

MS4 General Permit
Town of Madison 2021 Annual Report
Existing MS4 Permittee
Permit Number GSM 000051
January 1, 2021 – December 31, 2021

This report documents the Town of Madison’s efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from January 1, 2021 to December 31, 2021.

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 / Person Responsible	Due	Date completed or projected completion date	Additional details
1-1 Implement public education and outreach	Complete	<ul style="list-style-type: none"> • Town DPW website includes stormwater management background information, general permit descriptions and informational resources • The informational resources include links to: EPA NPDES Stormwater Program, CTDEEP Stormwater Management Program, CTDEEP Watershed Management Program, Center for Watershed Protection and the Local Government Environmental Assistance Network • Held “Madison Green Up Clean Up Day” on April 24, 2021 to raise environmental awareness and help keep Madison clean. 	Educate the public & raise environmental awareness	Public Works Rob Russo, P.E.	Jul 1, 2018	January 1, 2018	

1-2 Address education/ outreach for pollutants of concern	Complete	<ul style="list-style-type: none"> • CTDEEP Water Quality/ Stormwater summary factsheet available on the Town's DPW website • Animal Waste & Water Quality literature focusing on bacterial contamination located within Town Hall • Homeowner's Guide to Septic Systems & Wells which includes information on stormwater and water quality is located on the Town's Health Department website • The DPW in coordination with the Madison Conservation Commission have installed "Entering Watershed" signage Town wide notifying residents to use care when handling fertilizer, salt, pet waste, herbicides and washing vehicles. 	Raise awareness for pollutants of concern	Public Works Rob Russo, P.E.	Jul 1, 2018	July 1, 2018	
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1-3 Integrate storm water management, pollution prevention & water quality into school curriculum	Complete	<ul style="list-style-type: none"> • DPW coordinated with Board of Education science teachers to implement stormwater, pollution prevention & water quality education into the science curriculum. • On October 13th, all Madison Middle School 7th graders took a field trip to Bauer Farm to attend a lecture on stormwater runoff, water quality, illicit discharges and information on the State's General Permit. The lecture was given by Robert Russo from the DPW throughout the morning to each class. After the lecture, students walked around the ponds at the farm asking questions, recording observations for their lab assignment and obtaining water samples. 	Educate students on common stormwater, pollution prevention & water quality topics	Public Works Rob Russo, P.E.	-	Ongoing Annually	
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1.2 Describe any Public Education and Outreach activities planned for the next year, if applicable.

<ul style="list-style-type: none"> - Madison Green Up Clean Up Day 2022 - Educational lectures and Q&A sessions to Madison Public Schools 7th Graders on stormwater runoff, pollution, water quality & illicit discharges - Re-start coordination & implementation of stormwater sampling into the water chemistry unit of the Daniel Hand High School Marine Science class

1.3 Details of activities implemented to educate the community on stormwater

Program Element/Activity	Audience (and number of people reached)	Topic(s) covered	Pollutant of Concern addressed (if applicable)	Responsible dept. or partner org.
<i>Madison Public Schools - 7th Grade Educational Lecture and Q&A Session</i>	Teachers & Students (Approx. 250)	Stormwater Runoff, Pollution, Water Quality & Illicit Discharges	Bacteria – Pet Waste	Public Works & Board of Education

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	<ul style="list-style-type: none"> The Stormwater Management Plan is available on the Town of Madison's Public Works website 	Provide public notice and access to the Town's Stormwater Management Plan	Public Works Rob Russo, P.E.	Apr 3, 2017	April 3, 2017	
2-2 Comply with public notice requirements for Annual Reports	Complete	<ul style="list-style-type: none"> The 2016, 2017, 2018, 2019, 2020 & 2021 Annual Reports have been made available to the public on the Town of Madison's Public Works website 	Provide public notice and access to the Town's Annual Reports	Public Works Rob Russo, P.E.	Feb 15, 2022	January 25, 2022	

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

- Madison Green Up Clean Up Day 2022
- Continue compliance with public notice requirements for the Annual Report

2.3 Public Involvement/Participation reporting metrics

Metrics	Implemented	Date	Posted
Availability of the Stormwater Management Plan announced to public	Yes	April 3, 2017	Town of Madison's Public Works Website
Availability of Annual Report announced to public	Yes	January 25, 2022	Town of Madison's Public Works Website

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	<ul style="list-style-type: none"> The IDDE program has been completed and is available on the Town's DPW website 	Develop written plan of IDDE program	Public Works Rob Russo, P.E.	Jul 1, 2018	July 1, 2018	
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	Complete	<ul style="list-style-type: none"> The Town's storm drainage systems which include piping, outfalls, catch basins and other structures have been identified & mapped in a GIS database. 	Map all Townwide Stormwater Outfalls	Public Works Rob Russo, P.E.	Jul 1, 2019	July 1, 2019	
3-3 Implement citizen reporting program	Complete	<ul style="list-style-type: none"> The Town of Madison's Public Works website encourages citizens to report illicit discharges through a "Report a Concern" function 	Promote citizen reporting of illicit discharges into the Town's storm drainage systems	Public Works Rob Russo, P.E.	Jul 1, 2017	July 1, 2017	
3-4 Establish legal authority to prohibit illicit discharges	Complete	<ul style="list-style-type: none"> The Town has implemented an Illicit Discharge Detection and Elimination Stormwater Ordinance into the Town of Madison Code of Ordinances. Per the ordinance the DPW will be responsible for investigating, monitoring and prohibiting illicit discharges. 	Create a legal authority consisting of an individual or individuals who will investigate, monitor & eliminate reported illicit discharges	Public Works Rob Russo, P.E.	Jul 1, 2018	August 17, 2018	

3-5 Develop record keeping system for IDDE tracking	Complete	<ul style="list-style-type: none"> The Town of Madison's Public Works Department has implemented Cartegraph Operational & Asset Management software to record stormwater related issues and track illicit discharges 	Create & maintain a current and reliable system for recording stormwater issues and tracking illicit discharges	Public Works Beth Anne Twohill	Jul 1, 2017	July 1, 2017	
3-6 Address IDDE in areas with pollutants of concern	Not Started	<ul style="list-style-type: none"> No activities to declare during current reporting period 					

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

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| <ul style="list-style-type: none"> Utilize the IDDE program to continue baseline and catchment area sampling (dry and wet). Utilize the stormwater ordinance to investigate, monitor and eliminate discovered illicit discharges. Continue IDDE outfall screenings in MS4 priority area Citizen illicit discharge concerns will be recorded and tracked by the Department of Public Works in the Cartegraph software. |
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3.3 List of citizen reports of suspected illicit discharges received during this reporting period.

Date of Report	Location / suspected source	Response taken
6/8/21	41 River Edge Farms/Sump pump into culvert	On-site investigation concluded there was no illicit discharge or contaminates being introduced into stormwater drainage or natural drainage basins.

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. The Town of Madison has no SSOs

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)
N/A						
N/A						

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

Illicit Discharge reports as well as other stormwater related issues/concerns are received by the Department of Public Works and input into Cartegraph Operational & Asset Management software. The information is stored in a database which is graphically linked to Town wide GIS mapping. The DPW administrative assistant will generate a work request from the database and distribute to the DPW personnel. The DPW personnel, upon receipt of the work request investigates, monitors and takes the appropriate action in accordance with the IDDE Ordinance.

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
Approximately 193 Town-wide septic system permits issued 69% of septic system permits issued are due to septic repairs	Property owners are issued order letter with specific time frame (if necessary) to have system designed by a professional engineer or licensed septic contractor and installed immediately.	No evidence of contaminated drinking water or groundwater.

3.7 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	745 - Estimated
Estimated or actual number of interconnections	28 - Estimated
Outfall mapping complete	100%
Interconnection mapping complete	100%
System-wide mapping complete (detailed MS4 infrastructure)	95%
Outfall assessment and priority ranking	95%
Dry weather screening of all High and Low priority outfalls complete	60%
Catchment investigations complete	70%
Estimated percentage of MS4 catchment area investigated	70%

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 Illicit Discharge Detection and Elimination (IDDE) Program has been made available to the public via the Town website as well as all internal Town employees. A hard copy of the program is kept at the Town garage for Department of Public Works employees to reference.

No formal IDDE training has been implemented at this time.

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	Complete	<ul style="list-style-type: none"> All proposed development projects are reviewed by the Public Works & Land Use Departments for compliance with State of Connecticut 2002 Guidelines for Soil Erosion and Sediment Control, 2004 Connecticut Stormwater Quality Manual, Town of Madison Zoning Regulations, Inland Wetland Regulations and Building Regulations. 	Enforce State & Municipal guidelines and regulations to meet requirements of MS4 general permit	Land Use Erin Mannix Public Works Rob Russo, P.E.	Jul 1, 2019	Ongoing	
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval	Complete	<ul style="list-style-type: none"> The Town of Madison's Public Works, Land Use, Building & Health Departments coordinate and review site plans for approval Interdepartmental meetings regarding projects are held as necessary 	Maximize interdepartmental coordination on site plan reviews through communication	Public Works Rob Russo, P.E.	Jul 1, 2017	July 1, 2017	
4-3 Review site plans for stormwater quality concerns	Complete	<ul style="list-style-type: none"> The Town of Madison's Public Works, Land Use, Building & Health Departments perform site plan reviews to identify activities that disturb land surface and detect potential causes of pollution to stormwater runoff 	Identify stormwater quality concerns during site plan review process	Land Use Erin Mannix Public Works Rob Russo, P.E.	Jul 1, 2017	July 1, 2017	

4-4 Conduct site inspections	Complete	<ul style="list-style-type: none"> Site Developments are inspected by the building official, zoning enforcement officer, public works personnel & inland wetlands officer during construction 	Identify stormwater drainage issues with the site development	Building Department Vinny Garafalo	Jul 1, 2017	July 1, 2017	
4-5 Implement procedure to allow public comment on site development	Complete	<ul style="list-style-type: none"> The public has the ability to comment on site development at Town Meetings The Town of Madison's website includes a reporting function to receive public comments 	Allow public comment on site developments through public meetings and the Town of Madison's website	Public Works Rob Russo, P.E.	Jul 1, 2017	July 1, 2017	
4-6 Implement procedure to notify developers about DEEP construction stormwater permit	Complete	<ul style="list-style-type: none"> Developers are notified of the DEEP construction stormwater permit under Section 18 of the Town of Madison's Site Plan Review Application 	Notify developers of the DEEP construction stormwater permit	Land Use Erin Mannix	Jul 1, 2017	July 1, 2017	

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

- Continued enforcement of the State's Soil Erosion and Sedimentation Control Guidelines
- Continued enforcement of the State's Stormwater Quality Manual
- Continued enforcement of the Town of Madison's Zoning & Inland Wetland Regulations
- Continued Site Inspections
- Continued review of all proposed site development projects
- Continued implementation of the current procedure to allow public comment on site development
- Continued implementation of the current procedure to notify developers about DEEP construction stormwater permit

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 LID and runoff reduction in site development planning	In Progress	<ul style="list-style-type: none"> The Town is working to create new regulations pertaining to LID and runoff reduction in site development planning. 	Establish and/or update legal authority and guidelines regarding LID and runoff reduction in site development planning	Erin Mannix Land Use	Jul 1, 2021	July 1, 2022	
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects	Complete	<ul style="list-style-type: none"> The Town strongly encourages LID in projects and enforces runoff reduction through the use of stormwater regulations. The Town's current stormwater regulations require the applicant to minimize impervious surfaces and maximize infiltration through the use of vegetated swales, rain gardens, bioretention, etc... 	Enforce LID/runoff reduction requirements for development and redevelopment projects	Land Use Erin Mannix Public Works John Iennaco, P.E.	Jul 1, 2019	July 1, 2019	
5-3 Identify retention and detention ponds in priority areas	Complete	<ul style="list-style-type: none"> The Town owned detention ponds have been identified. 	Identify retention and detention ponds in priority areas	Public Works Rob Russo, P.E.	Jul 1, 2019	July 1, 2021	
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures	Complete	<ul style="list-style-type: none"> The Town Engineers perform periodic inspections of the stormwater basins throughout Town. If the health of basin & vegetation is a cause for concern, a wetland scientist is 	Implement long-term maintenance plan for stormwater basins and treatment structures	Public Works John Iennaco, P.E.	Jul 1, 2019	July 1, 2021	

		contacted to perform an investigation. If the basin requires routine maintenance, a work request is sent to the Public Works employees for action.					
5-5 DCIA mapping	In Progress	<ul style="list-style-type: none"> The DPW is continuing to identify DCIA's utilizing the Town's GIS, UCONN Clear mapping and aerial imagery to analyze DCIA Town wide. 	Identify DCIA's within the MS4 general permit priority area	Public Works Rob Russo, P.E.	Jul 1, 2020	Anticipated for July 1, 2022	
5-6 Address post-construction issues in areas with pollutants of concern	Not Started	<ul style="list-style-type: none"> No activities to declare during current reporting period 			Not specified		

5.2 Describe any Post-Construction Stormwater Management activities planned for the next year, if applicable.

- Continue review of legal authority and/or other updates to the current regulations to meet those LID and runoff reduction practices required under this permit
- Continued enforcement of LID/runoff reduction on all proposed development and redevelopment projects
- Continue periodic inspections, wetland scientist investigations and routine maintenance on all Town owned detention pond and stormwater treatment structures
- Complete DCIA mapping

5.3 Post-Construction Stormwater Management reporting metrics

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	Anticipated for 2022 Annual Report
DCIA disconnected (redevelopment plus retrofits)	Anticipated for 2022 Annual Report
Retrofits completed	Anticipated for 2022 Annual Report
DCIA disconnected	Anticipated for 2022 Annual Report
Estimated cost of retrofits	Anticipated for 2022 Annual Report
Detention or retention ponds identified	4 ponds

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

The Town of Madison will be following the guidance provided by CTDEEP and UCONN Clear to calculate the baseline Directly Connected Impervious Area (DCIA) of the watershed that contributes stormwater runoff to each of its MS4 outfalls.

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	Complete	<ul style="list-style-type: none"> Stormwater Pollution Prevention Yearly Training for the Town's Department of Public Works was delayed this year due to the continued global pandemic. 	Educate & train Town personnel on stormwater management and pollution prevention	Public Works Rob Russo, P.E.	Jul 1, 2017	Ongoing	
6-2 Implement MS4 property and operations maintenance	Complete	<ul style="list-style-type: none"> Under the general permit associated with industrial activity, the Town's Bulky Waste & Garage properties are currently being maintained. In accordance with the permit, stormwater samples are being obtained, analyzed and submitted to CTDEEP by SLR Consulting. Additional Town impervious areas such as the school properties were swept during low traffic volumes. Catch Basins on these properties are routinely cleaned biannually. 	Maintain all Town owned properties in accordance with the MS4 General Permit	Public Works Rob Russo, P.E.	Jul 1, 2018	Ongoing	
6-3 Implement coordination with interconnected MS4s	In Progress	<ul style="list-style-type: none"> The Town has researched, identified & mapped interconnections with other MS4s. Further coordination is required. 	Coordinate interconnected MS4's	Public Works Rob Russo, P.E.	Not specified	Anticipated for July 1, 2022	

6-4 Develop/implement program to control other sources of pollutants to the MS4	Not Started	<ul style="list-style-type: none"> No activities to declare during current reporting period 			Not specified		
6-5 Evaluate additional measures for discharges to impaired waters*	Not Started	<ul style="list-style-type: none"> No activities to declare during current reporting period 			Not specified		
6-6 Track projects that disconnect DCIA	Complete	<ul style="list-style-type: none"> The Town of Madison is currently tracking projects that disconnect DCIA via an internal database. 	Track & monitor projects that disconnect DCIA	Public Works Rob Russo, P.E.	Jul 1, 2017	Ongoing	
6-7 Implement infrastructure repair/rehab program	Complete	<ul style="list-style-type: none"> Based on DPW inspections, citizen reports and annual roadway improvement projects, storm drainage infrastructure rehabilitation & repair projects are completed by DPW personnel or bid to private contractors. 	Improve, repair & rehabilitate Town wide storm drainage infrastructure.	Public Works John Iennaco, P.E.	Jul 1, 2021	Ongoing	
6-8 Develop/implement plan to identify/prioritize retrofit projects	In Progress	<ul style="list-style-type: none"> The DPW plans to implement a retrofit project this year and will continue to identify and prioritize retrofit projects. 			Jul 1, 2020	Anticipated for July 1, 2022	
6-9 Implement retrofit projects to disconnect 2% of DCIA	In Progress	<ul style="list-style-type: none"> The Town has plans to retrofit the Town's Senior Center. 			Jul 1, 2022	Anticipated for July 1, 2022	
6-10 Develop/implement street sweeping program	Complete	<ul style="list-style-type: none"> The Town of Madison's annual street sweeping program was completed by the Department of Public Works. Approximately 125 miles of Town roads 	Continue annual street sweeping program to mitigate sediment & debris on Town roads and properties	Public Works John Iennaco, P.E.	Jul 1, 2017	Ongoing	

		<p>were swept as part of the annual program.</p> <ul style="list-style-type: none"> • Additional Town impervious areas such as the school properties were also included in the program. 					
6-11 Develop/implement catch basin cleaning program	Complete	<ul style="list-style-type: none"> • The Town of Madison's annual catch basin cleaning program was completed by Kropp Environmental Contractors. • 414 catch basins were cleaned during this reporting period. 	Continue catch basin cleaning program to remove sediment & debris from basins and improve stormwater quality	Public Works John Iennaco, P.E.	Jul 1, 2020	Ongoing	
6-12 Develop/implement snow management practices	Complete	<ul style="list-style-type: none"> • Road salt was utilized to treat Town roads during storm events as opposed to a salt/sand mixture; preventing sediment accumulation in catch basins • To mitigate wetland impacts, adjacent snow banks/piles were transported to Town properties 	Continue snow management practices to mitigate the effect on water quality and the Town's storm drainage infrastructure.	Public Works John Iennaco, P.E.	Jul 1, 2018	Ongoing	

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

- Re-start Stormwater Pollution Prevention Training for Department of Public Works Personnel
- Additional maintenance on Town owned MS4 properties
- MS4 interconnection coordination with other MS4's
- Continue tracking projects that disconnect DCIA
- Continue Street Sweeping and Catch Basin Cleaning Programs
- Install and construct DCIA retrofit project at the Town of Madison Senior Center

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	No - Delayed
Street sweeping	
Curb miles swept	250 miles
Volume (or mass) of material collected	N/A
Catch basin cleaning	
Total catch basins in priority areas	2,154
Total catch basins in MS4	2,643
Catch basins inspected	414
Catch basins cleaned	414
Volume (or mass) of material removed from all catch basins	381 C.Y.
Volume removed from catch basins to impaired waters (if known)	N/A
Snow management	
Type(s) of deicing material used	Road Salt
Total amount of each deicing material applied	1174 tons
Type(s) of deicing equipment used	6 wheel dump trucks w/ computerized salt spreading equipment
Lane-miles treated	250 miles
Snow disposal location	Exchange Field
Staff training provided on application methods & equipment	Yes for New Hires
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
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)	
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 Madison Department of Public Works personnel performed visual inspections of the catch basins throughout Town to determine which areas were most in need of cleaning. These observations in conjunction with residents work requests provide direction on which quadrant of Town will be cleaned in a given year. The remaining quadrants of Town will be targeted in subsequent years.

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.

DPW identifies directly connected regions in town with a significant area of impermeability that could readily utilize rain gardens, tree box filters or re-routing of stormwater into natural infiltration areas. Prioritizing these projects is based on cost effectiveness, feasibility, public impact/awareness and aesthetics. The Town has plans developed by a team from UCONN Clear to disconnect the Town's Senior Center utilizing a State grant. This project was chosen because it will enhance public awareness of our efforts and has a large impermeable surface area. The project will also serve to beautify the property. Total disconnect is estimated to be 0.041%.

Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection in future years.

DPW is evaluating the feasibility of disconnecting more Town properties from municipal stormwater systems and redirecting to retention/detention ponds, raingardens, tree-box filters, etc. Additional disconnecting projects have been provided through a study performed by UCONN Clear.

Describe plans for continuing the Retrofit program beyond this permit term with the goal to disconnect 1% DCIA annually over the next 5 years.

DPW will continue to internally identify potential retrofit projects as well as considering suggestions made by UCONN Clear or other alternate studies.

Part II: Impaired waters investigation and monitoring

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.

The Town of Madison impaired waters monitoring work continued in 2021 by visiting 9 different outfalls including the 6 highest contributors of pollutants. 1 of the 9 outfalls visited did not have flow when screened. All of the 6 highest contributors were below the bacteria threshold, a significant reduction from when they were previously sampled. No mitigation measures were taken during the time period between the two samples in the consecutive years. Additionally, two more outfalls were sampled that discharge to impaired water bodies and both were below the bacteria threshold. For 2022, the Town intends on sampling additional outfalls to impaired water bodies and continue monitoring the 6 outfalls that as of 2019 had the highest contribution of pollutants.

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

2.1 Screening data

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	Name of Laboratory (if used)	Follow-up required?
OF-8	6-20-19	Bacteria – E. coli	47.3 MPN/100ml	CET, Inc.	No
OF-42	6-20-19	Bacteria – E. coli	1553.1 MPN/100ml	CET, Inc.	Yes
OF-71	6-20-19	Bacteria – E. coli	1413.6 MPN/100ml	CET, Inc.	Yes
OF-72	6-20-19	Bacteria – E. coli	>2419.6 MPN/100ml	CET, Inc.	Yes
OF-89	6-20-19	Bacteria – E. coli	>2419.6 MPN/100ml	CET, Inc.	Yes
OF-123	6-20-19	Bacteria – E. coli	>2419.6 MPN/100ml	CET, Inc.	Yes
OF-263	6-20-19	Bacteria – E. coli	>2419.6 MPN/100ml	CET, Inc.	Yes
OF-276	6-20-19	Bacteria – E. coli	50.4 MPN/100ml	CET, Inc.	No
OF-298	6-20-19	Bacteria – E. coli	547.5 MPN/100ml	CET, Inc.	Yes
OF-257	12-9-19	Bacteria – E. coli	185 MPN/100ml	CET, Inc.	No
OF-1.147	12-9-19	Bacteria – E. coli	50.4 MPN/100ml	CET, Inc.	No
OF-1.254	12-9-19	Bacteria – E. coli	111.2 MPN/100ml	CET, Inc.	No
OF-1.256	12-9-19	Bacteria – E. coli	44.8 MPN/100ml	CET, Inc.	No
OF-1.257	12-9-19	Bacteria – E. coli	36.4 MPN/100ml	CET, Inc.	No
OF-1.315	12-9-19	Bacteria – E. coli	328.2 MPN/100ml	CET, Inc.	Yes
OF-262	5-2-19	Bacteria – E. coli	Positive	DHHS Lab	Yes
OF-258	5-2-19	Bacteria – E. coli	Positive	DHHS Lab	Yes
OF-400	5-2-19	Bacteria – E. coli	Positive	DHHS Lab	Yes
OF-401	12-14-20	Bacteria – E. coli	>2419.6 MPN/100ml	CET, Inc.	Yes
OF-259	12-14-20	Bacteria – E. coli	55.40 MPN/100ml	CET, Inc.	No
OF-40	12-14-20	Bacteria – E. coli	214.30 MPN/100ml	CET, Inc.	No
OF-400	12-14-20	Bacteria – E. coli	816.40 MPN/100ml	CET, Inc.	Yes
OF-1.112	12-14-20	Bacteria – E. coli	No Flow		Yes
OF-42	12-6-21	Bacteria – E. coli	34.5 MPN/100ml	CET, Inc	No
OF-72	12-6-21	Bacteria – E. coli	16 MPN/100ml	CET, Inc	No
OF-89	12-6-21	Bacteria – E. coli	35.9 MPN/100ml	CET, Inc	No
OF-123	12-6-21	Bacteria – E. coli	186 MPN/100ml	CET, Inc	No
OF-263	12-6-21	Bacteria – E. coli	143.9 MPN/100ml	CET, Inc	No
OF-401	12-6-21	Bacteria – E. coli	No Flow		Yes
OF-71	12-15-21	Bacteria – E. coli	ND<1 MPB/100ml	CET, Inc.	No

60 Webster Point Road	11/15/16	Bacteria - E. coli	1414 MPN/100ml	CET, Inc.	Yes
60 Webster Point Road	12/17/15	Bacteria - E. coli	435.2 MPN/100ml	CET, Inc.	Yes
60 Webster Point Road	10/19/12	Bacteria - E. coli	980.4 MPN/100ml	ECL, Inc.	Yes
60 Webster Point Road	11/16/11	Bacteria - E. coli	435.2 MPN/100ml	ECL, Inc	Yes

3. Follow-up investigations (Section 6(i)(1)(D) / page 43) – Anticipated for 2022 Annual Report

Provide the following information for outfalls exceeding the pollutant threshold.

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

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)
OF-42	12/6/2021	E. Coli- (MPN/100ml)	Bacteria dropped from 1553.1 (2019) to 34.5 (2021)	CET, Inc.
OF-71	12/15/2021	E. Coli- (MPN/100ml)	Bacteria dropped from 1413.6 (2019) to ND<1 (2021)	CET, Inc.
OF-72	12/6/2021	E. Coli- (MPN/100ml)	Bacteria dropped from >2419.6 (2019) to 16 (2021)	CET, Inc.
OF-89	12/6/2021	E. Coli- (MPN/100ml)	Bacteria dropped from >2419.6 (2019) to 35.9 (2021)	CET, Inc.
OF-123	12/6/2021	E. Coli- (MPN/100ml)	Bacteria dropped from >2419.6 (2019) to 186 (2021)	CET, Inc.
OF-263	12/6/2021	E. Coli- (MPN/100ml)	Bacteria dropped from >2419.6 (2019) to 143.9 (2021)	CET, Inc.
OF-401	12/6/2021	E. Coli- (MPN/100ml)	No 2021 data (no flow)	CET, Inc.

Part III: Additional IDDE Program Data

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).

Catchment ID (DEEP Basin ID)	Priority Ranking
5000-17	High Priority
5000-15	High Priority
5000-16	High Priority
5000-14	High Priority
5000-13	High Priority
5107-01	High Priority
5106-00	High Priority
5106-17	High Priority
5107-00	Low Priority
5106-14	Low Priority
5108-05	Low Priority
5108-01	Low Priority

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	Flow	Ammonia	Chlorine	Conductivity	Salinity	E. coli or enterococcus	Surfactants	Water Temp	Pollutant of concern	If required, follow-up actions taken
See Attachment 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
See Attachment B									

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
5000-17	Neck River	None as specified
5000-15	Long Island Sound	None as specified; high density area (industrial, commercial, residential, parks)
5000-16	Long Island Sound	None as specified; high density area (industrial, commercial, residential, schools, parks)
5000-13	Long Island Sound	None as specified
5000-14	Long Island Sound	None as specified; high density area (commercial, residential, parks)
5106-00	Hammonasset River	None as specified
5107-01	Neck River	None as specified; high density area (commercial, residential, schools)
5106-17	Hammonasset River	None as specified
5107-00	Neck River	None as specified; high density area (commercial, residential)
5106-14	Hammonasset River	None as specified
5108-05	East River	None as specified
5108-01	East River	None as specified

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
Attachment A					

3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants
Attachment B				

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
No sources indicated as of 12/31/2021							

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:

Attachment A
Dry Weather Screening and Sampling Data

Outfall ID	Screening/Sample Date	Flow Obs.	Ammonia (mg/L)	Chlorine (mg/L)	Conductivity (umhos/cm)	Salinity (ppt)	Bacteria E. Coli - (MPN/100ml)	Surfactants (mg/L)	Water Temp Degrees F	If required, follow up action taken
OF-226	12/13/2019	No								
OF-227	12/13/2019	No								Follow up sampling Planned for 2022
OF-245	12/13/2019	No								
OF-257	12/13/2019	No								
OF-261	12/13/2019	No								
OF-262	12/13/2019	No								Follow up sampling Planned for 2022
OF-276	12/13/2019	No								
OF-277	12/13/2019	No								
OF-344	12/13/2019	No								
OF-1.147	12/13/2019	No								
OF-1.254	12/13/2019	No								
OF-1.256	12/13/2019	No								
OF-1.257	12/13/2019	No								
OF-1.315	12/13/2019	No								
OF-248	12/3/2020	No								
OF-150	12/3/2020	No								
OF-205	12/3/2020	No								
OF-203	12/3/2020	No								
OF-246	12/3/2020	No								
OF-247	12/3/2020	No								
OF-257	12/3/2020	No								
OF-258	12/3/2020	No								Follow up sampling Planned for 2022
OF-310	12/3/2020	No								
OF-298	12/3/2020	Yes	ND<0.10	0.3	210	0.1		0.093	41.5	
OF-333	12/3/2020	Yes	ND<0.10	0.38	250	0.1		0.08	41.5	
OF-336	12/3/2020	No								
OF-346	12/3/2020	Yes	0.14	0.32	200	0.1		0.069	41.5	
OF-401	12/3/2020	Yes								Wet Weather Sampled
OF-245	10/19/2021	No	--	--	--	--	--	--	--	Follow up sampling Planned for 2022
OF-295	10/19/2021	No	--	--	--	--	--	--	--	Follow up sampling Planned for 2022
OF-318	10/19/2021	No	--	--	--	--	--	--	--	Follow up sampling Planned for 2022
OF-328	10/19/2021	Yes	0.51	0	380	0.30	4.1000	0.17	60	Dry Weather Sampled

Attachment B
Wet Weather Sampling and Inspection Data

Outfall ID	Screening/Sample Date	Flow Obs.	Ammonia (mg/L)	Chlorine (mg/L)	Conductivity (umhos/cm)	Salinity (mg/L)	Bacteria E. coli - (MPN/100ml)	Surfactants (mg/L)	Temp. Degrees F	If required, follow up action taken
OF-400	12/14/2020	Yes	0.16	<0.025	20	<0.10	816.4	0.16	47.8	
OF-401	12/14/2020	Yes	0.42	<0.025	170	0.1	>2419.60	0.072	47.8	
OF-1.184	12/15/2021	Yes	0.14	ND<0.025	26	23	ND<1	ND<0.10	41.4	
OF-1.104	12/15/2021	Yes	0.13	ND<0.025	33	31	ND<1	ND<0.10	41.1	