Connecticut Department of
Energy & Environmental Protection
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

MS4 Annual Report Transmittal Form

For the General Permit to Discharge Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)

Print or type unless otherwise noted. Please submit this completed transmittal form, fee, and the MS4 Annual Report as indicated at the end of this form.

CPPU USE ONLY

App #:_____

Doc #:_____

Check #:_____

Program: Stormwater Permits

Part I: Annual Report General Information

1. Reporting Period (Calendar Year): **January 1, 2021-December 31, 2021**
2. Provide the registration number for the existing general permit registration: **GSM000050**

3. Registrant Type (check one):	Fees
☐ state institution/agency	$375.00 **[713]**
☐ federal institution/agency	$375.00 **[713]**
☒ municipality	$187.50 **[713]**

4. Municipality name or Municipality name where institution is located: **Town of Simsbury**

The annual report will not be processed without the fee. The fee shall be non-refundable and shall be paid by check or money order to the Department of Energy and Environmental Protection (DEEP) or by such other method as the commissioner may allow.

Part II: Registrant Information

1. Registrant (Name of Municipality or State or Federal Institution/Agency): Town of Simsbury

Mailing Address: 933 Hopmeadow Street

City/Town: Simsbury State: CT Zip Code: 06070

Business Phone: 860-658-3200 ext.:

Contact Person: Tom Roy Phone: 860-658-3200 ext.

*E-mail: troy@simbury-ct.gov

*By providing this e-mail address you are agreeing to receive official correspondence from DEEP, at this electronic address, concerning the subject registration. Please remember to check your security settings to be sure you can receive e-mails from “ct.gov” addresses. Also, please notify DEEP if your e-mail address changes.

Part II: Registrant Information (continued)

2. Billing contact, if different than the registrant.

Name: **Atlas Technical Consultants**

Mailing Address: 290 Roberts Street

City/Town: East Hartford State: CT Zip Code: 06108

Business Phone: 860-282-9924 ext.:

Contact Person: Luke Whitehouse Phone: 860-608-8576 ext.

E-mail: luke.whitehouse@oneatlas.com

3. Primary contact for departmental correspondence and inquiries, if different than the registrant.

Name: **Atlas Technical Consultants**

Mailing Address: 290 Roberts Street

City/Town: East Hartford State: CT Zip Code: 06108

Business Phone: 860-282-9924 ext.:

Contact Person: Luke Whitehouse Phone: 860-608-8576 ext.

*E-mail: luke.whitehouse@oneatlas.com

*By providing this e-mail address you are agreeing to receive official correspondence from DEEP, at this electronic address, concerning the subject registration. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify DEEP if your e-mail address changes.

4. Engineer(s) or other consultant(s) employed or retained to assist in preparing the annual report.

☐ Check here if additional sheets are necessary, and label and attach them to this sheet.

Name: **Atlas Technical Consultants**

Mailing Address: 290 Roberts Street

City/Town: East Hartford State: CT Zip Code: 06108

Business Phone: 860-608-8576 ext.:

Contact Person: Luke Whitehosue Phone: 860-608-8576 ext.

E-mail: luke.whitehouse@oneatlas.com

Service Provided: **Annual Report Preparation**

5. ☐ Check here if there are adjacent towns or other entities with which implementation of the Stormwater Management Plan is coordinated for a portion of the subject MS4. If so, provide the names of such towns or entities: _____

Part III: Registrant Certification

The registrant *and* the individual(s) responsible for actually preparing the annual report must sign this part. [If the registrant is the preparer, please mark N/A in the spaces provided for the preparer.]

"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 the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I certify that this annual report transmittal is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I certify that the following public notice requirements have been met.

☒ **Annual Report Availability:** At least forty-five (45) days prior to submission of each Annual Report to DEEP, pursuant to Section 4(d)(3) of the MS4 General Permit, each permittee shall make available for public review and comment a draft copy of the complete Annual Report. Comments on the Annual Report may be made to the permittee and are *not* submitted to DEEP. Reasonable efforts to inform the public of this document shall be undertaken by the permittee. Such draft copies shall be made available electronically on the permittee's website for public inspection and copying, consistent with the federal and state Freedom of Information Acts, and shall be made available, at a minimum, at one of the following locations: the permittee's main office or other designated municipal or institution office, a local library or other central publicly available location. Following submission of the Annual Report to DEEP, a copy of the final report shall be made available for public inspection during regular business hours.

I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute.

I also certify that the signature of the registrant, or a duly authorized representative, being submitted herewith complies with section 22a-430-3(b)(2)(B) of the Regulations of Connecticut State Agencies.

Maria E. Capriola	**4-1-2022**
Signature of Chief Elected official or Principal Executive Officer	Date
Maria E. Capriola	**Town Manager**
Printed Name of Chief Elected official or Principal Executive Officer	Title (if applicable)
Kay Lehoux	**4-1-2022**
Signature of Preparer (if different than above)	Date
Kay Lehoux	**Evironmental Scientist**
Printed Name of Preparer	Title (if applicable)

Note: Please submit 1) this completed Transmittal Form and the Fee to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

2) a copy of this completed Transmittal Form and the Annual Report electronically to the following email address: DEEP.StormwaterStaff@ct.gov.

Refer to www.ct.gov/deep/municipalstormwater for information on Annual Report Templates or other additional information concerning the MS4 General Permit.

In the event that electronic submission is not available or possible, please contact the Stormwater Section at 860-424-3025.

2021 MS4 ANNUAL REPORT

Town of Simsbury, Connecticut

MS4 General Permit
Town of Simsbury2021 Annual Report
Permit Number GSM 000050
January 1, 2021 – December 31, 2021

Primary MS4 Contact: Thomas Roy, Director of Public Works, 860-658-3222, troy@simsbury-ct.gov

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

Part I: Summary of Minimum Control Measure Activities

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

1.1 BMP Summary

BMP	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	*The Town's website page pertaining to the MS4 Permit contains links related to stormwater topics.*	*Simsbury MS4 Progam: https://www.simsbury-ct.gov/simsbury-ms4-program*	*Town Website*	*~1,000*	*Provide access to stormwater public*	*Department of Public Works/Tom Roy*	*The Town of Simsbury has multiple resources posted on the Town website related to stormwater topics. These resources include an informative stormwater video, the Town Stormwater Management Plan, and access to the CT NEMO Program.*
1-2 Address education/ outreach for	*The Town has a Pet Waste Management link included on the Town's*	*Pet Waste Management: https://portal.ct.gov/*	*Town Webstie*	*~1,000*	*Educate and provide pet waste*	*Department of Public Works/Tom Roy.*	

pollutants of concern	*website page related to stormwater topics. This link directs the reader to the CTDEEP Pollution Prevention Ideas for Pet Care, which includes several ways to manage pet waste.*	*DEEP/P2/Individual/Its-Greening-Cats-and-Dogs*			*management to the public.*		
Example Additional BMP: *1-3 Hazardous Waste Collection*	*In partnership with Farmington, Canton, Granby, and Avon. Hazardous Waste Collection days are provided per year.*	*Hazardous Waste Collection: https://www.simsbury-ct.gov/sites/g/files/vyhlif1216/f/uploads/household_hazwaste_flyer_2021.pdf*	*Town Website*	*~2,000*	*Educate and provide hazardous waste collections.*	*Department of Public Works/Tom Roy*	*The Town works collectively with Farmington, Avon, Canton, Granby, and Suffield to provide collections for household hazardous wastes. Dates of hazardous collection for 2021 were April 24, June 12, and Oct. 16.*

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

1. Continue Hazardous Waste Collection days with neighboring towns.
2. Update/add links to informational websites and videos that relate to bacterial impairments.

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

2.1 BMP Summary

BMP	**Status** (Complete, Ongoing, In Progress, or Not started)	**Activities in current reporting period**	**Measurable Goal**	**Department / Person Responsible**	**Date completed or projected completion date** (include the start date for anything that is 'in progress')	**Location Posted**	**Additional details**
2-1 Final Stormwater Management Plan publicly available	*Complete*	*Public Notice Posted via Town Website.*	*Provide notice and access to Annual Report*	*Engineering/J. Shea*	*March 30th, 2017*	*Stormwater Management Plan: https://www.simsbury-ct.gov/sites/g/files/vyhlif1216/f/uploads/swmplan_simsbury-rev0.pdf*	
2-2 Comply with public notice requirements for Annual Reports (annually by 2/15)	*Complere*	*Public notice posted via Town Website*	*Provide notice and access to Annual Report*	*Department of Public Works/Tom Roy*	*Annually by Feb. 15th*	*Annual Report: https://www.simsbury-ct.gov/simsbury-ms4-program*	
Example additional BMP: *2-3 Hazardous Waste Collection*	*Ongoing*	*In partnership with Farmington, Canton, Granby, and Avon for hazardous waste collection days.*	*Provide hazardous waste collections*	*Department of Public Works/Tom Roy*	*April 24th, June 12th, October 16th*	*Hazardous Waste Collection: https://www.simsbury-ct.gov/sites/g/files/vyhlif1216/f/uploads/household_hazwaste_flyer_2021.pdf*	

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

Due to concerns surrounding the COVID-19 pandemic, public outreach will be restricted to online activities only. The annual Hazardous Waste Collection, which is provided annually, will be completed in 2022.

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

3.1 BMP Summary

BMP	**Status** (Complete, Ongoing, In Progress, or Not started)	**Activities in current reporting period**	**Measurable Goal**	**Department / Person Responsible**	**Date completed or projected completion date** (include the start date for anything that is 'in progress')	**Additional details**
3-1 Develop written IDDE program (Due 7/1/19)	*Completed*	*The Town completed a written IDDE Programusing the CT IDDE program template*	*Develop written plan of IDDE program*	*Engineering/J. Shea*	*June 27, 2018*	
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas (Due 7/1/20)	*Completed*	*The Town continues a QA/QC process of reviewing GIS system and editing as necessary*	*All outfalls mapped*	*Engineering/J. Shea*	*Fall 2017*	*Mapping and data will be continually maintained as outfalls are tested,repaired, etc.*
3-3 Implement citizen reporting program (Ongoing)	*Completed*	*Maintained reporting via Department of Public Works phone and Town website.*	*Provide a reporting mechanism and log.*	*Department of Public Works/Tom Roy*	*Completed under previous permit.*	*Citizens may report illicit discharges as they would report other concerns to the Department of Public Works.*
3-4 Establish legal authority to prohibit illicit discharges (Due 7/1/19)	*Completed*	*The Town wrote and adoped a Stormwater Connection Ordinance*	*Adopt ordinance*	*Engineering/J. Shea*	*June 11th, 2018*	*Five (5) members of the Town staff are designatedas authorized enforcement officers.*
3-5 Develop record keeping system for IDDE tracking (Due 7/1/17)	*Ongoing*	*The Town continues to maintain a list of reports that include IDDE.*	*Maintain list.*	*Department of Public Works/ Tom Roy*	*Completed under previous permit.*	*Town staff have determined that the current system is sufficient due to the limited number of illicit discharges reported.*
3-6 Address IDDE in areas with pollutants of concern	*In Progress*	*Dry weather screening was conducted at 39 outfalls in 2021.* *Wet weather screen was conducted at six(6) priority outfalls.* *Catchment Rankings have been completed. SSOs are under investigation.*	*Wet weather testing and additional investigation as necessary.*	*Deaprtment of Public Works/Tom Roy*	*Ongoing-Started in 2021*	*Atlas assists the Town with sampling and inspections at outfalls to impaired waterbodies, as well as dry weather inspections at outfalls related to the Town MS4 infrastructure.*

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

-Continue wet weather sampling at priority outfalls discharging to impaired waters.
-Continue follow-up dry weather screening/testing.
-Respond to any illicit discharge complaints.

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)
3 Tunxis Road	8/28/2012	Unnamed Brook/Farmington River	Unknown	Broken forcemain	Repaired by Simsbury WPCA	
17 Firetown Road	4/05/2013	Hop Brook/Farmington River	<50 gallons	Private Lateral		
4 Middle Lane	4/27/2014	Stebbins Brook/Farmington River	<50 gallons	Private System	Line Cleaned by Simsbury WPCA	
3 Tunxis Road	6/19/2014	Unnamed Brook/Farmington River	Unknown	Cracked AC forcemain	Repaired by Simsbury WPCA	
4 Middle Lane	9/25/2014	Stebbins Brook/Farmington River	<50 gallons	Private System		
536 Hopmeadow Street	11/10/2014	Stebbins Brook/Farmington River	Unknown	Private System	Line cleaned by Simsbury WPCA	
536 Hopmeadow Street	8/22/2015	Stebbins Brook/Farmington River	<50 gallons	Private System	Line cleaned by Simsbury WPCA	
536 Hopmeadow Street	11/13/2015	Stebbins Brook/Farmington River	Unknown	Private System		
536 Hopmeadow Street	6/07/2017	Stebbins Brook/Farmington River	Unknown	Private System	Line cleaned by Simsbury WPCA	
50 Longview Drive	4/01/2018		51-500 gallons	Broken forcemain at Pump Station.	Repaired by Simsbury WPCA	

3 Tunxis Road	12/3/2018	Farmington River	500-1,000 gallons	Contractor excavating damaged forcemain	Repaired by Simsbury WPCA	
536 Hopmeadow Street	12/16/2020	Stebbins Brook/Farmington River	Unknown	Private System	Line cleaned by Simsbury WPCA	
West Mountain Road	6/10/2021	Unnamed brook	~ten -10-gallon containers	Various herbicides and fungicides alongside the road were discovered.	Recovered and properly disposed of by the DPW.	
9 Mountain View Road	7/7/2021	Russell Brook	~17,953	Flooded basement/Homeowner and/or Kapura General Contractors, Inc.	A total of 375-gallons of waste liquid and 55ft^3 were removed from catch basins associated with the IDDE. Refer to **Appendix IV** for the Spill Report.	Refer to **Appendix IV**for Sampling Data and interpretations.
15 Oakhurst Road	2021	Unnamed Brook	Unknown	Private System Failure	An engineering plan has been approved by the FVHD, and is currently awaiting installation.	

3.4 Provide a summary of actions taken to address septic failures 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
Farmington Valley Health District (FVHD)	*15 Oakhurst Road*	*An engineering plan has been approved by FVHD, and is currently awaiting installation.*	*Potential for impact to an unknown brook-further catchment investigation is necessary.*	*FVHD*
Farmington Valley Health District (FVHD) receives and maintains records of septic failures along with actions taken. All sanitary sewer connections and system extensions are managed by the Simsbury Water Pollution Control Authority (WPCA) .The sanitary sewer system has been expanded as required, with a focus on areas of known septic failures. The Town will begin to formally coordinate with WPCA regarding records of septic failures. In coordination with Atlas, the Town is currently investigating any septic repairs and/or failures through the Farmington Valley Health District as well.				

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

Residents of the Town of Simsbury can report illicit discharges to the Department of Public Works via https://www.simsbury-ct.gov/users/troy/contact . The DPW staff then performs investigations. The engineering department provides support to the DPW staff for locating hard-to-find sources of discharge. Digital records on the town server are used for tracking illicit discharges.

3.6 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	300
Estimated or actual number of interconnections	20
Outfall mapping complete	95% *(ongoing updates throughout permit lifetime.)*
Interconnection mapping complete	70% (est.) - *Mapping of CTDOT interconnections has been completed. Interconnection mapping with surrounding Towns is ongoing.*
System-wide mapping complete (detailed MS4 infrastructure)	95% (ongoing updates throughout permit lifetime.)
Outfall assessment and priority ranking	95% (est.)- *Outfalls to impaired waterbodies have been inspected and sampled. Six (6) outfalls have been chosen as priority outfalls. Priority rankings have also been mapped, and may change throughout the lifetime of the permit based on future data.*
Dry weather screening of all High and Low priority outfalls complete	*60% (est.)-All dry weather screening at outfalls in high priority outfalls and discharging to impaired waterbodies have been investigated. Outfalls throughout the*

	entirety of the Town are continued to be investigated.
Catchment investigations complete	90% (est.) *All catchments (utilizing basins for assessment purposes), have been ranked and prioritized. Due to the lengthy time needed to investigate all septic repairs and/or failures, the Refer to* ***Appendix III*** *for the completed Catchment Investigations)*
Estimated percentage of MS4 catchment area investigated	45%

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 it is given (minimum once per year).

Best Management Practice training is provided to all DPW staff for new procedures, as determined by the Director of Public Works.

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

4.1 BMP Summary

BMP	**Status** (Complete, Ongoing, In Progress, or Not started)	**Activities in current reporting period**	**Measurable Goal**	**Department / Person Responsible**	**Date completed or projected completion date** (include the start date for anything that is 'in progress')	**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 Town is working towards updating and/or revising land use reglations as they pertain to the MS4 permit.*	*Revise land-use regulations.*	*Planning*	*In Progress-Started in June 2018.*	*A resolution to create, implement, and enforce regulations was adopted by the Board of Selectmen on June 11th, 2018.*
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval (Ongoing)	*Completed*	*Not Applicable*	*Utilize interdepartmental coordination in site plan review and approval as it pertains to the MS4 permit.*	*Planning*	*Completed under previous permit.*	*Applications are received by the Planning Department, and are circulated to the appropriate departments.*
4-3 Review site plans for stormwater quality concerns (Ongoing)	*Ongoing*	*Six (6) site plan applications were reviewed for stormwater quality concerns, and provided recommendations, if necessary, for stormwater quality concerns.*	*Issue review comments, and review revised plans for MS4 compliance.*	*Engineering/J. Shea*	*Completed under previous permit-ongoing throughout permit life.*	
4-4 Conduct site inspections (Ongoing)	*Ongoing*	*Active sites are monitored throughout the year by the Planning Department.*	*Document inspections and actions.*	*Planning/Mr.Glidden*	*Completed under previous permit-ongoing throughout the permit life.*	
4-5 Implement procedure to allow public comment on site development (Ongoing)	*Ongoing*	*Planning, Zoning, and Conservation Commission meetings allow for public comment on all applications.*	*Provide an opportunity for public comment/involvement.*	*Planning*	*Completed under previous permit-ongoing throughout the permit life.*	
4-6 Implement procedure to notify developers about DEEP construction stormwater permit (Ongoing)	*Completed*	*Continue notification to developers via staff comments.*	*Include comment to applications.*	*Planning/Engineering*	*Completed under previous permit-ongoing throughout permit life..*	

Example additional BMP: *4-7 Require Waste Control On-Site*	*In progress*	*The Town currently requires permit on an as-needed basis. The Town also conducts inspections throughout construction as well.*	*Notify devlopers about DEEP permitting obligations*	*Planning/Engineering.*	*Completed-continued throughout permit lifetime.*	

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

Any approved project is required to produce an erosion and sedimentation control plan.

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

5.1 BMP Summary

BMP	**Status** (Complete, Ongoing, In Progress, or Not started)	**Activities in current reporting period**	**Measurable Goal**	**Department / Person Responsible**	**Date completed or projected completion date** (include the start date for anything that is 'in progress')	**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)	*Ongoing*	*Currently, LID is a suggested practice on all sizable projects throughout the Town, in order to obtain zero output to the Town's DCIA.*	*Adopt BMPs for any activity, operation, or facility which may cause or contribute to the pollution or contamination of stormwater, the storm drain system, or waters of the U.S.*	*Planning*	*Ongoing-started in 2018*	
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects (Due 7/1/22)	*Completed*	*All site designs are required to maintain pre-construction flows.*	*Enforce regulations and guidelines of LID and runoff reductions.*	*Engineering/Department of Public Works*	*June 30th, 2021*	
5-3 Identify retention and detention ponds in priority areas (Due 7/1/20)	*Completed*	*Surface detention facilities and most drywells were added to GIS.*	*Compile a list and complete mapping of Town-owned detention basins.*	*Engineering/Department of Public Works*	*July 1, 2019*	

5-4 Implement long-term maintenance plan for stormwater basins and treatment structures (Ongoing)	*Completed*	*The Department of Public Works inspects facilities annually, and performs maintenance as needed.*	*Annually inspect and maintatin facilities.*	*Department of Public Works*	*Completed under previous permit-ongoing throughout permit life.*	
5-5 DCIA mapping (Due 7/1/20)	*Completed*	*DCIA was calculated for the Town with the assistance of Nathan L. Jacobson & Associates. Atlas has mapped the DCIA areas.*	*Provide an understandin of the Town's overall DCIA to the MS4 infrastructure.*	*Engineering/J. Shea*	*August 2021*	
5-6 Address post-construction issues in areas with pollutants of concern	*In Progress*	*In post-construction areas, if erosion or high accumulation of sedimentation are found during the annual inspections conducted under the long-term maintenance plan, the Town of Simsbury will prioritize these areas for DCIA retrofit projects.*	*Address post-construction areas where erosion or high accumulation of sedimentation are found during annual inspections.*	*Engineering/Department of Public Works*	*Ongoing-Started in 2021*	

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

1. The Town of Simsbury will continue to monitor, clean, and repair settling/silting basins, catch basins, outfalls, swales, etc.
2. Local permits for the Town Hall and Peroforming Arts Center paking lots were permitted in 2021. These are projected to be completed in 2022.

5.3 Post-Construction Stormwater Management reporting metrics

For details on this requirement, visit https://nemo.uconn.edu/ms4/tasks/post-construction.htm. Scroll down to the DCIA section.

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	92.51 acres
DCIA disconnected (redevelopment plus retrofits)	acres this year (TBD) / acres total (TBD)
Retrofit projects completed	Under development
DCIA disconnected	% this year (TBD) / % total since 2012 (TBD)
Estimated cost of retrofits	$TBD
Detention or retention ponds identified	10/10

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

The DCIA Mapping was conducted in substantial accordance with the methodologies presented in the October 25, 2017 UConn CLEAR Webinar entitled CT MS4 Mapping Details, Clarifications and Tools, the October 19, 2018 UConn CLEAR Workshop entitled CT MS4 Mapping Workshop as well as information contained in the EPA reference entitled Estimating Change in Impervious Area (IA) and Directly Connected Impervious Area (DCIA) for Massachusetts Small MS4 Permit utilizing Sutherland equations.

The DCIA computations were prepared utilizing Connecticut Environmental Conditions Online MS4 base mapping prepared by UConn CLEAR.

Impaired waters were determined from the report entitled 2018 Integrated Water Quality Report, dated August 01, 2019, prepared by the State of Connecticut Department of Energy and Environmental protection.

The method to determine the 2012 baseline DCIA was to first compile the CT DEEP drainage basin characteristics in a Microsoft Excel spreadsheet. Information on the Connecticut Environmental Conditions Online MS4 Mapping was used to determine the impervious area breakdown as Buildings, Roads and Other. For CT DEEP drainage basins that fell in two or more municipalities the advanced mapping tab of Connecticut Environmental Conditions Online was used to delineate and determine the applicable town CT DEEP basin area. It was assumed that the entire drainage basin characteristics were directly proportional to the applicable town CT DEEP drainage basin area.

In that ConnDOT has a MS4 Stormwater Program which applies to state owned roads and facilities which the town has no control over, it was decided that the impervious state road area would be determined and deducted from the total impervious road area for each CT DEEP drainage basin as the impervious road areas associated with state highways and facilities constitutes a considerable portion of the total town impervious road area.

The ConnDOT state highway, parking lot and facility impervious road areas were then determined for each CT DEEP drainage basin. The ConnDOT state highway, parking lot and facility impervious road areas were then deducted from the total town impervious road area to determine a town owned impervious road area for each CT DEEP drainage basin. Subsequent to the above deduction, the total impervious area in acres and percentage was then recomputed for each CT DEEP drainage basin.

The DCIA formula for each of four development types was then utilized to compute the DCIA. The impervious area in acres was assigned to each of the four Sutherland equations which were modified for the northeastern United State. The Sutherland equation to be utilized was determined using the following methodology:

For impervious percentage less than 6%:
100% of the impervious area was assigned to the slight connectivity Sutherland Equation where DCIA% = 0.01*(IA%)2.0

For an impervious area between 6% and 12 %:
50% of the area was assigned to the partial connectivity Sutherland Equation where DCIA% = 0.04*(IA%)1.7
and
50% was assigned to the average connectivity Sutherland Equation where DCIA% = 0.10*(IA%)1.5

For an impervious area between 12% and 18 %:
50% of the area was assigned to the average connectivity Sutherland Equation where DCIA% = 0.10*(IA%)1.5
and
50% was assigned to the high connectivity Sutherland Equation where DCIA% = 0.40*(IA%)1.2

For an impervious area of greater than 18 %:
100% of the area was assigned to the high connectivity Sutherland Equation where DCIA% = 0.40*(IA%)1.2

The DCIA for each CT DEEP drainage basin was then summed to determine the entire town DCIA. Subsequent to completion of 2012 Baseline DCIA computations, UConn CLEAR Mapping available on Connecticut Environmental Conditions Online (CT ECO) was revised to separate road impervious area into State Road Impervious Area (Acres) and Town Road Impervious Area (Acres).

The original 2012 Baseline DCIA computations were revised utilizing the UConn CLEAR State Road Impervious Area (Acres) and Town Road Impervious Area (Acres).

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

6.1 BMP Summary

BMP	**Status** (Complete, Ongoing, In Progress, or Not started)	**Activities in current reporting period**	**Measurable Goal**	**Department / Person Responsible**	**Date completed or projected completion date** (include the start date for anything that is 'in progress')	**Additional details**
6-1 Develop/implement formal employee training program (Ongoing)	*Completed*	*All DPW personnel are trained with proper stormwater management procedures and spill control.*	*Eliminate non-stormwater discharges into the storm sewers*	*Engineering/Department of Public Works/Planning*	***ATC:*** *Annual Staff Training- 09/22/2020* ***J. Shea:*** *Engineering- East Lyme Stormwater BMP and MS4 Workshop: 4/27/2018* *Challenges and Practical Solutions to MS4s: 5/23/2018* *In-House training by Tighe&Bond: 10/09/2018* *CT MS4 Mapping Workshop: 10/19/2018*	
6-2 Implement MS4 property and operations maintenance (Ongoing)	*Completed*	*The Parks Department revised the carry-in/out policy from 2017 in response to the deposition of trash at key parks. Most parks remain carry-in/out.*	*Eliminates/minimizes spills and/or pollutant releases to the environment and navigable waterways.*	*Parks/Deaprtment of PublicWorks*	*Ongoing throughout permit life.*	*Municipally-owned or operated properties, parks, and other facilities are maintained to minimize the discharge of pollutants to the MS4.*

						Eleven (11) stormwater infiltrators were installed throughout various locations on Town-owned properties and/or roads. Mapping of the newly installed stormwater infiltrators will be completed in 2022.
6-3 Implement coordination with interconnected MS4s	*Ongoing*	*Coordination of the MS4 interconnection mapping began in 2019. CTDOT interconnections have been mapped, and coordination between the Town and surrounding areas is ongoing.*	*Update the GIS system with interconnected lcoations.*	*Engineering/J. Shea*	*Ongoing-Started in 2021*	*GIS updates will continue with assistance from New England Geosystems, as well as Atlas.*
6-4 Develop/implement program to control other sources of pollutants to the MS4	*Completed*	*A spill response team has been developed in coordination between the Town and Atlas.*	*Reduce other possible pollutants to the MS4.*	*Department of Public Works/Atlas*	*October 1, 2020-ongoing throughout permit life.*	*A plan of action for emergency spills has been created, and is as follows: The Town will immediately notify Atlas of a spill. Atlas will provide spill response and guidance, such as coordinating the elimination of any spill flow to navigable waterways, spill cleanup, reporting, etc.*
6-5 Evaluate additional measures for discharges to impaired waters*	*Ongoing*	*Wet weather sampling events have been conducted, and priority outfalls were identified throughout the Town. Dry weather inspections are continuing to be conducted for the entirety of the Town. As catchments are investigated, the Town will coordinate with Atlas on future measures pertaining to the reduction of bacteria discharge to impaired waters.*	*Pending further investgations, create a program or plan of action to reduce bacterial discharge to impaired waters.*	*Engineering/J. Shea*	*Ongoing-Started in 2020*	*Based on wet-and-dry weather testing, the Town will implement additional measures including but not limited to a retrofit program or source management to correct the problem at municipally-owned or operated facilities, as well as IDDEs, where applicable.*

6-6 Track projects that disconnect DCIA (Ongoing)	*Ongoing*	*A Stormwater Retrofit Program has been drafted, and will be utilized as a method of tracking future DCIA disconnects.*	*Track DCIA disconnects.*	*Engineering/J. Shea*	*Ongoing-Started in 2021*	*The Town will utilize the Impervious Cover Tracking Sheet created by NEMO. This will allow the Town to track Project information, new developments, redevelopment, retrofits, changes in impervious cover, and cumulative totals.*
6-7 Implement infrastructure repair/rehab program (Due 7/1/21)	*Ongoing*	*There were no infrastrucures found within the Town that required repair or rehabilitation. The Town continues to assess and implement repairs or rehabilitation on an as-needed basis.*	*Reduce/ eliminate causes or contributions of pollution or contamination of stormwater, the storm drain system, or waters of the U.S.*	*Department of Public Works/Tom Roy*	*Ongoing throughout permit life.*	
6-8 Develop/implement plan to identify/prioritize retrofit projects (Due 7/1/20)	*Ongoing*	*A Stormwater Retrofit Program has been drafted. Prioritized areas and/or sites were identified based off of DCIA calculations, impaired waterbodies, current stormwater infrastructure, and the MEP of the Town.*	*Develop retrofit projects*	*Planning/Engineering*	*Ongoing-Started in 2021*	*See "Retrofit Program"*
6-9 Implement retrofit projects to disconnect 2% of DCIA (Due 7/1/22)	*Ongoing*	*As Retrofit Projects are identified, the Town will utilize the Impervious Cover Tracking Sheet to track and work towards disconnecting 2% of DCIA, or the MEP of the Town.*	*Track and reduce DCIA impacts.*	*Department of Public Works/Tom Roy*	*Ongoing-Started in 2021*	*See "Retrofit Program"*
6-10 Develop/implement street sweeping program (Ongoing)	*Completed*	*The Department of Public Works sweeps all roads in the Town of Simsbury following the winter season.*	*Track swept lane miles.*	*Department of Public Works/Tom Roy*	*Completed under previous permit-ongoing throughout permit life.*	
6-11 Develop/implement catch basin cleaning program (Ongoing)	*Completed*	*Public Woks utilizes Shaw Vac, a third-party vendor to clean 20% of catch basins each year.*	*Track material usage, and update plan as needed.*	*Department of Public Works/Tom Roy*	*Completed under previous permit-ongoing throughout permit life.*	

6-12 Develop/implement snow management practices (Due 7/1/18)	*Completed*	*Snow management per the Town's MS4 plan is implemented on an annual basis.*	*Track material usage, and update plan as needed.*	*Department of Public Works/Tom Roy*	*Completed under previous permit-ongoing throughout permit life.*	*The Town of Simsbury has ceased sand application to Simsbury-owned roadways. Roadway de-icing and anti-icing procedures are utilized to minimize discharge. Simsbury also maintains a record of the applications of anti-icing and/or de-icing chemicals used.*

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

General inspections are to be performed throughout the year, with support from Atlas. Training to applicable employees will be completed as well.

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	Yes / 1. CT Stormwater Pond Retrofit Workshop (Engineering Staff)- July 26th, 2021. 2. Annual training for the DPW staff is scheduled in the spring of 2022.
Street sweeping	
Curb miles swept	328 miles
Volume (or mass) of material collected	497 cu.yds.
Catch basin cleaning	

Total catch basins in priority areas (value will be less than or equal to total catch basins town or institution-wide)	3,999
Total catch basins town- (or institution-) wide	4,071
Catch basins inspected	690
Catch basins cleaned	690
Volume (or mass) of material removed from all catch basins	306 cu.yds
Volume removed from catch basins to impaired waters (if known)	.44 cu.yds
Snow management	
Type(s) of deicing material used	Treated road salt
Total amount of each deicing material applied	2,103.05 tons
Type(s) of deicing equipment used	
Lane-miles treated (A lane-mile is a mile of roadway in a single driving lane)	165
Snow disposal location	
Staff training provided on application methods & equipment	December 2020
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	N/A
Reduction in turf area (since start of permit)	N/A
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	
Cost of mitigation actions/retrofits	TBD

6.4 Catch basin cleaning program

Provide any updates or modifications to your catch basin cleaning program.
The Town of Simsbury is currently operating on an approximate 3-year cycle for catch basin cleanings. Excessive depositing of sediment in structures has not been encountered since the Town ceased the use of sand to treat roadways during the winter months. Any structures that are determined to have excessive depositing of sediment will have a shorter cycle for cleanings.

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)
The Stormwater Retrofit Program was drafted by the Town and Atlas in 2021. The Program was designed to provide guidance on implementing LID, runoff reduction measures, or other means to disconnect or improve stormwater quality. To meet the 2% MEP disconnection goal, DCIA calculations, Urbanized areas, Impaired Waterbodies, and Catchment Rankings were utilized in identifying and prioritizing areas and/or projects to be selected for retrofits. DCIA by Catchment was identified utilizing the the following formulas: **High Connectivity** DCIA%=0.4*(IA %)^1.2 Directly Connected Area= (DCIA)(IC Acres) **Average Connectivity**

DCIA%=0.1*(IA%)^1.5
Directly Connected Area= (DCIA)(IC Acres)

Partial Connectivity
DCIA%=0.04*(IA%)^1.7
Directly Connected Area= (DCIA)(IC Acres)

Slight Connectivity
DCIA%=0.01*(IA%)^2.0
Directly Connected Area= (DCIA)(IC Acres)

The Average Connectivity calculation was utilized in assessing the Town's DCIA connectivity, based on the majority of land utilizing defined as agricultural and/or rural, minor residential communities, and minor-to-moderate commercial or indudustrialized areas. Based on the Average Connectivity calculations for each catchmet, no catchments were identified with a connectivity of 11% or greater.

Catchments were then prioritized utilizing the total urbanized area per catchment. Atlas was provided with a shapefile of the 2010 Urbanized Areas for the Town from the 2010 Census or Urban Classificiations, which was improted into ArcGIS for calculation purposes. Utilizing the Overlay-Intersect Tool, Atlas was able to extract the total Urbanized Area acreage per catchment, and then calculate the Urbanized area percentage per catchment utilizing the following formula: Based on these calculations, 49 catchments were identified with Urbanized Areas

*Urbanized Area (Ac.)/Basin Total Acreage*100*

22 catchments containing impaired waterbodies were identified for the Town.

Catchment Priority Rankings were conducted for all Sub-Basins in the Town. Multiple factors were taken into consideration when scoring each catchment, including but not limited to DCIA calculations, previous screening results, age of development/structures, density of generating sites, nearby sewer repairs, urbanized areas, and impaired waterbodies. 50 catchmetns were identified as Problem or High Priority.

Specific criteria was utilizing in defining priority areas for the implementation of non-municipal retrofit projects. The criteria utilized in defining priority areas of non-municipal retrofit projects included High or Problem catchment priority rankings, catchments containing an impaired waterbody, and catchments identified with an urbanized area. Utilizing ArcGIS, Atlas extracted catchments where two (2) or more of the aforementioned criteria were found. Community outreach or project redevelopment is encouraged in these defined catchments.

Municipal-owned retrofit projects were identified for several schools, and other municipal-owned sites such as the Fire Department, Town Hall, etc. These locations were selected based on location and plausibility of future disconnects. Refer to the attached Stormwater Retrofit Program for further information on these projects.

The draft Stormwater Retrofit Program is attached to this Annual Report.

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)

The Stormwater Retrofit Program, included in **Attachment V,** is designed to comply with *Section (6) (B) (ii)* of the CTDEEP 2017-2022 MS4 Permit. The Town of Simsbury will work towards disconnecting existing DCIA. The initial focus of the Stormwater Retrofit Program will first be applied to Town-owned properties, parks, and other facilities, followed by a focus of non-municipal facilities, parks, communities, or other redevelopments. Progress towards the DCIA disconnects will be tracked and continuously updated, with a goal to disconnect one percent (1%) of DCIA or to the MEP each year following the fifth year of the MS4 permit.

Part II: Impaired waters investigation and monitoring

1. Impaired waters investigation and monitoring program

For details on this requirement, visit https://nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the yellow column of the Monitoring comparison chart and the Impaired waters monitoring flowchart.

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

Nitrogen/ Phosphorus ☐ Bacteria ☒ Mercury ☐ Other Pollutant of Concern ☐

1.2 Describe program status

Discuss 1) the status of monitoring work completed, 2) a summary of the results and any notable findings, and 3) any changes to the Stormwater Management Plan based on monitoring results.
The Town of Simsbury began wet weather testing in 2018. Ten (10) outfalls were monitored for Bacteria during two eligible storm events in 2018. Twenty-three (23) additional outfalls were monitored in 2019 for Bacteria. The first two (2) years of wet weather testing was intended to achieve a well-represented sample of the drainage systems discharging from the two (2) impaired streams in the Town of Simsbury. All outfalls monitored in 2019 tested positive for bacteria. Twenty-eight (28) outfalls were monitored during dry-weather inspections in 2020. Thirty-nine (39) outfalls were monitored during dry-weather inspections in 2021. Seventeen (17) outfalls to impaired waterbodies were sampled during storm events, including six (6) priority outfalls.

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

2.1 Screening data

Complete the table below to report data for any wet weather sampling completed for MS4 outfalls that discharge directly to a stormwater impaired waterbody during the reporting period. For details on this requirement, visit www.nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the yellow column of the Monitoring comparison chart and the Impaired waters monitoring flowchart.

Each Annual Report will add on to the previous year's data showing a cumulative list of sampling data. **You may also attach an excel spreadsheet with the same data rather than copying it into this table**. If you do attach a spreadsheet, please write "See Attachment" below.

Outfall ID	**Latitude / Longitude**	**Sample date**	**Parameter** (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	**Results**	**Name of Laboratory (if used)**	**Follow-up required? ***
OF-910	*41.88905306/ -72.80819448*	6/25/2019	Bacteria	E. Coli- 98 (col/100 mL)	Phoenix	No
OF-911	*41.8886954/ -72.80846182*	6/25/2019	Bacteria	E. Coli- **571** (col/100 mL)	Phoenix	Yes
OF-168	*41.88823351/ -72.8089843*	6/25/2019	Bacteria	E. Coli- 98 (col/100 mL)	Phoenix	No

OF-169	*41.88774205/ -72.80961694*	6/25/2019	Bacteria	E. Coli- **3,080** (col/100 mL)	Phoenix	Yes
OF-380	*41.88750962/ -72.80344765*	6/25/2019	Bacteria	E. Coli- **1,580** (col/100 mL)	Phoenix	Yes
OF-379	*41.88884969/ -72.80658787*	6/25/2019	Bacteria	E. Coli- 10 (col/100 mL)	Phoenix	No
OF-378	*41.88739613/ -72.80831462*	6/25/2019	Bacteria	E. Coli- **4,110** (col/100 mL)	Phoenix	Yes
OF-902	*41.88718797/ -72.81036964*	6/25/2019	Bacteria	E. Coli- **3,650** (col/100 mL)	Phoenix	Yes
OF-968		6/25/2019	Bacteria	E. Coli- 144 (col/100 mL)	Phoenix	No
OF-501	*41.87273507/ -72.83235225*	6/25/2019	Bacteria	E. Coli- 408 (col/100 mL)	Phoenix	No
OF-503	*41.87272976/ -72.83229093*	6/25/2019	Bacteria	E. Coli- **723** (col/100 mL)	Phoenix	Yes
OF-495	*41.87440234/ -72.83293641*	6/25/2019	Bacteria	E. Coli- 364 (col/100 mL)	Phoenix	No
OF-504	*41.87451348/ -72.83285623*	6/25/2019	Bacteria	E. Coli- **816** (col/100 mL)	Phoenix	Yes
OF-301	*41.88259452/ -72.83419684*	6/25/2019	Bacteria	E. Coli- 10 (col/100 mL)	Phoenix	No
OF-35	*41.88778586/ -72.84058095*	6/25/2019	Bacteria	E. Coli- **6,870** (col/100 mL)	Phoenix	Yes
OF-37	*41.88568897/ -72.84641664*	6/25/2019	Bacteria	E. Coli- 189 (col/100 mL)	Phoenix	No
OF-36	*41.8852679/ -72.84631145*	6/25/2019	Bacteria	E. Coli- 63 (col/100 mL)	Phoenix	No
OF-293	*41.88509391/ -72.84514983*	6/25/2019	Bacteria	E. Coli- **7,700** (col/100 mL)	Phoenix	Yes
OF-318	*41.88613866/ -72.84985181*	6/25/2019	Bacteria	E. Coli- **4,350** (col/100 mL)	Phoenix	Yes
OF-38	*41.88370386/ -72.84949036*	6/25/2019	Bacteria	E. Coli- 464 (col/100 mL)	Phoenix	No
OF-58	*41.88474086/ -72.85531201*	6/25/2019	Bacteria	E. Coli- **1,480** (col/100 mL)	Phoenix	Yes
OF-55	*41.88326701/ -72.85684297*	6/25/2019	Bacteria	E. Coli- **3,650** (col/100 mL)	Phoenix	Yes
OF-310	*41.88107918/ -72.851826*	6/25/2019	Bacteria	E. Coli- **1,310** (col/100 mL)	Phoenix	Yes
OF-136	*41.90866471/ -72.76008183*	6/14/2021	Bacteria	E. coli- **2,990** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-139	*41.91110774/ -72.76177019*	6/14/2021	Bacteria	E. coli- **7,700** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-133	*41.91185769/ -72.76400447*	6/14/2021	Bacteria	E. coli- **6,130** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-132	*41.91224077/ -72.76441768*	6/14/2021	Bacteria	E. coli- **24,200** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes

OF-131	*41.91040665/ -72.77161854*	6/14/2021	Bacteria	E. coli- 132 (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	
OF-877	*41.90885745/ -72.77293044*	6/14/2021	Bacteria	E. coli- **4,350** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-129	*41.90645829/ -72.77391842*	6/14/2021	Bacteria	E. coli- **5,480** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-870	*41.90492486/ -72.77430193*	6/14/2021	Bacteria	E. coli- **19,900** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-715	*41.88540684/ -72.79728946*	6/14/2021	Bacteria	E. coli- **644** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-713	*41.88482698/ -72.79817292*	6/14/2021	Bacteria	E. coli- **24,200** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-160	*41.88502542/ -72.79905452*	6/14/2021	Bacteria	E. coli- **809** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-877	*41.90885745/ -72.77293044*	9/1/2021	Bacteria	E. coli- **3,080** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-129	*41.90645829/ -72.77391842*	9/1/2021	Bacteria	E. coli- **15,500** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-132	*41.91224077/ -72.76441768*	9/1/2021	Bacteria	E. coli- **6,130** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-870	*41.90492486/ -72.77430193*	9/1/2021	Bacteria	E. coli- **14,100** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-139	*41.91110774/ -72.76177019*	9/1/2021	Bacteria	E. coli- **>24,200** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes
OF-713	*41.88482698/ -72.79817292*	9/1/2021	Bacteria	E. coli- **9,210** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix	Yes

Follow-up investigation required (last column) if the following pollutant thresholds are exceeded:

Pollutant of concern	Pollutant threshold
Nitrogen	Total N > 2.5 mg/l
Phosphorus	Total P > 0.3 mg/l
Bacteria (fresh waterbody)	• E. coli > 235 col/100ml for swimming areas or 410 col/100ml for all others • Total Coliform > 500 col/100ml
Bacteria (salt waterbody)	• Fecal Coliform > 31 col/100ml for Class SA and > 260 col/100ml for Class SB • Enterococci > 104 col/100ml for swimming areas or 500 col/100 for all others
Other pollutants of concern	Sample turbidity is 5 NTU > in-stream sample

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

Provide the following information for outfalls exceeding the pollutant threshold.

Outfall ID	Status of drainage area investigation	Control measure to address impairment
All above listed outfalls	*Investigations are being conducted on the surrounding drainage area, with a focus on surrounding runoff from agricultural land, septic repairs, and septic failures.*	*Potential measures that may be used in addressing bacterial impairments include aquatic vegetative buffers, control runoff measures implemented. Discussions are underway within the Town on how to address potential septic failures or repairs at privately-owned properties.*

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

Once outfall sampling 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, 2021. **You may also attach an excel spreadsheet with the same data rather than copying it to this table.** If you do attach a spreadsheet, please write "See Attachment" below.

Outfall	Latitude / Longitude	Sample Date	Parameter(s)	Results	Name of Laboratory (if used)
OF-877	*41.90885745/ -72.77293044*	6/14/2021	Bacteria	E. coli- **4,350** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix
OF-129	*41.90645829/ -72.77391842*	6/14/2021	Bacteria	E. coli- **5,480** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix
OF-132	*41.91224077/ -72.76441768*	6/14/2021	Bacteria	E. coli- **24,200** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix
OF-870	*41.90492486/ -72.77430193*	6/14/2021	Bacteria	E. coli- **19,900** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix
OF-139	*41.91110774/ -72.76177019*	6/14/2021	Bacteria	E. coli- **7,700** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix
OF-713	*41.88482698/ -72.79817292*	6/14/2021	Bacteria	E. coli- **24,200** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix
OF-877	*41.90885745/ -72.77293044*	9/1/2021	Bacteria	E. coli- **3,080** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix
OF-129	*41.90645829/ -72.77391842*	9/1/2021	Bacteria	E. coli- **15,500** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix
OF-132	*41.91224077/ -72.76441768*	9/1/2021	Bacteria	E. coli- **6,130** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix

OF-870	*41.90492486/ -72.77430193*	9/1/2021	Bacteria	E. coli- **14,100** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix
OF-139	*41.91110774/ -72.76177019*	9/1/2021	Bacteria	E. coli- **>24,200** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix
OF-713	*41.88482698/ -72.79817292*	9/1/2021	Bacteria	E. coli- **9,210** (MPN/100 mL) T. coli- **>24,200** (MPN/100 mL)	Phoenix

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).

1. Catchment ID (DEEP Basin ID)	2. Category	3. Rank
4300-00-5+R10	Problem	8
4300-00-5+R11	Problem	8
4300-00-5+R12	Problem	9
4300-00-5+R13	Problem	9
4300-00-5+R14	Problem	8
4300-00-5+R15	Problem	7
4300-00-5+R16	Problem	8
4300-00-5+R17	Problem	9
4300-00-5+R18	Problem	9
4300-00-5+R19	High Priority	10
4300-00-5+R20	Problem	8
4300-00-5+R21	Problem	9
4300-00-5+R22	Problem	9
4300-00-5+R8	Problem	9
4300-00-5+R9	Problem	9
4300-32-1	High Priority	13
4300-33-1	High Priority	10
4300-34-1	Problem	8
4300-35-1	Problem	6
4300-36-1*	Problem	8
4300-37-1	Problem	9
4300-38-1	Problem	6
4300-39-1	High Priority	13
4300-39-2-R1	Problem	7
4300-40-1	Low Priority	5
4300-41-1	Problem	9
4300-42-1	High Priority	11
4300-43-1	Problem	9
4300-44-1	High Priority	14
4300-44-1-L1	High Priority	14
4300-47-1	Low Priority	5
4309-02-1	Low Priority	5
4309-03-1	Low Priority	5

4317-00-1	High Priority	17
4317-00-2-L1	High Priority	17
4317-00-2-R1	High Priority	15
4317-01-1	High Priority	11
4318-00-1	High Priority	17
4318-00-1-L1	High Priority	15
4318-00-2-R1	High Priority	16
4318-00-2-R2	High Priority	19
4318-00-3-R1	High Priority	12
4318-00-3-R2	High Priority	17
4318-01-1	Problem	9
4318-02-1	Problem	8
4318-02-1-L1	Problem	6
4318-03-1	High Priority	10
4318-03-2-R1	High Priority	11
4318-04-1	High Priority	11
4318-04-1-L1	High Priority	10
4318-05-1	High Priority	11
4318-06-1	Problem	7
4319-10-1	Problem	8
4319-10-2-L1	Problem	7
4319-11-1	Low Priority	5

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

For details on this requirement, visit https://nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the blue column of the Monitoring comparison chart and the IDDE baseline monitoring flowchart.

Provide sample data for outfalls where flow is observed. Only include Pollutant of concern data for outfalls that discharge into stormwater impaired waterbodies. **You may also attach an excel spreadsheet with the same data rather than copying it to this table.** If you do attach a spreadsheet, please write "See Attachment" below.

Outfall / Interconnection ID	Latitude / Longitude	Screening / sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or enterococcus	Surfactants	Water Temp	Pollutant of concern	If required, follow-up actions taken
OF-139		*4/7/2021*	*0.08 mg/L*	*<0.02 mg/L*	*408 umhos/cm*	*<0.5 ppt*	*E.coli-845 MPN/100 mL*	*<0.05*	-	*Bacteria*	*Results of this flow from dry weather indicated a potential bacterial impact, however, further investigation is needed to confirm whether or not the*

											bacterial impact is naturally occurring.
OF-967		*6/14/2021*	*<0.05 mg/L*	*<0.02 mg/L*	*203 umhos/cm*	*<0.5 ppt*	*E. Coli-10 MPN/100mL*	*<0.05 mg/L*	*-*	*Bacteria*	*Results of this dry weather flow are indicative of groundwater influence, and not an Illicit Discharge.*

2.2 Wet weather sample and inspection data

For details on this requirement, visit https://nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the green column of the Monitoring comparison chart and the IDDE catchment investigation flowchart.

Provide sample data for outfalls and key junction manholes of any catchment area with at least one System Vulnerability Factor. **You may also attach an excel spreadsheet with the same data rather than copying it to this table.** If you do attach a spreadsheet, please write "See Attachment" below.

Outfall / Interconnection ID	Latitude / Longitude	Sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or Enterococcus	Surfactants	Water Temp	Pollutant of concern
System Vulnerability Factors are currently under investigation, and will be added to the next annual report. Refer to ***Section 1: Catchment Investigation Data, 3.1 System Vulnerability Factor Summary*** *for more information.*										

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

For details on this requirement, visit www.nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the green column of the Monitoring comparison chart and the IDDE catchment investigation flowchart.

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
The Town of Simsbury's sanitary sewer is currently managed by the Town of Simsbury's Water Pollution Control Facility (WPCF). The storm sewer and sanitary sewer have historically been separate, and remain so in the present day. Therefore, SVFs 4, 5, 6, 7, 8, and 9 are not applicable to the Town. Other SVFs are currently under investigation, and will be updated in the next annual report. These investigations include coordination between the WPCF, as well as the Farmington Valley Health District.		

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 that 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 that poor owner maintenance).

3.2 Key junction manhole dry weather screening and sampling data

You may also attach an excel spreadsheet with the same data rather than copying it to this table. If you do attach a spreadsheet, please write "See Attachment" below.

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

3.3 Wet weather investigation outfall sampling data

You may also attach an excel spreadsheet with the same data rather than copying it to this table. If you do attach a spreadsheet, please write "See Attachment" below.

Outfall ID	Latitude / Longitude	Sample date	Ammonia	Chlorine	Surfactants

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

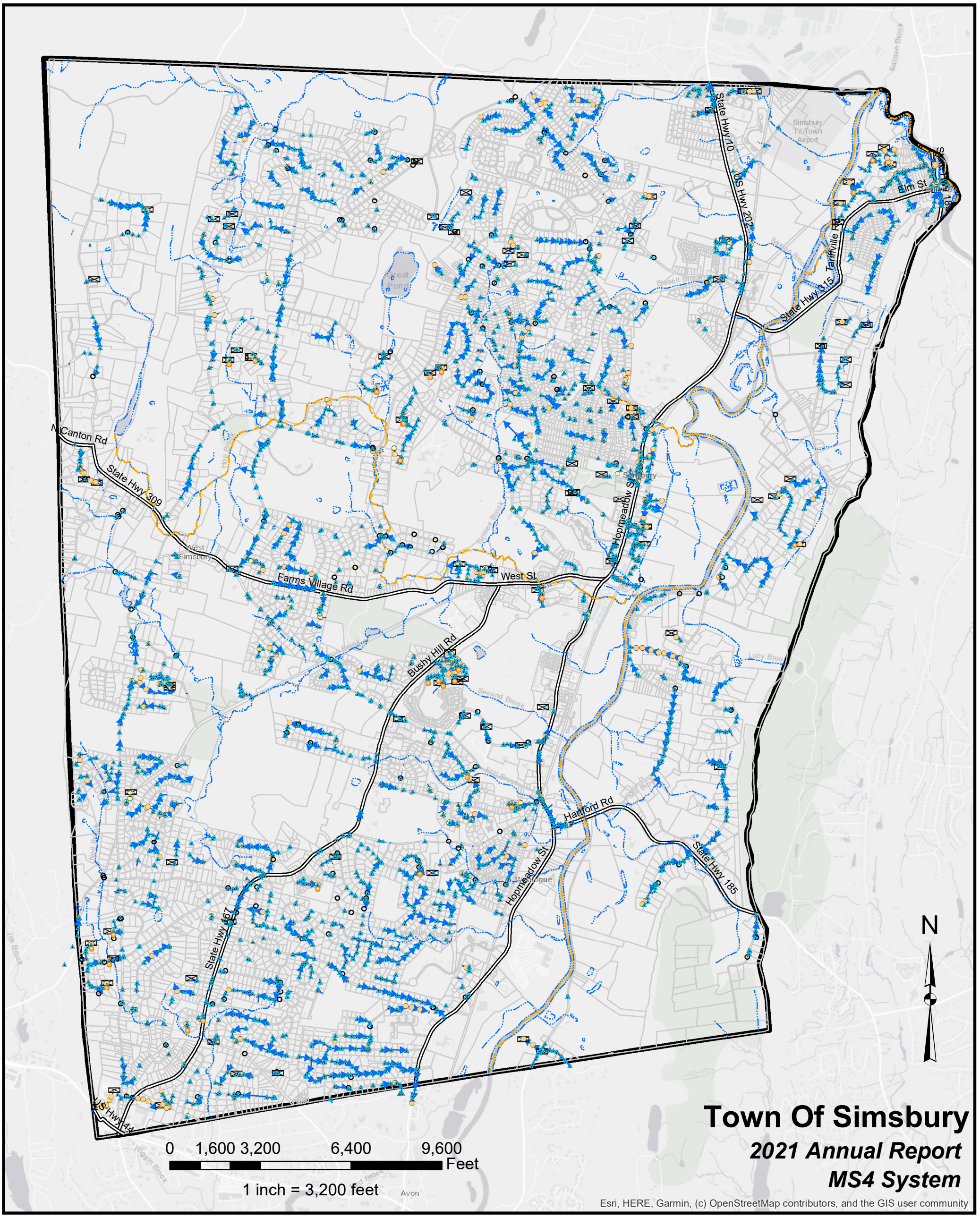
Discharge location	Source location	Discharge description	Method of discovery	Date of discovery	Date of elimination	Mitigation or enforcement action	Estimated volume of flow removed
OF-139	*Under investigation*	*Slight yellow tint, no foam.*	*Dry Weather Inspection*	*4/7/2021*	*TBD*	*TBD*	*Unknown*

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: Maria E. Capriola	Print name: Kay Lehoux-Environmental Scientist, Atlas
Signature / Date: Maria E. Capriola 4/4/2022	Signature / Date: 4/1/2022
Email: mcapriola@simsbury-ct.gov	Email: kay.lehoux@oneatlas.com

FIGURES



Legend

- Sediment Structure
- Catch Basin
- Infiltrator
- Miscella... Inlet
- Manhole
- Detention Structure
- Culvert
- Gravity Main
- Drain
- Drainage Easement
- Impaired Waterbody
- Surface Water
- Main Road
- Parcel
- Town of Simsbury

Fig No.
1

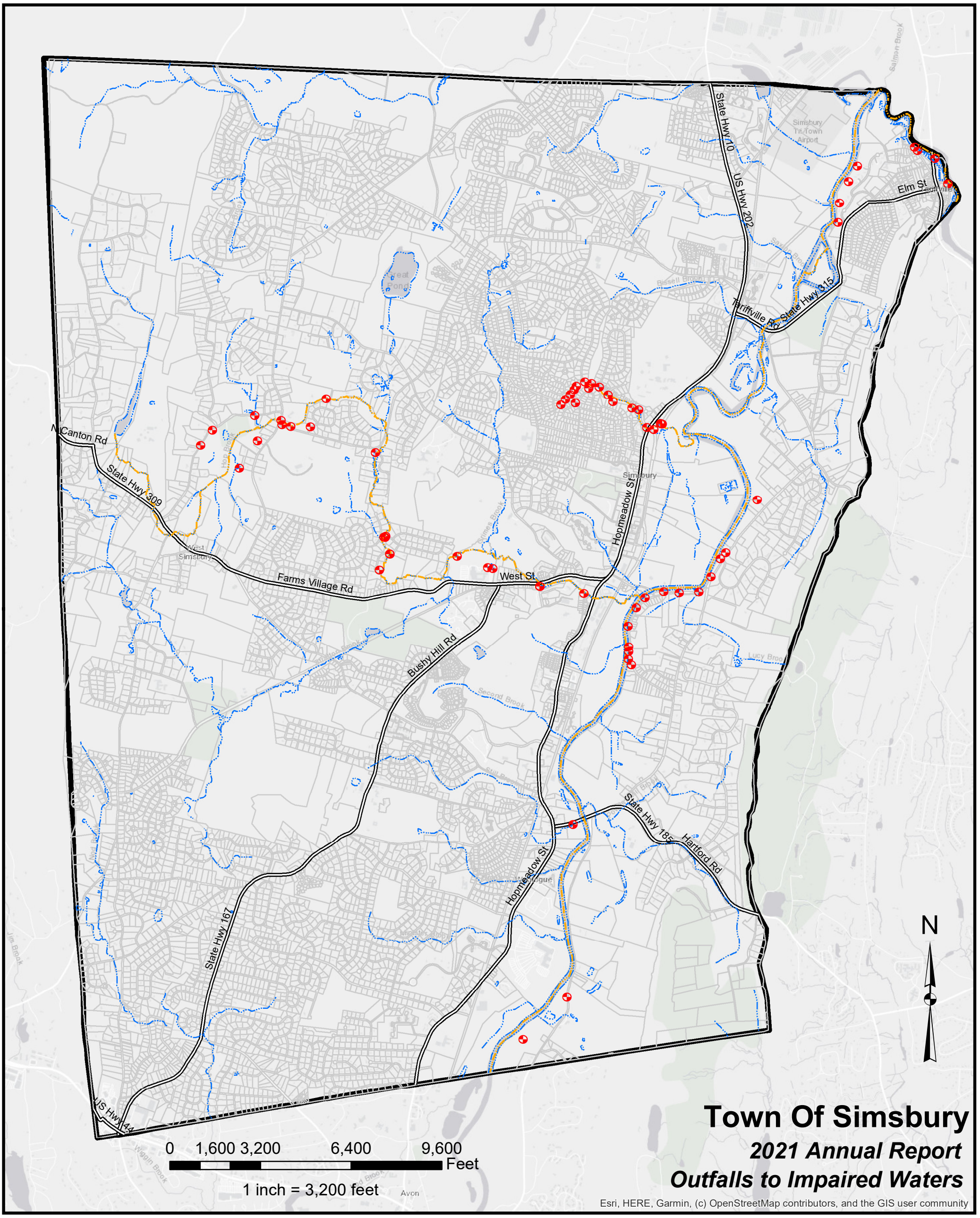
Drawn By: KLL

Checked by: LRW

Date: 2021

ATLAS

290 Roberts Street Suite 301
East Hartford,CT 06108



Town Of Simsbury

2021 Annual Report

Outfalls to Impaired Waters

N

Legend

- Outfall to Impaired Waterbody
- Impaired Waterbody
- Surface Water
- Main Road
- Parcel
- Town of Simsbury

Fig No.
2

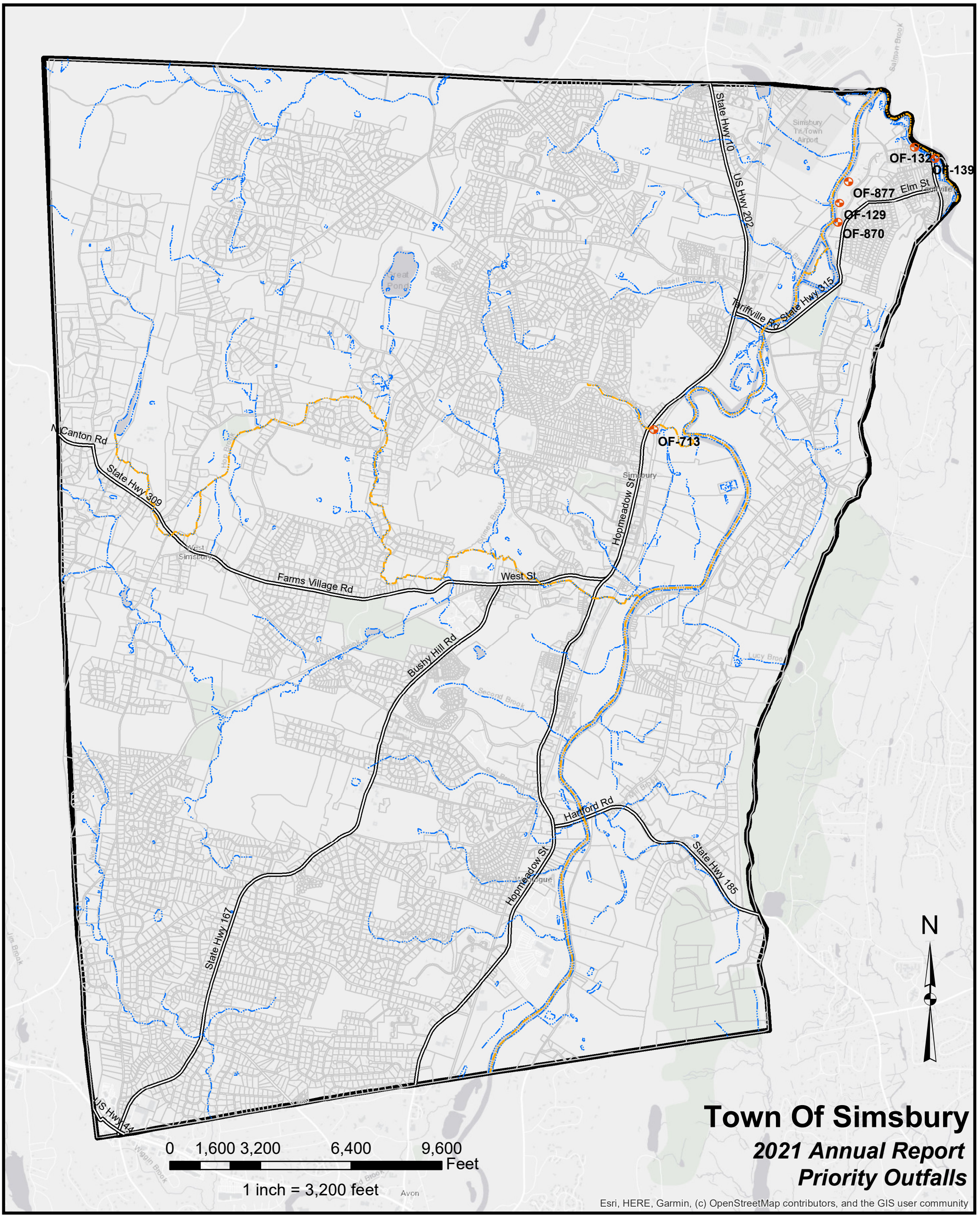
Drawn By: KLL

Checked by: LRW

Date: 2021

ATLAS

290 Roberts Street Suite 301
East Hartford,CT 06108



Legend

- Priority Outfall
- Impaired Waterbody
- Surface Water
- Main Road
- Parcel
- Town of Simsbury

Town of Simsbury Priority Outfalls

FACILITYID	LOCDESC	Latitude	Longitude
OF-129	10 TEAL CIRCLE	41.906458	-72.773918
OF-132	4 MAIN STREET EXT	41.912241	-72.764418
OF-870	10 TEAL CIRCLE	41.904925	-72.774302
OF-139	2 TUNXIS ROAD	41.911108	-72.76177
OF-713	HOPMEADOW STREET	41.884827	-72.798173
OF-877	10 TEAL CIRCLE	41.908857	-72.77293

Fig No.
3

Drawn By: KLL

Checked by: LRW

Date: 2021

ATLAS

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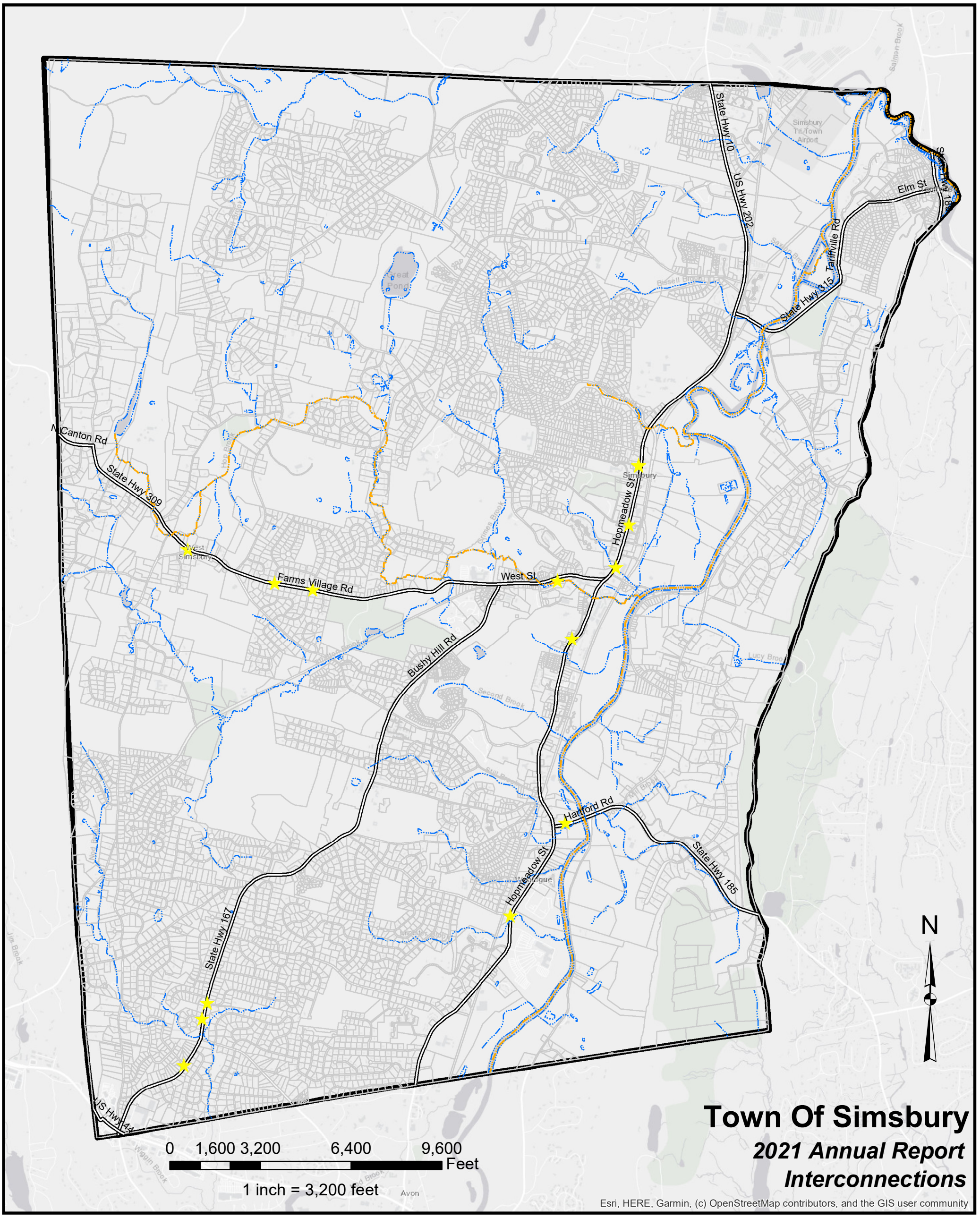
East Hartford,CT 06108



Legend

- CTDOT Interconnection
- Impaired Waterbody
- Surface Water
- Main Road
- Parcel
- Town of Simsbury

Fig No.
4

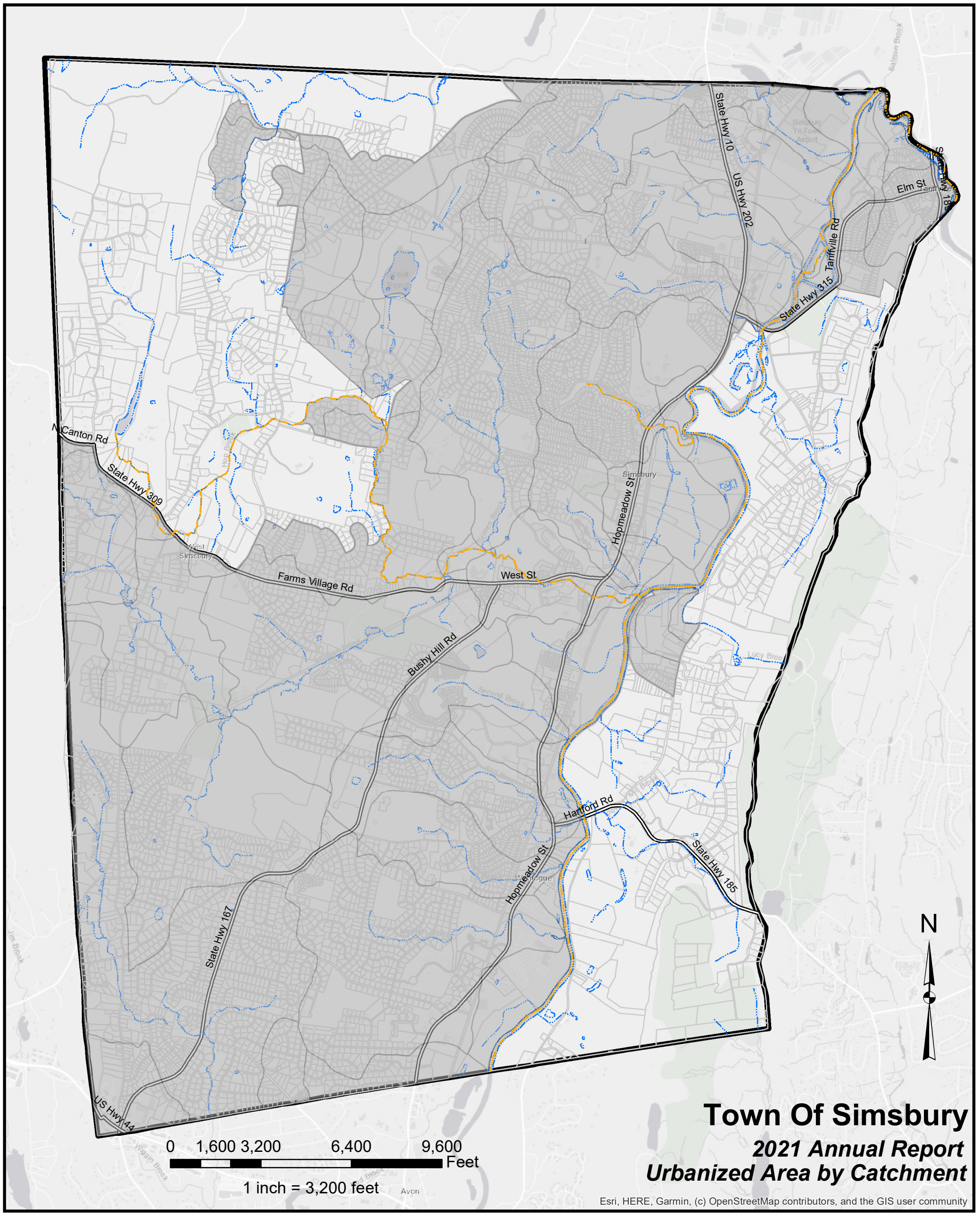
Drawn By: KLL

Checked by: LRW

Date: 2021

ATLAS

290 Roberts Street Suite 301
East Hartford,CT 06108



Town Of Simsbury

2021 Annual Report
Urbanized Area by Catchment

Legend

- Impaired Waterbody
- Surface Water
- Main Road
- Parcel
- Urbanized Areas by Catchment
- Town of Simsbury

Fig No.
5

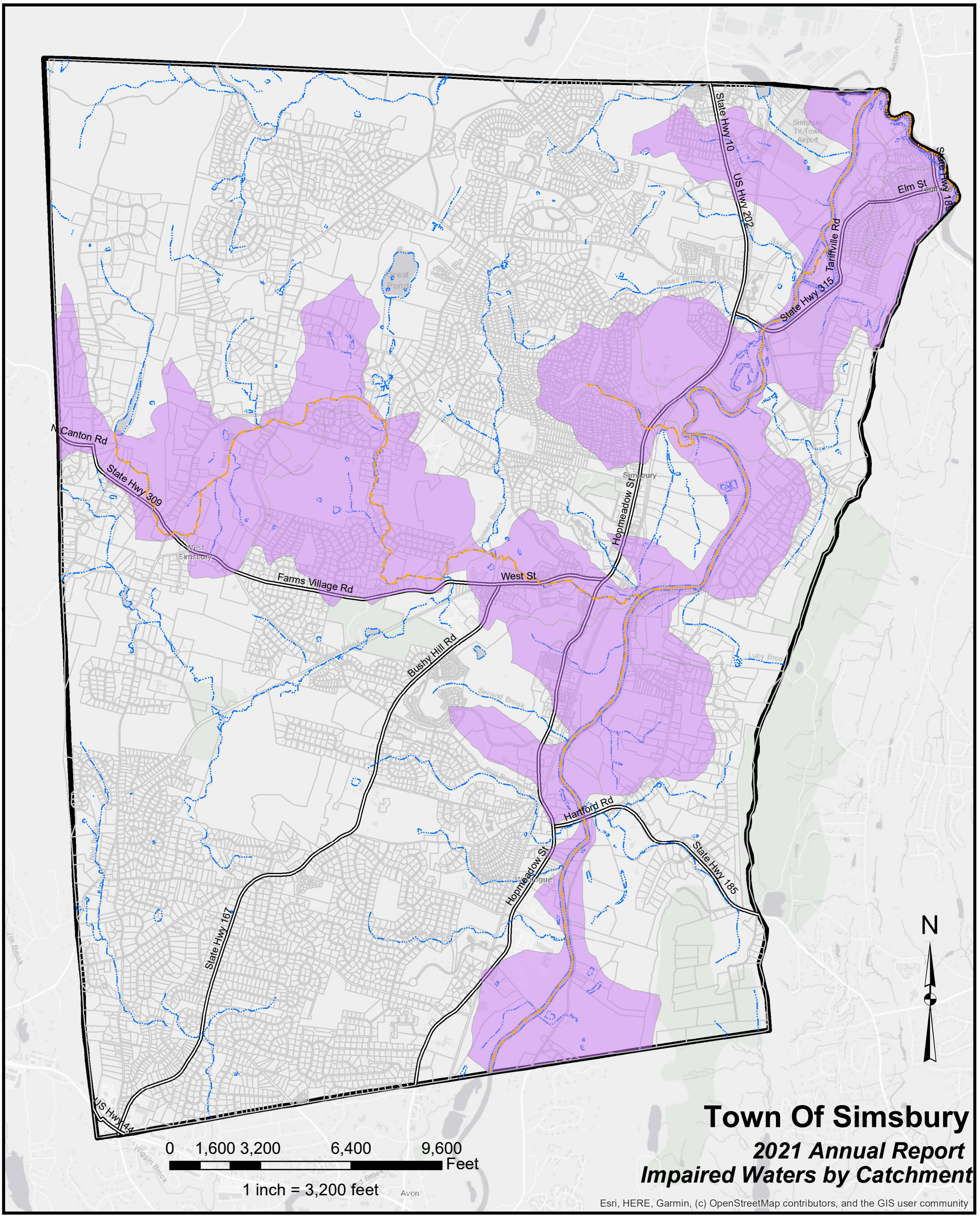
Drawn By: KLL

Checked by: LRW

Date: 2021

ATLAS

290 Roberts Street Suite 301
East Hartford,CT 06108



Town Of Simsbury

2021 Annual Report
Impaired Waters by Catchment

Legend

- Impaired Waterbody
- Surface Water
- Main Road
- Parcel
- Impaired Waters by Catchment
- Town of Simsbury

Fig No.
6

Drawn By: KLL

Checked by: LRW

Date: 2021

ATLAS

290 Roberts Street Suite 301
East Hartford,CT 06108

ATTACHMENT I –Dry Weather Inspections

Town of Simsbury MS4

Dry Weather Sampling

Analytical Results

Outfall ID	Inspection Date	Condition	Discharge Description	Screening Indicators						
				Chlorine Residual	Ammonia as Nitrogen	MBAS	Conductivitiy	Salinity	Escherichia Coli	Total Coliforms
				mg/L			umhos/cm	ppt	MPN/100mL	
OF-139	4/7/21	Good	Slight yellow tint, no foam.	<0.02	0.08	<0.05	408	<0.5	845	24,200
OF-967	6/14/21	Fair	Clear, no odor, no foam.	<0.02	<0.05	<0.05	203	<0.5	10	272

Notes:

* All highlighted bacterial concentrations are required for follow-up investigations.

*Highlighting is based on the following criteria;

1. E. Coli: >235/100mL for Swimming Areas, and >410 col/100mL for all others.
2. Total Coliform: > 500 col/100mL
3. Fecal Coliform: >31 col/100 mL for Class SA and >260 col/100mL for Class SB
4. Enterococci: >104 col/100mL for Swimming Areas and >500 col/100mL for all others.
5. Ammonia: >0.5 mg/L
6. Surfactants (MBAS): > 0.25 mg/L
7. Chlorine: detectable level
8. Conductivity: >1,500 uS
9. Salinity: ≥ 0.5 ppt

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-35

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 8:15 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Wetland area, rip rap from outlet into Hop Brook

Latitude: 41.887786 **Longitude**: -72.840581 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Wetland area, rip rap from outlet into Hop Brook

---

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" precast concrete pipe in good condition, heavy amounts of rip rap from outlet to Hop Brook. Possible influx of groundwater into outlet. Extremely wet soil surrounding area, with corresponding catch basins lighter flow.

Water Flow: __X___ Flowing _____ Ponded _____ Dry **Flow Reaches Receiving Water**: __X__ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.): clear, foam or odor not present

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present, odor or foam not present. Little sediment observed.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-36

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 11:15 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Outfall located downs a small embankment, surrounded by leaf litter and some brush.

Latitude: 41.885268 **Longitude:** 41.885268 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: high amounts of brush/leaf litter

---

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): Unknown diameter with flared end. Outfall mostly clogged with sediment/debris. In poor condition.

Water Flow: _____ Flowing _____ Ponded ___X_ Dry **Flow Reaches Receiving Water**: ____ Yes ____ No ___X_ Unk.

Flow Observations (odor, color, clarity, solids, etc.): N/A.

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. High amounts of sediment observed, little foam.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-37

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 11:15 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Outfall located off of road in a bamboo-like/brush area.

Latitude: 41.885689 **Longitude:** -72.846417 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: bamboo-like/brush surrounding area.

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): Unknown diameter. Outfall mostly clogged with sediment/debris. In poor condition.

Water Flow: _____ Flowing _____ Ponded ___X_ Dry **Flow Reaches Receiving Water**: ____ Yes ____ No ___X_ Unk.

Flow Observations (odor, color, clarity, solids, etc.): N/A.

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. High amounts of sediment observed, little foam.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-55

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 13:00 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Immediately behind home and at the end of lawn.

Latitude: 41.883704 **Longitude**: -72.84949 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Lawn, then shifts to a wetlands area.

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" concrete pipe with flared end in good condition.

Water Flow: _____ Flowing ___X__ Ponded _____ Dry **Flow Reaches Receiving Water**: ____ Yes ____ No __X__ Unk.

Flow Observations (odor, color, clarity, solids, etc.): N/A

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present, odor or foam not present.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-55

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 11:30 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Located off of road into a small intermittent stream, which was ponded and frozen at the mouth of the outfall.

Latitude: 41.883267 **Longitude**: -72.856843 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Lightly wooded area

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" concrete pipe with flared end in good condition, although this outfall was partially blocked by debris. Some trash present.

Water Flow: _____ Flowing ___X__ Ponded _____ Dry **Flow Reaches Receiving Water**: ____ Yes ____ No __X__ Unk.

Flow Observations (odor, color, clarity, solids, etc.): N/A

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present, odor or foam not present.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-58

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 11:30 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Located off of road into a small intermittent stream

Latitude: -72.849852 **Longitude**: -72.855312 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Lightly wooded area with little rip rap surrounding stream bed

---

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel __X__ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" concrete pipe with flared end in good condition. High amounts of sediment observed in streambed.

Water Flow: _____ Flowing _____ Ponded __X___ Dry **Flow Reaches Receiving Water**: ____ Yes ____ No __X__ Unk.

Flow Observations (odor, color, clarity, solids, etc.): N/A

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present, odor or foam not present.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-158

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 8:45 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Off of road into a wetlands area

Latitude: 41.888947 **Longitude**: -72.805228 **Receiving Water Body**: Owen's Brook

Terrain/Vegetation Description: Road, lightly wooded wetlands.

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" precast concrete pipe in with a flared end good condition. A slight trickle ended in a ponded area. May have groundwater influx due to recent heavy rains and snow melt. No illicit discharge observed.

Water Flow: _____ Flowing ___X__ Ponded _____ Dry **Flow Reaches Receiving Water**: __X__ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.): slightly silty, little foam

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present, odor or foam not present. Little sediment observed.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-293

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 8:00 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Lightly wooded, downslope into Hop Brook

Latitude: 41.885094 **Longitude**: -72.84515 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Lightly wooded, downslope into Hop Brook

---

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" precast concrete pipe in good condition

Water Flow: _____ Flowing _____ Ponded __X___ Dry **Flow Reaches Receiving Water**: __X__ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.): N/A

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present, odor or foam not present.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-163

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 8:40 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Wetland area, rip rap from outlet into Hop Brook

Latitude: 41.889442 **Longitude**: -72.807095 **Receiving Water Body**: Owen's Brook

Terrain/Vegetation Description: Wetland area, rip rap from outlet into Hop Brook

---

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" precast concrete pipe in good condition. Slight erosion along channel. May have groundwater influx due to recent heavy rains and snow melt. No illicit discharge observed.

Water Flow: __X___ Flowing _____ Ponded _____ Dry **Flow Reaches Receiving Water**: __X__ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.): clear, foam or odor not present

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present, odor or foam not present. Little sediment observed.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-297

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 10:55 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Located directly off of road into an intermittent streambed.

Latitude: 41.885052 **Longitude:** -72.84261 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Intermittent streambed, lightly wooded.

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 18" plastic pipe in excellent condition.

Water Flow: _____ Flowing _____ Ponded ___X_ Dry **Flow Reaches Receiving Water**: ____ Yes ____ No ___X_ Unk.

Flow Observations (odor, color, clarity, solids, etc.): N/A.

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. High amounts of sediment observed, little foam.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-301

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 10:55 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Located off of private road in a wetlands area. Multiflora rose bushes run from the road to the outfall, making it difficult to access without clippers or a machete.

Latitude: 41.882595 **Longitude:** -72.834197 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Multiflora rose bushes run from the road to the outfall, making it difficult to access without clippers or a machete. The outfall expels into a widening area of the Hop Brook.

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 18" plastic pipe in excellent condition.

Water Flow: _____ Flowing __X___ Ponded ____ Dry **Flow Reaches Receiving Water**: __X__ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.): N/A.

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. High amounts of sediment observed, little foam.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-310

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 13:15 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Outfall discharges into a gully/intermittent streambed, and is found at the beginning of the dirt road.

Latitude: 41.881079 **Longitude**: -72.851826 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: A gully/intermittent streambed surrounded by a residence as well as open fields.

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" concrete pipe with flared end in good condition.

Water Flow: _____ Flowing ___X__ Ponded _____ Dry **Flow Reaches Receiving Water**: ____ Yes ____ No __X__ Unk.

Flow Observations (odor, color, clarity, solids, etc.): N/A

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present, odor or foam not present.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-318

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 11:20 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Located on the North side of the road. Flow is received from marsh/wetlands area.

Latitude: 41.886139 **Longitude:** -72.849852 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: marsh/wetlands

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 4' width in good condition

Water Flow: __X___ Flowing _____ Ponded ____ Dry **Flow Reaches Receiving Water**: _X___ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.): Clear, no odor or foam present.

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. High amounts of sediment observed, little foam.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-405, 409, 410

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 10:25 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Outfalls located off of town drainage easement. The three outfalls are directly next to one another.

Latitude: 41.874513 **Longitude:** -72.832856 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Mostly flat with some brush surrounding the area.

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): All outfalls are 24" concrete pipes with flared ends in good condition. Water reaches the Hop Brook, but was not flowing at time of inspection.

Water Flow: _____ Flowing __X___ Ponded ____ Dry **Flow Reaches Receiving Water**: __X__ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.): N/A.

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. High amounts of sediment observed, little foam.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-495

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 10:20 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Underneath middle of bridge

Latitude: 41.874402 **Longitude:** -72.832936 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Stream bed

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel __X__ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" concrete pipe in good condition.

Water Flow: __X___ Flowing _____ Ponded ____ Dry **Flow Reaches Receiving Water**: __X__ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.): little foam, clear.

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. High amounts of sediment observed

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-501

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 10:15 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Closest to Cedar Hill Road on bridge

Latitude: 41.872735 **Longitude:** -72.832352 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Rip rap around edges of bridge.

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 12" concrete pipe, fair condition.

Water Flow: __X___ Flowing _____ Ponded ____ Dry **Flow Reaches Receiving Water**: __X__ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.): Clear, no odor, slight foam present

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. Heavy water flow, foam and sediment present.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-503

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 10:15 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Farthest from Cedar Hill Road on bridge

Latitude: 41.87273 **Longitude:** -72.832291 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Rip rap around edges of bridge.

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 12" concrete pipe, fair condition.

Water Flow: _____ Flowing _____ Ponded __X__ Dry **Flow Reaches Receiving Water**: __X__ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.): N/A

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. Heavy water flow, foam and sediment present.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-504

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 10:25 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Underneath middle of bridge

Latitude: 41.874513 **Longitude:** -72.832856 **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Stream bed

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel __X__ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 48" concrete pipe, good structural condition. Large logs/sticks present, should be cleared out.

Water Flow: __X___ Flowing _____ Ponded ____ Dry **Flow Reaches Receiving Water**: __X__ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.): clear.

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. High amounts of sediment observed, little foam.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-898

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 9:15 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Off of road into a wetlands area, then to Owen's Brook

Latitude: 41.888185 **Longitude:** 41.888185 **Receiving Water Body**: Owen's Brook

Terrain/Vegetation Description: Wetlands

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel __X__ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" precast concrete pipe in good condition, little sediment observed. Some forest debris observed in natural creek.

Water Flow: __X___ Flowing _____ Ponded ____ Dry **Flow Reaches Receiving Water**: ____ Yes ____ No __X__ Unk.

Flow Observations (odor, color, clarity, solids, etc.): Clear, no odor, no foam.

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. High amounts of sediment observed

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-925

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 8:50 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Off of road into a wetlands area

Latitude: 41.886717 **Longitude**: -72.800119 **Receiving Water Body**: Owen's Brook

Terrain/Vegetation Description: Road, lightly wooded wetlands.

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" precast concrete pipe in with a flared end good condition. Some sediment observed. May have groundwater influx due to recent heavy rains and snow melt. No illicit discharge observed.

Water Flow: _____ Flowing _____ Ponded __X___ Dry **Flow Reaches Receiving Water**: ____ Yes ____ No __X__ Unk.

Flow Observations (odor, color, clarity, solids, etc.): N/A

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present, odor or foam not present. Little sediment observed.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-960

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 9:25 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Easily accessibility from Owen's Brook, near blue stakes marking out detention structure.

Latitude: 41.8869 **Longitude:** -72.801001 **Receiving Water Body**: Owen's Brook

Terrain/Vegetation Description: A steep backdrop to the outfall

---

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" precast concrete pipe in good condition. Ponding directly below outfall.

Water Flow: _____ Flowing __X___ Ponded ____ Dry **Flow Reaches Receiving Water**: __X__ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.):

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present, little foam High amounts of sediment observed/

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-Priority Unknown 1 (G)

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 9:30 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Direct discharge into stream, near blue stakes marking detention structure.

Latitude: **Longitude:** **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: A steep slope on the backside of this outfall, lightly wooded.

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): Outfall not found, possibl covered in forest debris. Piece of pipe observed off of outlet. Rip rap found.

Water Flow: _____ Flowing __X___ Ponded ____ Dry **Flow Reaches Receiving Water**: ____ Yes ____ No __X__ Unk.

Flow Observations (odor, color, clarity, solids, etc.): Clear, no odor, no foam.

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. High amounts of sediment observed with a heavy flow.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-Priority Unknown 2 (S)

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 9:45 AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Direct discharge into stream at end of road

Latitude: **Longitude:** **Receiving Water Body**: Hop Brook

Terrain/Vegetation Description: Directly beneath guardrail at the end of the road.

Conveyance: __X__ Outlet _____ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" precast concrete pipe in fair condition. Some sediment and foam present.

Water Flow: __X___ Flowing _____ Ponded ____ Dry **Flow Reaches Receiving Water**: __X__ Yes ____ No ____ Unk.

Flow Observations (odor, color, clarity, solids, etc.): Clear, no odor, foam present

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present. Heavy water flow, foam present.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

DRY WEATHER OUTFALL INSPECTION FORM
Town of Simsbury, Connecticut
Municipal Separate Storm Sewer System (MS4) Compliance

Outfall ID: OF-960

Inspector's Name: Kay Lehoux, Daniel Kubow **Date**: 12/29/2020 **Time**: 9:30AM

Weather Conditions: 30°, overcast **Last Qualifying Rain Event**: 12/25/2020

Outfall Location/Surrounding Area Description: Easily accessibility from Owen's Brook, near blue stakes marking out detention structure.

Latitude: **Longitude:** **Receiving Water Body**: Owen's Brook

Terrain/Vegetation Description: A steep backdrop to the outfall

---

Conveyance: __X__ Outlet __X___ Manhole _____ Concrete Channel ____ Natural Creek ____ Earthen Channel _____Other

Outfall Details (piping material/diameter, structural condition, erosion, trash present, sediment, etc.): 24" precast concrete pipe with a flared end in good condition.

Water Flow: _____ Flowing _____ Ponded __X__ Dry **Flow Reaches Receiving Water**: ____ Yes ____ No __X__ Unk.

Flow Observations (odor, color, clarity, solids, etc.):

Receiving Water Body Observations (murky, solids, sheen, trash present, bubbles, odor, etc.): clear, no trash present, little foam High amounts of sediment observed.

Receiving Water Body Quality Classification: ____A_____ **Constituent(s) of Concern**: Bacteria

Discharge Sample Collected: _____ Yes ___X__ No **Analytes**: _____

Evidence of Illegal Dumping: _____ Yes ___X___ No **Details (if any)**: _____

_____

Representative Photographs:

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 11:29 AM

OUTFALL ID: OF-902
INSPECTION DATE: APRIL 13, 2021

Material	Concrete
Subtype	Flared End
Diameter	24”
Condition	Good
Erosion Control	No

Notes

Discharge comes from Kerr Farm Rd and Hearthstone Dr. Kerr Farm rd. CB dry, no discharge. Very slight discharge from CBs on Hearthstone. Possible broken pipe with GW discharge.

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 11:25 AM

OUTFALL ID: OF-169
INSPECTION DATE: APRIL 13, 2021

Material	Concrete
Subtype	Flared End
Diameter	24”
Condition	Good
Erosion Control	No

Notes

Culverted stream under road. Heavily eroded around outfall.

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 11:21 AM

OUTFALL ID: OF-168
INSPECTION DATE: APRIL 13, 2021

Material	Concrete
Subtype	Flared End
Diameter	12”
Condition	Good
Erosion Control	No

Notes

Slightly eroded beneath outfall.

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 11:15 AM

OUTFALL ID: OF-911
INSPECTION DATE: APRIL 13, 2021

Material	Concrete
Subtype	Flared End
Diameter	18”
Condition	Good
Erosion Control	No

Notes

Good condition. Some trash/debris present.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 11:11 AM

OUTFALL ID: OF-910
INSPECTION DATE: APRIL 13, 2021

Material	Concrete
Subtype	Flared End
Diameter	18”
Condition	Fair
Erosion Control	No

Notes

Flared end slightly broken. Many fallen trees in the vicinity of outfall.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 11:07 AM

OUTFALL ID: OF-163
INSPECTION DATE: APRIL 13, 2021

Material	Concrete
Subtype	Flared End
Diameter	18”
Condition	Fair
Erosion Control	No

Notes

Culvert under Owens Brook Blvd. Concrete flared end broken.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 10:40 AM

OUTFALL ID: OF-82
INSPECTION DATE: APRIL 13, 2021

Material	Concrete
Subtype	Flared End
Diameter	24”
Condition	Good
Erosion Control	Yes

Notes

Located in farmland area.

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 10:24 AM

OUTFALL ID: OF-749
INSPECTION DATE:

Material	
Subtype	
Diameter	
Condition	Poor
Erosion Control	

Notes

Outfall completely silted in/buried. Only top of concrete end wall exposed.

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 10:11 AM

OUTFALL ID: OF-71
INSPECTION DATE: APRIL 13, 2021

Material	Concrete
Subtype	Flared End
Diameter	36”
Condition	Excellent
Erosion Control	Yes

Notes

Concrete culvert under River Rd.

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 10:07 AM

OUTFALL ID: OF-72
INSPECTION DATE: APRIL 13, 2021

Material	Precast
Subtype	Flared End
Diameter	12”
Condition	Poor
Erosion Control	Yes

Notes

Corrugated metal, highly corroded, broken at end.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 10:04 AM

OUTFALL ID: OF-894
INSPECTION DATE: APRIL 13, 2021

Material	Precast
Subtype	Flared End
Diameter	12”
Condition	Fair
Erosion Control	Yes

Notes

Corrugated metal, corroded at end. Flared end heavily corroded.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 9:57 AM

OUTFALL ID: OF-895
INSPECTION DATE: APRIL 13, 2021

Material	Concrete
Subtype	Flared End
Diameter	24”
Condition	Good
Erosion Control	Yes

Notes

Outfall in good condition. While there is discharge, the discharge comes from a stream- this outfall is connected to a culvert.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 9:54 AM

OUTFALL ID: OF-75
INSPECTION DATE: APRIL 13, 2021

Material	Precast
Subtype	Other
Diameter	12”
Condition	Poor
Erosion Control	Yes

Notes

Corrugated metal corroded at end. Slightly silted in.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 9:49 AM

OUTFALL ID: OF-76
INSPECTION DATE: APRIL 13, 2021

Material	Precast
Subtype	Other
Diameter	12”
Condition	Fair
Erosion Control	Yes

Notes

Corrugated metal pipe, corroded and broken at end.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 9:42 AM

OUTFALL ID: OF-77
INSPECTION DATE: APRIL 13, 2021

Material	Concrete
Subtype	Other
Diameter	18”
Condition	Poor
Erosion Control	No

Notes

OF in poor condition. corrugated metal pipe disintegrated approx 3ft. Little to no riprap. clay pipe is located approx 20 feet upstream from outfall. Pipe discharges directly to the river and it is unclear where it comes from.

Outfall:

Discharge:

No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 9:34 AM

OUTFALL ID: OF-78
INSPECTION DATE: APRIL 13, 2021

Material	Concrete
Subtype	Flared End
Diameter	18”
Condition	Poor
Erosion Control	No

Notes

Outfall in very poor condition. Mostly silted in, and no erosion control to be seen. Outfall needs to be cleared out and riprap put in.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 9:29 AM

OUTFALL ID: OF-727
INSPECTION DATE: APRIL 13, 2021

Material	Concrete
Subtype	Endwall
Diameter	48”
Condition	Good
Erosion Control	Yes

Notes

Large culvert with metal water gate. Sticks/leaves wedged in cap opening. Needs to be cleaned.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 9:16 AM

OUTFALL ID: OF-935
INSPECTION DATE: APRIL 13, 2021

Material	Precast
Subtype	Flared End
Diameter	36”
Condition	Good
Erosion Control	Yes

Notes

Outfall is corrugated metal pipe. Fall is also a culvert. Discharges from stream directly into Farmington river.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 9:12 AM

OUTFALL ID: OF-140
INSPECTION DATE: APRIL 13, 2021

Material	Precast
Subtype	Other
Diameter	24”
Condition	Good
Erosion Control	Yes

Notes

Outfall is a corrugated metal pipe. This outfall is a an outlet. Riprap is in OK condition. Some erosion along stream channel. Some refuse observed.

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 9:00 AM

OUTFALL ID: OF-934
INSPECTION DATE: APRIL 13, 2021

Material	Precast
Subtype	Flared End
Diameter	18”
Condition	Fair
Erosion Control	No

Notes

Flared end of outfall is almost completely disconnected. Riprap is not visible, high erosion rates along discharge channel. High flow of discharge.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 8:56 AM

OUTFALL ID: OF-933
INSPECTION DATE: APRIL 13, 2021

Material	Precast
Subtype	Flared End
Diameter	36”
Condition	Good
Erosion Control	Yes

Notes

Outfall in good condition. While there is discharge, after further investigation a sinkhole was found, where it is suspected that the pipe is broken and groundwater is seeping. The angle of the pipe is sloped steeply down words, making for a steady flow.

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 13, 2021 8:30 AM

OUTFALL ID: OF-123
INSPECTION DATE: APRIL 13, 2021

Material	Precast
Subtype	Flared End
Diameter	24”
Condition	Good
Erosion Control	Yes

Notes

Outfall discharges to a stream. Some leaf litter and tree branches covering riprap channel. Outfall 122 is connected/is a culvert that runs to Outfall 123, discharging to small stream.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-751
INSPECTION DATE: APRIL 7, 2021

Material	Plastic
Subtype	Other
Diameter	10”
Condition	Good
Erosion Control	No

Notes

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-379
INSPECTION DATE: APRIL 7, 2021

Material	Concrete
Subtype	Flared End
Diameter	24”
Condition	Good
Erosion Control	Yes

Notes

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-380
INSPECTION DATE: APRIL 7, 2021

Material	HDPE
Subtype	Flared End
Diameter	24”
Condition	Excellent
Erosion Control	Yes

Notes

In good condition. Riprap is sufficient.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-160
INSPECTION DATE: APRIL 7, 2021

Material	Concrete
Subtype	Flared End
Diameter	24”
Condition	Fair
Erosion Control	Yes

Notes

Erosion control adequate. Flared and partially separated from outfall pipe.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-715
INSPECTION DATE: APRIL 7, 2021

Material	Concrete
Subtype	Flared End
Diameter	24”
Condition	Fair
Erosion Control	Yes

Notes

Pipe slightly broken at flare.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-129
INSPECTION DATE: APRIL 7, 2021

Material	Concrete
Subtype	Flared End
Diameter	24”
Condition	Fair
Erosion Control	Yes

Notes

Outfall pipe is partially clogged by leaf litter. High volume of pet waste bags found at flared end.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-136
INSPECTION DATE: APRIL 7, 2021

Material	Concrete
Subtype	Other
Diameter	12”
Condition	Fair
Erosion Control	Yes

Notes

Outfall possibly made from clay. End of outfall is broken. Slight erosion on Hillside. Outfall comes directly out of bridge.

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-139
INSPECTION DATE: APRIL 7, 2021

Material	Concrete
Subtype	Endwall
Diameter	24”
Condition	Good
Erosion Control	Yes

Notes

Outfall in good condition. Some leaf litter and branches throughout channel.

Outfall:

Discharge: Yes

Illicit Discharge Flow Type:

Steady

Illicit Discharge Description:

High flow discharge. No foam. Little floating particulates. Slight yellow tint.

Illict Discharge

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-133
INSPECTION DATE: APRIL 7, 2021

Material	Precast
Subtype	Other
Diameter	18”
Condition	Fair
Erosion Control	Yes

Notes

End of pipe is slightly corroded.

Outfall:

Discharge: Yes

Illicit Discharge Flow Type:

Steady

Illicit Discharge Description:

Catch basins Connected to this outfall and surrounding out falls come from a steeped area, possible ground water infiltrating outfall pipe.

Illict Discharge

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-132
INSPECTION DATE: APRIL 7, 2021

Material	Concrete
Subtype	Endwall
Diameter	8”
Condition	Fair
Erosion Control	Yes

Notes

Outfall is made from a clay pipe. Much of the riprap channel is washed away.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-131
INSPECTION DATE: APRIL 7, 2021

Material	Concrete
Subtype	Flared End
Diameter	18”
Condition	Good
Erosion Control	Yes

Notes

Good condition.

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-877
INSPECTION DATE: APRIL 7, 2021

Material	Plastic
Subtype	Endwall
Diameter	24”
Condition	Good
Erosion Control	Yes

Notes

Channel has formed above concrete pipe from the condo area. Riprap channel contains high amounts of dog waste bags. Owner of home next to outfall believes there may be a gap in the pipe, due to a sinkhole following along the pipe path.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-870
INSPECTION DATE: APRIL 7, 2021

Material	Concrete
Subtype	Flared End
Diameter	18”
Condition	Fair
Erosion Control	Yes

Notes

Outfall is partially covered with sediment. Flow may be disrupted due to sediment. Pet waste baggies observed in flow channel of outfall.

Outfall:

Discharge: No

SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-713
INSPECTION DATE: APRIL 7, 2021

Material	Concrete
Subtype	Flared End
Diameter	36”
Condition	Fair
Erosion Control	Yes

Notes

Outfall is completely submerged under retention pond.

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-166
INSPECTION DATE: APRIL 7, 2021

Material	Concrete
Subtype	Flared End
Diameter	36”
Condition	Good
Erosion Control	Yes

Notes

Outfall did have a discharge, however after further investigation the outfall was found to be connected to a culvert. A stream runs through this culvert. Two sink holes were found above the outfall as well.

Outfall:

Discharge: No

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-967
INSPECTION DATE: APRIL 7, 2021

Material	Concrete
Subtype	Other
Diameter	18”
Condition	Fair
Erosion Control	Yes

Notes

Pipe chipped. Slight discharge.

Outfall:

Discharge: Yes

Illicit Discharge Flow Type:

Low

Illicit Discharge Description:

No odor, clear, no foam, no floating particulates.

Illict Discharge

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SIMSBURY DRY WEATHER INSPECTIONS

SUBMITTED BY: ATC GROUP SERVICES, LLC
SUBMITTED TIME: APRIL 7, 2021 3:22 PM

OUTFALL ID: OF-750
INSPECTION DATE: APRIL 7, 2021

Material	Plastic
Subtype	Other
Diameter	4”
Condition	Fair
Erosion Control	No

Notes

Surrounding area of outfall has refuse. Outfall needs to be uncovered and refuse picked up.

Outfall:

Discharge: No

ATTACHMENT II –Wet Weather Inspections

Town of Simsbury

MS4 Wet Weather Sampling

Analytical Results

Outfall ID	Inspection Date	Condition	Discharge Description	General Parameters							Bacterial			
				Temperature (°C)	pH (SU)	Dissolved Oxygen (mg/L)	SPC (uS/cm)	ORP (mV)	Turbidity (NTU)	Odor	Escheriachia Coli	Enterococci Bacteria	Fecal Coliforms	Total Coliforms
											MPN/100mL			
OF-136	6/14/21	Good	Silty, light brown	19	6.94	6.8	39.1	-66.9	15.21	No	2,990	>24,200	2,910	>24,200
OF-139	6/14/21	Good	Strong septic odor	19.1	6.6	8.66	68.4	-118.5	16.07	Yes	7,700	19,900	9,210	>24,200
OF-133	6/14/21	Good	Septic	19.5	6.48	7.98	41.1	-157.9	13.58	Yes	6,130	14,100	3,870	>24,200
OF-132	6/14/21	Good	Clear, some suspended solids	19.7	6.37	7.18	35.3	-171.4	9.27	No	24,200	>24,200	>24,200	>24,200
OF-131	6/14/21	Excellent	Clear, some suspended solids	7.29	6.25	9.22	33.4	-160.3	10.68	No	132	2,480	1,380	>24,200
OF-877	6/14/21	Good	Extremely strong septic odor	18.5	6.06	7.32	29.4	-177.9	16.34	Yes	4,350	14,100	4,350	>24,200
OF-129	6/14/21	Fair	Strong septic odor	18.3	5.73	6.55	58.2	-193.3	27.6	Yes	5,480	>24,200	4,350	>24,200
OF-870	6/14/21	Fair	Light brown, silty	17.4	5.71	-189.5	22.7	-184.1	45.9	No	19,900	>24,200	14,100	>24,200
OF-715	6/14/21	Excellent	Light brown, silty	19.4	6.78	6.49	52	-132.1	11.66	No	644	4,610	5,170	>24,200
OF-713	6/14/21	Excellent	Dark brown, silty	17.5	6.49	7.76	90.3	-175.2	17.14	No	24,200	24,200	13,000	>24,200
OF-160	6/14/21	Good	Clear, some suspended solids	19.8	6.62	6.88	35.8	-204.8	13.5	No	809	1,620	2,280	>24,200

Notes:

* All highlighted bacterial concentrations are required for follow-up investigations at associated outfall.

*Highlighting is based on the following criteria;

1. E. Coli >235/100mL for Swimming Areas, and >410 col/100mL for all others.
2. Total Coliform > 500 col/100mL
3. Fecal Coliform >31 col/100 mL for Class SA and >260 col/100mL for Class SB
4. Enterococci >104 col/100mL for Swimming Areas and >500 col/100mL for all others.

PHOTOGRAPHIC LOG

ATC Group Services LLC
290 Roberts Street, Suite 301
East Hartford, CT 06108

Client Name:	**Site Location:**	**ATC Project # / Date:**
Town of Simsbury	*Town of Simsbury MS4 Outfalls*	2419020001 *June 14, 2021*

Outfall ID	
OF-129	

Outfall ID	
OF-877	

PHOTOGRAPHIC LOG

ATC Group Services LLC
290 Roberts Street, Suite 301
East Hartford, CT 06108

Client Name:	**Site Location:**	**ATC Project # / Date:**
Town of Simsbury	*Town of Simsbury MS4 Outfalls*	2419020001 *June 14, 2021*

Outfall ID	
OF-160	

Outfall ID	
OF-713	

PHOTOGRAPHIC LOG

ATC Group Services LLC
290 Roberts Street, Suite 301
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Client Name:	**Site Location:**	**ATC Project # / Date:**
Town of Simsbury	*Town of Simsbury MS4 Outfalls*	2419020001 *June 14, 2021*

Outfall ID	
OF-870	

Outfall ID	
OF-131	

PHOTOGRAPHIC LOG

ATC Group Services LLC
290 Roberts Street, Suite 301
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Client Name:	**Site Location:**	**ATC Project # / Date:**
Town of Simsbury	*Town of Simsbury MS4 Outfalls*	2419020001 *June 14, 2021*

Outfall ID	
OF-132	

Outfall ID	
OF-133	

PHOTOGRAPHIC LOG

ATC Group Services LLC
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Client Name:	**Site Location:**	**ATC Project # / Date:**
Town of Simsbury	*Town of Simsbury MS4 Outfalls*	2419020001 *June 14, 2021*

Outfall ID	
OF-139	

Outfall ID	
OF-136	

Town of Simsbury

MS4 General Permit

Priority Outfall Sampling

Outfall ID	Inspection Date	Condition	Discharge Description	Discharge Visual	General Parameters							Bacterial	
					Temperature (°C)	pH (SU)	Dissolved Oxygen (mg/L)	SPC (uS/cm)	ORP (mV)	Turbidity (NTU)	Odor	Escheriachia Coli	Total Coliforms
												MPN/100mL	
OF-713	9/1/21	Excellent	Strong flow, suspended sediment, clear.		18.8	6.56	7.44	251.5	200.7	17.03	No	**9,210**	**>24,200**
OF-139	9/1/21	Good	Moderate flow, slight yellow tint, some suspended solids.		21.6	7.85	5.29	213.9	-161.3	40	No	**>24,200**	**>24,200**
OF-870	9/1/21	Good	Clear, weak flow.		21	7.06	5.98	26.9	159.7	11.7	No	**14,100**	**>24,201**
OF-132	9/1/21	Excellent	Strong flow, little suspended sediment, clear.		21.8	7.71	5.33	32.7	-204.3	6.55	No	**6,130**	**>24,200**
OF-129	9/1/21	Good	Slight organic/septic odor, clear with some suspended particles, weak flow.		20.9	7	5.88	133.2	166.1	7.99	Yes	**15,500**	**>24,200**
OF-877	9/1/21	Good	Strong septic odor, light opaque, strong flow, some foam, some suspended particles.		19.7	6.7	5.62	79.6	165.7	17.39	Yes	**3,080**	**>24,201**

Notes:

* All highlighted bacterial concentrations are required for follow-up investigations at associated outfall.

*Highlighting is based on the following criteria;

1. E. Coli >235/100mL for Swimming Areas, and >410 col/100mL for all others.
2. Total Coliform > 500 col/100mL
3. Fecal Coliform >31 col/100 mL for Class SA and >260 col/100mL for Class SB
4. Enterococci >104 col/100mL for Swimming Areas and >500 col/100mL for all others.

ATTACHMENT III- Catchment Assessment and Priority Ranking Matrix

Town of Simsbury
Catchment Assessment
and
Priority Ranking Matrix

Catchment ID	Number of Outfalls Included	Receiving Water(s)	Previous Screening Results Indicate Likely Sewer Input? [1]	Discharging to Area of Concern to Public Health? [2]	Frequency of Past Discharge Complaints	Receiving Water Quality [3]	Density of Generating Sites [4]	Age of Development/ Infrastructure [5]	Historic Combined Sewers or Septic? [6]	Aging Septic? [7]	Culverted Streams? [8]	Additional Characteristics	Sewer Repair Nearby?	Urbanized Area	DCIA >11% [9]	Impaired Waterbody	Score	Priority Ranking *Low Priority: 0-5* *Problem: 6-9* *High Priority: ≥10*
Information Source			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 Storm System Maps	Other	Municipal Staff, GIS Maps	CLEAR	CLEAR	CLEAR		
Scoring Criteria			Yes = 3 (Problem Catchment) No = 0	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	Description	Yes=2 No=0	Yes =1 No = 0	Yes =1 No = 0	Yes =1 No = 0		
4300-00-5+R10	0	Farmington River		0		3	1	1	0		1	Agricultural land, some wooded areas.		1	0	1	8	Problem
4300-00-5+R11	0	Farmington River		0		3	1	1	0		1	Wooded with majority of basin made up of Russel Brook.		1	0	1	8	Problem
4300-00-5+R12	7	Farmington RIver		0		3	2	2	0		0	Highly Commercialized/industrializ ed with wooded or cleared areas.		1	0	1	9	Problem
4300-00-5+R13	11	Farmington River		0		3	2	2	0		0	Mixture of commercial and agricultural areas.		1	0	1	9	Problem
4300-00-5+R14	3	Farmington River, unamed stream		0		3	1	1	0		1	Agricultural land with some residential areas		1	0	1	8	Problem
4300-00-5+R15	9	Farmington River		0		3	1	1	0		0	Agricultural land with some residential areas		1	0	1	7	Problem
4300-00-5+R16	0	Farmington River		1		3	1	1	0		0	Agricultural land with some residential areas. Small portion of aquifer protection area loctaed on the northeast corner of the catchment.		1	0	1	8	Problem
4300-00-5+R17	0	Farmington River		1		3	2	1	0		0	Wooded land with the Westminster School. Aquifer protection areas.		1	0	1	9	Problem
4300-00-5+R18	4	Farmington River		1		3	1	1	0		1	Mixture of commercial and agricultural areas.		1	0	1	9	Problem
4300-00-5+R19	8	Farmington River		1		3	2	2	0		0	Residential, wooded, and some agricultural.		1	0	1	10	High Priority
4300-00-5+R20	5	Farmington River		0		3	2	1	0		0	Residential and wooded.		1	0	1	8	Problem
4300-00-5+R21	3	Farmington River		1		3	2	1	0		0	Residential and wooded.		1	0	1	9	Problem

Town of Simsbury
Catchment Assessment
and
Priority Ranking Matrix

Catchment ID	Number of Outfalls Included	Receiving Water(s)	Previous Screening Results Indicate Likely Sewer Input? [1]	Discharging to Area of Concern to Public Health? [2]	Frequency of Past Discharge Complaints	Receiving Water Quality [3]	Density of Generating Sites [4]	Age of Development/ Infrastructure [5]	Historic Combined Sewers or Septic? [6]	Aging Septic? [7]	Culverted Streams? [8]	Additional Characteristics	Sewer Repair Nearby?	Urbanized Area	DCIA >11% [9]	Impaired Waterbody	Score	Priority Ranking *Low Priority: 0-5* *Problem: 6-9* *High Priority: ≥10*
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4300-00-5+R22	7	Farmington River		0		3	3	1	0		0	Mainly residential housing with wooded areas.		1	0	1	9	Problem
4300-00-5+R8	3	Farmington River		1		3	2	1	0		0	Mixture of commercial, agricultural, and golf parks.		1	0	1	9	Problem
4300-00-5+R9	0	Farmington River		1		3	2	1	0		0	Mixuture of commercial and wooded areas		1	0	1	9	Problem
4300-32-1	41	Farmington River, Minister Brook		0		3	3	2	0		1	Highly residential/commercialized areas	2	1	0	1	13	High Priority
4300-33-1	22	Russel Brook		0		3	2	2	0		1	Highly residential/commercialized areas with some wooded areas.		1	0	1	10	High Priority
4300-34-1	20	Still Brook, Smiths Pond		0		0	2	2	0		3	Mostly wooded, some residential housing, light commercial		1	0	0	8	Problem
4300-35-1	13	Powder Mill Brook, King Phillip Brook		0		0	1	2	0		3	Wooded, light residential housing		0	0	0	6	Problem
4300-36-1*	8	Powder Mill Brook, King Phillip Brook		3		0	1	1	0		3	Wooded, light residential housing, some cleared agricultural land		0	0	0	8	Problem
4300-37-1	10	Second Brook, Farmington River		0		3	1	1	0		3	Wooded with light residential housing		1	0	0	9	Problem
4300-38-1	6	Lucy Brook		0		0	1	1	0		3	Wooded with very light residential		1	0	0	6	Problem
4300-39-1	38	Owens Brook, Farmington River		0		3	3	2	0		3	Mainly residential housing with wooded areas.		1	0	1	13	High Priority
4300-39-2-R1	0	Owens Brook, Farmington River		0		3	1	1	0		0	Wooded with cleared undeveloped land		1	0	1	7	Problem
4300-40-1	16	Unnamed Streams		0		0	2	2	0		0	Commercial/ Marshland, some cleared agricultural		1	0	0	5	Low Priority

Town of Simsbury
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4300-41-1	6	Unnamed Streams		3		0	1	2	0		3	Mostly wooded, some residential housing and cleared agricultural land		0	0	0	9	Problem
4300-42-1	18	Bissel Brook		3		0	2	2	0		3	Cleared agricultural land, some residential housing and wooded areas		1	0	0	11	High Priority
4300-43-1	10	Saxton Brook		3		0	1	1	0		3	Agricultural land, some wooded area, residential housing, commercial, marshland		1	0	0	9	Problem
4300-44-1	0	Munnisunk Brook, Lake Basile, Wadhams Pond		3		2	2	2	0		3	Residential housing, some wooded area, light agricultural land, commercial (airport)		1	0	1	14	High Priority
4300-44-1-L1	11	Munnisunk Brook, Lake Basile, Wadhams Pond		3		2	2	2	0		3	Residential housing, some wooded area, light agricultural land		1	0	1	14	High Priority
4300-47-1	0	Griffin Brook, Three Unnamned Streams, Penwood Pond, Wadhams Pond		0		0	1	1	0		3	Wooded, light residential housing		0	0	0	5	Low Priority
4309-02-1	0	Unnamed Streams, Tilton Pond		0		0	1	1	0		3	Wooded, light residential housing, little agricultural land		0	0	0	5	Low Priority
4309-03-1	0	Unnamed Streams		0		0	1	1	0		3	Wooded, light residential housing, little agricultural land		0	0	0	5	Low Priority
4312-00-2-L2	0	None in the Town		0		0	1	1	0		0	Wooded		1	0	0	3	Low Priority
4317-00-1	71	Nod Brook		3		3	2	2	0		3	Residential housing, some wooded and commercial	2	1	0	1	17	High Priority

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4317-00-2-L1	3	Nod Brook, Stub Pond		3		3	2	2	0		3	Residential housing, some wooded and commercial	2	1	0	1	17	High Priority
4317-00-2-R1	1	Nod Brook Twin Ponds		3		3	2	2	0		3	Residential housing, some wooded and commercial		1	0	1	15	High Priority
4317-01-1	9	Wiggin Brook		3		0	2	2	0		3	Commercial, moderate residential housing, some wooded area		1	0	0	11	High Priority
4318-00-1	16	Hop Brook		3		3	2	2	0		3	Wooded, cleared land (golf courses), some agricultural land, and residential housing, light commercial		1	0	3	17	High Priority
4318-00-1-L1	9	Hop Brook, Tutler Rservoir		3		3	1	2	0		3	Wooded, some residential housing		0	0	3	15	High Priority
4318-00-2-R1	9	Hop Brook		3		3	1	2	0		3	Wooded, some residential housing, agricultural land, golf course		1	0	3	16	High Priority
4318-00-2-R2	25	Hop Brook		3		3	2	2	0		3	Wooded, golf course, residential housing, light farmland	2	1	0	3	19	High Priority
4318-00-3-R1	1	Hop Brook		3		3	1	1	0		0	Wooded, recreational fields and track		1	0	3	12	High Priority
4318-00-3-R2	25	Hop Brook		3		3	3	1	0		3	Commercial, golf course, recreational fields		1	0	3	17	High Priority
4318-01-1	37	Unnamed Stream		0		0	1	2	0		3	Wooded. Some residential housing, light agricultural land	2	1	0	0	9	Problem
4318-02-1	4	Great Pond Brook, Brooks Pond, Unnamed Stream		1		0	1	2	0		3	Wooded, light residential housing		1	0	0	8	Problem
4318-02-1-L1	7	Unnamed Stream, Great Pond		0		0	1	1	0		3	Wooded, some agricultural land, light residential		1	0	0	6	Problem
4318-03-1	19	Stratton Brook		3		0	2	2	0		0	Wooded, residential	2	1	0	0	10	High Priority
4318-03-2-R1	23	Stratton Brook		3		0	2	2	0		3	Wooded, some residential housing, light agricultural land		1	0	0	11	High Priority
4318-04-1	17	Unnamed Stream, Case Reservoir		3		0	2	2	0		3	Wooded, agricultural land, resdiential housing, light commercial		1	0	0	11	High Priority
4318-04-1-L1	6	Unnamed Stream		3		0	1	2	0		3	Wooded, some resdiential housing		1	0	0	10	High Priority

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4318-05-1	40	Grimes Brook		0		0	3	2	0		3	Residential housing, some agricultural land, light commercial	2	1	0	0	11	High Priority
4318-06-1	17	Unnamed Stream		0		0	2	1	0		3	Residential housing, some recreational fields, light wooded		1	0	0	7	Problem
4319-10-1	42	Bissell Brook		0		0	2	2	0		3	Wooded and residential housing		1	0	0	8	Problem
4319-10-2-L1	17	Bissel Brook		0		0	1	2	0		3	Wooded, aome agricultural land and residential		1	0	0	7	Problem
4319-11-1	1	Unnamed Stream		0		0	1	1	0		3	Wooded		0	0	0	5	Low Priority
4404-04-1-L2	0	Unnamed Stream		0		0	1	1	0		0	Wooded		1	0	0	3	Low Priority

Scoring Criteria:

[1] Previous 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

[2] Catchments that discharge to or in the vicinity of any of the following areas: public beaches, recreational areas, drinking water supplies, or shellfish beds

[3] 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

[4] 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.)

[5] 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

[6] 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.

[7] Aging septic systems are septic systems 30 years or older in residential areas.

[8] Any river or stream that is culverted for distance greater than a simple roadway crossing.

[9] Based off of CT NEMO DCIA Calculations

Pending investigation

ATTACHMENT IV- Miscellaneous Documentation

CONNECTICUT DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION

REPORT OF PETROLEUM OR CHEMICAL PRODUCT
DISCHARGE, SPILLAGE OR RELEASE

1.) When did the incident occur?

Date: July 7, 2021 Time: ~12:00 PM

2.) Where did the incident occur?

9 Mountain View Road
Weatogue (Simsbury)
CT 06089

3.) How did the incident occur?

Based on conversations between the Town of Simsbury and representatives from Kapura General Contractors (Kapura), the apparent cause of the incident is that a broken pipe connected to a well pump system resulted in the basement of a vacant house at 9 Mountain View Road, Weatogue, CT, to flood and partially fill with water (approximately a 4-ft. depth). Kapura, of 339 Cooke Street in Plainville, Connecticut, was retained by the homeowner to pump out the basement. The homeowner/contractor were in communication with the Simsbury Fire Department and a Building Official. The Building Official, under the understanding that the materials had been tested, advised that the material could be discharged if it was filtered. Kapura then discharged the unfiltered water, mixed with unknown materials from the basement onto the driveway of the home. The discharge then flowed into Mountain View Road and then south into a nearby municipal stormwater catch basin, which connected into a series of five (5) additional catch basins, eventually discharging a total of 17,953-gallons of water from the flooded basement into a nearby catch basin. Approximately 17,578-gallons of dewatering waste liquid discharged from an outfall pipe directly into Russell Brook. The catch basins and outfall pipe are associated with the Town of Simsbury Municipal Separate Storm Sewer System (MS4).

4.) Under whose control was the chemical or petroleum product at the time of this incident? Please give their name, mailing address and telephone number.

Bill Kapura
Kapura General Contractors, Inc.
339 Cook Street, Plainville, Connecticut 06062
(860) 747-2100

5.) Who is the owner of the property onto which the spill occurred? If this is corporate property or property owned jointly, who represents the owner? Please give their name, mailing address and telephone number.

Owner:
Ann Iskra
9 Mountain View Road,
Weatogue, CT 06089

6.) When was the incident verbally reported to the Department of Energy & Environmental Protection?

Date: 7/14/2021 **Time:** ~12PM
To: Richard Scalora (Richard.scalora@ct.gov) at CTDEEP Spill Hotline
Case #: 2021-02876

7.) Who reported the incident and whom were they representing? Please give their name, title, mailing address and telephone number.

A Town of Simsbury representative spoke with a Kapura representative on the day of the incident. Based on this discussion, Kapura indicated they would report the spill to the DEEP. Between July 7 and July 14, several inquiries were made by the Town of Simsbury to the DEEP on whether or not the spill had been reported. The DEEP indicated that a spill had not been reported associated with the release. Anthony Piazza, a Town of Simsbury representative, then reported the spill to DEEP. Mr. Piazza spoke with Richard Scalora, a member of the DEEP Hazmat Team and DEEP Spill Department, who was made aware of the lack of reporting from Kapura.

Representative Reporting on Behalf of the Town of Simsbury:

Luke Whitehouse
Senior Project Manager
ATC Group Services, LLC (ATC)
290 Roberts Street – Suite 301, East Hartford, Connecticut 06108
(860) 608-8576

Representative of the Town of Simsbury:

Anthony Piazza
Water Pollution Control Facility Superintendent
36 Drake Hill, Simsbury, Connecticut 06070
(860) 658-3258

Kapura Contact Information:

Bill Kapura
Kapura General Contractors, Inc.
339 Cook Street, Plainville, Connecticut 06062
(860) 747-2100

8.) What were the chemical or petroleum products released, spilled or discharged? Give an exact description of each of the materials involved in the incident, including chemical names, percent concentrations, trade names, etc. If the chemicals are Extremely Hazardous Substances or CERCLA hazardous substances they must be identified as such and include the reportable quantity (RQ). Please attach a Material Safety Data Sheet (MSDS) for each chemical involved. What were the quantities of chemicals that were released, spilled or discharged to each environmental medium (air, surface water, soil, and groundwater)? [NOTE: CGS 22a-450 requires the reporting of any amount of any substance or material released to the environment].

Approximately 17,953-gallons of a water that had flooded the basement of the vacant house were discharged by Kapura to the Town of Simsbury MS4 system. This was calculated by an estimate of a 600-ft^2 basement with a depth of four (4)-ft., totaling 2,400-ft^3. The total ft^3 was then multiplied by 7.4805 (the equivalent of gallons to one (1)-ft^3). Kapura provided the Town of Simsbury with a one-page laboratory analytical report from EnviroTech Laboratory, LLC, of Windsor, Connecticut, which was reportedly associated with a water sample collected by Kapura from the water in the basement on June 5, 2021 (included as **Attachment II**). The laboratory report indicates extractable total petroleum hydrocarbons (ETPH) was not detected above 0.070 milligrams per liter. However, discrepancies in the authenticity of the laboratory report included the informal format of the report, lack of chain of custody record, and quality control data, which is typically provided with all Connecticut Department of Public Health (CTDPH) approved laboratory reports.

On July 7, 2021, ATC responded to the incident and collected a water sample from the first catch basin that received the discharged liquid in the series of MS4 catch basins. The water sample was submitted to Phoenix Environmental Laboratories, Inc., of Manchester, Connecticut, a CTDPH-approved laboratory, for the analysis of Escherichia coli (E. coli), enterococci bacteria, fecal coliforms, total coliforms, chlorine, surfactants (MBAS), ammonia, ETPH, volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbons (PAHs). The laboratory analytical report is provided as **Attachment III**.

Bacterial analysis results, including E. Coli and Fecal Coliform, which are typically associated with raw sewage, were reported at concentrations either too numerous to count or greater than 17,000 units per 100 milliliters. Additionally, ETPH was reported at a concentration of 1.7 milligrams per liter (mg/L), which exceeds the state criteria of 0.250 mg/L. Other constituents reported above laboratory detection limits, which included ammonia, surfactants, VOCs, and PAHs, were at relatively low concentrations, but are indicative of a mixture of pollutants present in the discharge water.

9.) Did any of the chemical travel beyond the property line? [NOTE: materials that enter the ground water are considered to have gone beyond the property line.]

Yes. Approximately 17,953-gallons of a contaminated water that had flooded the basement of the residential dwelling were discharged to the paved driveway, releasing into the Town of Simsbury MS4 infrastructure. The water traveled through six (6) associated catch basins, which ultimately discharge to Russell Brook. Based on the volume of liquid removed from the catch basins by the Town of Simsbury (discussed below), approximately 17,578-gallons are suspected to have discharged into Russel Brook because of this incident.

10.) What actions were taken to respond to and contain the release, spill or discharge?

Upon notification of the illicit discharge, the Town of Simsbury immediately reached out to the homeowner for verification of what company discharged the water.

The Town of Simsbury then contacted ATC, Simsbury's on-call environmental consulting firm, who provided guidance on cleaning up the spill. On July 7, 2021, the Town directed the removal of waste liquids and sediments with the six (6) catch basins that received the waste discharge. A total of 375-gallons of the waste liquid and 55 ft^3 of impacted sediments were removed during the remediation efforts. The waste liquid was transported to the Town of Simsbury Water Pollution Control Facility to be treated and discharged. The removed impacted sediment was transported to an incineration facility for proper disposal. ATC inspected Russel Brook for signs of obvious environmental impacts (deceased wildlife, discolored water, and other such indicators). At the time of inspection, no obvious impacts were observed; however, based on the flow of the brook at the time of inspection, the majority of waste liquids discharged are suspected to have migrated downstream. The outfall water that conveyed the impacted water is positioned directly over Russel Brook; therefore, impacted sediments along the brook's embankment were not observed.

11.) What actions are being taken to prevent reoccurrence of an incident of this type?

Preventative actions will continue to include the use of spill equipment, training, and safe response to spills. The incident was related to the lack of knowledge of the homeowner and associated contractor of the illegal discharge of polluted liquid to the Town's MS4. Training will continue to be provided to Town employees on illicit discharges, as well continue public outreach, possibly targeting contractors.

12.) Were there any injuries as a result of the incident? If so, list the names of exposed individuals, their addresses, and phone numbers and describe their injuries.

There were no injuries as a result of the incident.

13.) What is the appropriate advice regarding medical attention necessary for exposed individuals?

No contact by individuals reported.

14.) Is there any known or anticipated health risks, acute or chronic, associated with the release of this chemical or medical advice that should be communicated?

Based on the constituents present in the discharged waste and relatively small size and capacity of Russel Brook, potentially adverse effects may have occurred to wildlife and the water quality downstream of the release.

15.) Was the incident completely cleaned up by the time this report was submitted? If not, what are the anticipated remedial actions and their duration?

The effected catch basins were cleaned immediately upon notification to the Town of Simsbury of the release. However, the majority of the impacted materials were discharged to Russel Brook and had migrated downstream prior to remedial efforts were initiated. Additional inquiry and/or efforts may be warranted by Kapura, the general contractor that discharged the polluted water.

16.) CERTIFICATION

I hereby affirm that the foregoing statement is true to the best of my knowledge.

	Senior Project Manager- Atlas	7/16/2021
Signature	Title	Date

Luke Whitehouse	(860) 608-8576
Print Name	Telephone Number

290 Roberts Street-Suite 301	East Hartford	CT	06108
Street Address/P.O. Box	City/Town	State	Zip

This form may be reproduced or computerized as long as it contains all of the information requested and is on an 8 1/2 x 11 white paper, black type format. For serious incidents, the questions may be answered in a narrative format, which must include the preparer's affidavit.

ATTACHMENT I –Photo Documentation

PHOTOGRAPHIC LOG

ATC Group Services, LLC
290 Roberts Street – Suite 301
East Hartford, CT 06108

Client Name: *Town of Simsbury*	**Site Location:** *9 Mountain View Dr., Weatogue, CT 06089*	**Date:** *7/7/2021*

Photograph #1

Description: *Town of Simsbury vacuuming out initial catch basin (facing north, towards 9 Mountain View Drive).*

Photograph #2

Description: *Second associated catch basin of water mixture flow.*

PHOTOGRAPHIC LOG

ATC Group Services, LLC
290 Roberts Street – Suite 301
East Hartford, CT 06108

Client Name: *Town of Simsbury*	**Site Location:** *9 Mountain View Dr., Weatogue, CT 06089*	**Date:** *7/7/2021*

Photograph #3	
Description: *Facing south, showing direction of flow (towards Russell Brook, through the stormwater drainage system).*	

Photograph #4	
Description: *Third associated catch basin of water mixture flow.*	

PHOTOGRAPHIC LOG

ATC Group Services, LLC
290 Roberts Street – Suite 301
East Hartford, CT 06108

Client Name: *Town of Simsbury*	**Site Location:** *9 Mountain View Dr., Weatogue, CT 06089*	**Date:** *7/7/2021*

Photograph #5

Description:
Final catch basin of water mixture flow, with some sediment accumulation, of which was vacuumed out.

Photograph #6

Description:
Russell Brook- where the water mixture discharged an unknown amount.

ATTACHMENT II –Kapura Laboratory Analytical Results

ENVIROTECH LABORATORY, LLC
77 COOK HILL ROAD • WINDSOR, CONNECTICUT 06095
MARYELLEN DiLUZIO
TELEPHONE
(860) 688-7249

June 18, 2021

Sharon Holcombe

Dear Sharon,

We have the following to report on the sample submitted to this Laboratory on June 5, 2021.

Sample Number: 28131

Mark: water sample collected 6/5/21 by Sharon Holcombe from
9 Mountain View Rd, Weatogue, CT

CTETPH 8015D

Location	Test Results in mg/L	Action Level in mg/L
CELLAR	< 0.070 none detected	0.25

If there are any questions we would be pleased to discuss them with you.

Very truly yours,
EnviroTech Laboratory, LLC

M. DiLuzio

Maryellen DiLuzio, a member
PH 0464 PH 0618

ATTACHMENT III – Analytical Results

PHOENIX
Environmental Laboratories, Inc.

Wednesday, July 14, 2021

Attn: Luke Whitehouse
ATC Associates
290 Roberts St., Suite 301
East Hartford, CT 06108

Project ID: SIMSBURY
SDG ID: GCI68556
Sample ID#s: CI68556

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

SDG Comments

July 14, 2021

SDG I.D.: GCI68556

Volatile 8260 analysis:
1,2-Dibromoethane and 1,2-Dibromo-3-chloropropane do not meet GWP criteria, these compounds are analyzed by GC/ECD to achieve this criteria.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

July 14, 2021

SDG I.D.: GCI68556

Project ID: SIMSBURY

Client Id	Lab Id	Matrix
IDDE-1	CI68556	WASTE WATER

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 14, 2021

FOR: Attn: Luke Whitehouse
ATC Associates
290 Roberts St., Suite 301
East Hartford, CT 06108

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		07/06/21	15:30
Location Code:	ATC-EH	Received by:	B	07/06/21	18:32
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCI68556
Phoenix ID: CI68556

Project ID: SIMSBURY
Client ID: IDDE-1

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Escherichia Coli	17300	10	MPN/100 mls	10	07/06/21 18:55	LJ/HB	SM9223B-04
Enterococci Bacteria	>24200	10	MPN/100 mls	10	07/06/21 18:55	LJ/LJ	Enterolert
Fecal Coliforms MPN	19900	10	MPN/100 mls	10	07/06/21 18:55	LJ/HB	Colilert-18
Total Coliforms	>24200	10	MPN/100 mls	10	07/06/21 18:55	LJ/HB	SW9223B-06
Chlorine Residual	< 0.02	0.02	mg/L	1	07/07/21 01:19	MW	SM4500Cl-G-00
MBAS	0.16	0.10	mg/L	2	07/07/21 22:27	MW/ER	SM5540 C-11
Ammonia as Nitrogen	1.30	0.10	mg/L	2	07/13/21	KDB	E350.1
Extraction of ETPH	Completed				07/12/21	P/CG	SW3510C/SW3520C
Semi-Volatile Extraction	Completed				07/06/21	P/CG	SW3520C
TPH by GC (Extractable Products)							
Ext. Petroleum H.C. (C9-C36)	1.7	0.066	mg/L	1	07/09/21	PS	CTETPH 8015D
Identification	**		mg/L	1	07/09/21	PS	CTETPH 8015D
QA/QC Surrogates							
% Terphenyl (surr)	Interference		%	1	07/09/21	PS	50 - 150 %
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,1,1-Trichloroethane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1	07/09/21	HM	E624.1
1,1,2-Trichloroethane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,1-Dichloroethane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,1-Dichloroethene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,1-Dichloropropene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,2,3-Trichlorobenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,2,3-Trichloropropane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,2,4-Trichlorobenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1

Project ID: SIMSBURY
Client ID: IDDE-1

Phoenix I.D.: CI68556

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L	1	07/09/21	HM	E624.1
1,2-Dibromoethane	ND	0.50	ug/L	1	07/09/21	HM	E624.1
1,2-Dichlorobenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,2-Dichloroethane	ND	0.60	ug/L	1	07/09/21	HM	E624.1
1,2-Dichloropropane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,3-Dichlorobenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,3-Dichloropropane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
1,4-Dichlorobenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
2,2-Dichloropropane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
2-Chlorotoluene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
2-Hexanone	ND	5.0	ug/L	1	07/09/21	HM	E624.1
2-Isopropyltoluene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
4-Chlorotoluene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
4-Methyl-2-pentanone	ND	5.0	ug/L	1	07/09/21	HM	E624.1
Acetone	ND	25	ug/L	1	07/09/21	HM	E624.1
Acrylonitrile	ND	0.50	ug/L	1	07/09/21	HM	E624.1
Benzene	ND	0.70	ug/L	1	07/09/21	HM	E624.1
Bromobenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Bromochloromethane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Bromodichloromethane	ND	0.50	ug/L	1	07/09/21	HM	E624.1
Bromoform	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Bromomethane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Carbon Disulfide	ND	5.0	ug/L	1	07/09/21	HM	E624.1
Carbon tetrachloride	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Chlorobenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Chloroethane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Chloroform	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Chloromethane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
cis-1,2-Dichloroethene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
cis-1,3-Dichloropropene	ND	0.40	ug/L	1	07/09/21	HM	E624.1
Dibromochloromethane	ND	0.50	ug/L	1	07/09/21	HM	E624.1
Dibromomethane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Dichlorodifluoromethane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Ethylbenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Hexachlorobutadiene	ND	0.40	ug/L	1	07/09/21	HM	E624.1
Isopropylbenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
m&p-Xylene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Methyl ethyl ketone	8.5	5.0	ug/L	1	07/09/21	HM	E624.1
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Methylene chloride	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Naphthalene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
n-Butylbenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
n-Propylbenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
o-Xylene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
p-Isopropyltoluene	4.8	1.0	ug/L	1	07/09/21	HM	E624.1
sec-Butylbenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Styrene	ND	1.0	ug/L	1	07/09/21	HM	E624.1

Project ID: SIMSBURY
Client ID: IDDE-1

Phoenix I.D.: CI68556

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
tert-Butylbenzene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Tetrachloroethene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Tetrahydrofuran (THF)	ND	2.5	ug/L	1	07/09/21	HM	E624.1
Toluene	8.3	1.0	ug/L	1	07/09/21	HM	E624.1
Total Xylenes	ND	1.0	ug/L	1	07/09/21	HM	E624.1
trans-1,2-Dichloroethene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
trans-1,3-Dichloropropene	ND	0.40	ug/L	1	07/09/21	HM	E624.1
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	1	07/09/21	HM	E624.1
Trichloroethene	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Trichlorofluoromethane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Trichlorotrifluoroethane	ND	1.0	ug/L	1	07/09/21	HM	E624.1
Vinyl chloride	ND	1.0	ug/L	1	07/09/21	HM	E624.1
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	96		%	1	07/09/21	HM	70 - 130 %
% Bromofluorobenzene	98		%	1	07/09/21	HM	70 - 130 %
% Dibromofluoromethane	97		%	1	07/09/21	HM	70 - 130 %
% Toluene-d8	94		%	1	07/09/21	HM	70 - 130 %

Semivolatiles by SIM, PAH

2-Methylnaphthalene	ND	0.47	ug/L	1	07/07/21	WB	625(SIM)
Acenaphthene	ND	0.47	ug/L	1	07/07/21	WB	625(SIM)
Acenaphthylene	ND	0.28	ug/L	1	07/07/21	WB	625(SIM)
Anthracene	ND	0.47	ug/L	1	07/07/21	WB	625(SIM)
Benz(a)anthracene	0.05	0.05	ug/L	1	07/07/21	WB	625(SIM)
Benzo(a)pyrene	ND	0.19	ug/L	1	07/07/21	WB	625(SIM)
Benzo(b)fluoranthene	0.07	0.07	ug/L	1	07/07/21	WB	625(SIM)
Benzo(ghi)perylene	ND	0.45	ug/L	1	07/07/21	WB	625(SIM)
Benzo(k)fluoranthene	ND	0.28	ug/L	1	07/07/21	WB	625(SIM)
Chrysene	ND	0.47	ug/L	1	07/07/21	WB	625(SIM)
Dibenz(a,h)anthracene	ND	0.09	ug/L	1	07/07/21	WB	625(SIM)
Fluoranthene	ND	0.47	ug/L	1	07/07/21	WB	625(SIM)
Fluorene	ND	0.47	ug/L	1	07/07/21	WB	625(SIM)
Indeno(1,2,3-cd)pyrene	ND	0.09	ug/L	1	07/07/21	WB	625(SIM)
Naphthalene	0.63	0.47	ug/L	1	07/07/21	WB	625(SIM)
Phenanthrene	0.17	0.06	ug/L	1	07/07/21	WB	625(SIM)
Pyrene	ND	0.47	ug/L	1	07/07/21	WB	625(SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	51		%	1	07/07/21	WB	30 - 130 %
% Nitrobenzene-d5	79		%	1	07/07/21	WB	30 - 130 %
% Terphenyl-d14	39		%	1	07/07/21	WB	30 - 130 %

Project ID: SIMSBURY
Client ID: IDDE-1

Phoenix I.D.: CI68556

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

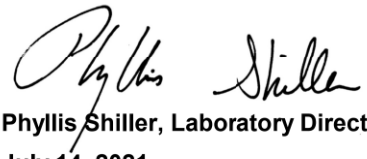
Comments:

The LAS standard used for the MBAS analysis has a molecular weight of 342 g/mol.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

TPH Comment:
**Petroleum hydrocarbon chromatogram contains a multicomponent hydrocarbon distribution in the range of C18 to C36. The sample was quantitated against a C9-C36 alkane hydrocarbon standard.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director
July 14, 2021
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 14, 2021

QA/QC Data

SDG I.D.: GCI68556

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 582632 (mg/L), QC Sample No: CI67928 (CI68556)													
MBAS	BRL	0.05	<0.05	<0.05	NC	87.7			102			85 - 115	20
Comment:													
Additional criteria matrix spike acceptance range is 75-125%.													
QA/QC Batch 583118 (mg/L), QC Sample No: CI68556 (CI68556)													
Ammonia as Nitrogen	BRL	0.05	1.30	1.38	6.00	102			102			90 - 110	20
QA/QC Batch 582415 (mg/L), QC Sample No: CI67903 (CI68556)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	93.1							

PHOENIX

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QA/QC Report

July 14, 2021

QA/QC Data

SDG I.D.: GCI68556

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 582391 (mg/L), QC Sample No: CI68486 (CI68556)											
TPH by GC (Extractable Products) - Waste Water											
Ext. Petroleum H.C. (C9-C36)	ND	0.10	96	119	21.4				60 - 120	30	
% Terphenyl (surr)	82	%	103	95	8.1				50 - 150	20	
Comment:											
Additional surrogate criteria: LCS acceptance range is 60-120% MS acceptance range 50-150%. The ETPH/DRO LCS has been normalized based on the alkane calibration.											
QA/QC Batch 583173 (mg/L), QC Sample No: CI72003 (CI68556)											
TPH by GC (Extractable Products) - Waste Water											
Ext. Petroleum H.C. (C9-C36)	ND	0.10	90	96	6.5				60 - 120	30	
% Terphenyl (surr)	91	%	92	96	4.3				50 - 150	20	
Comment:											
Additional surrogate criteria: LCS acceptance range is 60-120% MS acceptance range 50-150%. The ETPH/DRO LCS has been normalized based on the alkane calibration.											
QA/QC Batch 582392 (ug/L), QC Sample No: CI67905 (CI68556)											
Semivolatiles by SIM, PAH - Waste Water											
2-Methylnaphthalene	ND	0.50	58	73	22.9				30 - 130	20	r
Acenaphthene	ND	0.50	72	76	5.4				30 - 130	20	
Acenaphthylene	ND	0.30	66	54	20.0				30 - 130	20	
Anthracene	ND	0.50	82	83	1.2				30 - 130	20	
Benz(a)anthracene	ND	0.02	92	92	0.0				30 - 130	20	
Benzo(a)pyrene	ND	0.02	87	84	3.5				30 - 130	20	
Benzo(b)fluoranthene	ND	0.02	88	88	0.0				30 - 130	20	
Benzo(ghi)perylene	ND	0.48	81	79	2.5				30 - 130	20	
Benzo(k)fluoranthene	ND	0.02	83	84	1.2				30 - 130	20	
Chrysene	ND	0.02	81	80	1.2				30 - 130	20	
Dibenz(a,h)anthracene	ND	0.10	95	94	1.1				30 - 130	20	
Fluoranthene	ND	0.50	93	94	1.1				30 - 130	20	
Fluorene	ND	0.50	75	79	5.2				30 - 130	20	
Indeno(1,2,3-cd)pyrene	ND	0.02	101	99	2.0				30 - 130	20	
Naphthalene	ND	0.50	54	72	28.6				30 - 130	20	r
Phenanthrene	ND	0.06	87	90	3.4				30 - 130	20	
Pyrene	ND	0.50	96	95	1.0				30 - 130	20	
% 2-Fluorobiphenyl	59	%	61	65	6.3				30 - 130	20	
% Nitrobenzene-d5	54	%	78	84	7.4				30 - 130	20	
% Terphenyl-d14	79	%	82	81	1.2				30 - 130	20	
Comment:											
Additional 8270 criteria:20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)											
QA/QC Batch 582901 (ug/L), QC Sample No: CI67538 (CI68556)											
Volatiles - Waste Water											
1,1,1,2-Tetrachloroethane	ND	1.0	91	90	1.1				70 - 130	30	

QA/QC Data

SDG I.D.: GCI68556

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
1,1,1-Trichloroethane	ND	1.0	91	86	5.6				70 - 130	30
1,1,2,2-Tetrachloroethane	ND	0.50	88	88	0.0				70 - 130	30
1,1,2-Trichloroethane	ND	1.0	84	84	0.0				70 - 130	30
1,1-Dichloroethane	ND	1.0	94	93	1.1				70 - 130	30
1,1-Dichloroethene	ND	1.0	96	89	7.6				70 - 130	30
1,1-Dichloropropene	ND	1.0	89	84	5.8				70 - 130	30
1,2,3-Trichlorobenzene	ND	1.0	75	73	2.7				70 - 130	30
1,2,3-Trichloropropane	ND	1.0	85	85	0.0				70 - 130	30
1,2,4-Trichlorobenzene	ND	1.0	83	80	3.7				70 - 130	30
1,2,4-Trimethylbenzene	ND	1.0	89	87	2.3				70 - 130	30
1,2-Dibromo-3-chloropropane	ND	1.0	86	88	2.3				70 - 130	30
1,2-Dibromoethane	ND	1.0	85	83	2.4				70 - 130	30
1,2-Dichlorobenzene	ND	1.0	88	85	3.5				70 - 130	30
1,2-Dichloroethane	ND	1.0	85	84	1.2				70 - 130	30
1,2-Dichloropropane	ND	1.0	88	87	1.1				70 - 130	30
1,3,5-Trimethylbenzene	ND	1.0	90	86	4.5				70 - 130	30
1,3-Dichlorobenzene	ND	1.0	87	84	3.5				70 - 130	30
1,3-Dichloropropane	ND	1.0	87	85	2.3				70 - 130	30
1,4-Dichlorobenzene	ND	1.0	88	84	4.7				70 - 130	30
2,2-Dichloropropane	ND	1.0	82	78	5.0				70 - 130	30
2-Chlorotoluene	ND	1.0	91	87	4.5				70 - 130	30
2-Hexanone	ND	5.0	86	85	1.2				70 - 130	30
2-Isopropyltoluene	ND	1.0	104	100	3.9				70 - 130	30
4-Chlorotoluene	ND	1.0	90	85	5.7				70 - 130	30
4-Methyl-2-pentanone	ND	5.0	94	94	0.0				70 - 130	30
Acetone	ND	5.0	87	97	10.9				70 - 130	30
Acrylonitrile	ND	5.0	99	96	3.1				70 - 130	30
Benzene	ND	0.70	89	87	2.3				70 - 130	30
Bromobenzene	ND	1.0	90	89	1.1				70 - 130	30
Bromochloromethane	ND	1.0	83	83	0.0				70 - 130	30
Bromodichloromethane	ND	0.50	88	85	3.5				70 - 130	30
Bromoform	ND	1.0	83	82	1.2				70 - 130	30
Bromomethane	ND	1.0	143	154	7.4				70 - 130	30
Carbon Disulfide	ND	1.0	113	107	5.5				70 - 130	30
Carbon tetrachloride	ND	1.0	91	87	4.5				70 - 130	30
Chlorobenzene	ND	1.0	90	87	3.4				70 - 130	30
Chloroethane	ND	1.0	122	118	3.3				70 - 130	30
Chloroform	ND	1.0	86	83	3.6				70 - 130	30
Chloromethane	ND	1.0	129	125	3.1				70 - 130	30
cis-1,2-Dichloroethene	ND	1.0	88	85	3.5				70 - 130	30
cis-1,3-Dichloropropene	ND	0.40	87	86	1.2				70 - 130	30
Dibromochloromethane	ND	0.50	89	88	1.1				70 - 130	30
Dibromomethane	ND	1.0	86	84	2.4				70 - 130	30
Dichlorodifluoromethane	ND	1.0	141	133	5.8				70 - 130	30
Ethylbenzene	ND	1.0	92	88	4.4				70 - 130	30
Hexachlorobutadiene	ND	0.40	88	85	3.5				70 - 130	30
Isopropylbenzene	ND	1.0	94	90	4.3				70 - 130	30
m&p-Xylene	ND	1.0	88	85	3.5				70 - 130	30
Methyl ethyl ketone	ND	5.0	97	97	0.0				70 - 130	30
Methyl t-butyl ether (MTBE)	ND	1.0	112	113	0.9				70 - 130	30
Methylene chloride	ND	1.0	85	84	1.2				70 - 130	30
Naphthalene	ND	1.0	78	78	0.0				70 - 130	30
n-Butylbenzene	ND	1.0	85	83	2.4				70 - 130	30

QA/QC Data

SDG I.D.: GCI68556

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
n-Propylbenzene	ND	1.0	91	88	3.4				70 - 130	30
o-Xylene	ND	1.0	89	86	3.4				70 - 130	30
p-Isopropyltoluene	ND	1.0	90	86	4.5				70 - 130	30
sec-Butylbenzene	ND	1.0	96	94	2.1				70 - 130	30
Styrene	ND	1.0	90	86	4.5				70 - 130	30
tert-Butylbenzene	ND	1.0	88	86	2.3				70 - 130	30
Tetrachloroethene	ND	1.0	90	88	2.2				70 - 130	30
Tetrahydrofuran (THF)	ND	2.5	84	81	3.6				70 - 130	30
Toluene	ND	1.0	92	90	2.2				70 - 130	30
trans-1,2-Dichloroethene	ND	1.0	99	94	5.2				70 - 130	30
trans-1,3-Dichloropropene	ND	0.40	85	84	1.2				70 - 130	30
trans-1,4-dichloro-2-butene	ND	5.0	88	89	1.1				70 - 130	30
Trichloroethene	ND	1.0	90	88	2.2				70 - 130	30
Trichlorofluoromethane	ND	1.0	125	118	5.8				70 - 130	30
Trichlorotrifluoroethane	ND	1.0	109	105	3.7				70 - 130	30
Vinyl chloride	ND	1.0	124	119	4.1				70 - 130	30
% 1,2-dichlorobenzene-d4	91	%	99	101	2.0				70 - 130	30
% Bromofluorobenzene	98	%	96	97	1.0				70 - 130	30
% Dibromofluoromethane	101	%	94	91	3.2				70 - 130	30
% Toluene-d8	95	%	105	104	1.0				70 - 130	30

Comment:

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%, 25-160% for Chloroethane-HL and Trichlorofluoromethane-HL.

I = This parameter is outside laboratory LCS/LCSD specified recovery limits.
r = This parameter is outside laboratory RPD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
July 14, 2021

Wednesday, July 14, 2021

Criteria: CT: GWP, SWP

State: CT

Sample Criteria Exceedances Report

GCI68556 - ATC-EH

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
CI68556	$8260GWR	1,2-Dibromo-3-chloropropane	CT / RSR GWPC (ug/l) / APS Organics	ND	0.50	0.2	0.2	ug/L
CI68556	$8260GWR	1,2-Dibromoethane	CT / RSR GWPC (ug/l) / Volatiles	ND	0.50	0.05	0.05	ug/L
CI68556	$ETPH_WMR	Ext. Petroleum H.C. (C9-C36)	CT / RSR GWPC (ug/l) / Pest/PCB/TPH	1.7	0.066	0.25	0.25	mg/L
CI68556	$ETPH_WMR	Ext. Petroleum H.C. (C9-C36)	CT / RSR SWPC (ug/l) / APS Organics	1.7	0.066	0.25	0.25	mg/L
CI68556	NH3-WM	Ammonia as Nitrogen	CT / RSR GWPC (ug/l) / APS Inorganics	1.30	0.10	0.7	0.7	mg/L

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

Analysis Comments

July 14, 2021 SDG I.D.: GCI68556

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report:

ETPH Narration

AU-FID1 07/09/21-1: CI68556

The following Continuing Calibration compounds did not meet % deviation criteria:
Samples: CI68556
Preceding CC 709A003A - None.
Succeeding CC 709A013 - ETPH (C9-C36) 32%H (30%)

The ETPH method allows for one discrimination check standard outlier.

VOA Narration

CHEM17 07/08/21-3: CI68556

Chem 17 is a 25ml purge instrument. The laboratory minimum response factor is set at 0.01 instead of 0.05 for the 25ml purge instruments. EPA method 8260D Table 4 supports this approach.

The following Initial Calibration compounds did not meet RSD% criteria: 1,2-Dibromo-3-chloropropane 28% (20%), Bromomethane 29% (20%), trans-1,4-dichloro-2-butene 36% (20%)
The following Initial Calibration compounds did not meet maximum RSD% criteria: None.
The following Initial Calibration compounds did not meet recommended response factors: 1,2-Dibromo-3-chloropropane 0.043 (0.05), 2-Hexanone 0.096 (0.1), Acetone 0.055 (0.1), Bromoform 0.085 (0.1), Methyl ethyl ketone 0.073 (0.1)
The following Initial Calibration compounds did not meet minimum response factors: 1,2-Dibromo-3-chloropropane 0.043 (0.05)

The following Continuing Calibration compounds did not meet % deviation criteria: 2,2-Dichloropropane 33%L (30%), Bromomethane 37%L (30%)
The following Continuing Calibration compounds did not meet Maximum % deviation criteria: None.
The following Continuing Calibration compounds did not meet recommended response factors: 1,2-Dibromo-3-chloropropane 0.038 (0.05), Tetrahydrofuran (THF) 0.045 (0.05)
The following Continuing Calibration compounds did not meet minimum response factors: 1,2-Dibromo-3-chloropropane 0.043 (0.05), Tetrahydrofuran (THF) 0.052 (0.05)

Up to eight compounds can be outside of ICAL %RSD criteria and up to sixteen compounds can be outside of CCAL %Dev criteria if less than 40%.

Cooler: Yes ☐ No ☑
Coolant: IPK ☐ ICE ☑ No ☐

PHOENIX
Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 19.5 °C Pg of

Data Delivery/Contact Options:
☐ Fax:
☐ Phone:
☑ Email: luke.whitehouse@atcgs.com

Customer: ATC Group Services
Address: 290 Roberts St.
E. Hartford, CT

Project: Simsbury
Report to: Luke Whitehouse
Invoice to:
QUOTE #

Project P.O:

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature: [signature] Date: 7.6.21

Matrix Code:
DW=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
RW=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe **OIL**=Oil
B=Bulk **L**=Liquid **X** = _____(Other)

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	VOCs	ETPH	PAHs	Surfactants (MBAS)	Chloride	E. Coli Enterococci	T. Coli - Fecal Coliforms	Ammonia	MS/MSD*	GL Amber 8 oz. w/H3PO4	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [X] HCL	GL Amber 1000ml [X] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [X] 250ml [ ] 500ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
68556	IDDE-1	WW	7.6.21	1530	X	X	X	X	X	X	X	X						3	3		1	1			2	

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	7.6.21	18:52

Comments, Special Requirements or Regulations:
aliquot ambers for sample if possible

*MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.

Turnaround Time:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☑ Standard
☐ Other
* SURCHARGE APPLIES

RI
☐ (Residential) Direct Exposure
☐ (Comm/Industrial) Direct Exposure
☐ GA Leachability
☐ GB Leachability
☐ GA-GW Objectives
☐ GB-GW Objectives

CT
☐ RCP Cert
☑ GW Protection
☑ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☐ MCP Certification
☐ GW-1 ☐ MWRA eSMART
☐ GW-2 ☐ S-1 10% CALC
☐ GW-3
☐ S-1 GW-1 ☐ S-1 GW-2 ☐ S-1 GW-3
☐ S-2 GW-1 ☐ S-2 GW-2 ☐ S-2 GW-3
☐ S-3 GW-1 ☐ S-3 GW-2 ☐ S-3 GW-3
☐ SW Protection

State where samples were collected: CT

Data Format
☐ Excel
☑ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☑ Phoenix Std Report
☐ Other
* SURCHARGE APPLIES

PEL-126 REV. 06/20

ATTACHMENT V- Stormwater Retrofit Program

STORMWATER RETROFIT PROGRAM

TOWN OF SIMSBURY

PREPARED FOR:

Town of Simsbury

PREPARED BY:

Atlas
290 Roberts Street-Suite 301
East Hartford, Connecticut 06108

January 3, 2022

6280 Riverdale Street
San Diego, CA 92120
(877) 215-4321 | oneatlas.com

December 2021

Project No. 2419022001

MR. THOMAS ROY
TOWN OF SIMSBURY
CONNECTICUT 06070

Subject: **Stormwater Retrofit Program**
Town of Simsbury

Dear Mr. Roy,

Atlas is pleased to present this Stormwater Retrofit Program
If you have any questions, please call us at (860) 608-8576.

Respectfully submitted,
Atlas

Name: Luke Whitehouse
Title: Environmental Division Manager
Luke.Whitehouse@oneatlas.com

Name: Kay Lehoux
Title: Environmental Scientist
Kay.Lehoux@oneatlas.com

CONTENTS

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GRAPHICS

APPENDICES

EXECUTIVE SUMMARY

The goal of this Stormwater Retrofit Program is to comply with *Section (6) (B) (ii)* of the Connecticut Department of Energy and Environmental Protection (CTDEEP) 2017-2022 General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 Permit). Specifically, the Town of Simsbury (Town) will work towards disconnecting existing Directly Connected Impervious Areas (DCIA). According to the MS4 Permit, "an area of DCIA is considered disconnected when the appropriate portion of the Water Quality Volume has been retained in accordance with the requirements of Section 6(a)(5)(B)(i) or (ii) of this general permit" (CTDEEP, 2017). For clarification, the MS4 Permit defines the following:

> A Retrofit Project is *"One that modifies an existing developed site for the primary purpose of disconnecting DCIA. The DCIA calculation performed pursuant to Section 6(a)(5)(C) shall serve as the baseline for the retrofit Program required in this section*" (*NEMO, 2021).*
>
> A Low Impact Development (LID) is defined as a means "*to maintain, mimic, or replicates pre-development hydrology through the use of numerous site design principles and small-scale treatment practices distributed throughout a site to manage runoff volume and water quality at the source" (NEMO, 2021).*

To accomplish the disconnecting of DCIA, LID, runoff reduction measures, or any other means by which stormwater is infiltrated into the ground or reused for other purposes without a surface or storm sewer discharge may be implemented (CTDEEP, 2017).

The following document provides guidance on implementing LID, runoff reduction measures, or other means to disconnect or improve stormwater quality. It should be noted that the following programs or practices in this document are considered a Retrofit Project *only* if it disconnects an area, whether it be commercial, residential, or industrial, that was *directly connected to the MS4*. Areas that implement the following programs or practices, as provided for guidance in this document or otherwise, that are not directly connected to the Town's MS4 system (while still beneficial in other ways) *cannot be counted towards the Town's disconnect percentage.*

Retrofit Projects will be clearly defined throughout this document, easily accessible, and clearly defined henceforth with **bolded and underlined text.** Important factors pertaining to LID, runoff reduction measures, or other means by which stormwater is infiltrated have been italicized throughout this document, with the exception of quoted, referenced material.

1. OBJECTIVES AND BENEFITS OF STORMWATER RETROFITS

The objective of a stormwater retrofit program, according to the CTDEEP, is

> *"…To remedy problems associated with, and improve water quality-mitigation functions of, older, poorly designed or poorly maintained stormwater management. The incorporation of stormwater retrofits into existing developed sites or redevelopment projects can reduce adverse impacts of uncontrolled stormwater runoff systems.*

Stormwater retrofits can also remedy local nuisance conditions and maintenance problems in older areas, as well as improve the appearance of existing facilities" (CTDEEP, 2004).

2. WHEN IS RETROFITTING APPROPRIATE?

Site constraints may exist, and are common in developed areas. Site constraints can often limit the type of stormwater Retrofit Projects that are possible, as well as their overall effectiveness. Specific factors, such as location of existing utilities, buildings, wetlands, maintenance access, and adjacent land uses may affect the retrofitting of an existing stormwater management facility. Stormwater should not be infiltrated in Aquifer Protection Areas where there is a high pollutant load, sites with existing subsurface contamination, or a drinking water wellhead area (UCONN, 2020). *Consider the following site-specific factors to determine the appropriateness of stormwater Retrofit Project implementation:*

Table 1 – Site Considerations for Determining the Appropriateness of Stormwater Retrofits

Factor	Consideration
Retrofit Purpose	What are the primary and secondary (if any) purposes of the retrofit project? Are the retrofits designed primarily for stormwater quantity control, quality control, or a combination of both?
Construction/Maintenance Access	Does the site have adequate construction and maintenance access and sufficient construction staging area? Are maintenance responsibilities for the retrofits clearly defined?
Subsurface Conditions	Are the subsurface conditions at the site (soil permeability and depth to groundwater/bedrock) consistent with the proposed retrofit regarding subsurface infiltration capacity and constructability?
Utilities	Do the locations of existing utilities present conflicts with the proposed retrofits, require relocation, or design modifications?
Conflicting Land Uses	Are the retrofits compatible with adjacent land uses of nearby properties?
Wetlands, Sensitive Water Bodies, and Vegetation	How do the retrofits affect adjacent or downgradient wetlands, sensitive receiving waters, and vegetation? Do the retrofits minimize or mitigate impacts where possible?
Complementary Restoration Projects	Are there opportunities to combine stormwater retrofits with complementary projects such as stream stabilization, habitat restoration, or wetland restoration/mitigation?
Permits and Approvals	Which local, state, and federal regulatory agencies have jurisdiction over the proposed retrofit project, and can regulatory approvals be obtained for the retrofits?
Public Safety	Does the retrofit increase the risk to public health and safety?
Cost	What are the capital and long-term maintenance costs associated with the stormwater retrofits? Are the retrofits cost-effective in terms of anticipated benefits?

Source: NEMO (N.D)

3. STORMWATER RETROFIT OPTIONS

3.1 Low Impact Development (LID) Management Practices

LID practices include natural or fabricated swales, depressions, and/or vegetated areas that are designed to capture, filter, and infiltrate stormwater runoff utilizing soils and vegetation (USEPA, 2014). The implementation of LID Practices lower long-term life cycles costs, perform better, and provide additional benefits such as improved aesthetics and enhanced property values. *While LID practices generally require a lower initial investment, they may require continuous maintenance of established vegetation*. However, established LID practices may be maintained in the same manner as landscaping. LID Practices should follow the following rules:

1. *Is it safe, both environmentally and for human health?*
2. *Aesthetically pleasing*
3. *Compliant with the Connecticut Department of Energy and Environmental Protection applicable and local regulations (UCONN, 2021).*

3.1.1 Bioretention and Infiltration Basins

Many towns, communities, and commercial or industrial facilities utilize bioretention or infiltration basins as a means to infiltrate pollutants of concerns (POC), reduce peak flow or total water volume, as well as adding an aesthetically pleasing area to the location.

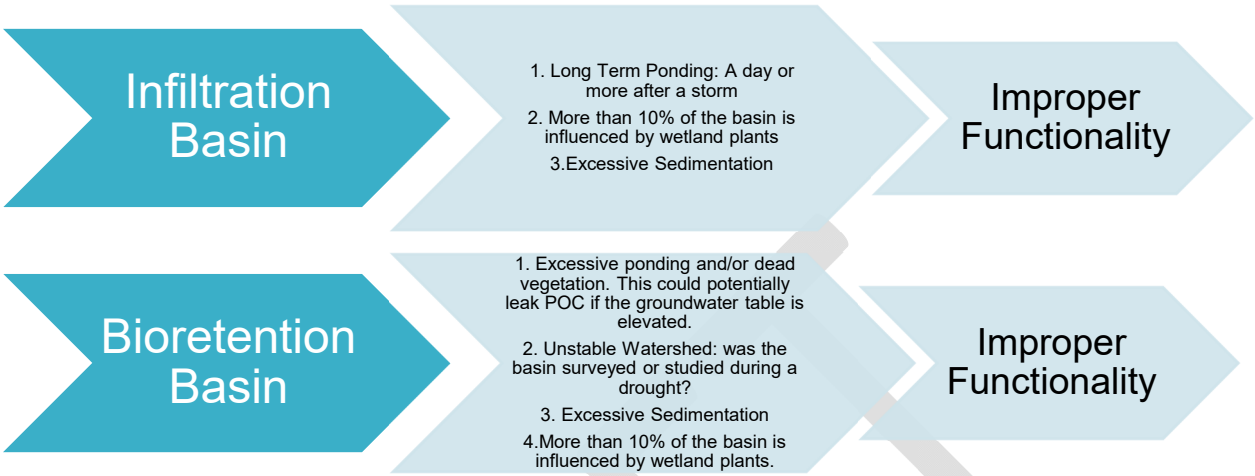
Typically, an infiltration basin has more potential in reducing peak flow or total water volume, as well as removing POC. Infiltration basins often have an increased advantage of phosphorus and nitrogen uptake, as well as some anaerobic conditions for bacterial removal (UCONN, 2021). *Infiltration basins can be utilized for the less frequent large-storm events that may exceed the capacity of upgradient practices.*

Bioretention basins create habitat, nutrient cycling, and aesthetics, and are often preferred for the reduced installation and maintenance costs. *Bioretention basins are generally utilized on a smaller scale, and are designed for typical storm events*. Bioretention basins are more likely to be maintained if aesthetically pleasing, therefore; considerations should be made to provide suitable plant species of which will create environmentally friendly habitats while maintaining public support or interest (PCA, 2020).

Properly Functioning Bioretention or Infiltration Basins

Bioretention or infiltration basins (while an excellent addition to stormwater infrastructure) must function properly in order to meet regulation criteria, reduce POC, and provide a safe and healthy environment for the surrounding area. **Graphic 1** provides examples of bioretention or infiltration basins that are considered poorly functioning.

Graphic 1: Improper Functionality of Bioretention or Infiltration Basins



Source: Created by Atlas Technical Consultants (2021).

Considerations on the Rehabilitation of Bioretention or Infiltration Basins

When working towards disconnection goals, several factors should be considered when identifying if a basin should be rehabbed or retrofitted, and are as follows:

Table 2 –Considerations on the Rehabilitation of a Bioretention or Infiltration Basins

Factor	Consideration
Regulatory Standards	Does it still meet the applicable regulatory criteria?
Financial Incentives	What will it cost to rehabilitate (removal of sedimentation, etc.) or retrofit?
Human Health	Is this in an area where it can affect human health? For example, will it create a mosquito breeding ground near schools or public areas?
Water Table	Is the water table greatly influencing the filtration of this Bioretention Pond?
Outlet Structure	What type of outlet structure is being utilized, and again, what are the costs for rehab or retrofit?

Source: Created by Atlas Technical Consultants (2021)

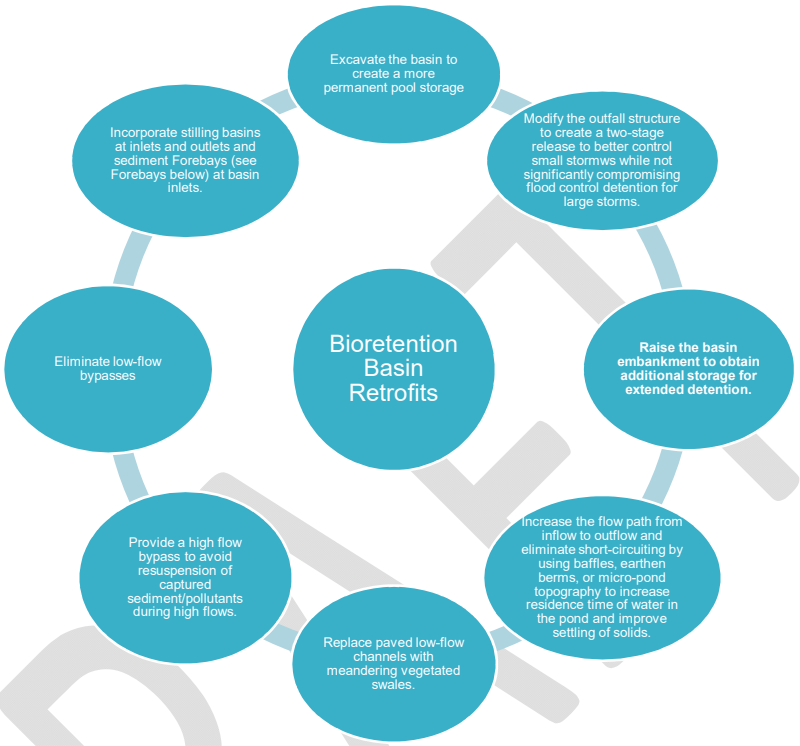
3.1.2 Bioretention and Infiltration Basins Variations

CONVENTIONAL BIORETENTION BASIN

A conventional bioretention basin, often referred to as a *detention basin*, typically consists of stormwater discharge into the basin, the temporary storage of unfiltered stormwater, and the eventual discharge to a designed outfall location. An underdrain typically lines the basin, allowing for stormwater, which has infiltrated the surficial material, to discharge to a designed outfall. An overflow is generally added in the event of a large storm. Some woody materials (trees, small bushes) may be present, which allows for the uptake of infiltrated stormwater in the evapotranspiration zone, decreasing the amount of discharged stormwater (UCONN, 2021).

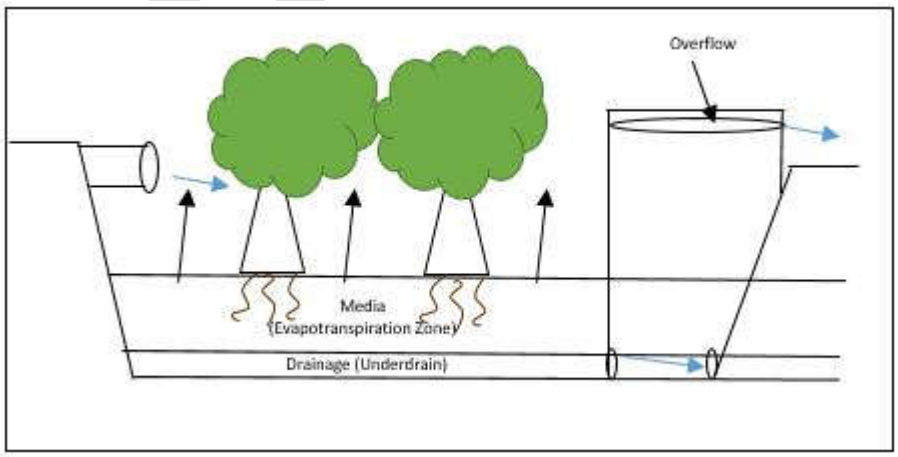
Graphic 2 summarizes modifications to existing Bioretention basins for improved water quality mitigation. **<u>If the following modifications are made to a basin that is directly connected to the MS4 System, then it can be considered a Retrofit Project.</u>**

Graphic 2: Bioretention Basin Retrofit Projects for Improved Water Quality Mitigation



Source: Adapted from Claytor, Center for Watershed Protection, 2000; Pennsylvania Association of Conservation Districts et al., 1998; and NJDEP, 2000.

Graphic 3: Conventional Bioretention Basin



Source: Created by Atlas Technical Consultants (2021),

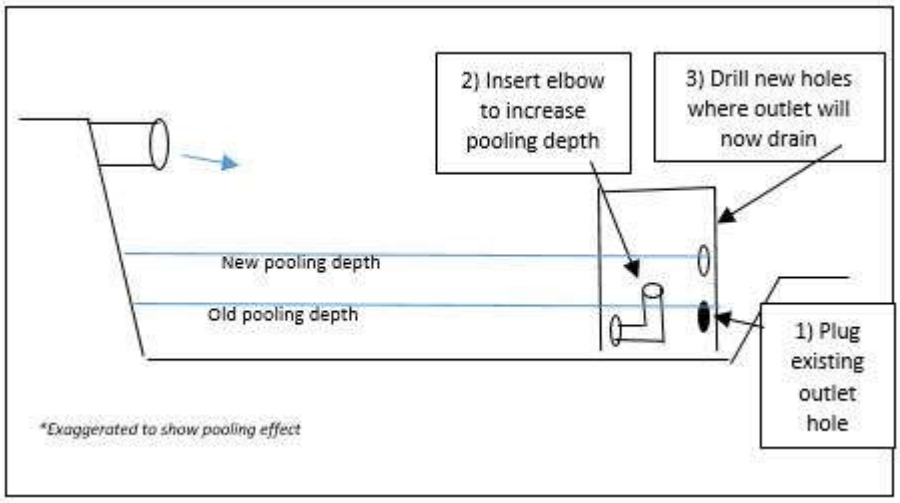
SOGGY BIORETENTION BASINS

If a bioretention basin is continuously found soggy, then retrofitting the basin into a wetland or detention basin may be the best option. Converting a bioretention basin into a wetlands area or detention basin will provide higher peak flow rate and water volume reduction than other Retrofit Projects, however, *it will not increase the amount of POC removed.*

For a converted bioretention basin or detention basin to be considered a Retrofit Project, first, determine if this basin is directly connected to the MS4 System. Then, install an elbow into the basin to increase pooling, which in turn will increase the peak flow and total water volume that is contained within the basin. A "T" can be installed rather than an elbow, if it is decided that the original outlet should remain in the event of a large storm and/or heavy soil saturation.

An attempt can be made to introduce wetland plants; however, based on soil type (for example, heavy infiltrative), they may not survive. As pooling depths increase, so too does the chance of potential safety concerns for the public (i.e. drowning). A fence should always be installed to surround the basin.

Graphic 4: From Bioretention to Wetlands or Detention Basins



Source: Created by Atlas Technical Consultants (2021),

NATURALIZED BASIN

A familiar sight in bioretention or infiltration basins is an abundance of woody material in the form of trees or small bushes. While some basins may have poor functionality with woody material growth, there are potential benefits of maintaining woody systems in a bioretention or infiltration basin. **Prior to shifting maintenance techniques or implementing other modifications to encourage woody growth, determine if this basin directly discharges to the Town's MS4 System. If directly connected, it can be considered a Retrofit Project.**

Woody systems (naturalized basin) allow for a higher rate of water volume to be infiltrated. Based on this higher rate of infiltrated stormwater, the POC load removed is greater than bioretention or infiltration basins functioning normally. Trees will occupy approximately 1% of water uptake in

bioretention or infiltration basins, as opposed to no woody vegetation (UCONN, 2021). Other benefits include less maintenance and lower costs. There is a high potential of attracting mosquito populations for naturalized basins. *It is recommended that naturalized basins not be constructed within 500 feet (ft.) of a public area.*

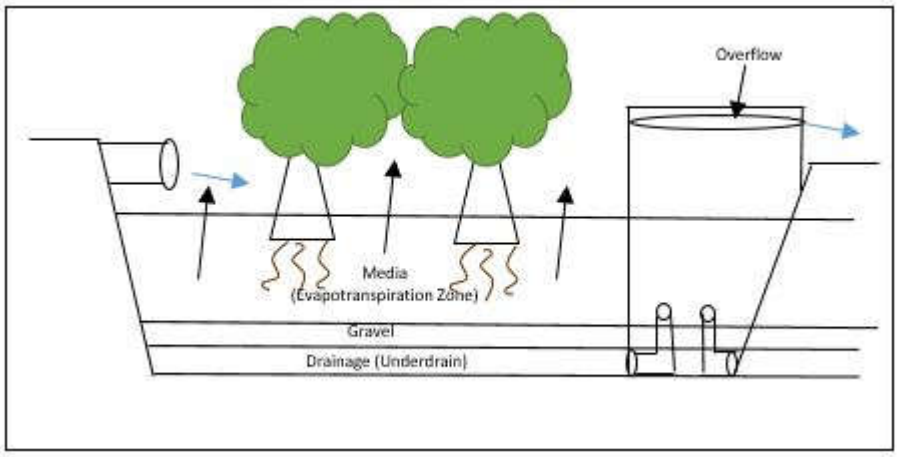
Studies have not been conducted on whether old woody growth or new woody growth is more beneficial in the uptake of POC or water. In theory, newer growth would promote soil movement due to root growth, and would increase the surface area for higher rates of infiltration (UCONN, 2021).

INTERNAL WATER STORAGE (IWS)

A conventional bioretention or infiltration basin may not always meet the needs of a site or community, particularly in areas of high stormwater volume. An internal water storage (IWS), if created properly, will reduce volume output by approximately 35%, as well as increasing the evapotranspiration rate. This system can also remove approximately 58% of nitrogen input (UCONN, 2021). **To be considered a Retrofit Project; first determine if this basin directly discharges to the Town's MS4 system.**

As with a conventional bioretention or infiltration basins, an underdrain will line the bottom of the basin. The underdrain will be followed by gravel. *It should be noted that processed gravel should NOT be utilized.* The sedimentation caused by processed/fine gravel does not allow for ponding or storage area of infiltrated water, and will reduce the peak flow intercepted. An elbow is then installed into the underdrain, forcing the water to pond internally. A total of 18-inches only should be the increase in internal ponding. This internal ponding will preserve the filtration system, and improve peak flow and total water volume, with the exception of soil group 'D' (UCONN, 2021)..

Graphic 5: Internal Water Storage



Source: Created by Atlas Technical Consultants (2021),

FOREBAYS

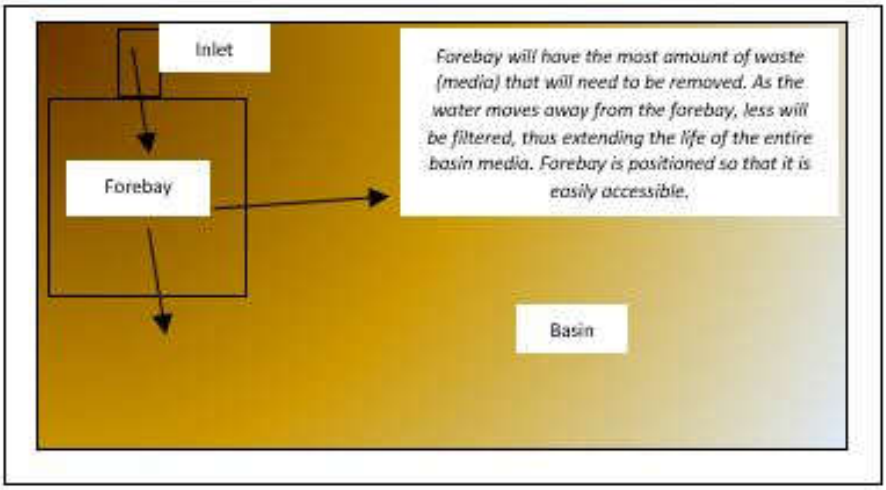
Forebays are designed and utilized to slow stormwater runoff, as well as provide pretreatment of runoff and facilitate the separation of suspended solids (MADEP, N.D). Advantages include the following:

> "*Provides pretreatment of runoff before delivery to other best management practices (BMPs), slows velocities of incoming stormwater, easily accessed for sediment removal, longevity is high with proper maintenance, relatively inexpensive compared to other BMPs, and a greater detention time than proprietary separators" (MADEP, N.D.).*

With the implementation of a forebay, media life expectancy can be extended up to approximately 500-years. The implementation of a forebay allows for the removal of phosphorus, nitrogen, metals, and sediment. **The implementation of a forebay can only be considered a Retrofit Project if the basin, pond, etc., directly discharges to the MS4 system.**

Disadvantages of a forebay include the removal of only coarse sediment fractions; therefore, soluble pollutants will remain and potentially discharge to the entirety of the basin. There is also no recharge to groundwater in a forebay, as well as no control of the volume of runoff. *Frequent maintenance is essential* (MADEP. N.D.).

Graphic 6: Forebays



Source: Created by Atlas Technical Consultants (2021).

Graphic 7: Forebay Implementation

Source: MADEP. No Date. Sediment Forebays.

MEDIA AMENDMENTS FOR AGEING SYSTEMS

Soils are part of fundamental design characteristics of most construction practices, including those of stormwater practices. Properly functioning media provide rapid infiltration rates, attenuate POC, and generally allow for plant growth (PCA, 2021). *Thus, as basins age, so too does the media.* Several amendments, including compost, woodchips, or the by-products of water treatment (water treatment residuals) for drinking water can be applied to increase infiltration, attenuate POC, and promote healthy plant growth. Water treatment residuals, as defined by the Minnesota Pollution Control Agency, are primarily sediment, metals (aluminum, or, or calcium), oxide/hydroxides, activated carbon, and lime removed during purification processes of raw water (PCA, 2021). **In order to be considered a Retrofit Project, media amendments should be made to basins, forebays, IWS, etc. that are directly connected to the MS4 system.**

Table 3– Media Amendments

Media	Benefits	POC Potentially Attenuated	Considerations
Compost	❖ Increases soil infiltration rate ❖ Reduces runoff ❖ Improves soil porosity ❖ Increases soil moisture holding capacity ❖ Reduces maintenance needs ❖ Alleviates compaction from construction activities	❖ Hydrocarbons ❖ Solvents ❖ Heavy metals	❖ Unstable composts may utilize available nitrogen and stunt plant growth ❖ Compost from bio solids and/or animal manure may contain unwanted nutrients. ❖ Ages relatively rapidly
Woodchips	❖ Slowly release nutrients if maintained properly ❖ Effectively retain and slowly release moisture ❖ Provide weed control ❖ Relatively cheap ❖ Resists compaction	❖ Nitrogen ❖ Oil & Grease ❖ Carbon source in the degradation of nitrate, sulphate, ammonia, and ammonium ❖ Some heavy metals	❖ Leachate from fresh woodchips is acidic, which may produce chemical oxygen demand (COD) and release unwanted nutrients. ❖ Negative aquatic response to leachate has been observed near wood chipping facilities

			❖ Woodchips from recycled wood may contain creosote, dyes, or other toxic materials.
Spent Lime	❖ Reduces the impact of phosphorus to receiving waters.	❖ Dissolved Phosphorus	❖ Due to spent lime's absorptive properties, there is a potential to contain chemicals that may be of an environmental concern.
Aluminum and Iron Water Treatment Residuals (WTR)	❖ Improves plant growth	❖ Phosphorus retention, particularly dissolved ❖ Several studies show AL- and Fe-WTR are effective at retaining nitrogen when nitrogen is found in high amounts.	❖ Potential of leaching, thus damaging aquatic environments ❖ Leaching potential is dependent on soil pH.
Alum	❖ Reduces soil pH ❖ Reduces Turbidity/ Total Suspended Solids ❖ No restrictions for use as fill material or cover	❖ Nitrogen ❖ Phosphorus ❖ Metals ❖ Bacteria	❖ Studies have not been conducted on PCBs or PFAS additives of Alum-treated soils ❖ Extensive study is necessary of the discharge watershed area. (Harper. N.D)

Source: Created by Atlas Technical Consultants (2021), Adapted from PCA, 2021, and Harper, N.D.

3.1.3 Bioretention or Infiltration Basin Inspections

Maintenance of bioretention or infiltration basins is essential in preserving the functionality of basins and promoting high quality stormwater discharge. The following checklist can be utilized in performing bioretention or infiltration basin inspections:

Table 4– Bioretention or Infiltration Basin Checklist

Factor	Consideration	Observations	Maintenance Performed
Bed Surface	Is there excessive sediment, caking, trash, or moldy mulch?		
Evidence of Underdrainage or Observation Wells	Is this system functioning properly? Is there excessive sediment or clogging?		
Mulch/Media	Does the media need replaced? Is there standing water that is not infiltrating?		
Bed Drainage	Time your bed drainage: Is water ponding for longer than a day?		
Outlet Structure	Is there evidence of clogging or outflow release velocities that are great than the designed flow?		

Source: Created by Atlas Technical Consultants (2021), adapted from MADEP and UCONN NEMO.

3.1.4 Rain Gardens

Rain gardens are a relatively easy and aesthetic Retrofit Project option for small communities or homes. According to NEMO, a rain garden is "a depression (about 6 inches deep), that collects stormwater runoff from a roof, driveway, or yard, and allows it to infiltrate into the ground" (CLEAR, 2021.). Typically, a residential rain garden is 50 to 100 square feet, and includes a variety of native shrubs and plants. *A rain garden should never be installed in a low area or an area that is wet; it is not a water garden or wetland.*

Graphic 8: Rain Garden Retrofit Benefits

Source: Created by Atlas Technical Consultants (2021)

Promoting the installation of rain gardens is easy; encourage the utilization of the Rain Garden Application, created by the CT NEMO Program. Once a community or home has installed a rain garden, encourage citizen reporting to track disconnects and retrofits. **To track these Retrofit Projects, communities considering the implementation of a rain garden should be defined internally as to whether it is directly connected to the MS4 system.**

3.2 Rainwater Harvesting/Stormwater Reuse & Rain Barrel Programs

Managing stormwater in areas of tight spaces, highly commercialized or industrial areas, as well as intensely residential communities can pose issues with volume control, increased flooding and erosion, and an increase in non-point source pollution. The implementation of a rainwater harvesting/ stormwater reuse and rain barrel program can greatly reduce the aforementioned issues related to stormwater in these area types, as well as reducing the cost of potable water, promote potable water resource conservation, remove 100% of solids, nutrients, metals, pathogens, and toxins, and increase soil moisture for urban greenery (PCA. 2021). **Areas that implement a Rainwater Harvesting/Stormwater Reuse & Rain Barrel Programs of which are directly connected to the Town's MS4 system can be considered a Retrofit Project.**

Data compiled from the Neighborhood Rain Barrel Partnership Project indicated, "…the average 50-gallon rain barrel could capture a 0.26-inch precipitation event, or 64 percent of the 28 precipitation events monitored" (EPA, 2008). The implementation of such a program could greatly increase the quality of stormwater, as well as involve the community in protecting the Town's navigable waterways.

Potentially, with the utilization of ordinances or other legal means, the Town could require rain harvesting of an agreed upon percentage for commercial developments. Other considerations include historical land uses, facilities, or industrial uses may contaminate rainwater harvesting (PCA, 2021). **Table 5** describes the implementation, applications, and considerations of executing such a program.

Table 5– Rainwater Harvesting/Stormwater Reuse & Rain Barrel Programs

Program	Implementation	Application	Considerations
Rain Barrels	❖ Rain Barrels are typically small scale (25-100-gallons). ❖ Install at the downspout of a gutter system. ❖ Gravity is the simplest method of delivery; complex systems can be designed to deliver water from several barrels. ❖ Town may want to offer an agreed upon rebate residents or businesses that purchase specified rain barrels.	❖ Collects and store rainwater for watering landscapes and gardens ❖ Cumulative effect includes volume reduction over entire watershed area ❖ Removes 100% of 100% of solids, nutrients, metals, pathogens, & toxins that would have potentially reached MS4 system.	❖ Typical costs range from $50 to $230 for a 55-gallon drum. ❖ Plastic, food-grade 55-gallon drums range from $15 to $20. ❖ Barrel should include overflow deflection ❖ Routing features should be installed to keep water away from structure foundations ❖ Not to be utilized for tar & gravel, asbestos shingle, or treated cedar shake roof types. ❖ A fine screen over all openings or emptying of barrels should be conducted to prevent mosquito breeding. ❖ Disconnected in the winter to prevent deformation of the system
Cisterns	❖ Greater storage capacity ❖ Stored above or below ground ❖ Delivered utilized a pump system ❖ A surface stormwater pond (Bioretention or infiltration basin) could be designed to overflow into the cistern as well.	❖ Typically utilized to irrigate landscapes, gardens, and ballparks on a regular basis ❖ Reduces strain on municipal water supplies during peak summer months. ❖ Potential for use in non-potable services (toilets, urinal flushing)	❖ Typical costs range from $200 to $10,000 based on size, materials, and structural requirements ❖ Often complex system that requires continuous maintenance ❖ Designed overflow from a basin may need treatment prior to use for irrigation purposes.

Source: Created by Atlas Technical Consultants (2021), resourced from the Minnesota Pollution Control Agency (PCA) Pollution Prevention & the MS4 Program.

3.3 Credit Trading Program

Stormwater POC have long afflicted navigable waterways, with negative effects including algae blooms, resource degradation, toxicity, and even an increase in drinking water treatment costs. Options in reducing stormwater POC often include LID-implementation, community participation, ordinances, and legal action. However, these practices may not always have the desired effect, particularly in areas of high industrial or commercialized infrastructure (point sources). A Credit

Trading Program may be the solution, as it holds businesses accountable for stormwater pollution and promotes the increased quality of stormwater discharge.

To find a successful Trading Credit Program, one need not look far. The Connecticut and New York Credit Trading Program (known as the Nitrogen Control Program for Long Island Sound) has been found to be incredibly effective in the reduction of nitrogen discharged to the Sound. The reduction of nitrogen input into the Sound was achieved by first achieving the total maximum daily load (TMDL) of nitrogen that could be discharged, and the implementation of an initiative nitrogen-trading program among sewage treatment plants located throughout the state. Established in 2002, by 2014 65 percent of nitrogen loading from sewage treatment plants had been reduced (CTDEEP, 2020).

To reduce the amount of the POC discharged, participating developers purchase credits from the Town. **Developers directly connected to the MS4 system that participate in this program can be considered a Retrofit Project, as it pertains specifically to the area of previously connected surface that was disconnected.** The amount of credits purchased is the equivalent of the POC in mass. Developers would then pay a fee on a per/lb. basis over a 30-year reduction period, for example. Developers then create and/or monitor POC removal from the stormwater infrastructure. The removal of the POC would be reported in mass. *Developers that remove over the standards for their specific POC removal goal can sell credits to other developers who cannot meet their POC removal goal.* **Table 6** demonstrates the annual re-evaluation of developers of trading versus treating.

Table 6 – Performance of the NCE, 2002-2009

Trading Year	Credit Prices (Dollars)	Purchased (Dollars)	Sold (Dollars)	Purchased (1,000 Credits)	Sold (1,000 Credits)
2002	$1.65	$1,317,223	$2,357,323	798	1,429
2003	$2.14	$2,116,875	$2,428,636	989	1,135
2004	$1.90	$1,786,736	$2,659,804	940	1,400
2005	$2.11	$2,467,757	$1,315,392	1,170	623
2006	$3.40	$3,828,114	$2,394,956	1,126	704
2007	$4.36	$5,159,019	$2,072,001	1,183	475
2008	$4.50	$6,148,327	$2,660,688	1,366	591
2009	$4.54	$4,390,023	$2,835,447	967	625
Total		$27,214,074	$18,724,247	8,539	6,982

Source: CTDEEP. 2020.

The implementation of a Credit Trading Program may create economic activity within the Town, motivate developers through monetary incentive, and create an annual re-evaluation on treating versus trading based on annual increases or decreases in credit costs. Considerations should be made in the potential buy back of credits - *if all developers meet the POC removal goal within the threshold (ex. 30-years), the Town will be liable for buying back all credits.* Funding may be available through the Clean Water State Revolving Fund (CWSRF) (EPA, 2021).

3.4 Buffer Ordinance

A buffer can be defined as “small areas or strips of land in permanent vegetation, designed to intercept pollutants and manage other environmental concerns” (PCA, N.D.). *Buffers present numerous advantages, including POC removal, erosion reduction, restore the integrity of water resources, contribute organic matter to aquatic ecosystems, provide riparian wildlife habitat, and bring scenic or recreational opportunity to the area* (EPA, 2002). **Buffers implemented in areas directly connected to the Town’s MS4 system can be considered a Retrofit Project, as it pertains specifically to the area of previously connected surface that was disconnected.**

The United States Environmental Protection Agency (EPA) has created a model buffer ordinance, with suggested language or guidance in creating buffer ordinances, and is included in **Appendix III**. Design standards of a buffer ordinance, at a minimum, should include the following:

Table 7 – Buffer Ordinance Design Standards

Standard	Considerations
Establish minimum width to apply to all buffers.	Customize requirements according to functions, values, and water body size.
Determine how areas are to be calculated.	Identify flexibility in standard (using an average buffer width, etc.) Should allow changes to be made to adjust for slope, soils, encroaching land uses, or water utilization.
Vegetative Specifications	Vegetative mixes based on soils, slope, region.
Signage	Specify minimum spacing of signage to identify buffer and prevent encroachment

Source: Created by Atlas Technical Consultants (2021). Adapted from PCA Pollution Prevention and the MS4 Program.

Following the implementation of a buffer ordinance, a Town-wide campaign can be utilized to inform developers and property owners of the benefits of a vegetated buffer. To reach the desired audience, brochures, signage at municipal locations, workshops, or seminars can be provided by the Town (PCA, N.D.).

Maintenance of buffers will generally consist of mowing, removal of refuse or debris, inspections for erosion and infiltration, and the replacement of damaged or dead plants. The installation of a vegetated buffer is estimated at $0.50 per square foot, as well as costs relating to labor or maintenance supplies (PCA, N.D.). Applications of a vegetated buffer can include natural drainage in residential areas, along roads in place of curbing, parking lot islands, low-flow conveyance in place of structural conveyance, pretreatment prior to discharge to open water, provide aesthetic appeal, and provide a natural habitat within urbanized areas (PCA, N.D).

3.5 Additional Disconnect Strategies

3.5.1 Curbless Streets

Curbless streets, or streets that are sloped to vegetative areas, allow stormwater to drain into permeable areas adjacent to the property. By eliminating curbs or gutters, there are fewer infrastructure costs and higher infiltration rates (PCA, 2021). *If curbs cannot be eliminated, then they can sometimes be slotted to re-route runoff to vegetated areas.* Existing stormwater infrastructure should be evaluated and expanded if needed (NEMO, 2004). **Curbs or gutters that are eliminated in areas that discharge directly to the MS4 system can be considered a Retrofit Project.**

3.5.2 Permeable Pavement

As the Town continues to maintain its properties, permeable paving materials can be utilized during upgrades. *Examples of permeable materials include modular concrete paving blocks, modular concrete, plastic lattice, cast-in-place concrete grids, and/or designed permeable pavement*. Considerations pertaining to site-specific factors should include "traffic volumes, soil permeability, maintenance, sediment loads, and land use…" (NEMO, 2004). **Sites that implement permeable pavements of which were previously directly connected to the Town's MS4 system can be considered a Retrofit Project.**

4. STORMWATER DISCONNECT TRACKING

4.1 Directly Connected Impervious Areas (DCIA)

Under the Pollution Prevention/Good Housekeeping portion of the general permit, the Town must develop a retrofit program to disconnect existing DCIA by 1% per year, or a total of 2% to the maximum extent practicable (MEP). *Previous disconnections going back to 2012 can be counted toward this disconnection requirement.*

According to the MS4 General Permit, the Town must make a serious attempt to comply with DCIA disconnects. However, based on attenuating factors, including MS4 size, the ability to finance, the capacity to perform operations and maintenance, and local conditions, the MEP may be less than a total of 2% disconnected for the Town. (CTDEEP. 2017)

For the purpose of maximum extent practicable (MEP) for the Town, an investigation was conducted by Nathan L. Jacobson & Associates on DCIA for each catchment in the Town. Catchments were defined by utilizing the Town Sub-Basins. High Connectivity, Average Connectivity, Partial Connectivity, and Slight Connectivity were calculated utilizing the following:

High Connectivity

DCIA%=0.4(IA %)^1.2*

Directly Connected Area= (DCIA)(IC Acres)

Average Connectivity

DCIA%=0.1(IA%)^1.5*

Directly Connected Area= (DCIA)(IC Acres)

Partial Connectivity

DCIA%=0.04(IA%)^1.7*

Directly Connected Area= (DCIA)(IC Acres)

Slight Connectivity

DCIA%=0.01(IA%)^2.0*

Directly Connected Area= (DCIA)(IC Acres)

The Average Connectivity calculation was utilized in assessing the Town's DCIA connectivity based on the majority of land utilization defined as agricultural and/or rural, minor residential communities, and minor-to-moderate commercial or industrialized areas. Based on the

calculations provided, no catchments have a connectivity of 11% or greater. Refer to **Appendix IV** for the Town's complete DCIA Computations.

Please note that in all tables henceforth, catchments are organized by drainage waterbodies. Refer to *Section 4.3* for information regarding impaired waters in the Town. **Figures** pertaining to the DCIA and all future sections are located in **Appendix II**.

Table 8 – DCIA

Catchment ID	Basin Total Acreage (Ac.)	Town Impervious Area Acreage (Ac)	Town Impervious Area Percentage (%)	DCIA Acreage (Average) (Ac)	DCIA Percentage (Average) (%)
Farmington River					
4300-00-5+R10	61.38	0	0	0	0
4300-00-5+R11	3.70	0.14	3.78	0	1.97
4300-00-5+R12	210.67	15.58	7.40	0.89	5.69
4300-00-5+R13	686.91	32.03	4.66	0.91	2.85
4300-00-5+R14	115.01	0	0.00	0	0
4300-00-5+R15	354.76	11.5	3.24	0.19	1.65
4300-00-5+R16	170.03	0	0.00	0	0
4300-00-5+R17	273.13	10.49	3.84	0.22	2.13
4300-00-5+R18	357.41	0	0.00	0	0
4300-00-5+R19	484.47	18.27	3.77	0.38	2.07
4300-00-5+R20	149.49	5.88	3.93	0.13	2.20
4300-00-5+R21	67.72	4.89	7.22	0.27	5.48
4300-00-5+R22	156.79	13.71	8.74	1.00	7.31
4300-00-5+R8	497.41	0	0	0	0
4300-00-5+R9	43.63	1.91	4.38	0.05	2.59
4300-32-1	1114.03	68.52	6.15	2.96	4.31
4300-33-1	339.98	21.47	6.32	0.96	4.49
4300-34-1	459.85	28.47	6.19	1.24	4.36
4300-35-1	282.22	0	0	0	0
4300-36-1*	726.67	0	0	0	0
4300-37-1	264.79	14.24	5.38	0.50	3.53
4300-38-1	336.95	0	0	0	0
4300-39-1	370.83	0	0	0	0
4300-39-2-R1	17.26	0	0	0	0
4300-40-1	288.21	16.3	5.66	0.62	3.80
4300-41-1	431.60	0	0	0	0
4300-42-1	557.21	27.62	4.96	0.86	3.12
4300-43-1	461.36	23.08	5.00	0.73	3.16

Catchment ID	Basin Total Acreage (Ac.)	Town Impervious Area Acreage (Ac)	Town Impervious Area Percentage (%)	DCIA Acreage (Average) (Ac)	DCIA Percentage (Average) (%)
4300-44-1	118.14	0	0.00	0.49	5.63
4300-44-1-L1	467.89	22.52	4.81	0.67	2.99
Cherry Brook					
4309-02-1	89.06	0	0	0	0
4309-03-1	13.25	0	0	0	0
Roaring Brook					
4312-00-2-L2	3.03	0	0	0	0
Nod Brook					
4317-00-1	1431.58	75.14	5.25	2.56	3.40
4317-00-2-L1	98.14	6.36	6.48	0.30	4.67
4317-00-2-R1	147.98	10.39	7.02	0.55	5.27
4317-01-1	189.58	0	0	0	0
Hop Brook					
4318-00-1	764.38	0	0	0	0
4318-00-1-L1	524.83	0	0	0	0
4318-00-2-R1	324.64	11.06	3.41	0.20	1.78
4318-00-2-R2	808.80	36.08	4.46	0.96	2.66
4318-00-3-R1	28.83	1.42	4.93	0.04	3.08
4318-00-3-R2	381.85	0	0	0	0
4318-01-1	645.97	20.02	3.10	0.31	1.54
4318-02-1	195.11	7.81	4.00	0.18	2.26
4318-02-1-L1	312.52	0	0	0	0
4318-03-1	909.56	32.84	3.61	0.64	1.94
4318-03-2-R1	1103.82	44.68	4.04	1.03	2.30
4318-04-1	531.26	16.52	3.10	0.26	1.55
4318-04-1-L1	287.62	8.83	3.07	0.13	1.52
4318-05-1	888.52	63.09	7.10	3.38	5.35
4318-06-1	246.23	21.62	8.78	1.59	7.36
West Branch Salmon Brook					
4319-10-1	814.35	0	0	0	0
4319-10-2-L1	752.86	0	0	0	0
4319-11-1	422.57	0	0	0	0
North Branch Park River					
4404-04-1-L2	180.77	0	0	0	0

Source: Created by Atlas Technical Consultants (2021). Referenced from Nathan L. Jacobson & Associates DCIA Calculations.

4.1.1 Impervious Cover Tracking

Existing DCIA by 1% per year, or a total of 2% disconnect to the maximum extent practicable (MEP) is required under the MS4 Permit. A disconnect is defined as infiltrating the first inch of rain. Previous disconnections going back to 2012 can be counted toward this disconnection requirement. Stormwater should not be infiltrated in Aquifer Protection Areas where there is a high pollutant load, at sites with existing subsurface contamination, or a drinking water wellhead area (UCONN, 2020).

UConn, along with CT NEMO, have provided a tool- the Impervious Cover Disconnection Spreadsheet-that is useful for DCIA disconnection tracking purposes. Included in the Disconnection Spreadsheet is Project Information, New Developments, Redevelopments, Retrofits, Change, and Cumulative Totals. This spreadsheet will allow the Town to easily track and compute disconnects from the MS4 system during redevelopment or retrofitting, or connections to the MS4 system with new developments. **Graphic 9** provides an example of disconnection tracking. This spreadsheet is included in **Appendix V**.

Graphic 9: Impervious Cover Disconnection Spreadsheet

Example Impervious Cover Tracking Spreadsheet

NEMO

Town: Uconnopolis
Town area (ac): 20,000

PROJECT INFORMATION				NEW DEVELOPMENT		REDEVELOPMENT		RETROFIT	CHANGE			CUMULATIVE TOTALS				NOTES & REFERENCES
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
date	practice #	project	practice	Total IC added (ac)	Connected IC added	Total IC added or	Connected IC added or	IC disconnected (ac)	Change in Total IC (ac)	Change in Connected IC (ac)	Net change (ac)	TOWN TOTAL IC (ac)	TOWN TOTAL IC (%)	TOWN CONNECTED IC	TOWN CONNECTED IC	Notes & References
1-Jun-12		Townwide BASELINE										3500.0	17.5%	1800.0	9.00%	from baseline report (note: total town area is 20,000 acres)
21-Jul-15	15-1-A	Town Hall parking rennovation	porous asphalt					(6.0)	0.0	(6.0)	(6.0)	3500.0	17.5%	1794.0	8.97%	replaced old asphalt lot, see file for plans and photos
21-Jul-15	15-1-B	Town Hall demonstration project (rain gardens)	rain gardens (2)					(0.5)	0.0	(0.5)	(0.5)	3500.0	17.5%	1793.5	8.97%	downspout disconnects on NW and SW corner of building, draining to RGs
12-Oct-15	15-2	Dickson Park basketball courts		2.0	1.0				2.0	1.0	3.0	3502.0	17.5%	1794.5	8.97%	new courts in Stocker Park; western half drains to lawn
30-Nov-15	15-3	Bonsack Building expansion & redevelopment	green roof, bioretention cell			1.5	(5.0)		1.5	(5.0)	(3.5)	3503.5	17.5%	1788.5	8.95%	Section 319 grant for LID upgrade
30-Nov-15	15-4	Dietz Auto Parts store improvements (walkways and parking lot)	permeable interlocking concrete pavers					(1.0)	0.0	(1.0)	(1.0)	3503.5	17.5%	1788.5	8.94%	front walkway and sidewalk; paid for by owner to get stormwater fee reduction
2-Apr-16	16-1	Downtown streetscaping	permeable interlocking concrete pavers					(5.5)	0.0	(5.5)	(5.5)	3503.5	17.5%	1783.0	8.92%	downtown walking mall renovation, see file for plans and photos
16-May-16	16-2	Chadwick Courts subdivision	bioretention, porous asphalt parking stalls	12.0	3.0				12.0	3.0	15.0	3515.5	17.6%	1786.0	8.93%	planning commission required LID to treat 75% of runoff
14-May-16	16-3	Hoffhine Estates Apt. rennovation	rear loading zone eliminated; rain gardens (3), permeable concrete parking area, bioretention			1.0	21.0		1.0	21.0	22.0	3514.5	17.6%	1765.0	8.83%	major rennovation by new owner; disconnected entire site (applying for LEED Silver) & removed 1 ac pavement in back
9-Sep-16	16-4	Center stormwater retrofitting	parking lot bioretention cells (6)					(15.0)	0.0	(15.0)	(15.0)	3514.5	17.6%	1750.0	8.75%	agreement with developer to treat half of all stalls with bioretention
2/18/2017	17-1	Barrett Blvd sidewalk (new)	porous concrete	4.0	0.0				4.0	0.0	4.0	3518.5	17.6%	1750.0	8.75%	sidewalk put in as per Downtown Revitalization Plan, porous concrete (see
											0.0		0.0%	1750.0	8.75%	
													0.0%		0.0%	
											(31.5)					
										NET	(31.5)	acres disconnected				
										%	1.8	% disconnected				

NEMO Project
Center for Land Use Education and Research (CLEAR)
University of Connecticut
clear@uconn.edu

OVERALL NOTES
1 *This is just our take on it. Feel free to change and tailor as you see fit.*
2 Area unit used is acres but could be anything

COLUMNS
1 date of completion
2 any identifying system will do
3 overall description of project
4 overview of LID practices used
5 for new development, total acres of IC added
6 acres of #5 above that are connected
7 for redevelopment projects: total ic after project minus total ic before project
8 for redevelopment projects: connected ic after project minus connected ic before project
9 for retrofits of exisiting development, total acres IC disconnected (from plans and observation)
10 change in total IC after project completion
11 change in connected IC after project completion
12 cumulative total of IC in town, acres
13 cumulative total of IC in town, %
14 cumulative total of connected IC in town, acres
15 cumulative total of connected IC in town, %
16 notes, referrals to other files, plans, photos, folders, etc.

4.2 Urbanized Areas

The 2010 Census of Urban Classification defines an Urban Area as “densely developed territory, and encompass [es] residential, commercial, and other non-residential urban land use (Census.

2010)". There are two clearly defined Urban Area types: an Urbanized Area must contain 50,000 or more people, and an Urban Cluster must contain at least 2,500 and less than 50,000 people. (Census. 2010) For purposes of the Stormwater Retrofit Program, data pertaining to an Urbanized Area was utilized.

Atlas was provided with a shapefile of the 2010 Urbanized Areas for the Town, which was imported into ArcGIS for calculation purposes. Utilizing the Overlay-Intersect tool, Atlas was able to extract the total Urbanized Area acreage per catchment, and then calculate the Urbanized Area percentage per catchment utilizing the following formula:

*Urbanized Area (Ac)/Basin Total Acreage*100*

Table 9 includes catchments found to contain Urbanized Areas only, as well as the results of the Urbanized Area Acreage extraction and Urbanized Area Percentage results. **Figure 1** depicts the Urbanized Areas and corresponding catchments.

Table 9 – Urbanized Areas by Catchment

Catchment ID	Basin Total Acreage (Ac.)	Urbanized Area (Ac)	Urbanized Area Percentage (%)
Farmington River			
4300-00-5+R10	61.38	17.79	28.98
4300-00-5+R11	3.70	0.92	24.86
4300-00-5+R12	210.67	167.97	79.73
4300-00-5+R13	686.91	331.85	48.31
4300-00-5+R14	115.01	100.07	87.01
4300-00-5+R15	354.76	88.41	24.92
4300-00-5+R16	170.03	48.39	28.46
4300-00-5+R17	273.13	184.97	67.72
4300-00-5+R18	357.41	123.54	34.57
4300-00-5+R19	484.47	477.67	98.60
4300-00-5+R20	149.49	137.10	91.71
4300-00-5+R21	67.72	55.50	81.96
4300-00-5+R22	156.79	145.51	92.81
4300-00-5+R8	497.41	176.20	35.42
4300-00-5+R9	43.63	22.81	52.28
4300-32-1	1114.03	1,113.50	99.95
4300-33-1	339.98	339.98	100.00
4300-34-1	459.85	459.85	100.00
4300-37-1	264.79	264.79	100.00
4300-38-1	336.95	21.48	6.37

Catchment ID	Basin Total Acreage (Ac.)	Urbanized Area (Ac)	Urbanized Area Percentage (%)
4300-39-1	370.83	370.83	100.00
4300-39-2-R1	17.26	17.26	100.00
4300-40-1	288.21	288.21	100.00
4300-42-1	557.21	553.77	99.38
4300-43-1	461.36	461.37	100.00
4300-44-1	118.14	117.97	99.86
4300-44-1-L1	467.89	467.72	99.96
Nod Brook			
4317-00-1	1,431.58	1,431.39	99.99
4317-00-2-L1	98.14	98.03	99.89
4317-00-2-R1	147.98	147.54	99.70
4317-01-1	189.58	189.35	99.88
Hop Brook			
4318-00-1	764.38	67.73	8.86
4318-00-2-R1	324.64	179.47	55.28
4318-00-2-R2	808.80	563.97	69.73
4318-00-3-R1	28.83	28.83	100.00
4318-00-3-R2	381.85	381.85	100.00
4318-01-1	645.97	206.74	32.00
4318-02-1	195.11	178.39	91.43
4318-02-1-L1	312.52	312.52	100.00
4318-03-1	909.56	909.56	100.00
4318-03-2-R1	1,103.82	1,102.90	99.92
4318-04-1	531.26	529.64	99.70
4318-04-1-L1	287.62	274.01	95.27
4318-05-1	888.52	888.52	100.00
4318-06-1	246.23	246.23	100.00
West Branch Salmon Brook			
4319-10-1	814.35	156.37	19.20
4319-10-2-L1	752.86	281.56	37.40
4319-11-1	422.57	13.06	3.09

Source: Created by Atlas (2021). Total Urbanized Area Acreage calculated utilizing ArcGIS.

4.3 Impaired Waterbodies

CT ECO, a partnership between the CTDEEP and UConn, has based the state's impaired waters on the following specifications; waters listed as impaired by the EPA and waters that were listed

as having adopted a Total Maximum Daily Load (TMDL) for either one or all of the following: phosphorus, nitrogen, bacteria, or mercury. These were then combined into a Stormwater Impaired Waters layer through CT ECO for the use in a GIS system.

Utilizing the 2020 CT Stormwater Impaired Waters shapefile, Atlas was able to identify impaired waters that directly flow through the Town. The Farmington River, Owens Brook, and Hop Brook were all identified with impairments. Catchments containing the aforementioned impaired waters are listed in **Table 10**, below. **Figure 2** depicts the locations of the impaired waters and associated catchments.

Table 10 –Catchments Containing Impaired Waterbodies

Catchment ID	Basin Total Acreage (Ac.)	Town Impervious Acreage (AC)	Town Impervious Area Percentage (%)	Impaired Waterbody	Location
Farmington River					
4300-00-5+R10	61.38	0	0	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R11	3.70	0.14	3.78	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R12	210.67	15.58	7.40	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R13	686.91	32.03	4.66	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R14	115.01	0	0.00	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R15	354.76	11.5	3.24	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R16	170.03	0	0.00	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*

Catchment ID	Basin Total Acreage (Ac.)	Town Impervious Acreage (AC)	Town Impervious Area Percentage (%)	Impaired Waterbody	Location
4300-00-5+R17	273.13	10.49	3.84	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R18	357.41	0	0.00	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R19	484.47	18.27	3.77	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R20	149.49	5.88	3.93	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R21	67.72	4.89	7.22	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R22	156.79	13.71	8.74	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R8	497.41	0	0	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-00-5+R9	43.63	1.91	4.38	*Farmington River (Bloomfield/Farmington)-02*	*Inlet to Rainbow Reservoir (at Route 187 crossing), Bloomfield, US (south) to confluence Pequabuck River (US Route 4 crossing), Farmington.*
4300-39-1	370.83	0	0	*Owens Brook (Simsbury)-01*	*Mouth on Farmington River, DS of Route 10 (202) road crossing, US to HW parallel to Owens Brook Blvd, between Musket Trail and Winterset Lane intersections with Owens Brook Blvd, Simsbury.*
4300-39-2-R1	17.26	0	0	*Owens Brook (Simsbury)-01*	*Mouth on Farmington River, DS of Route 10 (202) road crossing, US to HW parallel to Owens Brook Blvd, between Musket Trail and Winterset Lane intersections with Owens Brook Blvd, Simsbury.*
Hop Brook					

Catchment ID	Basin Total Acreage (Ac.)	Town Impervious Acreage (AC)	Town Impervious Area Percentage (%)	Impaired Waterbody	Location
4318-00-1	764.38	0	0	*Hop Brook (Simsbury) - 01*	*Mouth of Farmington River, US to HW at outlet Tuller Reservoir, Simsbury.*
4318-00-2-R1	324.64	11.06	3.41	*Hop Brook (Simsbury) - 01*	*Mouth of Farmington River, US to HW at outlet Tuller Reservoir, Simsbury.*
4318-00-2-R2	808.80	36.08	4.46	*Hop Brook (Simsbury) - 01*	*Mouth of Farmington River, US to HW at outlet Tuller Reservoir, Simsbury.*
4318-00-3-R1	28.83	1.42	4.93	*Hop Brook (Simsbury) - 01*	*Mouth of Farmington River, US to HW at outlet Tuller Reservoir, Simsbury.*
4318-00-3-R2	381.85	0	0	*Hop Brook (Simsbury) - 01*	*Mouth of Farmington River, US to HW at outlet Tuller Reservoir, Simsbury.*

Source: Created by Atlas (2021).

4.4 Catchment Priority Rankings

Based on current investigatory results, High Priority areas are focused along the western and southwestern side of the Town, extending eastwards. One “finger”-like High Priority protrusion extends from the central portion to the northeastern edge of the Town. The High Priority areas in the Town are a mixture of residential, industrial or commercial, and some agricultural land. Most High Priority areas in the Town include several outfalls, however not all discharge to impaired waterbodies.

Multiple factors were taken into consideration when scoring each catchment, including but not limited to DCIA calculations, previous screening results, age of development/structures, density of generating sites, nearby sewer repairs, urbanized areas, and impaired waterbodies. Refer to **Table 11** below for a list of the Town of Simsbury’s High and Problem catchments.* **Figure 3** depicts the location of the Town’s High, Problem, and Low Priority Catchment Ranking.

Table 11 – High Priority and Problem Catchments

Catchment ID	Number of Outfalls Included	Priority Ranking *Low Priority: 0-5 Problem: 6-9 High Priority: ≥10*
Farmington River		
4300-00-5+R10	0	Problem
4300-00-5+R11	0	Problem
4300-00-5+R12	7	Problem
4300-00-5+R13	11	Problem
4300-00-5+R14	3	Problem
4300-00-5+R15	9	Problem

Catchment ID	Number of Outfalls Included	Priority Ranking *Low Priority: 0-5* *Problem: 6-9* *High Priority: ≥10*
4300-00-5+R16	0	Problem
4300-00-5+R17	0	Problem
4300-00-5+R18	4	Problem
4300-00-5+R19	8	High Priority
4300-00-5+R20	5	Problem
4300-00-5+R21	3	Problem
4300-00-5+R22	7	Problem
4300-00-5+R8	3	Problem
4300-00-5+R9	0	Problem
4300-32-1	41	High Priority
4300-33-1	22	High Priority
4300-34-1	20	Problem
4300-35-1	13	Problem
4300-36-1*	8	Problem
4300-37-1	10	Problem
4300-38-1	6	Problem
4300-39-1	38	High Priority
4300-39-2-R1	0	Problem
4300-41-1	16	Problem
4300-42-1	6	High Priority
4300-43-1	18	Problem
4300-44-1	10	High Priority
4300-44-1-L1	0	High Priority
Cherry Brook		
4309-02-1	0	Low Priority
4309-03-1	0	Low Priority
Nod Brook		
4317-00-1	71	High Priority
4317-00-2-L1	3	High Priority
4317-00-2-R1	1	High Priority
4317-01-1	9	High Priority
Hop Brook		
4318-00-1	16	High Priority
4318-00-1-L1	9	High Priority
4318-00-2-R1	9	High Priority
4318-00-2-R2	25	High Priority
4318-00-3-R1	1	High Priority
4318-00-3-R2	25	High Priority

Catchment ID	Number of Outfalls Included	Priority Ranking *Low Priority: 0-5* *Problem: 6-9* *High Priority: ≥10*
4318-01-1	37	Problem
4318-02-1	4	Problem
4318-02-1-L1	7	Problem
4318-03-1	19	High Priority
4318-03-2-R1	23	High Priority
4318-04-1	17	High Priority
4318-04-1-L1	6	High Priority
4318-05-1	40	High Priority
4318-06-1	17	Problem
West Branch Salmon Brook		
4319-10-1	42	Problem
4319-10-2-L1	17	Problem

Source: Created by Atlas Technical Consultants (2021)

Exempt and Low Priority Catchments are not included in this table. For a complete list of the Priority Catchment Rankings and factors applied in scoring, refer to **Appendix VI.*

5. RETROFIT PLANNING

According to the MS4 General Permit,

> *"By the end of this permit term, the permittee shall commence the implementation of the retrofit projects identified in subparagraph (b)…with a goal of disconnecting one percent (1%) per year of the permittee's DCIA for the fourth and fifth years of this general permit, or a total of 2%, to the MEP. The two percent (2%) goal may be achieved by compiling the total disconnected DCIA tracked…or the retrofit projects designated…or a combination of the two" (CTDEEP. 2017).*

If the two percent (2%) goal will not be met, then the MEP standard shall be utilized. The Town must make a serious attempt to comply with DCIA disconnects. However, based on attenuating factors, including MS4 size, the ability to finance, the capacity to perform operations and maintenance, and local conditions, the MEP may be less than a total of 2% disconnected for the Town. (CTDEEP, 2017). Following the fifth year of the MS4 Permit, the Town will continue the Retrofit Program with a goal to disconnect one percent (1%) of DCIA each year thereafter (CTDEEP, 2017). *Section 5.1* details Town-owned facilities, as well as parks and conservation areas located through the Town. **Figure 4** depicts the location of the aforementioned locations.

5.1 Municipal Owned Facilities and Parks

Town owned or operated properties, parks, and other facilities are the recommended focus for the initial Retrofit Project planning. By controlling the point or non-point source pollutions at municipal-owned properties, the Town can implement control practices and pollution prevention, most of which are non-structural and require minimal or no land area. In addition, by implementing control practices and pollution prevention, the Town will contribute to public education and outreach (UCONN, 2004).

As specified in Section 6 (H)(ii) in the MS4 Permit, for impaired waters where bacteria is a POC, the Town shall develop, fund, implement, and prioritize a Retrofit Project to correct bacterial contribution to impaired waterbodies. Atlas will continue to investigate and develop recommendations for Retrofit Projects pertaining to dog parks, parks with open water, sites with failing septic systems, etc., that will contribute to source management of bacterial contribution.

Table 12 details Town-owned facilities, parks, and/or conservation areas owned by other investors. Locations shaded brown signify sites under investigation. As these sites are investigated, Atlas will submit addendums to the Town pertaining to the updated information.

Table 12 – Municipal Owned

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
Simsbury Transfer Station	68 WOLCOTT ROAD	94.68	N/A	Transfer Station, Old Landfill	The highest point of elevation is the central point of this site, located	None

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
					at the peak of the old landfill. The landfill then slopes in all directions. Rainfall flowing to the south-southwest will be infiltrated into a wooded area. Rainfall flowing to the northeast will be infiltrated into a wooded area, or indirectly flow into the Munnisunk Brook. Rainfall flowing to the north-northwest will flow towards the paved Transfer Station. Rainfall is then directed into catch basins, which directly discharge into the Munnisunk Brook, a tributary to the Farmington River.	
Gifts of Love Farm & Education Center	69 WOLCOTT ROAD	8.99	1932-2000	Agricultural, Commercial	Stormwater flows in a west-southwesterly direction, towards Munnisunk Brook, a tributary of the Farmington River. Paved areas, located on the eastern side of the site, are either infiltrated into grassy areas, or directed towards MS4 catch basins on Wolcott Rd. Agricultural crops are located approximately 120-125 feet from and slope towards wetlands or Munnisunk Brook. Pastureland directly abuts and flows into wetlands on the northern point of the Subject Property.	Rain gutters, discharging to pavement or grassy areas.
Simsbury Department of Public Works	66 TOWN FOREST ROAD	37.46	1964-Unknown	Garage, Warehouse, Fueling Activities	Rainfall landing in wooded areas surrounding the DPW are	Oil/water separator located on the western side of the car wash, infiltrator

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
					expected to infiltrate prior to paved areas. A sand quarry surrounds the site on all sides, with the exception of the southern border. Stormwater is expected to flow in a southerly direction, towards Stratton Brook. Stormwater is directed into catch basins, where it is eventually discharged into Stratton Brook.	located on the southern border.
Bushy Hill Fire Station	345 BUSHY HILL ROAD	1.74	1998	Fire Station - Volunteer		
	30 TOWN FOREST ROAD	3.49		Fire Station - Volunteer		
	36 DRAKE HILL ROAD	25.14		Light Industrial		
	34 FARMS VILLAGE ROAD	46.2		High School		
	344 FIRETOWN ROAD	1.28		Fire Station - Volunteer		
	38 WOLCOTT ROAD	0.79		Commercial Garage		
	ADAMS ROAD	10.20		Residential		
	AVERY WAY	0.07		Residential		
	AVERY WAY	1.02		Residential		
	BARNDOOR HILLS ROAD	1.00		Residential		
	BARNDOOR HILLS ROAD	27.72		Residential		
	BROWNGATE LANE	4.00		Residential		
	BUSHY HILL ROAD	0.57		Residential		
	BUSHY HILL ROAD	0.57		Residential		
	BUSHY HILL ROAD	0.57		Residential		
	BUSHY HILL ROAD	0.92		Residential		
	BUSHY HILL ROAD	282.95		Residential		

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
	BUSHY HILL ROAD	0.92		Residential		
	BUSHY HILL ROAD	0.92		Residential		
	BUSHY HILL ROAD	0.92		Residential		
	BUTTONWOOD DRIVE	0.18		Residential		
	CLEARFIELD ROAD	0.92		Residential		
	CLIFDON DRIVE	14.85		Residential		
	CLOVER LANE	3.65		Residential		
	COLBY COURT	0.42		Residential		
	COLBY COURT	0.64		Residential		
	COUNTY ROAD	0.41		Residential		
	COUNTY ROAD	1.89		Residential		
	COUNTY ROAD	1.03		Residential		
	COUNTY ROAD	9.26		Residential		
	COUNTY ROAD	9.93		Residential		
	COUNTY ROAD	0.45		Residential		
	COUNTY ROAD	18.54		Residential		
	COUNTY ROAD	9.93		Residential		
	DEER PARK ROAD	7.26		Residential		
	DEER PARK ROAD	11.60		Residential		
	DOMINIQUE LANE	15.39		Residential		
	EAGLE LANE	0.18		Residential		
	EAST WEATOGUE STREET	3.30		Residential		
	EAST WEATOGUE STREET	75.33		Residential		
	EAST WEATOGUE STREET	28.16		Residential		
	ECHO LANE	0.92		Residential		
	ELAINE DRIVE	0.00		Public Use Vacant Land		
	ELCY WAY	15.32		Residential		
	ELLIOTT DRIVE	4.87		Residential		
	FARMS VILLAGE ROAD	36.00		Residential		
	FARMS VILLAGE ROAD	15.96		Residential		
	FAWNBROOK LANE	0.34		Residential		

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
	FERRY LANE	0.00				
	FIREBRICK LANE	0.56		Residential		
	FIRETOWN ROAD	0.46		Residential		
	FIRETOWN ROAD	40.20		Residential		
	FIRETOWN ROAD	0.36		Residential		
	FIRETOWN ROAD	3.04		Residential		
	FIRETOWN ROAD	5.82		Residential		
	FIRETOWN ROAD	1.51		Residential		
	FIRETOWN ROAD	47.20		Residential		
	FIVE GAITS FARM	0.92		Residential		
	FLINTLOCK RIDGE	0.18		Residential		
	FLINTLOCK RIDGE	7.00		Residential		
	GLADE THE	0.32		Residential		
	GREAT POND ROAD	0.92		Residential		
	GREAT POND ROAD	0.92		Residential		
	GREAT POND ROAD	0.92		Residential		
	GREAT POND ROAD	2.00		Residential		
	GREAT POND ROAD	0.92		Residential		
	GREAT POND ROAD	2.00		Residential		
	GREAT POND ROAD	2.00		Residential		
	HAMPDEN CIRCLE	0.22		Residential		
	HARDING DRIVE	0.91		Residential		
	HARTFORD ROAD	4.55		Residential		
	HARTFORD ROAD	5.00		Residential		
	HARTFORD ROAD	2.70		Commercial Vacant Land		
	HAWKS LANE	0.18		Residential		
	HAYES ROAD	0.34		Industrial Vacant Land		
	HAYES ROAD	0.17		Residential		

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
	HEATHER LANE	0.80		Residential		
	HEATHER LANE	1.83		Residential		
	HEDGEHOG LANE	19.12		Residential		
	HEDGEHOG LANE	29.19		Residential		
	HEDGEHOG LANE	50.00		Residential		
	HIGHRIDGE ROAD	47.00		Residential		
	HIGHWOOD	1.44		Residential		
	HIGHWOOD	2.68		Residential		
	HOLCOMB STREET	1.21		Residential		
	HOP BROOK ROAD	6.06		Residential		
	HOP BROOK ROAD	2.00		Residential		
	HOPMEADOW STREET	4.15		Commercial Vacant Land		
	HOPMEADOW STREET	2.80		Residential		
	HOPMEADOW STREET	90.98		Commercial Vacant Land		
	HOPMEADOW STREET	35.20		Residential		
	HOPMEADOW STREET	3.20		Residential		
	HOPMEADOW STREET	45.50		Residential		
	HOPMEADOW STREET	5.00		Residential		
	HOPMEADOW STREET	4.36		Commercial Vacant Land		
	HOPMEADOW STREET	64.56		Residential		
	HOPMEADOW STREET	13.29		Commercial Vacant Land		
	HOPMEADOW STREET	0.15		Commercial Vacant Land		
	HOPMEADOW STREET	11.06		Residential		
	HOPMEADOW STREET	23.30		Commercial Vacant Land		
	HOPMEADOW STREET	20.42		Commercial Vacant Land		
	HOPMEADOW STREET	0.23		Commercial Vacant Land		
	HOPMEADOW STREET	1.42		Commercial Vacant Land		
	HOPMEADOW STREET	4.73		Commercial Vacant Land		

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
	HOPMEADOW STREET	7.80		Residential		
	HOPMEADOW STREET (REAR)	0.92		Residential		
	HOSKINS ROAD	5.32		Residential		
	HOSKINS ROAD	1.53		Residential		
	HOSKINS ROAD	1.27		Residential		
	HOSKINS ROAD	10.70		Residential		
	HUNTING RIDGE DRIVE	14.90		Residential		
	JOSHUA DRIVE	28.90		Residential		
	KERR FARM ROAD	0.92		Commercial Vacant Land		
	LATIMER LANE	27.90		Residential		
	LAUREL LANE	0.00		Residential		
	LITCHFIELD DRIVE	5.71		Residential		
	LUCY WAY	32.03		Residential		
	MADISON LANE	0.92		Residential		
	MAIN STREET	0.66		Residential		
	MAIN STREET EXT	0.12		Residential		
	MAIN STREET EXT	23.70		Commercial Vacant Land		
	MEADOW CROSSING	1.16		Residential		
	MERRYWOOD	0.92		Residential		
	METACOM DRIVE	9.11		Residential		
	METACOM DRIVE	3.76		Residential		
	MOUNTAIN ROAD	46.20		Residential		
	MOUNTAIN ROAD	0.46		Residential		
	MOUNTAIN ROAD	3.80		Residential		
	MUNNISUNK DRIVE	2.93		Residential		
	MUNNISUNK DRIVE	24.59		Residential		
	MUNNISUNK DRIVE	0.69		Residential		
	MUSKET TRAIL	0.23		Residential		
	MUSKET TRAIL	2.23		Residential		
	MUSKET TRAIL	0.18		Residential		
	MUSKET TRAIL	1.06		Residential		
	NEWBURY COURT	2.00		Residential		
	NILAS WAY	0.13		Residential		

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
	NILAS WAY	0.35		Residential		
	NILAS WAY	1.72		Residential		
	NORTH SADDLE RIDGE DRIVE	1.68		Residential		
	NORTH SADDLE RIDGE DRIVE	0.87		Residential		
	NORTHGATE	1.02		Residential		
	NORTHGATE	1.17		Residential		
	NORTHGATE	18.53		Residential		
	NORTHGATE	17.00		Residential		
	NOTCH ROAD	0.39		Residential		
	NOTCH ROAD	19.04		Public Use Vacant Land		
	OAKHURST ROAD	0.92		Residential		
	OLD BARGE ROAD	4.36		Residential		
	OLD BRIDGE ROAD	0.93				
	OLD FARMS ROAD	0.76		Residential		
	OLD FARMS ROAD	0.84		Residential		
	OLD FARMS ROAD	0.96		Residential		
	OLD FARMS ROAD	38.06		Residential		
	OLD FARMS ROAD	2.63		Residential		
	OLD FARMS ROAD	3.95		Residential		
	OLD MEADOW PLAIN ROAD	0.45		Residential		
	OLD MEADOW PLAIN ROAD	60.86		Residential		
	OLD STONE CROSSING	0.18		Residential		
	OLD STONE CROSSING	12.21		Residential		
	OLD STONE CROSSING	20.70		Residential		
	OWENS PLACE	0.76		Residential		
	OX YOKE DRIVE	7.76		Residential		
	OX YOKE DRIVE	0.18		Residential		
	OX YOKE DRIVE	1.38		Residential		
	OXFORD COURT	1.96		Residential		

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
	PLANK HILL ROAD	0.12		Residential		
	PLANK HILL ROAD	10.00		Residential		
	POWDER HORN DRIVE	12.80		Commercial Vacant Land		
	QUARRY ROAD	4.20		Residential		
	QUARRY ROAD	19.20		Residential		
	QUARRY ROAD	48.40		Residential		
	REBECCA LANE	0.26		Residential		
	REBECCA LANE	8.92		Residential		
	RIVERSIDE ROAD	5.27		Residential		
	RIVERSIDE ROAD	0.10		Residential		
	ROCKLYN DRIVE	0.92		Residential		
	ROCKLYN DRIVE	0.92		Residential		
	RUTHIES LANE	9.20		Residential		
	RUTHIES LANE	3.71		Residential		
	RYAN CIRCLE	3.15		Residential		
	SAND HILL ROAD	0.92		Residential		
	SAXTON BROOK DRIVE	0.37		Residential		
	SCARBOROUGH ROAD	3.30		Residential		
	SCARBOROUGH ROAD	1.24		Residential		
	SCHOOL HOUSE LANE	0.12		Residential		
	SHINGLE MILL ROAD	21.00		Residential		
	SIDNEY WAY	7.82		Residential		
	SIMSBURY PINES	0.62		Residential		
	SIMSBURY PINES	1.49		Residential		
	SMOKEY RIDGE ROAD	14.53		Residential		
	SMOKEY RIDGE ROAD	8.87		Residential		
	SOMERSET LANE	2.77		Residential		
	SOMERSET LANE	0.33		Residential		

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
	STAFFORD ROAD	36.40		Residential		
	STAFFORD ROAD	4.00		Residential		
	STAFFORD ROAD	10.00		Residential		
	STAFFORD ROAD	6.00		Residential		
	STAFFORD ROAD	1.24		Residential		
	STONEHENGE DRIVE	0.18		Residential		
	STRATTON BROOK ROAD	42.52		Residential		
	STRATTON BROOK ROAD	65.00		Residential		
	STRATTON BROOK ROAD	0.34		Residential		
	TARIFFVILLE ROAD	4.61		Commercial Vacant Land		
	TARIFFVILLE ROAD	2.75		Residential		
	TARIFFVILLE ROAD	12.80		Residential		
	TEACHERS TURN	2.05		Residential		
	TERRYS PLAIN ROAD	0.25		Residential		
	TERRYS PLAIN ROAD	13.00		Residential		
	TERRYS PLAIN ROAD	7.00		Residential		
	TERRYS PLAIN ROAD	0.92		Residential		
	TERRYS PLAIN ROAD	11.58		Residential		
	TERRYS PLAIN ROAD	15.00		Residential		
	TERRYS PLAIN ROAD	8.00		Residential		
	TERRYS PLAIN ROAD	1.37		Residential		
	TIM CLARK CIRCLE	0.36		Residential		
	TIMBER RIDGE DRIVE	1.83		Residential		
	TIMBER RIDGE DRIVE	3.90		Residential		
	TRAINOR DRIVE	0.92		Residential		
	VINING DRIVE	0.34		Residential		
	WELDEN WAY	13.26		Residential		

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	7.22		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	2.80		Residential		
	WEST MOUNTAIN ROAD	0.92		Residential		
	WEST MOUNTAIN ROAD	20.40		Residential		
	WESTLEDGE ROAD	14.00		Residential		
	WESTLEDGE ROAD	10.00		Residential		

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
	WESTLEDGE ROAD	26.30		Residential		
	WESTLEDGE ROAD	8.62		Residential		
	WHITE OAK LANE	0.64		Residential		
	WHITMAN POND ROAD	2.00		Residential		
	WILD FLOWER LANE	0.92		Residential		
	WILD FLOWER LANE	0.92		Residential		
	WOODCHUCK HILL ROAD	10.90		Residential		
	WOODHAVEN DRIVE	0.92		Residential		
	WOODHAVEN DRIVE	0.92		Residential		
	WYNGATE	2.00		Residential		
	1 BROWNGATE LANE	0.92		Residential		
	1 OLD BRIDGE ROAD	0.50		Residential		
	1 ST JOHNS PLACE	1.75		Mixed Use - Retail / Office		
	10 DOMINIQUE LANE	0.82		Residential		
	10 PHELPS LANE	0.74		Office Building		
	10 WINSLOW PLACE	14.81		Restaurant		
	100 CASTERBRIDGE CROSSING	1.79		Apartments General		
	11 CAMILLE LANE	0.96		Residential		
	11 NORTHGATE	0.93		Residential		
	122 WEST MOUNTAIN ROAD	1.02		Residential		
	128 OLD FARMS ROAD	9.10		Apartments General		
	1375 HOPMEADOW STREET	17.08		Mixed Use - Retail / Office		
	15 SUGAR LOAF CUT	22.30		Residential		
	153 GREAT POND ROAD	60.80		Residential		
	1602 HOPMEADOW STREET	18.37		Residential		

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
	1602 HOPMEADOW STREET	18.37		Residential		
	1602 HOPMEADOW STREET	18.37		Residential		
	164 WESTLEDGE ROAD	9.88		Residential		
	17 FERNWOOD DRIVE	0.66		Residential		
	17 HIGHWOOD	2.09		Residential		
	18 CENTERWOOD ROAD	0.58		Residential		
	18 TOLLGATE LANE	0.92		Residential		
	186 STRATTON BROOK ROAD	0.92		Residential		
	19 FERNWOOD DRIVE	0.89		Residential		
	2 BARN OWL COURT	0.99		Residential		
	21 METACOM DRIVE	3.70		Residential		
	21 NORTHGATE	0.92		Residential		
	21 TERRYS PLAIN ROAD	2.43		Residential		
	22 IRON HORSE BOULEVARD	3.29		Community Recreation Center		
	22 WOOSTER ROAD	0.46		Residential		
	23 WOOSTER ROAD	0.43		Residential		
	231 STRATTON BROOK ROAD	1.34		Residential		
	235 HOPMEADOW STREET	1.16		Veterinary Hospital		
	24 FIRETOWN ROAD	0.47		Residential		
	24 MAIN STREET EXT	1.76		Residential		
	26 FIRETOWN ROAD	0.34		Residential		
	261 HOPMEADOW STREET	8.19		Commercial Vacant Land		
	28 IRON HORSE BOULEVARD	8.00		Residential		
	288 FIRETOWN ROAD	0.75		Residential		

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
	29 CLIFDON DRIVE	2.31		Commercial Vacant Land		
	3 CHURCH STREET	0.65		Commercial Vacant Land		
	3 LAURIE-JOE WAY	0.70		Residential		
	3 TUNXIS ROAD	0.06		Residential		
	31 MAIN STREET	0.34		Commercial Vacant Land		
	356 FIRETOWN ROAD	0.96		Residential		
	38 WOLCOTT ROAD	0.79		Commercial Garage		
	38 WOODHAVEN DRIVE	0.92		Residential		
	39 WOODLAND STREET	0.28		Residential		
	4 CLOVER LANE	1.84		Residential		
	4 OLD MILL LANE	0.71		Office Building		
	4 RAILROAD STREET	0.02		Commercial Vacant Land		
	40 PLANK HILL ROAD	15.30		Commercial Vacant Land		
	42 ALDER ROAD	0.55		Residential		
	42 LONG VIEW DRIVE	2.00		Residential		
	47 BANKS ROAD	0.75		Residential		
	47 NORTHGATE	0.91		Residential		
	498 BUSHY HILL ROAD	9.00		Retail Store		
	5 SHORT LANE	2.27		Residential		
	50 WINTHROP STREET	0.87		Residential		
	51 CHURCH STREET	0.32		Residential		
	51 TERRYS PLAIN ROAD	7.60		Residential		
	52 WINTHROP STREET	0.37		Residential		
	526 HOPMEADOW STREET	0.66		Fitness Center		
	530 BUSHY HILL ROAD	16.40		Community Shopping Center		
	60 WESTLEDGE ROAD	22.40		Residential		
	61 WEST MOUNTAIN ROAD	17.40		Residential		

Title	Location	Acres	Year Built	Utilization or Land Class	Stormwater Flow[1]	Current Infrastructures
	65 WEST MOUNTAIN ROAD	124.90		Residential		
	689 HOPMEADOW STREET	6.13		Church - Sanctuary (Chapel)		
	695 HOPMEADOW STREET	0.58		Office Building		
	7 SIMSBURY PINES	0.76		Residential		
	725 HOPMEADOW STREET	3.97		Public Library		
	73 PLANK HILL ROAD	0.92		Residential		
	73 WEST STREET	5.01		Office Building		
	749 HOPMEADOW STREET	0.39		Public Library		
	75 OLD FARMS ROAD	0.92		Residential		
	754 HOPMEADOW STREET	1.33		Mixed Use - Retail / Office		
	81 OLD FARMS ROAD	1.51		Residential		
	869 HOPMEADOW STREET	2.17		Fire Station - Volunteer		
	87 RIVERSIDE ROAD	0.58		Residential		
	9 NORTHGATE	0.92		Residential		
	9 REBECCA LANE	0.79		Residential		
	9 SACHEMS TRAIL	0.99		Residential		
	90 PLANK HILL ROAD	0.72		Residential		
	933 HOPMEADOW STREET	3.58		Office Building		
	939 HOPMEADOW STREET	0.49		Commercial Vacant Land		
	99 DEER PARK ROAD	0.99		Residential		

Source: Created by Atlas (2021).

5.2 Non-Municipal Retrofitting

Retrofit Projects can be applied to non-municipal facilities, parks, communities, or other developments, and be counted towards the Town's disconnect percentage. Atlas recommends

applying ordinances, post-construction maintenance plans, or other legal regulations associated with the construction, upgrade, and/or rehabilitation of non-Town owned properties to achieve retrofitting.

Specific criteria was utilized in defining priority areas for the implementation of non-municipal Retrofit Projects. The criteria utilized in defining priority areas of non-municipal Retrofit Projects included High or Problem catchment priority rankings, catchments containing an impaired waterbody, and catchments identified with an urbanized area. Utilizing ArcGIS, Atlas extracted catchments where two (2) or more of the aforementioned criteria were found. **Table 13** details these catchments, and may act as a guide for the Town to focus non-municipal retrofitting efforts. **Figure 5** depicts the location of the extracted catchments prioritized for non-municipal Retrofit Projects.

Table 13 – Non-Municipal Retrofitting

Catchment ID	Total Acres (Ac.)	Priority Ranking	Impaired Waterbody	Urbanized Area Percentage (%)
Farmington River				
4300-00-5+R10	61.38	Problem	Yes	28.98
4300-00-5+R11	3.70	Problem	Yes	24.86
4300-00-5+R12	210.67	Problem	Yes	79.73
4300-00-5+R13	686.91	Problem	Yes	48.31
4300-00-5+R14	115.01	Problem	Yes	87.01
4300-00-5+R15	354.76	Problem	Yes	24.92
4300-00-5+R16	170.03	Problem	Yes	28.46
4300-00-5+R17	273.13	Problem	Yes	67.72
4300-00-5+R18	357.41	Problem	Yes	34.57
4300-00-5+R19	484.47	High Priority	Yes	98.60
4300-00-5+R20	149.49	Problem	Yes	91.71
4300-00-5+R21	67.72	Problem	Yes	81.96
4300-00-5+R22	156.79	Problem	Yes	92.81
4300-00-5+R8	497.41	Problem	Yes	35.42
4300-00-5+R9	43.63	Problem	Yes	52.28
4300-32-1	1,114.03	High Priority	No	99.95
4300-33-1	339.98	High Priority	No	100.00
4300-34-1	459.85	Problem	No	100.00
4300-37-1	264.79	Problem	No	100.00
4300-38-1	336.95	Problem	No	6.37
4300-39-1	370.83	High Priority	Yes	100.00
4300-39-2-R1	17.26	Problem	Yes	100.00
4300-42-1	557.21	High Priority	No	99.38

Catchment ID	Total Acres (Ac.)	Priority Ranking	Impaired Waterbody	Urbanized Area Percentage (%)
4300-43-1	461.36	Problem	No	100.00
4300-44-1	118.14	High Priority	No	99.86
4300-44-1-L1	467.89	High Priority	No	99.96
Nod Brook				
4317-00-1	1,431.58	High Priority	No	99.99
4317-00-2-L1	98.14	High Priority	No	99.89
4317-00-2-R1	147.98	High Priority	No	99.70
4317-01-1	189.58	High Priority	No	99.88
Hop Brook				
4318-00-1	764.38	High Priority	Yes	8.86
4318-00-2-R1	324.64	High Priority	Yes	55.28
4318-00-2-R2	808.80	High Priority	Yes	69.73
4318-00-3-R1	28.83	High Priority	Yes	100.00
4318-00-3-R2	381.85	High Priority	Yes	100.00
4318-01-1	645.97	High Priority	No	32.00
4318-02-1	195.11	Problem	No	91.43
4318-02-1-L1	312.52	Problem	No	100.00
4318-03-1	909.56	Problem	No	100.00
4318-03-2-R1	1,103.82	High Priority	No	99.92
4318-04-1	531.26	High Priority	No	99.70
4318-04-1-L1	287.62	High Priority	No	95.27
4318-05-1	888.52	High Priority	No	100.00
4318-06-1	246.23	High Priority	No	100.00
West Branch Salmon Brook				
4319-10-1	814.35	Problem	No	19.20
4319-10-2-L1	752.86	Problem	No	37.40

Source: Created by Atlas Technical Consultants (2021)

5.3 Retrofit Planning

The following Retrofit Projects are recommended for implementation by the Town. This Program is ongoing, and is dependent on available information, costs, installation periods, and town-wide discussions. As Retrofit Projects are implemented, the Town should update the Impervious Cover Tracking Spreadsheet, located in **Appendix V**. Atlas will continue to assess and recommend Retrofit Projects for the Town's municipal sites. As these sites are assessed, addendums to **Table 14** will be submitted to the Town.

Table 14 – Retrofit Planning

Title	Location(s)	Retrofit(s) Recommended	Projected Disconnected Area (Ac.)	Cost Analysis	Projected Implementation Date
Simsbury Transfer Station	68 Wolcott Road	Construct cover over main unloading areas and collect rainfall in barrels. These main areas include the used oil collection, white goods, trash receptacles, composting, and brush pile. Utilize collected rainfall at 69 Wolcott Road.	0.34	Refer to *Section 3.2.*	2022-2025
		During repaving of this site, pitch paved areas or reroute catch basins and associated piping towards the northwest or northeast for infiltration, away from wetlands or Munnisunk Brook.	1.71	Refer to *Section 3.5.1.*	2022-2025
Gifts of Love Farm & Education Center	69 Wolcott Road	During repaving of site, pitch paved areas away from Wolcott Rd, encouraging infiltration onto the site.	0.19	Refer to *Section 3.5.1.*	2022-2025
		Install rain barrels on all agricultural barrels, particularly ones near to or adjacent to crops or pastureland. Utilize collected rainfall on crops.	0.21	Refer to *Section 3.2.*	2022-2025
		Implement riparian buffer along the western edge of the pastureland on this site, as well as any other areas that in proximity to	0.23	Refer to *Section 3.2.*	2022-2025

Title	Location(s)	Retrofit(s) Recommended	Projected Disconnected Area (Ac.)	Cost Analysis	Projected Implementation Date
		wetlands and are mowed, in proximity to crops, or are heavily walked.			
		Install rain barrels on all agricultural barrels, particularly ones near to or adjacent to crops or pastureland. Utilize collected rainfall on crops.	0.21	Refer to *Section 3.2.*	2022-2025
Bushy Hill Fire Station	345 Bushy Hill Road	Remove curbing or slot from grassed areas to allow for infiltration during typical storms. Regrade parking lot to slope towards grassed areas, and reduce slope towards Bushy Hill Road.	0.50	Refer to *Section 3.5.1.*	2022-2025
		Collect roof runoff from the main building and reuse for grassy area irrigation.	0.17	Refer to *Section 3.2.*	2022-2025

Source: Created by Atlas 2021.

APPENDIX I
REFERENCES

Connecticut Department of Energy and Environmental Protection (CTDEEP). (2020) *Nitrogen Control Program for Long Island Sound*. Retrieved from https://portal.ct.gov/DEEP/Municipal-Wastewater/Nitrogen-Control-Program-for-Long-Island-Sound.

Connecticut Department of Energy and Environmental Protection: Bureau of Materials Management & Compliance Assurance Water Permitting & Enforcement Division (CTDEEP). (2017) *General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4).* DEEP-WPED-GP-021.

Connecticut Department of Environmental Protection (CTDEEP). *Connecticut Stormwater Quality Manual (2004).* Retrieved from https://portal.ct.gov/-/media/DEEP/water_regulating_and_discharges/stormwater/manual/StormwaterManualCompletepdf.pdf.

Connecticut Department of Environmental Protection (CTDEP). (2010) *Connecticut's Nitrogen Credit Exchange-An Incentive-based Water Quality Trading Program*. Retrieved from https://nationalstormwater.com/wp/wp-content/uploads/2020/08/CT-water_quality_trading_summary_2010.pdf.

CTECO. (2020) *Stormwater Impaired Waters 2020*. Retrieved from https://cteco.uconn.edu/guides/Stormwater_Impaired_Waters_2016.htm.

Harper, H., Ph.D., P.E, Environmental Research & Design, Inc. (N.D.) Current Research and Trends in Alum Treatment of Stormwater Runoff. Retrieved from https://stormwater.ucf.edu/fileRepository/docs/chemicaltreatment/documents/CURRENT%20%20RESEARCH%20%20AND%20%20TRENDS.pdf.

Massachusetts Department of Environmental Protection (MADEP). (N.D.) *Sediment Forebays*. Retrieved from https://megamanual.geosyntec.com/npsmanual/sedimentforebays.aspx.

Minnesota Pollution Control Agency (PCA). (2020) Differences between Infiltration Basins and Bioretention Basins. Retrieved from https://stormwater.pca.state.mn.us/index.php/Differences_between_infiltration_basins_and_bioretention_basins.

Minnesota Pollution Control Agency (PCA). (2021). Stormwater and Soil, Engineered (Bioretention) Media, and Media Amendments. Retrieved from https://stormwater.pca.state.mn.us/index.php?title=Stormwater_and_soil,_engineered_(bioretention)_media,_and_media_amendments.

Minnesota Pollution Control Agency (PCA). (N.D.) *Pollution Prevention and the MS4 Program*. Retrieved from https://www.pca.state.mn.us/sites/default/files/wq-strm4-26.pdf.

U.S. EPA Region 5 Great Cities Program: Neighborhood Rain Barrel Partnership Final Project Report. (2008). City of Minneapolis, Minneapolis Department of Public Works Division of Surface Water & Sewers.

U.S. EPA. (2002) *Urban Runoff: Model Ordinances for Aquatic Buffers*. Retrieved from https://www.epa.gov/nps/urban-runoff-model-ordinances-aquatic-buffers

U.S. EPA. (2021) *Learn About the Clean Water State Revolving Fund (CWSRF).* Retrieved from https://www.epa.gov/cwsrf/learn-about-clean-water-state-revolving-fund-cwsrf.

UCONN and NEMO. CT Stormwater Quality Manual (2004) Retrieved from https://ctstormwatermanual.nemo.uconn.edu/10-retrofits/.

UCONN CLEAR/NEMO. (2018) Mapping Impervious Cover, presented by Chet Arnold, UConn CLEAR. Retrieved from https://docs.google.com/viewerng/viewer?url=https://nemo.uconn.edu/publications/MS4/MeasuringIC.pdf&hl=en.

UCONN CLEAR/NEMO. (2018) *MS4 Mapping Overview, presented by David Dickson, UConn CLEAR*. Retrieved from https://docs.google.com/viewerng/viewer?url=https://nemo.uconn.edu/publications/MS4/MapWkshpOverview.pdf&hl=en.

UCONN CLEAR/NEMO. (2021) *Stormwater Pond Retrofit Workshop-Retrofit Motivations, Retrofitting Dry Ponds for Volume Reduction & Pollutant Removal, Retrofitting Bioretention for Volume Reduction & Nitrogen Removal, Retrofitting Wet Ponds for Pathogen & Nutrient Removal*. William Hunt, Ph.D., North Carolina State University. Presented at the Mystic Marriot, in Groton, Connecticut.

UCONN. (2020) MS4 Disconnection Workshop Series. Workshop retrieved from https://nemo.uconn.edu/ms4/tasks/post-construction.htm.

United States Census Bureau (Census). (2010) *2010 Census Urban and Rural Classification and Urban Area Criteria*. Retrieved from https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural/2010-urban-rural.html.

United States Environmental Protection Agency (USEPA). Soil Constraints and Low Impact Development: Careful Planning Helps LID Work in Clay Soils. (2014)

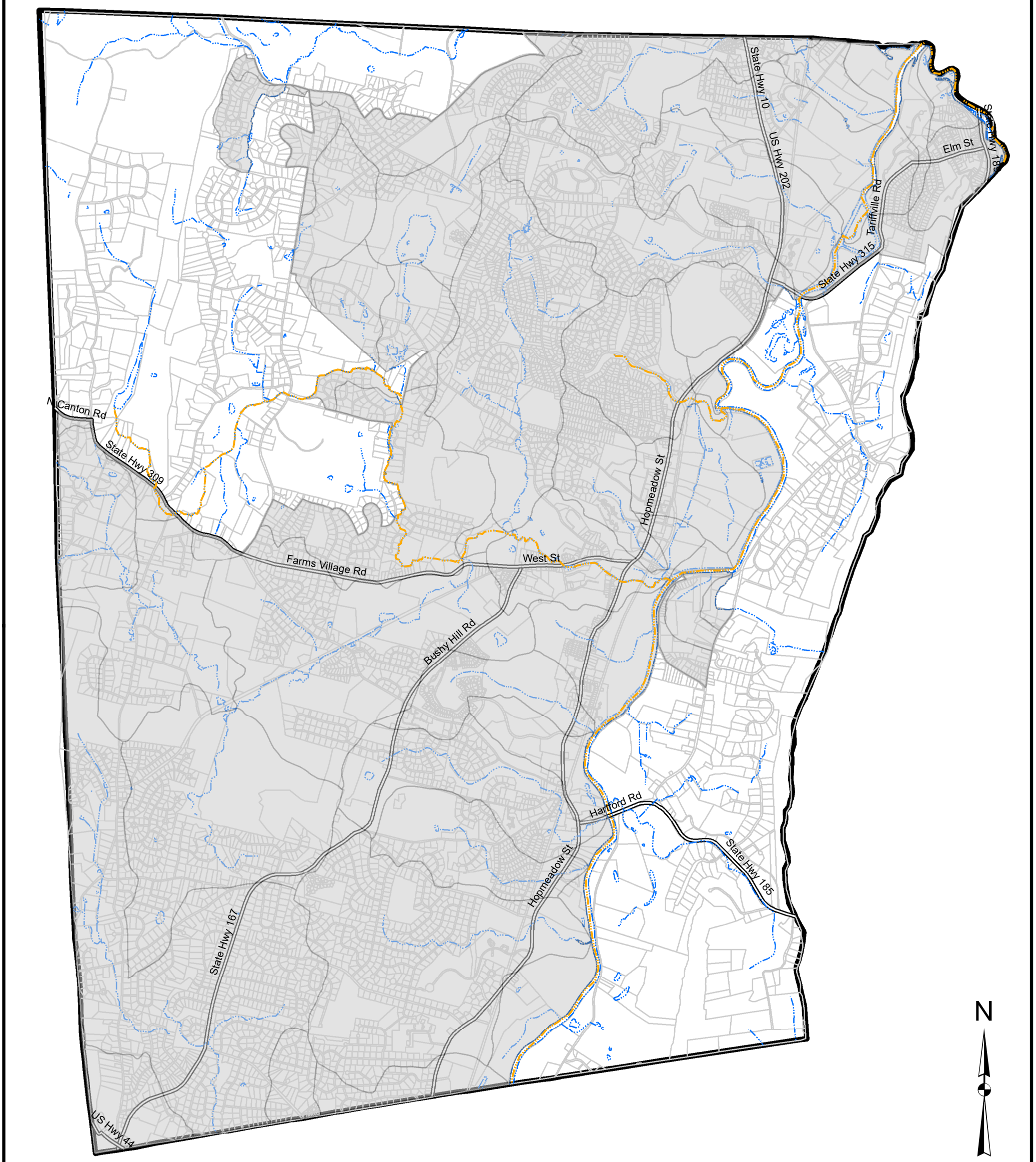
University of Connecticut (UCONN). (2020) *Strategies for Disconnection-How to Get Started Unplugging Your Impervious Surfaces*. MS4 Disconnection Workshop Series, December 2020.

University of Connecticut Center for Land Use Education and Research's (CLEAR) NEMO Program. (2021). *Rain Gardens: A Design Guide for Connecticut & New England Homeowners.* Retrieved from https://nemo.uconn.edu/raingardens/index.htm.

University of Connecticut Center for Land Use Education and Research's (CLEAR) NEMO Program. (2021) *Rain Garden App: A Mobile App for designing, installing, and maintaining a Rain Garden*. Retrieved from https://nemo.uconn.edu/tools/app/raingarden.htm

University of Connecticut Center for Land Use Education and Research's (CLEAR) NEMO Program. (2021) Implementation: Post-Construction Stormwater Management. Retrieved from https://nemo.uconn.edu/ms4/tasks/post-construction.htm.

APPENDIX II
FIGURES



Town Of Simsbury

Stormwater Retrofit Program

Urbanized Areas by Catchment

Legend

- Impaired Waterbody
- Surface Water
- Main Road
- Parcel
- Town of Simsbury
- Urbanized Areas by Catchment

Fig No.
1

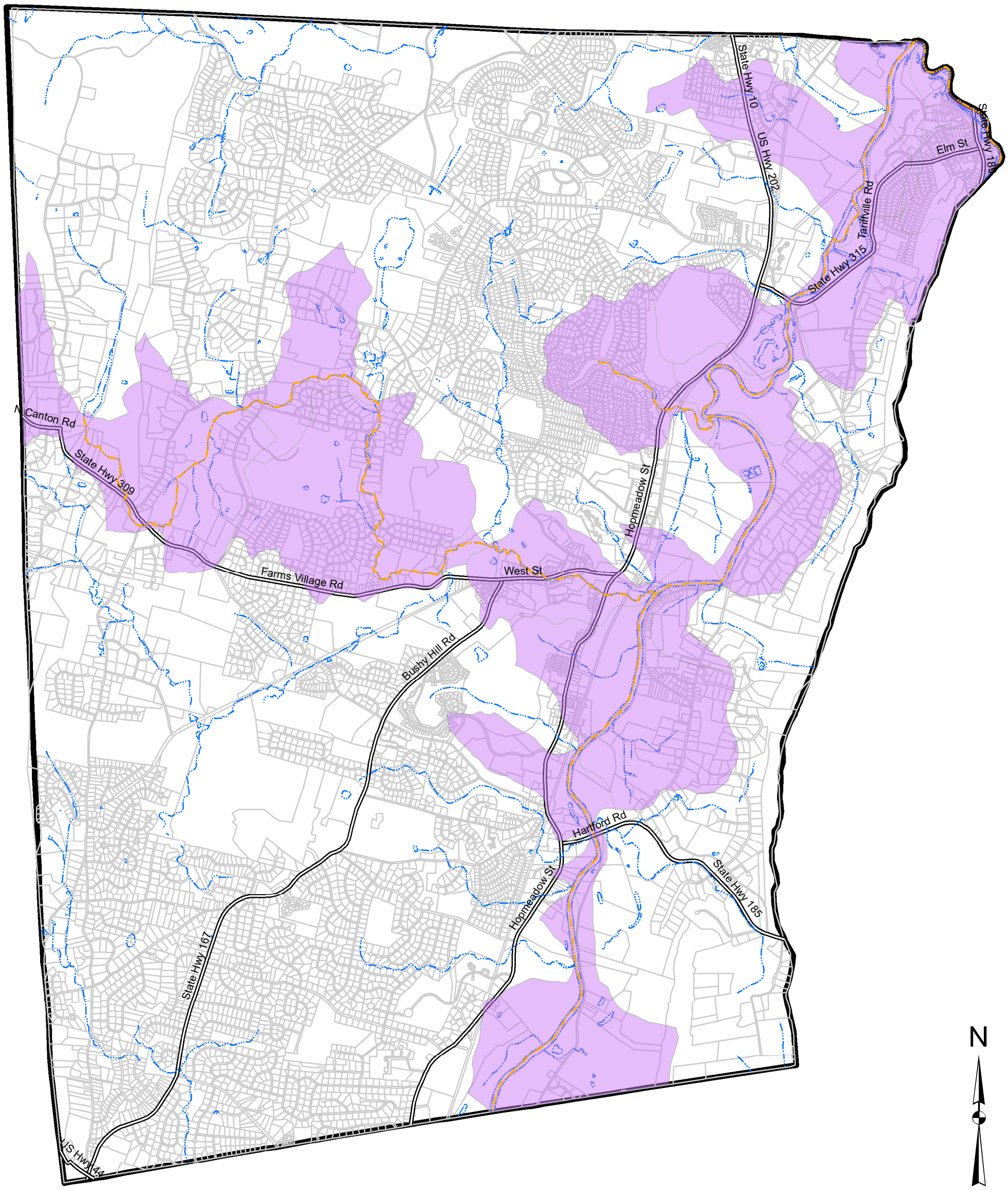
Drawn By: KLL

Checked by: LRW

Date: 2021

ATLAS

290 Roberts Street Suite 301
East Hartford,CT 06108



Town Of Simsbury

Stormwater Retrofit Program

Impaired Waterbodies by Catchment

Legend

- Impaired Waterbody
- Surface Water
- Main Road
- Parcel
- Town of Simsbury
- Impaired Waters by Catchment

Fig No.
2

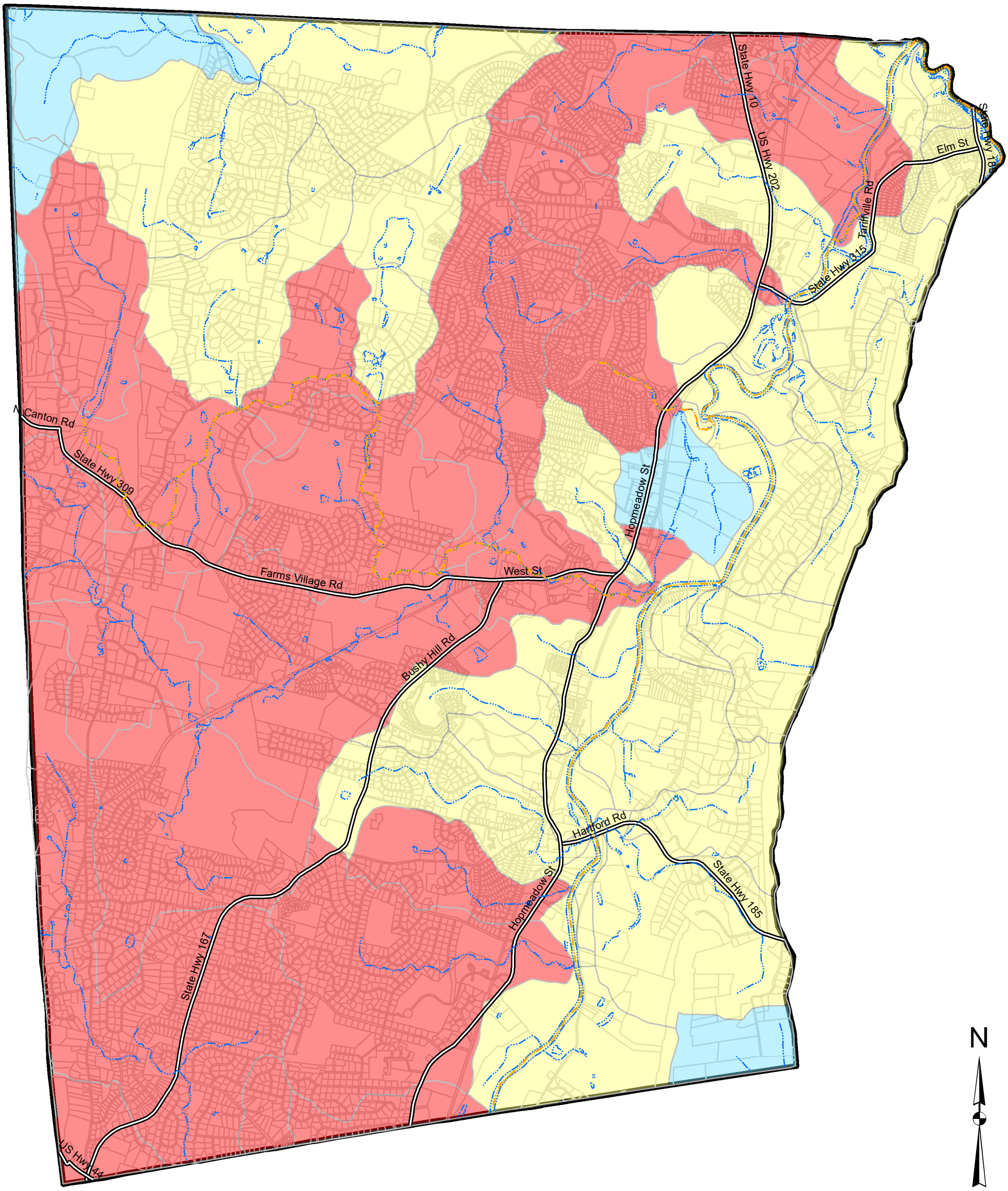
Drawn By: KLL

Checked by: LRW

Date: 2021

ATLAS

290 Roberts Street Suite 301
East Hartford,CT 06108



Town Of Simsbury

Stormwater Retrofit Program
Catchment Rankings

Legend

- Impaired Waterbody
- Surface Water
- Main Road
- Parcel
- Town of Simsbury

Priority Ranking

- High Priority
- Problem
- Low Priority

Fig No. 3

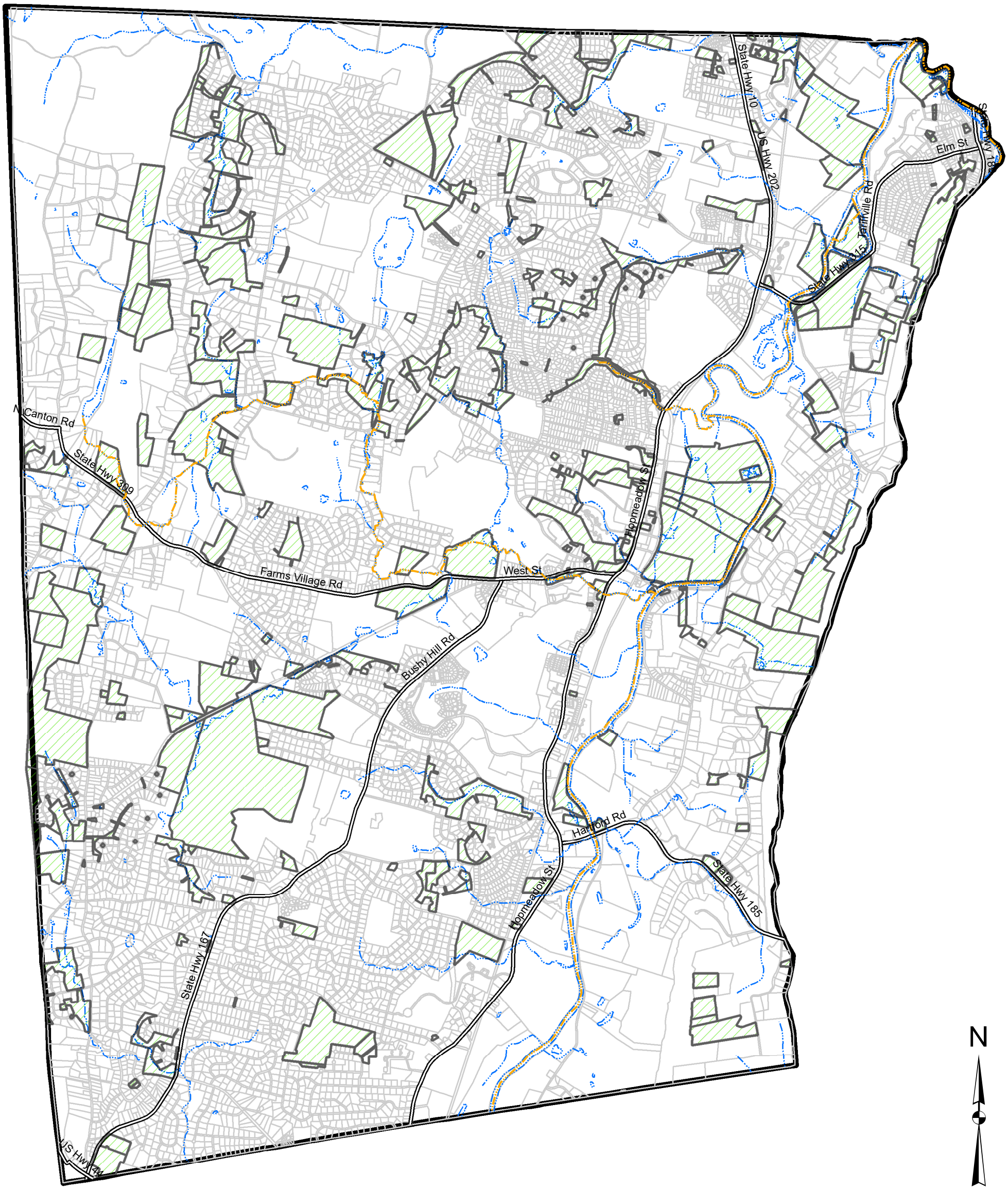
Drawn By: KLL

Checked by: LRW

Date: 2021

ATLAS

290 Roberts Street Suite 301
East Hartford,CT 06108



Town Of Simsbury

Stormwater Retrofit Program

Municipal Owned Facilities and Parks

Legend

- Impaired Waterbody
- Surface Water
- Main Road
- Parcel
- Town of Simsbury
- Municipal Owned

Fig No.
4

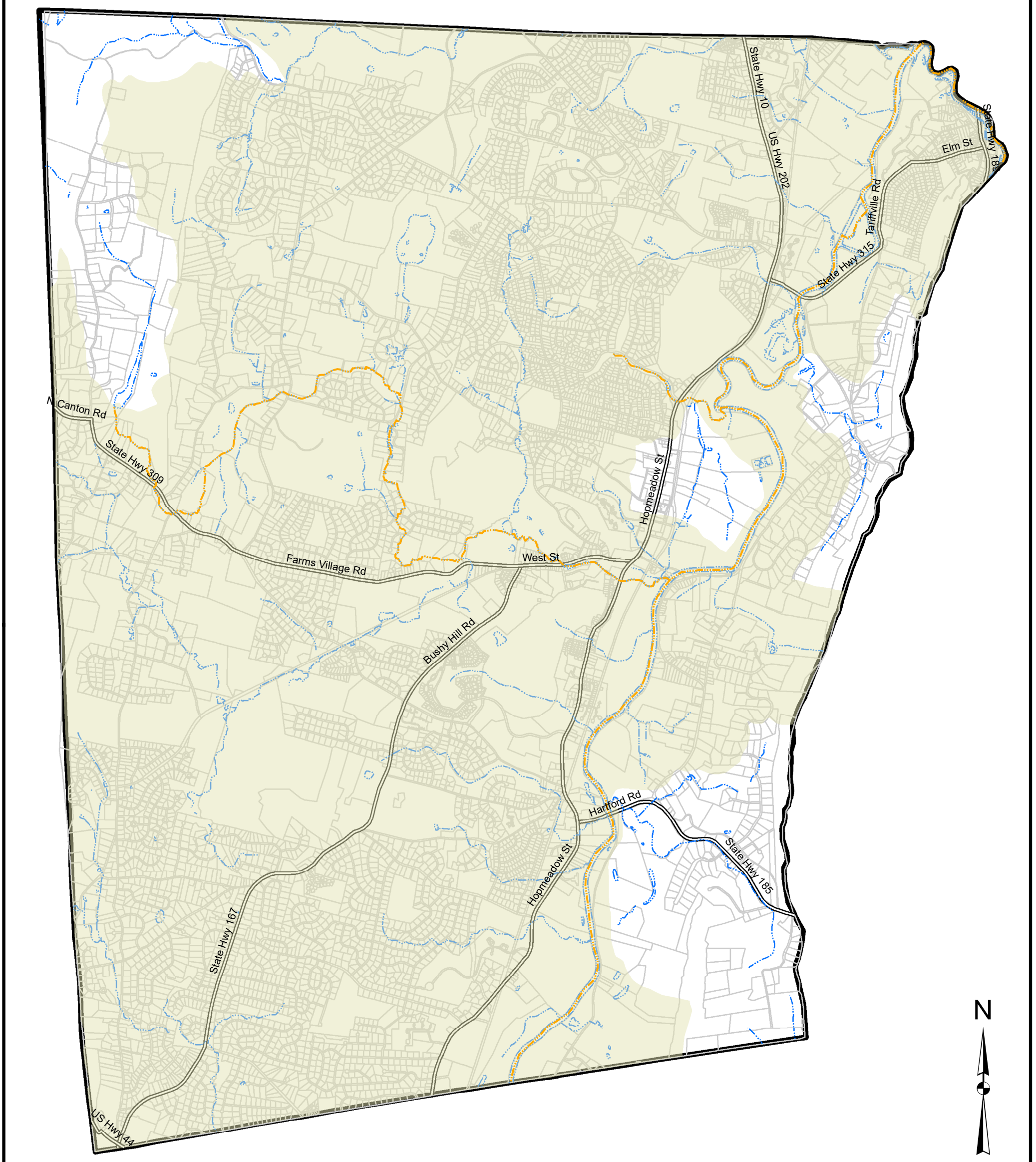
Drawn By: KLL

Checked by: LRW

Date: 2021

ATLAS

290 Roberts Street Suite 301
East Hartford,CT 06108



Town Of Simsbury

Stormwater Retrofit Program

Non-Municipal Retrofitting by Catchment

Legend

- Impaired Waterbody
- Surface Water
- Main Road
- Parcel
- Town of Simsbury
- Prioritized Non-Mun... Retrofit by Catchment

Fig No.
5

Drawn By: KLL

Checked by: LRW

Date: 2021

ATLAS

290 Roberts Street Suite 301
East Hartford,CT 06108

APPENDIX III
BUFFER ORDIANCE TEMPLATE

Aquatic Buffer Model Ordinance

☞ *This ordinance focuses primarily on stream buffers. Communities creating coastal buffers may wish to incorporate additional features. For an example of a coastal buffer ordinance, see the Rhode Island ordinance.*

Section I. Background

Buffers adjacent to stream systems and coastal areas provide numerous environmental protection and resource management benefits that can include the following:

1) Restoring and maintaining the chemical, physical, and biological integrity of the water resources
2) Removing pollutants delivered from urban stormwater
3) Reducing erosion and sediment entering the stream
4) Stabilizing stream banks
5) Providing infiltration of stormwater runoff
6) Maintaining base flow of streams
7) Contributing the organic matter that is a source of food and energy for the aquatic ecosystem
8) Providing tree canopy to shade streams and promote desirable aquatic organisms

☞ *This benefit applies primarily to forested buffer systems. In some communities, such as prairie settings, the native vegetation may not be forest. See the example ordinance from Omaha, Nebraska, for an example.*

9) Providing riparian wildlife habitat
10) Furnishing scenic value and recreational opportunity

It is the desire of the _____(*Natural Resources or Planning Agency*) to protect and maintain the native vegetation in riparian and wetland areas by implementing specifications for the establishment, protection, and maintenance of vegetation along all stream systems and/or coastal zones within our jurisdictional authority.

Section II. Intent

The purpose of this ordinance is to establish minimal acceptable requirements for the design of buffers to protect the streams, wetlands, and floodplains of _____ (*jurisdiction*); to protect the water quality of watercourses, reservoirs, lakes, and other significant water resources within _____(*jurisdiction*); to protect _____'s (Jurisdiction's) riparian and aquatic ecosystems; and to provide for the environmentally sound use of _____'s (*jurisdiction's*) land resources.

Section III. Definitions

Active Channel	The area of the stream channel that is subject to frequent flows (approximately once per one and a half years) and that includes the portion of the channel below the floodplain.
Best Management Practices (BMPs)	Conservation practices or management measures that control soil loss and reduce water quality degradation caused by nutrients, animal wastes, toxics, sediment, and runoff.

Buffer — A vegetated area, including trees, shrubs, and herbaceous vegetation, that exists or is established to protect a stream system, lake, reservoir, or coastal estuarine area. Alteration of this natural area is strictly limited.

Development

1) The improvement of property for any purpose involving building
2) Subdivision or the division of a tract or parcel of land into two or more parcels
3) The combination of any two or more lots, tracts, or parcels of property for any purpose
4) The preparation of land for any of the above purposes

Nontidal Wetlands — Those areas not influenced by tidal fluctuations that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

☞ *The definition of "nontidal wetland" here is adapted from the definition of "wetland" used by the USEPA and the US Army Corps of Engineers.*

Nonpoint Source Pollution — Pollution that is generated by various land use activities rather than from an identifiable or discrete source and is conveyed to waterways through natural processes, such as rainfall, stormwater runoff, or groundwater seepage rather than direct discharges.

One Hundred-Year Floodplain — The area of land adjacent to a stream that is subject to inundation during a storm event that has a recurrence interval of 100 years.

Pollution — Any contamination or alteration of the physical, chemical, or biological properties of any waters that will render the waters harmful or detrimental to

1) Public health, safety, or welfare
2) Domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses
3) Livestock, wild animals, or birds
4) Fish or other aquatic life

Stream Channel — Part of a watercourse either naturally or artificially created that contains an intermittent or perennial base flow of groundwater origin. Base flows of groundwater origin can be distinguished by any of the following physical indicators:

1) Hydrophytic vegetation, hydric soil, or other hydrologic indicators in the area(s) where groundwater enters the stream channel in the vicinity of the stream headwaters, channel bed, or channel banks
2) Flowing water not directly related to a storm event
3) Historical records of a local high groundwater table, such as well and stream gauge records.

Stream Order — A classification system for streams based on stream hierarchy. The smaller the stream, the lower its numerical classification. For example, a first-order stream

does not have tributaries and normally originates from springs and/or seeps. (See Figure 1.)

Stream System — A stream channel together with one or both of the following:
1) 100-year floodplain
2) Hydrologically related nontidal wetland

Streams — Perennial and intermittent watercourses identified through site inspection and US Geological Survey (USGS) maps. Perennial streams are those which are depicted on a USGS map with a solid blue line. Intermittent streams are those which are depicted on a USGS map with a dotted blue line.

☞ *Defining the term "stream" is perhaps the most contentious issue in the definition of stream buffers. This term determines the origin and the length of the stream buffer. Although some jurisdictions restrict the buffer to perennial or "blue line" streams, others include both perennial and intermittent streams in the stream buffer program. Some communities do not rely on USGS maps and instead prepare local maps of all stream systems that require a buffer.*

Water Pollution Hazard — A land use or activity that causes a relatively high risk of potential water pollution.

Section IV. Applications

A) This ordinance shall apply to all proposed development except for that development which meets waiver or variance criteria as outlined in Section IX of this regulation.
B) This ordinance shall apply to all timber harvesting activities, except those timber harvesting operations which are implementing a forest management plan that has been deemed to be in compliance with the regulations of the buffer ordinance and has received approval from _____(*state forestry agency*).
C) This ordinance shall apply to surface mining operations except that the design standards shall not apply to active surface mining operations that are operating in compliance with an approved _____(*state or federal agency*) surface mining permit.
D) The ordinance shall not apply to agricultural operations that are covered by an approved Natural Resources Conservation Service (NRCS) conservation plan that includes the application of BMPs.

☞ *Communities should carefully consider whether exempt agricultural operations from the buffer ordinance because buffer regulations may take land out of production and impose a financial burden on family farms. Many communities exempt agricultural operations if they have an approved NRCS conservation plan. In some regions, agricultural buffers may be funded through the Conservation Reserve Program (CRP). For further information, consult the Conservation Technology Information Center (CTIC) at www.ctic.perdue.edu.*

☞ *Livestock operations near and around streams may be regulated by communities. Livestock can significantly degrade the stream system and accelerate streambank erosion. The King County Livestock Management Ordinance is one example of a local livestock ordinance. For more information, contact the King County Department of Development and Environmental Services at (206) 296-6602.*

E) Except as provided in Section IX, this ordinance shall apply to all parcels of land, structures, and activities that are causing or contributing to

1) Pollution, including nonpoint source pollution, of the waters of the jurisdiction adopting this ordinance
2) Erosion or sedimentation of stream channels
3) Degradation of aquatic or riparian habitat

Section V. Plan Requirements

A) In accordance with Section IV of this ordinance, a plan approved by the appropriate agency is required for all development, forest harvesting operations, surface mining operations, and agricultural operations.
B) The plan shall set forth an informative, conceptual, and schematic representation of the proposed activity by means of maps, graphs, charts, or other written or drawn documents so as to enable the agency an opportunity to make a reasonably informed decision regarding the proposed activity.
C) The plan shall contain the following information:

☞ *The ordinance can identify the scale of maps to be included with the analyses in items 2) through 7). A 1"=50' to 1"=100' scale will generally provide sufficient detail.*

1) A location or vicinity map
2) Field-delineated and surveyed streams, springs, seeps, bodies of water, and wetlands (include a minimum of 200 feet into adjacent properties)
3) Field delineated and surveyed forest buffers
4) Limits of the ultimate 100-year floodplain

☞ *The limits of the ultimate floodplain (i.e., the floodplain under "built-out" conditions) might not be available in all locations.*

5) Hydric soils mapped in accordance with the NRCS soil survey of the site area
6) Steep slopes greater than 15 percent for areas adjacent to and within 200 feet of streams, wetlands, or other waterbodies

☞ *The ordinance may also explicitly define how slopes are measured. For example, the buffer may be divided into sections of a specific width (e.g., 25 feet) and the slope for each segment reported. Alternatively, slopes can be reported in segments divided by breaks in slope.*

7) A narrative of the species and distribution of existing vegetation within the buffer

D) The buffer plan shall be submitted in conjunction with the required grading plan for any development,and the forest buffer should be clearly delineated on the final grading plan.
E) Permanent boundary markers, in the form of signage approved by _____(*natural resources or planning agency*), shall be installed prior to final approval of the required clearing and grading plan. Signs shall be placed at the edge of the middle zone (See Section VI.I).

Section VI. Design Standards for Forest Buffers

A) A forest buffer for a stream system shall consist of a forested strip of land extending along both sides of a stream and its adjacent wetlands, floodplains, or slopes. The forest buffer width shall be adjusted to include contiguous sensitive areas, such as steep slopes or erodible soils, where development or disturbance may adversely affect water quality, streams, wetlands, or other waterbodies.

B) The forest buffer shall begin at the edge of the stream bank of the active channel.
C) The required width for all forest buffers (i.e., the base width) shall be a minimum of 100 feet, with the requirement to expand the buffer depending on
   1) Stream order
   2) Percent slope
   3) 100-year floodplain
   4) Wetlands or critical areas

☞ *The width of the stream buffer varies from 20 feet to 200 feet in ordinances throughout the United States (Heraty, 1993). The width chosen by a jurisdiction will depend on the sensitivity and characteristics of the resource being protected and the political realities in the community.*

B) In third-order and higher streams, 25 feet shall be added to the base width of the forest buffer.
C) The forest buffer width shall be modified if steep slopes are within close proximity to the stream and drain into the stream system. In those cases, the forest buffer width may be adjusted.

☞ *Several methods may be used to adjust buffer width for steep slopes. Two examples ifollow:*

Method A

Percent	Width of Buffer
15%-17%	add 10 feet
18%-20%	add 30 feet
21%-23%	add 50 feet
24%-25%	add 60 feet

Method B

	Type of Stream Use	
Percent Slope	Water Contact Recreational Use	Sensitive Stream Habitat
0% to 14%	no change	add 50 feet
15% to 25%	add 25 feet	add 75 feet
Greater than 25%	add 50 feet	add 100 feet

D) Forest buffers shall be extended to encompass the entire 100-year floodplain and a zone with a minimum width of 25 feet beyond the edge of the floodplain.
E) When wetland or critical areas extend beyond the edge of the required buffer width, the buffer shall be adjusted so that the buffer consists of the extent of the wetland plus a 25-foot zone extending beyond the wetland edge.

H) Water Pollution Hazards
The following land uses and/or activities are designated as potential water pollution hazards

and must be set back from any stream or waterbody by the distance indicated below:

1) Storage of hazardous substances—(150 feet)
2) Aboveground or underground petroleum storage facilities—(150 feet)
3) Drainfields from onsite sewage disposal and treatment systems (i.e., septic systems)—(100 feet)
4) Raised septic systems—(250 feet)
5) Solid waste landfills or junkyards—(300 feet)
6) Confined animal feedlot operations—(250 feet)
7) Subsurface discharges from a wastewater treatment plant—(100 feet)
8) Land application of biosolids—(100 feet)

☞ *For surface water supplies, the setbacks should be doubled.*

☞ *A community should carefully consider which activities or land uses should be designated as potential water pollution hazards. The list of potential hazards shown above is not exhaustive, and others may need to be added depending on the major pollutants of concern and the uses of water.*

I) The forest buffer shall be composed of three distinct zones, with each zone having its own set of allowable uses and vegetative targets as specified in this ordinance. (See Figure 2.)

☞ *Although a three-zone buffer system is highly recommended, the widths and specific uses allowed in each zone may vary between jurisdictions.*

I) Zone 1, Streamside Zone
   a) Protects the physical and ecological integrity of the stream ecosystem.
   b) Begins at the edge of the stream bank of the active channel and extends a minimum of 25 feet from the top of the bank.
   c) Allowable uses within this zone are highly restricted to
      i) Flood control structures
      ii) Utility right of ways
      iii) Footpaths
      iv) Road crossings, where permitted
   d) Target for the streamside zone is undisturbed native vegetation.

☞ *This ordinance assumes that the native vegetation in the stream corridor is forest. In some regions of the United States, other vegetation such as prairie may be native. See the Omaha, Nebraska, buffer ordinance for an example of a stream buffer ordinance that protects nonforested systems.*

2) Zone 2, Middle Zone
   a) Protects key components of the stream and provides distance between upland development and the streamside zone.
   b) Begins at the outer edge of the streamside zone and extends a minimum of 50 feet plus any additional buffer width as specified in this section.
   c) Allowable uses within the middle zone are restricted to
      i) Biking or hiking paths
      ii) Stormwater management facilities, with the approval of _____ *(local agency responsible for stormwater*).

iii) Recreational uses as approved by _____ (*planning agency*).
iv) Limited tree clearing with approval from _____ (*forestry agency or planning agency*).

d) Targets mature native vegetation adapted to the region.

3) Zone 3, Outer Zone
   a) Prevents encroachment into the forest buffer and filters runoff from residential and commercial development.
   b) Begins at the outward edge of the middle zone and provide a minimum width of 25 feet between Zone 2 and the nearest permanent structure.
   c) Restricts septic systems, permanent structures, or impervious cover, with the exception of paths.
   d) Encourages the planting of native vegetation to increase the total width of the buffer.

Section VII. <u>Buffer Management and Maintenance</u>

A) The forest buffer, including wetlands and floodplains, shall be managed to enhance and maximize the unique value of these resources. Management includes specific limitations on alteration of the natural conditions of these resources. The following practices and activities are restricted within Zones 1 and 2 of the forest buffer, except with approval by _____ _____ (*forestry, planning or natural resources agency*)
   1) Clearing of existing vegetation
   2) Soil disturbance by grading, stripping, or other practices
   3) Filling or dumping
   4) Drainage by ditching, underdrains, or other systems
   5) Use, storage, or application of pesticides, except for spot spraying of noxious weeds or non-native species consistent with recommendations of _____(*forestry agency*)
   6) Housing, grazing, or other maintenance of livestock
   7) Storage or operation of motorized vehicles, except for maintenance and emergency use approved by _____(*forestry, planning, or natural resources agency*)

B) The following structures, practices, and activities are permitted in the forest buffer, with specific design or maintenance features, subject to the review of _____ (*forestry, planning, or natural resources agency)*:
   1) Roads, bridges, paths, and utilities:
      a) An analysis needs to be conducted to ensure that no economically feasible alternative is available.
      b) The right-of-way should be the minimum width needed to allow for maintenance access and installation.
      c) The angle of the crossing shall be perpendicular to the stream or buffer to minimize clearing requirements
      d) The minimum number of road crossings should be used within each subdivision, and no more than one fairway crossing is allowed for every 1,000 feet of buffer.
   2) Stormwater management:
      e) An analysis needs to be conducted to ensure that no economically feasible alternative is available and that the project either is necessary for flood control or significantly improves the water quality or habitat in the stream.
      f) In new developments, onsite and nonstructural alternatives will be preferred over larger facilities within the stream buffer.

g) When constructing stormwater management facilities (i.e., BMPs), the area cleared will be limited to the area required for construction and adequate maintenance access as outlined in the most recent edition of _____ (*refer to stormwater manual*).

☞ *Rather than placing specific stormwater BMP design criteria in an ordinance, it is often preferable to reference a manual. With this approach, specific design information can be changed over time without going through the formal process needed to change ordinance language.*

☞ *The* Maryland Stormwater Design Manual *is one example of an up-to-date stormwater design manual. For more information, go to www.mde.state.md.us. Under topics, choose "Stormwater Design Manual."*

h) Material dredged or otherwise removed from a BMP shall be stored outside the buffer.

3) Stream restoration projects, facilities, and activities approved by _____ (*forestry, planning, or natural resources agency*) are permitted within the forest buffer.
4) Water quality monitoring and stream gauging are permitted within the forest buffer, as approved by _____(*forestry, planning or natural resources agency*):.
5) Individual trees within the forest buffer that are in danger of falling, causing damage to dwellings or other structures, or causing blockage of the stream may be removed.
6) Other timber cutting techniques approved by the agency may be undertaken within the forest buffer under the advice and guidance of _____ (*state or federal forestry agency*) if necessary to preserve the forest from extensive pest infestation, disease infestation, or threat from fire.

C) All plans prepared for recording and all right-of-way plans shall clearly
1) Show the extent of any forest buffer on the subject property
2) Label the forest buffer
3) Provide a note to reference any forest buffer stating: “There shall be no clearing, grading, construction or disturbance of vegetation except as permitted by the agency.”
4) Provide a note to reference any protective covenants governing all forest buffer areas stating: “Any forest buffer shown hereon is subject to protective covenants that may be found in the land records and that restrict disturbance and use of these areas.”

D) All forest buffer areas shall be maintained through a declaration of protective covenant, which is required to be submitted for approval by _____ (*planning board or agency*). The covenant shall be recorded in the land records and shall run with the land and continue in perpetuity.

☞ *This protective covenant can be kept either by the local government agency responsible for management of environmental resources or by an approved nonprofit organization. An example conservation easement is included later in this section.*

E) All lease agreements must contain a notation regarding the presence and location of protective covenants for forest buffer areas and shall contain information on the management and maintenance requirements for the new property owner.

F) An offer of dedication of a forest buffer area to the agency shall not be interpreted to mean that this automatically conveys to the general public the right of access to this area.

G) _____ (*responsible individual or group*) shall inspect the buffer annually and immediately following severe storms for evidence of sediment deposition, erosion, or concentrated flow channels and corrective actions taken to ensure the integrity and functions

of the forest buffer.

A local ordinance will need to designate the individual or group responsible for buffer maintenance. Often, the responsible party will be identified in protective covenants associated with the property.

H) Forest buffer areas may be allowed to grow into their vegetative target state naturally, but methods to enhance the successional process such as active reforestation may be used when deemed necessary by _____ (*natural resources or forestry agency*) to ensure the preservation and propagation of the buffer area. Forest buffer areas may also be enhanced through reforestation or other growth techniques as a form of mitigation for achieving buffer preservation requirements.

Explicit forestry management criteria are often included in a forestry or natural resources conservation ordinance. An example forest conservation ordinance from Frederick County, Maryland is included in the miscellaneous ordinances section of this site.

Section VIII. <u>Enforcement Procedures</u>

A) _____ (*director of responsible agency)* or his/her designee is authorized and empowered to enforce the requirements of this ordinance in accordance with the procedures of this section.

B) If, upon inspection or investigation, the director or his/her designee is of the opinion that any person has violated any provision of this ordinance, he/she shall with reasonable promptness issue a correction notice to the person. Each such notice shall be in writing and shall describe the nature of the violation, including a reference to the provision within this ordinance that has been violated. In addition, the notice shall set a reasonable time for the abatement and correction of the violation.

C) If it is determined that the violation or violations continue after the time fixed for abatement and correction has expired, the director shall issue a citation by certified mail to the person who is in violation. Each such notice shall be in writing and shall describe the nature of the violation, including a reference to the provision within this ordinance that has been violated and what penalty, if any, is proposed to be assessed. The person charged has 30 days within which to contest the citation or proposed assessment of penalty and to file a request for a hearing with the director or his/her designee. At the conclusion of this hearing, the director or his/her designee will issue a final order, subject to appeal to the appropriate authority. If, within 30 days from the receipt of the citation issued by the director, the person fails to contest the citation or proposed assessment of penalty, the citation or proposed assessment of penalty shall be deemed the final order of the director.

B) Any person who violates any provision of this ordinance may be liable for any cost or expenses incurred as a result thereof by the agency.

C) Penalties that may be assessed for those deemed to be in violation may include the following:

1) A civil penalty not to exceed $1,000.00 for each violation. Every day that such violation(s) continue will be considered a separate offense.
2) A criminal penalty in the form of a fine of not more than $1,000.00 for each violation, imprisonment for not more than 90 days, or both. Every day that such violation(s) continue will be considered a separate offense.
3) Anyone who knowingly makes any false statements in any application, record, or plan required by this ordinance shall upon conviction be punished by a fine of not more than $1,000.00 for each violation, imprisonment for not more than 30 days, or both.

☞ *Specific penalties will vary between communities, and should reflect realistically enforceable penalties given the political realities of a jurisdictin.*

F) In addition to any other sanctions listed in this ordinance, a person who fails to comply with the provisions of this buffer ordinance shall be liable to the agency in a civil action for damages in an amount equal to twice the cost of restoring the buffer. Damages that are recovered in accordance with this action shall be used for the restoration of buffer systems or for the administration of programs for the protection and restoration of water quality, streams, wetlands, and floodplains.

Section IX. **Waivers/Variances**

A) This ordinance shall apply to all proposed development except for activities that were completed prior to the effective date of this ordinance and had received the following:
   1) A valid, unexpired permit in accordance with development regulations
   2) A current, executed public works agreement
   3) A valid, unexpired building permit
   4) A waiver in accordance with current development regulations.

B) The director of the agency may grant a variance for the following:
   1) Those projects or activities for which it can be demonstrated that strict compliance with the ordinance would result in a practical difficulty or financial hardship
   2) Those projects or activities serving a public need where no feasible alternative is available
   3) The repair and maintenance of public improvements where avoidance and minimization of adverse impacts to nontidal wetlands and associated aquatic ecosystems have been addressed
   4) Those developments which have had buffers applied in conformance with previously issued requirements

C) Waivers for development may also be granted in two additional forms, if deemed appropriate by the director:
   1) The buffer width made be reduced at some points as long as the average width of the buffer meets the minimum requirement. This averaging of the buffer may be used to allow for the presence of an existing structure or to recover a lost lot, as long as the streamside zone (Zone I) is not disturbed by the reduction and no new structures are built within the 100-year floodplain.
   2) _____ (*planning agency*) may offer credit for additional density elsewhere on the site in compensation for the loss of developable land due to the requirements of this ordinance. This compensation may increase the total number of dwelling units on the site up to the amount permitted under the base zoning.

D) The applicant shall submit a written request for a variance to the director of the agency. The application shall include specific reasons justifying the variance and any other information necessary to evaluate the proposed variance request. The agency may require an alternative analysis that clearly demonstrates that no other feasible alternatives exist and that minimal impact will occur as a result of the project or development.

E) In granting a request for a variance, the director of the agency may require site design, landscape planting, fencing, signs, and water quality best management practices to reduce adverse impacts on water quality, streams, wetlands, and floodplains.

Section X. **Conflict With Other Regulations**

Where the standards and management requirements of this buffer ordinance are in conflict with other laws, regulations, and policies regarding streams, steep slopes, erodible soils, wetlands, floodplains, timber harvesting, land disturbance activities, or other environmental protective measures, the more restrictive shall apply.

Figure 1: Stream Order (Source: Schueler, 1995)

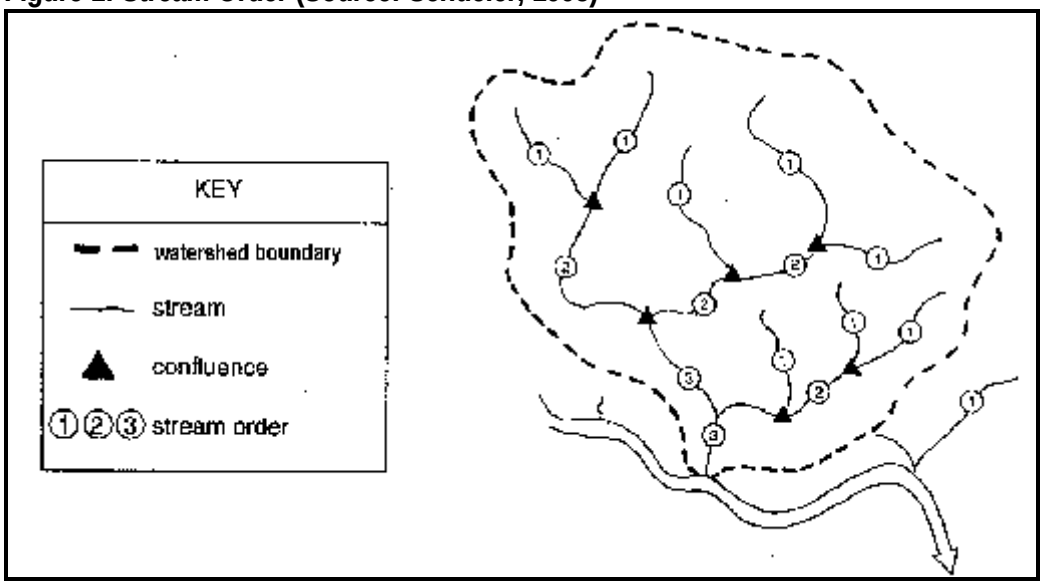
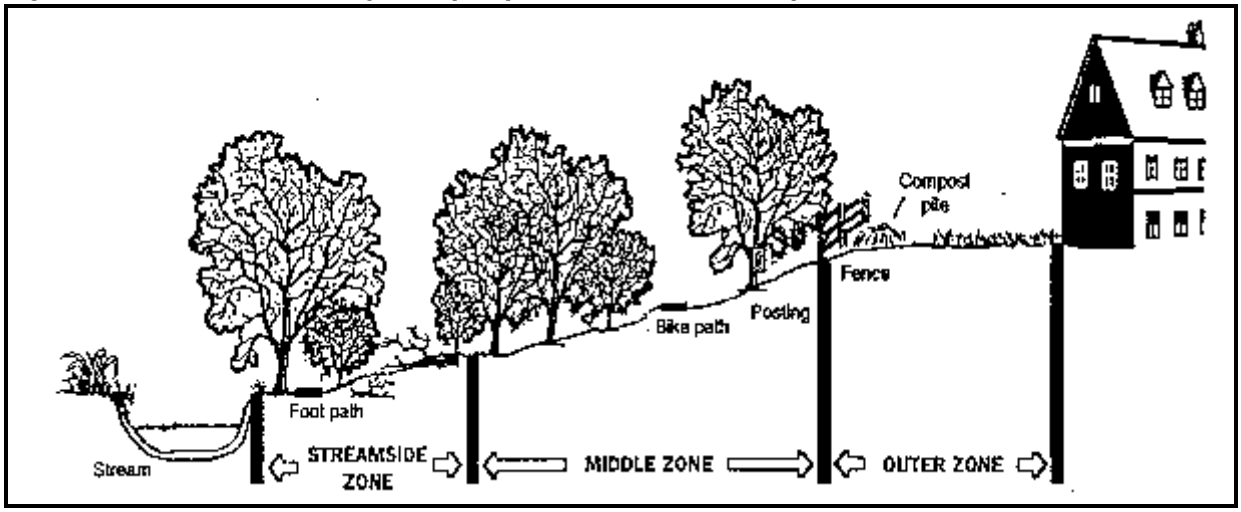


Figure 2: Three Zone Buffer System (Adapted from Welsch, 1991)



References

Heraty, M. 1993. Riparian buffer programs: a guide to developing and implementing a riparian buffer program as an urban best management practice. Metropolitan Washington Council of Governments, USEPA Office of Wetlands, Oceans and Watersheds. Washington, DC.

Schueler, T. 1995. Site planning for urban stream protection. Metropolitan Washington Council of Governments, USEPA Office of Wetlands, Oceans and Watersheds. Washington, DC.

Welsch, D. 1991. Riparian forest buffers. FS Pub. No. NA-PR-07-91. US Department of Agriculture, Forest Service. Forest Resources Management, Radnor, PA.

APPENDIX IV
DCIA CALCULATIONS

CT DEEP MS4 General Permit

Drainage Basin Areas, Drainage Sub-Basin Areas and Impervious Area (IA) Tabulations and Directly Connected Impervious Area (DCIA) Computations

Simsbury - GSM000071

Town No. 128

											CT ECO				CT ECO
				Total					Basin		State		Town	Town	Town
	Drainage			Basin					Imp.		Road		Imp.	Imp.	Road
Town Area	Sub-Basin		Drainage	Area	Town Impervious Area (Ac)				Area		Area		Area	Area	Area
Acres	No.		Sub-Basin No.	Ac.	Buildings	Roads	Other	Total	%		Ac.		Ac.	%	Ac.
21,970.10	UConn CLEAR Website				**540.25**	**646.15**	**826.79**	**2,013.19**			**90.95**				**555.20**
21,970	NEMO Website														
9,869.51	**4300**	9,871.60	**Farmington River**												
Manual Check		NEMO	4300-32-1	1,114.03	41.13	51.11	51.53	143.77	12.91		6.74		137.03	12.30	44.36
			4300-33-1	339.98	13.94	14.18	16.24	44.36	13.05		1.43		42.93	12.63	12.75
			4300-34-1	459.85	18.25	22.30	21.33	61.79	13.44		4.85		56.94	12.38	17.45
			4300-35-1	282.22	3.42	4.69	6.37	14.48	5.13		1.56		12.92	4.58	3.12
			4300-36-1*	726.67	4.99	11.92	10.64	27.55	3.79		6.49		21.06	2.90	5.43
			4300-37-1	264.79	9.95	12.61	8.26	30.82	11.64		2.35		28.47	10.75	10.26
			4300-38-1	336.95	2.34	4.04	4.19	10.57	3.14		0.00		10.57	3.14	4.04
			4300-39-1	370.83	23.22	26.88	23.73	73.83	19.91		1.88		71.95	19.40	25.00
			4300-40-1	288.21	7.72	8.11	18.97	34.80	12.07		2.20		32.60	11.31	5.90
			4300-41-1	431.60	5.00	7.72	7.31	20.02	4.64		0.00		20.02	4.64	7.72
			4300-42-1	557.21	15.32	19.66	22.33	57.31	10.29		2.08		55.23	9.91	17.58
			4300-43-1	461.37	12.49	8.01	28.22	48.72	10.56		2.57		46.15	10.00	5.44
			4300-44-1	118.14	6.38	2.66	8.32	17.36	14.69		0.00		17.36	14.69	2.66
			4300-44-1-L1	467.89	14.49	16.80	14.74	46.03	9.84		1.00		45.03	9.62	15.80
			4300-00-5+R8	497.41	8.70	6.31	37.41	10.54	2.12		0.49		10.05	2.02	5.82
			4300-00-5+R9	43.63	0.78	0.87	2.17	3.82	8.76		0.00		3.82	8.76	0.87
			4300-00-5+R10	61.38	0.41	2.34	0.53	3.27	5.33		0.36		2.91	4.74	1.98
			4300-00-5+R11	3.70	0.00	0.42	0.27	0.69	18.65		0.42		0.27	7.30	0.00
			4300-00-5+R12	210.67	5.10	7.87	20.82	33.78	16.03		2.63		31.15	14.79	5.23
			4300-00-5+R13	686.91	17.69	14.95	33.80	66.43	9.67		2.38		64.05	9.32	12.57
			4300-00-5+R14	115.01	1.02	2.12	3.21	6.35	5.52		0.00		6.35	5.52	2.12
			4300-00-5+R15	354.76	5.38	8.54	9.07	22.99	6.48		0.00		22.99	6.48	8.54
			4300-00-5+R16	170.03	1.67	3.09	1.72	6.48	3.81		1.54		4.94	2.91	1.54
			4300-00-5+R17	273.13	5.92	7.01	9.67	22.60	8.27		1.62		20.98	7.68	5.39
			4300-00-5+R18	357.41	3.67	8.62	6.82	19.11	5.35		3.28		15.83	4.43	5.34
			4300-00-5+R19	484.47	10.99	12.84	16.49	40.32	8.32		3.79		36.53	7.54	9.05
			4300-00-5+R20	149.49	3.86	1.91	6.19	11.96	8.00		0.21		11.75	7.86	1.69
			4300-00-5+R21	67.72	2.69	1.61	5.90	10.20	15.06		0.43		9.77	14.43	1.18

CT DEEP MS4 General Permit

Drainage Basin Areas, Drainage Sub-Basin Areas and Impervious Area (IA) Tabulations and Directly Connected Impervious Area (DCIA) Computations

Simsbury - GSM000071

Town No. 128

	Town		Town	Town	High Connectivity			Average Connectivity			Partial Connectivity			Slight Connectivity			
Drainage	Basin		Imp.	Imp.	DCIA% = 0.4*(IA%)^1.2			DCIA% = 0.1*(IA%)^1.5			DCIA% = 0.04*(IA%)^1.7			DCIA% = 0.01*(IA%)^2.0			Total
Sub-Basin	Area	Drainage	Area	Area	Imp.	DCIA	DCIA	Imp.	DCIA	DCIA	Imp.	DCIA	DCIA	Imp.	DCIA	DCIA	DCIA
No.	Acres	Sub-Basin No.	Ac.	IA%	Ac.	%	Ac.	Ac.	%	Ac.	Ac.	%	Ac.	Ac.	%	Ac.	Ac.
					HDR			MDR	Comm.	Ind.	LDR			Forest	Ag.		
								Urban Public/Institutional									
								Open Land									
4300		**Farmington River**															
	1,114.03	4300-32-1	137.03	**12.30**	68.52	8.13	5.57	68.52	4.31	2.96	0.00	0.00	0.00	0.00	0.00	0.00	**8.52**
	339.98	4300-33-1	42.93	**12.63**	21.47	8.39	1.80	21.47	4.49	0.96	0.00	0.00	0.00	0.00	0.00	0.00	**2.76**
	459.85	4300-34-1	56.94	**12.38**	28.47	8.19	2.33	28.47	4.36	1.24	0.00	0.00	0.00	0.00	0.00	0.00	**3.57**
	282.22	4300-35-1	12.92	**4.58**	0.00	0.00	0.00	0.00	0.00	0.00	12.92	0.53	0.07	0.00	0.00	0.00	**0.07**
	726.67	4300-36-1*	21.06	**2.90**	0.00	0.00	0.00	0.00	0.00	0.00	21.06	0.24	0.05	0.00	0.00	0.00	**0.05**
	264.79	4300-37-1	28.47	**10.75**	0.00	0.00	0.00	14.24	3.53	0.50	14.24	2.27	0.32	0.00	0.00	0.00	**0.82**
	336.95	4300-38-1	10.57	**3.14**	5.29	1.58	0.08	0.00	0.00	0.00	10.57	0.28	0.03	0.00	0.00	0.00	**0.11**
	370.83	4300-39-1	71.95	**19.40**	71.95	14.04	10.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**10.10**
	288.21	4300-40-1	32.60	**11.31**	0.00	0.00	0.00	16.30	3.80	0.62	16.30	2.47	0.40	0.00	0.00	0.00	**1.02**
	431.60	4300-41-1	20.02	**4.64**	0.00	0.00	0.00	0.00	0.00	0.00	20.02	0.54	0.11	0.00	0.00	0.00	**0.11**
	557.21	4300-42-1	55.23	**9.91**	0.00	0.00	0.00	27.62	3.12	0.86	27.62	1.97	0.55	0.00	0.00	0.00	**1.41**
	461.37	4300-43-1	46.15	**10.00**	0.00	0.00	0.00	23.08	3.16	0.73	23.08	2.01	0.46	0.00	0.00	0.00	**1.19**
	118.14	4300-44-1	17.36	**14.69**	8.68	10.06	0.87	8.68	5.63	0.49	0.00	0.00	0.00	0.00	0.00	0.00	**1.36**
	467.89	4300-44-1-L1	45.03	**9.62**	0.00	0.00	0.00	22.52	2.99	0.67	22.52	1.88	0.42	0.00	0.00	0.00	**1.10**
	497.41	4300-00-5+R8	10.05	**2.02**	0.00	0.00	0.00	0.00	0.00	0.00	10.05	0.13	0.01	0.00	0.00	0.00	**0.01**
	43.63	4300-00-5+R9	3.82	**8.76**	0.00	0.00	0.00	1.91	2.59	0.05	1.91	1.60	0.03	0.00	0.00	0.00	**0.08**
	61.38	4300-00-5+R10	2.91	**4.74**	0.00	0.00	0.00	0.00	0.00	0.00	2.91	0.56	0.02	0.00	0.00	0.00	**0.02**
	3.70	4300-00-5+R11	0.27	**7.30**	0.00	0.00	0.00	0.14	1.97	0.00	0.14	1.17	0.00	0.00	0.00	0.00	**0.00**
	210.67	4300-00-5+R12	31.15	**14.79**	15.58	10.14	1.58	15.58	5.69	0.89	0.00	0.00	0.00	0.00	0.00	0.00	**2.46**
	686.91	4300-00-5+R13	64.05	**9.32**	0.00	0.00	0.00	32.03	2.85	0.91	32.03	1.78	0.57	0.00	0.00	0.00	**1.48**
	115.01	4300-00-5+R14	6.35	**5.52**	0.00	0.00	0.00	0.00	0.00	0.00	6.35	0.73	0.05	0.00	0.00	0.00	**0.05**
	354.76	4300-00-5+R15	22.99	**6.48**	0.00	0.00	0.00	11.50	1.65	0.19	11.50	0.96	0.11	0.00	0.00	0.00	**0.30**
	170.03	4300-00-5+R16	4.94	**2.91**	0.00	0.00	0.00	0.00	0.00	0.00	4.94	0.25	0.01	0.00	0.00	0.00	**0.01**
	273.13	4300-00-5+R17	20.98	**7.68**	0.00	0.00	0.00	10.49	2.13	0.22	10.49	1.28	0.13	0.00	0.00	0.00	**0.36**
	357.41	4300-00-5+R18	15.83	**4.43**	0.00	0.00	0.00	0.00	0.00	0.00	15.83	0.50	0.08	0.00	0.00	0.00	**0.08**
	484.47	4300-00-5+R19	36.53	**7.54**	0.00	0.00	0.00	18.27	2.07	0.38	18.27	1.24	0.23	0.00	0.00	0.00	**0.60**
	149.49	4300-00-5+R20	11.75	**7.86**	0.00	0.00	0.00	5.88	2.20	0.13	5.88	1.33	0.08	0.00	0.00	0.00	**0.21**
	67.72	4300-00-5+R21	9.77	**14.43**	4.89	9.84	0.48	4.89	5.48	0.27	0.00	0.00	0.00	0.00	0.00	0.00	**0.75**

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Drainage Basin Areas, Drainage Sub-Basin Areas and Impervious Area (IA) Tabulations and Directly Connected Impervious Area (DCIA) Computations

Simsbury - GSM000071

Town No. 128

											CT ECO				CT ECO
				Total					Basin		State		Town	Town	Town
	Drainage			Basin					Imp.		Road		Imp.	Imp.	Road
Town Area	Sub-Basin		Drainage	Area	Town Impervious Area (Ac)				Area		Area		Area	Area	Area
Acres	No.		Sub-Basin No.	Ac.	Buildings	Roads	Other	Total	%		Ac.		Ac.	%	Ac.
	4300		**Farmington River (Continued)**												
			4300-00-5+R22	156.79	9.22	11.38	10.13	30.73	19.60		3.32		27.41	17.48	8.06
			4300-39-2-R1	17.26	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00	0.00
7,953.94	**4318**	7953.58	**Hop Brook**												
Manual Check		NEMO	4318-00-1	764.38	9.59	14.16	21.86	45.61	5.97		4.45		41.16	5.38	9.71
			4318-01-1	645.97	10.49	15.64	13.89	40.03	6.20		0.00		40.03	6.20	15.64
			4318-02-1	195.11	3.68	5.62	6.31	15.61	8.00		0.00		15.61	8.00	5.62
			4318-03-1	909.56	19.69	25.55	22.40	67.65	7.44		1.98		65.67	7.22	23.57
			4318-04-1	531.26	8.09	12.88	12.51	33.48	6.30		0.45		33.03	6.22	12.43
			4318-05-1	888.52	38.95	41.73	45.50	126.18	14.20		0.00		126.18	14.20	41.73
			4318-06-1	246.23	12.40	11.61	20.40	44.41	18.04		1.17		43.24	17.56	10.45
			4318-00-1-L1	524.83	5.61	7.65	9.65	22.90	4.36		0.00		22.90	4.36	7.65
			4318-00-2-R1	324.64	5.13	6.46	10.52	22.11	6.81		0.00		22.11	6.81	6.46
			4318-00-2-R2	808.80	20.41	23.35	31.04	74.79	9.25		2.64		72.15	8.92	20.71
			4318-00-3-R1	28.83	0.34	0.00	2.49	2.83	9.82		0.00		2.83	9.82	0.00
			4318-00-3-R2	381.85	23.43	15.46	49.12	88.01	23.05		8.19		79.82	20.90	7.27
			4318-02-1-L1	312.52	3.36	4.05	3.55	10.96	3.51		0.00		10.96	3.51	4.05
			4318-03-2-R1	1,103.82	25.83	34.06	35.26	95.15	8.62		5.79		89.36	8.10	28.28
			4318-04-1-L1	287.62	4.63	5.16	8.31	18.10	6.29		0.44		17.66	6.14	4.72
1,867.12	**4317**	1867.28	**Nod Brook**												
Manual Check		NEMO	4317-00-1	1431.58	46.55	61.23	48.59	156.37	10.92		6.09		150.28	10.50	55.14
			4317-01-1	189.58	13.76	8.62	32.26	57.64	30.40		4.76		52.88	27.89	3.86
			4317-00-2-L1	98.14	4.09	4.82	3.81	12.72	12.96		0.00		12.72	12.96	4.82
			4317-00-2-R1	147.82	5.30	7.33	9.48	22.11	14.96		1.33		20.78	14.06	6.00

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Simsbury - GSM000071

Town No. 128

					High Connectivity			Average Connectivity			Partial Connectivity			Slight Connectivity			
Drainage	Town Basin		Town Imp.	Town Imp.	DCIA% = 0.4*(IA%)^1.2			DCIA% = 0.1*(IA%)^1.5			DCIA% = 0.04*(IA%)^1.7			DCIA% = 0.01*(IA%)^2.0			Total
Sub-Basin No.	Area Acres	Drainage Sub-Basin No.	Area Ac.	Area IA%	Imp. Ac.	DCIA %	DCIA Ac.	Imp. Ac.	DCIA %	DCIA Ac.	Imp. Ac.	DCIA %	DCIA Ac.	Imp. Ac.	DCIA %	DCIA Ac.	DCIA Ac.
		Farmington River															
		4300-00-5+R22	27.41	**17.48**	13.71	12.39	1.70	13.71	7.31	1.00	0.00	0.00	0.00	0.00	0.00	0.00	**2.70**
		4300-39-2+R1	0.00	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
4318		**Hop Brook**															
	764.38	4318-00-1	41.16	**5.38**	0.00	0.00	0.00	0.00	0.00	0.00	41.16	0.70	0.29	0.00	0.00	0.00	**0.29**
	645.97	4318-01-1	40.03	**6.20**	0.00	0.00	0.00	20.02	1.54	0.31	20.02	0.89	0.18	0.00	0.00	0.00	**0.49**
	195.11	4318-02-1	15.61	**8.00**	0.00	0.00	0.00	7.81	2.26	0.18	7.81	1.37	0.11	0.00	0.00	0.00	**0.28**
	909.56	4318-03-1	65.67	**7.22**	0.00	0.00	0.00	32.84	1.94	0.64	32.84	1.15	0.38	0.00	0.00	0.00	**1.02**
	531.26	4318-04-1	33.03	**6.22**	0.00	0.00	0.00	16.52	1.55	0.26	16.52	0.89	0.15	0.00	0.00	0.00	**0.40**
	888.52	4318-05-1	126.18	**14.20**	63.09	9.66	6.09	63.09	5.35	3.38	0.00	0.00	0.00	0.00	0.00	0.00	**9.47**
	246.23	4318-06-1	43.24	**17.56**	21.62	12.46	2.69	21.62	7.36	1.59	0.00	0.00	0.00	0.00	0.00	0.00	**4.28**
	524.83	4318-00-1-L1	22.90	**4.36**	0.00	0.00	0.00	0.00	0.00	0.00	22.90	0.49	0.11	0.00	0.00	0.00	**0.11**
	324.64	4318-00-2-R1	22.11	**6.81**	0.00	0.00	0.00	11.06	1.78	0.20	11.06	1.04	0.12	0.00	0.00	0.00	**0.31**
	808.80	4318-00-2-R2	72.15	**8.92**	0.00	0.00	0.00	36.08	2.66	0.96	36.08	1.65	0.60	0.00	0.00	0.00	**1.56**
	28.83	4318-00-3-R1	2.83	**9.82**	0.00	0.00	0.00	1.42	3.08	0.04	1.42	1.94	0.03	0.00	0.00	0.00	**0.07**
	381.85	4318-00-3-R2	79.82	**20.90**	79.82	15.36	12.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**12.26**
	312.52	4318-02-1-L1	10.96	**3.51**	0.00	0.00	0.00	0.00	0.00	0.00	10.96	0.34	0.04	0.00	0.00	0.00	**0.04**
	1,103.82	4318-03-2-R1	89.36	**8.10**	0.00	0.00	0.00	44.68	2.30	1.03	44.68	1.40	0.63	0.00	0.00	0.00	**1.65**
	287.62	4318-04-1-L1	17.66	**6.14**	0.00	0.00	0.00	8.83	1.52	0.13	8.83	0.87	0.08	0.00	0.00	0.00	**0.21**
4317		**Nod Brook**															
	1,431.58	4317-00-1	150.28	**10.50**	0.00	0.00	0.00	75.14	3.40	2.56	75.14	2.18	1.64	0.00	0.00	0.00	**4.19**
	189.58	4317-01-1	52.88	**27.89**	52.88	21.71	11.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**11.48**
	98.14	4317-00-2-L1	12.72	**12.96**	6.36	8.65	0.55	6.36	4.67	0.30	0.00	0.00	0.00	0.00	0.00	0.00	**0.85**
	147.82	4317-00-2-R1	20.78	**14.06**	10.39	9.54	0.99	10.39	5.27	0.55	0.00	0.00	0.00	0.00	0.00	0.00	**1.54**

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Drainage Basin Areas, Drainage Sub-Basin Areas and Impervious Area (IA) Tabulations and Directly Connected Impervious Area (DCIA) Computations

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Town No. 128

Town Area Acres	Drainage Sub-Basin No.		Drainage Sub-Basin No.	Total Basin Area Ac.	Town Impervious Area (Ac) Buildings	Roads	Other	Total	Basin Imp. Area %		CT ECO State Road Area Ac.		Town Imp. Area Ac.	Town Imp. Area %	CT ECO Town Road Area Ac.
1,989.78	**4319**	1990.32	**West Branch Salmon Brook**												
Manual Check		NEMO	4319-10-1	814.35	12.74	18.26	17.11	48.11	5.91		0.00		48.11	5.91	18.26
			4319-11-1	422.57	0.75	2.48	1.37	4.61	1.09		0.00		4.61	1.09	2.48
			4319-10-2-L1	752.86	9.59	19.39	11.30	40.29	5.35		0.00		40.29	5.35	19.39
180.77	**4404**	181.8	**North Branch Park River**												
Manual Check		NEMO	4404-04-1-L2	180.77	0.06	0.02	0.10	0.18	0.10		0.00		0.18	0.10	0.02
102.31	**4309**	102.31	**Cherry Brook**												
Manual Check		NEMO	4309-02-1	89.06	0.06	0.00	0.53	0.59	0.66		0.00		0.59	0.66	0.00
			4309-03-1	13.25	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00	0.00
3.03	**4312**	3.03	**Roaring Brook**												
Manual Check		NEMO	4312-00-2-L2	3.03	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00	0.00
21,966.46	Total Area Check (Ac)														

09/14/21 *Last Revised Date* *NLJA PN 1208-0001*

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Simsbury - GSM000071

Town No. 128

	Town		Town	Town	High Connectivity			Average Connectivity			Partial Connectivity			Slight Connectivity			
Drainage	Basin		Imp.	Imp.	DCIA% = 0.4*(IA%)^1.2			DCIA% = 0.1*(IA%)^1.5			DCIA% = 0.04*(IA%)^1.7			DCIA% = 0.01*(IA%)^2.0			Total
Sub-Basin	Area	Drainage	Area	Area	Imp.	DCIA	DCIA	Imp.	DCIA	DCIA	Imp.	DCIA	DCIA	Imp.	DCIA	DCIA	DCIA
No.	Acres	Sub-Basin No.	Ac.	IA%	Ac.	%	Ac.	Ac.	%	Ac.	Ac.	%	Ac.	Ac.	%	Ac.	Ac.
4319		**West Branch Salmon Brook**															
	814.35	4319-10-1	48.11	**5.91**	0.00	0.00	0.00	0.00	0.00	0.00	48.11	0.82	0.39	0.00	0.00	0.00	**0.39**
	422.57	4319-11-1	4.61	**1.09**	0.00	0.00	0.00	0.00	0.00	0.00	4.61	0.05	0.00	0.00	0.00	0.00	**0.00**
	752.86	4319-10-2-L1	40.29	**5.35**	0.00	0.00	0.00	0.00	0.00	0.00	40.29	0.69	0.28	0.00	0.00	0.00	**0.28**
4404		**North Branch Park River**															
	180.77	4404-04-1-L2	0.18	**0.10**	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	**0.00**
4309		**Cherry Brook**															
	89.06	4309-02-1	0.59	**0.66**	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.02	0.00	0.00	0.00	0.00	**0.00**
	13.25	4309-03-1	0.00	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
4312		**Roaring Brook**															
	3.03	4312-00-2-L2	0.00	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
																Total DCIA (Ac) =	**92.51**

IA%	Connectivity Assignment
0 - 6	100% IA%
6 - 12	50% IA%
12 - 18	50% IA%
>18	100% IA%

09/14/21 *Last Revised Date* *NLJA PN 1208-0001*

APPENDIX V
IMPERVIOUS COVER TRACKING SPREADSHEET

Impervious Cover Tracking Spreadsheet

Town: **Town of Simsbury**
Town area (ac): **21,966.46** *Based off of 2020 DCIA Calculations

PROJECT INFORMATION				NEW DEVELOPMENT		REDEVELOPMENT		RETROFITS	CHANGE			CUMULATIVE TOTALS				NOTES & REFERENCES
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Date	Practice #	Project	Practice	Total IC added (ac)	Connected IC added (ac)	Total IC added or subtracted (ac)	Connected IC added or subtracted (ac)	IC disconnected (ac)	Change in Total IC (ac)	Change in Connected IC (ac)	Net change (ac)	TOWN TOTAL IC (ac)	TOWN TOTAL IC (%)	TOWN CONNECTED IC (ac)	TOWN CONNECTED IC (%)	Notes & References
Townwide BASELINE													**0.00%**		**0.00%**	
											0.0					

NET	**0.0**	**acres disconnected**
%	#DIV/0!	**% disconnected**

NEMO Project
Center for Land Use Education and Research (CLEAR)
University of Connecticut
clear@uconn.edu

OVERALL NOTES

1 *This is just our take on it. Feel free to change and tailor as you see fit.*
2 Area unit used is acres but could be anything

COLUMNS

1 date of completion
2 any identifying system will do
3 overall description of project
4 overview of LID practices used
5 for new development, total acres of IC added
6 acres of #5 above that are connected
7 for redevelopment projects: total ic after project minus total ic before project
8 for redevelopment projects: connected ic after project minus connected ic before project
9 for retrofits of exisiting development, total acres IC disconnected (from plans and observation)
10 change in total IC after project completion
11 change in connected IC after project completion
12 cumulative total of IC in town, acres
13 cumulative total of IC in town, %
14 cumulative total of connected IC in town, acres
15 cumulative total of connected IC in town, %
16 notes, referrals to other files, plans, photos, folders, etc.

APPENDIX VI
CATCHMENT RANKINGS

Town of Simsbury
Catchment Assessment
and
Priority Ranking Matrix

Catchment ID	Number of Outfalls Included	Receiving Water(s)	Previous Screening Results Indicate Likely Sewer Input? [1]	Discharging to Area of Concern to Public Health? [2]	Frequency of Past Discharge Complaints	Receiving Water Quality [3]	Density of Generating Sites [4]	Age of Development/ Infrastructure [5]	Historic Combined Sewers or Septic? [6]	Aging Septic? [7]	Culverted Streams? [8]	Additional Characteristics	Sewer Repair Nearby?	Urbanized Area	DCIA >11% [9]	Impaired Waterbody	Score	Priority Ranking *Low Priority: 0-5* *Problem: 6-9* *High Priority: ≥10*
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Scoring Criteria			Yes = 3 (Problem Catchment) No = 0	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	Description	Yes=2 No=0	Yes =1 No = 0	Yes =1 No = 0	Yes =1 No = 0		
4300-00-5+R10	0	Farmington River		0		3	1	1	0		1	Agricultural land, some wooded areas.		1	0	1	8	Problem
4300-00-5+R11	0	Farmington River		0		3	1	1	0		1	Wooded with majority of basin made up of Russel Brook.		1	0	1	8	Problem
4300-00-5+R12	7	Farmington RIver		0		3	2	2	0		0	Highly Commercialized/industrializ ed with wooded or cleared areas.		1	0	1	9	Problem
4300-00-5+R13	11	Farmington River		0		3	2	2	0		0	Mixture of commercial and agricultural areas.		1	0	1	9	Problem
4300-00-5+R14	3	Farmington River, unamed stream		0		3	1	1	0		1	Agricultural land with some residential areas		1	0	1	8	Problem
4300-00-5+R15	9	Farmington River		0		3	1	1	0		0	Agricultural land with some residential areas		1	0	1	7	Problem
4300-00-5+R16	0	Farmington River		1		3	1	1	0		0	Agricultural land with some residential areas. Small portion of aquifer protection area loctaed on the northeast corner of the catchment.		1	0	1	8	Problem
4300-00-5+R17	0	Farmington River		1		3	2	1	0		0	Wooded land with the Westminster School. Aquifer protection areas.		1	0	1	9	Problem
4300-00-5+R18	4	Farmington River		1		3	1	1	0		1	Mixture of commercial and agricultural areas.		1	0	1	9	Problem
4300-00-5+R19	8	Farmington River		1		3	2	2	0		0	Residential, wooded, and some agricultural.		1	0	1	10	High Priority
4300-00-5+R20	5	Farmington River		0		3	2	1	0		0	Residential and wooded.		1	0	1	8	Problem
4300-00-5+R21	3	Farmington River		1		3	2	1	0		0	Residential and wooded.		1	0	1	9	Problem

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4300-00-5+R22	7	Farmington River		0		3	3	1	0		0	Mainly residential housing with wooded areas.		1	0	1	9	Problem
4300-00-5+R8	3	Farmington River		1		3	2	1	0		0	Mixture of commercial, agricultural, and golf parks.		1	0	1	9	Problem
4300-00-5+R9	0	Farmington River		1		3	2	1	0		0	Mixuture of commercial and wooded areas		1	0	1	9	Problem
4300-32-1	41	Farmington River, Minister Brook		0		3	3	2	0		1	Highly residential/commercialized areas	2	1	0	1	13	High Priority
4300-33-1	22	Russel Brook		0		3	2	2	0		1	Highly residential/commercialized areas with some wooded areas.		1	0	1	10	High Priority
4300-34-1	20	Still Brook, Smiths Pond		0		0	2	2	0		3	Mostly wooded, some residential housing, light commercial		1	0	0	8	Problem
4300-35-1	13	Powder Mill Brook, King Phillip Brook		0		0	1	2	0		3	Wooded, light residential housing		0	0	0	6	Problem
4300-36-1*	8	Powder Mill Brook, King Phillip Brook		3		0	1	1	0		3	Wooded, light residential housing, some cleared agricultural land		0	0	0	8	Problem
4300-37-1	10	Second Brook, Farmington River		0		3	1	1	0		3	Wooded with light residential housing		1	0	0	9	Problem
4300-38-1	6	Lucy Brook		0		0	1	1	0		3	Wooded with very light residential		1	0	0	6	Problem
4300-39-1	38	Owens Brook, Farmington River		0		3	3	2	0		3	Mainly residential housing with wooded areas.		1	0	1	13	High Priority
4300-39-2-R1	0	Owens Brook, Farmington River		0		3	1	1	0		0	Wooded with cleared undeveloped land		1	0	1	7	Problem
4300-40-1	16	Unnamed Streams		0		0	2	2	0		0	Commercial/ Marshland, some cleared agricultural		1	0	0	5	Low Priority

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4300-41-1	6	Unnamed Streams		3		0	1	2	0		3	Mostly wooded, some residential housing and cleared agricultural land		0	0	0	9	Problem
4300-42-1	18	Bissel Brook		3		0	2	2	0		3	Cleared agricultural land, some residential housing and wooded areas		1	0	0	11	High Priority
4300-43-1	10	Saxton Brook		3		0	1	1	0		3	Agricultural land, some wooded area, residential housing, commercial, marshland		1	0	0	9	Problem
4300-44-1	0	Munnisunk Brook, Lake Basile, Wadhams Pond		3		2	2	2	0		3	Residential housing, some wooded area, light agricultural land, commercial (airport)		1	0	1	14	High Priority
4300-44-1-L1	11	Munnisunk Brook, Lake Basile, Wadhams Pond		3		2	2	2	0		3	Residential housing, some wooded area, light agricultural land		1	0	1	14	High Priority
4300-47-1	0	Griffin Brook, Three Unnamned Streams, Penwood Pond, Wadhams Pond		0		0	1	1	0		3	Wooded, light residential housing		0	0	0	5	Low Priority
4309-02-1	0	Unnamed Streams, Tilton Pond		0		0	1	1	0		3	Wooded, light residential housing, little agricultural land		0	0	0	5	Low Priority
4309-03-1	0	Unnamed Streams		0		0	1	1	0		3	Wooded, light residential housing, little agricultural land		0	0	0	5	Low Priority
4317-00-1	71	Nod Brook		3		3	2	2	0		3	Residential housing, some wooded and commercial	2	1	0	1	17	High Priority

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4317-00-2-L1	3	Nod Brook, Stub Pond		3		3	2	2	0		3	Residential housing, some wooded and commercial	2	1	0	1	17	High Priority
4317-00-2-R1	1	Nod Brook Twin Ponds		3		3	2	2	0		3	Residential housing, some wooded and commercial		1	0	1	15	High Priority
4317-01-1	9	Wiggin Brook		3		0	2	2	0		3	Commercial, moderate residential housing, some wooded area		1	0	0	11	High Priority
4318-00-1	16	Hop Brook		3		3	2	2	0		3	Wooded, cleared land (golf courses), some agricultural land, and residential housing, light commercial		1	0	3	17	High Priority
4318-00-1-L1	9	Hop Brook, Tutler Rservoir		3		3	1	2	0		3	Wooded, some residential housing		0	0	3	15	High Priority
4318-00-2-R1	9	Hop Brook		3		3	1	2	0		3	Wooded, some residential housing, agricultural land, golf course		1	0	3	16	High Priority
4318-00-2-R2	25	Hop Brook		3		3	2	2	0		3	Wooded, golf course, residential housing, light farmland	2	1	0	3	19	High Priority
4318-00-3-R1	1	Hop Brook		3		3	1	1	0		0	Wooded, recreational fields and track		1	0	3	12	High Priority
4318-00-3-R2	25	Hop Brook		3		3	3	1	0		3	Commercial, golf course, recreational fields		1	0	3	17	High Priority
4318-01-1	37	Unnamed Stream		0		0	1	2	0		3	Wooded. Some residential housing, light agricultural land	2	1	0	0	9	Problem
4318-02-1	4	Great Pond Brook, Brooks Pond, Unnamed Stream		1		0	1	2	0		3	Wooded, light residential housing		1	0	0	8	Problem
4318-02-1-L1	7	Unnamed Stream, Great Pond		0		0	1	1	0		3	Wooded, some agricultural land, light residential		1	0	0	6	Problem
4318-03-1	19	Stratton Brook		3		0	2	2	0		0	Wooded, residential	2	1	0	0	10	High Priority
4318-03-2-R1	23	Stratton Brook		3		0	2	2	0		3	Wooded, some residential housing, light agricultural land		1	0	0	11	High Priority
4318-04-1	17	Unnamed Stream, Case Reservoir		3		0	2	2	0		3	Wooded, agricultural land, resdiential housing, light commercial		1	0	.	11	High Priority
4318-04-1-L1	6	Unnamed Stream		3		0	1	2	0		3	Wooded, some resdiential housing		1	0	0	10	High Priority

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4318-05-1	40	Grimes Brook		0		0	3	2	0		3	Residential housing, some agricultural land, light commercial	2	1	0	0	11	High Priority
4318-06-1	17	Unnamed Stream		0		0	2	1	0		3	Residential housing, some recreational fields, light wooded		1	0	0	7	Problem
4319-10-1	42	Bissell Brook		0		0	2	2	0		3	Wooded and residential housing		1	0	0	8	Problem
4319-10-2-L1	17	Bissel Brook		0		0	1	2	0		3	Wooded, aome agricultural land and residential		1	0	0	7	Problem
4319-11-1	1	Unnamed Stream		0		0	1	1	0		3	Wooded		0	0	0	5	Low Priority

Scoring Criteria:

[1] Previous 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

[2] Catchments that discharge to or in the vicinity of any of the following areas: public beaches, recreational areas, drinking water supplies, or shellfish beds

[3] 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

[4] 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.)

[5] 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

[6] 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.

[7] Aging septic systems are septic systems 30 years or older in residential areas.

[8] Any river or stream that is culverted for distance greater than a simple roadway crossing.

[9] Based off of CT NEMO DCIA Calculations

Pending investigation