

**DRAFT**

**2022 ANNUAL REPORT**

***General Permit for the Discharge of Stormwater from  
Small Municipal Separate Storm Sewer Systems (MS4)***

***Registration No. GSM000114***

*for*

*City of Derby, CT  
1 Elizabeth Street  
Derby, Connecticut*



Prepared By:

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**MS4 General Permit  
City of Derby 2021 Annual Report  
Existing MS4 Permittee  
Permit Number GSM000114  
January 1, 2022 – December 31, 2022**

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This report documents the City of Derby's efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) during the Reporting Period from January 1, 2022 to December 31, 2022.

**Executive Summary**

Submission of this report by the City of Derby maintains compliance with the reporting requirements and registration (no. GSM000114) under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), submitted to the State of Connecticut Department of Energy and Environmental Protection ('CT DEEP') Commissioner for activities located within the City of Derby. The City of Derby certifies by this report that the terms and conditions of the General Permit are being met to the maximum extent practicable (MEP).

Starting in 2017, the City of Derby contracted with a consulting firm, Barton & Loguidice, LLC (B&L), who has completed much of the dry weather screening and sampling of the City's existing and newly identified outfalls (147 municipally-owned). Through the efforts of B&L, the City continues working toward the completion of all dry weather outfall Illicit Discharge Detection and Elimination (IDDE) screening and sampling, and wet weather impaired outfall sampling efforts for all of the municipally-owned outfalls identified in the City to the MEP.

In 2021 and 2022, with assistance from B&L, the City completed a significant amount of updates to their MS4 system mapping. The main focus for the updates in 2021 and 2022 were to verify municipal outfalls, catch basins, manholes, drainage lines, and interconnections, as well as, update mapping that was noted as incorrect during field inspections, and map drop-down catch basins (catch basins that discharge directly into a waterway with no other piping connected to the system).

Through the field investigation process, some new outfalls in the MS4 system that were previously mapped were identified as incorrect and needed to be updated based on actual field conditions. Large incomplete areas of the City's MS4 system mapping were able to be resolved, missing structures added, and piping corrected to match the true conditions. B&L's efforts assisted in reducing the burden on the City for mapping locations that could be resolved in the field allowing the City to focus on other aspects of the MS4 permit. By performing this action, in 2022 B&L was able to map nine additional new outfalls, 172 new catch basins, 100 new manholes and approximately 24 miles of drainage piping.

### **Outfall Monitoring Status**

During the reporting period (January 1 through December 31, 2022), dry and wet weather screening and sampling efforts were not conducted due to focused efforts on updating the MS4 system mapping.

To date, 105 outfalls were dry weather screened and 27 samples were collected. Dry weather screening and sampling data identified the presence of one suspected illicit discharge requiring an investigation, which was added to the list of High Priority Outfalls for further investigations.

In 2022, due to limited qualifying rain events and significant efforts being spent on mapping updates, no additional wet weather sampling were completed. To date, 24 of 77 outfalls discharging to impaired waters have been sampled during wet weather events and, 11 of those outfalls were identified with suspected illicit discharges and were ranked at the top of the high priority category for further investigations. Additionally, 25 wet weather samples were collected to date at outfalls that are not discharging to impaired waters. Of these samples collected, two were identified for further investigations with suspected illicit discharges and were ranked at the top of the high priority category.

As a result of the recent mapping update efforts, there were many outfalls that were previously screened and sampled during wet and dry weather events which were removed from the list or reclassified because they were either found to be structures other than outfalls, they were confirmed as not existing, or the waters they were discharging to either changed classifications or their impairments were updated.

With assistance from B&L, the City has initiated investigations on seven catchment areas and have collected samples at 29 key system junctions within these catchment areas that were ranked at the top of the high priority category. Because of the complexity of the City's MS4 system and the need to further update the system mapping, the City has not been able to complete any of the investigations that have been started.

The City of Derby will continue to conduct dry weather and wet weather outfall screening and sampling efforts and catchment investigations throughout the next reporting period (January 1 through December 31, 2023). This effort will be conducted simultaneously with the City's MS4 system mapping updates.

## Part I: Summary of Minimum Control Measure Activities

### 1. PUBLIC EDUCATION AND OUTREACH (Section 6 (a)(1) / page 19)

#### 1.1 BMP Summary

BMP	Activities in current reporting period	Sources Used (if applicable)	Method of Distribution	Audience (and number of people reached)	Measurable goal	Department/ Person Responsible	Additional details
1-1 Implement public education and outreach	A link was created for access to the City's Stormwater Management program. Links were added to the Stormwater website that discuss Stormwater and Water Quality; Pet Waste; Impervious Cover; Fertilizers, Pesticides & Herbicides; Illicit Discharges; and Bacteria.	CT DEEP, River Smart, UConn NEMO, NH DES, Clemons Coop Ext, Minnesota PCA,	Town Webpage: <a href="http://www.derbyct.gov/stormwater-management">www.derbyct.gov/stormwater-management</a>	General Public	Link to educational resources on City website. Develop and Distribute Material to Public Annually.	Public Works	
1-2 Address education/ outreach for pollutants of concern*	A weblink for "Help Keep Our Waterways Clean" and additional links regarding bacteria were added to the Stormwater website (see BMP 1-1).	CT DEEP (Under "Additional Recourses")	Town Webpage: <a href="http://www.derbyct.gov/help-keep-our-waterways-clean">www.derbyct.gov/help-keep-our-waterways-clean</a>	General Public	Develop and Distribute Information on Bacteria Pollution	Public Works	

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

- Continue to provide current, relevant educational materials on the City's stormwater webpage.

### 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	Date completed/ projected	Location Posted	Additional details
2-1 Final Stormwater Management Plan publicly available	Complete	The SMP is accessible on the City's Stormwater Management website.	Provide public access to the Stormwater Management Plan.	Public Works	April 2017 On-going	Connecticut Post, City Hall, the library and <a href="http://www.derbyct.gov/Stormwater-Management">http://www.derbyct.gov/Stormwater-Management</a>	

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Location Posted	Additional details
2-2 Comply with public notice requirements for Annual Reports (annually by 2/15)	Complete	Notice of the draft Annual Report was posted in the Connecticut Post. The draft Annual Report was accessible in City Hall, the library and uploaded to the City's Stormwater Management website.	Notify public of published Annual Report and document comments received.	Public Works	2021 Notice Posted: 1/31/2022 2021 Report Posted: 2/15/22 through 3/28/22 On-going	Connecticut Post, City Hall, the library and <a href="http://www.derbyct.gov/Stormwater-Management">http://www.derbyct.gov/Stormwater-Management</a>	The notice for the draft 2022 report was posted in the CT Post on 1/31/22 and the 2022 report was available on the website from 2/15/23 through 3/XX/23

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

- Continue to provide notice of updated SMPs and draft Annual Reports in the Connecticut Post, City Hall, the public library and the Stormwater Management 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	Date completed/pr ojected	Additional details
3-1 Develop written IDDE program (Due 7/1/19)	In Progress	The City has a draft plan in place and anticipates reviewing and finalizing the IDDE Plan in 2023.	Develop Written Plan	Public Works	Jul 1, 2023	
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas (Due 7/1/20)	Substantially Complete	Extensive efforts were conducted in 2019-2022 to locate and identify new outfalls that were not previously mapped and update the system mapping.	Update Existing Outfall Map	Public Works	Dec 31, 2021 On-going	In 2023, the City will continue to update its system mapping, as necessary.
3-3 Implement citizen reporting program (On-going)	Complete	Email address and telephone number have been added to the Public Works website for issuing complaints.	Develop Program	Public Works	May 1, 2019	
3-4 Establish legal authority to prohibit illicit discharges (Due 7/1/19)	Complete	An Illicit Discharge and Connection Stormwater Ordinance was passed and adopted on 5/10/2018.	Update City Ordinance	Zoning Department	May 10, 2018	

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/pr ojected	Additional details
3-5 Develop record keeping system for IDDE tracking (Due 7/1/17)	Complete	The City uses excel and access spreadsheets, along with GIS, for IDDE tracking.	Develop SOP	Public Works	Jul 1, 2017 On-going	
3-6 Address IDDE in areas with pollutants of concern	In Progress	Throughout the term of the permit, the City continued screening and sampling the municipal outfalls. Several outfalls were identified that will require further investigation. Two IDDE investigations for outfalls discharge to impaired waters have been initiated. It is anticipated that these investigations will continue to be investigate in 2023 to the maximum extent practicable.	Identify IDDEs	Public Works	On-going	
3-7 Map MS4 System in Priority Areas	In Progress	In 2021 and 2022, the City continued its significant effort to map all of its outfalls, catch basins, manholes and piping in priority areas.	Map Priority Areas	Public Works	On-going	In 2023, the City will continue to update its system mapping, as necessary.

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

- Finalize written IDDE Program
- Post IDDE Program to the Stormwater Management webpage and include link in next year's Annual Report
- Continue updating the MS4 outfall and system mapping
- Continue to maintain master IDDE records tracking
- Investigate illicit discharges in areas with pollutants of concern

**3.3 Provide a record of all citizen reports of suspected illicit discharges and other illicit discharges occurring during the reporting period and SSOs occurring July 2017 through end of reporting period using the following table.** Illicit discharges are any unpermitted discharge to waters of the state that do not consist entirely of stormwater or uncontaminated groundwater except those discharges identified in Section 3(a)(2) of the MS4 general permit when such non-stormwater discharges are not significant contributors of pollution to a discharge from an identified MS4.

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)
<b><u>No citizen reports of suspected illicit discharges were recorded in 2022.</u></b>						
<b><u>No illicit discharges were reported in 2022.</u></b>						
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)
<b><u>SSOs that occurred July 2017 through end of 2022:</u></b>						
287 Sentinel Hill Rd, Derby	8/5/2017 0 hrs	N/A	Unknown	Sentinel Hill was jet rodded on 08/04/2017 and caused sewage to come out in basement of 287 Sentinel Hill Rd	Servepro was called in to clean basement 287 Sentinel Hill Rd was added to Maintenance "caution" list to prevent future bypass	N/A
1 Caroline Street, Derby	10/24/17 9 hrs	Grassed area at plant	5,001-20,000 gallons	Flash flooding / WPCA	Hosed down area. No action planned as Plant exceeded capacity during storm event	N/A
Burtville Ave, Derby / 41.31, -72.87	11/15/17 24 hrs	Housatonic River	1,001 - 5,000 gallons	Broken pipe Cause unknown	Area hosed down and disinfected Pipe repaired	N/A
Roosevelt Drive	2/7/19 1 hrs	Housatonic River	10-20 gal	Power failure at pump station. Contractor issues.	Area cleaned & contractor issues resolved 2/7/2019	N/A
222 Derby Ave unit 304	7/18/19 3 hrs	No	51-500 gal	Contractor excavating	Private property 7/18/2019	N/A
Ferrara CT/Indian Ave	9/8/19 3 hrs	No	1-50 gal	Sewer line blockage	Sewer line Jetted and cleaned 9/8/2019	N/A
North Ave/ RT 34	10/1/19 4 hrs	Housatonic River	5,000-20,000 gal	Pump station/Clogged pumps	Pumps cleaned and cleared, area cleaned 10/1/2019	N/A
Caroline St/WPCA Plant	10/16/19 2 hrs	No	20,000 - 50,000 gal	Excessive flows from severe rain event	Areas cleaned 10/16/2019	N/A
Caroline St/WPCA Plant	10/28/19 1 hrs	No	1-50 gal	Excessive flows from severe rain event	Areas cleaned 10/28/2019	N/A
Caroline St/WPCA Plant	12/14/19 4 hrs	Housatonic River	20,000-50,000 gal	Raw sewage pump discharge line broke	By-pass pumps set up areas cleaned 12/20/2019	N/A

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)
Mt. Pleasant Street	2/2/20 8 Days	Naugatuck River	1-50 gal	Private common lateral	No action was taken by the residents until the city stepped in and hired a contractor to fix the private lateral. Area cleaned 2/10/2020	N/A
Caroline St/WPCA Plant	7/3/20 2 hrs	No	501-1,000 gal	Excessive flows from severe rain event	Areas cleaned 7/3/2020	N/A
Caroline St/WPCA Plant	9/10/20 2 hrs	No	1,000-5,000 gal	Excessive flows from severe rain event	Areas cleaned 9/10/2020	N/A
Emmit Ave/Derby Ave	9/13/20 2 hrs	No	1-50 gal	Sewer line blockage	Sewer line Jetted and cleaned 9/13/2020	N/A
109 Hawkins St/8 <sup>th</sup> St	3/11/21 Unknown	No	1-50 gal	Root intrusion and wipes blockage in private lateral	Homeowner had the sewer lateral cleaned 3/12/2021	N/A
Caroline St/WPCA Plant	7/9/21 6 hrs	Yes, Housatonic River	Undetermined	Excessive flows due to rain event (3"-4" per hour) caused overflow	Areas cleaned 7/9/21	N/A
Caroline St/WPCA Plant	8/23/21 2 hrs	No	1,001-5,000 gal	Excessive flows due to rain event (2"-3" per hour) caused overflow	Areas cleaned 8/23/21	N/A
Caroline St/WPCA Plant	9/2/21 2 hrs	No	5,001-20,000 gal	Excessive flows due to rain event (2"-3" per hour), along with Stevenson dam releasing 2,500 CFS, caused overflow	Areas cleaned 9/2/21	N/A
19 Cherry St	10/10/21 2 hrs	Yes, Housatonic River	1-50 gal	Private sewer lateral leak	Lateral was inspected and determined to be in good condition	N/A

### 3.4 Provide a summary of actions taken to address septic failures during the Reporting Period using the table below.

Method used to track illicit discharge reports	Location and nature of structure with failing septic systems	Actions taken to respond to and address the failures	Impacted waterbody or watershed, if known	Dept. / Person responsible
FileMaker Pro and Hard Copy Filing System	6 McConney Grove –system failure	Replacing the septic tank and leaching fields; septic permit issued; testing and plan review was conducted in 2022.	No impact to Housatonic	Naugatuck Valley Health District

### 3.5 Briefly describe the method and effectiveness of said method used to track illicit discharge reports.

- The City will continue tracking illicit discharges using an excel table. DPW is responsible for tracking the information.



### 3.6 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	147 (increased from 138 in 2021 due to updated mapping)
Estimated or actual number of interconnections	~40
Outfall mapping complete	~90%
Interconnection mapping complete	~25%
System-wide mapping complete (detailed MS4 infrastructure)	~55%
Outfall assessment and priority ranking	~75%
Dry weather screening of all High and Low priority outfalls complete	105 (decreased from 111 in 2021 due to updated mapping)
Catchment investigations complete	2 in progress
Estimated percentage of MS4 catchment area investigated	5%

### 3.7 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).

- An MS4 and IDDE training program was developed and implemented for presentation to all City personnel that may come into contact with stormwater or that may review applications and plans that impact stormwater quality. This training is conducted on an annual basis, or as needed when new employees are added. The last training program was conducted at the Public Works Department on 9/21/22.

## 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	Date completed/ projected	Additional details
4-1 Implement, upgrade, and enforce land use regulations or other legal authority to meet requirements of MS4 general permit (Due 7/1/20)	In Progress	The City anticipates making progress towards reviewing their land use regulations in 2023 to identify potential areas for improved compliance with the MS4 General Permit.	Review and update regulations	Zoning Department	Dec 31, 2023	

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Additional details
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval (On-going)	Complete	The City has an established plan for site review and approval and depending on the proposed project, the following boards and commissions review the development plans: Planning and Zoning Commission, Inland Wetlands Commission and the Board of Alderman.	Document Current Procedure	City Engineer	Jul 1, 2018 On-going	
4-3 Review site plans for stormwater quality concerns (On-going)	Complete	The City conducted the necessary site plan reviews during the reporting period.	Document Plans Reviewed	City Engineer	Jul 1, 2017 On-going	
4-4 Conduct site inspections (On-going)	Complete	The City conducted the necessary site inspections during the reporting period.	Document Inspections Performed	City Engineer	Jul 1, 2017 On-going	
4-5 Implement procedure to allow public comment on site development (On-going)	Complete	Public comment is allowed during public hearings that accompany the multiple boards and commissions review/approval of development plans. These hearings are publicly noticed. The public can also utilize the City's Citizen Resource Center for submitting comments.	Document Public Comments	Zoning Department	Jul 1, 2017 On-going	
4-6 Implement procedure to notify developers about DEEP construction stormwater permit (On-going)	In Progress	Currently, the City verbally notifies developers and contractors of their potential obligations to the Construction Stormwater Permit.	Add standard note on all qualifying plans	City Engineer	Jul 1, 2020	In 2023, the City anticipates reviewing current procedures and improve compliance with MS4 general permit

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

- The City will work towards updating the City ordinances to include being able to enforce land use regulations.
- Continue to review all design plans for regulation consistency.
- Continue the site inspection and checklist program.
- Continue to follow all State public notice and hearing requirements and follow up on all comments and complaints received.
- Add Construction Stormwater GP requirements to the stormwater website.

## 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	Date completed/ projected	Additional details
5-1 Establish and/or update legal authority and guidelines regarding LID and runoff reduction in site development planning (Due 7/1/22)	In Progress	The City anticipates making progress towards continuing to review their legal authority and guidelines regarding LID and runoff reduction in site development planning in 2023 to identify potential areas for improved compliance with the MS4 General Permit.	Update City Ordinance	Zoning Department	Dec 31, 2023	
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects (Due 7/1/22)	In Progress	The City anticipates making progress towards continuing to review their current practices for enforcing LID/runoff reduction requirements for development and redevelopment projects in 2023 to identify potential areas for improved compliance with the MS4 General Permit.	Document Facilities Specified	City Engineer	Dec 31, 2023	
5-3 Identify retention and detention ponds in priority areas (Due 7/1/20)	In Progress	Through the MS4 system mapping updates efforts from 2019-2022, City and its consultant identified 7 ponds and 5 additional treatment structures to date.	Inventory City Facilities	Public Works/ City Engineer	Jul 1, 2020 On-going	
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures (On-going)	In Progress	The City is in the process of drafting a plan for long-term maintenance plan for stormwater basins and treatment structures.	Development Maintenance Plan	Public Works/ City Engineer	Jul 1, 2023	
5-5 DCIA mapping (Due 7/1/20)	Substantially Completed	The DCIA for the priority areas have been calculated using the available impervious cover layers.	Calculate DCIA	Public Works	Feb 18, 2020 On-going	The DCIA mapping will be updated, as necessary, to include retrofit, development and development projects.
5-6 Address post-construction issues in areas with pollutants of concern	To be started	None	Document issues identified and addressed	City Engineer	On-going	

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

- Complete review of current regulations including site planning requirements, zoning regulations, street design regulations and infrastructure specifications to identify/ reduce/ eliminate existing regulatory barriers to implementation of LID and runoff reduction practices.
- Identify and map City retention and detention ponds in priority areas.
- Finalize and start implementing a long-term maintenance plan for ponds and structures including inspecting municipal ponds/structures annually and removing sediment in excess of 50% design capacity.
- Continue updating the DCIA mapping, as necessary.

## 5.3 Post-Construction Stormwater Management reporting metrics

Metrics		
Baseline (2012) Directly Connected Impervious Area (DCIA)	252	acres
DCIA disconnected (redevelopment plus retrofits)	Unknown	acres this year / acres total
Retrofits completed	Unknown	#
DCIA disconnected	TBD	% this year / % total since 2012
Estimated cost of retrofits	Unknown	\$
Detention or retention ponds identified	7 ponds & 5 additional treatment structures	# this year /# total

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

- To calculate the baseline DCIA for the City of Derby, Barton & Loguidice used the process found on the CT NEMO website. CT NEMO developed 5 formulas to calculate the DCIA and Impervious Cover (IC) independently for each basin in the City using the percent DCIA for the basin with the state DCIA removed from the equation. Barton & Loguidice took the formulas and created a bell curve to input the calculated percent of DCIA for each basin and calculate the total DCIA and IC amounts for the City. Each basin value was added together to create the baseline for the DCIA and IC for the City.

## 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	Date completed/ projected	Additional details
6-1 Develop/implement formal employee training program (On-going)	Complete	Completed annual training with Public Works on 9/21/22. Public Works & Water Pollution Control Staff also receive annual SWPPP training, which covers some areas of the MS4.	Track employee participation	Public Works	On-going	Additional training for other City staff will be conducted in the future.
6-2 Implement MS4 property and operations maintenance (On-going)	Complete	Salt piles are stored under cover and on impervious surfaces. City industrial stormwater discharges are monitored. Vehicle maintenance is performed undercover. Completed annual leaf collection program.	Develop written SOP's for operations	Public Works, Parks & Rec, Building Dept.	Jul 1, 2018 On-going	The City is reviewing current practices and looking for areas for optimization.
6-3 Implement coordination with interconnected MS4s	In Progress	Through the outfall identification process and system mapping, the City identified several interconnections with the neighboring towns/cities.	Identify interconnections	Public Works	On-going	
6-4 Develop/ implement program to control other sources of pollutants to the MS4	In Progress	The City has obtained a list of all industrial facilities not currently registered under the DEEP's Industrial Stormwater General Permit and is planning on sending out notices. Progress has been made towards preparing brochures notifying industrial facilities of their requirements to register under the Industrial Stormwater GP.	Identify Sources	Public Works		
6-5 Evaluate additional measures for discharges to impaired waters*	In Progress	Through the IDDE investigation process, the City and its consultant are in the process of identifying potential pollutant sources that may be discharging to impaired waters.	Identify potential project locations	Public Works		
6-6 Track projects that disconnect DCIA (On-going)	In Progress	The City has set up a table for tracking disconnected DCIA. It is anticipated that the City will continue to complete some progress towards this requirement in 2023.	Develop tracking procedure and data base	City Engineer	On-going	

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Date completed/ projected	Additional details
6-7 Implement infrastructure repair/rehab program (Due 7/1/21)	In Progress	Through the outfall screening process, the City has identified several outfalls requiring maintenance. The City is addressing these issues to the maximum extent practicable. In 2022, the City completed replacements and/or repairs that were required to 5 catch basins and 7 manhole covers.	Document existing repair projects	Public Works	Jul 1, 2021 On-going	The Town will review current practices and look for areas for optimization.
6-8 Develop/implement plan to identify/ prioritize retrofit projects (Due 7/1/20)	In Progress	It is the City's intention to perform efforts towards completing this requirement in 2023.	Identify potential retrofit projects	Public Works	Dec 31, 2023	
6-9 Implement retrofit projects to disconnect 2% of DCIA (Due 7/1/22)	In Progress	In 2023, the City is intending to work with its consultant to identify and prioritize potential projects for the Retrofit Program to the maximum extent practicable.	Implement retrofit projects	City Engineer	Dec 31, 2023	
6-10 Develop/ implement street sweeping program (On-going)	Complete/ Ongoing	City streets are swept annually, concentrating on high priority areas.	Document materials removed annually	Public Works	Jul 1, 2017 On-going	The City is reviewing current practices and looking for areas for optimization.
6-11 Develop/ implement catch basin cleaning program (On-going)	Complete/ Ongoing	Several catch basins were inspected and cleaned out in 2022 as part of continued road repair activities.	Document materials removed annually	Public Works	Jul 1, 2020 On-going	The City is reviewing current practices and looking for areas for optimization.
6-12 Develop/ implement snow management practices (Due 7/1/18)	Complete/ On-going	Streets & municipal lots were plowed as necessary. Roads were treated salt (no sand), as necessary.	Develop written SOP	Public Works	Jul 1, 2018 On-going	The City is reviewing current practices and looking for areas for optimization.

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

- Continue to conduct annual MS4 training programs.
- Review current MS4 property and operations maintenance practices and look for areas for optimization.
- Track projects that disconnect DCIA.
- Review current practices street sweeping practices and look for areas for optimization.
- Review current snow management practices and look for areas for optimization.
- Identify areas where pet waste receptacles maybe installed.
- Review current leaf management practices and look for areas for optimization.

### 6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	Yes – 9/21/22
Street sweeping	
Curb miles swept	~15 miles
Volume (or mass) of material collected	~100 cy
Catch basin cleaning	
Total catch basins in priority areas	TBD
Total catch basins in MS4	TBD
Catch basins inspected	130
Catch basins cleaned	15
Volume (or mass) of material removed from all catch basins	~50 cy
Volume removed from catch basins to impaired waters (if known)	UNK
Snow management	
Type(s) of deicing material used	Salt
Total amount of each deicing material applied	~50 tons
Type(s) of deicing equipment used	Trucks
Lane-miles treated	90 miles
Snow disposal location	N/A
Staff training provided on application methods & equipment	Yes – as necessary
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	UKN
Reduction in turf area (since start of permit)	UKN
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	
Cost of mitigation actions/retrofits	UKN

### 6.4 Catch basin cleaning program

#### Provide any updates or modifications to your catch basin cleaning program.

Catch basins will all be inspected, cleaned out and the sumps will be measured. A second round of inspections and cleaning will be conducted and the amount of material removed will be recorded. A list will be generated and the catch basins with the most material present will be put on a more frequent cleaning schedule to ensure that the 50% design capacity for the sump is not exceeded.

### 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. (Due 7/1/20)

Due to restrictions, the City was unable to complete any progress towards this requirement in 2022. It is the City's intention to perform efforts towards completing this requirement in 2023. In 2023, the City anticipates working with its consultant to identify and prioritize potential projects for the Retrofit Program to the maximum extent practicable.

#### Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection annually in future years. (Due 7/1/22)

In 2023, the City will be working with its consultant to identify and prioritize potential projects for the Retrofit Program to the maximum extent practicable.

## 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.**

1. Due to focused efforts on system mapping updates, no wet weather samples were collected from outfalls discharging to impaired waters in 2022. To date, the City has collected samples from 24 of 77 outfalls that discharge to impaired waters.
2. Ten of the impaired outfalls sampled so far had elevated levels of bacteria present. Four of the outfalls sampled had elevated levels of turbidity discharging from the outfall when compared to the receiving waterbody turbidity level.
3. The City has ranked the outfalls with elevated sampling results and started conducting further investigations, as necessary, to attempt to eliminate the source of pollutants discharging to the impaired waters.

The City will continue to attempt to collect wet weather samples from the impaired outfalls until all known locations are sampled. Once the remaining impaired wet weather samples are collected, efforts will be focused on the 6 annual priority wet weather samples and the wet weather investigation samples. Coordination with qualifying rain events will continue to be conducted for future monitoring events. Weather conditions and efforts being focused in other areas during 2022 did not allow the City to gain progress towards the wet weather sampling requirements; however, other local efforts resulted in the refinement of the Town's list of outfalls to impaired waters. No additional changes have been made to the Stormwater Management Plan at this time.



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

### 2.1 Screening data collected under 2017 permit

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

#### Wet Weather Impaired Outfall Sampling Results

Outfall ID	Latitude	Longitude	Sampled Date	ΔTurbidity (NTU)	E. Coli (100col/L)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab	Investigation Required
DSN-009	41.30464202	-73.07258997	4/16/2018	n/a	20	n/a	n/a	Phoenix	No
DSN-010	41.30464202	-73.07258997	4/16/2018	n/a	<10	n/a	n/a	Phoenix	No
DSN-011	41.30464202	-73.07258997	4/16/2018	n/a	10	n/a	n/a	Phoenix	No
DSN-012	41.30464202	-73.07258997	4/16/2018	n/a	10	n/a	n/a	Phoenix	No
DSN-013	41.30464202	-73.07258997	4/16/2018	n/a	10	n/a	n/a	Phoenix	No
DSN-014	41.30464202	-73.07258997	4/16/2018	n/a	10	n/a	n/a	Phoenix	No
DSN-022	41.33063309	-73.07899824	4/16/2018	3.93	1270	n/a	n/a	Phoenix	Yes
DSN-023	41.31472222	-73.08055556	4/16/2018	-0.28	2010	n/a	n/a	Phoenix	Yes
DSN-024	41.31661552	-73.08115311	9/25/2018	11.75	2760	n/a	n/a	Phoenix	Yes
DSN-025	41.31682455	-73.08113357	4/25/2018	7.76	2140	n/a	n/a	Phoenix	Yes
DSN-026	41.31638889	-73.08111111	4/25/2018	3.6	10	n/a	n/a	Phoenix	No
DSN-027	41.31799129	-73.08123813	6/18/2019	9.82	3450	n/a	n/a	Phoenix	Yes
DSN-028	41.32888889	-73.08083333	6/18/2019	1.71	8660	n/a	n/a	Phoenix	Yes
DSN-031	41.31784798	-73.08121879	4/16/2018	-20.15	20	n/a	n/a	Phoenix	No
DSN-034	41.31832547	-73.08133427	4/16/2018	24.67	10	n/a	n/a	Phoenix	Yes
DSN-035	41.32388889	-73.08194444	9/25/2018	2.2	11200	n/a	n/a	Phoenix	Yes
DSN-036	41.32805556	-73.08194444	4/25/2018	0.71	20	n/a	n/a	Phoenix	No
DSN-037	41.31666667	-73.08777778	4/25/2018	n/a	8160	n/a	n/a	Phoenix	Yes
DSN-039	41.31930793	-73.09046972	4/25/2018	n/a	683	n/a	n/a	Phoenix	Yes
DSN-040	41.32263	-73.095231	4/25/2018	n/a	161	n/a	n/a	Phoenix	No
DSN-041	41.32305556	-73.09583333	4/25/2018	n/a	10	n/a	n/a	Phoenix	No
DSN-043	41.32566285	-73.1004598	4/25/2018	n/a	63	n/a	n/a	Phoenix	No
DSN-044	41.32567598	-73.10038302	4/25/2018	n/a	63	n/a	n/a	Phoenix	No
DSN-076	41.32972908	-73.10776581	6/18/2019	n/a	12000	1.79	0.216	Phoenix	Yes

#### Notes:

n/a - Not Applicable

Twomile Brook was not impaired prior to the 2018 Integrated Water Quality Report (IWQR), which is now impaired for "other"

## 2.2 Credit for screening data collected under 2004 permit

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

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

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

Provide the following information for outfalls exceeding the pollutant threshold.

Outfall	Status of drainage area investigation	Control measure implementation to address impairment
DSN-021	Investigation initiated in the drainage area, see Part III, Section 3.2 for key manhole/catch basin screening/sampling data. Additional MS4 system mapping being completed for this drainage area in conjunction with sampling.	
DSN-070	Investigation initiated in the drainage area, see Part III, Section 3.2 for key manhole/catch basin screening/sampling data. Additional MS4 system mapping being completed for this drainage area in conjunction with sampling.	

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

Outfall	Latitude	Longitude	Sample Date	Parameter(s)	Results	Name of Laboratory (if used)
In 2021 and 2022, the City focused efforts on updating system mapping. In 2023, the City will continue to attempt to collect wet weather samples from the impaired outfalls until all known locations are sampled. Once the remaining impaired wet weather samples are collected, efforts will be focused on the 6 annual priority wet weather samples.						

## 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).

See attachment provided with this report

### 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.

Table 2.1.a – Non-Impaired Waterbody Outfalls

Outfall ID	Latitude	Longitude	Sampled Date	Temp (oC)	Conductivity (uohms)	Salinity (g/kg)	Ammonia (mg/L)	Chlorine (mg/L)	MBAs (mg/L)	E. Coli (100col/L)	Lab	Investigation Required
DSN-006	41.31237499	-73.05859102	8/14/17	21.17	826	0.41	0.25	0.07	0	206	Phoenix	No
DSN-047	41.31239402	-73.05857903	6/13/18	17.76	1293	0.65	0.25	0.06	0.25	<10	Phoenix	No
DSN-056	41.32188996	-73.05615197	8/17/17	16.64	213	0.12	0	0.03	0.25	10	Phoenix	No
DSN-067	41.31061869	-73.07102476	8/17/17	22.44	258	0.12	0.25	0.11	0.25	1660	Phoenix	No
DSN-073	41.31804789	-73.04941471	3/10/21	6.7	276	0.134	0	0	0.09	<10	Phoenix	No
DSN-078	41.33060059	-73.1019416	11/1/17	12.65	455	0.22	0.25	0	0.25	52	Phoenix	No
DSN-144	41.3404961	-73.11015421	3/16/21	7.9	267	0.129	0	0.18	0.04	<10	Phoenix	No
DSN-145	41.33782931	-73.11168308	3/16/21	7.8	179	0.0859	0	0	0.04	<10	Phoenix	No
DSN-146	41.34340059	-73.11244034	3/17/21	5.7	120	0.058	0	0.01	0.07	10	Phoenix	No
DSN-156	41.31377972	-73.07014529	3/23/21	19.5	251	0.103	0	0.02	0.07	31	Phoenix	No
DSN-157	41.31323024	-73.06968514	3/30/21	10.9	258	0.123	0	0	0.07	<10	Phoenix	No
DSN-159	41.32154305	-73.06680721	4/6/21	12	220	0.104	0	0.01	0.14	31	Phoenix	No
DSN-160	41.32461142	-73.06444739	4/6/21	15.2	274	0.13	0	0.01	0.11	1440	Phoenix	No
DSN-162	41.32108726	-73.05466435	4/7/21	15.2	260	0.124	0	0.13	0.11	3870	Phoenix	No

Table 2.1b – Impaired Waterbody Outfalls

Outfall ID	Latitude	Longitude	Sampled Date	ΔTurbidity (NTU )	E. Coli (100col/L)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab	Investigation Required
DSN-040	41.32263	-73.095231	8/14/2017	n/a	161	n/a	n/a	Phoenix	No
DSN-045 *	41.32785908	-73.10433884	8/14/2017	n/a	262			Phoenix	No
DSN-070	41.30683003	-73.07550796	8/17/2017	n/a	31	n/a	n/a	Phoenix	No
DSN-009	41.30464202	-73.07258997	8/22/2017	n/a	<10	n/a	n/a	Phoenix	No
DSN-010	41.30464202	-73.07258997	8/22/2017	n/a	20	n/a	n/a	Phoenix	No
DSN-021 *	41.31333333	-73.07888889	8/22/2017	6.1		n/a	n/a	Phoenix	No
DSN-044 *	41.32567598	-73.10038302	8/22/2017	n/a	31			Phoenix	No
DSN-112*	41.32485798	-73.08094554	11/22/2019		73	n/a	n/a	Phoenix	No
DSN-140	41.31948099	-73.09039628	2/19/2020	n/a	>24200	n/a	n/a	Phoenix	Yes
DSN-071	41.30487041	-73.06546757	3/10/2021	-0.15	<10	n/a	n/a	Phoenix	No
DSN-076	41.32972908	-73.10776581	3/10/2021	n/a	183	0.23	0.019	Phoenix	No
DSN-091	41.30368654	-73.06613004	3/10/2021	0.49	<10	n/a	n/a	Phoenix	No

**Notes:**  
n/a - Not Applicable  
**Data collected based upon the 2016 Integrated Water Quality Report (IWQR)**  
Data collected based upon the 2018 IWQR  
Data collected based upon the 2020 IWQR  
Twomile Brook was not impaired prior to the 2018 Integrated Water Quality Report (IWQR), which is now impaired for "other"  
\* - These outfalls have impairment parameters that were missed during initial sampling event, which will need resampling

## 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.

Per a Request for Information from the EPA, the City of Derby is also required to conduct wet weather sampling at outfalls that are not discharging to impaired waters, which did not have discharges during dry weather screening. The sampling results for these outfalls are provided below.

### Wet Weather Non-Impaired Outfall Sampling Results

Outfall ID	Latitude	Longitude	Sampled Date	Temp (oC)	Conductivity (uohms)	Salinity (g/kg)	Ammonia (mg/L)	Chlorine (mg/L)	MBAs (mg/L)	E. Coli (100col/L)	Lab	Investigation Required
DSN-001	41.32090896	-73.04705448	9/25/18	17.32	117	0.1	0.5	0.13	1	>24200	Phoenix	Yes
DSN-003	41.31740741	-73.0542078	6/13/19	19.3	44.7	0.0204	0.25	0.05	0.25	14100	Phoenix	No
DSN-004	41.31739968	-73.05419223	6/13/19	20.8	22.8	0.0104	0.25	0.06	0.5	836	Phoenix	No
DSN-005	41.31419202	-73.05501496	6/13/19	23.7	21.5	0.0098	0.25	0.04	0.5	2720	Phoenix	No
DSN-007	41.31859138	-73.07128022	6/13/19	17.2	16	0.01	0.25	0	0.25	4110	Phoenix	No
DSN-015	41.32597896	-73.07382812	6/13/19	17.33	13	0.01	0	0	0.25	1440	Phoenix	No

Outfall ID	Latitude	Longitude	Sampled Date	Temp (oC)	Conductivity (uohms)	Salinity (g/kg)	Ammonia (mg/L)	Chlorine (mg/L)	MBAs (mg/L)	E. Coli (100col/L)	Lab	Investigation Required
DSN-019	41.31946791	-73.07470531	6/13/19	17.12	28	0.01	0.25	0.03	0.5	1850	Phoenix	No
DSN-046	41.30480999	-73.07167802	6/13/19	17.43	8	0	0	0.01	0.25	1110	Phoenix	No
DSN-051	41.32163966	-73.04912189	9/25/18	16.68	15	8.91	0.25	0.07	0.25	5170	Phoenix	No
DSN-055	41.31572197	-73.04623098	9/25/18	17.33	93	0.05	0.25	0	1	>24200	Phoenix	No
DSN-057	41.32126834	-73.05614541	6/13/19	16.92	43	0.02	0	0	0.25	6870	Phoenix	No
DSN-058	41.32053374	-73.05568003	6/13/19	17.1	21	0.01	0.25	0	0.25	1310	Phoenix	No
DSN-059	41.32204	-73.055942	6/13/19	16.98	38	0.02	0.25	0.03	0.25	169	Phoenix	No
DSN-068	41.31383101	-73.06421	6/13/19	17.44	13	0.01	0	0.02	0.5	563	Phoenix	No
DSN-069	41.31153303	-73.06816097	6/13/19	17.54	26	0.01	0	0.02	0.25	24200	Phoenix	No
DSN-002A *	41.31285622	-73.04815455	9/25/18	17.92	26	0.01	1	0.02	0.5	2140	Phoenix	Yes
DSN-060*	41.31312766	-73.05642576	6/13/19	19.3	19.5	0.0029	0.25	0.03	0.25	4610	Phoenix	No
DSN-063*	41.31304404	-73.05649303	6/13/19	19.8	16.5	0.0075	0.25	0.04	0.25	75	Phoenix	No
DSN-065*	41.3127415	-73.05759033	6/13/19	19.2	268	0.0122	0.25	0.01	0.5	712	Phoenix	No
DSN-066*	41.31285516	-73.05725041	6/13/19	18.7	25	0.0114	0.25	0.05	0.5	9210	Phoenix	No
DSN-071*	41.30487041	-73.06546757	6/13/19	17.2	272	0.15	0.25	0	0.25	231	Phoenix	No
DSN-073	41.31804789	-73.04941471	9/25/18	17.3	24	0.01	0	0.01	0.25	7700	Phoenix	No
DSN-077	41.34248497	-73.11479302	6/13/19	17.67	111	0.06	0.25	0	0.25	20	Phoenix	No
DSN-079	41.33330896	-73.10798901	6/13/19	17.44	35	0.02	0.25	0	0.25	17300	Phoenix	No
DSN-080	41.33339232	-73.10804102	6/13/19	17.54	42	0.02	0.25	0.06	0.25	19900	Phoenix	No
<b>Note:</b> * = Twomile Brook was not impaired prior to the 2018 Integrated Water Quality Report (IWQR), which is now impaired for "other"												

### 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.

Outfall ID	Receiving Water	System Vulnerability Factors
DSN-001	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-002A	CT6900-00_01, Naugatuck River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-021	CT6000-00_01, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-027	CT6900-00_01, Naugatuck River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-001	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old

Outfall ID	Receiving Water	System Vulnerability Factors
DSN-002A	CT6900-00_01, Naugatuck River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-021	CT6000-00_01, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-027	CT6900-00_01, Naugatuck River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-001	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-002A	CT6900-00_01, Naugatuck River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-003	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-004	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-005	Twomile Brook	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-007	Ansonia Reservoir	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-015	Ansonia Reservoir	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-019	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-022	CT6900-00_01, Naugatuck River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-023	CT6900-00_01, Naugatuck River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-024	CT6900-00_01, Naugatuck River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-025	CT6900-00_01, Naugatuck River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-027	CT6900-00_01, Naugatuck River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-028	CT6900-00_01, Naugatuck River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-035	CT6900-00_01, Naugatuck River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-037	CT6000-00_02, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-039	CT6000-00_02, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-046	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-055	Unnamed Waterbodies	
DSN-057	Unnamed Waterbodies	
DSN-058	Unnamed Waterbodies	
DSN-060	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-067	Unnamed Waterbodies	
DSN-068	Unnamed Waterbodies	
DSN-069	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-072	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-073	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-075	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-076	CT6000-00-5+L4_01, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-079	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-080	Unnamed Waterbodies	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-010	CT6000-00_01, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old

Outfall ID	Receiving Water	System Vulnerability Factors
DSN-011	CT6000-00_01, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-012	CT6000-00_01, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-013	CT6000-00_01, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-021	CT6000-00_01, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-037	CT6000-00_02, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-039	CT6000-00_02, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old
DSN-040	CT6000-00_02, Housatonic River	Sanitary and Storm Drain Infrastructure >40 years Old

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 dry weather screening and sampling data

Outfall ID	Key Junction ID	Sample Date	Ammonia	Chlorine	Surfactants	E. Coli	Entero-coccus	Fecal Coliform
DSN-070	P-In/CB-3	8/2/2019				160	148	158
DSN-021	P-MH-100/MH-104	8/2/2019	0.25	0.08	0	>24200		
DSN-021	P-CB-119/CB-111	10/4/2019				175		
DSN-021	P-MH-119B/CB-119	11/7/2019				171		
DSN-021	P-CB-934/MH-933B	11/7/2019				20		
DSN-021	P-MH-104/CB-104A	8/2/2019	0.25	0.08	0	906	6130	1110
DSN-021	P-CB-110A/MH-100	8/2/2019	0.25	0.08	0	>24200		
DSN-021	P-MH-100/MH-100A	8/2/2019	0.25	0.08	0			
DSN-021	P-MH-930A/MH-115A	11/7/2019				813		

Outfall ID	Key Junction ID	Sample Date	Ammonia	Chlorine	Surfactants	E. Coli	Enterococcus	Fecal Coliform
DSN-021	P-IN/MH-119A	10/4/2019				173		
DSN-021	P-MH-941A/MH-938A	11/7/2019				<10		
DSN-021	P-MH-938A/MH-935A	11/7/2019				<10		
DSN-021	P-MH-955A/MH-933A	11/7/2019				<10		
DSN-021	P-MH-933A/MH-933B	11/7/2019				<10		
DSN-021	P-MH-933A/MH-931A	11/7/2019				20		
DSN-021	P-MH-931A/MH-930A	11/7/2019				246		
DSN-072	P-CB-150/CB-153	11/7/2019				<10		
DSN-072	P-CB-155/CB-157	11/7/2019				<10		
DSN-072	P-CB-157/CB-988	11/7/2019				31		
DSN-072	P-CB-989/CB-987	11/7/2019				10		
DSN-072	P-CB-987/CB-988	11/7/2019				10		
DSN-072	P-CB-989A/CB-989	11/7/2019				<10		
DSN-072	P-IN/CB-989	11/7/2019				20		
DSN-072	P-CB-150A/CB-150	11/7/2019				<10		
DSN-103E	P-CB-93A/DSN-103E	8/6/2019	0.25	0.06	0.25			
DSN-103W	P-CB-93A/DSN-103W	8/6/2019	0.25	0.17	0.25			
DSN-106	P-IN/DSN-106	8/6/2019	0.25	0.04	0.25			
UNKNOWN	P-IN/CB-99	9/17/2019				<10		
UNKNOWN	P-CB-99/CB-100	9/17/2019				305		

### 3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants
See Part III, Section 2.2				



### 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
DSN-021	TBD	Investigation initiated in the drainage area, see Part III, Section 3.2 for key manhole/catch basin screening/sampling data. Additional MS4 system mapping being completed for this drainage area in conjunction with sampling.	Outfall sampling	8/22/17	TBD	TBD	TBD
DSN-070	TBD	Investigation initiated in the drainage area, see Part III, Section 3.2 for key manhole/catch basin screening/sampling data. Additional MS4 system mapping being completed for this drainage area in conjunction with sampling.	Outfall sampling	8/17/17	TBD	TBD	TBD
DSN-072	TBD	Investigation initiated in the drainage area, see Part III, Section 3.2 for key manhole/catch basin screening/sampling data. Additional MS4 system mapping being completed for this drainage area in conjunction with sampling.	Outfall sampling	8/17/17	TBD	Outfall identified as an outlet after further mapping updates were completed. Investigation will continue, as necessary.	TBD
DSN-103E	TBD	Investigation initiated in the drainage area, see Part III, Section 3.2 for key manhole/catch basin screening/sampling data. Additional MS4 system mapping being completed for this drainage area in conjunction with sampling.	Outfall sampling	3/10/21	TBD	Outfall identified as an outlet after further mapping updates were completed. Investigation will continue, as necessary.	TBD
DSN-103W	TBD	Investigation initiated in the drainage area, see Part III, Section 3.2 for key manhole/catch basin screening/sampling data. Additional MS4 system mapping being completed for this drainage area in conjunction with sampling.	Outfall sampling	3/10/21	TBD	Outfall identified as an outlet after further mapping updates were completed. Investigation will continue, as necessary.	TBD
DSN-106	TBD	Investigation initiated in the drainage area, see Part III, Section 3.2 for key manhole/catch basin screening/sampling data. Additional MS4 system mapping being completed for this drainage area in conjunction with sampling.	Outfall sampling	3/11/21	TBD	Outfall identified as an outlet after further mapping updates were completed. Investigation will continue, as necessary.	TBD

## 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: <b>Walt Mayhew, Chief of Staff City of Derby</b>	Print name: <b>T.J. Therriault, EIT, CDT Barton &amp; Loguidice, LLC</b>
Signature/Date:  <b>DRAFT</b>	Signature / Date:  <b>DRAFT</b>
Email: <b>wmayhew@derbyct.gov</b>	Email: <b>tjt@bartonandloguidice.com</b>

Catchment ID	Receiving Water	Dry Weather Sampling Results Indicate Likely Illicit Discharge? <sup>1</sup>	Wet Weather Sampling Results Indicated Likely Illicit Discharge? <sup>1a</sup>	Discharging to Area of Concern to Public Health? <sup>2</sup>	Frequency of Past Discharge Complaints	Receiving Water Quality <sup>3</sup>	Density of Generating Sites <sup>4</sup>	Age of Development/ Infrastructure <sup>5</sup>	Historic Combined Sewers or Septic? <sup>6</sup>	Aging Septic? <sup>7</sup>	Culverted Streams? <sup>8</sup>	Additional Characteristics	Sampling Score	Score	Priority Ranking	Priority Ranking Number
Information Source		Catchment Inspections and Sample Results	Catchment Inspections and Sample Results	GIS Maps	Municipal Staff	Impaired Waters List	Land Use/GIS Maps, Aerial Photography	Land Use Information, Visual Observation	Municipal Staff, GIS Maps	Land Use, Municipal Staff	GIS and Stormwater system Maps	Other				
Scoring Criteria (Yes = Problem)		Score is determined using an extrapolated formula based on the results		Yes = 3 No = 0	Frequent = 3 Occasional = 2 None = 0	Poor = 3 Fair = 2 Good = 0	High = 3 Medium = 2 Low = 1	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	Yes = 3 No = 0	Yes = 3 No = 0	TBD				
DSN-140	CT6000-00_02, Housatonic River	22		0		2	1	3			0		22	28	High	1
DSN-037	CT6000-00_02, Housatonic River		16	3		2	3	3			0		16	27	High	2
DSN-021	CT6000-00_01, Housatonic River		16	0		2	3	3			0		16	24	High	3
DSN-001	Unnamed Waterbodies		15	0		0	3	3			0		15	21	High	4
DSN-028	CT6900-00_01, Naugatuck River		7	3		3	3	3			0		7	19	High	5
DSN-024	CT6900-00_01, Naugatuck River		5	3		3	3	3			0		5	17	High	6
DSN-025	CT6900-00_01, Naugatuck River		5	3		3	3	3			0		5	17	High	7
DSN-027	CT6900-00_01, Naugatuck River		5	3		3	3	3			0		5	17	High	8
DSN-035	CT6900-00_01, Naugatuck River		8	0		3	3	3			0		8	17	High	9
DSN-076	CT6000-00-5+L4_01, Housatonic River		8	0		3	3	3			0		8	17	High	10
DSN-039	CT6000-00_02, Housatonic River		5	3		2	3	3			0		5	16	High	11
DSN-009	CT6000-00_01, Housatonic River	2	2	0		2	3	3			3		4	15	High	12
DSN-036	CT6900-00_01, Naugatuck River		6	0		3	3	3			0		6	15	High	13
DSN-055	Unnamed Waterbodies		12	0		0	1	2			0		12	15	High	14
DSN-069	Unnamed Waterbodies		10	0		0	2	3			0		10	15	High	15
DSN-080	Unnamed Waterbodies		9	0		0	3	3			0		9	15	High	16
DSN-014	CT6000-00_01, Housatonic River		3	0		2	3	3			3		3	14	High	17
DSN-002A	CT6900-00_01, Naugatuck River		7	0		0	3	3			0		7	13	High	18
DSN-010	CT6000-00_01, Housatonic River	1	1	0		2	3	3			3		2	13	High	19
DSN-011	CT6000-00_01, Housatonic River		2	0		2	3	3			3		2	13	High	20
DSN-012	CT6000-00_01, Housatonic River		2	0		2	3	3			3		2	13	High	21
DSN-013	CT6000-00_01, Housatonic River		2	0		2	3	3			3		2	13	High	22
DSN-026	CT6900-00_01, Naugatuck River		1	3		3	3	3			0		1	13	High	23
DSN-031	CT6900-00_01, Naugatuck River		1	3		3	3	3			0		1	13	High	24
DSN-034	CT6900-00_01, Naugatuck River		1	3		3	3	3			0		1	13	High	25
DSN-079	Unnamed Waterbodies		7	0		0	3	3			0		7	13	High	26
DSN-003	Unnamed Waterbodies		8	0		0	1	3			0		8	12	High	27
DSN-005	Twomile Brook		6	0		0	3	3			0		6	12	High	28
DSN-023	CT6900-00_01, Naugatuck River		3	0		3	3	3			0		3	12	High	29
DSN-029	CT6900-00_01, Naugatuck River			3		3	3	3			0		0	12	High	30
DSN-030	CT6900-00_01, Naugatuck River			3		3	3	3			0		0	12	High	31
DSN-045	CT6000-00-5+L4_01, Housatonic River	1		3		3	3	2			0		1	12	High	32
DSN-066	Twomile Brook		8	0		0	1	3			0		8	12	High	33
DSN-007	Ansonia Reservoir		4	3		0	1	3			0		4	11	High	34
DSN-015	Ansonia Reservoir		3	3		0	2	3			0		3	11	High	35
DSN-019	Unnamed Waterbodies		5	0		0	3	3			0		5	11	High	36
DSN-022	CT6900-00_01, Naugatuck River		2	0		3	3	3			0		2	11	High	37
DSN-070	CT6000-00_02, Housatonic River	3		0		2	3	3			0		3	11	High	38
DSN-073	Unnamed Waterbodies		5	0		0	3	3			0		5	11	High	39
DSN-040	CT6000-00_02, Housatonic River	1	1	0		2	3	3			0		2	10	High	40
DSN-112	CT6900-00_01, Naugatuck River	2		0		3	2	3			0		2	10	High	41
DSN-028A	Naugatuck River			0		3	3	3			0		0	9	Low	42
DSN-032	Naugatuck River			0		3	3	3			0		0	9	Low	43
DSN-041	CT6000-00_02, Housatonic River		1	0		2	3	3			0		1	9	Low	44
DSN-044	CT6000-00_02, Housatonic River	1	1	0		2	3	2			0		2	9	Low	45
DSN-051	Unnamed Waterbodies		6	0		0	1	2			0		6	9	Low	46
DSN-057	Unnamed Waterbodies		5	0		0	2	2			0		5	9	Low	47
DSN-060	Unnamed Waterbodies		5	0		0	1	3			0		5	9	Low	48
DSN-067	Unnamed Waterbodies	4		0		0	3	2			0		4	9	Low	49
DSN-004	Unnamed Waterbodies		4	0		0	1	3			0		4	8	Low	50
DSN-042	CT6000-00_02, Housatonic River			0		2	3	3			0		0	8	Low	51
DSN-043	CT6000-00_02, Housatonic River		1	0		2	3	2			0		1	8	Low	52
DSN-068	Unnamed Waterbodies		4	0		0	2	2			0		4	8	Low	53
DSN-097	CT6000-00-5+L4_01, Housatonic River			0		3	2	3			0		0	8	Low	54
DSN-098	CT6000-00-5+L4_01, Housatonic River			0		3	2	3			0		0	8	Low	55
DSN-099	CT6900-00_01, Naugatuck River			0		3	2	3			0		0	8	Low	56
DSN-113	CT6900-00_01, Naugatuck River			0		3	2	3			0		0	8	Low	57
DSN-128	CT6000-00_02, Housatonic River			0		2	3	3			0		0	8	Low	58
DSN-129	CT6000-00_02, Housatonic River			0		2	3	3			0		0	8	Low	59
DSN-138	CT6000-00-5+L4_01, Housatonic River			0		3	2	3			0		0	8	Low	60
DSN-144	Unnamed Waterbodies	2		0		0	3	3			0		2	8	Low	61
DSN-008	Ansonia Reservoir			3		0	1	3			0		0	7	Low	62
DSN-046	Unnamed Waterbodies		3	0		0	1	3			0		3	7	Low	63
DSN-058	Unnamed Waterbodies		3	0		0	2	2			0		3	7	Low	64
DSN-065	Twomile Brook		3	0		0	1	3			0		3	7	Low	65
DSN-078	Unnamed Waterbodies	1		0		0	3	3			0		1	7	Low	66
DSN-094	CT6000-00-5+L4_01, Housatonic River			0		3	1	3			0		0	7	Low	67
DSN-095	CT6000-00-5+L4_01, Housatonic River			0		3	1	3			0		0	7	Low	68
DSN-096	CT6000-00-5+L4_01, Housatonic River			0		3	1	3			0		0	7	Low	69
DSN-100	CT6000-00-5+L4_01, Housatonic River			0		2	2	3			0		0	7	Low	70
DSN-110	CT6900-00_01, Naugatuck River			0		3	1	3			0		0	7	Low	71
DSN-111	CT6900-00_01, Naugatuck River			0		3	1	3			0		0	7	Low	72
DSN-114	CT6900-00_01, Naugatuck River			0		3	1	3			0		0	7	Low	73
DSN-124	CT6000-00_02, Housatonic River			0		2	2	3			0		0	7	Low	74
DSN-125	CT6000-00_02, Housatonic River			0		2	2	3			0		0	7	Low	75
DSN-126	CT6000-00_02, Housatonic River			0		2	2	3			0		0	7	Low	76
DSN-132	CT6900-00_01, Naugatuck River			0		3	1	3			0		0	7	Low	77
DSN-018	Unnamed Waterbodies			0		0	3	3			0		0	6	Low	78
DSN-033	CT6900-00_01, Naugatuck River			0		0	3	3			0		0	6	Low	79
DSN-059	Unnamed Waterbodies		2	0		0	2	2			0		2	6	Low	80
DSN-063	Twomile Brook		2	0		0	1	3			0		2	6	Low	81
DSN-071	Twomile Brook		1	0		0	3	2			0		1	6	Low	82
DSN-083	Unnamed Waterbodies			0		0	3	3			0		0	6	Low	83
DSN-101	CT6000-00-5+L4_01, Housatonic River			0		2	1	3			0		0	6	Low	84
DSN-102	CT6000-00-5+L4_01, Housatonic River			0		2	2	2			0		0	6	Low	85
DSN-127	CT6000-00_02, Housatonic River			0		2	1	3			0		0	6	Low	86
DSN-130	CT6000-00_02, Housatonic River			0		0	3	3			0		0	6	Low	87
DSN-141	CT6000-00_02, Housatonic River			0		2	1	3			0		0	6	Low	88
DSN-145	Unnamed Waterbodies			0		0	3	3			0		0	6	Low	89
DSN-148				0		0	3	3			0		0	6	Low	90
DSN-006	Twomile Brook	1		0		0	3	1			0		1	5	Low	91
DSN-056	Unnamed Waterbodies	2		0		0	1	2			0		2	5	Low	92
DSN-077	Pink House Cove Brook		1	0		0	3	1			0		1	5	Low	93
DSN-089	Twomile Brook			0		0	3	2			0		0	5	Low	94
DSN-115	CT6000-00_02, Housatonic River			0		0	2	3			0		0	5	Low	95
DSN-118	CT6000-00_02, Housatonic River			0		0	2	3			0		0	5	Low	96
DSN-119	CT6000-00_02, Housatonic River			0		0	2	3			0		0	5	Low	97
DSN-120	CT6000-00_02, Housatonic River			0		0	2	3			0		0	5	Low	98
DSN-121	CT6000-00_02, Housatonic River			0		0	2	3			0		0	5	Low	99
DSN-122	CT6000-00_02, Housatonic River			0		0	2	3			0		0	5	Low	100
DSN-123	CT6000-00_02, Housatonic River			0		0	2	3			0		0	5	Low	101
DSN-156				0		0	3	2			0		0	5	Low	102
DSN-157																

Catchment ID	Receiving Water	Dry Weather Sampling Results Indicate Likely Illicit Discharge? <sup>1</sup>	Wet Weather Sampling Results Indicated Likely Illicit Discharge? <sup>1a</sup>	Discharging to Area of Concern to Public Health? <sup>2</sup>	Frequency of Past Discharge Complaints	Receiving Water Quality <sup>3</sup>	Density of Generating Sites <sup>4</sup>	Age of Development/ Infrastructure <sup>5</sup>	Historic Combined Sewers or Septic? <sup>6</sup>	Aging Septic? <sup>7</sup>	Culverted Streams? <sup>8</sup>	Additional Characteristics	Sampling Score	Score	Priority Ranking	Priority Ranking Number
Information Source		Catchment Inspections and Sample Results	Catchment Inspections and Sample Results	GIS Maps	Municipal Staff	Impaired Waters List	Land Use/GIS Maps, Aerial Photography	Land Use Information, Visual Observation	Municipal Staff, GIS Maps	Land Use, Municipal Staff	GIS and Stormwater system Maps	Other				
Scoring Criteria (Yes = Problem)		Score is determined using an extrapolated formula based on the results		Yes = 3 No = 0	Frequent = 3 Occasional = 2 None = 0	Poor = 3 Fair = 2 Good = 0	High = 3 Medium = 2 Low = 1	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	Yes = 3 No = 0	Yes = 3 No = 0	TBD				
DSN-091	Twomile Brook			0		0	1	2			0		0	3	Low	126
DSN-092	Twomile Brook			0		0	1	2			0		0	3	Low	127
DSN-109	Unnamed Waterbodies			0		0	1	2			0		0	3	Low	128
DSN-143	Unnamed Waterbodies												0	0	Low	129
DSN-158													0	0	Low	130
DSN-159													0		Low	131
DSN-160															Low	132
DSN-161															Low	133
DSN-162															Low	134
DSN-163															Low	135
DSN-164															Low	136
DSN-165															Low	137
DSN-166															Low	138
DSN-167															Low	139
DSN-168															Low	140
DSN-169															Low	141
DSN-170															Low	142
DSN-171															Low	143
DSN-172															Low	144
DSN-173															Low	145
DSN-18A	Ansonia Reservoir			0		0	1	3			0				Low	146
DSN-19A	Ansonia Reservoir			0		0	1	3			0				Low	147

Impaired Outfalls

Scoring Criteria:

If there's no waterbody feature identified the receiving body source will be the name of the subregional basin the outfall resides in

- <sup>1</sup> Previous dry weather screening results indicate likely sewer input if any of the following are true:
- Olfactory or visual evidence of sewage,
  - Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
  - Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine

- <sup>1a</sup> Previous wet weather screening results indicate impacts to impaired waters including:
- Total Nitrogen >2.5 mg/L, Total Phosphorous >0.3 mg/L,
  - E. Coli >235col/100 ml for swimming areas and >410 col/100 ml for all others or,
  - Total Coliform >500 col/100 ml, or Fecal coliform >31 col/100ml for Class SA and >260 Col/100ml for Class SB, or
  - Enterococci >104 col/100ml for swimming areas and >500 col/100ml for all others.

- <sup>2</sup> Catchments that discharge to or in the vicinity of any of the following areas: public beaches, recreational areas, drinking water supplies, or shellfish beds

- <sup>3</sup> Receiving water quality based on latest version of State of Connecticut Integrated Water Quality Report.
- Poor = Waters with approved TMDLs (Category 4a Waters) where illicit discharges have the potential to contain the pollutant identified as the cause of the impairment
  - Fair = Water quality limited waterbodies that receive a discharge from the MS4 (Category 5 Waters)
  - Good = No water quality impairments

- <sup>4</sup> Generating sites are institutional, municipal, commercial, or industrial sites with a potential to contribute to illicit discharges (e.g., car dealers, car washes, gas stations, garden centers, industrial manufacturing, etc.)

- <sup>5</sup> Age of development and infrastructure:
- High = Industrial areas greater than 40 years old and areas where the sanitary sewer system is more than 40 years old
  - Medium = Developments 20-40 years old
  - Low = Developments less than 20 years old

- <sup>6</sup> Areas once served by combined sewers and but have been separated, or areas once served by septic systems but have been converted to sanitary sewers.

- <sup>7</sup> Aging septic systems are septic systems 30 years or older in residential areas.

- <sup>8</sup> Any river or stream that is culverted for distance greater than a simple roadway crossing.