

MS4 General Permit
City of New Haven 2025 Annual Report
 Existing MS4 Permittee
 Permit Number GSM 000030
 [January 1, 2025 – December 31, 2025]

This report documents the City of New Haven’s efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from January 1, 2025 to December 31, 2025.

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	Ongoing	-Active watershed groups and affiliates: Mill River Watershed Association and West River Watershed Coalition, Quinnipiac River Fund, Mill River Trail - Signage at green infrastructure (GI) installations -West River Watershed Coalition river walks -Mill River Urban Waters Initiative activities and events	Link to websites, # of people reached	Engineering	Ongoing	Continuing	West River Watershed Coalition https://www.westriverwatershed.org/ Mill River Watershed Coalition https://millriverofsouthcentralct.org/ Quinnipiac River Fund https://www.thequinnipiacriver.com/ Mill River Trail https://www.millrivertrail.com/

		-Mill River Trail walks -Promotion of GI and sustainable land use practices in Climate and Sustainability Framework and in 2023 Sustainable CT Gold certification.					
1-2 Address education/ outreach for pollutants of concern*	Ongoing	Research on effectiveness of infrastructure to capture litter in collaboration with Yale School of the Environment.	# of litter traps # of bioswales monitored	Engineering	Ongoing	Continuing	

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

<ul style="list-style-type: none"> - Continue support of watershed groups and affiliates. - Continue university research partnerships.
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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.
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Maintain signage at over 55 GI installations.	Entire city with New Haven Independent article and signage.	- Impact of impervious cover - Purpose of GI and how it works		Engineering in partnership with Urban Resources Initiative and Save the Sound
Continued informative media on GI and sustainable land use practices associated with New Haven's Sustainable Connecticut Certification.	All publicly available on the Sustainable Connecticut website.	- Impact of impervious cover, fertilizers, pesticides - Purpose of GI		Engineering
Research project to install, monitor, and assess the effectiveness of three litter traps at the end of three stormwater outfalls discharging to Beaver Pond (tributary to West River)	Results of the research will be used to develop anti-litter outreach campaign	- Litter - Sources of pollutants		Engineering Dept in collaboration with Urban Resources Initiative, Yale School of Forestry and Environmental Studies
Research on infiltration capacity of 281 bioswale installations throughout the City and soil moisture analysis at 77 bioswales	Results of research to inform future design and maintenance	Impact of impervious cover, Purpose of GI		Engineering Dept in collaboration with University of New Haven
West River Watershed Coalition, Mill River Watershed Association and Mill River Trail group lead walks and hikes along the banks of the West River and Mill River to educate and garner interest in the restoration of these resources. Also, volunteer cleanup events	Various events held annually	- Impact of impervious cover - West and Mill Rivers as community resources. - Watershed restoration		West River Watershed Coalition and Mill River Watershed Association.
Quinnipiac River Fund supports research in the Quinnipiac River and particularly on pollutants of concern with sampling locations in New Haven	Ongoing with research collaborative presentations annually	- Sources of pollutants - Watershed restoration		Quinnipiac River Fund
Mill River Watershed Association holds monthly meetings focused on watershed health	Monthly meetings with about 20 attendees	- Impact of impervious cover		City Plan and Engineering

		<ul style="list-style-type: none">- Importance of local rivers- Watershed education and awareness		
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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 Continue availability of Final Stormwater Management Plan to the public	Ongoing	SWMP available on website (see below 2.3)	Link to plan	Engineering	Ongoing	Completed	Website :- http://www.newhavenct.gov/government/departments-divisions/engineering/stormwater
2-2 Comply with public notice requirements for Annual Reports	Ongoing	Annual Report available on website (see below 2.3)	Link to draft report	Engineering	To be completed annually on Feb 15 th	2/13/2026	Website :- http://www.newhavenct.gov/government/departments-divisions/engineering/stormwater

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

None are planned at present by the City, but these activities are expected to occur. Many are instigated by the City's Environmental Advisory Council, or by the West River and Mill River Watershed Associations.

2.3 Public Involvement/Participation reporting metrics

Metrics	Implemented	Date	Posted
Availability of the Stormwater Management Plan to public	Y	July 2017	<p>A hard copy is kept for public review at the Engineering Department's reception desk, Hall of Records, 200 Orange Street, New Haven.</p> <p>Additionally, an electronic version is published on the City's web site at:- http://www.newhavenct.gov/gov/depts/engineering/stormwater.htm</p>
Availability of Annual Report announced to public	Y	2/13/2026	<p>A hard copy is kept for public review at the Engineering Department's reception desk, Hall of Records, 200 Orange Street, New Haven.</p> <p>Additionally, an electronic version is published on the City's web site at:- http://www.newhavenct.gov/government/departments-divisions/engineering/stormwater</p>

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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	Completed	IDDE protocol researched and written in early 2018	IDDE Protocol Document	Engineering	Jul 1, 2018	March 2, 2018	The document is considered to be a 'living document', in as far as it will be modified over time as new problems are encountered, and as experience is gained
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	Completed	Minor updating when errors or omissions have been detected during field visits	(1) Excel spreadsheet listing all outfalls, locations and type of construction. (2) A photo log of all outfalls with condition data. (3) 1" to 80" plans showing all outfalls and listing their drainage basins.	Engineering	Jul 1, 2019	In stages between 2004 and 2009	The City has 110 outfalls in priority areas. The City's outfalls drain to the Quinnipiac, Mill River, West River, and New Haven Inner and Outer harbor. All are waters impaired by bacteria, nitrogen and phosphorus. A water testing program is underway. To date, the City has reduced the number of outfalls covered by the City's permit from 260 initially, and 146 in 2022 to 110 in 2023 and has remained at this number since then. During 2023 the list was reviewed to remove further outfalls in DOT property that are now covered by their MS4 Permit.
3-3 Implement citizen reporting program	Completed	Monitoring of the "See Click-Fix" web site for citizen reports, and rectification of the problem	"See Click-Fix" website	All City Departments	Jul 1, 2017	Circa 2010	Citizen reports cover a large number of issues affecting stormwater run-off, from blocked or damaged catch basins through to illegal dumping. Appendix 1 of the 2018 Report includes a typical "See Click-Fix" posting

3-4 Establish legal authority to prohibit illicit discharges	Completed	No enforcement actions taken this reporting period	Title III Chapter 26 Code of Ordinances	Engineering and Corporation Counsel	Jul 1, 2018	June 6, 2016	Can be viewed at - https://library.municode.com/ct/new_haven/codes/code_of_ordinances?nodeId=TITIICOGEOEOR_CH26STDI&showChanges
3-5 Develop record keeping system for IDDE tracking	Completed	N/A	CCTV footage captured in given year	Engineering	Jul 1, 2017	Not known	CCTV footage is kept on a hard drive with all pipe lengths uniquely numbered. This is backed up by drawings illustrating the pipe networks. For each outfall, a register is kept of any potential problem areas.
3-6 Address IDDE in areas with pollutants of concern	On-going	Review of CCTV footage of storm drains to detect any illicit connections	Prompt removal of illicit connection	Engineering	Not specified	Continuing	Illicit connections into the storm system will be removed when found. To date, the CCTV inspections have found no illicit connections.
3-7 Detailed MS4 infrastructure mapping	On-going	Updated catch basin layer to include data on maintenance activities	GIS layers with infrastructure data	Engineering		Complete-continually updating	The City has all its MS4 infrastructure within layers in GIS. This past year, the system has been updated to allow for field collection of catch basin maintenance data. In addition, the layers are updated to reflect storm sewer upgrades and construction projects.

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

The CCTV program has been in operation for approximately six years. To date approximately 100,000 linear feet were reviewed, with no definitive illicit connections located. Due to staffing changes, the City will be re-evaluating its IDDE program to determine the most effective methodology moving forward and with new permit requirements.

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

Date of Report	Location / suspected source	Response taken
No reports during 2025		

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)
SSO response and record keeping is undertaken by the Greater New Haven Water Pollution Authority						
Outfall off of Front Street south of I-91 into Quinnipiac River (41.320159, -72.89646)	Multiple occurrences, reported to City 11/1/2021	MS4	100 gallons of cloudy discharge	Runoff from tile and marble cutting operations/ Centennial Tile and Marble, LLC, 72 Middletown Ave	Reported 11/1/2021, tracked to business 11/5/2021, enforcement action taken 11/5/2021, operations causing discharge stopped 11/5/2021, resolved with treatment and new sanitary connection on 11/22/2021	

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

1. The tracking system for illicit sanitary connections is as described in section 3.1.5 above. To date no such connections have been detected.
2. Records of other potentially polluting events are kept on the “See Click Fix” web site.
3. Direct citizen reports sent to City Engineer. City Engineer responsible for enforcement action and City Engineer and Assistant City Engineer responsible for tracking this information.

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
There are no precise records, but as of 2020 it is believed there are only 10 to 20 septic systems left in the City. There were no reports of failures during 2025.		

3.7 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	110
Estimated or actual number of interconnections	See below
Outfall mapping complete	100%
Interconnection mapping complete	100%
System-wide mapping complete (detailed MS4 infrastructure)	100%
Outfall assessment and priority ranking	See below
Dry weather screening of all High and Low priority outfalls complete	See below
Catchment investigations complete	See below
Estimated percentage of MS4 catchment area investigated	Approximately 90-95% complete.

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).

On-the-job training of employees managing MS4 requirements occurs annually as IDDE requirements are reviewed and fulfilled. This was particularly the case in 2025 staff transition periods. As stated previously, the City will be re-evaluating its IDDE program and protocols to determine the most effective methodology and will update training accordingly.

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	Completed	See 4.2 below		City Plan	Jul 1, 2019	Sept 19, 2011	
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval	On-going	See 4.2 below	37 Site plan applications reviewed in 2025	City Plan Engineering Building Dept	Jul 1, 2017	Since 2004	
4-3 Review site plans for stormwater quality concerns	On-going	See 4.2 below	37 Site plan applications reviewed in 2025	Engineering	Jul 1, 2017	Since 2004	
4-4 Conduct site inspections	On-going	See 4.2 below	Records do not exclusively track inspections, but 90 to 100 inspections is	Building Dept, Engineering	Jul 1, 2017	Since 2004	

			considered a good estimate				
4-5 Implement procedure to allow public comment on site development	On-going	See 4.2 below	Monthly City Plan Commission meetings	City Plan Commission	Jul 1, 2017	Since 2004	
4-6 Implement procedure to notify developers about DEEP construction stormwater permit	On-going	See 4.2 below	This is part of the Site plan application process	City Plan	Jul 1, 2017	Since 2004	

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

The City Plan Commission reviews all development plans prior to approval. There are monthly meetings at which commissioners review developments and approve them, or otherwise. These meetings are open to all, and members of the public can comment on any aspect of a development. Various city departments review the plans prior to City Plan Commission review, and there are bi-monthly co-ordination meetings between the departments involved. In the case of stormwater, input is from City Plan, the Engineering Department, the Building Department, and the Greater New Haven Water Pollution Control Authority. As required by Section 60 of the Zoning Code, the developer’s engineer submits a Stormwater Management Plan addressing compliance with the City’s ordinances, including Soil Erosion and Sediment Control plans. A typical report is included as Appendix 2 of the 2018 Annual Report. As part of the approval process, City Plan prepares a project specific report indicating any special requirements. A typical example which has stormwater related requirements is included as Appendix 3 of the 2018 Annual Report. A building permit is not issued until all the conditions of approval are met. Site inspections by Building Department and Engineering Department staff during construction ensure SESC controls are in place, retention system/BMPs are installed per plan, and all work complies with the approved design, including stormwater elements, prior to the issuance of a Certificate of Occupancy.

Sections 57, 58 and 60 of Article VI of the City’s code of ordinances are the mechanism by which the requirements of the MS4 permit are met. They include low impact development requirements and the retention onsite of one inch of rainfall. They can be viewed at the following web address:

https://library.municode.com/ct/new_haven/codes/zoning?nodeId=ZOOR_ARTVIOTDI

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	Completed	See 4.2 above	Section 60 of the Zoning Ordinance	City Plan	Jul 1, 2021	Sept 19, 2011	
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects	On-going	See 4.2 above	Approximately 20 stormwater management plans submitted for development projects during 2025	City Plan	Jul 1, 2019	On-going	
5-3 Identify retention and detention ponds in priority areas	Completed	None	None	Engineering	Jul 1, 2019		There are no known retention / detention structures under the City's jurisdiction
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures	Not necessary at the present time			Engineering	Jul 1, 2019	On-going	There are no known structures of these types under the City's jurisdiction.
5-5 DCIA mapping	On-going	The City used mapping resources provided by UCONN NEMO for DCIA mapping and for baseline DCIA calculations. See below for details.	Completion	Engineering	Jul 1, 2020	Initial DCIA calculations completed Jul 1, 2020. Revisions were made to the baseline DCIA in 2024 to account for removal of areas with separate MS4	See 5.4 for details on refinement calculations

						permits.	
5-6 Address post-construction issues in areas with pollutants of concern						Not specified	

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

The City has a robust database of the storm sewer system in GIS and continues to refine and update this database as errors are found and construction work is completed throughout the MS4 area.

5.3 Post-Construction Stormwater Management reporting metrics

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	3,109 acres
DCIA disconnected (redevelopment plus retrofits)	<p>113.5 acres representing both public and private retrofits and redevelopment.</p> <p>37.3 acres have been disconnected due to retrofits within the public right of way (i.e. bioswales).</p> <p>76.2 acres have been disconnected due to private retrofits and redevelopment In 2025, the City approved 20 projects within the MS4 area that result in a</p>

	<p>projected 11.0 acres of DCIA disconnection.</p> <p>In addition, there have been DCIA disconnections on private property since 2011 when Section 60 of the Zoning Ordinance was adopted that are not fully accounted for. As this was prior to 2017, MS4 Permit records were not kept. It is intended that records will be further researched, and the amount of work already done will be quantified.</p> <p>Additionally, as record tracking systems are improved and implemented at the City level, quantification of DCIA will further improve.</p>
Retrofits completed	217 ROW bioswales
DCIA disconnected	113.5 acres. This estimate is conservative and does not yet quantify all the disconnections undertaken as part of private property development and redevelopment projects since 2012.
Estimated cost of retrofits	178 bioswales throughout downtown cost \$2.52M. Not known for the private development projects.
Detention or retention ponds identified	There are no known detention or retention ponds under the City's jurisdiction

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

Baseline DCIA for the City of New Haven is 3,109 acres. This value was calculated as follows:
 The 2012 imperviousness layer was downloaded from the CT ECO website. This layer was used to calculate imperviousness within the combined sewer areas of New Haven so that it can be subtracted out from the total impervious acreage. After subtracting out State Roads and Combined Sewer impervious cover from New Haven's total impervious acreage (according to UCONN's MS4 map), the total impervious cover within MS4 areas in New Haven is 3,809.7 acres. This amounts to 38% impervious after adjusting the City's total acreage minus the combined sewer and state road acreage (10,015.9 acres). Using the methodology developed by EPA for Massachusetts, the City was conservatively assigned as 'Highly Connected' and the associated equation was used to

convert the total imperviousness percentage to DCIA percentage. The DCIA percentage is 31.5% or 3,155 acres. In 2024, the City updated its baseline DCIA acreage to reflect areas within the City that have separate MS4 permits, namely Southern Connecticut State University. The updated baseline DCIA acreage was reduced by 46 acres and is now 3,109 acres.

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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	On-going		Annual training of Public Works and Parks Dept operatives	Public Works Parks Dept	Jul 1, 2017	Continuing	Training materials in the form of presentation slides are available
6-2 Implement MS4 property and operations maintenance	On-going	<p>Pavement sweeping and trash removal from the Public Works Garage, the Refuse Vehicle Garage, and the transfer Station sites</p> <p>Parks continues to manage parks and open spaces with minimal to no fertilizer and pesticide use. Leaves and grass clippings are collected and composted.</p>	Meeting target pollutant levels in the relevant DEEP general permit	Public Works Parks Dept	Jul 1, 2018	Continuing	Facilities covered by DEEP Industrial Discharge General permits GSI000800, GSI001690 and GSI002097
6-3 Implement coordination with interconnected MS4s	On-going (as required)	Discussions with staff from West Haven and North Haven on minor issues and the exchange of information	See 3.7 above	Engineering	Not specified	Continuing as required	
6-4 Develop/implement program to control other sources of pollutants to the MS4		None		Engineering	Not specified		There are no known sources of other pollutants to the MS4
6-5 Evaluate additional measures for discharges to impaired waters*		<p>Parks does not fertilize large areas of lawn nor use widespread pesticides.</p> <p>Signage exists at ponds to not feed waterfowl</p>		Engineering	Not specified	Ongoing	

6-6 Track projects that disconnect DCIA	On-going	In 2025, City reviewed and approved site plans for projects that would disconnect 11.0 acres of DCIA.	Spread sheet listing all developments since 2017 with DCIA reductions	Engineering	Jul 1, 2017	Annually calculate DCIA disconnected Work is in progress to quantify DCIA disconnected from previous projects as far back as 2012.	Protocols are in place to track disconnected DCIA each year. It is intended, dependent on staff availability, to track projects back to 2012.
6-7 Implement infrastructure repair/rehab program	On-going	Nearly \$700,000 was spent on repair and maintenance of stormwater infrastructure in 2025, namely on catch basins and repairing broken piping and laterals.	Keeping all infrastructure in a state of good repair	Engineering	Jul 1, 2021	Continuing	
6-8 Develop/implement plan to identify/prioritize retrofit projects	On-going	Continued water sampling and testing to determine the worst polluted watersheds that will need attention first. Currently, private development projects account for much of the disconnected DCIA		Engineering	Jul 1, 2020	Continuing	
6-9 Implement retrofit projects to disconnect 2% of DCIA	Commenced	Developed protocol for tracking new/re-development disconnection, incorporating green infrastructure into street projects	Acres of impervious area disconnected	Engineering	Jul 1, 2022	Continuing	So far, 113.5 acres of DCIA was disconnected representing 3.7% of baseline DCIA. 37.3 acres of disconnected DCIA are attributed to 217 ROW (right-of-way) bioswales installed within MS4 areas 76.2 acres of DCIA was disconnected or planned on private property in MS4 areas

6-10 Develop/implement street sweeping program	On-going	All streets within the City are swept 6 to 8 times annually between April and November	Visually clear of trash, dust, and leaves at all times	Public Works	Jul 1, 2017	Continuing	
6-11 Develop/implement catch basin cleaning program	On-going	4,755 catch basins were completed in 2025	Clean every catch basin once every two years	Engineering	Jul 1, 2020	Continuing	This year we implemented a field based GIS tool for tracking catch basin cleaning program.
6-12 Develop/implement snow management practices	On-going	Application of chloride liquid de-icer and sand/salt as required. No specific metrics available	Maintenance of safe movement of traffic	Public Works	Jul 1, 2018	Continuing	

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

1. Continued street sweeping – 6 to 8 times during the year
2. Continued catch basin cleaning – Approx 4,500. In 2025, a GIS-based tool for tracking CB cleanings and lateral jetting was debuted. The tool was adopted by the contactor and continues to be developed to further improve tracking efficacy.
3. Spill response – As required
4. Illicit dumping response – As required
5. Litter removal in the downtown area and city parks – As required
6. Continued maintenance of bioswales and GI within the public right of way, including trash and sediment removal.

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	Yearly refresher class to all Public Works and Parks Department

	employees
Street sweeping	
Curb miles swept	231 miles swept monthly
Volume (or mass) of material collected	Not recorded
Catch basin cleaning	
Total catch basins in priority areas	Approx 6,500
Total catch basins in MS4	Approx 6,500
Catch basins inspected	Approx 4,500
Catch basins cleaned	Approx 4,500
Volume (or mass) of material removed from all catch basins	Approx 76,000 Cu Ft
Volume removed from catch basins to impaired waters (if known)	Approx 76,000 Cu Ft
Snow management	
Type(s) of deicing material used	Salt
Total amount of each deicing material applied	Varies based on storm event
Type(s) of deicing equipment used	Truck mounted
Lane-miles treated	231 miles
Snow disposal location	No data available
Staff training provided on application methods & equipment	Yearly refresher course at start of snow season
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	None used
Reduction in turf area (since start of permit)	Nothing substantial
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	
	The City has approximately 2,000 acres of parkland, which have significant populations of birds and wildlife
Cost of mitigation actions/retrofits	None

6.4 Catch basin cleaning program

Provide any updates or modifications to your catch basin cleaning program

No changes. Expect to clean 4,500 annually. We developed and implemented a GIS-based tool for tracking CB cleanings and lateral jetting which will help us track and plan better for the future. Contractor began to use the tool in 2025.

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.

The retrofit program identification and prioritization process is based on opportunity with development and re-development projects. The City continues to incorporate green infrastructure into all its projects as applicable. There are 217 right-of-way (ROW) bioswales constructed within the MS4 watershed for a total DCIA of 37.3 acres.

On private property, Section 60 was adopted in 2011 requiring capture of the 1st inch of runoff from applicable sites being developed or re-developed. Conservatively, 76 acres have been disconnected since 2017. This number will continue to be refined as we document past projects since 2012 and update for newly developed projects.

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

It is anticipated that the retrofit program will continue to consist of two elements. One will be the continued installation of bioswales and incorporation of green infrastructure into the City's projects. The other will be the retention of the first inch of rainfall on new and major re-developments.

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

As described in the previous section.

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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

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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 City has monitored water quality per the 2004 permit since its inception, and has always had bacteria, nitrogen and phosphorus levels above target levels, sometimes significantly so. The City was audited by the EPA during 2014 and 2016, at which times they undertook PPCP testing at the outfalls monitored by the City. These suggested that sewage was entering the storm system. The EPA test results were submitted to DEEP with the 2017 annual report. However, City staff believe that the high levels of bacteria are due to wildlife, which has probably contributed to the high levels of nitrogen also. In consequence, the City undertook PPCP sampling of gutter flows into catch basins. Several of the parameters in the PPCP spectrum had similar levels to those previously found at outfalls, reinforcing the City's opinion that the problems at the outfalls are due to contamination by animal excrement rather than sanitary sewer cross connections. The City has an extensive sewer separation program in place, and so far the CCTV review found no illicit connections.

Water testing undertaken during 2020 consisted of monitoring at both the catch basins and outfalls, all samples on a network being collected within an hour of each other, so the test results would be a reasonably good comparison of what is going into the system with what is coming out. A review of the results indicated that the stormwater entering the catch basins was as polluted as that leaving the outfalls. Using the term "outfall" here is not fully correct as they are generally submerged. The sampling is at a close by upstream manhole.

Testing results since 2018 are included in Section 2.1 below, and in the Appendices, which also includes inflow data at catch basins. Going forward the City will sample at all outfalls and typical catch basins on selected pipe networks. All sampling is "Wet Weather", and most tests are undertaken at a laboratory. The sampling and testing at catch basins can be looked on as the "follow up Investigation" of the situation at the outfall. Work will progress in the ranking order as indicated in Part iii Table 1 below, as far as is possible.

The following parameters have been and will be tested at all outfalls and selected catch basins :-

1. E-Coli (Col/100ml) *
2. Total coliform
3. Fecal coliform
4. Enterococci
5. Ammonia (mg/l) *
6. Chlorine
7. Conductivity (umos) *
8. Salinity
9. Surfactants
10. pH (SU) *
11. Hardness (mg/l) *
12. Oil and grease (mg/l) *
13. Chemical oxygen demand (mg/l) *
14. Turbidity (NTU) *
15. Total suspended solids (mg/l) *
16. Total phosphorus (mg/l) *
17. Total Kjeldahl Nitrogen (mg/l) *
18. Nitrate plus nitrite Nitrogen (mg/l) *
19. Temperature of sample *
20. pH (SU) of uncontaminated rainfall *
21. Boron (mg/l)

The items marked * are the same parameters tested under the MS4 permit in place between 2004 and 2017. They are

continuing to be monitored as they give a general indication as to how dirty the storm discharges are, and it is hoped a database built up over many years will indicate general improvements.

Starting mid-2018 all bacteria samples were split to be tested at two separate and independent laboratories as a check on their accuracy. This practice has been continued through 2025 when it was deemed no longer necessary given the consistency in results.

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?
O-180 (5200-00)	6/21/18	Bacteria	E. coli 616 MPN/100mls	Phoenix	Yes
			Enterococci >24,200 MPN/100mls	Phoenix	Yes
			Fecal Coliform 605 MPN/100mls	Phoenix	Yes
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 3.08 mg/l	Phoenix	Yes
Phosphorus	Total P 0.123 mg/l	Phoenix	No		
O-119 (5305-00)	6/28/18	Bacteria	E.Coli 3,450 MPN/100mls	Phoenix	Yes
			Enterococci 12,000 MPN/100mls	Phoenix	Yes
			Fecal Coliform 4,110 MPN/100mls	Phoenix	Yes
			Total Coliform >242,000 MPN/100mls	Phoenix	Yes

		Nitrogen	Total N 3.48 mg/l	Phoenix	Yes
		Phosphorus	Total P 0.545 mg/l	Phoenix	Yes
O-11 (5305-00)	11/13/18	Bacteria	E Coli 609 MPN/100mls 200 MPN/100mls	Phoenix ECL	Yes
			Enterococci 602 MPN/100mls 310 MPN/100mls	Phoenix ECL	Yes
			Fecal Coliform 383 MPN/100mls 300 MPN/100mls	Phoenix ECL	Yes
			Total Coliform 17,300 MPN/100mls 17,250 MPN/100mls	Phoenix ECL	Yes
		Nitrogen	Total N 0.66 mg/l	Phoenix	No
Phosphorus	Total P 0.076 mg/l	Phoenix	No		

O-7 (5305-00)	11/13/18	Bacteria	E Coli >24,200 MPN/100mls 241,960 MPN/100mls	Phoenix ECL	Yes Yes		
			Enterococci >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes		
			Fecal Coliform >24,200 MPN/100mls 48,840 MPN/100mls	Phoenix ECL	Yes Yes		
			Total Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes		
			Nitrogen	Total N 14.69 mg/l	Phoenix	Yes	
			Phosphorus	Total P 1.34 mg/l	Phoenix	Yes	
			O-10 (5305-00)	12/28/18	Bacteria	E Coli >24,200	Phoenix

			MPN/100mls >241,960 MPN/100mls	ECL	Yes
			Enterococci >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 16.67 mg/l	Phoenix	Yes
		Phosphorus	Total P 1.76 mg/l	Phoenix	Yes

O-12 (5305-00)	11/13/18	Bacteria	E Coli 5,480 MPN/100mls 5,040 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci 5,170 MPN/100mls 6,770 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 1,860 MPN/100mls 1,560 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls 198,630 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 0.44 mg/l	Phoenix	No
		Phosphorus	Total P 0.229 mg/l	Phoenix	No
O13 (5305-00)	12/28/18	Bacteria	E Coli >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes

			<p>Enterococci 2,280 MPN/100mls 1,990MPN/100mls</p> <p>Fecal Coliform 197 MPN/100mls 200 MPN/100mls</p> <p>Total Coliform 9,800 MPN/100mls 8,420 MPN/100mls</p> <p>Nitrogen Total N 0.42 mg/l</p> <p>Phosphorus Total P 0.13 mg/l</p>	<p>Phoenix ECL</p> <p>Phoenix ECL</p> <p>Phoenix ECL</p> <p>Phoenix</p> <p>Phoenix</p>	<p>Yes Yes</p> <p>Yes Yes</p> <p>Yes Yes</p> <p>No</p> <p>No</p>
O-47 (5305-00)	12/21/18	Bacteria	<p>E Coli 9,140 MPN/100mls 3,360 MPN/100mls</p> <p>Enterococci 3,870 MPN/100mls 1,580 MPN/100mls</p> <p>Fecal Coliform 5,170 MPN/100mls 1,610 MPN/100mls</p> <p>Total Coliform 10,100 MPN/100mls 13,540 MPN/100mls</p> <p>Nitrogen Total N 0.72 mg/l</p> <p>Phosphorus Total P 0.161 mg/l</p>	<p>Phoenix ECL</p> <p>Phoenix ECL</p> <p>Phoenix ECL</p> <p>Phoenix ECL</p> <p>Phoenix</p> <p>Phoenix</p>	<p>Yes Yes</p> <p>Yes Yes</p> <p>Yes Yes</p> <p>Yes Yes</p> <p>No</p> <p>No</p>
O-57 (5305-00)	12/28/18	Bacteria	<p>E Coli >24,200 MPN/100mls >241,960 MPN/100mls</p> <p>Enterococci >24,200 MPN/100mls >241,960 MPN/100mls</p> <p>Fecal Coliform >24,200 MPN/100mls >241,960 MPN/100mls</p> <p>Total Coliform >24,200 MPN/100mls</p>	<p>Phoenix</p> <p>ECL</p> <p>Phoenix</p> <p>ECL</p> <p>Phoenix</p> <p>ECL</p> <p>Phoenix</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>

			>241,960 MPN/100mls	ECL	Yes
		Nitrogen	Total N 32.24 mg/l	Phoenix	Yes
		Phosphorus	Total P 4.09 mg/l	Phoenix	Yes
O-58 (5305-00)	12/28/18	Bacteria	E Coli >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci >24,200 MPN/100mls 81,640 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 26.01 mg/l	Phoenix	Yes
		Phosphorus	Total P 2.96 mg/l	Phoenix	Yes

O-66 (5305-00)	11/13/18	Bacteria	E Coli 3,080 MPN/100mls 2,350 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci 2,190 MPN/100mls 1,350 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 1,480 MPN/100mls 1,610 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls 61,310 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 0.49 mg/l	Phoenix	No
		Phosphorus	Total P 0.182 mg/l	Phoenix	No

O-68 (5305-00)	12/28/18	Bacteria Nitrogen Phosphorus	E Coli 30 MPN/100mls 100 MPN/100mls Enterococci 249 MPN/100mls 8,600 MPN/100mls Fecal Coliform 20 MPN/100mls 100 MPN/100mls Total Coliform 13,000 MPN/100mls 5,810 MPN/100mls Total N 0.95 mg/l Total P 0.07 mg/l	Phoenix ECL Phoenix ECL Phoenix ECL Phoenix Phoenix	No No No Yes No No Yes Yes No No
O-81 (5305-00)	6/18/19	Bacteria Nitrogen Phosphorus	E Coli 2,060 MPN/100mls Enterococci 9,210 MPN/100mls Fecal Coliform 934 MPN/100mls Total Coliform >24,200 MPN/100mls Total N 0.76 mg/l Total P 0.072 mg/l	Phoenix Phoenix Phoenix Phoenix Phoenix Phoenix	Yes Yes Yes Yes No No
O-87 (5305-00)	12/28/18	Bacteria	E Coli 30 MPN/100mls 100 MPN/100mls Enterococci 249 MPN/100mls 8,600 MPN/100mls Fecal Coliform 20 MPN/100mls 100 MPN/100mls Total Coliform 13,000 MPN/100mls 5,810	Phoenix ECL Phoenix ECL Phoenix ECL Phoenix ECL	No No No Yes No No Yes Yes

		Nitrogen	MPN/100mls Total N 24.37 mg/l	Phoenix	No
		Phosphorus	Total P 0.07 mg/l	Phoenix	No
O-88 (5305-00)	12/28/18	Bacteria	E Coli 591 MPN/100mls 520 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci 471 MPN/100mls 1,100 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 637 MPN/100mls 200 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls 30,760 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 0.826 mg/l	Phoenix	Yes
		Phosphorus	Total P 0.105 mg/l	Phoenix	No
O-89 (5305-00)	12/21/18	Bacteria	E Coli 7,700 MPN/100mls 9,590 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci 5,480 MPN/100mls 5,540 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 2,610 MPN/100mls 2,980 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls 46,110 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 0.72 mg/l	Phoenix	No
		Phosphorus	Total P 0.133 mg/l	Phoenix	No
O-121 (5302-00)	12/21/18	Bacteria	E Coli >24,200 MPN/100mls	Phoenix	Yes

			Enterococci >24,200 MPN/100mls	Phoenix	Yes
			Fecal Coliform >24,200 MPN/100mls	Phoenix	Yes
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 26.94 mg/l	Phoenix	Yes
		Phosphorus	Total P 4.0 mg/l	Phoenix	Yes
O-122 (5302-00)	4/26/19	Bacteria	E Coli 7,270 MPN/100mls	Phoenix	Yes
			Enterococci 3,080 MPN/100mls	Phoenix	Yes
			Fecal Coliform 4,880 MPN/100mls	Phoenix	Yes
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 3.77 mg/l	Phoenix	Yes
		Phosphorus	Total P 0.40 mg/l	Phoenix	Yes
O-124 (5302-00)	4/26/19	Bacteria	E Coli >24,200 MPN/100mls	Phoenix	Yes
			Enterococci 4,610 MPN/100mls	Phoenix	Yes
			Fecal Coliform >24,200 MPN/100mls	Phoenix	Yes
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 78.95 mg/l	Phoenix	Yes
		Phosphorus	Total P 8.51 mg/l	Phoenix	Yes
O-124X (5302-00)	4/26/19	Bacteria	E Coli 216 MPN/100mls	Phoenix	No

			Enterococci 134 MPN/100mls Fecal Coliform 395 MPN/100mls Total Coliform 19,900 MPN/100mls Total N 2.623 mg/l Total P 0.196 mg/l	Phoenix Phoenix Phoenix Phoenix Phoenix	No Yes Yes Yes no
O-125 (5302-00)	4/26/19	Bacteria Nitrogen Phosphorus	E Coli 10 MPN/100mls Enterococci 61 MPN/100mls Fecal Coliform 10 MPN/100mls Total Coliform 934 MPN/100mls Total N 1.13 mg/l Total P 0.067 mg/l	Phoenix Phoenix Phoenix Phoenix Phoenix Phoenix	No no Yes Yes Yes Yes
O-126 (5302-00)	4/26/19		E Coli >24,200 MPN/100mls Enterococci >24,200 MPN/100mls Fecal Coliform >24,200 MPN/100mls Total Coliform >24,200 MPN/100mls Total N 26.94 mg/l Total P 4.00 mg/l	Phoenix Phoenix Phoenix Phoenix Phoenix Phoenix	Yes Yes Yes Yes Yes Yes
O-126 (5302-00)	12/9/19	Bacteria	E Coli 2,600 MPN/100mls 2,750 MPN/100mls Enterococci >24,200 MPN/100mls 111,990	Phoenix ECL Phoenix ECL	Yes Yes Yes Yes

			MPN/100mls Fecal Coliform 1,080 MPN/100mls 2,130 MPN/100mls Total Coliform >24,200 MPN/100mls >241,960 MPN/100mls Total N 4.014 mg/l Total P 0.812 mg/l	Phoenix ECL Phoenix ECL Phoenix Phoenix	Yes Yes Yes Yes Yes Yes
O-127	4/26/19	Bacteria Nitrogen Phosphorus	E Coli 703 MPN/100mls Enterococci 1,170 MPN/100mls Fecal Coliform 24,200 MPN/100mls Total Coliform >24,200 MPN/100mls Total N 2.445 mg/l Total P 0.114 mg/l	Phoenix Phoenix Phoenix Phoenix Phoenix Phoenix	Yes Yes No Yes No No
O-128 (5302-00)	4/26/19	Bacteria Nitrogen Phosphorus	E Coli 218 MPN/100mls Enterococci 1070 MPN/100mls Fecal Coliform 98 MPN/100mls Total Coliform >24,200 MPN/100mls Total N 0.971 mg/l Total P 0.248 mg/l	Phoenix Phoenix Phoenix Phoenix Phoenix Phoenix	No Yes No Yes No No
O-128 (5302-00)	12/9/19	Bacteria	E Coli 384 MPN/100mls 410 MPN/100mls Enterococci 857 MPN/100mls	Phoenix ECL Phoenix	No No Yes

			1,450 MPN/100mls ECL		Yes
			Fecal Coliform 189 MPN/100mls 520 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
			21,870 MPN/100mls	ECL	Yes
		Nitrogen	Total N 1.30 mg/l	Phoenix	No
		Phosphorus	Total P 0.174 mg/l	Phoenix	No
O-129 (5302-00)	6/18/19	Bacteria	E Coli 537 MPN/100mls	Phoenix	Yes
			Enterococci 988 MPN/100mls	Phoenix	Yes
			Fecal Coliform 437 MPN/100mls	Phoenix	Yes
			Total Coliform 24,200 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 0.44 mg/l	Phoenix	Yes
		Phosphorus	Total P 0.047 mg/l	Phoenix	No
O-129 (5302-00)	12/9/19	Bacteria	E Coli 327 MPN/100mls 100 MPN/100mls	Phoenix ECL	No No
			Enterococci 857 MPN/100mls 1,090 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 189 MPN/100mls 300 MPN/100mls	Phoenix ECL	Yes No
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
			>241,960 MPN/100mls	ECL	Yes
		Nitrogen	Total N 2.136 mg/l	Phoenix	No
		Phosphorus	Total P 0.265 mg/l	Phoenix	No
O-132 (5302-00)	12/21/18	Bacteria	E Coli 12,000 MPN/100mls	Phoenix	Yes

			7,490 MPN/100mls Enterococci 2,190 MPN/100mls 630 MPN/100mls Fecal Coliform 1,260 MPN/100mls 1,100 MPN/100mls Total Coliform 19,900 MPN/100mls 18,600 MPN/100mls Nitrogen Total N 0.85 mg/l Phosphorus Total P 0.061 mg/l	ECL Phoenix ECL Phoenix ECL Phoenix ECL Phoenix	Yes Yes Yes Yes Yes No No
O-133 (5320-00)	6/18/19	Bacteria Nitrogen Phosphorus	E Coli 171 MPN/100mls 100 MPN/100mls Enterococci 554 MPN/100mls 1,630 MPN/100mls Fecal Coliform 158 MPN/100mls 100 MPN/100mls Total Coliform >24,200 MPN/100mls 77,010 MPN/100mls Total N 1.19 mg/l Total P 0.135 mg/l	Phoenix ECL Phoenix ECL Phoenix ECL Phoenix ECL Phoenix	No No Yes Yes No No Yes Yes No No

O-134 (5302-00)	6/18/19	Bacteria Nitrogen Phosphorus	E Coli 3,260 MPN/100mls Enterococci 8,660 MPN/100mls Fecal Coliform 3,650 MPN/100mls Total Coliform >24,200 MPN/100mls Total N 1.189 mg/l Total P 0.376 mg/l	Phoenix Phoenix Phoenix Phoenix Phoenix	No Yes Yes Yes No Yes
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O-138 (5302-00)	12/21/18	Bacteria	E Coli 211 MPN/100mls	Phoenix	No
			Enterococci 657 MPN/100mls	Phoenix	Yes
			Fecal Coliform 546 MPN/100mls	Phoenix	Yes
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 2.381 mg/l	Phoenix	No
Phosphorus	Total P 0.35 mg/l	Phoenix	Yes		

O-122 Mill River	02/06/20	Bacteria	E Coli 161 MPN/100mls 100 MPN/100mls	Phoenix ECL	No No
			Enterococci 272 MPN/100mls 520 MPN/2100mls	Phoenix ECL	No Yes
			Fecal Coliform 110 MPN/100mls <100 MPN/100mls	Phoenix ECL	No No
			Total Coliform 6,870 MPN/100mls 3,990 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 1.60 mg/l	Phoenix	No
		Phosphorus	Total P 0.121 mg/l	Phoenix	No

O-124 Mill River	02/06/20	Bacteria	E Coli 408 MPN/100mls 520MPN/100mls	Phoenix ECL	No Yes
			Enterococci 1,210 MPN/100mls 960 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 594 MPN/100mls 100 MPN/100mls	Phoenix ECL	Yes No
			Total Coliform 19,900 MPN/100mls 20,460 MPN/100mls	Phoenix ECL	Yes Yes

		Nitrogen	Total N 7.77 mg/l	Phoenix	Yes
		Phosphorus	Total P 0.90 mg/l	Phoenix	Yes
O-161 New Haven Harbor	03/13/20	Bacteria	E Coli 2,500 MPN/100mls 13,140 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci 1,960 MPN/100mls 2,310 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 1,350 MPN/100mls 860 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls 57,940 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 3.40 mg/l	Phoenix	Yes
		Phosphorus	Total P 0.041 mg/l	Phoenix	No
O-162 New Haven Harbor	03/13/20	Bacteria	E Coli 74 MPN/100mls 300 MPN/100mls	Phoenix ECL	No No
			Enterococci 657 MPN/100mls 750 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 31 MPN/100mls <100 MPN/100mls	Phoenix ECL	No No
			Total Coliform 8,160 MPN/100mls 3,360 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 1.06 mg/l	Phoenix	No
		Phosphorus	Total P 0.168 mg/l	Phoenix	No
O-162A New Haven Harbor	03/13/20	Bacteria	E Coli 727 MPN/100mls 860 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci 594 MPN/100mls 11,090 MPN/100mls	Phoenix ECL	Yes Yes

			Fecal Coliform 350 MPN/100mls 200 MPN/100mls	Phoenix ECL	Yes No
			Total Coliform 11,200 MPN/100mls 14,210 NPM/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 1.18 mg/l	Phoenix	No
		Phosphorus	Total P 0.067 mg/l	Phoenix	No

O-44 West River	03/19/20	Bacteria	E Coli 1,940 MPN/100mls 1,610 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci 776 MPN/100mls 620 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 122 MPN/100mls 410 MPN/100mls	Phoenix ECL	No Yes
			Total Coliform 4,350 MPN/100mls 6,630 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 1.02 mg/l	Phoenix	No
		Phosphorus	Total P 0.163mg/l	Phoenix	No
O-6 West River	03/19/20	Bacteria	E Coli <10MPN/100mls 100 MPN/100mls	Phoenix ECL	No No
			Enterococci 487 MPN/100mls 1,310 MPN/100mls	Phoenix ECL	No Yes
			Fecal Coliform <10MPN/100mls <100 MPN/100mls	Phoenix ECS	No No
			Total Coliform >24,200 MPN/100mls 23,100 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 0.71 mg/l	Phoenix	No
		Phosphorus	Total P 0.155 mg/l	Phoenix	No
O-24	03/19/20	Bacteria	E Coli		

West River			86 MPN/100mls 100 MPN/100mls Enterococci 141 MPN/100mls 310 MPN/100mls Fecal Coliform 20 MPN/100mls 100 MPN/100mls Total Coliform 19,900 MPN/100mls 15,390 MPN/100mls Total N 1.16 mg/l Total P 0.171 mg/l	Phoenix ECL Phoenix ECL Phoenix ECL Phoenix ECL Phoenix Phoenix	No No No No No No Yes Yes No No
O-25 West River	03/19/20	Bacteria Nitrogen Phosphorus	E Coli 31 MPN/100mls 100 MPN/100mls Enterococci 455 MPN/100mls 1,830 MPN/100mls Fecal Coliform 10 MPN/100mls <100 MPN/100mls Total Coliform 0 MPN/100mls 9,060 MPN/100mls Total N 0.45 mg/l Total P 0.099mg/l	Phoenix ECL Phoenix ECL Phoenix ECL Phoenix ECL Phoenix Phoenix	No No No Yes No No No Yes No No
O-141 New Haven Harbor	04/24/20		E Coli 218 MPN/100mls 200 MPN/100mls Enterococci 187 MPN/100mls 520 MPN/100mls Fecal Coliform 131 MPN/100mls 100 MPN/100mls Total Coliform 4,880 MPN/100mls 6,630 MPN/100mls Total N 0.55 mg/l Total P 0.090mg/l	Phoenix ECL Phoenix ECL Phoenix ECL Phoenix ECL Phoenix Phoenix	No No No Yes No No Yes Yes No No

			<p>Fecal Coliform <10 MPN/100mls <100 MPN/100mls</p> <p>Total Coliform 373 MPN/100mls 2,130 MPN/100mls</p> <p>Total N 19.45 mg/l</p> <p>Total P 0.420 mg/l</p>	<p>Phoenix ECL</p> <p>Phoenix ECL</p> <p>Phoenix</p> <p>Phoenix</p>	<p>No No</p> <p>No Yes</p> <p>Yes</p> <p>Yes</p>
O-15 Wintergreen Brook	10/02/20	<p>Bacteria</p> <p>Nitrogen</p> <p>Phosphorus</p>	<p>E Coli >24,200 MPN/100mls 5,790 MPN/100mls</p> <p>Enterococci 24,200 MPN/100mls 19,500 MPN/100mls</p> <p>Fecal Coliform >24,200 MPN/100mls 198,630 MPN/100mls</p> <p>Total Coliform >24,200 MPN/100mls >241,960 MPN/100mls</p> <p>Total N 6.79 mg/l</p> <p>Total P 1.09 mg/l</p>	<p>Phoenix ECL</p> <p>Phoenix ECL</p> <p>Phoenix ECL</p> <p>Phoenix ECL</p> <p>Phoenix</p> <p>Phoenix</p>	<p>Yes Yes</p> <p>Yes Yes</p> <p>Yes Yes</p> <p>Yes Yes</p> <p>Yes Yes</p>
O-16 Wintergreen brook	10/02/20	Bacteria	<p>E Coli 987 MPN/100mls 750 MPN/100mls</p> <p>Enterococci 8,160 MPN/100mls 3,830 MPN/100mls</p> <p>Fecal Coliform 2,600 MPN/100mls 3,010 MPN/100mls</p> <p>Total Coliform >24,200 MPN/100mls >241,960</p>	<p>Phoenix ECL</p> <p>Phoenix ECL</p> <p>Phoenix ECL</p> <p>Phoenix ECL</p>	<p>Yes Yes</p> <p>Yes Yes</p> <p>Yes Yes</p> <p>Yes Yes</p>

		Nitrogen	MPN/100mls Total N 2.49 mg/l	Phoenix	No
		Phosphorus	Total P 0.254 mg/l	Phoenix	No
O-21 Wintergreen Brook	10/02/20	Bacteria	E Coli 10,500 MPN/100mls 6,200 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci 6,870 MPN/100mls 4,710 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 19,900 MPN/100mls 41,060 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
			>241,960 MPN/100mls	ECL	Yes
			Total N 1.38 mg/l	Phoenix	No
			Total P 0.291 mg/l	Phoenix	No
		Nitrogen			
		Phosphorus			
O-60A Wintergreen Brook	10/29/20	Bacteria	E Coli 12,000 MPN/100mls 16,070 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci 19,900 MPN/100mls 30,760 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 19,900 MPN/100mls 13,960 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200MPN/100mls 51,720 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 0.77 mg/l	Phoenix	No
		Phosphorus	Total P 0.051 mg/l	Phoenix	No
O-45 West River	10/29/20	Bacteria	E Coli 4,610 MPN/100mls 3,450 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci >24,200	Phoenix	Yes

			MPN/100mls 22,470 MPN/100mls	ECL	Yes
			Fecal Coliform 8,660 MPN/100mls 3,590 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 1.21 mg/l	Phoenix	No
		Phosphorus	Total P 0.110 mg/l	Phoenix	No

O-25 West River	10/29/20	Bacteria	E Coli 5,790 MPN/100mls 5.730 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci >24,200 MPN/100mls 38,730 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 15,500 MPN/100mls 5,730 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 24.57 mg/l	Phoenix	Yes
		Phosphorus	Total P 4.40 mg/l	Phoenix	Yes
O-26 West River	10/29/20	Bacteria	E Coli >24,200 MPN/100mls 41,060 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci >24,200 MPN/100mls 86,640 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 24,200 MPN/100mls 19,350 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform		

			>24,200 MPN/100mls	Phoenix	Yes
			>241,960 MPN/100mls	ECL	Yes
		Nitrogen	Total N 0.98 mg/l	Phoenix	No
		Phosphorus	Total P 0.281 mg/l	Phoenix	No

O-61 Winter Green Brook	04/15/21	Bacteria	E Coli	Phoenix	Yes
			>24,200 MPN/100mls		
			98,040 MPN/100mls	ECL	Yes
			Enterococci	Phoenix	
			Not analyzed	ECL	Yes
			81,640 MPN/100mls		
		Fecal Coliform	Phoenix	Yes	
		>24,200 MPN/100mls			
		68,670 MPN/100mls	ECL	Yes	
		Total Coliform	Phoenix	Yes	
>24,200 MPN/100mls	ECL	Yes			
241,960 MPN/100mls					
Nitrogen	Total N 4.43 mg/l	Phoenix	Yes		
Phosphorus	Total P 0.497 mg/l	Phoenix	Yes		

O-62 Winter Green Brook	04/15/21	Bacteria	E Coli	Phoenix	Yes
			>24,200 MPN/100mls		
			>241,960 MPN/100mls	ECL	Yes
			Enterococci	Phoenix	
			Not analyzed	ECL	Yes
			>241,960 MPN/100mls		
		Fecal Coliform	Phoenix	Yes	
		>24,200 MPN/100mls			
		19,350 MPN/100mls	ECL	Yes	
		Total Coliform	Phoenix	Yes	
>24,200 MPN/100mls	ECL	Yes			
>241,960 MPN/100mls					
Nitrogen	Total N 53.95 mg/l	Phoenix	Yes		

		Phosphorus	Total P 5.99 mg/l	Phoenix	Yes
O-180 (5200-00)	6/21/18	Bacteria	E. coli 616 MPN/100mls	Phoenix	Yes
			Enterococci >24,200 MPN/100mls	Phoenix	Yes
			Fecal Coliform 605 MPN/100mls	Phoenix	Yes
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 3.08 mg/l	Phoenix	Yes
		Phosphorus	Total P 0.123 mg/l	Phoenix	No
O-119 (5305-00)	6/28/18	Bacteria	E.Coli 3,450 MPN/100mls	Phoenix	Yes
			Enterococci 12,000 MPN/100mls	Phoenix	Yes
			Fecal Coliform 4,110 MPN/100mls	Phoenix	Yes
			Total Coliform >242,000 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 3.48 mg/l	Phoenix	Yes
		Phosphorus	Total P 0.545 mg/l	Phoenix	Yes
O-11 (5305-00)	11/13/18	Bacteria	E Coli 609 MPN/100mls 200 MPN/100mls	Phoenix ECL	Yes
			Enterococci 602 MPN/100mls 310 MPN/100mls	Phoenix ECL	Yes
			Fecal Coliform 383 MPN/100mls 300 MPN/100mls	Phoenix ECL	Yes
			Total Coliform 17,300 MPN/100mls 17,250 MPN/100mls	Phoenix ECL	Yes
		Nitrogen	Total N 0.66 mg/l	Phoenix	No

		Phosphorus	Total P 0.076 mg/l	Phoenix	No
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O-7 (5305-00)	11/13/18	Bacteria	E Coli >24,200 MPN/100mls 241,960 MPN/100mls	Phoenix	Yes
			Enterococci >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform >24,200 MPN/100mls 48,840 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 14.69 mg/l	Phoenix	Yes
		Phosphorus	Total P 1.34 mg/l	Phoenix	Yes
O-10 (5305-00)	12/28/18	Bacteria	E Coli >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 16.67 mg/l	Phoenix	Yes

		Phosphorus	Total P 1.76 mg/l	Phoenix	Yes
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O-12 (5305-00)	11/13/18	Bacteria	E Coli	Phoenix	Yes
			5,480 MPN/100mls	ECL	Yes
			5,040 MPN/100mls		
			Enterococci	Phoenix	Yes
		5,170 MPN/100mls	ECL	Yes	
		6,770 MPN/100mls			
Fecal Coliform	Phoenix	Yes			
1,860 MPN/100mls	ECL	Yes			
1,560 MPN/100mls					
Total Coliform	Phoenix	Yes			
>24,200					
MPN/100mls	ECL	Yes			
198,630					
MPN/100mls					
Total N 0.44 mg/l	Phoenix	No			
Total P 0.229 mg/l	Phoenix	No			

O13 (5305-00)	12/28/18	Bacteria	E Coli	Phoenix	Yes
			>24,200	ECL	Yes
			MPN/100mls		
			>241,960		
			MPN/100mls		
			Enterococci	Phoenix	Yes
		>24,200	ECL	Yes	
		MPN/100mls			
		61,310			
		MPN/100mls			
		Fecal Coliform	Phoenix	Yes	
		>24,200	ECL	Yes	
MPN/100mls					
155,310					
MPN/100mls					
Total Coliform	Phoenix	Yes			
>24,200	ECL	Yes			
MPN/100mls					
>241,960					
MPN/100mls					
Nitrogen	Phoenix	Yes			
Total N 17.49mg/l					
Phosphorus	Phoenix	Yes			
Total P 2.02mg/l					

O-41 (5305-00)	12/28/18	Bacteria Nitrogen Phosphorus	E Coli >24,200 MPN/100mls >241,960 MPN/100mls Enterococci >24,200 MPN/100mls 92,080 MPN/100mls Fecal Coliform >24,200 MPN/100mls >241,960 MPN/100mls Total Coliform >24,200 MPN/100mls >241,960 MPN/100mls Total N 11.49 mg/l Total P 1.33 mg/l	Phoenix ECL Phoenix ECL Phoenix ECL Phoenix Phoenix	Yes Yes Yes Yes Yes Yes Yes Yes Yes
O-46 (5305-00)	12/21/18	Bacteria Nitrogen Phosphorus	E Coli 637 MPN/100mls 410 MPN/100mls Enterococci 2,280 MPN/100mls 1,990MPN/100mls Fecal Coliform 197 MPN/100mls 200 MPN/100mls Total Coliform 9,800 MPN/100mls 8,420 MPN/100mls Total N 0.42 mg/l Total P 0.13 mg/l	Phoenix ECL Phoenix ECL Phoenix ECL Phoenix ECL Phoenix Phoenix	Yes Yes Yes Yes Yes Yes Yes Yes No No
O-47 (5305-00)	12/21/18	Bacteria	E Coli 9,140 MPN/100mls 3,360 MPN/100mls Enterococci 3,870 MPN/100mls 1,580 MPN/100mls	Phoenix ECL Phoenix ECL	Yes Yes Yes Yes

			Fecal Coliform 5,170 MPN/100mls 1,610 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform 10,100 MPN/100mls 13,540 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 0.72 mg/l	Phoenix	No
		Phosphorus	Total P 0.161 mg/l	Phoenix	No

O-57 (5305-00)	12/28/18	Bacteria	E Coli >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 32.24 mg/l	Phoenix	Yes
		Phosphorus	Total P 4.09 mg/l	Phoenix	Yes

O-58 (5305-00)	12/28/18	Bacteria	E Coli >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci >24,200 MPN/100mls 81,640 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform >24,200 MPN/100mls >241,960	Phoenix ECL	Yes Yes

			MPN/100mls		
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
			>241,960 MPN/100mls	ECL	Yes
		Nitrogen	Total N 26.01 mg/l	Phoenix	Yes
		Phosphorus	Total P 2.96 mg/l	Phoenix	Yes

O-66 (5305-00)	11/13/18	Bacteria	E Coli 3,080 MPN/100mls 2,350 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci 2,190 MPN/100mls 1,350 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 1,480 MPN/100mls 1,610 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls 61,310 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 0.49 mg/l	Phoenix	No
		Phosphorus	Total P 0.182 mg/l	Phoenix	No
O-68 (5305-00)	12/28/18	Bacteria	E Coli 30 MPN/100mls 100 MPN/100mls	Phoenix ECL	No No
			Enterococci 249 MPN/100mls 8,600 MPN/100mls	Phoenix ECL	No Yes
			Fecal Coliform 20 MPN/100mls 100 MPN/100mls	Phoenix ECL	No No
			Total Coliform 13,000 MPN/100mls 5,810 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 0.95 mg/l	Phoenix	No
		Phosphorus	Total P 0.07 mg/l	Phoenix	No

O-81 (5305-00)	6/18/19	Bacteria Nitrogen Phosphorus	E Coli 2,060 MPN/100mls Enterococci 9,210 MPN/100mls Fecal Coliform 934 MPN/100mls Total Coliform >24,200 MPN/100mls Total N 0.76 mg/l Total P 0.072 mg/l	Phoenix Phoenix Phoenix Phoenix Phoenix Phoenix	Yes Yes Yes Yes No No
O-87 (5305-00)	12/28/18	Bacteria Nitrogen Phosphorus	E Coli 30 MPN/100mls 100 MPN/100mls Enterococci 249 MPN/100mls 8,600 MPN/100mls Fecal Coliform 20 MPN/100mls 100 MPN/100mls Total Coliform 13,000 MPN/100mls 5,810 MPN/100mls Total N 24.37 mg/l Total P 0.07 mg/l	Phoenix ECL Phoenix ECL Phoenix ECL Phoenix ECL Phoenix Phoenix	No No No Yes No No Yes Yes No No
O-88 (5305-00)	12/28/18	Bacteria	E Coli 591 MPN/100mls 520 MPN/100mls Enterococci 471 MPN/100mls 1,100 MPN/100mls Fecal Coliform 637 MPN/100mls 200 MPN/100mls Total Coliform >24,200 MPN/100mls 30,760 MPN/100mls	Phoenix ECL Phoenix ECL Phoenix ECL Phoenix ECL	Yes Yes Yes Yes Yes Yes Yes Yes

		Nitrogen	Total N 0.826 mg/l	Phoenix	Yes
		Phosphorus	Total P 0.105 mg/l	Phoenix	No

O-89 (5305-00)	12/21/18	Bacteria	E Coli 7,700 MPN/100mls 9,590 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci 5,480 MPN/100mls 5,540 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 2,610 MPN/100mls 2,980 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls 46,110 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 0.72 mg/l	Phoenix	No
		Phosphorus	Total P 0.133 mg/l	Phoenix	No

O-121 (5302-00)	12/21/18	Bacteria	E Coli >24,200 MPN/100mls	Phoenix	Yes
			Enterococci >24,200 MPN/100mls	Phoenix	Yes
			Fecal Coliform >24,200 MPN/100mls	Phoenix	Yes
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 26.94 mg/l	Phoenix	Yes
		Phosphorus	Total P 4.0 mg/l	Phoenix	Yes

O-122 (5302-00)	4/26/19	Bacteria	E Coli 7,270 MPN/100mls	Phoenix	Yes
			Enterococci 3,080 MPN/100mls	Phoenix	Yes

			Fecal Coliform 4,880 MPN/100mls	Phoenix	Yes
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 3.77 mg/l	Phoenix	Yes
		Phosphorus	Total P 0.40 mg/l	Phoenix	Yes
O-124 (5302-00)	4/26/19	Bacteria	E Coli >24,200 MPN/100mls	Phoenix	Yes
			Enterococci 4,610 MPN/100mls	Phoenix	Yes
			Fecal Coliform >24,200 MPN/100mls	Phoenix	Yes
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 78.95 mg/l	Phoenix	Yes
		Phosphorus	Total P 8.51 mg/l	Phoenix	Yes
O-124X (5302-00)	4/26/19	Bacteria	E Coli 216 MPN/100mls	Phoenix	No
			Enterococci 134 MPN/100mls	Phoenix	No
			Fecal Coliform 395 MPN/100mls	Phoenix	Yes
			Total Coliform 19,900 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 2.623 mg/l	Phoenix	Yes
		Phosphorus	Total P 0.196 mg/l	Phoenix	no
O-125 (5302-00)	4/26/19	Bacteria	E Coli 10 MPN/100mls	Phoenix	No
			Enterococci 61 MPN/100mls	Phoenix	no
			Fecal Coliform 10 MPN/100mls	Phoenix	Yes
			Total Coliform		

		Nitrogen	934 MPN/100mls	Phoenix	Yes
		Phosphorus	Total N 1.13 mg/l	Phoenix	Yes
			Total P 0.067 mg/l	Phoenix	Yes
O-126 (5302-00)	4/26/19		E Coli >24,200 MPN/100mls	Phoenix	Yes
			Enterococci >24,200 MPN/100mls	Phoenix	Yes
			Fecal Coliform >24,200 MPN/100mls	Phoenix	Yes
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
			Total N 26.94 mg/l	Phoenix	Yes
			Total P 4.00 mg/l	Phoenix	Yes
O-126 (5302-00)	12/9/19	Bacteria	E Coli 2,600 MPN/100mls 2,750 MPN/100mls	Phoenix ECL	Yes Yes
			Enterococci >24,200 MPN/100mls 111,990 MPN/100mls	Phoenix ECL	Yes Yes
			Fecal Coliform 1,080 MPN/100mls 2,130 MPN/100mls	Phoenix ECL	Yes Yes
			Total Coliform >24,200 MPN/100mls >241,960 MPN/100mls	Phoenix ECL	Yes Yes
		Nitrogen	Total N 4.014 mg/l	Phoenix	Yes
		Phosphorus	Total P 0.812 mg/l	Phoenix	Yes
O-127	4/26/19	Bacteria	E Coli 703 MPN/100mls	Phoenix	Yes
			Enterococci 1,170 MPN/100mls	Phoenix	Yes
			Fecal Coliform		

			24,200 MPN/100mls	Phoenix	No
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 2.445 mg/l	Phoenix	No
		Phosphorus	Total P 0.114 mg/l	Phoenix	No
O-128 (5302-00)	4/26/19	Bacteria	E Coli 218 MPN/100mls	Phoenix	No
			Enterococci 1070 MPN/100mls	Phoenix	Yes
			Fecal Coliform 98 MPN/100mls	Phoenix	No
			Total Coliform >24,200 MPN/100mls	Phoenix	Yes
		Nitrogen	Total N 0.971 mg/l	Phoenix	No
		Phosphorus	Total P 0.248 mg/l	Phoenix	No

Water quality results from 2022 onward are included in the Appendices.

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?
O-70 (5305-00)	Various dates between 2005 and 2016.	Bacteria E-coli 15 samples in total	Best 60 Worst 25,994 Average 6,336 (MPN/100mls)	Various Labs	Yes
		Total Nitrogen 13 samples in total	Best 1.22 Worst 5.36 Average 2.46 (mg/l)		

		Total Phosphorus 13 samples in total	Best 0 Worst 0.42 Average 0.19 (mg/l)		
O-109 (5000-48)	Various dates between 2005 and 2016.	Bacteria E-coli 14 samples in total Total Nitrogen 13 samples in total Total Phosphorus 13 samples in total Nitrogen	Best 228 Worst 30,100 Average 4,815 (MPN/100mls) Best 1.66 Worst 6.25 Average 3.09 (mg/l) Best 0 Worst 0.90 Average 0.44 (mg/l)	Various Labs	Yes
O-147 (5000-48)	Various dates between 2005 and 2016.	Bacteria E-coli 15 samples in total Total Nitrogen 13 samples in total Total Phosphorus 13 samples in total Nitrogen	Best 4 Worst 29,700 Average 5,100 (MPN/100mls) Best 0.16 Worst 6.13 Average 3.12 (mg/l) Best 0 Worst 3.6 Average 0.54 (mg/l)	Various Labs	Yes
O-156 (5200-00)	Various dates between 2005 and 2016	Bacteria E-coli 15 samples in total Total Nitrogen 13 samples in total Total Phosphorus 13 samples in total Nitrogen	Best 10 Worst >24,200 Average 3,051 (MPN/100mls) Best 0.0 Worst 26.45 Average 4.30 (mg/l) Best 0.08 Worst 1.70 Average 0.72 (mg/l)	Various Labs	Yes
O-249 (5200-00)	Various dates between 2005 and 2016	Bacteria E-coli 15 samples in total Total Nitrogen 13 samples in total Total Phosphorus 13 samples in total	Best 90 Worst 36,100 Average 4,497 (MPN/100mls) Best 0.22 Worst 4.47 Average 2.30 (mg/l) Best 0.11 Worst 2.57	Various Labs	Yes

		Nitrogen	Average 0.59 (mg/l)		
O-253 (5200-00)	Various dates between 2005 and 2016	Bacteria E-coli 15 samples in total	Best 10 Worst >24,200 Average 5,888 (MPN/100mls)	Various Labs	Yes
		Total Nitrogen 13 samples in total	Best 0.19 Worst 4.47 Average 3.04 (mg/l)		
		Total Phosphorus 13 samples in total Nitrogen	Best 0.0 Worst 0.66 Average 0.30 (mg/l)		

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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
O-180 (5200-00)	Dry weather testing was attempted, but there was no flow in the network. It was subsequently CCTVed throughout, and no illicit connections were detected. Finally, stormwater flowing into some of its catch basins was tested during the same storm event as the outfall. Pollutant levels at the catch basins were of the same order of magnitude as those at the outfall.	No control measures have been implemented, as the high pollutant levels are believed to be caused by wildlife in the area.

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)

Data is available for >50% of the outfalls, and annual monitoring continues.

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Part III: Additional IDDE Program Data [This section required beginning with 2018 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
5302-00 Mill River	Problem	1
5305-00 West River	Problem	2
5304-00 Wintergreen Brook	Problem	3
5000-48 South Central Shoreline (Inner Harbor)	Problem	4
5200-00 Quinnipiac	High Priority	5
5000-45 South Central Shoreline (Morris Cove)	Low Priority	6

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
No dry weather screening has been undertaken to date										

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 Mg/l	Chlorine Mg/l	Conductivity Umhos/cm	Salinity ppt	E. coli or Enterococcus MPN/100mls	Surfactants Mg/l	Water Temp	Pollutant of concern
O-180	6/21/18	0.08	<0.02	678	<0.5	See above	<0.05	Not recorded	Bacteria N P
O-119	6/28/18	0.42	<0.02	112	<0.5	See above	0.67	Not recorded	Bacteria N P
O-11	11/13/18	0.17	<0.02	186	<0.5	See above	0.09	10.2	Bacteria N P
O-7	11/13/18	5.14	<0.02	505	<0.5	See above	0.86	16	Bacteria N P
O-10	12/28/18	3.64	<0.02	678	<0.5	See above	0.25	12.2	Bacteria N P
O-12	11/13/18	<0.05	<0.02	106	<0.5	See above	<0.05	9.8	Bacteria N P
O-13	12/28/18	4.60	<0.02	276	<0.5	See above	0.35	11.5	Bacteria N P
O-14	11/13/18	<0.05	<0.02	118	<0.5	See above	0.07	9.5	Bacteria N P
O-41	12/28/18	3.42	<0.02	276	<0.5	See above	0.75	8.2	Bacteria N P
O-46	12/21/18	0.06	<0.02	14	<0.5	See above	<0.05	9.5	Bacteria N P
O-47	12/21/18	0.10	<0.02	15	<0.5	See above	0.11	8.4	Bacteria N P
O-57	12/28/18	13.10	<0.02	488	<0.5	See above	2.15	17.6	Bacteria N P
O-58	12/28/18	11.50	<0.02	515	<0.5	See above	2.23	11.9	Bacteria N P
O-66	11/13/18	0.15	0.02	24	<0.5	See above	<0.05	8.8	Bacteria N P
O-68	12/28/18	0.40	<0.02	120	<0.5	See above	0.12	5.3	Bacteria N P
O-87	12/28/18	10.8	<0.02	528	<0.5	See above	6.29	13.4	Bacteria N P
O-88	12/28/18	0.22	<0.02	51	<0.5	See above	0.14	7.5	Bacteria N P
O-89	12/21/18	0.14	<0.02	39	<0.5	See above	0.11	10.7	Bacteria N P
O-121	12/21/18	0.10	<0.02	49	<0.5	See above	0.08	10.6	Bacteria N P

O-132	12/21/18	0.23	<0.02	300	<0.5	See above	0.07	12.1	Bacteria N P
O-138	12/21/18	0.14	0.03	48	<0.5	See above	<0.05	10.3	Bacteria N P
O-81	6/18/19	0.13	<0.02	42	<0.5	See above	<0.05	21.4	Bacteria N P
O-122	4/26/19	0.37	<0.02	179	<0.5	See above	0.16	12.6	Bacteria N P
O-124	4/26/19	34.20	<0.02	471	<0.5	See above	13.9	14.4	Bacteria N P
O-124X	4/26/19	0.92	<0.02	432	<0.5	See above	0.44	13.7	Bacteria N P
O-125	4/26/19	0.17	<0.02	4250	3.1	See above	<0.05	11.7	Bacteria N P
O-126	4/26/19	14.5	<0.02	608	<0.5	See above	1.92	13.2	Bacteria N P
O-126	12/9/19	0.51	<0.02	205	<0.5	See above	0.2	9.9	Bacteria N P
O-127	4/26/19	0.18	<0.02	254	<0.5	See above	0.09	13.3	Bacteria N P
O-128	4/26/19	0.11	<0.02	578	<0.5	See above	0.13	13.6	Bacteria N P
O-128	12/9/19	**	**	**	**	See above	**	**	Bacteria N P
O-129	6/18/19	0.12	<0.02	19	<0.5	See above	<0.05	21.3	Bacteria N P
O-129	12/9/19	0.44	<0.02	928	0.5	See above	0.41	9.0	Bacteria N P
O-133	6/18/19	<0.25	<0.02	525	<0.5	See above	0.07	22.1	Bacteria N P
O-134	6/18/19	<0.25	<0.02	60	<0.5	See above	0.21	22	Bacteria N P
O-122	2/6/20	0.36	<0.02	277	<0.5	See above	0.11	3.4	Bacteria N P
O-124	2/6/20	1.06	<0.10	902	<0.05	See above	0.21	4.3	Bacteria N P
O-161	3/13/20	0.13	<0.02	487	<0.5	See above	<0.05	9.0	Bacteria N P
O-162	3/13/20	0.3	<0.02	30	<0.5	See above	0.27	9.8	Bacteria N P
O-162A	3/13/20	0.17	<0.02	25	<0.5	See above	0.06	9.6	Bacteria N P
O-44	3/19/20	0.29	0.03	29	<0.5	See above	0.19	7.4	Bacteria N P
O-6	3/19/20	0.06	<0.02	15	<0.5	See above	0.08	6.3	Bacteria N P
O-24	3/19/20	0.13	<0.02	9	<0.5	See above	0.06	6.1	Bacteria N P
O-25	3/19/20	0.10	<0.02	21	<0.5	See above	<0.05	6.0	Bacteria N P
O-141	4/24/20	0.13	<0.02	390	<0.5	See above	0.18	6.6	Bacteria N P
O-147	4/24/20	7.13	<0.02	933	0.5	See above	1.04	11.2	Bacteria N P
O-148	4/27/20	<0.05	<0.02	403	<0.5	See above	0.07	9.8	Bacteria N P
O-156	6/11/20	2.67	<0.02	238,000	328	See above	0.68	21.0	Bacteria N P
O-15	10/2/20	0.5	0.12	182	<0.5	See above	0.25	20.3	Bacteria N P
O-16	10/2/20	0.16	<0.02	206	<0.5	See above	0.19	18.7	Bacteria N P
O-21	10/2/20	0.16	<0.02	161	<0.5	See above	161	19.8	Bacteria N P
O-60A	10/29/20	0.21	<0.02	15	<0.5	See above	0.25	12.2	Bacteria N P

O-45	10/29/20	0.33	<0.02	29	<0.5	See above	0.16	12.0	Bacteria N P
O-25	10/29/20	1.35	0.04	77	<0.5	See above	0.34	10.8	Bacteria N P
O-26	10/29/20	0.15	<0.02	35	<0.5	See above	0.14	11.9	Bacteria N P
O-61	04/15/21	2.54	<0.02	216	<0.5	See above	0.46	12.2	Bacteria N P
O-62	04/15/21	21.4	<0.02	565	<0.5	See above	11.4	17.2	Bacteria N P

Water quality results from 2022 onward are included in the Appendices.

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
O-180	5200-00 Quinnipiac	9, 10
O-119	5305-00 West River	6, 9, 10
O-11	5305-00 West River	5, 6, 10
O-7	5305-00 West River	6, 10
O-10	5305-00 West River	5, 6, 10
O-12	5305-00 West River	5, 6, 10
O-13	5305-00 West River	5, 6, 10
O-14	5305-00 West River	6, 10
O-41	5305-00 West River	6, 10
O-46	5305-00 West River	6, 10
O-47	5305-00 West River	6, 10
O-57	5305-00 West River	6
O-58	5305-00 West River	6
O-66	5305-00 West River	6, 10

O-68	5305-00 West River	10
O-81	5305-00 West River	6
O-87	5305-00 West River	6, 9, 10
O-88	5305-00 West River	6, 9, 10
O-89	5305-00 West River	6, 9, 10
O-121	5302-00 Mill River	6, 9, 10
O-122	5302-00 Mill River	6, 9, 10
O-124	5302-00 Mill River	6, 9, 10
O-124X	5302-00 Mill River	6, 9, 10
O-125	5302-00 Mill River	6, 9, 10
O-126	5302-00 Mill River	6, 9, 10
O-127	5302-00 Mill River	6, 9, 10
O-128	5302-00 Mill River	6, 9, 10
O-129	5302-00 Mill River	6, 9, 10
O-132	5302-00 Mill River	6, 9, 10
O-133	5302-00 Mill River	6, 9, 10
O-134	5302-00 Mill River	6, 9, 10
O-138	5302-00 Mill River	6, 9, 10
O-122	5302-00 Mill River	6,9,10
O-124	5302-00 Mill River	6,9,10
O-161	5000-48 Inner Harbor	6,9,10
O-162	5000-48 Inner Harbor	6,9,10
O-162A	5000-48 Inner Harbor	6, 9, 10
O-6	5305-00 West River	6, 9, 10
O-24	5305-00 West River	6, 9, 10
O-25	5305-00 West River	6, 9, 10
O-141	5000-48 Inner Harbor	6, 9, 10
O-147	5000-48 Inner Harbor	6, 9, 10
O-148	5000-48 Inner Harbor	6, 9, 10
O-156	5000-48 Inner Harbor	6, 9, 10
O-15	5304-00 Wintergreen Brook	6, 9, 10
O-16	5304-00 Wintergreen Brook	6, 9, 10
O-21	5304-00 Wintergreen Brook	6, 9, 10
O-60A	5304-00 Wintergreen Brook	6, 9, 10
O-45	5305-00 West River	6, 9, 10
O-25	5305-00 West River	6, 9, 10

O-26	5305-00 West River	6, 9, 10
O-44	5305-00 West River	6, 9, 10
O-61	5304-00 Wintergreen Brook	6, 9, 10
O-62	5304-00 Wintergreen brook	6, 9, 10
O-109	5000-48 Inner Harbor	6, 9, 10
O-76	5305-00 West River	6, 9, 10
O-85	5305-00 West River	6, 9, 10
O-90	5305-00 West River	6, 9, 10
O-115	5000-48 Inner Harbor	6, 9, 10
O-114	5000-48 Inner Harbor	6, 9, 10
O-113	5000-48 Inner Harbor	6, 9, 10
O-111	5000-48 Inner Harbor	6, 9, 10
O-103	5000-48 Inner Harbor	6, 9, 10
O-105	5000-48 Inner Harbor	6, 9, 10
O-106	5000-48 Inner Harbor	6, 9, 10
O-107	5000-48 Inner Harbor	6, 9, 10
O-100	5000-48 Inner Harbor	6, 9, 10
O-102	5000-48 Inner Harbor	6, 9, 10
O-153	5000-48 Inner Harbor	6, 9, 10
O-164	5000-48 Inner Harbor	6
O-163	5000-48 Inner Harbor	6
O-70	5305-00 West River	6, 9, 10
O-77	5000-48 Inner Harbor	6, 9, 10
O-79	5304-05 Beaver Pond	6, 9, 10
O-78	5304-05 Beaver Pond	6, 9, 10
O-149	5000-48 Inner Harbor	6
O-150	5000-48 Inner Harbor	6
O-151	5000-48 Inner Harbor	6
O-152	5000-48 Inner Harbor	6

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
No dry weather samples were taken during 2025					

3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants
See 4.2.2 above.				

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 illicit discharge locations were found in CCTV footage reviewed during 2025							

DRAFT

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:
Mayor Justin Elicker

Print name:
Giovanni Zinn, PE – City Engineer

Signature / Date:

Signature / Date:

