# TOWN
# OF
# SOUTH WINDSOR

# MS4 General Permit
# 2020 Annual Report

**Existing MS4 Permittee**
**Permit No. GSM 000081**
**January 1, 2019 – December 31, 2020**

# Table of Contents

# INTRODUCTION

This Stormwater Management Plan (SWMP) and Annual Report was developed by the Town of South Windsor for the purpose of establishing, implementing and enforcing a stormwater management program to reduce the discharge of pollutants from the Town's roadways and facilities to the maximum extent practicable, to protect water quality, and to satisfy the appropriate requirements of the Clean Water Act.

The SWMP covers all of the Town's roadways and facilities including public buildings and parks/grounds. Individual facilities such as the Public Works Facility (including the salt shed) and the Sewage Treatment Plant are covered under separate general permits (Phase 1 - Industrial) with the Connecticut Department of Energy & Environmental Protection (DEEP). Information on both the MS4 (Phase 2) and the Industrial (Phase 1) permits can be found on the Town website.

The U.S. Environmental Protection Agency (EPA) published the regulation entitled "National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges", on December 8, 1999 as required by Section 402(p) of the Clean Water Act (CWA). This is commonly referred to as the National Pollution Discharge Elimination System (NPDES) Phase II program.

This SWMP also directly addresses the requirements of the NPDES Phase II program as implemented and administered by the DEEP as the regulatory authority for the State of Connecticut. The NPDES Phase II program is implemented by the DEEP through the use of the General Permit for the Discharge of Stormwater from Small Municipal Storm Sewer Systems (MS4), which was originally issued in January 2004.

The DEEP has recently reissued the MS4 General Permit with an effective date of July 1, 2017. The reissuance of this permit builds on the six areas of responsibility (Minimum Control Measures) for each municipality. The new MS4 General Permit provides significantly more detail on the requirements and implementation of the six Minimum Control Measures as well as expanding on certain requirements.

The Town currently has many practices and programs in place relating to stormwater management and pollution prevention. This plan coordinates and incorporates these programs, policies, guidelines and practices into the SWMP document by reference.

The plan outlines a program of best management practices (BMP's) and measurable goals for the following six minimum control measures:

- Public Education and Outreach
- Public Participation / Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post Construction Stormwater Management
- Pollution Prevention / Good Housekeeping

For each minimum control measure, the Town has defined appropriate BMP's, designated a person(s) and job title responsible for each BMP, defined a time frame for implementation for each BMP, and defined measurable goals for each BMP.

## Plan Development Process

As part of the development of the SWMP, a working committee has been established with representatives from several Town Departments/Divisions to provide input and guidance. The committee meets on a regular basis to review the SWMP and to discuss measures and modifications to the BMP's as needed. A list of the members of the current working committee is provided below.

Stormwater Committee

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| Jeff Doolittle | Engineering |
| Michele Lipe | Planning |
| Jeff Folger | Planning / Inland Wetlands |
| Vincent Stetson | Public Works / Street Services |
| Joseph Perna | Engineering |
| Jason Scott | Engineering |
| John Caldwell | Parks and Grounds |
| Thad Dymkowski | Engineering / GIS |
| Anthony Manfre | Pollution Control |
| Heather Oatis | Town Sanitarian |

## Description of Municipality

The operator of the MS4 is the Town of South Windsor. The Town of South Windsor is a public entity located in the county of Hartford, State of Connecticut. The Town of South Windsor covers an area of approximately twenty-nine (29) square miles, located in northeastern Connecticut. The Connecticut Department of Transportation (DOT) operates an MS4 on state highways located in the Town of South Windsor. This system is regulated under the CT DOT's MS4 permit. Implementation of the BMPs identified in this plan will be coordinated between the Town of South Windsor and CT DOT.

## Annual Report – 2019/2020

This report documents the Town of South Windsor's efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from January 1, 2019 to December 31, 2020 (because of limited staffing due to COVID restrictions in year 2020, the annual report for year 2019 was not submitted). This Annual Report has also be made available to the public in compliance with the Public Involvement section of this plan. Appendices to this report include a BMP list and timeline, a subregional drainage basin map, and a map of the Town's impaired waterbodies.

The Town is utilizing MS4Front software to generate the Stormwater Management Plan and Annual Reports. Information is added to the SWMP as BMP activities in the annual report.

## Record Keeping

The Town of South Windsor shall keep records required by the MS4 General Permit for at least 5 years following its expiration, or longer if requested by the Commissioner in writing. Such records, including the Stormwater Management Plan and Annual Reports shall be available to the public at reasonable times during regular business hours.

## Impaired Waters

In preparing the SWMP, the CT DEEP's Water Quality Standards were reviewed in order to determine the Surface Water Quality Classifications for each watercourse in town. Certain BMP's address the watersheds containing watercourses designated as "impaired" by the CT DEEP. Table 1 shows the water quality classification for each watershed. Table 2 summarizes the water bodies within or that run through the municipality that are listed on the 2020 List of Connecticut Water Bodies not meeting water quality standards and are designated as "impaired".

**TABLE 1**
**Water Quality Surface Classifications**
**South Windsor, CT**

| Drainage Basin Number | Name | Surface Water Quality Classification | Impaired per Water Quality Standards |
|---|---|---|---|
| 4500-09 | Avery Brook | A | No |
| 4000-19 | Bancroft Brook | A | No |
| 4004-05 | Burnham Brook | A | No |
| 4500-03 | Campbell's Brook | A | No |
| 4004-03 | Cemetery Brook | A | No |
| 4000-00 | Connecticut River | B | Yes |
| 4500-10 | Dart (aka Wells) Brook | A | No |
| 4200-28 | Dry Brook | A | Yes |
| 4004-02 | Farm Brook | A | Yes** |
| 4500-00 | Hockanum River | B | Yes |
| 4207-00 | Ketch Brook | A | No |
| 4500-07 | Muzzy Brook | A | No |
| 4000-21 | Newberry Brook | A | No |
| 4004-01 | Plum Gully Brook | A | No |
| 4004-00 | Podunk River | A | No |
| 4004-04 | Quarry (aka Whaples) Brook | A | No |
| 4200-00 | Scantic River | B | Yes |
| 4000-18 | Stoughton's Brook | A | No |

| TABLE 2<br>South Windsor Impaired Waterbody | | | | | |
|---|---|---|---|---|---|
| Waterbody ID | Water Segment Description | Water Segment Length (miles) | Impaired Use | Pollutant | Cause/Potential Source |
| Connecticut River * CT4000-00-03 | From confluence with Scantic River to point 7000 feet south of Bissell Bridge | 6.63 | Fish Consumption<br><br>Recreation | Polychlorinated biphenyls (not a stormwater pollutant)<br><br>Escherichia coli (bacteria) | Potential sources include industrial discharges, municipal discharges, landfills, illicit discharges, remediation sites, groundwater impacts<br><br>CT Statewide Bacteria TMDL |
| Dry Brook CT4200-28-01 | From confluence with Scantic River to HW upstream of Griffin Road crossing near Vintage Road | 4.70 | Recreation | Escherichia coli (bacteria) | Potential sources include stormwater, insufficient on-site treatment-septic systems, agricultural activities |
| Hockanum River * CT4500-00-04a | From inlet to Union Pond, Manchester, upstream to confluence with Tankerhoosen River, Vernon | 1.44 | Habitat for Fish, Other Aquatic Life and Wildlife<br><br>Recreation | Cause Unknown<br><br>Escherichia coli (bacteria) | Potential sources include industrial discharges, municipal discharges, illicit discharges, remediation sites, groundwater impacts<br><br>CT Statewide Bacteria TMDL |
| Scantic River CT4200-00-01 | From mouth at Connecticut River, upstream approximately 2.8 miles to Town Line | 2.88 | Habitat for Fish, Other Aquatic Life and Wildlife<br><br>Recreation | Cause Unknown<br><br>Escherichia coli (bacteria) | Potential sources include stormwater, industrial discharges, municipal discharges, salt storage facilities, remediation sites, groundwater impacts<br><br>Potential sources include stormwater, insufficient on-site treatment-septic systems, agricultural activities |
| Farm Brook** CT4004-02-01 | From confluence with Plum Gulley Brook to HW south of Tallwood Drive | 1.61 | Habitat for Fish, Other Aquatic Life and Wildlife | Cause Unknown<br><br>Other pollutant of concern | Potential sources include stormwater, insufficient on-site treatment-septic systems, agricultural activities |

* There are no direct discharges to this waterbody from the Town of South Windsor's MS4.

** Farm Brook was added to the list of Impaired Waterbody's by DEEP in 2018.

A map of the Town of South Windsor's impaired waterbodies is included in this report (see Appendix C).

The surface water classifications currently assigned to South Windsor watercourses are defined below.

Class A

Surface water is known or presumed to meet Water Quality Criteria which support designated uses, which may include potential drinking water supply; fish and wildlife habitat; recreational use; agricultural, industrial supply and other legitimate uses, including navigation.

Class B

Designated uses include fish and wildlife habitat, recreational use including navigation (may be restricted), agricultural and industrial supply.

Based on the DEEP Surface Water Quality Classifications, Farm Brook, Dry Brook and the Scantic River are identified as the surface waters that should take the highest priority in the Town of South Windsor's efforts to address stormwater impacts. There are no direct discharges to the Connecticut River or Hockanum River from the Town of South Windsor's MS4, although there are several local drainage basins that discharge to those regional basins (see Appendix B – Subregional Drainage Basin Map). This was taken into consideration as the BMPs were developed.

# Part I

# Town of South Windsor

## Control Measures Summary Report

| **Control Measure** |
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| (1) Public Education and Outreach |
| Description: This minimum control measure outlines a program to communicate common sources of stormwater pollution and the impacts of polluted stormwater to the public. This will be done through distributing educational materials to the community and conducting outreach activities. The following BMPs and implementation schedule serve as The Town of South Windsor's MS4 Public Education Program. |
| Measurable Goals: 1. Raise public awareness that polluted stormwater runoff is the most significant source of water quality problems;<br>2. Motivate residents to use Best Management Practices (BMPs) that reduce polluted stormwater runoff; and<br>3. Reduce polluted stormwater runoff in town as a result of increased awareness and utilization of BMPs. |
| Was the Implementation Schedule for Year 1 met? Yes<br>Year 1 Evaluation Summary: The Town of South Windsor continues to develop and implement various activities to raise public awareness and motivate residents to use Best Management Practices.<br><br>The Town will look to expand its existing library of stormwater educational materials by incorporating or developing new content for future use and distribution based on identified waterbody impairments. |
| Was the Implementation Schedule for Year 2 met? Yes<br>Year 2 Evaluation Summary: The Town of South Windsor continues to develop and implement various activities to raise public awareness and motivate residents to use Best Management Practices.<br><br>The Town will look to expand its existing library of stormwater educational materials by incorporating or developing new content for future use and distribution based on identified waterbody impairments. |
| Was the Implementation Schedule for Year 3 met? Yes<br>Year 3 Evaluation Summary: The Town of South Windsor continues to develop and implement various activities to raise public awareness and motivate residents to use Best Management Practices.<br><br>The Town will look to expand its existing library of stormwater educational materials by incorporating or developing new content for future use and distribution based on identified waterbody impairments. |

Was the Implementation Schedule for Year 4 met? Yes
Year 4 Evaluation Summary: The Town of South Windsor continues to develop and implement various activities to raise public awareness and motivate residents to use Best Management Practices.

The Town will look to expand its existing library of stormwater educational materials by incorporating or developing new content for future use and distribution based on identified waterbody impairments.

Was the Implementation Schedule for Year 5 met?
Year 5 Evaluation Summary:

| BMP | Staff Responsible | Target Completion Date | Measurable Goal |
|---|---|---|---|
| 1.1 Implement public education program | Stormwater Committee | 7/1/2022 | Review public education program |
| 1.2 Address education and outreach for pollutants of concern | Stormwater Committee | 7/1/2022 | Distribute information on pollutants of concern |
| 1.3 Acquire / Display Education Materials | Stormwater Committee | 7/1/2022 | Collect and distribute stormwater educational materials |
| 1.4 Web Based MS4 Library | Engineering Department | 7/1/2022 | Develop web based MS4 library |
| 1.5 Educational Displays | Public Works | 7/1/2022 | Educate students and the public on common stormwater topics |
| 1.6 Proper Disposal of Household Hazardous Wastes | Public Works | 7/1/2022 | Educate public on proper disposal of hazardous wastes |
| 1.7 Tributary Signage | Public Works | 7/1/2022 | Increase public awareness of receiving waterbodies located in town |

**BMP Name - 1.1 Implement public education program**

Staff Responsible: Stormwater Committee

Description: The Stormwater Committee will develop and implement a public education program that identifies sources of stormwater pollution and the impacts of polluted stormwater to the public.

Best Management Practices (BMP's) that will be utilized include distribution of educational materials to the public through printed and web based material, and conducting outreach activities to various community organizations.

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| The Stormwater Committee will review the various BMP's utilized on an annual basis to determine their effectiveness and make modifications as required. | |
| Measurable Goals: Review public education program | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation date 7/1/2017. Continues until permit expires. | |
| Targeted Completion Date: 7/1/2022 | |
| Has the BMP been completed? Continuing | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Quarterly stormwater committee meeting** | |
| Staff Responsible: | |
| Description: At it's quarterly meeting held on 2-13-18, the Stormwater committee discussed the BMP's that are currently used and BMP's that may be utilized in the public education program. Refer to each Public Education and Outreach BMP listed for specifics on potential activities. | |
| Evaluation: See each BMP listed for evaluation. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2022 |
| **BMP Activity - 2. Quarterly stormwater committee meeting** | |
| Staff Responsible: | |
| Description: At it's quarterly meeting held on 1-14-19, the Stormwater committee discussed updates on the BMP's that are currently in use or are scheduled to be used. Refer to each Public Education and Outreach BMP listed for specifics on activities. | |
| Evaluation: See each BMP listed for evaluation | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 7/1/2022 |

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| **BMP Name - 1.2 Address education and outreach for pollutants of concern** |
| Staff Responsible: Stormwater Committee |
| Description: The Stormwater Committee will identify locations in town where the MS4 discharges into impaired waters and provide educational outreach specific to the sources of that impairment. Targeted outreach efforts may include K-12 students, agricultural areas, commercial businesses, developers, homeowners, etc.<br><br>The Stormwater Committee will distribute information on common sources of phosphorus, nitrogen, bacteria, and mercury pollution and how to prevent or reduce the amount reaching the MS4 and discharging into waterways as needed. |

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| The following specific topics may be covered to address the phosphorus, nitrogen, bacteria, and mercury impairments that may potentially exist in South Windsor:<br><br>Phosphorus: Septic Systems; Fertilizer Use; Grass clippings and leaves management; Discharge of sediment; Other erosive surfaces<br><br>Nitrogen: Septic Systems; Fertilizer use<br><br>Bacteria: Septic systems; Sanitary cross connections; Waterfowl; Pet Waste; Manure piles<br><br>Mercury: Thermometers; Thermostats; Fluorescent lights; Button Cell Batteries |
| Measurable Goals: Distribute information on pollutants of concern |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation date 7/1/2018. Continues until permit expires. |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Address eduction and outreach for pollutants of concern** |
| Staff Responsible: |
| Description: The stormwater committee discussed using the distribution of flyers through mass mailings to neighborhoods located within the MS4 that discharge to identified impaired waterways as a way to communicate sources of pollution to the public. The committee also suggested utilizing the Town's web page as a resource to provide information to the general public. |
| Evaluation: TBD |
| Has the activity been completed?: No |
| Attachments: No Attachments Found... |

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| Start Date: 7/1/2018 | End Date: 7/1/2022 |

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| **BMP Name - 1.3 Acquire / Display Education Materials** |
| Staff Responsible: Stormwater Committee |
| Description: The Stormwater Committee will collect and distribute stormwater educational materials that at a minimum, address the impacts of the following on water quality: septic systems, application of fertilizers/pesticides/herbicides, grass clippings & leaf management, detergent use, waterfowl, pet waste, and illicit discharges and improper disposal of wastes into the MS4.<br><br>Materials will be reviewed annually and updated as needed. Topics on Phosphorous, Nitrogen, Bacteria, and Mercury will be addressed based on what impairments have been found in the town's waterways. |

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| Measurable Goals: Collect and distribute stormwater educational materials |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation date 7/1/2017. Continues until permit expires. |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Collect and distribute stormwater educational materials** |
| Staff Responsible: |
| Description: The EPA's informational brochure entitled "Step by Step: a citizen's guide to curbing polluted runoff" has been on display for distribution at the Town Hall and the Public Library. Also on display and available for distribution is a coloring book entitled "Stormwater", which is made available by the University of Kentucky Cooperative Extension Service and targets a younger audience.<br><br>The stormwater committee discussed looking at various resources for additional stormwater educational materials. Potential resources include the CTDEEP website and UCONN CLEAR website. |
| Evaluation: Topics on Phosphorous, Nitrogen, Bacteria, and Mercury need to be added to the Town's library of stormwater educational material. |
| Has the activity been completed?: No |
| Attachments: No Attachments Found... |
| Start Date: 7/1/2017 \| End Date: 7/1/2022 |

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| **BMP Name - 1.4 Web Based MS4 Library** |
| Staff Responsible: Engineering Department |
| Description: The Town of South Windsor will maintain their own web based MS4 library or link to UConn NEMO's comprehensive online library of stormwater educational material. The Town of South Windsor website (URL) would link directly to this web-based library and promote the availability of these materials. Links to additional web sites including CTDEEP, EPA and other stormwater resources may also be incorporated into the web site.<br><br>Materials on the website will be tailored to the various pollutants found within the town's MS4 and also provide municipal specific education materials where applicable.<br><br>The Stormwater Committee will look at all available sources of material and ways to promote the availability of these materials. |
| Measurable Goals: Develop web based MS4 library |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2020. Continues until permit expires. |

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| Targeted Completion Date: 7/1/2022 | |
| Has the BMP been completed? Continuing | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Development of web based MS4 library** | |
| Staff Responsible: | |
| Description: The Engineering Department has developed a stormwater web page that is posted on the Town's website. The stormwater committee discussed utilizing the web page to develop a MS4 library. One suggestion was to develop a "Frequently Asked Questions" section that the public can refer to for information on the stormwater program. | |
| Evaluation: More information needs to be added to the MS4 library. | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2020 | End Date: 7/1/2022 |
| **BMP Activity - 2. Cont'd development of web based MS4 library** | |
| Staff Responsible: | |
| Description: The Engineering Department is currently in the process of updating and improving the stormwater web page that is posted on the Town's website. The Planning Department has also added an educational link with information on low impact development (LID) under the departments web page under "General Education Resources - Land Use". | |
| Evaluation: The stormwater web page needs to be improved to become more "user friendly" and more information needs to be provided. | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 7/1/2022 |

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| **BMP Name - 1.5 Educational Displays** |
| Staff Responsible: Public Works |
| Description: The Town of South Windsor Public Works Department currently sponsors an annual Public Works Day event which targets elementary age school children. The Department has constructed a three-dimensional "Stormwater Cycle" display which is presented during the event and it has proven to be very popular with the children and teachers. Posters depicting the water cycle and pamphlets regarding public action to reduce pollutants in stormwater runoff are also distributed at the display. In addition, the Public Works Department has presented the "Stormwater Cycle" display at other public events such as the Annual Wapping Fair, Family Awareness Day, The South Windsor Strawberry Festival, and Annual Heritage Day.<br><br>In October of 2007, the South Windsor Public Works Department received an award from the Connecticut Transportation Institute for innovation in educational displays with the construction of the "Stormwater Cycle" display. |

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| The Public Works Department will continue to display the "Stormwater Cycle" at annual public events. The Stormwater Committee and Town staff will evaluate the program annually and implement modifications to enhance the program as needed. |
| Measurable Goals: Educate students and the public on common stormwater topics |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017. Continues until permit expires. |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Repair of educational display** |
| Staff Responsible: |
| Description: The three-dimensional "Stormwater Cycle" display originally constructed by the Public Works Department is currently in disrepair. The Department will look to make repairs to the display if possible. |
| Evaluation: TBD |
| Has the activity been completed?: No |
| Attachments: No Attachments Found... |
| Start Date: 4/2/2018 \| End Date: 7/1/2022 |
| **BMP Activity - 2. Annual Public Works Day** |
| Staff Responsible: |
| Description: The three-dimensional "Stormwater Cycle" display originally constructed by the Public Works Department was repaired in 2018 and was on display at the annual Public Works Day held at the Town's Public Works Facility on May 22, 2018. |
| Evaluation: The display was popular with the students and teachers and will be utilized for future Public Works events. |
| Has the activity been completed?: Yes |
| Attachments: No Attachments Found... |
| Start Date: 7/1/2018 \| End Date: 7/1/2022 |

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| **BMP Name - 1.6 Proper Disposal of Household Hazardous Wastes** |
| Staff Responsible: Public Works |
| Description: In past years, household hazardous wastes (HHW) were collected and safely disposed of through a regional cooperation effort sponsored by the Metropolitan District (MDC). Recently, the MDC chose to limit this program to MDC member towns. As a consequence, the Town of South Windsor entered into an agreement with the Capital Regional East Operating Committee (CREOC) for |

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| collection and proper disposal of HHW starting in July 2013. CREOC membership includes the towns of Glastonbury, Hebron, Manchester, Marlborough, Somers, Stafford, Vernon, and South Windsor.<br><br>Manchester is now the home of a regional center for HHW collection. This center, built with grant funding from the DEEP, is operated by CREOC and is located adjacent to the Manchester Landfill on Olcott Street.<br><br>The South Windsor Public Works Department distributes a Hazardous Household Waste flyer which provides information on household hazardous wastes and collection dates with locations. This information is also available on the Town's website.<br><br>In addition to the hazardous waste program, the Town of South Windsor also operates the town wide Recycling Program. The South Windsor Public Works Department distributes a recycling flyer annually. As part of the recycling program, waste oil, antifreeze, and used oil filters are collected. Information on the Town's recycling program is also available on the town's website.<br><br>Since year 2011, the Town runs a program to collect and recycle electronic wastes. The program provides a site at the Town Hall for residents to drop off electronic devices free of charge and collection events are scheduled quarterly each year.<br><br>The South Windsor Public Works Department will continue to administer the Hazardous Waste Collection and Recycling Programs. The Stormwater Committee and the Public Works Department will evaluate the programs on an annual basis and implement changes as needed or required. | |
| Measurable Goals: Educate public on proper disposal of hazardous wastes | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017. Continues until permit expires. | |
| Targeted Completion Date: 7/1/2022 | |
| Has the BMP been completed? Continuing | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Hazardous waste and recycling program - 2017** | |
| Staff Responsible: | |
| Description: Hazardous waste collection days sponsored by CREOC were held on 6/3, 8/26, 9/30, 10/14, and 10/28 in year 2017. New this year, residents were able to participate in the PaintCare take back program also sponsored by CREOC. The Town also continued with its Electronic Recycling Program with scheduled collection events on 1/7, 3/4, 5/6, 7/8, 9/9, and 11/4 of this year. | |
| Evaluation: The Town's hazardous waste and recycling program continues to be a success in educating the public on proper disposal of hazardous wastes. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2018 |

| BMP Activity - 2. Hazardous waste and recycling program - 2018 | |
|---|---|
| Staff Responsible: | |
| Description: Hazardous waste collection days sponsored by CREOC were held on 4/7, 5/5, 6/2, 8/25, 9/29, and 10/27 in year 2018. Residents were again able to participate in the PaintCare take back program also sponsored by CREOC. The Town also continued with its Electronic Recycling Program with scheduled collection events on 1/6, 3/3, 5/5, 7/14, 9/8, and 11/3 of this year. | |
| Evaluation: The Town's hazardous waste and recycling program continues to be a success in educating the public on proper disposal of hazardous wastes. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 7/1/2019 |
| **BMP Activity - 3. Hazardous waste and recycling program - 2019** | |
| Staff Responsible: | |
| Description: Hazardous waste collection days sponsored by CREOC were held on 4/6, 5/4, 6/1, 8/24, 9/28, and 11/2 in year 2019. Residents were again able to participate in the PaintCare take back program also sponsored by CREOC. The Town also continued with its Electronic Recycling Program with scheduled collection events on 1/5, 3/2, 5/4, 7/13, 9/7, and 11/2 of this year. | |
| Evaluation: The Town's hazardous waste and recycling program continues to be a success in educating the public on proper disposal of hazardous wastes. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2019 | End Date: 7/1/2020 |
| **BMP Activity - 4. Hazardous waste and recycling program - 2020** | |
| Staff Responsible: | |
| Description: Hazardous waste collection days sponsored by CREOC were held on 8/22, 9/19, 10/31, and 11/14 in year 2020. Residents were again able to participate in the PaintCare take back program also sponsored by CREOC. The Town also continued with its Electronic Recycling Program with scheduled collection events on 1/11, 3/7, 7/11, 9/5, and 11/7 of this year. | |
| Evaluation: The Town's hazardous waste and recycling program continues to be a success in educating the public on proper disposal of hazardous wastes. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2020 | End Date: 7/1/2021 |

| BMP Name - 1.7 Tributary Signage |
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| Staff Responsible: Public Works |
| Description: A Tributary Signage Program has been developed by Town staff in which a total of 32 roadway crossings have been identified throughout the town for placement of signage identifying the particular waterbody being crossed, to increase public awareness. Working in conjunction with |

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| the Department of Public Works, Town Staff developed a list of the locations of the crossings as an inventory. To date, all of the signage has been fabricated and installed for all 32 roadway crossings by Public Works personnel.<br><br>The Department of Public Works will inspect the sign inventory on an annual basis and replace any missing or damaged signs as necessary. | |
| Measurable Goals: Increase public awareness of receiving waterbodies located in town | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017. Continues until permit expires. | |
| Targeted Completion Date: 7/1/2022 | |
| Has the BMP been completed? Continuing | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Continuation of Tributary Signage Program** | |
| Staff Responsible: | |
| Description: The Town's Public Works Department inspected all of the tributary signs located in town and replaced any signs that were missing or damaged. | |
| Evaluation: This program continues to be successful in identifying the particular waterbody being crossed, increasing public awareness. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2018 |

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| **Control Measure** |
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| (2) Public Involvement and Participation |
| Description: To satisfy this minimum control measure, the operator of a regulated small MS4 must:<br>1. Comply with applicable State, Tribal, and local public notice requirements; and<br>2. Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.<br>EPA believes that the public can provide valuable input and assistance to a regulated small MS4's municipal storm water management program and, therefore, suggests that the public be given opportunities to play an active role in both the development and implementation of the program. An active and involved community is crucial to the success of a storm water management program because it allows for:<br>1. Broader public support since citizens who participate in the development and decision making process are partially responsible for the program and, therefore, may be less likely to raise legal challenges to the program and more likely to take an active role in its implementation; |

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| 2. Shorter implementation schedules due to fewer obstacles in the form of public and legal challenges and increased sources in the form of citizen volunteers;<br>3. A broader base of expertise and economic benefits since the community can be a valuable, and free, intellectual resource; and<br>4. A conduit to other programs as citizens involved in the storm water program development process provide important cross-connections and relationships with other community and government programs. This benefit is particularly valuable when trying to implement a storm water program on a watershed basis, as encouraged by EPA. |
| Measurable Goals: 1. Involve the community in planning and implementing the town's stormwater management activities.<br>2. Provide a minimum 30 day notice to the public for this plan and annual reports. |
| Was the Implementation Schedule for Year 1 met? Yes<br>Year 1 Evaluation Summary: The Town of South Windsor has complied with the public notice requirements of the General Permit for the Stormwater Management Plan and Annual Report. As of this date, there have been no reports or comments generated by the public regarding the SWMP and Annual Report.<br><br>The Town will also look to continue outreach activities with various community organizations as they become available. |
| Was the Implementation Schedule for Year 2 met? Yes<br>Year 2 Evaluation Summary: The Town of South Windsor has complied with the public notice requirements of the General Permit for the Stormwater Management Plan and Annual Report. As of this date, there have been no reports or comments generated by the public regarding the SWMP and Annual Report.<br><br>The Town will also look to continue outreach activities with various community organizations as they become available - see BMP's 2.3 and 2.4 for information on current public participation efforts. |
| Was the Implementation Schedule for Year 3 met? Yes<br>Year 3 Evaluation Summary: The Town of South Windsor has complied with the public notice requirements of the General Permit for the Stormwater Management Plan and Annual Report. As of this date, there have been no reports or comments generated by the public regarding the SWMP and Annual Report.<br><br>The Town will also look to continue outreach activities with various community organizations as they become available - see BMP's 2.3 and 2.4 for information on current public participation efforts. |
| Was the Implementation Schedule for Year 4 met? Yes<br>Year 4 Evaluation Summary: The Town of South Windsor has complied with the public notice requirements of the General Permit for the Stormwater Management Plan and Annual Report. As of this date, there have been no reports or comments generated by the public regarding the SWMP and Annual Report.<br><br>The Town will also look to continue outreach activities with various community organizations as they become available - see BMP's 2.3 and 2.4 for information on current public participation efforts. |
| Was the Implementation Schedule for Year 5 met?<br>Year 5 Evaluation Summary: |

| BMP | Staff Responsible | Target Completion Date | Measurable Goal |
|---|---|---|---|
| 2.1 Comply with public notice requirements for the Stormwater Management Plan and Annual Reports | Engineering Department | 7/1/2022 | Comply with public notice requirements |
| 2.2 Implement Public Involvement / Participation Program | Stormwater Committee | 7/1/2022 | Review BMP's that will possibly be utilized. |
| 2.3 Storm Drain Marking / Stenciling | Environmental Planner | 7/1/2022 | Demonstrate direct link between storm sewer system and surface waters |
| 2.4 Wetland & Riparian Buffer Plantings | Environmental Planner | 7/1/2022 | Increased participation and awareness by the general public |

| **BMP Name - 2.1 Comply with public notice requirements for the Stormwater Management Plan and Annual Reports** |
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| Staff Responsible: Engineering Department |
| Description: The Town of South Windsor will publish a public notice on its website (www.southwindsor.org), and in the newspaper. The notice will provide a contact name, phone number, address, and email to whom the public can send comments. Additionally, the SWMP and the Annual Reports will be publicly accessible on the website and in The Town of South Windsor Town Hall and/or library. The public notice will allow for a 30-day comment period, at a minimum. |
| Measurable Goals: Comply with public notice requirements |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017. Continues until permit expires. |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Availability of Town's SWMP announced to public** |
| Staff Responsible: |
| Description: A draft of the Town's Stormwater Management Plan was made available to the public on April 1, 2017. A hard copy of the plan was available in the office of the Engineering Department at the Town Hall. In addition, a digital copy of the plan was published electronically on the Town's web |

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| page under Departments - Engineering - Storm Water Management Program - Storm Water Annual Reports. | |
| Evaluation: BMP activity has been completed. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 4/1/2017 | End Date: 7/1/2022 |
| **BMP Activity - 2. Availability of the Town's 2017 Annual Report announced to public** | |
| Staff Responsible: | |
| Description: A draft of the Town's 2017 Annual report was made available to the public in February 2018. A hard copy of the report is available in the office of the Engineering Department at the Town Hall. In addition, a digital copy of the report has been published electronically on the Town's web page under Departments - Engineering - Storm Water Management Program - Storm Water Annual Reports. | |
| Evaluation: BMP activity has been completed. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 2/15/2018 | End Date: 7/1/2022 |
| **BMP Activity - 3. Availability of the town's 2018 Annual Report announced to public** | |
| Staff Responsible: | |
| Description: A draft of the Town's 2018 Annual report was made available to the public in February 2019. A hard copy of the report is available in the office of the Engineering Department at the Town Hall. In addition, a digital copy of the report has been published electronically on the Town's web page under Departments - Engineering - Storm Water Management Program - Storm Water Annual Reports. | |
| Evaluation: BMP activity has been completed. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 2/15/2019 | End Date: 7/1/2022 |
| **BMP Activity - 4. Availability of the town's 2020 Annual Report announced to public** | |
| Staff Responsible: Jason Scott | |
| Description: A draft of the Town's 2020 Annual report was made available to the public in April 2021. A hard copy of the report is available in the office of the Engineering Department at the Town Hall. In addition, a digital copy of the report has been published electronically on the Town's web page under Departments - Engineering - Storm Water Management Program - Storm Water Annual Reports. | |
| Evaluation: BMP is complete | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 4/1/2020 | End Date: 4/1/2021 |

| BMP Activity - 5. Availability of the town's 2019 Annual Report announced to public | |
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| Staff Responsible: | |
| Description: A draft of the Town's 2020 Annual report will be made available to the public in April 2021. A hard copy of the report is available in the office of the Engineering Department at the Town Hall. In addition, a digital copy of the report has been published electronically on the Town's web page under Departments - Engineering - Storm Water Management Program - Storm Water Annual Reports. | |
| Evaluation: BMP activity has not been completed. | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 4/1/2019 | End Date: 4/1/2020 |

| BMP Name - 2.2 Implement Public Involvement / Participation Program |
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| Staff Responsible: Stormwater Committee |
| Description: The Stormwater Committee will develop and implement a public involvement/participation program that encourages the public to have an active role in the Town's Stormwater Management Program.<br><br>Best Management Practices (BMP's) that will possibly be utilized include Storm Drain Marking/Stenciling, Wetland & Riparian Buffer Plantings, and other outreach activities to various community organizations that may become available.<br><br>The Stormwater Committee will review the various BMP's utilized on an annual basis to determine their effectiveness and make modifications as required. |
| Measurable Goals: Review BMP's that will possibly be utilized. |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date 7/1/2018. Continues until permit expires. |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Review BMP's that will possibly be utilized** |
| Staff Responsible: |
| Description: The stormwater committee discussed the possibility of renewing the storm drain marking/stenciling program, focusing on areas of town which discharge to impaired waters. The committee also discussed the possibility of organizing a volunteer activity involving wetland and riparian buffer plantings along a section of Plum Gulley Brook on newly acquired town open space land. |
| Evaluation: TBD |

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| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 7/1/2022 |
| **BMP Activity - 2. Review BMP's that will possibly be utilized.** | |
| Staff Responsible: | |
| Description: At the January 2019 meeting, the stormwater committee discussed the status of renewing the storm drain marking/stenciling program, focusing on areas of town which discharge to impaired waters. The committee also discussed the status of organizing volunteer activities involving wetland and riparian buffer plantings. | |
| Evaluation: Activities are on-going. See BMP activities 2.3 and 2.4 for more detailed information. | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2019 | End Date: 7/1/2022 |

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| **BMP Name - 2.3 Storm Drain Marking / Stenciling** |
| Staff Responsible: Environmental Planner |
| Description: A priority system will be developed to determine which areas in town should be targeted for the program first. |
| Measurable Goals: Demonstrate direct link between storm sewer system and surface waters |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2019. |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Storm Drain Marking / Stenciling** |
| Staff Responsible: |
| Description: The stormwater committee discussed the possibility of renewing the storm drain marking/stenciling program, focusing on areas of town which discharge to impaired waters. The Environmental Planner will look at obtaining storm drain markers or stencils and coordinate with local scout troops and schools to organize public projects. |
| Evaluation: TBD |
| Has the activity been completed?: No |
| Attachments: No Attachments Found... |
| Start Date: 7/1/2018 \| End Date: 7/1/2022 |
| **BMP Activity - 2. Storm Drain Marking / Stenciling** |
| Staff Responsible: |

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| Description: The Town's Environmental Planner reported that there was money available in the Open Space Fund to purchase Storm Drain Markers. He is currently looking at various markers available to purchase on-line and will look to coordinate with local scout troops and other civic groups to organize a public project. The Stormwater Committee has identified the Farnham Estates neighborhood in the northeast section of town which discharges stormwater to impaired waters as a top priority. | |
| Evaluation: TBD | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2019 | End Date: 7/1/2022 |

| **BMP Name - 2.4 Wetland & Riparian Buffer Plantings** | |
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| Staff Responsible: Environmental Planner | |
| Description: The Stormwater Committee will continue to sponsor annual volunteer activities as determined by availability of funding and which areas in town should be targeted for the program. | |
| Measurable Goals: Increased participation and awareness by the general public | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2019 | |
| Targeted Completion Date: 7/1/2022 | |
| Has the BMP been completed? Continuing | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Wetland & Riparian Buffer Plantings - Year 2018** | |
| Staff Responsible: | |
| Description: The Town's Environmental Planner reported that a 3-year program has begun to establish stream channel stabilization of Plum Gulley Brook, utilizing Open Space Funds. In early October, High School students participated in planting 500 wetlands shrubs along the Plum Gulley Brook channel. Four different species of shrubs were planted. | |
| Evaluation: This activity was successful in providing increased awareness and participation for High School students. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 12/31/2018 |

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| **Control Measure** |
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| (3) Illicit Discharge Detection and Elimination |

Description: This minimum control measure outlines a program to detect and eliminate current illicit discharges to the MS4 and prevent further illicit discharges in the future. All activities for this measure will be completed in The Town of South Windsor's priority areas (urbanized area, catchment areas with directly connected impervious area (DCIA) > 11%, and outfalls that discharge to impaired waters).

Measurable Goals: 1. Find the source of any illicit discharges; eliminate those illicit discharges; and ensure ongoing screening and tracking to prevent and eliminate future illicit discharges.

Was the Implementation Schedule for Year 1 met? Yes
Year 1 Evaluation Summary: The Town of South Windsor is currently working on a program to detect and eliminate illicit discharges to the MS4 including development of an IDDE plan, mapping and inventory of the MS4, and development of an illicit discharge ordinance.

Was the Implementation Schedule for Year 2 met? Yes
Year 2 Evaluation Summary: The Town of South Windsor has made progress on several of the BMP's associated with IDDE. It is anticipated that the illicit discharge ordinance will be adopted this year and the IDDE program will begin this spring.

Was the Implementation Schedule for Year 3 met? Yes
Year 3 Evaluation Summary: The Town of South Windsor continues to make progress on several of the BMP's associated with IDDE. A draft of the Town's IDDE Program has been developed by it's consultant - Anchor Engineering, and is being reviewed and edited by Town staff. Town Staff is currently developing GIS base mapping of the MS4 in areas that discharge to impaired waters.

Was the Implementation Schedule for Year 4 met? Yes
Year 4 Evaluation Summary: The Town of South Windsor continues to make progress on several of the BMP's associated with IDDE. A final draft of the Town's IDDE Program has been completed and the program requirements have begun to be implemented. Town Staff has completed GIS base mapping of the MS4 in areas that discharge to impaired waters on the north side of Town.

Was the Implementation Schedule for Year 5 met?
Year 5 Evaluation Summary:

| BMP | Staff Responsible | Target Completion Date | Measurable Goal |
|---|---|---|---|
| 3.1 Develop written IDDE plan | Engineering Department | 7/1/2019 | Develop written plan of IDDE program |
| 3.2 Develop list and map of all MS4 outfalls and interconnections in the town | Engineering Department | 7/1/2019 | Develop database of all outfalls located within the town. |
| 3.3 Develop citizen reporting program | Stormwater Committee | 7/1/2019 | Develop citizen reporting program |
| 3.4 Establish legal authority to prohibit illicit discharges | Stormwater Committee | 7/1/2019 | Establish Town illicit discharge ordinance |
| 3.5 Develop record keeping system for IDDE tracking | Stormwater Committee | 7/1/2019 | Develop record keeping system for IDDE tracking |

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| 3.6 Address IDDE in areas with pollutants of concern | Stormwater Committee | 7/1/2019 | Perform assessment of on-site sanitary systems located in town |
| 3.7 Detailed MS4 infrastructure mapping | Engineering Department | 7/1/2019 | Develop detailed map of Town's MS4 within priority areas |

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| **BMP Name - 3.1 Develop written IDDE plan** | |
| Staff Responsible: Engineering Department | |
| Description: The Town of South Windsor will develop a written IDDE plan to detect, locate and eliminate illicit discharges (to the maximum extent practicable) from the MS4 within The Town of South Windsor's priority areas. The IDDE plan will provide enforceable legal authority to eliminate illicit discharges, assign responsibilities, and develop a citizen reporting program. The plan will also outline the outfall screening and IDDE protocols consistent with Appendix B of the MS4 General Permit to identify, prioritize, and investigate MS4 catchments for suspected illicit discharge of pollutants. Also, the IDDE plan will outline follow-up screening and illicit discharge prevention procedures. | |
| Measurable Goals: Develop written plan of IDDE program | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2018 | |
| Targeted Completion Date: 7/1/2019 | |
| Has the BMP been completed? Continuing | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Develop written IDDE program** | |
| Staff Responsible: | |
| Description: The town is in the process of developing a written IDDE program using the template provided by UCONN CLEAR. | |
| Evaluation: Development of written IDDE program needs to be completed within the next year. | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 7/1/2019 |
| **BMP Activity - 2. Develop written IDDE program** | |
| Staff Responsible: | |
| Description: The Town has recently put out an RFP for consultants to assist with stormwater related activities including development of an IDDE plan/program. It is anticipated that a draft plan will be available in Spring 2019. | |
| Evaluation: TBD | |

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| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 2/1/2019 | End Date: 7/1/2019 |
| **BMP Activity - 2. Develop written IDDE program** | |
| Staff Responsible: | |
| Description: A draft of the Town's IDDE Program has been developed by it's consultant - Anchor Engineering, and is being reviewed and edited by Town staff. | |
| Evaluation: It is anticipated that the Town's IDDE Program will be completed in year 2020. | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2019 | End Date: 1/1/2020 |
| **BMP Activity - 4. Develop written IDDE program** | |
| Staff Responsible: | |
| Description: A final draft of the Town's IDDE Program has been completed and the program requirements have begun to be implemented. | |
| Evaluation: Task has been completed. The final draft will be posted on the Town's stormwater website. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 1/1/2020 | End Date: 3/16/2020 |

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| **BMP Name - 3.2 Develop list and map of all MS4 outfalls and interconnections in the town** |
| Staff Responsible: Engineering Department |
| Description: The Town of South Windsor will develop a database of all stormwater discharges from a pipe or conduit located within and owned or operated by the municipality and all interconnections with other MS4s. Each entry will include:<br><br>a. Type, material, size, shape and location (identified with a latitude and longitude) of conveyance, outfall or channelized flow (e.g. 24” concrete pipe);<br><br>b. the name, water body ID and Surface Water Quality Classification of the immediate surface waterbody or wetland to which the stormwater runoff discharges;<br><br>c. if the outfall does not discharge directly to a named waterbody, the name and water body ID of the nearest named waterbody to which the outfall eventually discharges;<br><br>d. the name of the watershed, including the subregional drainage basin number (available from CT ECO at www.cteco.uconn.edu) in which the discharge is located;<br><br>e. date of most recent inspection of the outfall, the condition, and any indicators of potential non-stormwater discharges as of most recent inspection; |

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| The database will be exported into excel format for annual reports.<br>[Include your process for keeping the spreadsheet up to date here] |
| Measurable Goals: Develop database of all outfalls located within the town. |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017 |
| Targeted Completion Date: 7/1/2019 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Develop list and map of all MS4 outfalls and interconnections in town** |
| Staff Responsible: |
| Description: The town is in the process of updating a database of all MS4 outfalls and interconnections located in town. To date, 311 outfalls have been located, photographed, and cataloged.<br><br>Along with utilizing the mapping of outfalls to help identify potential illicit discharges throughout the town, this information is also being used to identify storm sewer system structures (in this case - outfalls) that are in need of repair. Refer to Section 6.07 of this report for additional information regarding upgrades/repairs to the storm sewer system. |
| Evaluation: Map(s) and database needs to be updated. |
| Has the activity been completed?: No |
| Attachments: No Attachments Found... |
| Start Date: 7/1/2017 \| End Date: 7/1/2019 |
| **BMP Activity - 2. Development of database and outfall screenings in priority areas** |
| Staff Responsible: |
| Description: The Engineering Department has completed GIS base mapping of the MS4 in two local drainage basin areas that discharge to impaired waters - the Scantic River and Dry Brook. The mapping was field edited and modified as needed and data points sent to Anchor Engineering to begin screening and testing of outfalls. See Parts II and III of this report for results of that screening. Town Staff is currently working in another drainage basin area that contains a watercourse that was also identified in 2018 by DEEP as being impaired - Farm Brook. |
| Evaluation: The Town will continue to focus on each regional drainage basin to verify outfall locations slated for screening and testing based on priority ranking. |
| Has the activity been completed?: No |
| Attachments: No Attachments Found... |
| Start Date: 7/1/2019 \| End Date: 7/1/2022 |

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| **BMP Name - 3.3 Develop citizen reporting program** |

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| Staff Responsible: Stormwater Committee |
| Description: The Town of South Windsor will establish a system to allow for citizen reporting of suspected illicit discharges into the stormwater system. The system will include an email address and phone number or other means for submitting a report. The Town of South Windsor will affirmatively investigate and eliminate any illicit discharges for which a time and location of discharge are provided. The Town of South Windsor will promptly inspect the reported outfall or manhole and proceed according to the requirements of the written IDDE program. All citizen reports and responses will be included in The Town of South Windsor's annual report. |
| Measurable Goals: Develop citizen reporting program |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2018 |
| Targeted Completion Date: 7/1/2019 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Develop citizen reporting program** |
| Staff Responsible: |
| Description: The town will utilize a new online and mobile tool called "Connect South Windsor" which will allow residents to report on stormwater issues. "Connect South Windsor" can be accessed on the town's website: http://www.southwindsor.org/Publicstuff, and is also available on any mobile phone device or tablet using Apple, Android or the Windows app. The stormwater committee will work with the town's IT department to create a selection from the drop down list of available issues to report on. Instructions will be posted on the town's storm water web page on how to report a stormwater issue or illicit discharge using "Connect South Windsor". |
| Evaluation: TBD |
| Has the activity been completed?: No |
| Attachments: No Attachments Found... |
| Start Date: 7/1/2018 | End Date: 7/1/2019 |

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| **BMP Name - 3.4 Establish legal authority to prohibit illicit discharges** |
| Staff Responsible: Stormwater Committee |
| Description: The Town of South Windsor will establish the necessary and enforceable legal authority by statute, ordinance, rules and regulations, permit, easement, contract, order or any other means, to eliminate illicit discharges. The authority will:<br><br>a. prohibit illicit discharges to its storm sewer system and require removal of such discharges consistent with the deadlines outlined in the MS4 general; and<br><br>b. authorize the investigation of suspected illicit discharges and elimination of illicit discharge, including from properties not owned or controlled by the MS4 that discharge to the MS4 |

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| c. control the discharge of spills and prohibit the dumping or disposal of materials including, but not limited to, residential, industrial and commercial wastes, trash, used motor vehicle fluids, pesticides, fertilizers, food preparation waste, leaf litter, grass clippings, and animal wastes into its MS4; and<br><br>d. authorize appropriate enforcement procedures and actions;<br><br>e. authorize fines or penalties and/or recoup costs incurred by the permittee from anyone creating an illicit discharge or spilling or dumping. | |
| Measurable Goals: Establish Town illicit discharge ordinance | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2018 | |
| Targeted Completion Date: 7/1/2019 | |
| Has the BMP been completed? Continuing | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Develop Illicit Discharge Ordinance** | |
| Staff Responsible: | |
| Description: The Town is in the process of developing and implementing an ordinance to effectively prohibit non-stormwater discharges into the Town's storm drainage system, as well as provide sanctions to ensure compliance. | |
| Evaluation: Development and implementation of Town ordinance needs to be completed within the next year. | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2018 |
| **BMP Activity - 2. Draft Illicit Discharge Ordinance** | |
| Staff Responsible: | |
| Description: A draft Illicit Discharge Ordinance has been written utilizing a template provided by UCONN CLEAR. The UConn Center for Land Use Education and Research (CLEAR) provides information, education and assistance to municipalities and land use decision makers throughout the State. | |
| Evaluation: The draft ordinance is being reviewed by Town Staff and the Town attorney before being adopted by the Town Council. | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 7/1/2019 |

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| **BMP Name - 3.5 Develop record keeping system for IDDE tracking** |
| Staff Responsible: Stormwater Committee |

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| Description: The Town of South Windsor will keep a record of illicit discharge abatement activities including location (including latitude and longitude or address), description, date(s) of inspection, sampling data (if applicable), action(s) taken, date of removal or repair and responsible party.<br><br>In addition, the Town will develop and maintain an SSO inventory that records the location, date and time of occurrence, estimated volume of discharge, a description of known or suspected cause, and details about mitigating measures including dates of implementation.<br><br>This inventory may also:<br><br>• include all known SSOs to their MS4 in the past 5 years (July 1, 2012 – June 30, 2017);<br>• continue to be updated to track future SSOs; and<br>• be included in Annual Reports. | |
| Measurable Goals: Develop record keeping system for IDDE tracking | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2018 | |
| Targeted Completion Date: 7/1/2019 | |
| Has the BMP been completed? Continuing | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Develop record keeping system for IDDE tracking** | |
| Staff Responsible: | |
| Description: The stormwater committee will work with the Town's consultant to develop a record keeping system to track the outfall monitoring program. | |
| Evaluation: TBD | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 7/1/2019 |
| **BMP Activity - 2. Develop and maintain an SSO inventory** | |
| Staff Responsible: | |
| Description: Based on a review of available records, no SSO's from the Town's sanitary sewer system resulting in discharge to the MS4 are known to have occurred in the Town of South Windsor since five years prior to the effective date of the MS4 Permit (July 1, 2012) - to present. | |
| Evaluation: The SSO inventory will be made part of the IDDE Program and will be updated when new SSO's are detected. The SSO inventory will also be included in the annual report and will include the status of mitigation and corrective measures to address each identified SSO. | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2019 | End Date: 7/1/2022 |

| BMP Name - 3.6 Address IDDE in areas with pollutants of concern | |
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| Staff Responsible: Stormwater Committee | |
| Description: The Town of South Windsor will identify which areas in town are most likely to contribute nitrogen, phosphorus, and bacteria to the MS4. This assessment will consider: historic on-site sanitary system failures, proximity to bacterial impaired waters, low infiltrative soils, and shallow groundwater. Any areas determined to have a high potential for septic system failure will be reported to the Health Department for corrective action. | |
| Measurable Goals: Perform assessment of on-site sanitary systems located in town | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation Plan - 7/1/2018 | |
| Targeted Completion Date: 7/1/2019 | |
| Has the BMP been completed? Continuing | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Develop inventory of known septic systems in Town** | |
| Staff Responsible: | |
| Description: The stormwater committee will coordinate with the Town's Health Officer to develop an inventory of known septic systems and identify any known historic on-site sanitary system failures. | |
| Evaluation: TBD | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 7/1/2020 |

| BMP Name - 3.7 Detailed MS4 infrastructure mapping |
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| Staff Responsible: Engineering Department |
| Description: The Town of South Windsor will develop a detailed map of the MS4 to include:<br><br>• Components of the MS4 within priority areas:<br><br>o Outfalls & receiving waters;<br>o Pipes; open channel conveyances; catch basins; manholes;<br>o Interconnections with other MS4s and other storm sewer systems;<br>o Municipally-owned stormwater treatment structures (e.g. detention & retention ponds, infiltration systems, bioretention areas, water quality swales, gross<br>particle separators, oil/water separators, or other systems);<br>o Catchment delineations for each outfall;<br>o Impaired water bodies identified by name and use impairment as defined by the most recent integrated water quality report;<br>o Municipal sanitary sewer system (if available);<br>o Municipal combined sewer system (if applicable). |

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| The TOWN will update the map as new information becomes available and will report on the progress of the development of this map in the annual report. | |
| Measurable Goals: Develop detailed map of Town's MS4 within priority areas | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2018 | |
| Targeted Completion Date: 7/1/2019 | |
| Has the BMP been completed? Continuing | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Develop detailed map(s) of MS4 within priority areas** | |
| Staff Responsible: | |
| Description: The Engineering Department is currently developing GIS base mapping of the MS4 in areas that discharge to impaired waters, utilizing existing as-built plans on file to identify and lay out drainage structures, pipes, and other conveyances. This mapping will be field edited and modified as needed. | |
| Evaluation: Map(s) and database need to be completed within the next year. | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2018 |
| **BMP Activity - 2. Develop detailed map(s) of MS4 within priority areas** | |
| Staff Responsible: | |
| Description: The Engineering Department has completed GIS base mapping of the MS4 in two local drainage basin areas that discharge to impaired waters - the Scantic River and Dry Brook. The mapping was field edited and modified as needed. Town Staff is currently working in another drainage basin area that contains a watercourse that was also identified in 2018 by DEEP as being impaired - Farm Brook. | |
| Evaluation: The Town of South Windsor has recently hired a consultant - Tighe & Bond to assist the Town with detailed mapping of the MS4 infrastructure. | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2019 | End Date: 7/1/2022 |

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| **Control Measure** |
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| (4) Construction Site Stormwater Runoff Control |

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| Description: This minimum control measure outlines procedures for minimizing polluted stormwater runoff from activities that disturb one or more acres of land. In Town, this is determined on a site by site basis OR collectively as part of a larger plan. |
| Measurable Goals: 1. Minimize polluted stormwater runoff from construction sites and prevent it from carrying sediment into waterways via MS4 infrastructure. |
| Was the Implementation Schedule for Year 1 met? Yes<br>Year 1 Evaluation Summary: The Town of South Windsor will continue to administer its land use regulations to incorporate consideration of potential water quality impacts. |
| Was the Implementation Schedule for Year 2 met? Yes<br>Year 2 Evaluation Summary: The Town of South Windsor will continue to administer its land use regulations to incorporate consideration of potential water quality impacts. |
| Was the Implementation Schedule for Year 3 met?<br>Year 3 Evaluation Summary: |
| Was the Implementation Schedule for Year 4 met?<br>Year 4 Evaluation Summary: |
| Was the Implementation Schedule for Year 5 met?<br>Year 5 Evaluation Summary: |

| BMP | Staff Responsible | Target Completion Date | Measurable Goal |
|---|---|---|---|
| 4.1 Implement, upgrade and enforce land use regulations (or other legal authority) to meet requirements of MS4 general permit | Planning Department | 7/1/2022 | Review and upgrade the Town's current land use regulations |
| 4.2 Develop and implement plan for interdepartmental coordination of site plan review and approval | Planning Department | 7/1/2022 | Interdepartmental coordination of site plan review and approval |
| 4.3 Review site plans for stormwater quality concerns | Environmental Planner | 7/1/2022 | Review site plans for stormwater quality concerns |
| 4.4 Conduct Site Inspections | Environmental Planner | 7/1/2022 | Ensure the adequacy of all construction runoff control measures |
| 4.5 Implement procedure to allow public comment on site development | Planning Department | 7/1/2022 | Allow public comment on site development |
| 4.6 Implement procedure to notify developers about DEEP construction stormwater permit | Environmental Planner | 7/1/2022 | Inform developers about DEEP construction stormwater permit |

| **BMP Name - 4.1 Implement, upgrade and enforce land use regulations (or other legal authority) to meet requirements of MS4 general permit** |
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| Staff Responsible: Planning Department |
| Description: The Town of South Windsor will revise its land use regulations to establish the legal authority to control stormwater runoff from construction sites by requiring:<br><br>a. developers, construction site operators, or contractors maintain consistency with the 2002 Guidelines for Soil Erosion and Sedimentation Control, as amended, the Connecticut Stormwater Quality Manual, and all stormwater discharge permits issued by the DEEP within the municipal or institutional boundary pursuant to CGS 22a-430 and 22a-430b;<br><br>b. the implementation of additional measures to protect/improve water quality (in addition to the above requirements) as deemed necessary by The Town of South Windsor;<br><br>c. The Town of South Windsor is authorized to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with municipal regulations, ordinances or programs or institutional requirements related to the management of The Town of South Windsors's MS4. Inspections shall be conducted, where allowed, to inventory the number of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive drainage from the permittee's MS4;<br><br>d. the owner of a site seeking development approval from The Town of South Windsor shall provide and comply with a long term maintenance plan and schedule to ensure the performance and pollutant removal efficiency of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive discharge from The Town of South Windsor's MS4 including short-term and long-term inspection and maintenance measures to be implemented by the private owner; and<br><br>e. The Town of South Windsor will control, through interagency or inter-jurisdictional agreements, the contribution of pollutants between the permittee's MS4 and MS4s owned or operated by others. |
| Measurable Goals: Review and upgrade the Town's current land use regulations |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2018 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Current Town of South Windsor requirements** |
| Staff Responsible: |
| Description: The Town of South Windsor requires erosion and sediment controls for all projects in accordance with all state and federal regulations. Several documents are utilized for establishing guidelines and procedures for the use of erosion and sediment controls in planning, design, and construction for town projects and private development. These documents include the following: |

TOSW Public Improvement Specifications
TOSW Subdivision Regulations
TOSW Inland Wetland/Watercourse and Conservation Regulations
TOSW Zoning regulations
CT Guidelines for Soil Erosion and Sediment Control, 2002

TOSW Public Improvement Specifications
The Public Improvement Specifications specifically address the requirements for storm drainage design which includes pre and post development conditions for developed land, and the design of stormwater wetlands. These specifications also refer to the CTDOT Standard Specifications, Form 817.

TOSW Zoning and Subdivision Regulations
These regulations specifically address the requirements for submission of a conservation plan for all proposals and/or activities disturbing an area larger than one-half acre. The conservation plan functions as, and conforms to the requirements of an "Erosion and Sediment Control Plan", as set forth in Public Act 83-388, as amended. The guide for preparation of a conservation plan refers to the CT Guidelines for Soil Erosion and Sediment Control, 2002. The Planning & Zoning Commission typically requires a bond to ensure implementation of all erosion and sediment control measures outlined in the conservation plan. The amount of the bond is established by the Inland Wetland Agency/Conservation Commission, based upon recommendation of town staff and must be in place prior to commencement of any site work.

TOSW Inland Wetland/Watercourse and Conservation Regulations
The purpose of these regulations (see section 22a-36 of the Connecticut General Statutes as amended) is to protect the citizens of the town by making provisions for the protection, preservation, maintenance and use of the inland wetlands and watercourses by minimizing their disturbance and pollution.

Ordinances, Regulatory Mechanisms and Sanctions
The town has the authority to force corrective actions on behalf of the contractor or developer to comply with appropriate regulations and controls. In case of failure by the contractor or developer to perform pollution control work, the town shall arrange for the performance of required work by approved forces. The cost of such work shall be deducted from the Erosion and Sediment Control bond set by the IWACC. If the IWACC finds that the public health, safety or welfare requires emergency action, and incorporates a finding to that effect in its order, it may order summary suspension of the wetlands permit pending further proceedings and may issue a cease and desist order to the permittee directing him to immediately halt any and all regulated activities found to be in violation of the terms of the permit. In the event the cease and desist order is not obeyed, the Agency may bring an action pursuant to section 22a-44 of the Connecticut General Statutes, as amended.

Evaluation: The Stormwater Committee will continue to review the current land use regulations on a yearly basis and recommend changes if needed.

Has the activity been completed?: Yes

Attachments: No Attachments Found...

| Start Date: 7/1/2017 | End Date: 7/1/2022 |
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| **BMP Name - 4.2 Develop and implement plan for interdepartmental coordination of site plan review and approval** | |
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| Staff Responsible: Planning Department | |
| Description: The Town of South Windsor's plan to coordinate the functions of all the departments and boards involved in the review, permitting, or approval of land disturbance projects is as follows:<br><br>The Planning Department is responsible for coordinating technical reviews by other town departments for all land development applications. The Planning Department schedules a monthly meeting with town staff to discuss each application as a group. In addition, pre-application meetings are often scheduled with private developers or property owners to review development requirements and discuss what is expected. | |
| Measurable Goals: Interdepartmental coordination of site plan review and approval | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017 | |
| Targeted Completion Date: 7/1/2022 | |
| Has the BMP been completed? Yes | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Interdepartmental coordination of site plan review and approval** | |
| Staff Responsible: | |
| Description: The Town of South Windsor will continue to coordinate with all departments and boards involved in the review, permitting, or approval of land disturbance projects. | |
| Evaluation: The Town's interdepartmental coordination plan for site plan review and approval is successful and will continue through the duration of the permit. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2022 |

| **BMP Name - 4.3 Review site plans for stormwater quality concerns** |
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| Staff Responsible: Environmental Planner |
| Description: The Town of South Windsor will conduct site plan reviews that incorporate consideration of stormwater controls or management practices to prevent or minimize impacts to water quality on sites with soil disturbance of one-half acre or more. The Town of South Windsor will also conduct site inspections to assess the adequacy of the installation, maintenance, operation, and repair of construction and post construction control measures and take enforcement action when necessary. |
| Measurable Goals: Review site plans for stormwater quality concerns |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017 |

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| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Yes |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Procedures for Site Plan Review** |
| Staff Responsible: |
| Description: Procedures for site plan review which incorporate consideration of potential water quality impacts are utilized by the town. Construction plans and specifications are reviewed by the town's Environmental Planner and the Town Engineer for conformance to the town's requirements.<br><br>As part of the town's land use regulations, any activity that involves site construction requires submission of application and construction plans for approval by the town's regulatory agencies including the Planning and Zoning Commission and the Inland Wetlands Agency/Conservation Commission. If deemed necessary, the agencies hold a public hearing on an application if found to be in the best interest of the public. Permits are issued by the IWACC to specific applicants for conducting regulated activities upon approval, for a duration of five (5) years.<br><br>Projects requiring registration under the General Permit for the Discharge of Stormwater associated with construction activities shall include site plans along with the permit application and a site specific stormwater pollution control plan for review and registration by the CTDEEP. |
| Evaluation: The Town's procedures for site plan review and approval is successful and will continue through the duration of the permit. |
| Has the activity been completed?: Yes |
| Attachments: No Attachments Found... |
| Start Date: 7/1/2017 | End Date: 7/1/2022 |

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| **BMP Name - 4.4 Conduct Site Inspections** |
| Staff Responsible: Environmental Planner |
| Description: The town will perform construction site inspections and take enforcement actions if necessary to ensure the adequacy of the installation, maintenance, operation, and repair of all construction and post-construction runoff control measures. |
| Measurable Goals: Ensure the adequacy of all construction runoff control measures |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Procedures for Site Inspection and Enforcement of Control Measures** |
| Staff Responsible: |

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| Description: Site inspection and enforcement of control measures are utilized on all town projects and private site developments. Inspectors employed by the town are authorized to inspect all work performed and materials furnished for each project. The inspection may extend to all or any part of the work, and to the preparation or manufacture of the materials to be used including work and materials relating to construction site runoff control. Additional inspection is also provided by the environmental Planner.<br><br>The Inland Wetlands Agency/Conservation Commission and/or its designated agent(s) make routine inspections of all activities for which permits have been issued under their regulations. If the agency finds that any person or entity is conducting an activity which can be expected to impair, alter or destroy the wetlands or watercourses of the Town of South Windsor, or can be expected to create a source of pollution, they may be issued a written warning or order to correct such facility or condition. If the agency finds that the public health, safety or welfare requires emergency action and incorporates a finding to that effect in its order, it may order summary suspension of the permit pending further proceedings and may issue a cease and desist order to the permittee directing him to immediately halt any and all regulated activities found to be in violation of the terms of the permit. In the event said cease and desist order is not obeyed, the agency may bring an action pursuant to Section 22a-44 of the Connecticut General Statutes, as amended.<br><br>The Town of South Windsor will continue site inspections and enforcement of control measures. | |
| Evaluation: The stormwater committee will review and update, if needed, the site inspection and enforcement process throughout the duration of the permit. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2022 |

| **BMP Name - 4.5 Implement procedure to allow public comment on site development** |
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| Staff Responsible: Planning Department |
| Description: The Town of South Windsor's current procedure for public involvement in proposed and ongoing development and land disturbance activities is as follows:<br><br>For proposed developments, applicants are required to notify abutting property owners by certified mail of a scheduled public hearing. In addition, the town posts legal notices in the local newspaper and on the town's website notifying the general public of scheduled public hearings. Digital copies of site development plans are also posted on the website for viewing. This procedure is followed by both the Planning and Zoning Commission and the Inland Wetlands Agency/Conservation Commission.<br><br>Information or complaints submitted by the public for ongoing development and land disturbance activities are forwarded to the appropriate department within the town for consideration. Information related to construction site runoff is forwarded to and considered by the Environmental Planner and/or the Town Engineer / Public Works - Street Services Division.<br><br>Residents are encouraged to stop in at the Town Hall offices to review development plans and applications or lodge complaints regarding land disturbance activities. Residents can also utilize the |

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| new online and mobile tool called "Connect South Windsor" which allows residents to report on various issues. "Connect South Windsor" can be accessed on the town's website: http://www.southwindsor.org/Publicstuff, and is also available on any mobile phone device or tablet using Apple, Android or the Windows app. |
| Measurable Goals: Allow public comment on site development |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Allow public comment on site development** |
| Staff Responsible: |
| Description: The Town of South Windsor will continue with the policies and procedures currently in place to receive public comment. |
| Evaluation: The stormwater committee will review and update, if needed, the policies and procedures currently in place to receive public comment, throughout the duration of the permit. |
| Has the activity been completed?: Yes |
| Attachments: No Attachments Found... |

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| Start Date: 7/1/2017 | End Date: 7/1/2022 |

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| **BMP Name - 4.6 Implement procedure to notify developers about DEEP construction stormwater permit** |
| Staff Responsible: Environmental Planner |
| Description: The Town of South Windsor will inform developers and contractors of their potential obligation to obtain authorization under CTDEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities (construction general permit) if their project disturbs more than 1 acre of land and results in a point source discharge to Connecticut surface waters directly or through the Town of South Windsor's MS4. The Town of South Windsor will also require a copy of the Storm Water Pollution Control Plan be made available to the permittee upon request. |
| Measurable Goals: Inform developers about DEEP construction stormwater permit |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |

| BMP Activity - 1. Inform developers about DEEP construction stormwater permit | |
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| Staff Responsible: | |
| Description: It is the policy of the Town of South Windsor to verbally advise developers and contractors of their potential obligation to obtain authorization under CTDEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities (construction general permit). | |
| Evaluation: The Town of South Windsor will continue with this policy to inform developers about the CTDEEP construction stormwater permit. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2022 |

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| Control Measure | | | |
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| (5) Post-construction Stormwater Management in New Development or Redevelopment | | | |
| Description: This minimum control measure outlines the Town of South Windsor's program to address stormwater runoff from new or re-development projects that disturb one or more acres of land. | | | |
| Measurable Goals: 1. Mitigate the long-term impacts of new and re-development projects on water quality through proper use of low impact development and runoff reduction practices. | | | |
| Was the Implementation Schedule for Year 1 met? Yes<br>Year 1 Evaluation Summary: The Town of South Windsor is beginning to implement actions to update guidelines regarding LID/runoff reduction requirements, develop a long-term maintenance plan for detention basins and stormwater treatment structures, and calculate Directly Connected Impervious Areas (DCIA). | | | |
| Was the Implementation Schedule for Year 2 met? Yes<br>Year 2 Evaluation Summary: The Town of South Windsor is continuing to implement actions to update guidelines regarding LID/runoff reduction requirements, develop a long-term maintenance plan for detention basins and stormwater treatment structures, and calculate Directly Connected Impervious Areas (DCIA). | | | |
| Was the Implementation Schedule for Year 3 met?<br>Year 3 Evaluation Summary: | | | |
| Was the Implementation Schedule for Year 4 met?<br>Year 4 Evaluation Summary: | | | |
| Was the Implementation Schedule for Year 5 met?<br>Year 5 Evaluation Summary: | | | |
| **BMP** | **Staff Responsible** | **Target Completion Date** | **Measurable Goal** |

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| 5.1 Establish or update legal authority and guidelines regarding LID and runoff reduction in site development planning | Planning Department | 7/1/2022 | Update guidelines regarding LID and runoff reduction in site development planning and reduce regulatory barriers for implementing LID. |
| 5.2 Enforce LID/runoff reduction requirements for development and redevelopment projects | Planning Department | 7/1/2022 | Update regulations to enforce LID/runoff reduction requirements. |
| 5.3 Implement long-term maintenance plan for stormwater basins and treatment structures | Public Works / Parks & Grounds | 7/1/2022 | Develop and implement a long-term maintenance plan for retention/detention basins and stormwater treatment structures. |
| 5.4 Directly Connected Impervious Area (DCIA) Mapping | Engineering Department | 7/1/2020 | Complete DCIA mapping by July 1, 2020 and update from there on. |
| 5.5 Address post-construction issues in areas with pollutants of concern | Environmental Planner | 7/1/2022 | Prioritize and correct identified problems consistent with Retrofit Plan in areas with pollutants of concern. |

| **BMP Name - 5.1 Establish or update legal authority and guidelines regarding LID and runoff reduction in site development planning** |
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| Staff Responsible: Planning Department |
| Description: The Town of South Windsor will establish or update the existing legal authority by ordinance, bylaw, regulation, standard condition of approval, or other means to require developers and contractors seeking the town's approval to consider the use of low impact development (LID) and runoff reduction site planning and development practices that meet or exceed those LID and runoff reduction practices in the CT Stormwater Quality Manual prior to other stormwater management practices allowed in town's land use regulations, guidance or construction project requirements.<br><br>This legal authority will include the following standards:<br>1) for redevelopment of sites that are currently developed with Directly Connected Impervious Area (DCIA) of forty percent or more, the project must retain on-site half the water quality volume for the site, or<br>2) for new development and redevelopment of sites with less than forty percent DCIA, retain the water quality volume for the site, or<br>3) if those retention standards cannot be met, the developer will be required to provide a report indicating why the standard could not be met and a mitigation project on another property or pay a fee to fund a DCIA retrofit.<br><br>In developing this legal authority, The Town of South Windsor will consider the following watershed protection elements to manage the impacts of stormwater on receiving waters: |

a. Minimize the amount of impervious surfaces (roads, parking lots, roofs, etc.) within each municipality by minimizing the creation, extension, and widening of parking lots, roads, and associated development and encourage the use of Low Impact Development or green infrastructure practices.
b. Preserve, protect, create and restore ecologically sensitive areas that provide water quality benefits and serve critical watershed functions. These areas may include, but are not limited to; riparian corridors, headwaters, floodplains and wetlands.
c. Implement stormwater management practices that prevent or reduce thermal impacts to streams, including requiring vegetated buffers along waterways, and disconnecting discharges to surface waters from impervious surfaces such as parking lots.
d. Seek to avoid or prevent hydromodification of streams and other water bodies caused by development, including roads, highways, and bridges.
e. Implement standards to protect trees, and other vegetation with important evapotranspirative qualities.
f. Implement policies to protect native soils, prevent topsoil stripping, and prevent compaction of soils.
g. Coordinate with state or local health officials to ensure no interference with performance of on-site septic systems.
h. Consider the limitation of turf areas to those areas necessary to construct buildings, utilities, stormwater management measures, parking and access ways, and reasonable lawn areas and contouring necessary to prevent future site erosion.

In addition, The Town of South Windsor will review its current regulations - site planning requirements, zoning regulations, street design regulations, and infrastructure specifications with minimum size criteria for impervious cover (roads, parking lots, etc.) to identify and where appropriate, reduce or eliminate existing regulatory barriers to implementation of LID and runoff reduction practices to the Maximum Extent Practicable.

Measurable Goals: Update guidelines regarding LID and runoff reduction in site development planning and reduce regulatory barriers for implementing LID.

Implementation Partnership:

Implementation Plan and Schedule Comments: Implementation Date - 7/1/2021

Targeted Completion Date: 7/1/2022

Has the BMP been completed? Continuing

Specific Comments and Notes:

Attachments: No Attachments Found...

**BMP Activity - 1. Review guidelines regarding LID and runoff reduction in site development planning.**

Staff Responsible:

Description: The Stormwater Committee and Planning Department will review the current guidelines in the Town's site development regulations. Under Article 6.6.5 of the current zoning regulations (Storm Drainage), the design of any storm water management system shall be in accordance with the 2004 Connecticut Stormwater Quality Manual and consistent with the standards set forth in the Town's Public Improvement Specifications.

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| The Town encourages the use of on-site natural filtration functions as a part of currently accepted BMP's in the reduction of sediment and pollutants and to minimize discharge of pollutants to ground and surface water. Where feasible, roof runoff is collected and reintroduced to the groundwater table via infiltration devices where soils and water table depths permit. Energy dissipaters and flow spreading are used to discharge sheet flows over lawns. Storm runoff generated from parking lots and road pavements that carry sands, road salts, oils, etc. are initially treated at catch basins where heavy particles are trapped in basin sumps, and then further treated in extended detention basins or engineered structures to remove more sediment, oil, grease, and other pollutants. | |
| Evaluation: The stormwater committee will review and update, if needed, the guidelines regarding LID and runoff reduction in site development planning currently in place, throughout the duration of the permit. | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2021 | End Date: 7/1/2022 |

| **BMP Name - 5.2 Enforce LID/runoff reduction requirements for development and redevelopment projects** |
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| Staff Responsible: Planning Department |
| Description: The Town of South Windsor will require that parties responsible for new development or redevelopment projects follow the standards set forth by the legal authority identified in section 5.1 regarding the retention of stormwater on site.<br><br>Any systems designed and installed to meet these requirements must be consistent with the Connecticut Stormwater Quality Manual. If not consistent, a report must be provided detailing why that is not feasible.<br><br>Developers will also be required to consult with the local health official in areas with onsite septic systems to ensure any retention practices do not interfere with the functioning of those systems. |
| Measurable Goals: Update regulations to enforce LID/runoff reduction requirements. |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2021 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Update regulations to enforce LID/runoff reduction requirements.** |
| Staff Responsible: |
| Description: The Stormwater Committee and Planning Department will review the current procedures for review of site plan development and evaluate if any modifications to the existing regulations are required for the Town to request maintenance and operation plans for stormwater controls. Such modifications may include a requirement for private landowners to submit a report |

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| annually to the Town regarding maintenance and operation of their stormwater basins or structures, or maintain their maintenance records and produce the records upon request of the Town. This committee may also consider developing a standard condition of approval that allows the Town access to inspect structures. | |
| Evaluation: TBD | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2021 | End Date: 7/1/2022 |

| **BMP Name - 5.3 Implement long-term maintenance plan for stormwater basins and treatment structures** |
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| Staff Responsible: Public Works / Parks & Grounds |
| Description: The Town of South Windsor will develop a maintenance plan for retention / detention basins and stormwater treatment structures that it owns or over which it holds an easement or other authority and that are located in the town's priority areas to ensure their long-term effectiveness. This plan will require an annual inspection of those retention / detention ponds and stormwater treatment structures and removal of accumulated sediment and pollutants in excess of 50% design capacity. |
| Measurable Goals: Develop and implement a long-term maintenance plan for retention/detention basins and stormwater treatment structures. |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2019 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Update detention basin inventory and database** |
| Staff Responsible: |
| Description: In 2001, the Town compiled an inventory of known detention basins including Town owned facilities as well as privately owned. As of 2001, there were 91 known detention basins located throughout the town. The database included location, ownership, outlet type, and condition.<br><br>The Engineering Department will work in conjunction with Public Works to update the database, assess condition of the basins, and prioritize the inspection and maintenance of basins located in the Town's priority areas first. |
| Evaluation: |
| Has the activity been completed?: No |
| Attachments: No Attachments Found... |

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| Start Date: 7/1/2019 | End Date: 7/1/2022 |

| BMP Name - 5.4 Directly Connected Impervious Area (DCIA) Mapping | |
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| Staff Responsible: Engineering Department | |
| Description: The Town of South Windsor will follow guidance provided by CTDEEP and UConn CLEAR to calculate the Directly Connected Impervious Area (DCIA) that contributes stormwater runoff to each of its MS4 outfalls. Progress on this task will be documented in each Annual Report until completion. | |
| Measurable Goals: Complete DCIA mapping by July 1, 2020 and update from there on. | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2018 | |
| Targeted Completion Date: 7/1/2020 | |
| Has the BMP been completed? No | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Mapping of Directly Connected Impervious Area (DCIA)** | |
| Staff Responsible: | |
| Description: The Engineering Department will begin to calculate the Directly Connected Impervious Area that contributes stormwater runoff to each MS4 outfall, beginning with the priority areas first, utilizing the Town's GIS mapping software. | |
| Evaluation: TBD | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 7/1/2020 |

| BMP Name - 5.5 Address post-construction issues in areas with pollutants of concern |
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| Staff Responsible: Environmental Planner |
| Description: For areas contributing to waters where Nitrogen, Phosphorus or Bacteria is a Stormwater Pollutant of Concern and erosion or sedimentation problems are found during the annual inspections conducted under the long-term maintenance plan described in BMP 5.3, the Town of South Windsor will prioritize those areas for the DCIA retrofit program under minimum control measure 6 – Pollution Prevention/Good Housekeeping. |
| Measurable Goals: Prioritize and correct identified problems consistent with Retrofit Plan in areas with pollutants of concern. |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Plan - 7/1/2019 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |

| BMP Activity - 1. Inspection of storm drainage infrastructure | |
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| Staff Responsible: | |
| Description: The Environmental Planner will work with the Department of Public Works to conduct inspections of existing MS4 structures in areas with pollutants of concern to prioritize and correct identified problems. | |
| Evaluation: TBD | |
| Has the activity been completed?: No | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2019 | End Date: 7/1/2022 |

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| Control Measure |
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| (6) Pollution Prevention / Good Housekeeping |
| Description: This minimum control measure outlines a program to mitigate the impact of town operations and maintenance on town owned and/or operated properties and the MS4 itself to water quality.<br><br>The Town of South Windsor will implement an operations and maintenance program to prevent or reduce pollutant runoff from town facilities and protect water quality. |
| Measurable Goals: 1. Prevent or reduce pollutant runoff as a result of municipal operations. |
| Was the Implementation Schedule for Year 1 met? Yes<br>Year 1 Evaluation Summary: The Town of South Windsor will continue to implement an operations and maintenance program to mitigate impacts to water quality.<br><br>BMP's such as employee training, property maintenance, infrastructure repair, street sweeping, catch basin cleaning, and snow management practices are all on-going but are in the process of being evaluated and modified to meet the requirements of the General Permit as needed.<br><br>Other BMP's such as tracking projects that disconnect DCIA will be developed and implemented throughout the term of the permit. |
| Was the Implementation Schedule for Year 2 met? Yes<br>Year 2 Evaluation Summary: The Town of South Windsor will continue to implement an operations and maintenance program to mitigate impacts to water quality.<br><br>BMP's such as employee training, property maintenance, infrastructure repair, street sweeping, catch basin cleaning, and snow management practices are all on-going but are in the process of being evaluated and modified to meet the requirements of the General Permit as needed.<br><br>Other BMP's such as tracking projects that disconnect DCIA will be developed and implemented throughout the term of the permit. |

Was the Implementation Schedule for Year 3 met? Yes
Year 3 Evaluation Summary: The Town of South Windsor will continue to implement an operations and maintenance program to mitigate impacts to water quality.

BMP's such as employee training, property maintenance, infrastructure repair, street sweeping, catch basin cleaning, and snow management practices are all on-going but are in the process of being evaluated and modified to meet the requirements of the General Permit as needed.

Other BMP's such as tracking projects that disconnect DCIA will be developed and implemented throughout the term of the permit.

Was the Implementation Schedule for Year 4 met? Yes
Year 4 Evaluation Summary: The Town of South Windsor will continue to implement an operations and maintenance program to mitigate impacts to water quality.

BMP's such as employee training, property maintenance, infrastructure repair, street sweeping, catch basin cleaning, and snow management practices are all on-going but are in the process of being evaluated and modified to meet the requirements of the General Permit as needed.

Other BMP's such as tracking projects that disconnect DCIA will be developed and implemented throughout the term of the permit.

Was the Implementation Schedule for Year 5 met?
Year 5 Evaluation Summary:

| BMP | Staff Responsible | Target Completion Date | Measurable Goal |
|---|---|---|---|
| 6.01 Develop and implement formal employee training program | Public Works | 7/1/2022 | Continue providing on-the-job instruction and training to new and existing municipal employees related to stormwater management. |
| 6.02 Implement MS4 property and operations maintenance | Public Works / Parks & Grounds | 7/1/2022 | The Town will monitor and evaluate all maintenance operations on Town-owned properties, parks, and other facilities to minimize the discharge of pollutants to its MS4. |
| 6.03 Implement coordination with interconnected MS4s | Stormwater Committee | 7/1/2022 | Coordinate municipal operations with adjoining MS4's. |
| 6.04 Develop and implement a program to control other sources of pollutants to the MS4 | Stormwater Committee | 7/1/2022 | The Town shall annually review the list of stormwater general permit registrants, and identify non-permitted locations which may be potential contributors and use this data to adjust screening prioritization in the IDDE Plan as warranted. |

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| 6.05 Evaluate additional measures for discharges to impaired waters | Stormwater Committee | 7/1/2022 | Implement practices to minimize impacts from Nitrogen, Phosphorus, and Bacteria on impaired waters. |
| 6.06 Track projects that disconnect DCIA | Planning Department | 7/1/2022 | The Town of South Windsor's goal will be to reduce 1% of its total DCIA acreage per year to the maximum extent possible. The Town will also incorporate all DCIA disconnections which occurred in the town since July 1, 2012 towards meeting this goal. |
| 6.07 Develop and implement an infrastructure repair / rehabilitation program | Public Works | 7/1/2022 | Develop a formal policy on infrastructure repair, rehabilitation, and retrofits. |
| 6.08 Develop and implement plan to identify and prioritize retrofit projects | Planning Department | 7/1/2022 | Develop plan to identify and prioritize retrofit projects. |
| 6.09 Develop and implement street sweeping program | Public Works / Street Services | 7/1/2022 | The Town shall continue it's street sweeping program and document inspection results, dates of sweeping, curb miles swept, volume/mass of material collected, and method of reuse or disposal. |
| 6.10 Develop and implement catch basin cleaning program | Public Works / Street Services | 7/1/2022 | The Town shall continue it's catch basin cleaning program and document the number of structures inspected and/or cleaned, and the volume/mass of material removed. |
| 6.11 Develop and implement snow management practices | Public Works / Street Services | 7/1/2022 | |

| **BMP Name - 6.01 Develop and implement formal employee training program** |
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| Staff Responsible: Public Works |
| Description: The Town of South Windsor will continue its MS4 training program for town employees to increase awareness of water quality issues. Training will include:<br><br>• Standard operating procedures consistent with the MS4 general permit;<br>• General goals and objectives of this Stormwater Management Plan;<br>• Identification and reporting of illicit discharges and improper disposal; and<br>• Spill response protocols and responsibilities. |

These trainings may also include regional or statewide trainings coordinated by UConn CLEAR or others.

The training program will be administered by the Director of Public Works.

Measurable Goals: Continue providing on-the-job instruction and training to new and existing municipal employees related to stormwater management.

Implementation Partnership:

Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017

Targeted Completion Date: 7/1/2022

Has the BMP been completed? Continuing

Specific Comments and Notes:

Attachments: No Attachments Found...

**BMP Activity - Stormwater Pollution Prevention Training Program**

Staff Responsible:

Description: A Stormwater Pollution Prevention Plan (SWPPP) was developed for the Town's Public Works Facility in September 2011. As part of that plan, a training program was instituted to provide facility employees with the information and techniques required to assure the facility SWPPP is properly implemented.

The training program consists of two components. The first aspect of the program is for employees to read the Operational Procedures for Stormwater Pollution Prevention which is contained in the SWPPP. The second aspect is attendance at courses for pollution prevention.

In December 16, 2015, the Town's consultant (Anchor Engineering Services) provided training to all of the facility employees. Topics covered included Good Housekeeping, Litter Control, Sweeping, Maintaining Erosion and Sedimentation Control Devices, Spill Control and Cleanup, Vehicle and Equipment Washing, Stormwater Control Devices, and Materials Handling.

Evaluation: The Stormwater Committee and Public Works will evaluate the training program to determine if additional training is required or will be beneficial. Training will also be scheduled for any new hires who have not yet been through the program.

Has the activity been completed?: No

Attachments: No Attachments Found...

| Start Date: 7/1/2017 | End Date: 7/1/2022 |
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**BMP Name - 6.02 Implement MS4 property and operations maintenance**

Staff Responsible: Public Works / Parks & Grounds

Description: The Town of South Windsor properties, parks, and other facilities that are owned, operated, or otherwise the legal responsibility of The Town of South Windsor will be maintained so as to minimize the discharge of pollutants to its MS4. Such maintenance will include, but not be limited to:

(i) Parks and open space
The Town of South Windsor will optimize the application of fertilizers by municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance. Optimization practices considered may include:
• conducting soil testing and analysis to determine soil phosphorus levels,
• the reduction or elimination of fertilizers,
• reduction of fertilizer usage by adhering to the manufacturers' instructions,
• use of alternative fertilizers forms (i.e. products with reduced, slow-releasing, or insoluble phosphorus compositions),
• proper storage and application practices (i.e. avoid impervious surfaces),
• application schedule (i.e. appropriate season or month) and timing (i.e. coordinated with climatic conditions to minimize runoff potential);
• standard operating practices for the handling, storage, application, and disposal of pesticides and herbicides in compliance with applicable state and federal laws;
• evaluating reduced mowing frequencies and use of alternative landscaping materials like drought resistant and native plantings;
• establish procedures for management of trash containers at parks (scheduled cleanings; sufficient number).

The Town of South Windsor will establish practices for the proper disposal of grass clippings and leaves at The Town of South Windsor-owned lands. Clippings shall be composted or otherwise appropriately disposed. Clippings will not enter the MS4 system or waters of the state.

(ii) Pet waste management
The Town of South Windsor will identify locations where inappropriate pet waste management practices are immediately apparent and pose a threat to receiving water quality due to proximity and potential for direct conveyance of waste to its storm system and waters. In such areas, The Town of South Windsor will implement targeted management efforts such as public education and enforcement (e.g. increased patrol for violators).

In The Town of South Windsor-owned recreational areas where dog walking is allowed, The Town of South Windsor will install educational signage, pet waste baggies, and disposal receptacles (or require carry-out).

The Town of South Windsor will document its efforts in its annual reports. The Town of South Windsor should consider including information regarding the scope and extent of its education, compliance, and enforcement efforts (including the number of violations pursued and fines levied or other enforcement taken).

(iii) Waterfowl management
The Town of South Windsor will identify lands where waterfowl congregate and feeding by the public occurs.

To raise awareness regarding the water quality impacts, The Town of South Windsor will install signage or use other targeted techniques to educate the public about the detrimental impacts of feeding waterfowl (including the resulting feces deposition) and discourage such feeding practices.

The Town of South Windsor will also implement practices that discourage the undesirable congregation of waterfowl in these areas, or otherwise isolate the direct drainage from these areas away from its storm system and waters.

(iv) The Town of South Windsor Buildings and facilities (schools under the jurisdiction of The Town of South Windsor, town offices, police and fire stations, pools, parking garages and other The Town of South Windsor-owned or operated buildings or utilities)

The Town of South Windsor will:
• evaluate the use, storage, and disposal of both petroleum and non-petroleum products and ensure, through employee training, that those responsible for handling these products know proper procedures;
• ensure that Spill Prevention Plans are in place, if applicable, and coordinate with the fire department as necessary;
• develop management procedures for dumpsters and other waste management equipment;
• sweep parking lots and keep areas surrounding the facilities clean to minimize runoff of pollutants;
• ensure that all interior building floor drains are not connected to the MS4 and are appropriately permitted.

(v) Vehicles and Equipment
The Town of South Windsor will:
• establish procedures for the storage of The Town of South Windsor-owned or -operated vehicles;
• require vehicles with fluid leaks to be stored indoors or in contained areas until repaired;
• evaluate fueling areas owned by The Town of South Windsor and used by The Town of South Windsor owned or -operated vehicles and if possible, place fueling areas under cover in order to minimize exposure;
• establish procedures to ensure that vehicle wash waters are not discharged to the municipal storm sewer system or to surface waters;
• ensure any interior floor drains are appropriately permitted.

(vi) Leaf Management
The Town of South Windsor will establish and implement procedures to minimize or prevent the deposition of leaves in catch basins, streets, parking lots, driveways, sidewalks or other paved surfaces that discharge to the MS4. Such procedures shall also apply to leaves collected by The Town of South Windsor.

Measurable Goals: The Town will monitor and evaluate all maintenance operations on Town-owned properties, parks, and other facilities to minimize the discharge of pollutants to its MS4.

Implementation Partnership:

Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017

Targeted Completion Date: 7/1/2022

Has the BMP been completed? Continuing

Specific Comments and Notes:

Attachments: No Attachments Found...

**BMP Activity - 1. Parks and Open Space Maintenance Program**

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| Staff Responsible: | |
| Description: The Town of South Windsor follows procedures for fertilizer and chemical application to optimize growth and minimize the discharge of pollutants. For example, the Town is currently implementing a 0% phosphorus program for fertilizer application. Standard operating practices are adhered to for handling, storage, application, and disposal of all fertilizers and chemicals.<br><br>The Town has also adopted a maintenance program to reduce mowing frequencies in various areas of town where applicable. The Town utilizes mulching mowers so disposal of grass clippings is not a problem. All equipment is washed in a designated wash bay in the maintenance building. | |
| Evaluation: The Town will continue to implement current practices to minimize discharge of pollutants to its MS4. The Town will also evaluate current procedures for management of trash containers at all of its parks and grounds. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2022 |
| **BMP Activity - 2. Pet Waste Management** | |
| Staff Responsible: | |
| Description: The Town of South Windsor targets the recreational areas in town where dog walking is allowed for education and enforcement of proper disposal of pet waste. At Nevers Road Park, there is a designated area called the "Bark Park" where educational signage has been installed, and disposal receptacles are provided. A local environmental waste handling business has been contracted to remove and properly dispose of the waste. | |
| Evaluation: The Town will continue to manage the proper disposal of pet waste at Nevers Road Park and will also evaluate current procedures at other parks and areas in town where dog walking is observed. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2022 |
| **BMP Activity - 3. Town Owned Buildings and Facilities** | |
| Staff Responsible: | |
| Description: The Town owns and operates various buildings and facilities including pavilions and a public pool complex. All of these buildings and facilities are maintained to minimize the discharge of pollutants to the MS4.<br><br>The Town's Public Works Facility and the Sewage Treatment Plant are already covered under a General Permit for the Discharge of Stormwater Associated with Industrial Activities. All other buildings and facilities are covered under this MS4 Permit. | |
| Evaluation: The Town will continue to evaluate the use, storage, and disposal of petroleum and non-petroleum products at all of its buildings and facilities and update on-the-job training procedures to ensure that employees responsible for handling these products know proper procedures. The Town will continue to implement Spill Prevention Plans, procedures for dumpsters and other waste management equipment, and sweeping of parking lots. | |

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| The Town will also evaluate and verify if any interior building and facility floor drains are connected to the MS4 or are properly permitted. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2022 |
| **BMP Activity - 4. Vehicles and Equipment** | |
| Staff Responsible: | |
| Description: The Town has established procedures for the storage and fueling of vehicles and equipment as incorporated into the Industrial Stormwater Permit for its facilities.<br><br>To address the potential for polluted wash water entering the storm drainage system during routine maintenance/cleaning of trucks and equipment, a vehicle wash station has been constructed in one of the bays of the Public Works Garage. The wash station utilizes a grit chamber to collect sand and debris, which is periodically cleaned. Wash water is then discharged into the sanitary sewer system, which is ultimately treated at the Town's Wastewater Treatment Plant. | |
| Evaluation: The Town has established procedures which address storage, cleaning, and fueling of vehicles and equipment to minimize the potential for discharge of pollutants to the MS4. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2022 |
| **BMP Activity - 5. Leaf Management** | |
| Staff Responsible: | |
| Description: The Town has had a Town-wide leaf collection program for many years. Leaves are picked up curbside in late fall on all public streets, usually with two passes through each district. There is also a Leaf Bag collection that takes place on private roads. Residents also have the option of bringing leaves to the compost site at the Public Works Facility as well.<br><br>The Town performs a leaf composting operation at the Public Works Facility in a designated area that does not impact any nearby waterbodies. | |
| Evaluation: The Town will continue the Town-wide leaf collection program, as long as the program is funded. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2022 |

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| **BMP Name - 6.03 Implement coordination with interconnected MS4s** |
| Staff Responsible: Stormwater Committee |
| Description: The Town of South Windsor will coordinate with operators of interconnected MS4s (such as neighboring municipalities, institutions and DOT) regarding the contribution of potential pollutants from the storm sewer systems, contributing land use areas and stormwater control |

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| measures in the respective MS4s. This same coordination shall be conducted regarding operation and maintenance procedures utilized in the respective systems. |
| Measurable Goals: Coordinate municipal operations with adjoining MS4's. |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2020 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? No |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |

| **BMP Name - 6.04 Develop and implement a program to control other sources of pollutants to the MS4** |
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| Staff Responsible: Stormwater Committee |
| Description: The Town of South Windsor will develop and implement a program to control the contribution of pollutants to its MS4 from commercial, industrial, municipal, institutional or other facilities, not otherwise authorized by a CT DEEP stormwater permit. |
| Measurable Goals: The Town shall annually review the list of stormwater general permit registrants, and identify non-permitted locations which may be potential contributors and use this data to adjust screening prioritization in the IDDE Plan as warranted. |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2020 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? No |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |

| **BMP Name - 6.05 Evaluate additional measures for discharges to impaired waters** |
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| Staff Responsible: Stormwater Committee |
| Description: (i) For waters for which Nitrogen or Phosphorus is a Stormwater Pollutant of Concern:<br><br>On The Town of South Windsor-owned or -operated lands, The Town of South Windsor will implement a turf management practices and procedures policy which includes, but is not limited to, procedures for proper fertilizer application and the planting of native plant materials to lessen the amount of turf area requiring mowing and the application of chemicals. Each Annual Report will discuss the actions taken to implement this policy with an estimate of fertilizer and turf reduction.<br><br>(ii) For waters for which Bacteria is a Stormwater Pollutant of Concern:<br><br>On The Town of South Windsor-owned or -operated lands with a high potential to contribute bacteria (such as dog parks, parks with open water, sites with failing septic systems), The Town of |

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| South Windsor will develop, fund, implement, and prioritize a retrofit or source management program to correct the problem(s) within a specific timeframe. Each Annual Report will identify problem areas for which a retrofit or source management program were developed, the location of the closest outfall monitored in accordance with Section 6(i), the cost of such retrofit or program, and the anticipated pollutant reduction. On The Town of South Windsor-owned or -operated lands, prohibit the feeding of geese or waterfowl and implement a program to manage geese and waterfowl populations. Each Annual Report will discuss the actions taken to implement this program. |
| Measurable Goals: Implement practices to minimize impacts from Nitrogen, Phosphorus, and Bacteria on impaired waters. |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2020 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Turf Management Practices and Procedures Policy** |
| Staff Responsible: |
| Description: The Town of South Windsor follows procedures for fertilizer and chemical application to optimize growth and minimize the discharge of pollutants. For example, the Town is currently implementing a 0% phosphorus program for fertilizer application. Standard operating practices are adhered to for handling, storage, application, and disposal of all fertilizers and chemicals.<br><br>The Town has also adopted a maintenance program to reduce mowing frequencies in various areas of town where applicable. The Town utilizes mulching mowers so disposal of grass clippings is not a problem. All equipment is washed in a designated wash bay in the maintenance building. |
| Evaluation: The Town will continue to implement current practices to minimize discharge of pollutants to its MS4. |
| Has the activity been completed?: Yes |
| Attachments: No Attachments Found... |
| Start Date: 7/1/2017 \| End Date: 7/1/2022 |

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| **BMP Name - 6.06 Track projects that disconnect DCIA** |
| Staff Responsible: Planning Department |
| Description: The Town of South Windsor will annually track the total acreage of Directly Connected Impervious Area (DCIA) that is disconnected from the MS4 as a result of redevelopment or retrofit projects within the town. For each retrofit/redevelopment project, The Town of South Windsor will document the amount of existing DCIA that is disconnected. The total amount of disconnected DCIA will be reported each year in the Annual Report. |
| Measurable Goals: The Town of South Windsor's goal will be to reduce 1% of its total DCIA acreage per year to the maximum extent possible. The Town will also incorporate all DCIA disconnections which occurred in the town since July 1, 2012 towards meeting this goal. |

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| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2021 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? No |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |

| **BMP Name - 6.07 Develop and implement an infrastructure repair / rehabilitation program** | |
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| Staff Responsible: Public Works | |
| Description: The Town of South Windsor will continue its program to identify MS4 structures to repair, rehabilitate, or upgrade to reduce or eliminate the discharge of pollutants into water bodies. This program will be responsive to new information on outfalls discharging pollutants, impaired waters, inspections, or observations made during outfall mapping under the IDDE section of this plan. | |
| Measurable Goals: Develop a formal policy on infrastructure repair, rehabilitation, and retrofits. | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017 | |
| Targeted Completion Date: 7/1/2022 | |
| Has the BMP been completed? Continuing | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Repair of Existing MS4 Structures 2016-2017** | |
| Staff Responsible: | |
| Description: There were a total of 150 drainage structures repaired or rebuilt by the Town's Public Works Department or private contractors in fiscal year 2016-2017. In addition, one outfall structure was repaired on McGrath Road. | |
| Evaluation: The Town will continue with inspection of it's MS4 structures. Repairs will be done as funding becomes available. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2016 | End Date: 7/1/2017 |
| **BMP Activity - 2. Repair of Existing MS4 Structures 2017-2018** | |
| Staff Responsible: | |
| Description: There were 140 structures repaired or rebuilt by the Town's Public Works Department or private contractors in fiscal year 2017-2018. In addition, a long time drainage issue on Graham Road was mitigated by installing a drywell system to help capture runoff. On Pleasant Valley Road at an outfall leading into the Podunk River, a concrete headwall was removed due to separation from the pipe. The end treatment was reconstructed with an extension of the pipe and a flared end was added, and the surrounding area was re-sloped and riprap added for stabilization. | |

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| Evaluation: | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2018 |
| **BMP Activity - 3. Repair of Existing MS4 Structures 2018-2019** | |
| Staff Responsible: | |
| Description: There were 80 structures repaired or rebuilt by the Town's Public Works Department or private contractors in fiscal year 2018-2019. | |
| Evaluation: The Town will continue with inspection of it's MS4 structures. Repairs will be done as funding becomes available. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 7/1/2019 |
| **BMP Activity - 4. Repair of Existing MS4 Structures 2019-2020** | |
| Staff Responsible: | |
| Description: There were 110 structures repaired or rebuilt by the Town's Public Works Department or private contractors in fiscal year 2019-2020. On Hilton Drive at an outfall leading into the Podunk River, the outfall pipe was replaced and the end treatment reconstructed with a new headwall. | |
| Evaluation: The Town will continue with inspection of it's MS4 structures. Repairs will be done as funding becomes available. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2019 | End Date: 7/1/2020 |

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| **BMP Name - 6.08 Develop and implement plan to identify and prioritize retrofit projects** |
| Staff Responsible: Planning Department |
| Description: The Town of South Windsor will develop a Retrofit Project Plan to identify and prioritize potential DCIA disconnection projects. Prioritization will be based on several factors, including whether the project lies within one of the MS4 priority areas (urbanized area, DCIA > 11%, discharge to impaired waters). The Town of South Windsor will include in its annual report for the third year of the permit (2020-2021) its identification and prioritization process, a rationale for the selection of projects to be implemented, and the total acres of DCIA to be disconnected upon implementation. The implementation of projects in this plan will begin by June 30, 2022. |
| Measurable Goals: Develop plan to identify and prioritize retrofit projects. |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation date - 6/30/2022 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |

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| Specific Comments and Notes: |
| Attachments: No Attachments Found... |

| **BMP Name - 6.09 Develop and implement street sweeping program** |
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| Staff Responsible: Public Works / Street Services |
| Description: The Town of South Windsor will implement a program to provide for regular inspection and maintenance of The Town of South Windsor-owned or -operated streets, parking areas and other MS4 infrastructure.<br><br>The Town of South Windsor will establish and implement procedures for sweeping town-owned or operated streets and parking lots. All streets and parking lots within the MS4 Priority Areas will be inspected, swept and/or cleaned (as necessary) at least once per year in the spring following the cessation of winter maintenance activities (i.e. sanding, deicing, etc.). The procedures shall also include more frequent inspections, cleaning and/or sweeping of targeted areas determined by The Town of South Windsor to have increased pollutant potential based on the presence of active construction activity or other potential pollutant sources. The Town of South Windsor will identify such potential pollutant sources based upon surface inspections, catch basin cleaning or inspection results, land use, winter road deicing and/or sand application, impaired or TMDL waters or other relevant factors as determined by The Town of South Windsor. If wet dust suppression is conducted, the use of water will be minimized such that a discharge of excess water to surface waters and/or the storm sewer system does not occur.<br><br>For streets and parking lots outside the MS4 Priority Areas, including any rural uncurbed streets and parking lots with no catch basins, The Town of South Windsor will either meet the minimum frequencies above, or develop and implement an inspection, documentation and targeted sweeping and/or cleaning plan for those areas by June 30, 2018 and submit such plan with its year one Annual Report. For new and redeveloped municipal parking lots, The Town of South Windsor will evaluate options for reducing stormwater runoff to surface waters and/or the storm sewer system such as installing pervious pavements and/or other measures to promote sheet flow of stormwater.<br><br>a. The Town of South Windsor will ensure the proper disposal of street sweepings in accordance with DEEP policies, guidance and regulations. Sweepings shall not be discharged back into the storm drain system and/or surface waters.<br><br>b. The Town of South Windsor will document results of its sweeping program in its annual reports including: a summary of inspection results, curb miles swept, dates of cleaning, volume or mass of material collected, and method(s) of reuse or disposal. The Town of South Windsor will also include documentation of any alternate sweeping plan for rural uncurbed streets and any runoff reduction measures implemented. |
| Measurable Goals: The Town shall continue it's street sweeping program and document inspection results, dates of sweeping, curb miles swept, volume/mass of material collected, and method of reuse or disposal. |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017 |

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| Targeted Completion Date: 7/1/2022 | |
| Has the BMP been completed? Continuing | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Street Sweeping - Year 2017** | |
| Staff Responsible: | |
| Description: The Town's street sweeping program has continued with sweeping of silt, sand, and debris due to erosion, storms, litter, etc. There were 140 miles of roadway swept in 35 days with the Town's sweeper unit. | |
| Evaluation: The Town's street sweeping program will continue despite the elimination of road sanding. This program will still effectively minimize pollutant export to receiving waters. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2018 |
| **BMP Activity - 2. Street Sweeping - Year 2018** | |
| Staff Responsible: | |
| Description: The Town's street sweeping program has continued with sweeping of silt, sand, and debris due to erosion, storms, litter, etc. There were 140 miles of roadway swept in 35 days with the Town's sweeper unit. | |
| Evaluation: The Town's street sweeping program will continue despite the elimination of road sanding. This program will still effectively minimize pollutant export to receiving waters. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 7/1/2019 |
| **BMP Activity - 3. Street Sweeping - Year 2019** | |
| Staff Responsible: | |
| Description: The Town's street sweeping program has continued with sweeping of silt, sand, and debris due to erosion, storms, litter, etc. There were 135 miles of roadway swept with the Town's sweeper unit and 438 C.Y. of material was collected. | |
| Evaluation: The Town's street sweeping program will continue despite the elimination of road sanding. This program will still effectively minimize pollutant export to receiving waters. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2019 | End Date: 7/1/2020 |
| **BMP Activity - 4. Street Sweeping - Year 2020** | |
| Staff Responsible: | |

| | |
|---|---|
| Description: The Town's street sweeping program has continued with sweeping of silt, sand, and debris due to erosion, storms, litter, etc. There were 137 miles of roadway swept with the Town's sweeper unit and 465 C.Y. of material was collected. | |
| Evaluation: The Town's street sweeping program will continue despite the elimination of road sanding. This program will still effectively minimize pollutant export to receiving waters. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2020 | End Date: 7/1/2021 |

| **BMP Name - 6.10 Develop and implement catch basin cleaning program** |
|---|
| Staff Responsible: Public Works / Street Services |
| Description: The Town of South Windsor will conduct routine cleaning of all catch basins and track catch basin inspection observations. Utilizing information compiled through its inventory of catch basins, operational staff and public complaints, The Town of South Windsor will optimize routine cleaning frequencies for particular structures or catchment areas as follows to maintain acceptable sediment removal efficiencies:<br><br>a. Inspect all The Town of South Windsor-owned catch basins within MS4 Priority Areas at least once by June 30, 2020. Catch basins outside the MS4 Priority Areas shall be inspected by June 30, 2022.<br><br>b. Prioritize inspection and maintenance for The Town of South Windsor-owned catch basins located near impaired waters and construction activities (roadway construction, residential, commercial, or industrial development or redevelopment). The Town of South Windsor will clean catch basins in such areas more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings.<br><br>c. Establish a schedule such that the frequency of routine cleaning will ensure that no catch basin at any time will be more than fifty (50) percent full. A catch basin sump is more than 50 percent full if the contents within the sump exceed one half the distance between the bottom interior of the catch basin to the invert of the deepest outlet of the catch basin.<br><br>d. If a catch basin sump is more than fifty (50) percent full during two consecutive routine inspections/cleaning events, The Town of South Windsor will document that finding, investigate the contributing drainage area for sources of excessive sediment loading, and to the maximum extent practicable, abate contributing sources. The Town of South Windsor will describe any actions taken in its Annual Report.<br><br>e. The Town of South Windsor will detail its plan for optimizing catch basin cleaning, inspection plans, and its schedule for gathering information to develop the optimization plan in its first annual report. Documentation shall include metrics and other information used to reach the determination that the established plan for cleaning and maintenance is optimal for the MS4. The Town of South Windsor will keep a log of catch basins cleaned or inspected.<br><br>f. The Town of South Windsor will report in each Annual Report the total number of catch basins, number inspected, number cleaned, the total volume or mass of material removed from all catch |

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| basins and, if practicable, the volume or mass of material removed from each catch basin draining to water quality limited waters. | |
| Measurable Goals: The Town shall continue it's catch basin cleaning program and document the number of structures inspected and/or cleaned, and the volume/mass of material removed. | |
| Implementation Partnership: | |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017 | |
| Targeted Completion Date: 7/1/2022 | |
| Has the BMP been completed? | |
| Specific Comments and Notes: | |
| Attachments: No Attachments Found... | |
| **BMP Activity - 1. Clean Stormwater Structures 2016-2017** | |
| Staff Responsible: | |
| Description: There were a total of 1527 drainage structures cleaned by the Town's Public Works Department or private contractors in fiscal year 2016-2017. There was an estimated total of 135 tons of material removed from those structures. | |
| Evaluation: The elimination of sand used in the treatment of winter snow and ice removal has resulted in less material being deposited in catch basins throughout the town. The Town will continue conducting routine cleaning of catch basins and structures and monitor for excessive sediment loading, in particular, in areas where high erosion may occur. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2018 |
| **BMP Activity - 2. Clean Stormwater Structures 2017-2018** | |
| Staff Responsible: | |
| Description: There were a total of 2181 drainage structures cleaned by the Town's Public Works Department or private contractors in fiscal year 2017-2018. There was an estimated total of 190 tons of material removed from those structures. | |
| Evaluation: The Town will continue conducting routine cleaning of catch basins and structures and monitor for excessive sediment loading, in particular, in areas where high erosion may occur. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2018 | End Date: 7/1/2019 |
| **BMP Activity - 3. Clean Stormwater Structures 2018-2019** | |
| Staff Responsible: | |
| Description: There were a total of 1213 drainage structures cleaned by the Town's Public Works Department or private contractors in fiscal year 2018-2019. There was an estimated total of 121 tons of material removed from those structures. | |
| Evaluation: The Town will continue conducting routine cleaning of catch basins and structures and monitor for excessive sediment loading, in particular, in areas where high erosion may occur. | |

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| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2019 | End Date: 7/1/2020 |
| **BMP Activity - 4. Clean Stormwater Structures 2019-2020** | |
| Staff Responsible: | |
| Description: There were a total of 2138 drainage structures cleaned by the Town's Public Works Department or private contractors in fiscal year 2019-2020. There was an estimated total of 213 tons of material removed from those structures. | |
| Evaluation: The Town will continue conducting routine cleaning of catch basins and structures and monitor for excessive sediment loading, in particular, in areas where high erosion may occur. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2020 | End Date: 7/1/2021 |

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| **BMP Name - 6.11 Develop and implement snow management practices** |
| Staff Responsible: Public Works / Street Services |
| Description: (i) Deicing Material Management<br><br>The Town of South Windsor will develop and implement standard operating practices for the use, handling, storage, application, and disposal of deicing products such as salt and sand to minimize exposure to stormwater; consider means to minimize the use and optimize the application of chloride-based or other salts or deicing product (while maintaining public safety) and consider opportunities for use of alternative materials; for any exterior containers of liquid deicing materials installed after July 1, 2017, The Town of South Windsor will provide secondary containment of at least 110% of the largest container or 10% of the total volume of all containers, whichever is larger, without overflow from the containment area.<br><br>(ii) Snow and Ice Control Practices<br><br>The Town of South Windsor will implement and refine its standard operating practices regarding its snow and ice control to minimize the discharge of sand, anti-icing or de-icing chemicals and other pollutants (while maintaining public safety).<br><br>The Town of South Windsor will establish goals for the optimization of sand and/or chemical application rates through the use, where practicable, of automated application equipment (e.g. zero-velocity spreaders), anti-icing and pre-wetting techniques, implementation of pavement management systems, and alternate chemicals.<br><br>The Town of South Windsor will maintain records of the application of sand, anti-icing and/or de-icing chemicals to document the reduction of chemicals to meet established goals. |

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| The Town of South Windsor will ensure the proper training for deicing applications for municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance.<br><br>The Town of South Windsor will manage and dispose of snow accumulations in accordance with DEEP's Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots, revised 2/4/11 and as amended (see link at: www.ct.gov/deep/stormwater).<br><br>In its Annual Report, The Town of South Windsor will document results of its snow removal program including, at a minimum: the type of staff training conducted on application methods and equipment, type(s) of deicing materials used; lane-miles treated; total amount of each deicing material used; type(s) of deicing equipment used; any changes in deicing practices (and the reasons for the change); and snow disposal methods. |
| Measurable Goals: |
| Implementation Partnership: |
| Implementation Plan and Schedule Comments: Implementation Date - 7/1/2017 |
| Targeted Completion Date: 7/1/2022 |
| Has the BMP been completed? Continuing |
| Specific Comments and Notes: |
| Attachments: No Attachments Found... |
| **BMP Activity - 1. Storage of De-icing Chemicals** |
| Staff Responsible: |
| Description: To prevent road salts from migrating into the surrounding wetlands and watercourse areas at the Town Public Works Facility, a 10,000 sq. ft. enclosed salt storage shed was constructed in 2003. Approximately 4300 cubic yards of material can be stored in the enclosure. The building was also designed to allow mixing of sand and salt within the confines of the building if required. |
| Evaluation: The salt shed has been effective in preventing contamination of surface waters and the migration of salts into the ground water system in the area surrounding the Public Works Facility. |
| Has the activity been completed?: Yes |
| Attachments: No Attachments Found... |
| Start Date: 7/1/2017 | End Date: 7/1/2022 |
| **BMP Activity - 2. Application of anti-icing chemicals** |
| Staff Responsible: |
| Description: Since 2006, salting operations in South Windsor have been modified to eliminate the use of sand mixed with salt, and a anti-icing product called "Clearlane" has been introduced. Clearlane is a enhanced deicer which is more environmentally friendly than traditional road salt, with less impact on watersheds and fewer chlorides being introduced to the environment. Whereas salt tends to bounce off the pavement when applied, Clearlane adheres to the road surface better which translates to fewer applications and less material used.<br><br>South Windsor has also refined its standard operating practices to minimize application rates by utilizing automated application equipment and implementing a pre-treatment anti-icing policy. |

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| Evaluation: South Windsor's current snow management practices have effectively reduced labor and equipment costs, and decreased environmental impact by minimizing exposure to the MS4. | |
| Has the activity been completed?: Yes | |
| Attachments: No Attachments Found... | |
| Start Date: 7/1/2017 | End Date: 7/1/2022 |

# Part II

**South Windsor**
**MS4 Outfall Dry-Weather Tracking Table**
**Updated 9/11/2020**

| | | | Initial Screening | | | Follow-Up Screening | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Benchmark | 0.5 | 0.02 | | | | | 0.25 | 235/410 | |
| Outfall ID | Location | Impaired | Date | Flow (Y/N) | Evidence of Flow (Y/N) | Date | Flow (Y/N) | Sampled | Time Sampled | Flow (gal/min) | Condition (Good/Fair /Poor) | Other Defects | Ammonia (mg/L) | Chlorine (mg/L) | Conductivity (umhos/cm) | Salinity (g/kg) | Turbidity (NTU) | Temp (°C) | MBAs (mg/L) | Total Coliforms | Escherichia Coli | Comments |
| 0030-OT-01 | ABAR LANE | N | 3/2/20 | CNL | | | | | | | | | | | | | | | | | | Same location as 7860-OT-14. Only one visible outfall here. |
| 2250-OT-01 | COMMERCE WAY | N | 2/5/20 | Y | n/a | n/a | n/a | Y | 10:18 | 1 | GOOD | n/a | 0.00 | 0.04 | 687.60 | 0.34 | n/a | 6.50 | 0.25 | 359 | <10 | Some foam and oil sheen where outfall flow meets stream. |
| 2250-OT-02 | COMMERCE WAY | N | 2/5/20 | N | N | n/a | n/a | N | 12:27 | n/a | GOOD | n/a | | | | | | | | | | |
| 2250-OT-04 | COMMERCE WAY | N | 2/5/20 | Y | n/a | n/a | n/a | Y | 12:13 | 10 | GOOD | n/a | 0.00 | 0.00 | 1199.00 | 0.59 | n/a | 3.90 | 0.50 | 1260 | 591 | |
| 3210-OT-01 | FARNHAM ROAD | N | 3/2/20 | N | Y | 3/5/20 | N | N | 9:34 | n/a | GOOD | n/a | | | | | | | | | | |
| 3210-OT-03 | FARNHAM ROAD | N | 3/2/20 | CNL | | | | | | | | | | | | | | | | | | Could not locate. There is a clear path of running water but outfall must be buried. |
| 3830-OT-01 | GREEN LANE | N | 3/2/20 | N | Y | 3/5/20 | Y | Y | 10:34 | 0.1 | GOOD | n/a | 0.25 | 0.04 | 113.30 | 0.05 | n/a | 8.80 | 0.50 | 11100 | <10 | |
| 3900-OT-02 | GRIFFIN ROAD | N | 2/5/20 | N | N | n/a | n/a | N | 13:05 | n/a | GOOD | n/a | | | | | | | | | | |
| 3900-OT-07 | GRIFFIN ROAD | Y | 2/5/20 | Y | n/a | n/a | n/a | Y | 9:07 | 0.25 | GOOD | n/a | 0.00 | 0.15 | 225.70 | 0.11 | n/a | 7.00 | 0.25 | 1400 | 100 | |
| 3900-OT-08 | GRIFFIN ROAD | Y | 2/5/20 | N | N | n/a | n/a | N | 9:20 | n/a | GOOD | n/a | | | | | | | | | | |
| 3900-OT-10 | GRIFFIN ROAD | N | 3/2/20 | N | N | n/a | n/a | N | 10:30 | n/a | FAIR | CLOGGED | | | | | | | | | | Outfall 1/2 way filled with debris. |
| 4260-OT-01 | HIGH TOWER ROAD | N | 2/5/20 | Y | n/a | n/a | n/a | Y | 13:55 | 1 | GOOD | n/a | 0.25 | 0.03 | 390.60 | 0.19 | n/a | 6.30 | 0.25 | 310 | <10 | |
| 5820-OT-01 | MCGRATH ROAD | N | 3/2/20 | N | N | n/a | n/a | N | 9:22 | n/a | GOOD | n/a | | | | | | | | | | |
| 5820-OT-02 | MCGRATH ROAD | N | 3/2/20 | Y | n/a | n/a | n/a | Y | 9:13 | 3 | GOOD | n/a | 0.25 | 0.02 | 325.00 | 0.16 | n/a | 7.00 | 0.50 | 20 | <10 | |
| 7050-OT-01 | PEAR TREE LANE | N | 3/2/20 | Y | n/a | n/a | n/a | Y | 9:50 | 4 | GOOD | n/a | 0.00 | 0.09 | 373.00 | 0.18 | n/a | 7.40 | 0.25 | 4650 | 1600 | |
| 7050-OT-02 | PEAR TREE LANE | N | 3/2/20 | CNL | | | | | | | | | | | | | | | | | | Could not locate. Saw paths of running water but could not see a clear outfall location. Lots of debris in area. |
| 7860-OT-01 | RYE STREET | N | 2/5/20 | CNL | | | | | | | | | | | | | | | | | | Could not locate. Outfall most likely buried. Lots of dead trees/debris in area. |
| 7860-OT-02 | RYE STREET | N | 2/5/20 | N | Y | 3/5/20 | N | N | 10:31 | n/a | FAIR | CLOGGED | | | | | | | | | | Outfall clogged with debris about 1/2 way. Town should clean. |
| 7860-OT-08 | RYE STREET | Y | 2/5/20 | N | Y | 3/5/20 | N | N | 10:41 | n/a | POOR | DAMAGED | | | | | | | | | | At least two separate breaks in pipeline between catch basin and outfall. |
| 7860-OT-14 | RYE STREET | N | 2/5/20 | Y | n/a | n/a | n/a | Y | 11:05 | 1 | POOR | BURIED | 0.25 | 0.00 | 315.80 | 0.15 | n/a | 5.60 | 0.25 | 310 | <10 | Outfall buried under debris but had clear flow to pond. |
| 8100-OT-01 | SCANTIC MEADOW ROAD | N | 2/5/20 | N | Y | 3/5/20 | N | N | 13:27 | n/a | POOR | DAMAGED | | | | | | | | | | Pipeline is visibly disconnected in one area. |
| 8100-OT-02 | SCANTIC MEADOW ROAD | N | 2/5/20 | Y | n/a | n/a | n/a | Y | 13:40 | 3 | GOOD | n/a | 0.00 | 0.04 | 321.70 | 0.15 | n/a | 4.90 | 0.25 | 384 | 63 | |
| 9000-OT-01 | TROY ROAD | Y | 2/5/20 | Y | n/a | n/a | n/a | Y | 11:38 | 3 | GOOD | n/a | 0.25 | 0.00 | 571.40 | 0.28 | n/a | 3.90 | 0.50 | 1220 | 520 | |
| 9330-OT-01 | WENTWORTH DRIVE | N | 2/5/20 | N | N | n/a | n/a | N | 12:43 | n/a | GOOD | n/a | | | | | | | | | | |
| 9330-OT-02 | WENTWORTH DRIVE | N | 2/5/20 | N | N | n/a | n/a | N | 12:53 | n/a | POOR | CLOGGED | | | | | | | | | | Outfall is very clogged with debris. Town should clean. |
| 9570-OT-01 | WINDSORVILLE ROAD | N | 3/2/20 | N | Y | 3/5/20 | N | N | 10:15 | n/a | FAIR | CLOGGED | | | | | | | | | | |
| 9570-OT-02 | WINDSORVILLE ROAD | N | 3/2/20 | N | Y | 3/5/20 | N | N | 10:22 | n/a | FAIR | CLOGGED | | | | | | | | | | Outfall 1/2 way filled with debris. |

**Town of South Windsor**
**MS4 Outfall Wet Weather Sampling Data Table**
**Updated 9/11/2020**

Benchmark 235/410

| General Information | | | | | | Rain Event | | | | Lab Data | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Outfall ID | Sample Status | Condition Status | Condition Level | Upgradient Sample? | Direct Discharge? | Amount (in) | Time Since Previous Rain Event | Date | Time | Total Coliforms col/100mL | E. Coli col/100mL |
| 3900-OT-08 | SAMLPED | FAIR | BURIED | NO | YES | 0.21 | 72 HOURS | 4/24/2020 | 12:20 | 6490 | <10 |
| 3900-OT-07 | SAMPLED | GOOD | GOOD | NO | YES | 0.21 | 72 HOURS | 4/24/2020 | 12:10 | 1920 | <10 |
| 7860-OT-08 | SAMPLED | POOR | DAMAGED | NO | YES | 0.21 | 72 HOURS | 4/24/2020 | 12:00 | 14100 | 327 |
| 9000-OT-01 | SAMPLED | GOOD | GOOD | NO | YES | 0.21 | 72 HOURS | 4/24/2020 | 11:05 | 5480 | 86 |

**South Windsor**
**MS4 Outfall Dry-Weather Tracking Table**
**Updated 9/11/2020**

**Dry Weather Numbers**

| | |
|---|---|
| Number of outfalls | 27 |
| Attempted to screen | 27 |
| Could not located | 4 |
| Follow-ups completed | 7 |
| Total outfalls visited | 34 |
| Samples collected | 10 |
| Outfalls exceeding benchmarks | 9000-OT-01; 2250-OT-04; 7050-OT-01 |
| | Low level exceedances for surfactants |

**Wet Weather Numbers**

| | |
|---|---|
| Number of outfalls | 4 |
| Samples collected | 4 |
| Outfalls exceeding benchmarks | 7860-OT-08 |

# Part III

# Additional IDDE Program Data

The Town of South Windsor is continuing the process of preliminary assessment and priority ranking of each catchment located in the town. A catchment is the area that drains to an individual outfall or interconnection. Catchments are delineated to define contributing areas for investigation of potential sources of illicit discharges. Catchments are typically delineated based on topographic contours and mapped drainage infrastructure. Catchment delineations for the entire town are scheduled to be completed in the current permit term as part of the detailed system mapping that is still ongoing.

The Town will initially use larger-scale watershed boundary mapping provided by CTDEEP to delineate local drainage basins which will be used to support the initial assessment and priority ranking of catchments. Updates to the catchment assessment and priority rankings will be incorporated as test results from outfall and interconnection screening and sampling takes place.

Utilizing the priority rankings for each catchment, the Town will begin monitoring and screening the outfalls that are identified as high priority, or discharge to impaired waterbodies. Sampling of outfalls that drain to impaired waters was started in the Summer of 2019 (the Scantic River & Dry Brook watersheds), and will continue for outfalls that drain to Farm Brook (newly identified impaired waters) in Spring 2021.

The attached charts indicate what data/information will be collected and reported in the Town’s annual reports.

# *Illicit Discharge Detection and Elimination (IDDE) Program*

*for*

## *Town of South Windsor*

*1540 Sullivan Ave*
*South Windsor, CT*

March 2020

Prepared By:

ANCHOR
ENGINEERING SERVICES, INC.

**41 Sequin Drive**
**Glastonbury, CT 06033**
**T: 860.633.8770**
**F: 860.633.5971**

# TABLE OF CONTENTS

## TABLE OF CONTENTS

## TABLES



## FIGURES



## APPENDICES

# 1.0 INTRODUCTION

## 1.1 MS4 Program

The Town of South Windsor has developed an Illicit Discharge Detection and Elimination (IDDE) program to address the requirements of the Connecticut Department of Energy and Environmental Protection (CTDEEP) *General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems*, effective July 1, 2017, hereafter referred to as the "2017 MS4 Permit" or "MS4 Permit."

The MS4 Permit requires that each permittee, or regulated community, address six Minimum Control Measures. These measures include the following:

1. Public Education and Outreach
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development or Redevelopment
6. Pollution Prevention/Good Housekeeping.

Under Minimum Control Measure 3, the permittee is required to implement an IDDE program to provide the legal authority to prohibit and eliminate illicit discharges to the Municipal Separate Storm Sewer System (MS4), find the source of any illicit discharges, eliminate those illicit discharges, and ensure ongoing screening and tracking to prevent and/or eliminate future illicit discharges. The IDDE program must also be recorded in a written (hardcopy or electronic) document and meet the IDDE program requirements specified in the MS4 Permit. This document has been prepared to address this requirement.

## 1.2 Geographic Scope of IDDE Program

The MS4 Permit requires municipalities to implement the IDDE program within the Urbanized Area (based on 2010 U.S. Census) <u>and</u> those catchment areas of the MS4 with either Directly Connected Impervious Area (DCIA) of greater than 11% or which discharge directly to impaired waters (i.e., "priority" areas).

**Appendix B** depicts the urbanized area and other areas outside of the urbanized area that, collectively, may be considered priority areas within the Town of South Windsor.

## 1.3 Illicit Discharges

An "illicit discharge" is any unpermitted discharge to waters of the state that does not consist entirely of stormwater or uncontaminated groundwater except: (1) certain allowable non-stormwater discharges when such non-stormwater discharges are not significant contributors of pollution to a discharge from an identified MS4, or (2) discharges authorized under a separate NPDES permit that authorize a discharge to the MS4.

Illicit discharges may take a variety of forms. Illicit discharges may enter the drainage system through direct or indirect connections. Direct connections may be relatively obvious, such as cross-connections of sanitary sewer services to the storm drain system. Indirect illicit discharges may be more difficult to detect or address, such as failing septic systems that discharge untreated domestic wastewater to a ditch within the MS4, or a sump pump that discharges contaminated water on an intermittent basis.

Some illicit discharges are intentional, such as dumping used oil (or other pollutant) into catch basins, a resident or contractor illegally tapping a new sewer lateral into a storm drain pipe to avoid the costs of a sewer connection fee and service, and illegal dumping of yard wastes into surface waters. Some illicit discharges are related to the unsuitability of original infrastructure to the modern regulatory environment. Examples of illicit discharges in this category include connected floor drains in old buildings, as well as sanitary sewer overflows that enter the drainage system. Sump pumps legally connected to the storm drain system may be used inappropriately, such as for the disposal of floor wash water or old household products, in many cases due to a lack of understanding on the part of the homeowner.

Elimination of some discharges may involve substantial cost and effort, such as disconnecting and reconnecting sanitary sewer laterals or replacing leaking sanitary and/or storm sewer lines. Others, such as improving adherence to proper pet waste management practices through public education and by providing pest waste bags and receptacles, can be accomplished through relatively low-cost efforts.

Regardless of the intention, when not addressed, illicit discharges can be a significant source of pollutants to surface waters, including metals, toxics, oil, grease, solvents, nutrients, and pathogens.

### 1.4 Allowable Non-Stormwater Discharges

The following categories of non-stormwater discharges are allowed under the MS4 Permit provided: (1) the permittee controls such non-stormwater discharges to the Maximum Extent Practicable (MEP), as required by the MS4 Permit; (2) such non-stormwater discharges do not contribute to a violation of water quality standards; and (3) such non-stormwater discharges are documented in the Stormwater Management Plan and are not significant contributors of pollutants to any identified MS4:

- Uncontaminated groundwater discharges including, but not limited to: pumped groundwater, foundation drains, water from crawl space pumps and footing drains
- Irrigation water including, but not limited to: landscape irrigation and lawn watering runoff
- Residual street wash water associated with sweeping
- Discharges or flows from firefighting activities (except training)
- Naturally occurring discharges such as rising groundwaters, uncontaminated groundwater infiltration (as defined at 40 CFR 35.2005(20)), springs, diverted stream flows and flows from riparian habitats and wetlands.

If these discharges are identified as significant contributors to the MS4, they must be considered an "illicit discharge" and addressed by the IDDE program controlling these sources so they are no longer significant contributors of pollutants, and/or eliminate them entirely.

## 1.5 Receiving Waters and Impairments

**Table 1-1** lists the impaired waters within the boundaries of the Town of South Windsor based on the latest version of the State of Connecticut Integrated Water Quality Report produced by CTDEEP every two years. Impaired waters are waterbodies that do not meet water quality standards for one or more designated use(s) such as recreation or aquatic habitat.

**Table 1-1. Impaired Waters**

| Waterbody Name | Segment ID | EPA Category | Impairment and Stormwater Pollutant of Concern | Approved TMDL |
|---|---|---|---|---|
| Connecticut River (Portland/Suffield)-03 | CT4000-00_03 | 4a and 5 | Bacteria<br>Cause: Eschrerichia coli | Yes –<br>CT State Bacteria |
| Dry Brook (South Windsor/East Windsor)-01 | CT4200-28_01 | 5 | Bacteria<br>Cause: Eschrerichia coli | No |
| Scantic River-01 | CT4200-00_01 | 5 | Bacteria<br>Cause: Eschrerichia coli<br>Other Pollutant of Concern<br>Cause: Unknown | No |

Source: State of Connecticut 2016 Integrated Water Quality Report (CTDEEP) and UConn Clear MS4 Data website.
Category 4a Waters – Impaired waters with completed TMDLs
Category 5 Waters – Available data and/or information indicate that one or more designated uses are not being supported and a TMDL is needed.

Connecticut State bacteria (e.coli) TMDLs are as follows: 235col/100mL for designated swimming areas; 410col/100mL for non-designated swimming areas; and, 576 for naturally occurring wildlife sources.

## 1.6 IDDE Program Goals, Framework, and Timeline

The objective of the IDDE program is to systematically find and eliminate sources of non-stormwater discharges which are not permitted or allowed to the MS4 and implement procedures to prevent such discharges. The program consists of the following major components as outlined in the MS4 Permit:

- Legal authority to prohibit illicit discharges and enforce this prohibition
- Program for citizen reporting of illicit discharges
- Stormwater system mapping
- Address Sanitary Sewer Overflow (SSO)
- Assessment and priority ranking of catchments
- Outfall and interconnection screening and sampling
- Catchment investigations
- Identification/confirmation of illicit sources
- Illicit discharge removal
- Follow-up screening
- Employee training

The IDDE investigation protocol framework is shown in **Figure 1-1**. The required timeline for implementing the IDDE program is shown in **Table 1-2.**

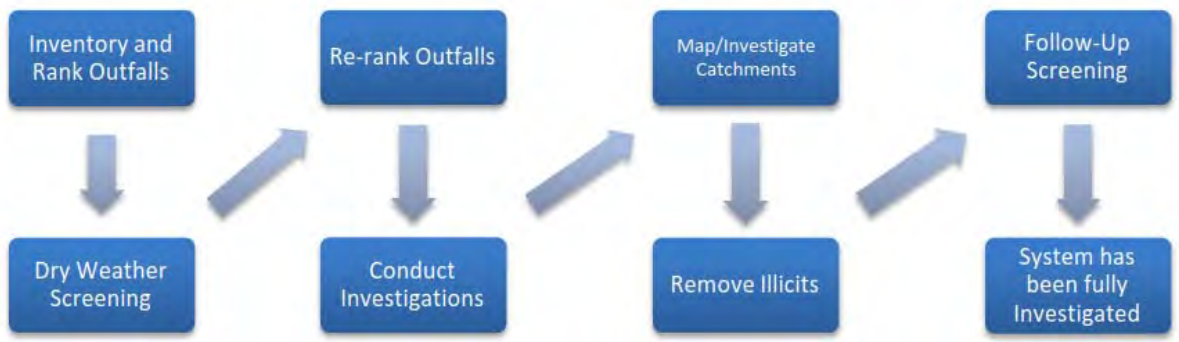


**Figure 1-1. IDDE Investigation Procedure Framework**

**Table 1-2. IDDE Program Implementation Timeline**

| IDDE Program Requirement | Deadline | | | | | |
|---|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 10 |
| SSO Inventory (5-year look back) | **Oct 30, 2017** | | | | | |
| Program for Citizen Reporting | **Effective Date** | | | | | |
| Establish IDDE Legal Authority | **July 1, 2018** | | | | | |
| Written IDDE Program | **July 1, 2018** | | | | | |
| Outfall/Interconnection Inventory | | **July 1, 2019** | | | | |
| Map All Stormwater Outfalls | | **July 1, 2019** | | | | |
| Initial Assessment and Priority Ranking of Catchments (update annually) | | **July 1, 2019** | | | | |
| Complete Detailed Stormwater System Mapping | | | **July 1, 2020** | | | |
| Begin Dry Weather Outfall Screening (high and low priority outfalls) | **July 1, 2018** | | | | | |
| Complete Dry Weather Outfall Screening (high and low priority outfalls) | | | | | **July 1, 2022** | |
| Catchment Investigations – Problem Outfalls (80% and 100% of problem catchments) | | | **July 1, 2020** | | **July 1, 2022** | |
| Catchment Investigations* – all Problem, High and Low Priority Outfalls | | | | | | **July 1, 2027** |

*Catchment investigations should begin within three months of finalization of investigation procedure and no later than 15 months from effective date of permit.

### 1.7 IDDE Program Accomplishments – 2004 MS4 Permit

The 2004 MS4 Permit required MS4 communities to develop a plan to detect illicit discharges using a combination of stormwater system mapping, adopting a regulatory mechanism to prohibit illicit discharges and enforcing this prohibition, and identifying tools and methods to investigate suspected illicit discharges. The Town was also required to define how confirmed discharges would be eliminated and how the removal would be documented.

The Town of South Windsor has completed or implemented the following IDDE program elements consistent with the 2004 MS4 Permit requirements:

- Dry weather outfall screening and sampling
- Wet weather outfall monitoring
- Outfall mapping of outfalls
- Additional stormwater system mapping, including the locations of catch basins, manholes and pipe connectivity
- Sanitary Sewer Overflow (SSO) inventory

## 2.0 AUTHORITY AND RESPONSIBILITIES

### 2.1 Legal Authority

The Town of South Windsor is in the process of getting an ordinance approved entitled: *Illicit Discharge and Connection Stormwater Ordinance* (Illicit Discharge Ordinance). A copy of the Draft ordinance is provided in **Appendix C**. The Illicit Discharge Ordinance will provide the Town of South Windsor with adequate legal authority to:

- Prohibit illicit discharges
- Investigate suspected illicit discharges
- Eliminate illicit discharges, including discharges from properties not owned by or controlled by the MS4 that discharge into the MS4 system
- Implement appropriate enforcement procedures and actions

The Town of South Windsor is currently reviewing the proposed Illicit Discharge Ordinance and related policies for consistency with the MS4 Permit, where necessary.

### 2.2 Statement of Responsibilities

The Town of South Windsor Engineering Department is the lead municipal agency or department responsible for implementing the IDDE Program pursuant to the provisions of the Illicit Discharge Ordinance. Other agencies, departments, or personnel with responsibility for aspects of the program include:

- Engineering Department – Responsible for oversight of the SMP, mapping, development and implementing IDDE Program, investigating illicit discharges, record keeping, maintaining overall compliance with the MS4 Permit.
- Stormwater Committee – Responsible for development and implementing IDDE Program, developing citizen reporting program, coordinating efforts with interconnected MS4s.
- Planning Department – Responsible for reviewing site plans for stormwater quality concerns, conducting site inspections, enforcing land use regulations and LID/runoff reduction regiments.
- Public Works and Parks & Grounds – Responsible for long-term maintenance plans, property and operations maintenance, eliminating illicit discharges, employee training, infrastructure repair/rehab program, attempting to reduce fertilizer and pesticide usage at Town properties.
- Engineering Consultant – Responsible for assisting the Town with development and implementation of the IDDE Program, outfall screening and sampling.
- Sewer Department – Responsible for reporting on SSO's and maintenance/repairs of the town's sanitary sewer infrastructure.
- Health Department – Responsible for reporting on SSO's caused by septic system failures.
- Town Manager – Responsible for administering, implementing and enforcing the provisions of the IDDE ordinance.

## 3.0 CITIZEN REPORTING OF ILLICIT DISCHARGES

The MS4 Permit requires municipalities to develop a program for citizen reporting of illicit discharges. The Town of South Windsor has established a system to allow for citizen reporting. The reporting system is described on the Town of South Windsor website and in municipal offices and consists of an online and mobile tool called "Connect South Windsor" in which residents can report an issue by selecting from a drop down list.

The Town of South Windsor will investigate and work to eliminate any illicit discharges reported by citizens or organizations, provided such a report incorporates at least a time and location of an observed discharge. The Town will conduct an inspection of the reported outfalls, manholes or other sites promptly after receiving such a report. The Town will incorporate the reported outfalls into the IDDE program. Citizen reports and the responses to those reports will be included in each Annual Report.

## 4.0 MAPPING

The Town of South Windsor originally developed mapping of its stormwater system to meet the mapping requirements of the 2004 MS4 Permit. The completed elements include GIS mapping showing the outfall locations.

A copy of the 2004 MS4 stormwater system permit map is provided in **Appendix D.**

The 2017 MS4 Permit requires a revised and more detailed stormwater system map than was required by the 2004 MS4 Permit. The Town is responsible for updating the stormwater system mapping

pursuant to the MS4 Permit and will report on the progress towards completion of the stormwater system mapping in each Annual Report. Updates to the stormwater system mapping will be included in **Appendix D**.

### 4.1 Outfall and Interconnection Inventory and Mapping

The Town of South Windsor will continue to develop an inventory and mapping at a minimum scale of 1" = 2000' and a maximum scale of 1" = 100' showing all stormwater outfalls located within and owned or operated by the Town and all interconnections with other MS4s.

The inventory and mapping requirements include the following information for each outfall and interconnection:

- Unique identifier
- Type, material, size (e.g., 24-inch concrete pipe)
- Spatial location (latitude and longitude with a minimum accuracy of +/-30 feet)
- Name, waterbody ID and Surface Water Quality Classification of the immediate surface waterbody or wetland to which the stormwater runoff discharges
- If the outfall does not discharge directly to a named waterbody, the name and waterbody ID of the nearest named waterbody to which the outfall eventually discharges
- Name of the watershed, including sub-regional drainage basin number, in which the discharge is located
- Date of most recent inspection
- Physical condition
- Indicators of potential non-stormwater discharges (including presence or evidence of suspect flow and sensory observations such as odor, color, turbidity, floatables, or oil sheen) as of the most recent inspection.

The Town is attempting to have the outfall inventory and mapping substantially completed within two years of the permit effective date (July 1, 2019) to remain in compliance with the MS4 permit.

The inventory and mapping will be updated annually to include data collected in connection with dry weather screening and other relevant inspections. An update on the progress of the outfall inventory and mapping will be provided in each Annual Report.

### 4.2 Detailed Stormwater System Mapping

A detailed stormwater system map will be developed for, at a minimum, the portions of the municipality within "priority" areas. The detailed mapping is intended to facilitate the identification of key infrastructure, factors influencing proper system operation, and the potential for illicit discharges.

The required scale and detail of the map will be appropriate to facilitate a rapid understanding of the system by the municipality and CTDEEP. The mapping will also serve as a planning tool for the implementation and phasing of the IDDE program and demonstration of the extent of complete and

planned investigations and corrections. The mapping will be updated, as necessary, to reflect newly discovered information and required corrections or modifications.

The following mapping elements are required:

- Outfalls and receiving waters
- Pipes, catch basins, and/or manholes
- Open channel conveyances (swales, ditches, etc.)
- Interconnections with other MS4s and other storm sewer systems
- Municipally owned stormwater treatment structures (e.g., detention and retention basins, infiltration systems, bioretention areas, water quality swales, gross particle separators, oil/water separators, or other proprietary systems)
- Catchment delineations for use in priority rankings, or prioritizing BMP retrofits
- Waterbodies identified by name and indication of all use impairments as identified on the most recent State of Connecticut Integrated Water Quality Report

The following mapping elements are required, where available:

- Municipal Sanitary Sewer System (if available)
- Municipal Combined Sewer System (if applicable)

The following mapping elements are recommended:

- Storm sewer material, size (pipe diameter), age
- Sanitary sewer system material, size (pipe diameter), age
- Where a municipal sanitary sewer system exists, properties known or suspected to be served by a septic system, especially in high density urban areas
- Area where the permittee's MS4 has received or could receive flow from septic system discharges
- Seasonal high water table elevations impacting sanitary alignments
- Topography
- Orthophotography
- Alignments, dates and representation of work completed of past illicit discharge investigations
- Locations of suspected, confirmed and corrected illicit discharges with dates and flow estimates

The Town will attempt to substantially complete the detailed stormwater system mapping within three years of the effective date of the permit (July 1, 2020) to maintain compliance with the MS4 Permit.

## 5.0 SANITARY SEWER OVERFLOW INVENTORY

The 2017 MS4 Permit requires municipalities to prohibit illicit discharges, including sanitary sewer overflows (SSOs), to the MS4. SSOs are discharges of untreated sanitary wastewater from a municipal sanitary sewer that can contaminate surface waters, cause water quality problems and property damage, and threaten public health. SSOs can be caused by blockages, line breaks, sewer defects that allow

stormwater and groundwater to overload the system, power failures, improper sewer design, and vandalism.

Based on a review of available records, no SSOs resulting in discharge to the MS4 have occurred in the Town of South Windsor in the five years prior to the effective date of the MS4 Permit (July 1, 2012 – December 31, 2018).

Upon detection of an SSO, the Town of South Windsor will eliminate it as expeditiously as possible and take interim measures to minimize the discharge of pollutants to and from its MS4 until the SSO is eliminated. Upon becoming aware of an SSO to the MS4, the Town will provide written notice to CTDEEP within five days of becoming aware of the SSO occurrence.

The inventory in **Table 5-1** is updated by the Town of South Windsor when new SSOs are detected. The SSO inventory will be included in each Annual Report, including the status of mitigation and corrective measures to address each identified SSO.

**Table 5-1. SSO Inventory**

| SSO Location[1] | Discharge Point[2] | Date/Duration[3] | Estimated Volume[4] | Description[5] | Mitigation Completed[6] | Mitigation Planned[7] |
|---|---|---|---|---|---|---|
| 1141 Strong Road, South Windsor, CT | n/a | 8/25/2019 8:00-8/26/2019 12:00 | Undetermined | Sewer line blockage in sewer main | Yes 8/25/2019 12:00 | |
| 450 Clark Street, South Windsor, CT | n/a | 3/11/2019 12:30-3/11/2019 15:00 | 1,500 Gallons | Sewer line blockage at pump station | Yes 3/11/2019 15:00 | |
| 970 Ellington Road, South Windsor, CT | n/a | 11/25/2019 15:45-11/25/2019 17:49 | 1,001-5,000 Gallons | Sewer line blockage in sewer main | Yes 11/25/2019 17:49 | |
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[1] Location (approximate street crossing/address and receiving water, if any)
[2] Discharge entered a surface water directly or entered the MS4
[3] Date(s) and time(s) of each known SSO occurrence (i.e., beginning and end of any known discharge)
[4] Estimated volume(s) of the SSO occurrence
[5] Description of the occurrence indicating known or suspected cause(s)
[6] Mitigation and corrective measures completed with dates implemented
[7] Mitigation and corrective measures planned with implementation schedules

# 6.0 CATCHMENT ASSESMENT AND PRIORITY RANKING

The MS4 Permit requires an assessment and priority ranking of catchments in terms of their potential to have illicit discharges and SSOs and the related public health significance. The ranking will determine the priority order for screening of outfalls and interconnections, catchment investigations for evidence of illicit discharges, and provides the basis for determining permit milestones.

## 6.1 Catchment Delineations

A catchment is the area that drains to an individual outfall or interconnection. Catchments will be delineated to define contributing areas for investigation of potential sources of illicit discharges. Catchments are typically delineated based on topographic contours and mapped drainage infrastructure, where available. As indicated in **Section 4.2**, catchment delineations will be completed as part of the detailed system mapping.

Larger-scale watershed boundaries available from CTDEEP or local watershed organizations, such as CTDEEP Local Basin boundaries, may be used instead of individual outfall catchment areas to support the initial assessment and priority ranking of catchments. Required updates to the catchment assessment and priority ranking will incorporate refined catchment details as they become available.

## 6.2 Assessment and Priority Ranking of Catchments

The Town of South Windsor and their designated consultant is currently completing an initial illicit discharge potential assessment and priority ranking of catchments based on existing information, including the outfall and interconnection inventory and mapping.

The Town will attempt to complete the initial assessment and priority ranks within two (2) years from the effective date of the permit (by July 1, 2019) to maintain compliance with the MS4 permit.

An updated assessment and priority ranking will be provided in each Annual Report thereafter, including a listing of all catchments and the results of the ranking for each catchment. The assessment and priority ranking will be updated annually based on catchment delineations, the results of dry weather screening, and other relevant information.

Catchments associated with outfalls and interconnections will be classified into one of the following categories:

1. **Excluded Catchments**: Catchments with no potential for illicit discharges. This category is limited to:
    - Roadway drainage in undeveloped areas with no dwellings and no sanitary sewers
    - Drainage for athletic fields, parks or undeveloped green space and associated parking without services
    - Cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.

2. **Problem Catchments**: Catchments with known or suspected contributions of illicit discharges based on existing information. This category includes any catchments where previous outfall/interconnection screening indicates likely sewer input. Likely sewer input indicators are any of the following:
    - 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.

Screening and sampling is not required for Problem Catchments. Problem Catchments must be scheduled for catchment investigation. Following the initial ranking of catchments, subsequent rankings shall not add any catchments to the Problem Catchment category.

3. **High Priority Catchments**: Catchments that have not been classified as Problem Catchments and that are:
    - Discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds
    - Determined by the permittee as high priority based on outfall/interconnection screening and catchment characteristics assessment

Any catchment where outfall/interconnection screening indicates likely sewer input as described under Item 1, Problem Catchments, shall be ranked at the top of the High Priority Catchments category and scheduled for catchment investigation.

4. **Low Priority Catchments**: Catchments determined by the permittee as low priority based on outfall/interconnection screening (see **Section 7**) and catchment characteristics assessment (see below).

Catchments will be ranked into the above priority categories (<u>except for excluded catchments, which may be excluded from the IDDE Program</u>) based on the following characteristics of the defined initial catchment areas, where information is available. Additional relevant characteristics, including location-specific characteristics, may be considered but must be documented in the IDDE Program.

- **Previous screening results** – previous screening/sampling results indicate likely sewer input (see criteria above for Problem Catchments).
- **Past discharge complaints and reports.**
- **Poor dry weather receiving water quality** – the following guidelines are recommended to identify waters as having a high illicit discharge potential:
    - Exceeding water quality standards for bacteria
    - Ammonia levels above 0.5 mg/l
    - Surfactants levels greater than or equal to 0.25 mg/l.
- **Density of generating sites** – Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could

contribute to illicit discharges. Examples of these sites include, but are not limited to, car dealers; car washes; gas stations; garden centers; and industrial manufacturing areas.

- **Age of development and infrastructure** – Industrial areas greater than 40 years old and areas where the sanitary sewer system is more than 40 years old will probably have a high illicit discharge potential. Developments 20 years or younger will probably have a low illicit discharge potential.
- **Sewer conversion** – Contributing catchment areas that were once serviced by septic systems, but have been converted to sewer connections may have a high illicit discharge potential.
- **Historic combined sewer systems** – Contributing catchment areas that were once serviced by a combined sewer system, but have been separated may have a high illicit discharge potential.
- **Surrounding density of aging septic systems** – Septic systems thirty years or older in residential land use areas are prone to have failures and may have a high illicit discharge potential.
- **Culverted streams** – Any river or stream that is culverted for distances greater than a simple roadway crossing may have a high illicit discharge potential.
- **Waterbodies** that receive a discharge from the MS4 and are drinking water supplies, shell fishing areas, beaches or waters used for contact recreation.
- **Impaired waterbodies** that receive a discharge from the MS4 or waters with approved TMDLs applicable to the permittee, where illicit discharges have the potential to contain the pollutant identified as the cause of the water quality impairment.

**Table 6-1** is a catchment assessment and priority ranking matrix that is used to document the catchment assessment and priority ranking process.

**Table 6-1 Catchment Assessment and Priority Ranking Matrix**

| Catchment ID | Receiving Water | Wet Sampling Results Indicate Likely Illicit Discharge? [1] | Dry Screening Results Indicate Likely Illicit Discharge? [1a] | 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 | Score | Priority Ranking |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Information Source | | Catchment inspections and sample results | Catchment inspections and sample results | GIS Maps | Municipal Staff | Impaired Waters List | Land Use/GIS Maps, Aerial Photography | Land Use Information, Visual Observation | Municipal Staff, GIS Maps | Land Use, Municipal Staff | GIS and Stormwater system Maps | Other | | |
| Scoring Criteria (Yes = Problem) | | Yes = 3<br>No = 0 | Yes = 3<br>No = 0 | Yes = 3<br>No = 0 | Frequent = 3<br>Occasional = 2<br>None = 0 | Poor = 3<br>Fair = 2<br>Good = 0 | High = 3<br>Medium = 2<br>Low = 1 | High = 3<br>Medium = 2<br>Low = 1 | Yes = 3<br>No = 0 | Yes = 3<br>No = 0 | Yes = 3<br>No = 0 | TBD | | |
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See below for Scoring Criteria.

**Table 6-1 Scoring Criteria:**

[1] Previous wet weather screening results indicate impacts to impaired waters including:

- Total Nitrogen >2.5 mg/L, Total Phosphorous >0.3 mg/L
- E. Coli >235 col/100 ml for swimming areas and >410 col/100 ml for all others
- Total Coliform >500 col/100 ml, or Fecal coliform >31 col/100ml for Class SA and >260 Col/100ml for Class SB
- Enterococci >104 col/100ml for swimming areas and >500 col/100ml for all others
- Turbidity at outfall is more than 5 NTU greater than the in-stream sample

[1a] 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.

# 7.0 OUTFALL AND INTERCONNECTION SCREENING AND SAMPLING

The 2017 MS4 Permit requires screening and sampling of outfalls and interconnections from the MS4 in dry and wet weather for evidence of illicit discharges and SSOs, including:

- Baseline outfall and interconnection screening (dry weather)
- Confirmatory screenings (dry and/or wet weather depending on catchment characteristics)
- Follow-up screening (dry and/or wet weather depending on catchment characteristics).

The Town of South Windsor and/or their designated consultant is responsible for conducting dry and wet weather outfall and interconnection screening and sampling.

## 7.1 Dry and Wet Weather Rainfall Criteria

For the purposes of outfall screening and sampling, dry and wet weather conditions are defined as follows:

- **Dry Weather** – dry weather screening and sampling shall proceed when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period.

- **Wet Weather** – wet weather screening and sampling shall occur during or after a storm event of sufficient depth or intensity to produce a stormwater discharge at the outfall. There is no specific rainfall amount that will trigger sampling, although minimum storm event intensities that are likely to trigger sanitary sewer interconnections are preferred. Sampling during the initial period of discharge ("first flush") will be avoided. To the extent feasible, sampling should occur during the spring (March through June) when groundwater levels are relatively high.

*Note that wet weather criteria for impaired waters outfall monitoring pursuant to Section 6(i) of the MS4 Permit are different than the above wet weather criteria for outfall screening and sampling.*

For the purposes of determine dry and wet weather conditions, precipitation data from KBDL Bradley International Airport Weather Station will be used. If KBDL Bradley International Airport Weather Station is not available or not reporting current weather data, then KCTSOUTH238 Wood Pond Road Weather Station will be used as a back-up.

The remainder of this section is focused on dry weather screening and sampling. Wet weather screening and sampling is discussed further in the context of catchment investigations, including confirmatory and follow-up screening in **Section 8**.

## 7.2 Dry Weather Screening/Sampling

Dry weather flow is a common indicator of potential illicit connections. The 2017 MS4 Permit requires all outfalls/interconnections (excluding Problem and Excluded Catchments) to be screened (i.e., visually inspected) for the presence of dry weather flow. Dry weather outfall screening and sampling may take place when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period.

### 7.2.1 General Procedure

The dry weather outfall screening and sampling procedure consists of the following general steps:

1. Identify outfall(s) to be screened/sampled based on outfall inventory and initial catchment priority ranking.
2. Acquire the necessary staff, mapping, and field equipment (see **Table 7-1** for a list of potential field equipment).
3. Conduct the outfall inspection during dry weather:
    a. Mark and photograph the outfall.
    b. Record the inspection information and outfall characteristics (using paper forms or digital form using a tablet or similar device) (see form in **Appendix E**).
    c. Look for and record visual/olfactory evidence of pollutants in flowing outfalls including odor, color, turbidity, and floatable matter (suds, bubbles, excrement, toilet paper or sanitary products). Also, observe outfalls for deposits and stains, vegetation, and damage to outfall structures.
4. If an outfall is inaccessible or submerged, proceed to the first accessible upstream manhole or structure for the observation and sampling and report the location with the screening results. If an interconnection is inaccessible or submerged, perform screening at the first accessible location within the permittee's system upgradient of the interconnection.
5. If flow is observed, sample and test the flow following the procedures described in the following sections.
6. If no flow is observed, but evidence of an illicit discharges exists (illicit discharges are often intermittent or transitory), revisit the outfall during dry weather within one week of the initial observation, if practicable, to perform a second dry weather screening and sample any observed flow. Other techniques can be used to detect intermittent or transitory flows including conducting inspections during evenings or weekends and using optical brighteners.
7. Input results from screening and sampling into a spreadsheet/database. Include pertinent information in the outfall/interconnection inventory and priority ranking.
8. Include all screening data in each Annual Report.

### 7.2.2 Field Equipment

**Table 7-1** lists field equipment commonly used for dry weather outfall screening and sampling.

## Table 7-1 Field Equipment – Dry Weather Outfall Screening and Sampling

| Equipment | Use/Notes |
|---|---|
| Clipboard | For organization of field sheets and writing surface |
| Field Sheets | Field sheets for both dry weather screening and sampling should be available with extras |
| Chain of Custody Forms | To ensure proper handling of all samples |
| Pens/Pencils/Permanent Markers | For proper labeling |
| Nitrile Gloves | To protect the sampler as well as the sample from contamination |
| Flashlight/headlamp w/batteries | For looking in outfalls or manholes, helpful in early mornings as well |
| Cooler with Ice | For transporting samples to the laboratory |
| Digital Camera | For documenting field conditions at time of inspection |
| Personal Protective Equipment (PPE) | Reflective vest, Safety glasses and boots at a minimum |
| GPS Receiver | For taking spatial location data |
| Water Quality Sonde | If needed, for sampling conductivity, temperature, pH |
| Water Quality Meter | Hand held meter, if available, for testing for various water quality parameters such as ammonia, surfactants and chlorine |
| Test Kits | Have extra kits on hand to sample more outfalls than are anticipated to be screened in a single day |
| Label Tape | For labeling sample containers |
| Sample Containers | Make sure all sample containers are clean.<br>Keep extra sample containers on hand at all times.<br>Make sure there are proper sample containers for what is being sampled for (i.e., bacteria requires sterile containers). |
| Pry Bar or Pick | For opening catch basins and manholes when necessary |
| Sandbags | For damming low flows in order to take samples |
| Small Mallet or Hammer | Helping to free stuck manhole and catch basin covers |
| Utility Knife | Multiple uses |
| Measuring Tape | Measuring pipe sizes distances and depth of flow |
| Safety Cones | Safety |
| Hand Sanitizer | Disinfectant/decontaminant |
| Zip Ties/Duct Tape | For making field repairs |
| Rubber Boots/Waders | For accessing shallow streams/areas |
| Sampling Pole/Dipper/Sampling Cage | For accessing hard to reach outfalls and manholes |
| Machete | For cleaning and clearing the outfalls |
| Flagging | Creates visibility for future site assessments on an outfall |
| Safety Vest | Ensure that one is visible in the woods and on the roads |
| Letter from Municipality | Gives the homeowners understanding of the project and assurance that this is really coming from the town |
| Cell Phone | Gives the ability to ask questions as well as emergency use |
| Business Cards | Identifies the inspector to whomever asks |
| Tester Bottles | Allows the inspector to bring water samples back to the truck for testing |

### 7.2.3 Sample Collection and Analysis

If flow is present during a dry weather outfall inspection, a sample will be collected and analyzed for the required permit parameters[1] listed in **Table 7-2**. The general procedure for collection of outfall samples is as follows:

1. Fill out all sample information on sample bottles and field sheets (see **Appendix E** for Sample Labels and Field Sheets)
2. Put on protective gloves (nitrile/latex/other) before sampling
3. Collect sample with dipper or directly in sample containers. If possible, collect water from the flow directly in the sample bottle. Be careful not to disturb sediments.
4. If using a dipper or other device, triple rinse the device with distilled water and then in water to be sampled (not for bacteria sampling)
5. Use test strips, test kits, and field meters (rinse similar to dipper) for most parameters (see **Table 7-2**)
6. Place laboratory samples on ice for analysis of bacteria, nitrogen, and phosphorous
7. Fill out chain-of-custody form (**Appendix E**) for laboratory samples
8. Deliver samples to the laboratory
9. Dispose of used test strips and test kit ampules properly
10. Decontaminate all testing personnel and equipment

Field test kits or field instrumentation are permitted for all parameters with the exception of indicator bacteria. Field kits need to have appropriate detection limits and ranges. **Table 7-2** lists various field test kits and field instruments that can be used for outfall sampling associated with the 2017 MS4 Permit parameters, other than indicator bacteria.

[1] Other potentially useful parameters, although not required by the MS4 Permit, include **fluoride** (indicator of potable water sources in areas where water supplies are fluoridated), **potassium** (high levels may indicate the presence of sanitary wastewater), and **optical brighteners** (indicative of laundry detergents).

**Table 7-2 Outfall Screening Sampling Parameters and Analysis Methods**

| Analyte or Parameter | Instrumentation (Portable Meter) | Field Test Kit |
|---|---|---|
| Ammonia | CHEMetrics™ V-2000 Colorimeter<br>Hach™ DR/890 Colorimeter<br>Hach™ Pocket Colorimeter™ II | CHEMetrics™ K-1410<br>CHEMetrics™ K-1510 (series)<br>Hach™ NI-SA<br>Hach N1-8<br>Hach™ Ammonia Test Strips |
| Surfactants (Detergents) | CHEMetrics™ I-2017 | CHEMetrics™ K-9400 and K-9404<br>Hach™ DE-2 |
| Chlorine | CHEMetrics™ V-2000, K-2513<br>Hach™ Pocket Colorimeter™ II | Hach CN-66F |
| Conductivity | CHEMetrics™ I-1200<br>YSI Pro30<br>YSI EC300A<br>Oakton 450 | N/A |
| Temperature | YSI Pro30<br>YSI EC300A<br>Oakton 450 | N/A |
| Salinity | YSI Pro30<br>YSI EC300A<br>Oakton 450 | N/A |
| Indicator Bacteria: *E. coli* (freshwater) or Enterococcus (saline water) | EPA certified laboratory procedure (40 CFR § 136) | N/A |
| Pollutants of Concern[1] | EPA certified laboratory procedure (40 CFR § 136) | N/A |

[1] Where the discharge is directly into a water quality limited water or a water subject to an approved TMDL, the sample must be analyzed for the pollutant(s) of concern identified as the cause of the water quality impairment.

Testing for indicator bacteria and any pollutants of concern must be conducted using analytical methods and procedures found in 40 CFR § 136.[2] Samples for laboratory analysis must also be stored and preserved in accordance with procedures found in 40 CFR § 136. **Table 7-3** lists analytical methods, detection limits, hold times, and preservatives for laboratory analysis of dry weather sampling parameters.

[2] 40 CFR § 136: http://www.ecfr.gov/cgi-bin/text-idx?SID=b3b41fdea0b7b0b8cd6c4304d86271b7&mc=true&node=pt40.25.136&rgn=div5

**Table 7-3 Required Analytical Methods, Detection Limits, Hold Times, and Preservatives**

| Analyte or Parameter | Analytical Method | Detection Limit | Max. Hold Time | Preservative |
|---|---|---|---|---|
| Ammonia | **EPA**: 350.2, **SM**: 4500-NH3C | 0.05 mg/L | 28 days | Cool ≤6°C, $H_2SO_4$ to pH <2, No preservative required if analyzed immediately |
| Surfactants | **SM**: 5540-C | 0.01 mg/L | 48 hours | Cool ≤6°C |
| Chlorine | **SM**: 4500-Cl G | 0.02 mg/L | Analyze within 15 minutes | None Required |
| Temperature | **SM**: 2550B | *NA* | Immediate | None Required |
| Specific Conductance | **EPA**: 120.1, **SM**: 2510B | 0.2 µs/cm | 28 days | Cool ≤6°C |
| Salinity | **SM**: 2520 | - | 28 days | Cool ≤6°C |
| Indicator Bacteria:<br>*E.coli (freshwater)*<br>*Enterococcus (saltwater)* | *E.coli*<br>**EPA**: 1603<br>**SM**: 9221B, 9221F , 9223 B<br>**Other**: Colilert ®, Colilert-18®<br>*Enterococcus*<br>**EPA**: 1600<br>**SM**: 9230 C<br>**Other**: Enterolert® | *E.coli*<br>**EPA**: 1 cfu/100mL<br>**SM**: 2 MPN/100mL<br>**Other**: 1 MPN/100mL<br>*Enterococcus*<br>**EPA**: 1 cfu/100mL<br>**SM**: 1 MPN/100mL<br>**Other**: 1 MPN/100mL | 6 hours | Cool ≤6°C, 0.0008% $Na_2S_2O_3$ (sodium thiosulfate) |
| Polychlorinated Biphenyls (PCBs) | | | | |

EPA = EPA Methods SM = Standard Methods

## 7.3 Interpreting Outfall Sampling Results

Outfall analytical data can be used to help identify the major type or source of discharge. **Table 7-4** shows values identified by the U.S. EPA and the Center for Watershed Protection as typical screening values for select parameters. These represent the typical concentration (or value) of each parameter expected to be found in stormwater. Screening values that exceed these benchmarks may be indicative of pollution and/or illicit discharges.

**Table 7-4 Benchmark Field Measurements for Select Parameters**

| Analyte or Parameter | Benchmark |
|---|---|
| Ammonia | >0.5 mg/L |
| Conductivity | >2,000 µS/cm |
| Surfactants | >0.25 mg/L |
| Chlorine | >0.02 mg/L<br>(detectable levels per the 2017 MS4 Permit) |
| Indicator Bacteria<br>*E.coli (freshwater)*<br><br><br><br><br><br><br><br>*Enterococcus (saltwater)* | *E.coli*: the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 126 colonies per 100 ml and no single sample taken during the bathing season shall exceed 235 colonies per 100 ml for designated swimming areas, 410 colonies per 100 ml for non-designated swimming areas, and 576 colonies per 100 ml for all other uses.<br><br>*Enterococcus:* the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 35 colonies per 100 ml and no single sample taken during the bathing season shall exceed 104 colonies per 100 ml for designated swimming areas and 500 colonies per 100 ml for all other uses. |

Catchments are considered highly likely to contain illicit discharges from sanitary sources when either of the following combinations of sampling results is detected:

- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, <u>and</u> bacteria levels greater than the water quality criteria applicable to the receiving water, <u>or</u>
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, <u>and</u> detectable levels of chlorine.

Catchments with outfall screening results that meet the above criteria shall be ranked at the top of the High Priority Catchments category for investigation.

# 8.0 CATCHMENT INVESTIGATIONS

Once stormwater outfalls with evidence of illicit discharges have been identified, various methods can be used to investigate the source of the potential discharge within the outfall catchment area. Common catchment investigation techniques include, but are not limited to:

- Review of maps, historic plans, and records
- Manhole inspection
- Dry and wet weather sampling
- Video inspection
- Dye testing
- Smoke testing

This section outlines a systematic procedure to investigate outfall catchments and identify the source(s) of potential illicit discharges. Information and data collected as part of the catchment investigations will be reported in each Annual Report.

## 8.1 System Vulnerability Factors

The Town and/or their designated consultant will review relevant mapping and historic plans and records to identify areas within the catchment with higher potential for illicit connections. The following information will be reviewed:

- Plans related to the construction of the drainage network
- Prior work on the storm drains
- Health Department or other municipal data on septic system failures or required upgrades
- Records related to septic system breakouts, SSOs, and sanitary sewer surcharges

Based on the review of this information, the presence of any of the following System Vulnerability Factors (SVFs) will be identified for each catchment. SVFs indicate a risk of sanitary or septic system inputs to the MS4 under wet weather conditions. The Town will identify and record the presence of any of the following SVFs:

- History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.
- Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.
- Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.
- Common or twin-invert manholes serving storm and sanitary sewer alignments.
- Common trench construction serving both storm and sanitary sewer alignments.
- Crossings of storm and sanitary sewer alignments.

- Sanitary sewer alignments known or suspected to have been constructed with an underdrain system.
- Areas formerly served by combined sewer systems.
- 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.
- Areas formerly served by combined sewer systems.
- Any storm drain infrastructure greater than 40 years old in medium and densely developed areas.
- 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).
- History of multiple health department 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).

An SVF inventory will be documented for each catchment (see **Table 8-1**), retained as part of this written IDDE program, and updates will be included in each Annual Report.

## Table 8-1 Outfall Catchment System Vulnerability Factor (SVF) Inventory

| Catchment ID | Receiving Water | 1 History of SSOs | 2 Common or Twin Invert Manholes | 3 Common Trench Construction | 4 Storm/Sanitary Crossings (Sanitary Above) | 5 Sanitary Lines with Underdrains | 6 Inadequate Sanitary Level of Service | 7 Areas Formerly Served by Combined Sewers | 8 Sanitary Infrastructure Defects | 9 SSO Potential In Event of System Failures | 10 Sanitary and Storm Drain Infrastructure >40 years Old | 11 Septic with Poor Soils or Water Table Separation | 12 History of BOH Actions Addressing Septic Failure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Catchment 1 | XYZ River | Yes/No | Yes/No | Yes/No | Yes/No | Yes/No | Yes/No | Yes/No | Yes/No | Yes/No | Yes/No | Yes/No | Yes/No |
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**Presence/Absence Evaluation Criteria:**

1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages
2. Common or twin-invert manholes serving storm and sanitary sewer alignments
3. Common trench construction serving both storm and sanitary sewer alignments
4. Crossings of storm and sanitary sewer alignments where the sanitary system is shallower than the storm drain system
5. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system
6. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints
7. Areas formerly served by combined sewer systems
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. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs
10. Any sanitary sewer and storm drain infrastructure greater than 40 years old
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 health department 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)

## 8.2 Dry Weather Investigation (Manhole Inspections)

The Town of South Windsor will implement dry weather storm drain network investigations that involves systematically and progressively observing, sampling and evaluating key junction manholes in the MS4 to determine the approximate location of suspected illicit discharges.

The Town of South Windsor Public Works Department and/or their designated consultant will be responsible for implementing the dry weather manhole inspection program and making updates as necessary. Infrastructure information will be incorporated into the stormwater system map, and catchment delineations will be refined based on the field investigation, where necessary. The SVF inventory will also be updated based on information obtained during the field investigations, where necessary.

Several important terms related to the dry weather manhole inspection program are defined by the MS4 Permit as follows:

- **Junction Manhole** is a manhole or structure with two or more inlets accepting flow from two or more MS4 alignments. Manholes with inlets solely from private storm drains, individual catch basins, or both are not considered junction manholes for these purposes.

- **Key Junction Manholes** are those junction manholes that can represent one or more junction manholes without compromising adequate implementation of the illicit discharge program. Adequate implementation of the illicit discharge program would not be compromised if the exclusion of a particular junction manhole as a key junction manhole would not affect the towns ability to determine the possible presence of an upstream illicit discharge. The town may exclude a junction manhole located upstream from another located in the immediate vicinity or that is serving a drainage alignment with no potential for illicit connections.

For all catchments identified for investigation, during dry weather, field crews will systematically inspect **key junction manholes** for evidence of illicit discharges and confirm or identify potential System Vulnerability Factors. This program involves progressive inspection and sampling at manholes in the storm drain network to isolate and eliminate illicit discharges.

The manhole inspection methodology will be conducted in one of two ways (or a combination of both):

- By working progressively up from the outfall and inspecting key junction manholes along the way, or
- By working progressively down from the upper parts of the catchment toward the outfall and inspecting key junction manholes along the way.

For most catchments, manhole inspections will proceed from the outfall moving up into the system. However, the decision to move up or down the system depends on the nature of the drainage system and the surrounding land use and the availability of information on the catchment and drainage system. Moving up the system can begin immediately when an illicit discharge is detected at an outfall, and only

a map of the storm drain system is required. Moving down the system requires more advance preparation and reliable drainage system information on the upstream segments of the storm drain system, but may be more efficient if the sources of illicit discharges are believed to be located in the upstream portions of the catchment area. Once a manhole inspection methodology has been selected, investigations will continue systematically through the catchment until the source of the illicit discharge is identified.

Inspection of key junction manholes will proceed as follows:

1. Manholes will be opened and inspected for visual and olfactory evidence of illicit connections. A sample field inspection form is provided in **Appendix E**.
2. If flow is observed, a sample will be collected and analyzed at a minimum for ammonia, chlorine, and surfactants. Field kits can be used for these analyses. Sampling and analysis will be in accordance with procedures outlined in **Section 7**. Additional indicator sampling may assist in determining potential sources.
3. Where sampling results or visual or olfactory evidence indicate potential illicit discharges, the area draining to the junction manhole will be flagged for further upstream manhole investigation and/or isolation and confirmation of sources.
4. Subsequent key junction manhole inspections will proceed until the location of suspected illicit discharges can be isolated to a pipe segment between two manholes.
5. If no evidence of an illicit discharge is found, catchment investigations will be considered complete upon completion of key junction manhole sampling.

### 8.3 Wet Weather Investigation (Outfall Sampling)

Where a minimum of one SVF is identified based on previous information or the catchment investigation, a wet weather investigation must also be conducted at the associated outfall. The Town of South Windsor Public Works Department and/or their designated consultant will be responsible for implementing the wet weather outfall sampling program and making updates as necessary.

Outfalls will be inspected and sampled under wet weather conditions, to the extent necessary, to determine whether wet weather-induced high flows in sanitary sewers or high groundwater in areas served by septic systems result in discharges of sanitary flow to the MS4.

Wet weather outfall sampling will proceed as follows:

1. At least one wet weather sample will be collected at the outfall for the same parameters required during dry weather screening (refer to **Table 7-3** and **Table 7-4**).
2. Wet weather sampling will occur during or after a storm event of sufficient depth or intensity to produce a stormwater discharge at the outfall.
    a. There is no specific rainfall amount that will trigger sampling, although minimum storm event intensities that are likely to trigger sanitary sewer interconnections are preferred.
    b. Sampling during the initial period of discharge ("first flush") will be avoided.
    c. To the extent feasible, sampling should occur during the spring (March through June) when groundwater levels are relatively high. Refer to **Section 7.1** for information on weather tracking.

3. If wet weather outfall sampling indicates a potential illicit discharge, then additional wet weather source sampling will be performed, as warranted, or source isolation and confirmation procedures will be followed as described in **Section 8.4**.
4. If wet weather outfall sampling does not identify evidence of illicit discharges, and no evidence of an illicit discharge is found during dry weather manhole inspections, catchment investigations will be considered complete.

## 8.4 Source Isolation and Confirmation

Once the source of an illicit discharge is approximated between two manholes, more detailed investigation techniques will be used to isolate and confirm the source of the illicit discharge. The following methods may be used in isolating and confirming the source of illicit discharges:

- Sandbagging
- Dye Testing
- CCTV/Video Inspections
- Optical Brightener Monitoring
- IDDE Canines
- Smoke Testing

These methods are described in the sections below. Instructions and Standard Operating Procedures (SOPs) for these and other IDDE methods are provided in **Appendix H**.

Public notification is an important aspect of a detailed source investigation program. Prior to smoke testing, dye testing, or TV inspections, the Town of South Windsor will notify property owners in the affected area. Smoke testing notification will include notification by mail, hanging notifications, press releases, and announcements on the town website, for single family homes, businesses and building lobbies for multi-family dwellings.

### 8.4.1 Sandbagging

This technique can be particularly useful when attempting to isolate intermittent illicit discharges or those with very little perceptible flow. The technique involves placing sandbags or similar barriers (e.g., caulking, weirs/plates, or other temporary barriers) within outlets to manholes to form a temporary dam that collects any intermittent flows that may occur. Sandbags are typically left in place for 48 hours, and should only be installed when dry weather is forecast. If flow has collected behind the sandbags/barriers after 48 hours it can be assessed using visual observations or by sampling. If no flow collects behind the sandbag, the upstream pipe network can be ruled out as a source of the intermittent discharge. Finding appropriate durations of dry weather and the need for multiple trips to each manhole makes this method both time-consuming and somewhat limiting.

### 8.4.2 Dye Testing

Dye testing involves flushing non-toxic dye into plumbing fixtures such as toilets, showers, and sinks and observing nearby storm drains and sewer manholes as well as stormwater outfalls for the presence of the dye. Similar to smoke testing, it is important to inform local residents and business owners. Police, fire, and local public health staff should also be notified prior to testing in preparation of responding to citizen phone calls concerning the dye and the presence of dye in local surface waters.

A team of two or more people is needed to perform dye testing (ideally, all with two-way radios). One person is inside the building, while the others are stationed at the appropriate storm drain and sanitary sewer manholes (which should be opened) and/or outfalls. The person inside the building adds dye into a plumbing fixture (i.e., toilet or sink) and runs a sufficient amount of water to move the dye through the plumbing system. The person inside the building then radios to the outside crew that the dye has been dropped, and the outside crew watches for the dye in the storm drain and sanitary sewer, recording the presence or absence of the dye.

The test can be relatively quick (about 30 minutes per test), effective (results are usually definitive), and inexpensive. Dye testing is best used when the likely source of an illicit discharge has been narrowed down to a few specific houses or businesses.

### 8.4.3 CCTV/Video Inspection

Another method of source isolation involves the use of mobile video cameras that are guided remotely through stormwater drain lines to observe possible illicit discharges. IDDE Program staff can review the videos and note any visible illicit discharges. While this tool is both effective and usually definitive, it can be costly and time consuming when compared to other source isolation techniques.

### 8.4.4 Optical Brightener Monitoring

Optical brighteners are fluorescent dyes that are used in detergents and paper products to enhance their appearance. The presence of optical brighteners in surface waters or dry weather discharges suggests there is a possible illicit discharge or insufficient removal through adsorption in nearby septic systems or wastewater treatment. Optical brightener monitoring can be done in two ways. The most common, and least expensive, methodology involves placing a cotton pad in a wire cage and securing it in a pipe, manhole, catch basin, or inlet to capture intermittent dry weather flows. The pad is retrieved at a later date and placed under UV light to determine the presence/absence of brighteners during the monitoring period. A second methodology uses handheld fluorometers to detect optical brighteners in water sample collected from outfalls or ambient surface waters. Use of a fluorometer, while more quantitative, is typically more costly and is not as effective at isolating intermittent discharges as other source isolation techniques.

### 8.4.5 IDDE Canines

Dogs specifically trained to smell human related sewage are becoming a cost-effective way to isolate and identify sources of illicit discharges. While not widespread at the moment, the use of IDDE canines is growing as is their accuracy. The use of IDDE canines is not recommended as a standalone practice for source identification; rather it is recommended as a tool to supplement other conventional methods, such as dye testing, in order to fully verify sources of illicit discharges.

### 8.4.6 Smoke Testing

Smoke testing involves injecting non-toxic smoke into drain lines and noting the emergence of smoke from sanitary sewer vents in illegally connected buildings or from cracks and leaks in the system itself. Typically, a smoke bomb or smoke generator is used to inject the smoke into the system at a catch basin or manhole and air is then forced through the system. Test personnel are placed in areas where there are suspected illegal connections or cracks/leaks, noting any escape of smoke (indicating an illicit connection or damaged storm drain infrastructure). It is important when using this technique to make proper notifications to area residents and business owners as well as local police and fire departments.

If the initial test of the storm drain system is unsuccessful then a more thorough smoke-test of the sanitary sewer lines can also be performed. Unlike storm drain smoke tests, buildings that do not emit smoke during sanitary sewer smoke tests may have problem connections and may also have sewer gas venting inside, which is hazardous.

It should be noted that smoke may cause minor irritation of respiratory passages. Residents with respiratory conditions may need to be monitored or evacuated from the area of testing altogether to ensure safety during testing. **SMOKE TESTING WILL BE UTILIZED AS A LAST RESORT, AFTER ALL OTHER METHODS HAVE BEEN EXHAUSTED.**

## 8.5 Illicit Discharge Removal

When the specific source of an illicit discharge is identified, the Town of South Windsor will exercise its authority, as necessary, to require its removal. The Annual Reports will include the status of IDDE investigation and removal activities including the following information for each confirmed source, including:

- The location of the discharge and its source(s)
- A description of the discharge
- The method of discovery
- Date of discovery
- Date of elimination, mitigation or enforcement action
- Estimate of the volume of flow removed

#### 8.5.1 Confirmatory Outfall Screening

Within one year of removal of all identified illicit discharges and SSO sources within a catchment area, confirmatory outfall or interconnection screening will be conducted. The confirmatory screening will be conducted in dry weather unless System Vulnerability Factors have been identified, in which case both dry weather and wet weather confirmatory screening will be conducted. If confirmatory screening indicates evidence of additional illicit discharges, the catchment will be scheduled for additional investigation. Confirmatory screening is not required in catchments where no illicit discharges or System Vulnerability Factors have been identified and no previous screening indicated suspicious flows.

### 8.6 Follow-Up Screening

Upon completion of all catchment investigations and illicit discharge removal and confirmation (if necessary), each outfall or interconnection will be scheduled for follow-up screening within five years, or sooner based on the catchment's illicit discharge priority. Ongoing screening will consist of dry weather screening and sampling consistent with the procedures described in **Section 7**. On-going wet weather screening and sampling will also be conducted at outfalls where wet weather screening was required due to System Vulnerability Factors and will be conducted in accordance with the procedures described in **Section 8.1**. All sampling results will be reported in each Annual Report.

### 8.7 Illicit Discharge Prevention Procedures

The Town of South Windsor will implement the following mechanisms and procedures to assist in the prevention of illicit discharges and SSOs:

- Spill response and prevention procedures including: identification of spills, reporting procedures, containment procedures, and documentation.
- Public awareness (may be part of the education program required by Subsection 2 of the MS4 Permit).
- Training of public employees involved in the IDDE program on way to identify potential illicit discharges and SSOs.

## 9.0 TRAINING

Annual MS4 IDDE training will be made available to all employees involved in implementing the MS4 Permit and IDDE Program. This training will, at a minimum, include information on how to identify illicit discharges and may also include additional training specific to the functions of particular personnel and their function within the framework of the IDDE Program. Training records will be maintained in **Appendix G**. The frequency and type of training will be included in the Annual Report.

## 10.0 PROGRESS REPORTING

The progress and success of the IDDE Program will be evaluated on an annual basis. The evaluation will be documented in each Annual Report and will include the following indicators of program progress:

- Measures that demonstrate efforts to locate illicit discharges
- Number of illicit discharges identified and removed
- Percent and area in acres of the catchment area served by the MS4 evaluated using the catchment investigation procedure
- Number of dry weather outfall inspections/screenings
- Number of wet weather outfall inspections/sampling events
- Number of enforcement notices issued
- All dry weather and wet weather screening and sampling results
- Estimate of the volume of sewage removed, as applicable
- Number of employees trained annually

The success of the IDDE Program will be measured by the IDDE activities completed within the required permit timeline in the maximum extent practicable.

# APPENDIX A

*Definitions*

## ***DEFINITIONS***

*Best Management Practices (BMPs)* means schedules of activities, practices (and prohibitions of practices), structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the state consistent with state, federal or other equivalent and technically supported guidance. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from material storage.

*DEEP* means the Connecticut Department of Energy and Environmental Protection.

*DOT* means the Connecticut Department of Transportation.

*Directly Connected Impervious Area (DCIA)* means that impervious area from which stormwater runoff discharges directly to waters of the state or directly to a storm sewer system that discharges to waters of the state. Impervious areas that discharge through a system designed to retain the appropriate portion of the Water Quality Volume (pursuant to Section 6(a)(5)(b)(i) or (ii) of this general permit) are not considered DCIA.

*Effective Date* means the effective date of this General Permit, July 1, 2017.

*EPA* means the United States Environmental Protection Agency.

*General Permit* means the DEEP's *General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems.*

*Illicit Discharge* means any unpermitted discharge to waters of the state that does not consist entirely of stormwater or uncontaminated ground water except those discharges identified in Section 3(*a*)(2) of this general permit when such non-stormwater discharges are not significant contributors of pollution to a discharge from an identified MS4.

*Impaired water(s)* means those surface waters of the state designated by the Commissioner as impaired pursuant to Section 303(d) of the federal Clean Water Act and as identified in the most recent State of Connecticut Integrated Water Quality Report within Categories 4 or 5, including any subdivisions of these categories.

*Industrial Stormwater General Permit* means the DEEP's General Permit for the Discharge of Stormwater Associated with Industrial Activity.

*Interconnection* means the point where the permittee's MS4 discharges to another MS4 or other storm sewer system, through which the discharge is conveyed to waters of the state or to another storm sewer system and eventually to a water of the state.

*Maximum Extent Practicable (MEP)* is a technology-based standard established by Congress in the Clean Water Act Section 402(p)(3)(B)(iii). Since no precise definition of MEP exists, it allows for maximum flexibility on the part of MS4 operators as they develop their programs. (40CFR 122.2, See also: Stormwater Phase II Compliance Assistance Guide EPA 833-R-00-002, March 2000).

*Municipal separate storm sewer system* (*MS4)* means conveyances for stormwater (including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) owned or operated by any municipality or by any state or federal institution and discharging to surface waters of the state.

## ***DEFINITIONS***

*Municipality* means a city, town or borough of the state as defined in section 22a-423 of the Connecticut General Statutes.

*NPDES* means the National Pollutant Discharge Elimination System.

*Outfall* means a point source as defined by 40 CFR § 122.2 and in Section 2 of the 2017 MS4 Permit as the point where the MS4 discharges to waters of the state. An outfall does not include open conveyances connecting two separate storm sewers or pipes, tunnels or other conveyances that connect segments of the same stream or other waters of the state and that are used to convey waters of the state. It is strongly recommended that a permittee inspect all accessible portions of the system as part of this process. Culverts longer than a simple road crossing shall be included unless the permittee can confirm that they are free of any connections and simply convey waters of the state.

*Permittee* means any municipality or any state or federal institution that initiates, creates, originates or maintains a discharge authorized by the MS4 general permit and that has filed a registration pursuant to Section 4 of the permit.

*Priority Areas* means areas within the urbanized areas, catchment areas with DCIA >11%, and areas where outfalls discharge to impaired waters.

*Sanitary Sewer Overflow (SSO)* means a discharge of untreated sanitary wastewater from a municipal sanitary sewer.

*Small MS4* means any municipally-owned or -operated MS4 (as defined above) including all those located partially or entirely within an Urbanized Area that have at least 1,000 residents in the Urbanized Area (as determined by the 2000 or 2010 census) and all state- and federally-operated MS4s (except DOT) and any other MS4s located outside an Urbanized Area as may be designated by the Commissioner.

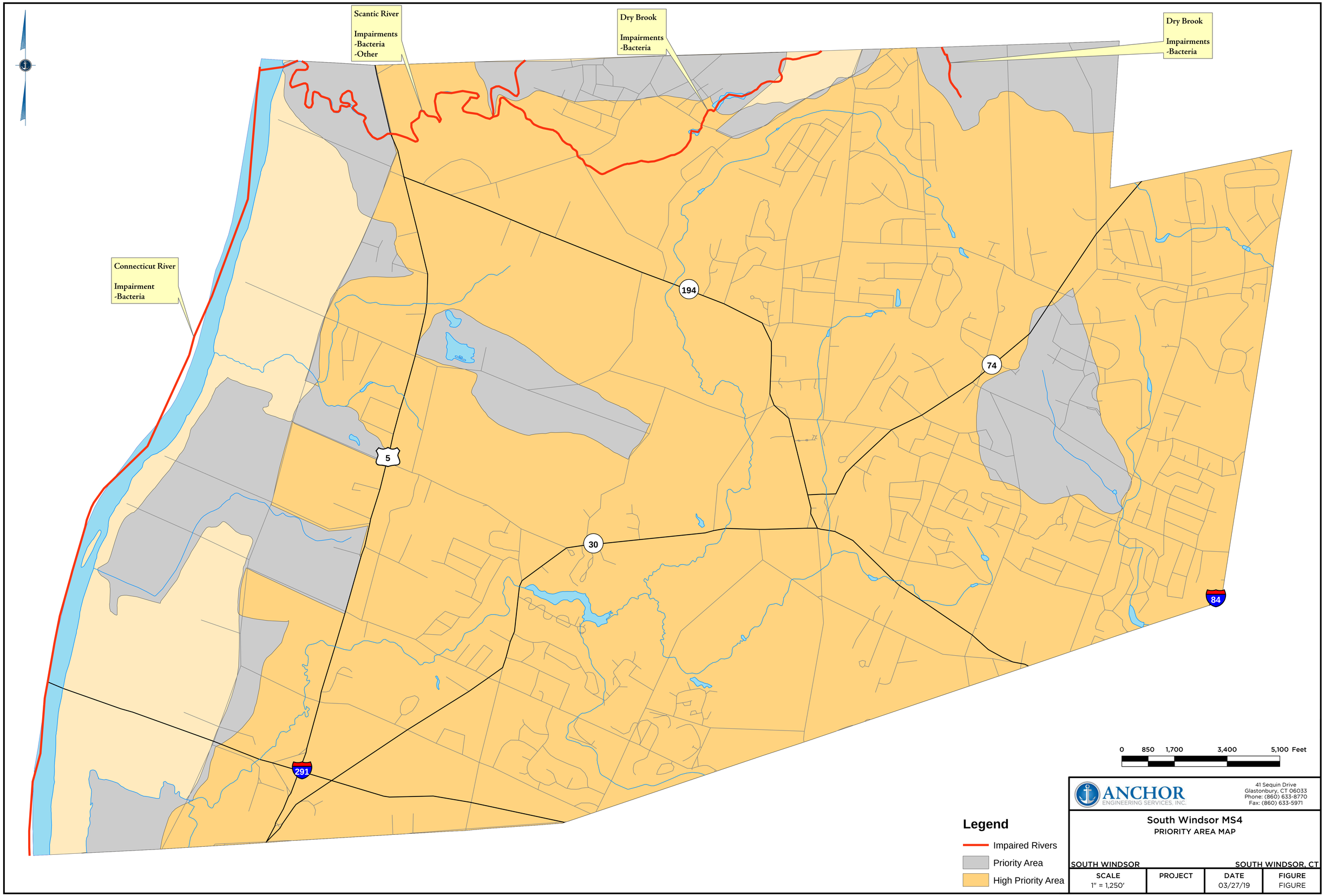
*Stormwater Management Plan (SMP)* means a stormwater management program required under the General Permit, designed to reduce the discharge of pollutants from the Small MS4 to the MEP, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.

*Total Maximum Daily Load* (*TMDL*) means a water quality implementation plan established pursuant to Section 303 of the federal Clean Water Act.

*Urbanized Area* (*UA*) means the areas of the State of Connecticut so defined by the U.S. Census Bureau for the 2000 or the 2010 census.

# APPENDIX B

***Urbanized Areas and Other Areas Potentially Subject to the MS4 Permit IDDE Program Requirements ("Priority Areas")***


Scantic River
Impairments
-Bacteria
-Other
Dry Brook
Impairments
-Bacteria
Dry Brook
Impairments
-Bacteria
Connecticut River
Impairment
-Bacteria
194
74
5
30
84
291
0 850 1,700 3,400 5,100 Feet
Legend
Impaired Rivers
Priority Area
High Priority Area
ANCHOR
ENGINEERING SERVICES, INC.
41 Sequin Drive
Glastonbury, CT 06033
Phone: (860) 633-8770
Fax: (860) 633-5971
South Windsor MS4
PRIORITY AREA MAP
SOUTH WINDSOR
SOUTH WINDSOR, CT
SCALE
1" = 1,250'
PROJECT
DATE
03/27/19
FIGURE
FIGURE

# APPENDIX C

*Legal Authority (IDDE Ordinances)*

DRAFT

# Town of South Windsor
# Illicit Discharge and Connection Stormwater Ordinance

ORDINANCE NO. ____

**SECTION 1. PURPOSE/INTENT.**

The purpose of this ordinance is to provide for the health, safety, and general welfare of the citizens of the **Town of South Windsor** through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This ordinance establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this ordinance are:

(1) To regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) by stormwater discharges by any user

(2) To prohibit and eliminate illicit connections and discharges to the municipal separate storm sewer system

(3) To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this ordinance

**SECTION 2. DEFINITIONS.**

For the purposes of this ordinance, the following shall mean:

Authorized Enforcement Agency: employees or designees of the director of the municipal agency designated to enforce this ordinance.

Best Management Practices (BMPs): schedules of activities, practices (and prohibitions of practices), structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the state consistent with state, federal or other equivalent and technically supported guidance. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from material storage.

Clean Water Act. The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity. Any activity associated with construction at a site including, but not limited to, clearing and grubbing, grading, excavation, and dewatering.

Hazardous Materials. Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illegal Discharge. Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in Section 7 of this ordinance.

Illicit Connections. An illicit connection is defined as either of the following: Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or, any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Industrial Activity. Activities subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26 (b)(14).
National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit. means a permit issued by EPA (or by a State under authority delegated pursuant to 33 USC § 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.
Non-Stormwater Discharge. Any discharge to the storm drain system that is not composed entirely of storm water.
Person. Any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.
Pollutant. Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.
Premises. Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.
Storm Drainage System. Publicly-owned facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.
Stormwater. Waters consisting of rainfall runoff, including snow or ice melt, during a rain event.
Stormwater Pollution Prevention Plan. A document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Stormwater, Stormwater Conveyance Systems, and/or Receiving Waters to the Maximum Extent Practicable.
Wastewater. Any water or other liquid, other than uncontaminated storm water, discharged from a facility.

**SECTION 3. APPLICABILITY.**
This ordinance shall apply to all water entering the storm drain system generated on any developed and undeveloped lands unless explicitly exempted by an authorized enforcement agency.

**SECTION 4. RESPONSIBILITY FOR ADMINISTRATION.**
The [Town Manager] [authorized enforcement agency] shall administer, implement, and enforce the provisions of this ordinance. Any powers granted or duties imposed upon the authorized enforcement agency may be delegated in writing by the Director of the authorized enforcement agency to persons or entities acting in the beneficial interest of or in the employ of the agency.

**SECTION 5. SEVERABILITY.**
The provisions of this ordinance are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Ordinance or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this Ordinance.

**SECTION 6. ULTIMATE RESPONSIBILITY.**
The standards set forth herein and promulgated pursuant to this ordinance are minimum standards; therefore this ordinance does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants.

## SECTION 7. DISCHARGE PROHIBITIONS.

Prohibition of Illegal Discharges.

No person shall discharge or cause to be discharged into the municipal storm drain system or watercourses any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water.

The commencement, conduct or continuance of any illegal discharge to the storm drain system is prohibited except as described as follows:

(a) The following discharges are exempt from discharge prohibitions established by this ordinance: uncontaminated ground water discharges including, but not limited to, pumped ground water, foundation drains, water from crawl space pumps and footing drains; irrigation water including, but not limited to, landscape irrigation and lawn watering runoff; residual street wash water associated with sweeping; discharges or flows from firefighting activities (except training); and naturally occurring discharges such as rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)), springs, diverted stream flows and flows from riparian habitats and wetlands.

(b) Any non-stormwater discharge to the MS4 authorized by a permit issued pursuant to Section 22a-430 or 22a-430b of the Connecticut General Statutes is also authorized under this ordinance.

Prohibition of Illicit Connections.

(a) The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.

(b) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(c) A person is considered to be in violation of this ordinance if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

## SECTION 8. SUSPENSION OF MS4 ACCESS.

Suspension due to Illicit Discharges in Emergency Situations

The [Town Manager ] [authorized enforcement agency] may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, the authorized enforcement agency may take such steps as deemed necessary to prevent or minimize damage to the MS4 or Waters of the United States, or to minimize danger to persons.

Suspension due to the Detection of Illicit Discharge

Any person discharging to the MS4 in violation of this ordinance may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The authorized enforcement agency will notify a violator of the proposed termination of its MS4 access. The violator may petition the authorized enforcement agency for a reconsideration and hearing.

A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this Section, without the prior approval of the authorized enforcement agency.

## SECTION 9. INDUSTRIAL OR CONSTRUCTION ACTIVITY DISCHARGES.

Any person subject to an industrial or construction activity NPDES storm water discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the [Town Manager ] [authorized enforcement agency] prior to the allowing of discharges to the MS4.

## SECTION 10. MONITORING OF DISCHARGES.

A. Applicability.

This section applies to all facilities that have storm water discharges associated with industrial activity, including construction activity.

B. Access to Facilities.

(a) The [Town Manager ] [authorized enforcement agency] shall be permitted to enter and inspect facilities subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the authorized enforcement agency.

(b) Facility operators shall allow the [Town Manager ] [authorized enforcement agency] ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge storm water, and the performance of any additional duties as defined by state and federal law.

(c) The [Town Manager] [authorized enforcement agency] shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the authorized enforcement agency to conduct monitoring and/or sampling of the facility's storm water discharge.

(d) The [Town Manager ] [authorized enforcement agency] has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.

(e) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the [Town Manager] [authorized enforcement agency] and shall not be replaced. The costs of clearing such access shall be borne by the operator.

(f) Unreasonable delays in allowing the [Town Manager] [authorized enforcement agency] access to a permitted facility is a violation of a storm water discharge permit and of this ordinance. A person who is the operator of a facility with a NPDES permit to discharge storm water associated with industrial activity commits an offense if the person denies the authorized enforcement agency reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this ordinance.

(g) If the [Town Manager] [authorized enforcement agency] has been refused access to any part of the premises from which stormwater is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this ordinance or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the authorized enforcement agency may seek issuance of a search warrant from any court of competent jurisdiction.

## SECTION 11. REQUIREMENT TO PREVENT, CONTROL, AND REDUCE STORM

**WATER POLLUTANTS BY THE USE OF BEST MANAGEMENT PRACTICES.**
[The_Town Manager] [Authorized enforcement agency] will adopt requirements identifying Best Management Practices for any activity, operation, or facility which may cause or contribute to pollution or contamination of storm water, the storm drain system, or waters of the U.S. The owner or operator of a commercial or industrial establishment shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses through the use of these structural and non-structural BMPs. Further, any person responsible for a property or premise, which is, or may be, the source of an illicit discharge, may be required to implement, at said person's expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of storm water associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section. These BMPs shall be part of a stormwater pollution prevention plan (SWPP) as necessary for compliance with requirements of the NPDES permit.

**SECTION 12. WATERCOURSE PROTECTION.**
Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

**SECTION 13. NOTIFICATION OF SPILLS.**
Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or water of the U.S. said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, said person shall notify the authorized enforcement agency in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the [authorized enforcement agency] within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

**SECTION 14. ENFORCEMENT.**
A. Notice of Violation.
Whenever the [Town Manager ] [authorized enforcement agency] finds that a person has violated a prohibition or failed to meet a requirement of this Ordinance, the authorized enforcement agency may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:
(a) The performance of monitoring, analyses, and reporting;
(b) The elimination of illicit connections or discharges;
(c) That violating discharges, practices, or operations shall cease and desist;
(d) The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property; and

(e) Payment of a fine or penalty to recoup costs incurred by the [Town Manager] [authorized enforcement

agency];
(f) Suspension of any discharge to the MS4 system consistent with Section 8 of this ordinance; and
(g) The implementation of source control or treatment BMPs.
If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Where elimination is not possible within 60 days of source confirmation, a schedule for its elimination will be set for no more than 180 days. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

**SECTION 15. APPEAL OF NOTICE OF VIOLATION.**
Any person receiving a Notice of Violation may appeal the determination of the authorized enforcement agency. The notice of appeal must be received within [_15_] days from the date of the Notice of Violation. Hearing on the appeal before the [_Inland Wetlands Agency/Conservation Commission_] [appropriate authority] or his/her designee shall take place within 15 days from the date of receipt of the notice of appeal. The decision of the Inland Wetlands Agency/Conservation Commission shall be final.

**SECTION 16. ENFORCEMENT MEASURES AFTER APPEAL.**
If the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or, in the event of an appeal, within [_15_] days of the decision of the municipal authority upholding the decision of the authorized enforcement agency, then representatives of the authorized enforcement agency shall enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the government agency or designated contractor to enter upon the premises for the purposes set forth above.

**SECTION 17. COST OF ABATEMENT OF THE VIOLATION.**
Within [_15_] days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the amount of the assessment within [_15_] days. If the amount due is not paid within a timely manner as determined by the decision of the Inland Wetlands Agency/Conservation Commission or by the expiration of the time in which to file an appeal, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.
Any person violating any of the provisions of this article shall become liable to the city by reason of such violation. The liability shall be paid in not more than 12 equal payments. Interest at the rate of [_18_] percent per annum shall be assessed on the balance beginning on the [_1_]st day following discovery of the violation.

**SECTION 18. INJUNCTIVE RELIEF.**
It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Ordinance. If a person has violated or continues to violate the provisions of this ordinance, the authorized enforcement agency may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

**SECTION 19. COMPENSATORY ACTION.**
In lieu of enforcement proceedings, penalties, and remedies authorized by this Ordinance, the authorized enforcement agency may impose upon a violator alternative compensatory actions, such as storm drain stenciling, attendance at compliance workshops, creek cleanup, etc.

**SECTION 20. VIOLATIONS DEEMED A PUBLIC NUISANCE.**
In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this Ordinance is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

**SECTION 21. CRIMINAL PROSECUTION.**
Any person that has violated or continues to violate this ordinance shall be liable to criminal prosecution to the fullest extent of the law, and shall be subject to a penalty of [_$250.00_] dollars per violation per day and subject to penalties through the civil and criminal courts.
The Town Manager may recover all attorney's fees court costs and other expenses associated with enforcement of this ordinance, including sampling and monitoring expenses.

**SECTION 22. REMEDIES NOT EXCLUSIVE.**
The remedies listed in this ordinance are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the authorized enforcement agency to seek cumulative remedies.

**SECTION 23. ADOPTION OF ORDINANCE.**
This ordinance shall be in full force and effect [_21_] days after its final passage and adoption. All prior ordinances and parts of ordinances in conflict with this ordinance are hereby repealed.

Public Hearing: _____

Adopted: _____

Publication Date: _____

Filed with Town Clerk: _____

Effective Date: _____

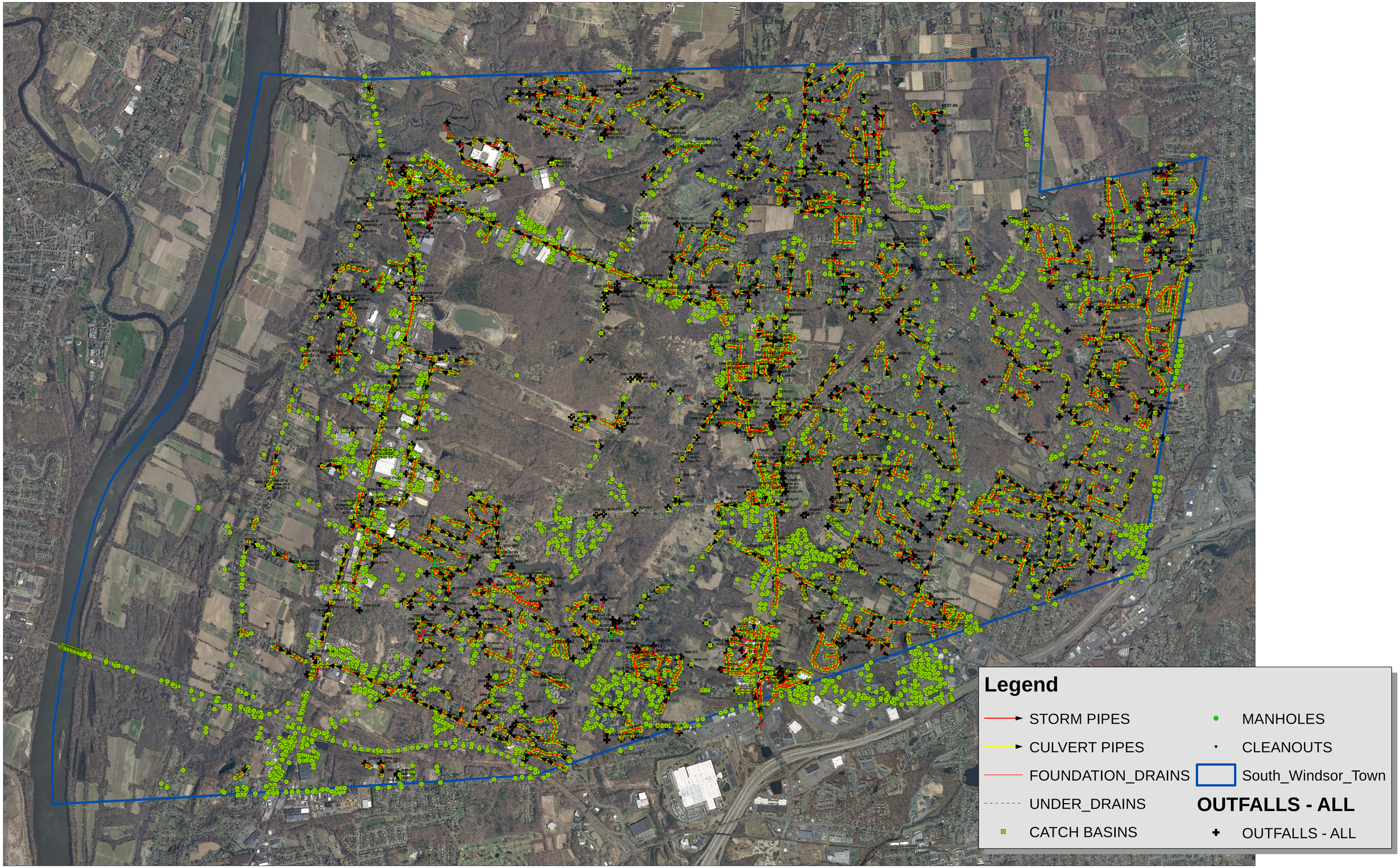
ATTEST:

_____

Town Clerk

# APPENDIX D

*Stormwater System Mapping*




**Stormwater System Mapping, South Windsor, CT**
**12/2/2019**

0 0.5 1 2 3 4 Miles

N W E S

Planimetric data provided by SBC under contract and is based on an aerial flight performed in spring of 2005. Continuous updates completed with As-built information and State of CT aerial flight in 2016. This map is a graphical representation of property information and is subject to change. The Town of South Windsor and SBC assume no legal responsibility for information depicted on this map and is to be used for planning purposes only.

One Town One Future

South Windsor GIS
Geographic Information System

# APPENDIX E

***Letter from Municipality, Field Forms, Sample Bottle Labels, and Chain of Custody Forms***

Town of South Windsor
1540 SULLIVAN AVENUE • SOUTH WINDSOR, CT 06074
TELEPHONE (860) 644-2511

April 4, 2019

**Re: Stormwater Sampling for the Town of South Windsor by Anchor Engineering Field Personnel**

To Whom It May Concern:

If you are reading this letter, you may be wondering why the bearer is in your area. Please be assured that he or she is here collecting stormwater samples or performing inspections on behalf of the Town of South Windsor.

Anchor Engineering Services, Inc. has been contracted by the Town of South Windsor to collect stormwater samples in accordance with its DEEP Permit No. GSM000081 for water discharges from the Town's Municipal Storm Sewer System (stormwater drainage). Under this permit, stormwater outfall pipes around the Town must be located and sampled.

The sampling locations are spread out over all sections of the Town including residential, commercial, and industrial areas. Anchor's field sampling personnel may be located in any of these areas at various times. They will generally send two to four samplers out to different areas of the Town during sampling events. The bearer of this letter has a map and list showing the required sampling locations, if you would like to see it.

Some of these samples must be collected during specific seasons and at certain times during or after rain events therefore, Anchor's field sampling personnel could be out at any time of the day or night.

If you have any questions, comments, or concerns about the sampling activities being conducted, please feel free to contact Anchor's Project Manager, T.J. Therriault, at (860) 633-8770 at any time. Alternatively, I can be reached at (860) 644-2511 x240 Monday thru Friday between 8:00 a.m. and 4:30 p.m.

Very Truly Yours,

Joseph J. Perna

Joseph J. Perna
Project Engineer
Town of South Windsor

# *Wet Weather MS4 Sample Field Data Sheet*

| Client/Project Name: | South Windsor MS4 | Project #: | 047-11 |
|---|---|---|---|

| Event Type: WET | Picture Taken of Outfall: Yes ☐ No ☐ | Discharge? Yes ☐ No ☐ |
|---|---|---|

***If yes, complete field parameters below***

**Location Data**

| Outfall Location (outfall # & street address): | | | |
|---|---|---|---|
| GPS Coordinates: | Diameter | Material Type | Outfall Type |
| Is the discharge directly to a impaired waterbody? Yes ☐ No ☐ | | | |
| Listed Impairments: Bacteria ☐ Nitrogen/Phosphorus ☐ Other ☐ | | | |
| Outfall condition: Buried / Damaged / Underwater / Inaccessible / Unknown | Condition level: Good / Fair / Poor | | |

***Outfall Type: Flared End, Headwall, Pipe, Round Culvert, Box Culvert, Swale, Ditch, Channel**

**Sample Data**

Date: _____ Time: _____ Weather: _____

Sampler: _____ Sample #: _____

If no discharge, was the sample collected at upgradient structure? Yes ☐ No ☐ If Yes, describe location:

**Observations**

| | | |
|---|---|---|
| Odor | Yes / No | If Yes, Describe: Musty / Sewage / Sulfur / Sour / Solvent / Other |
| Color | Yes / No | If Yes, Describe: |
| Clarity | Yes / No | If Yes, Describe: Clear / Slightly Cloudy / Cloudy / Opaque / Other |
| Floatables | Yes / No | If Yes, Describe: Debris / Leaves / Foam / Sheen / Sewage |

Other Observations:

**Field Parameters**

| | | |
|---|---|---|
| Upstream Turbidity (NTU) | | Only do Turbidity for discharges to "Other" impaired waters |
| Turbidity (NTU) | | |

**Samples Submitted to the Lab**

| | | |
|---|---|---|
| E.coli **AND** Total Coliform (freshwater receiving water) | ☐ | N/A ☐ |
| Fecal **AND** Enterococcus (saline or brackish receiving water) | ☐ | N/A ☐ |
| Nitrogen (Impaired) | ☐ | N/A ☐ |
| Phosphorus (Impaired) | ☐ | N/A ☐ |

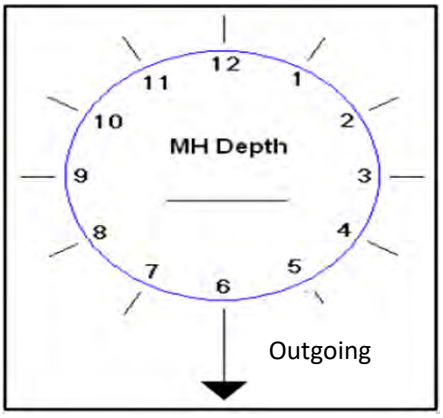
Fill out the top section **completely** for EVERY location visited. If there is no discharge or the outfall is inaccessible, still complete as much information as possible, including a description if there is evidence of flow.

# Manhole Inspection Form

| Outfall ID (if known) | Date | GPS Location | |
|---|---|---|---|
| Manhole ID | Last Rain Event | Weather | Inspector Initials |

Description

Sketch direction(s) of incoming flow




Incoming Pipe Data

| Clock Position (1-12) Pipe Material (Concrete, HDPE, PVC, Ducile Iron, CMP) | Pipe Diameter (in.) | Invert Elevation From Rim (ft) | Upgradient Structure/Source (MH ID, CB, Priv, Unk) | Flow (Damp, Trickle, Moderate, High) |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Structure Condition

**Cover Conditions:**
Diameter of opening (in.) Broken: ☐ Buried: ☐ Cannot Inspect: ☐ Cannot Locate: ☐

**Evidence of Flow:** ☐ Yes ☐ No
**If Yes, Description of Flow:** ☐ Damp ☐ Trickle ☐ Moderate ☐ High

**Visual Evidence of Illicit Discharge**
☐ None ☐ Floatables ☐ Pet Waste ☐ Oily Sheen ☐ Sanitary Waste ☐ Algae ☐ Foam

**Olfactory Evidence of Illicit Discharge**
☐ None ☐ Sewage Smell ☐ Musty ☐ Rotten Eggs ☐ Ammonia ☐ Petroleum

**Samples Taken and Sampling Results**

| Temp. | Conductivity | Salinity | Chlorine |
|---|---|---|---|
| Ammonia | Surfactants | Bacteria | Pollutant of Concern |

**Comments:**

**Further Investigation Needed?** ☐ Yes ☐ No

ANCHOR Engineering Services, Inc.

# *Dry Weather MS4 Sample Field Data Sheet*

| Client/Project Name: | South Windsor MS4 | Project #: | 047-11 |
|---|---|---|---|

| Event Type: DRY | Picture Taken of Outfall: Yes ☐ No ☐ | Discharge? Yes ☐ No ☐ |
|---|---|---|

***If yes, complete field parameters below***

**Location Data**

| Outfall Location (outfall # & street address): | | | |
|---|---|---|---|
| GPS Coordinates: | Diameter | Material Type | Outfall Type |
| Is the discharge directly to a waterbody? Yes ☐ No ☐ | | | |
| Listed Impairments: Bacteria ☐ Nitrogen/Phosphorus ☐ Other ☐ | | | |
| Outfall condition: Buried / Damaged / Underwater / Inaccessible / Unknown | Condition level: Good / Fair / Poor | | |

***Outfall Type: Flared End, Headwall, Pipe, Round Culvert, Box Culvert, Swale, Ditch, Channel**

**Sample Data**

Date: _____ Time: _____ Weather: _____

Sampler: _____ Sample #: _____

If no discharge, is there evidence of dry weather discharge? Yes ☐ No ☐

If yes, describe: Ponding at Outfall / Oil Sheen / Algae / Silt Deposits / Staining / Odor / Sewage

If other, describe:

Was sample collected at upgradient structure? Yes ☐ No ☐ If Yes, describe location:

**Observations**

| | | |
|---|---|---|
| Odor | Yes / No | If Yes, Describe: Musty / Sewage / Sulfur / Sour / Solvent / Other |
| Color | Yes / No | If Yes, Describe: |
| Clarity | Yes / No | If Yes, Describe: Clear / Slightly Cloudy / Cloudy / Opaque / Other |
| Floatables | Yes / No | If Yes, Describe: Debris / Leaves / Foam / Sheen / Sewage |

Other Observations:

**Field Parameters**

| | | Comments: |
|---|---|---|
| Flow (GPM) - 1 Liter per Minute = 0.2642 GPM | | |
| Temperature (°C) | | |
| Spec. Conductivity (µmhos/cm) | | |
| Salinity | | |
| Chlorine (CL2) kit - hach meter (mg/L) | | |
| Surfactants chemetrics K-9400 Blue box kit (mg/L) | | |
| Ammonia (NH3) Test Strip (mg/L) | | |
| Upstream Turbidity (NTU) | | Only do Turbidity for discharges to "Other" impaired waters |
| Turbidity (NTU) | | |

| Samples submitted to the lab for: | | | |
|---|---|---|---|
| | E.coli (freshwater receiving water) | ☐ | N/A ☐ |
| | Enterococcus (saline or brackish receiving water) | ☐ | N/A ☐ |
| | Nitrogen (Impaired) | ☐ | N/A ☐ |
| | Phosphorus (Impaired) | ☐ | N/A ☐ |

Fill out the top section **completely** for EVERY location visited. If there is no discharge or the outfall is inaccessible, still complete as much information as possible, including a description if there is evidence of flow.

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 ºC Pg of

**Data Delivery:**
☐ Fax #: _____
■ Email: _____

Customer: _____
Address: _____

Project: South Windsor MS4
Report to: _____
Invoice to: _____
Phone #: _____
Fax #: _____

Project P.O: _____

This section MUST be completed with Bottle Quantities.

**Client Sample - Information - Identification**

Sampler's Signature _____ Date: _____

**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

Analysis Request

| PHOENIX USE ONLY SAMPLE # | Customer Sample Identification | Sample Matrix | Date Sampled | Time Sampled | E. Coli | Enterococcus | Total Nitrogen | Total Phosphorus | Fecal Coliform | Total Coliform | | | | Soil VOA Vials [ ] methanol [ ] H 2O | GL Soil container ( 8 )oz | GL Soil container ( )oz | 40 ml VOA Vial [ ] As is [ x ] HCl | GL Amber 1000ml [ ] As is [ ] H2SO4 | PL As is [ X ] 250ml [ ] 500ml [ ] 1000ml | PL H2SO4 [ X ] 250ml [ ] 500ml | PL HNO3 250ml | PL NaOH 250ml | Bacteria Bottle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| Relinquished by: | Accepted by: | Date: | Time: |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

**Comments, Special Requirements or Regulations:**

**Municipal Client=No Tax**

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

**RI**
☐ Direct Exposure (Residential)
☐ GW
☐ Other

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

**MA**
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MWRA eSMART
☐ Other

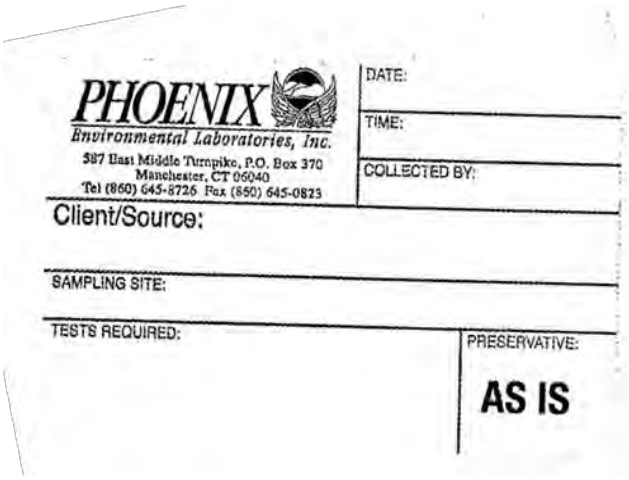
**State where samples were collected:** _____

**Data Format**
■ Excel
■ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

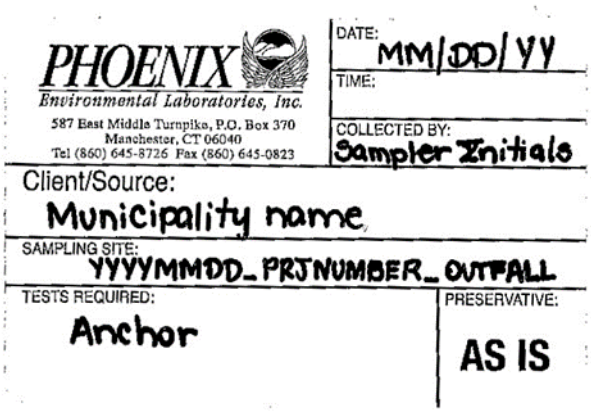
**Data Package**
☐ Tier II Checklist
☐ Full Data Package*
■ Phoenix Std Report
☐ Other

* **SURCHARGE APPLIES**

**Sample Bottle Labels from Phoenix Environmental Laboratories:**


PHOENIX
Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O. Box 370
Manchester, CT 06040
Tel (860) 645-8726 Fax (860) 645-0823
DATE:
TIME:
COLLECTED BY:
Client/Source:
SAMPLING SITE:
TESTS REQUIRED:
PRESERVATIVE:
AS IS

A blank sample label from Phoenix Environmental Laboratories, Inc.


PHOENIX
Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O. Box 370
Manchester, CT 06040
Tel (860) 645-8726 Fax (860) 645-0823
DATE: MM/DD/YY
TIME:
COLLECTED BY: Sampler Initials
Client/Source: Municipality name
SAMPLING SITE: YYYYMMDD_PRJNUMBER_OUTFALL
TESTS REQUIRED: Anchor
PRESERVATIVE:
AS IS

An example of a filled-out sample label for submission to Phoenix Environmental Laboratories, Inc.

# APPENDIX F

*Water Quality Analysis Instructions, User's Manuals and Standard Operating Procedures*

Refer to the provided links for instructions on the usage of:

***YSI 556 Multi Probe System***:
https://www.ysi.com/File%20Library/Documents/Manuals/655279-YSI-556-Operations-Manual-RevD.pdf

***LaMotte 2020we/wi Turbidimeter***:
http://www.geotechenv.com/Manuals/LaMotte_Manuals/2020we&wi.pdf

***HACH Pocket Colorimeter II***:
http://www.equipcoservices.com/pdf/manuals/pocketcolorimetercl2.pdf

***HACH AquaChek Water Quality Test Strips for Ammonia:***
https://www.hach.com/teststrips

***Chemetrics K-9400 Detergents Kit***:
https://www.chemetrics.com/index.php?route=product/product/download&file=i9400.pdf.8960e2d6822222534a5ab57b09254868

***ULTRAPEN PT1***:
http://www.myronl.com/PDF/manuals/pt1tfm.pdf

# APPENDIX G

*MS4 IDDE Employee Training Record*

**Illicit Discharge Detection and Elimination (IDDE) Program**
**Employee Training Record**

**South Windsor, Connecticut**

**Date of Training:** _____

**Duration of Training:** _____

| Name | Title | Signature |
|---|---|---|
| | | |
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# Part IV

# Certification

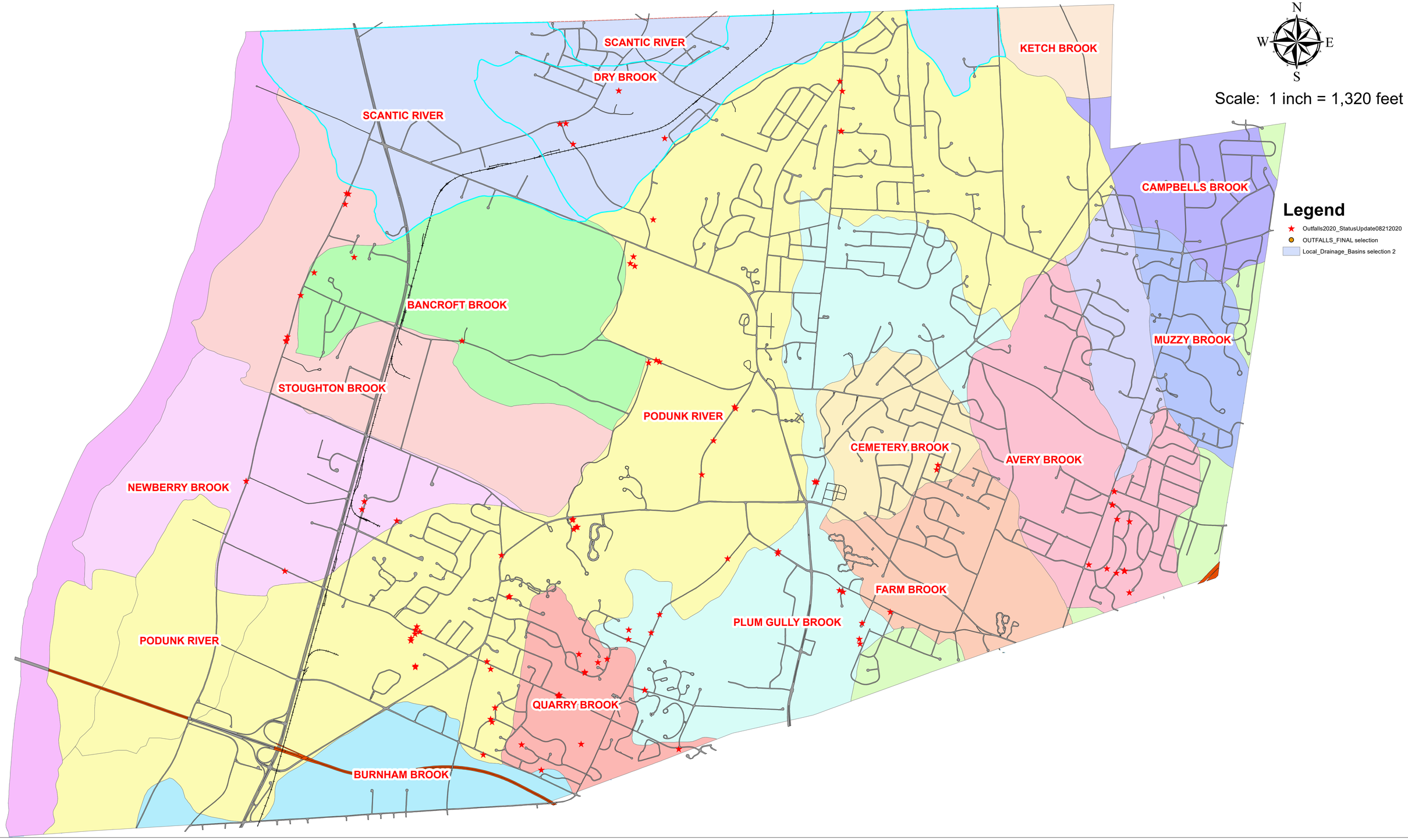
"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate 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."

| | | |
|---|---|---|
| | Town Manager | April 8, 2021 |
| Chief Elected Official/ Principal Executive Officer | Title | Date |
| | Town Engineer | April 8, 2021 |
| Principal plan preparer | Title | Date |

# Appendix A

# Appendix B

# Outfall Mapping Update
# 8/21/2020

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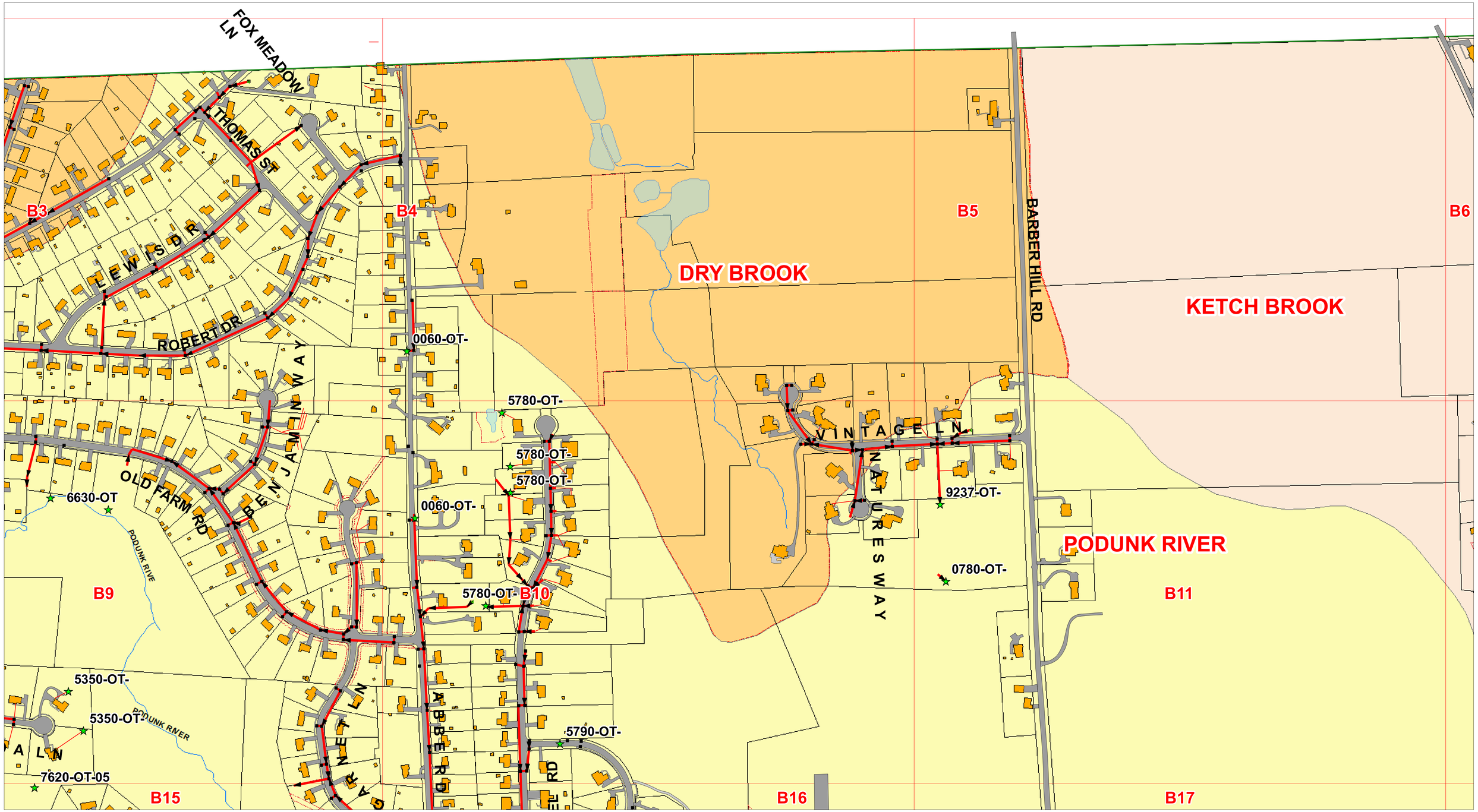
South Windsor GIS
Geographic Information System

# Appendix C




# MS4 Annual Report
# Storm Sewer Mapping
# February 22, 2011
# Sheet 1

## LEGEND

- OUTFALLS
- INLETS
- CATCHBASINS
- MANHOLES
- UNDER_DRAINS
- FOUNDATION_DRAINS
- STORM PIPES
- CULVERT PIPES

### MAJOR TRANSPORTATION

- HIGHWAY
- STREET

### MINOR TRANSPORTATION

- DRIVEWAY
- PARKING LOT
- PRIVATE WALKWAY
- SIDEWALK CONDO
- SIDEWALK PUBLIC
- SIDEWALK SCHOOL
- Grid200Scale 24X36
- TOWN LINE
- CONDOMINIUMS
- BUILDINGS

N
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0 200 400 800 Feet

Scale: 1 inch = 200 feet

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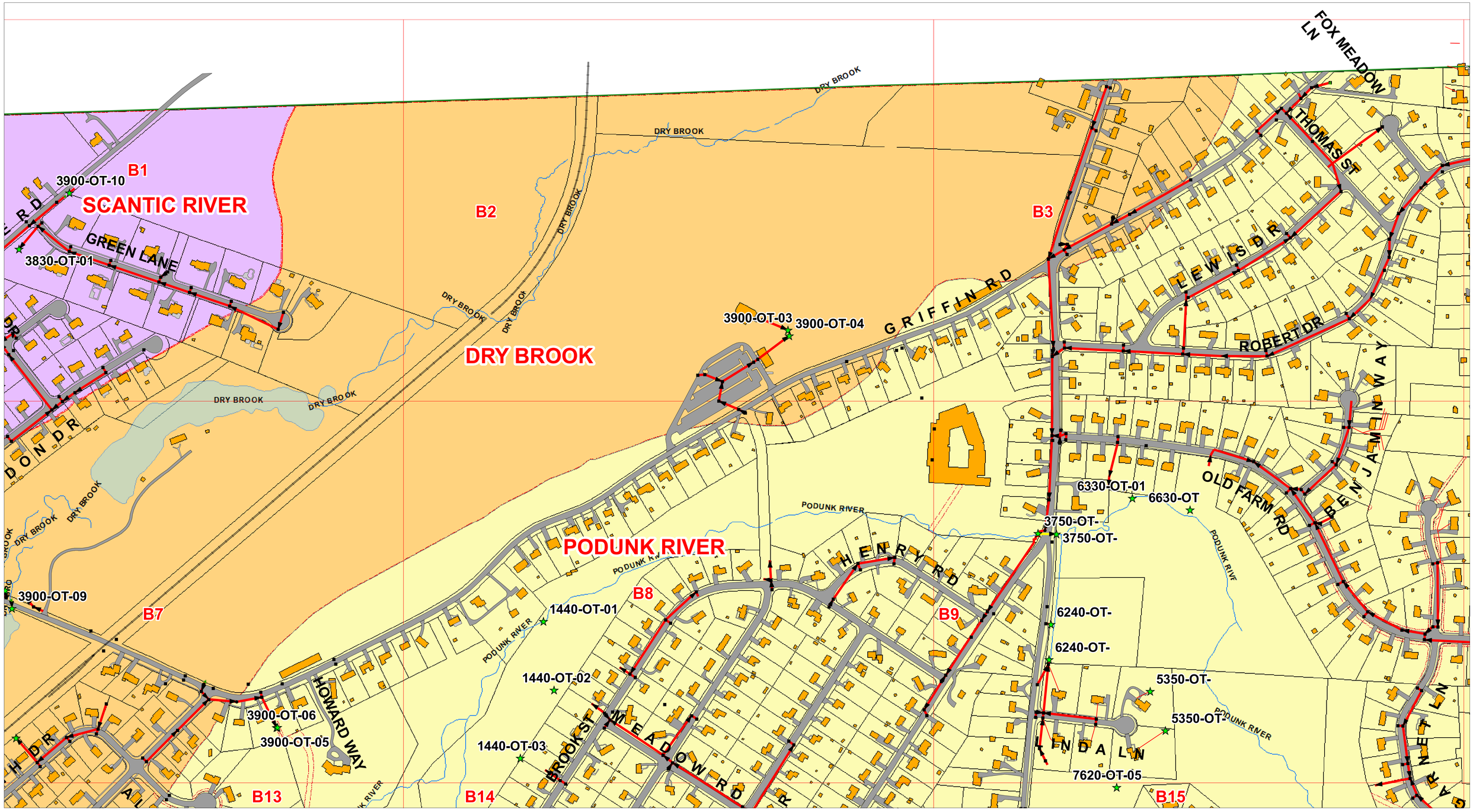
Geographic Information System




# MS4 Annual Report
# Storm Sewer Mapping
# February 22, 2021
# Sheet 2

## LEGEND

- OUTFALLS
- INLETS
- CATCHBASINS
- MANHOLES
- UNDER_DRAINS
- FOUNDATION_DRAINS
- STORM PIPES
- CULVERT PIPES

### MAJOR TRANSPORTATION

- HIGHWAY
- STREET

### MINOR TRANSPORTATION

- DRIVEWAY
- PARKING LOT
- PRIVATE WALKWAY
- SIDEWALK CONDO
- SIDEWALK PUBLIC
- SIDEWALK SCHOOL
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- CONDOMINIUMS
- BUILDINGS

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INCORPORATED 1845

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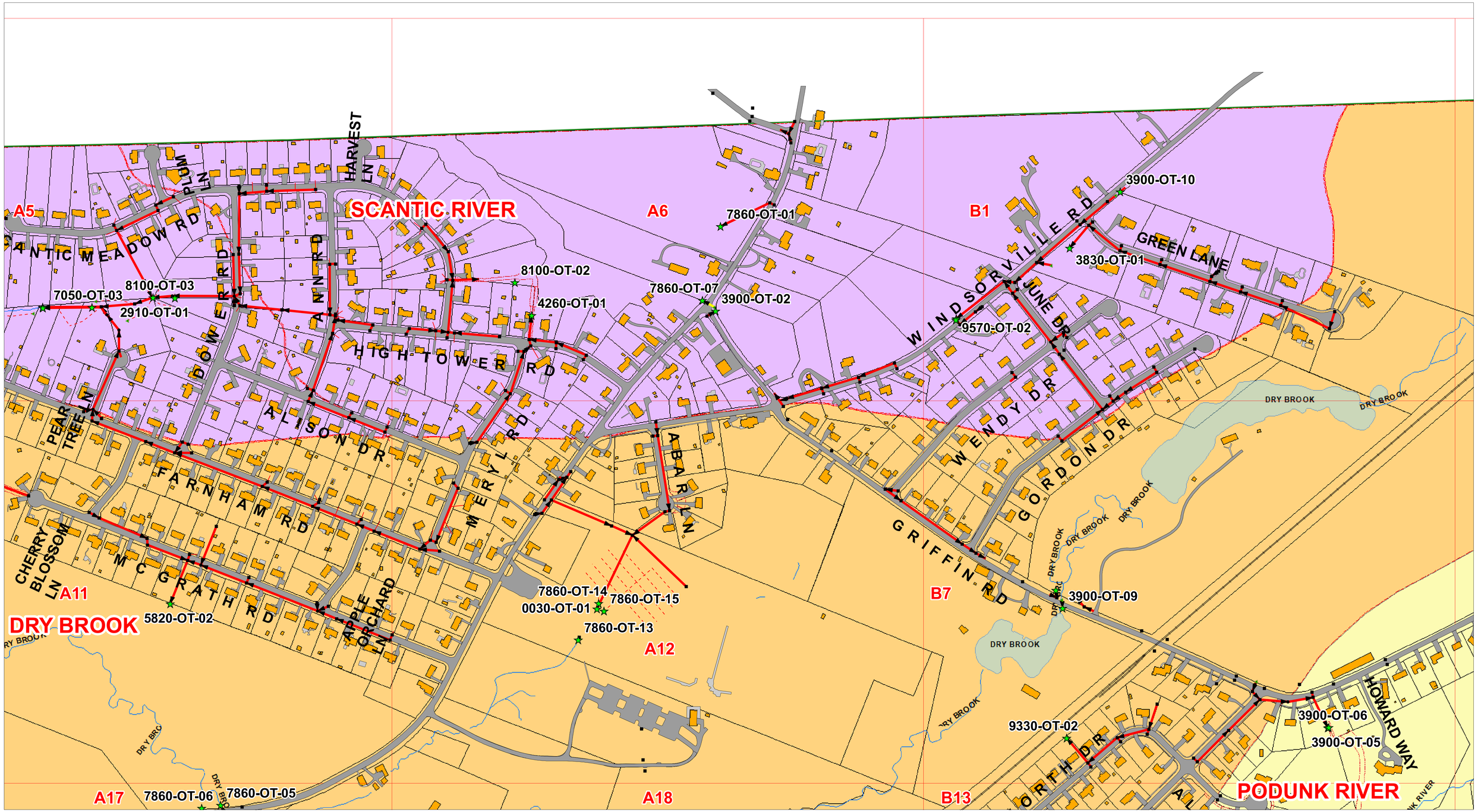
Geographic Information System




# MS4 Annual Report
# Storm Sewer Mapping
# February 22, 2021
# Sheet 3

## LEGEND

- OUTFALLS
- INLETS
- CATCHBASINS
- MANHOLES
- UNDER_DRAINS
- FOUNDATION_DRAINS
- STORM PIPES
- CULVERT PIPES

### MAJOR TRANSPORTATION

- HIGHWAY
- STREET

### MINOR TRANSPORTATION

- DRIVEWAY
- PARKING LOT
- PRIVATE WALKWAY
- SIDEWALK CONDO
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- SIDEWALK SCHOOL
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- TOWN LINE
- CONDOMINIUMS
- BUILDINGS

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Incorporated 1845

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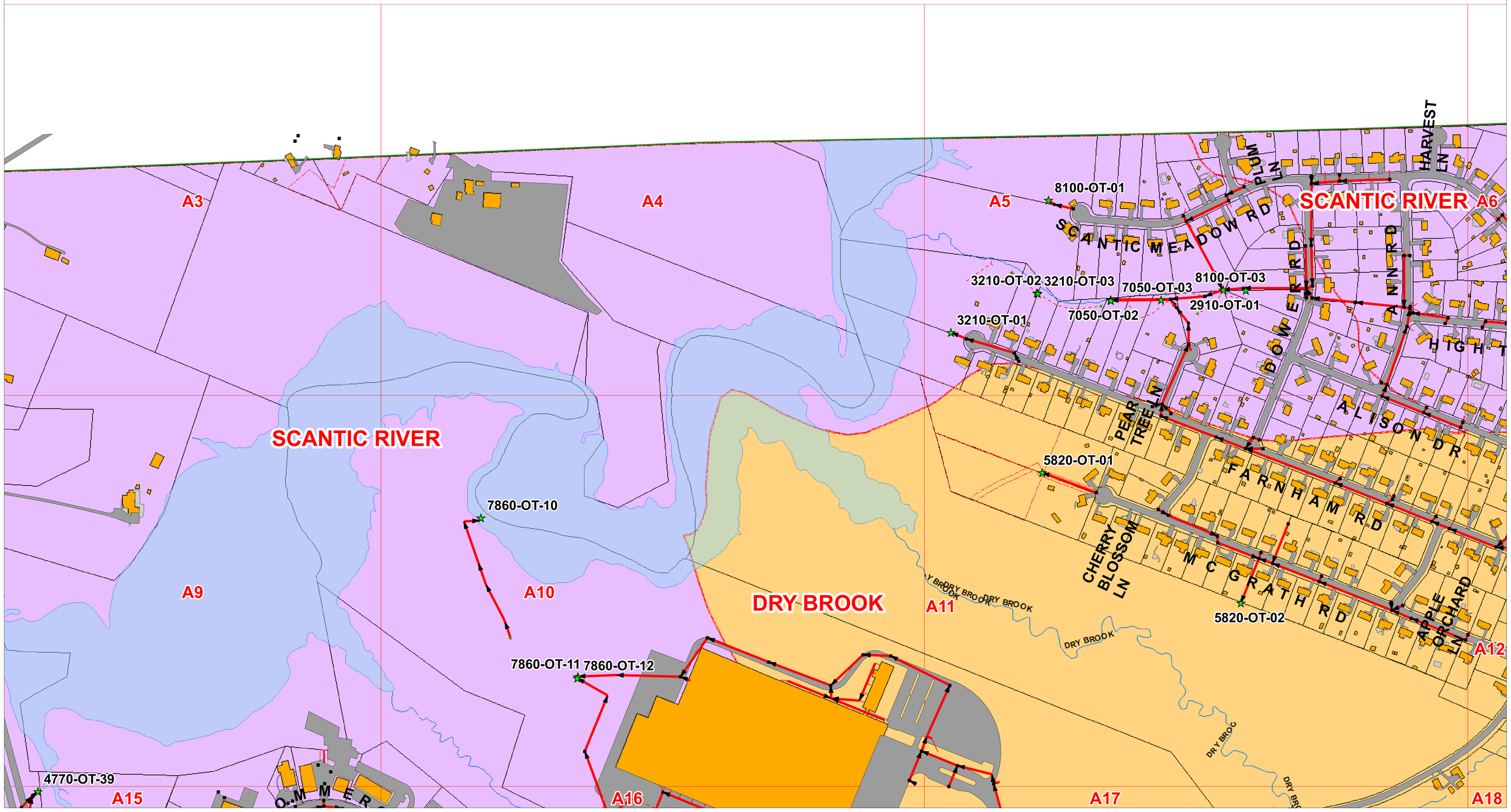
Geographic Information System




# MS4 Annual Report
# Storm Sewer Mapping
# February 22, 2021
# Sheet 4

## LEGEND

- OUTFALLS
- INLETS
- CATCHBASINS
- MANHOLES
- UNDER_DRAINS
- FOUNDATION_DRAINS
- STORM PIPES
- CULVERT PIPES

**MAJOR TRANSPORTATION**

- HIGHWAY
- STREET

**MINOR TRANSPORTATION**

- DRIVEWAY
- PARKING LOT
- PRIVATE WALKWAY
- SIDEWALK CONDO
- SIDEWALK PUBLIC
- SIDEWALK SCHOOL
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- TOWN LINE
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- BUILDINGS

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1845

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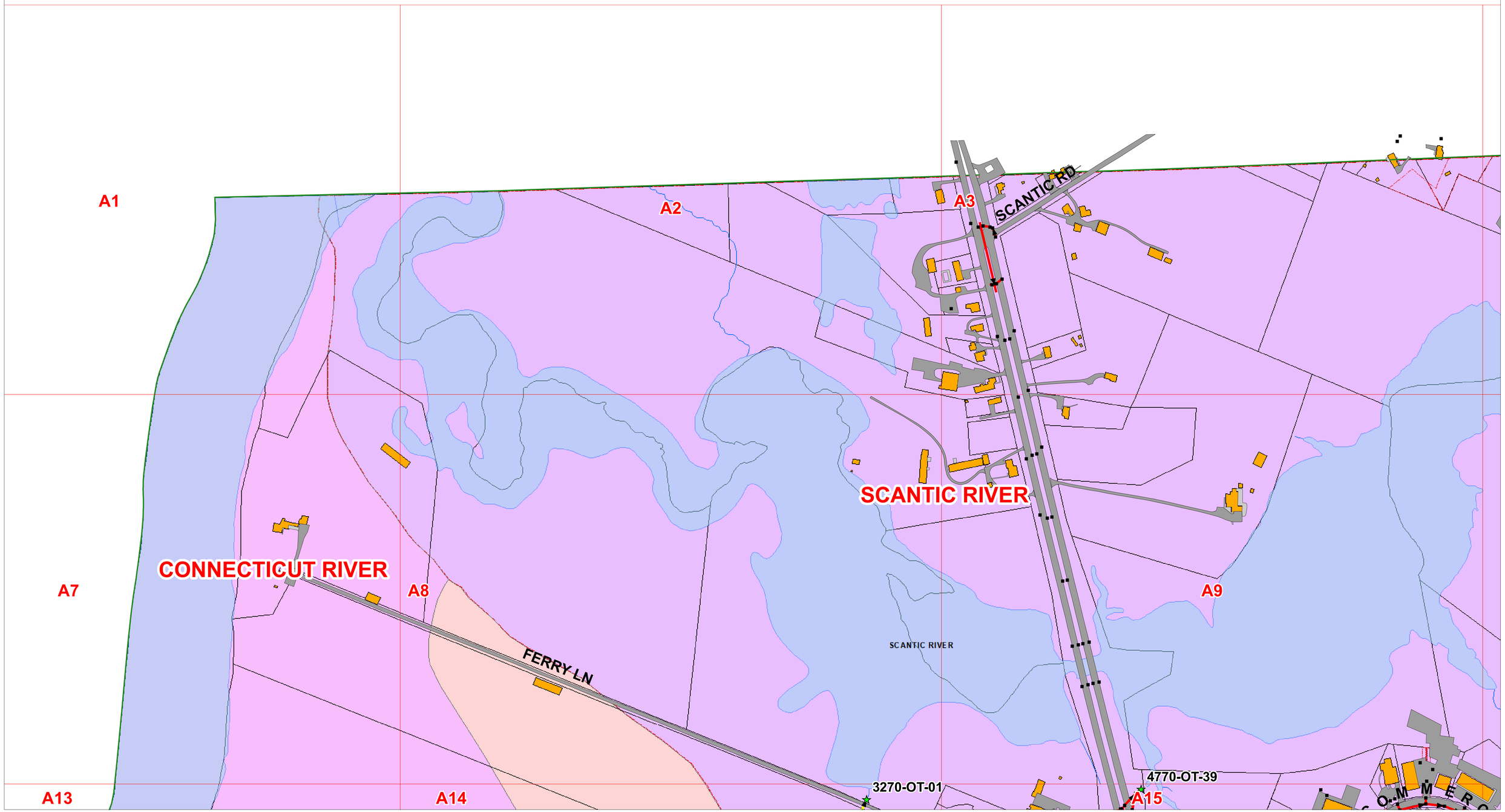
Geographic Information System




# MS4 Annual Report
# Storm Sewer Mapping
# February 22, 2021
# Sheet 5

## LEGEND

- OUTFALLS
- INLETS
- CATCHBASINS
- MANHOLES
- UNDER_DRAINS
- FOUNDATION_DRAINS
- STORM PIPES
- CULVERT PIPES

### MAJOR TRANSPORTATION

- HIGHWAY
- STREET

### MINOR TRANSPORTATION

- DRIVEWAY
- PARKING LOT
- PRIVATE WALKWAY
- SIDEWALK CONDO
- SIDEWALK PUBLIC
- SIDEWALK SCHOOL
- Grid200Scale 24X36
- TOWN LINE
- CONDOMINIUMS
- BUILDINGS

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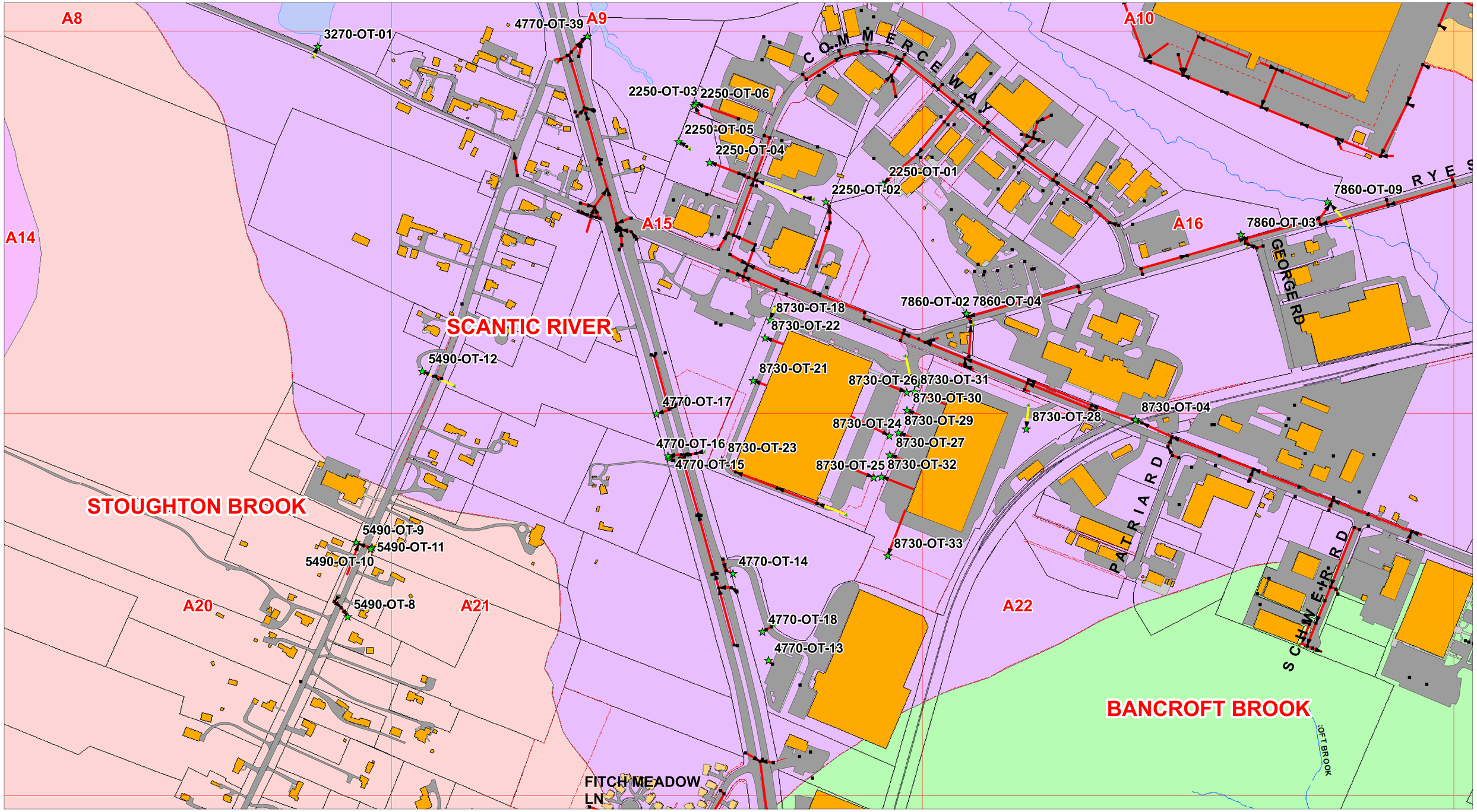
Geographic Information System




# MS4 Annual Report
# Storm Sewer Mapping
# February 22, 2021
# Sheet 6

## LEGEND

- OUTFALLS
- INLETS
- CATCHBASINS
- MANHOLES
- UNDER_DRAINS
- FOUNDATION_DRAINS
- STORM PIPES
- CULVERT PIPES

### MAJOR TRANSPORTATION

- HIGHWAY
- STREET

### MINOR TRANSPORTATION

- DRIVEWAY
- PARKING LOT
- PRIVATE WALKWAY
- SIDEWALK CONDO
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- SIDEWALK SCHOOL
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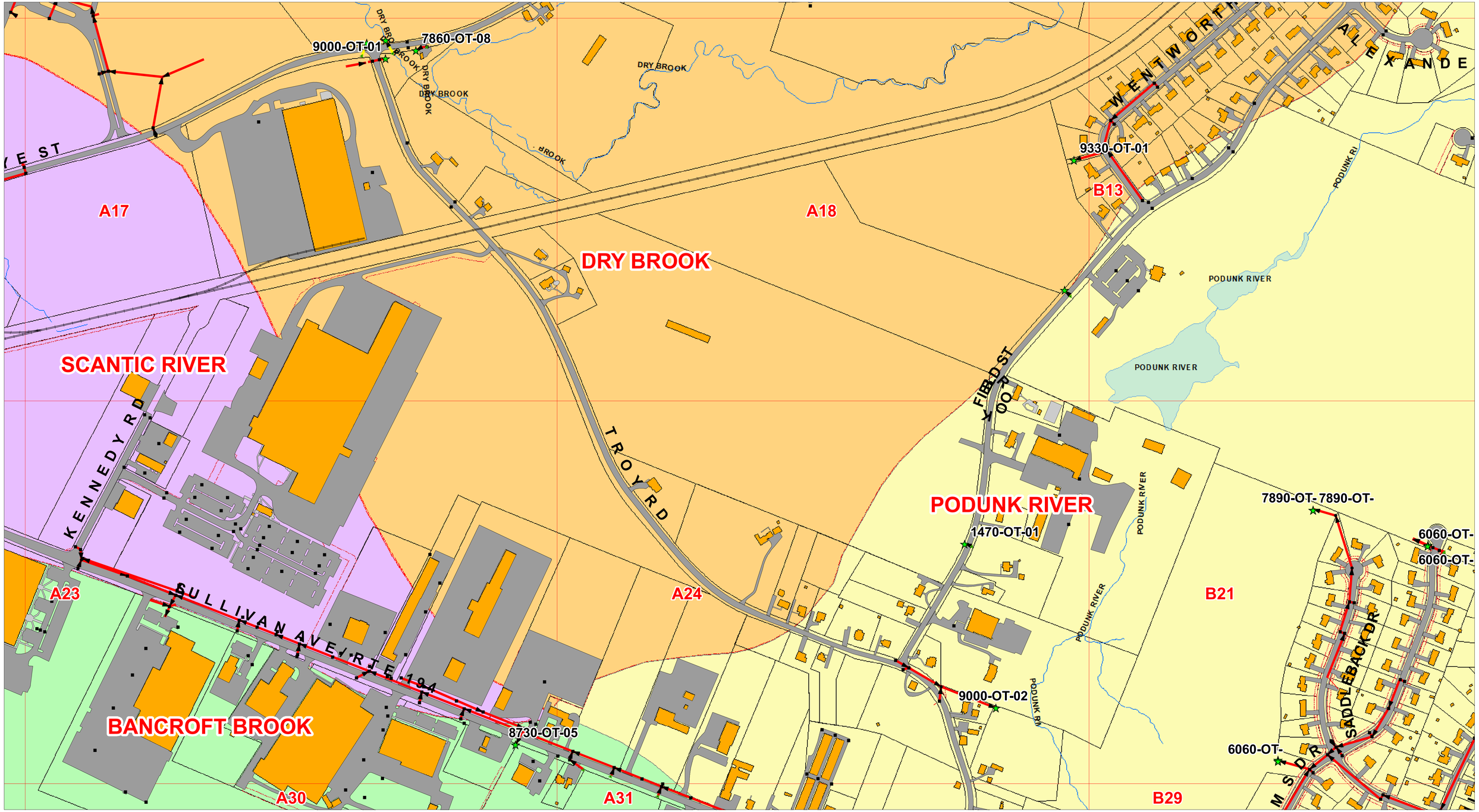


# MS4 Annual Report
# Storm Sewer Mapping
# February 22, 2021
# Sheet 7

## LEGEND

- OUTFALLS
- INLETS
- CATCHBASINS
- MANHOLES
- UNDER_DRAINS
- FOUNDATION_DRAINS
- STORM PIPES
- CULVERT PIPES

### MAJOR TRANSPORTATION

- HIGHWAY
- STREET

### MINOR TRANSPORTATION

- DRIVEWAY
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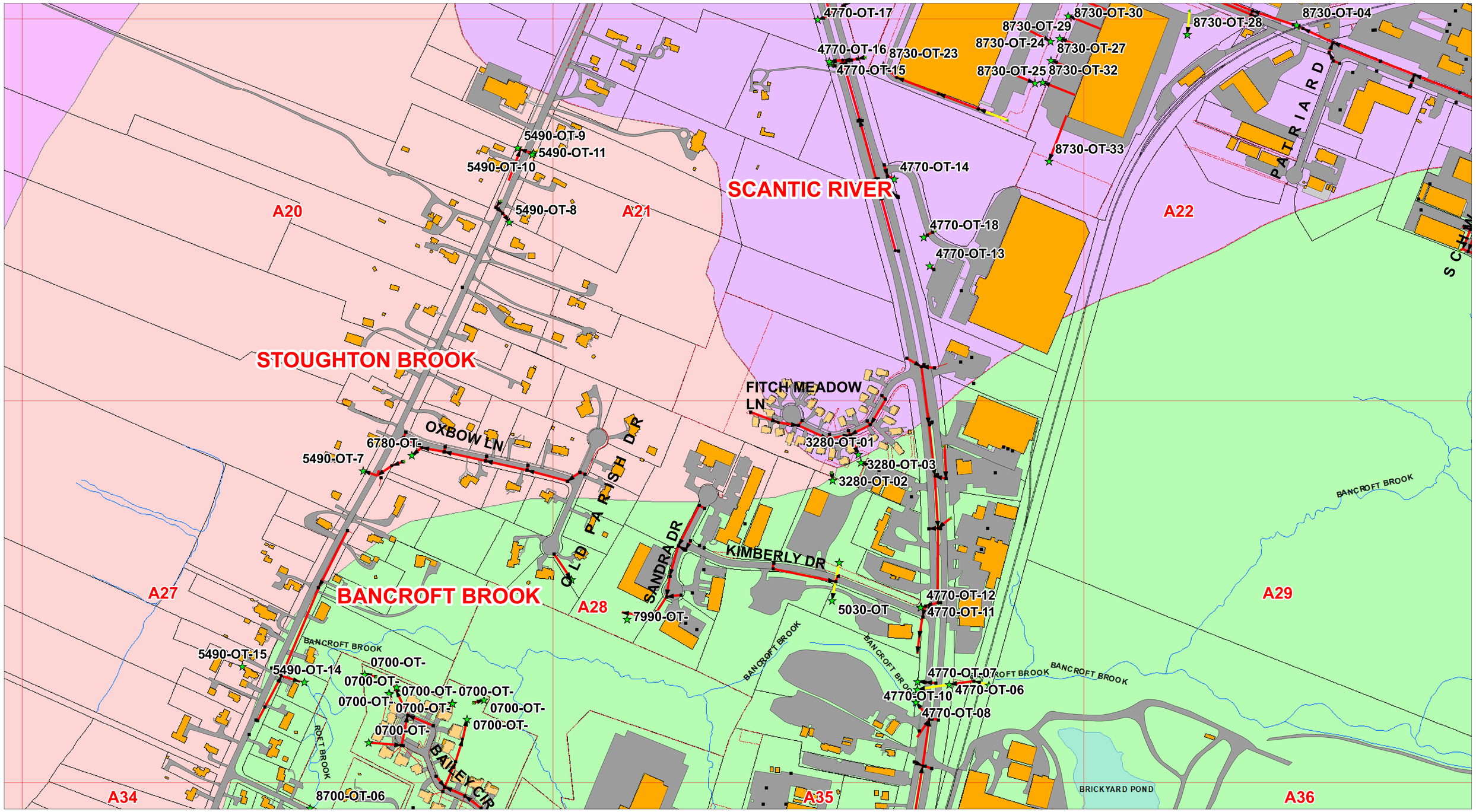


# MS4 Annual Report
# Storm Sewer Mapping
# February 22, 2021
# Sheet 8

## LEGEND

- OUTFALLS
- INLETS
- CATCHBASINS
- MANHOLES
- UNDER_DRAINS
- FOUNDATION_DRAINS
- STORM PIPES
- CULVERT PIPES

**MAJOR TRANSPORTATION**

- HIGHWAY
- STREET

**MINOR TRANSPORTATION**

- DRIVEWAY
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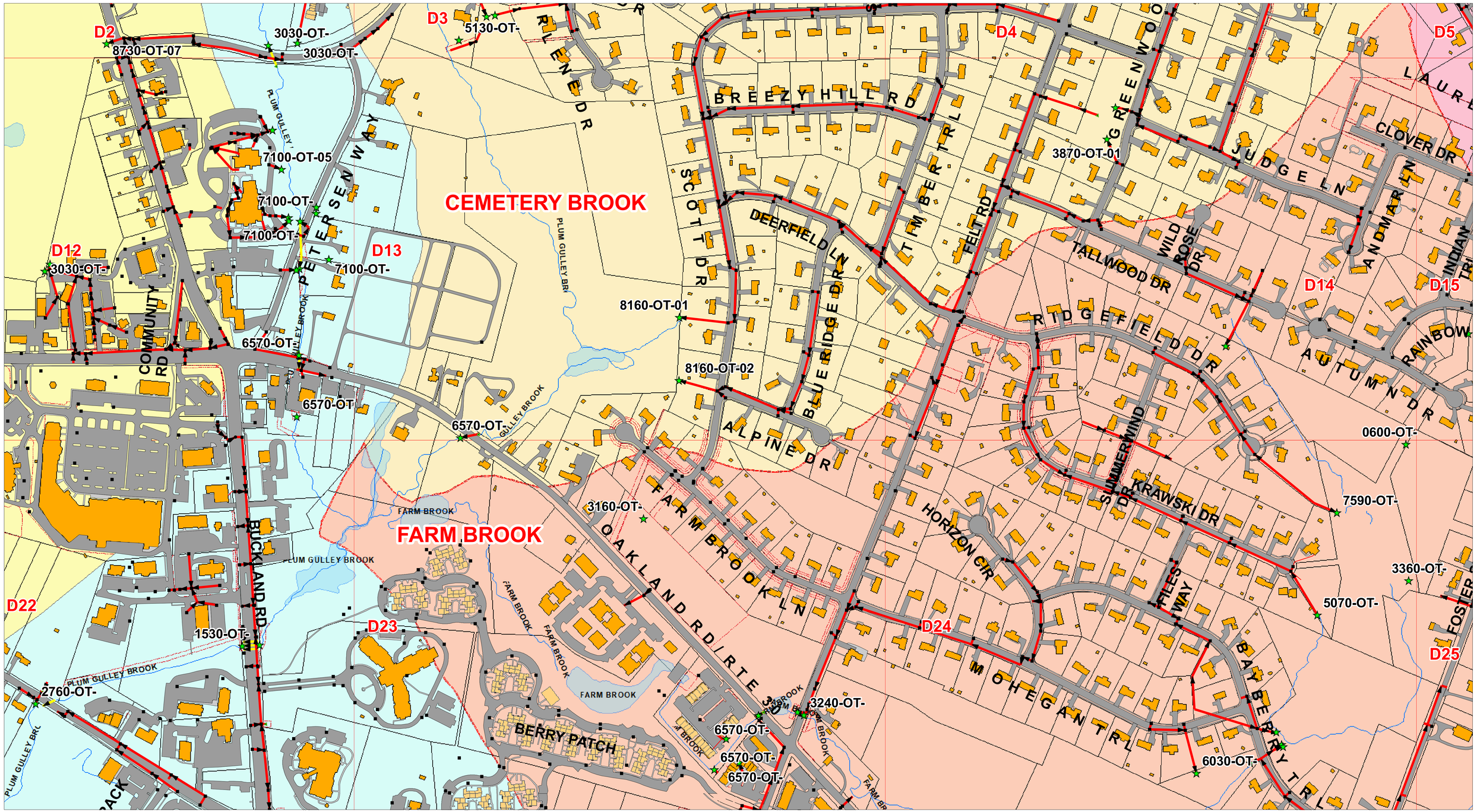


# MS4 Annual Report
# Storm Sewer Mapping
# February 22, 2021
# Sheet 9

## LEGEND

- OUTFALLS
- INLETS
- CATCHBASINS
- MANHOLES
- UNDER_DRAINS
- FOUNDATION_DRAINS
- STORM PIPES
- CULVERT PIPES

### MAJOR TRANSPORTATION

- HIGHWAY
- STREET

### MINOR TRANSPORTATION

- DRIVEWAY
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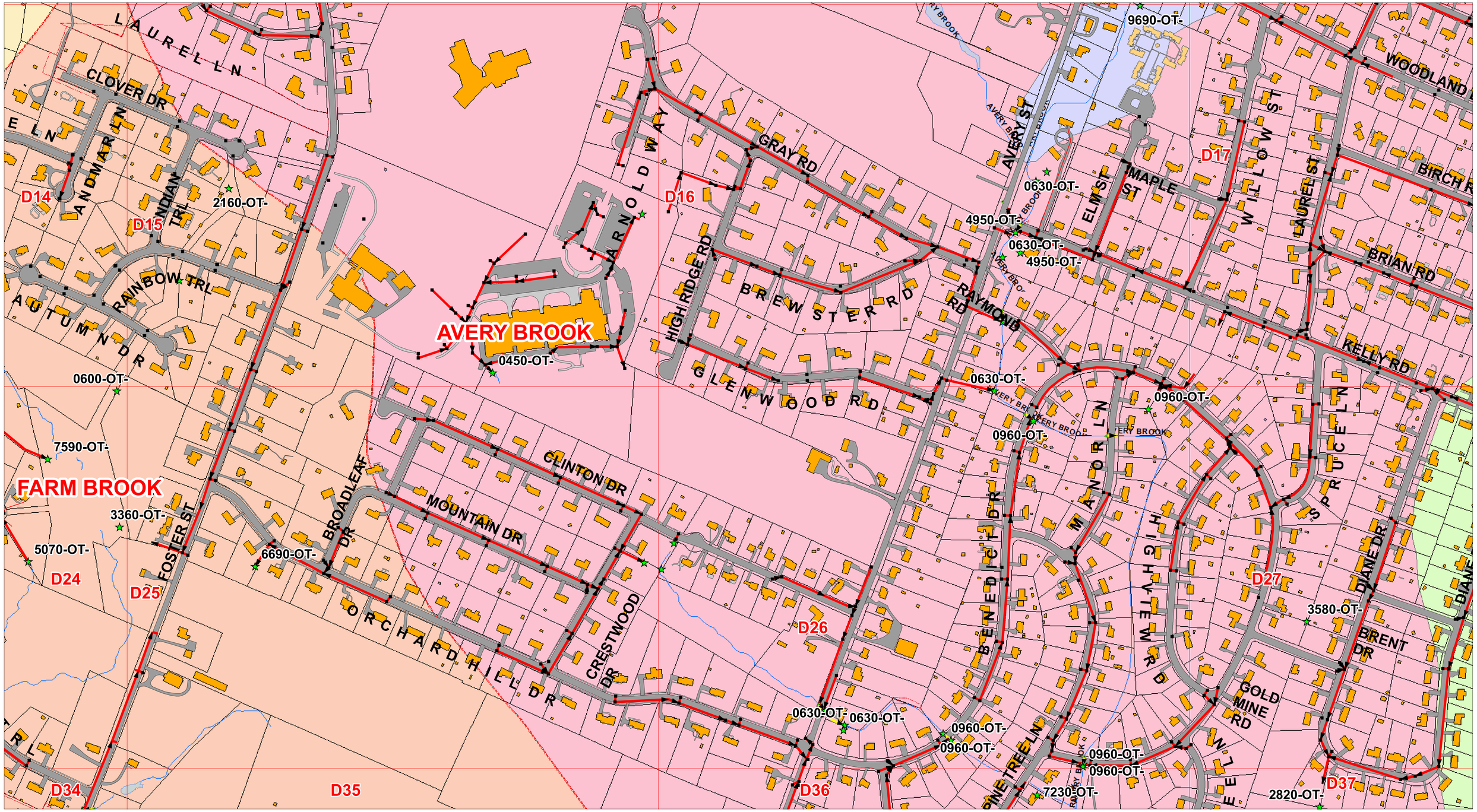


# MS4 Annual Report
# Storm Sewer Mapping
# February 22, 2021
# Sheet 10

## LEGEND

- OUTFALLS
- INLETS
- CATCHBASINS
- MANHOLES
- UNDER_DRAINS
- FOUNDATION_DRAINS
- STORM PIPES
- CULVERT PIPES

### MAJOR TRANSPORTATION

- HIGHWAY
- STREET

### MINOR TRANSPORTATION

- DRIVEWAY
- PARKING LOT
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INCORPORATED 1845

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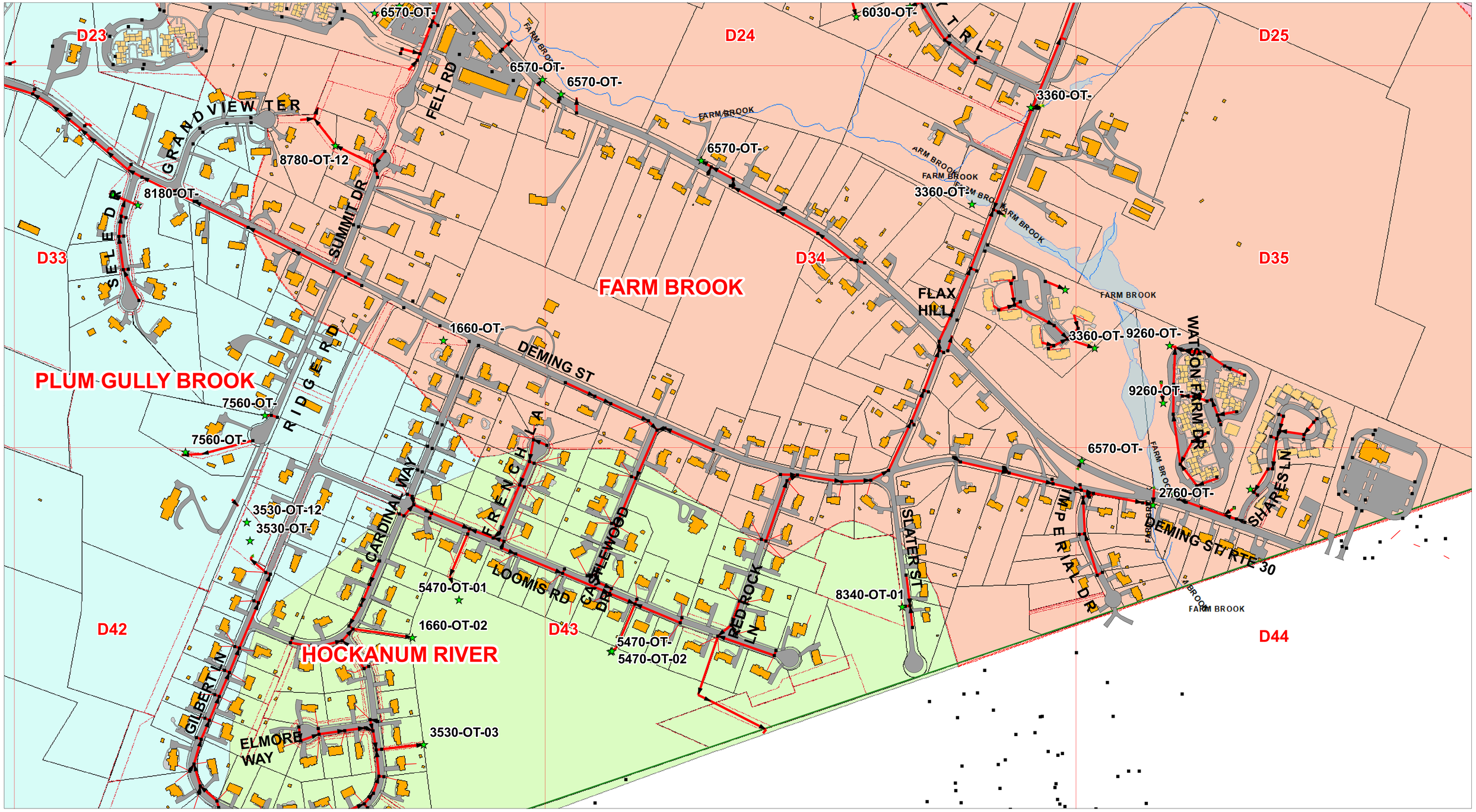


# MS4 Annual Report
# Storm Sewer Mapping
# February 22, 2021
# Sheet 11

## LEGEND

- OUTFALLS
- INLETS
- CATCHBASINS
- MANHOLES
- UNDER_DRAINS
- FOUNDATION_DRAINS
- STORM PIPES
- CULVERT PIPES

**MAJOR TRANSPORTATION**

- HIGHWAY
- STREET

**MINOR TRANSPORTATION**

- DRIVEWAY
- PARKING LOT
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- SIDEWALK CONDO
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- BUILDINGS

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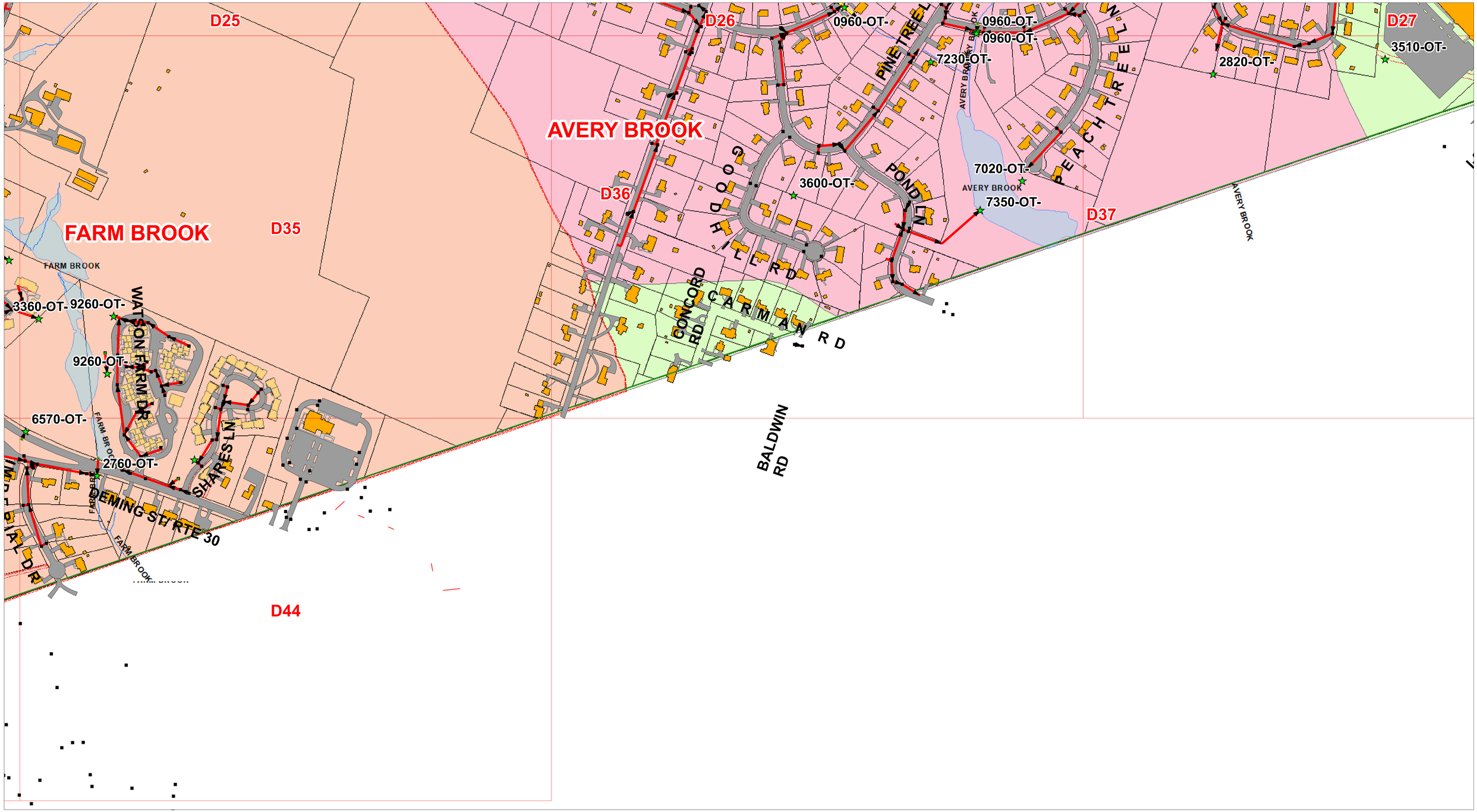


# MS4 Annual Report
# Storm Sewer Mapping
# February 22, 2021
# Sheet 12

## LEGEND

- OUTFALLS
- INLETS
- CATCHBASINS
- MANHOLES
- UNDER_DRAINS
- FOUNDATION_DRAINS
- STORM PIPES
- CULVERT PIPES

### MAJOR TRANSPORTATION

- HIGHWAY
- STREET

### MINOR TRANSPORTATION

- DRIVEWAY
- PARKING LOT
- PRIVATE WALKWAY
- SIDEWALK CONDO
- SIDEWALK PUBLIC
- SIDEWALK SCHOOL
- Grid200Scale 24X36
- TOWN LINE
- CONDOMINIUMS
- BUILDINGS

N
W E
S

0 200 400 800 Feet

Scale: 1 inch = 200 feet

Planimetric data provided by SBC under contract and is based on an aerial flight performed in spring of 2005. Continuous updates completed with As-built information and State of CT aerial flight in 2016. This map is a graphical representation of property information and is subject to change. The Town of South Windsor and SBC assume no legal responsibility for information depicted on this map and is to be used for planning purposes only.

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