# MS4 General Permit
# Town of Wallingford 2021 Annual Report
## Permit Number GSM 00050
## January 1, 2021 – December 31, 2021

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

**Part I: Summary of Minimum Control Measure Activities**

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

### 1.1 BMP Summary

| BMP | Activities in current reporting period | Sources Used (if applicable) | Method of Distribution | Audience (and number of people reached) | Measurable Goal | Department / Person Responsible | Additional details |
|---|---|---|---|---|---|---|---|
| 1-1 Implement public education and outreach | *The Town utilizes its website to post links related to the Stormwater Management Plan, as well as other links relating to polluted runoff, rain barrel utilization, and vegetated ripairian buffers.* | *Stormwater and You: https://www.wallingford.ct.us/government/departments/public-works/stormwater-and-you/* | *Website* | *~1,000* | *Provide public access to stormwater literature.* | *Department of Public Works, Engineering, Wetlands, Planning & Zoning* | |
| *1-2 Address education/ outreach for pollutants of concern* | *The Town has posted a brochure on the Stormwater management page relating to pet waste management. This brochure details* | *Pet Care Fact Sheet: https://www.wallingford.ct.us/Customer-Content/www/CMS/files/EngPetCare* | *Website* | *~1,000* | *Educate and provide pet waste management to the public.* | *Water Pollution Control Authority* | |

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| | *the importance of cleaning up after a pet as well as waterfowl pollutants.* | *FactSheet121120.pdf* | | | | | |
| ***Additional BMP:*** *1-3 Hazardous Waste Collection* | *The Town of Wallingford provides hazardous waste collection in association with the Regional Water Authority in New Haven. Wallingford residents can dispose of their hazardous wastes at this location Saturday Mornings from mid-May to the end of October.* | *Waste Disposal Center for Wallingford Residents: https://www.wallingford.ct.us/residents/recycling-composting-and-waste-disposal/waste-disposal-center/* | *Website.* | *~1,000* | *Educate and provide hazardous waste collections.* | *Town Planning Committee* | |

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

*1. Continue with Hazardous Wast collection days.*
*2. The Town plans to set up a display at the Town Hall, near the Engineering Department. Stormwater information is currently posted in the Engineering Department.*

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

### 2.1 BMP Summary

| **BMP** | **Status** (Complete, Ongoing, In Progress, or Not started) | **Activities in current reporting period** | **Measurable Goal** | **Department / Person Responsible** | **Date completed or projected completion date** (include the start date for anything that is 'in progress') | **Location Posted** | **Additional details** |
|---|---|---|---|---|---|---|---|
| 2-1 Final Stormwater Management Plan publicly available | *Completed* | *The Stormwater Management Plan is currently located on the Town's "Stormwater and You" page.* | *Provide notice and access to the Stormwater Management Plan* | *Engineering* | *April 1, 2017* | *Stormwater Management Plan: https://www.wallingford.ct.us/customer-content/www/CMS/files/StormwaterMgmtPlanFinal33017.pdf* | |
| 2-2 Comply with public notice requirements for Annual Reports (annually by 2/15) | *Completed Annually* | *The public notice is posted via the Town website on an annual basis for public review and comments.* | *Provide notice and access to the Annual Report* | *Law Department, Engineering, and Department of Public Works* | *Annually-by Feb. 15th* | *Annual Report: https://www.wallingford.ct.us/government/departments/public-works/stormwater-and-you/* | |
| ***Additional BMP:*** *2-3 Hazardous Waste Collection* | *Completed Annually* | *The Town of Wallingford provides hazardous waste collection in association with the Regional Water Authority in New Haven. Wallingford residents can dispose of their hazardous wastes at this location Saturday Mornings from mid-May to the end of October.* | *Provide Hazardous Waste Collections or access to collections* | *Regional Water Authority* | *Annually-mid-May though the end of October* | *Waste Disposal Center for Wallingford Residents: https://www.wallingford.ct.us/residents/recycling-composting-and-waste-disposal/waste-disposal-center/* | |
| ***Additional BMP:*** *2-4 Composting* | *Completed Annually* | *The Town of Wallingford provides disposal for* | *Provide disposal for organic debris.* | *Compost Center* | *Yearly* | *Compost Center: https://www.wallingford.ct.us/re* | |

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| | | *leaves and other organic debris for Town residents at the local compost center.* | | | | *sidents/recycling-composting-and-waste-disposal/compost-center-for-residents/* | |

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

*1. The Town of Wallingford anticipates a booth containing stormwater information at "Celebrate Wallingford".*
*2. Brochures to be distributed on the Stormwater Retrofit Progam.*

**It should be noted that all future activities are COVID-dependent, and may result in less participation or cancellation.*

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

### 3.1 BMP Summary

| **BMP** | **Status** (Complete, Ongoing, In Progress, or Not started) | **Activities in current reporting period** | **Measurable Goal** | **Department / Person Responsible** | **Date completed or projected completion date** (include the start date for anything that is 'in progress') | **Additional details** |
|---|---|---|---|---|---|---|
| 3-1 Develop written IDDE program (Due 7/1/19) | *Completed* | *The Town finalized an IDDE progam in September of 2019.* | *Develop written plan of IDDE program* | *Law Departemnt, Department of Public Works, Engineering* | *September 2019* | |
| 3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas (Due 7/1/20) | *Completed* | *The Town developed a list and maps of all MS4 stormwater outfalls in priority areas through CAD technology. With assistance from Atlas, the Town has since mapped all MS4 stormwater outfalls through a GIS technology, and continues a QA/QC process of reviewing the GIS/CAD systems, and editing as necessary.* | *Map all outfalls.* | | | |
| 3-3 Implement citizen reporting program (Ongoing) | *Completed* | *The Town has implemented an illicit discharge reporting form, which is available on the Town website. Citizen reporting is maintainined through the Engineering Department.* | *Provide a reporting mechanism and log.* | *Engineering Department* | *April 1, 2017.* | *Citizen Reporting Form: https://www.wallingford.ct.us/Customer-Content/www/CMS/files/EngSvcReqRepForm012820.pdf* |
| 3-4 Establish legal authority to prohibit illicit discharges (Due 7/1/19) | *Completed* | *The Town wrote and adoped a Stormwater Connection Ordinance, which was adopted in 2018.* | *Adopt ordinance* | *Law Department, Engineering* | *March 14, 2018* | *Ordinance No. 621: https://ecode360.com/33393542* |

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|---|---|---|---|---|---|---|
| 3-5 Develop record keeping system for IDDE tracking (Due 7/1/17) | *Completed* | | *Maintain list.* | *Engineering Department* | *April 1, 2017* | |
| 3-6 Address IDDE in areas with pollutants of concern | *Ongoing* | *Dry weather screening was conducted at 24 outfalls in 2021,*<br><br>*Wet weather screening was conducted at six (6) priority outfalls.*<br><br>*Catchment Rankings have been completed. SSOs are under investigation.* | *Wet weather testing and additional investigation as necessary.* | *Engineering Departmment* | *Ongoing-Started in 2018* | |

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

1. *Continue Wet Weather sampling at priority outfalls discharging to impaired waters.*
2. *Continue follow-up dry-weather screening/testing.*
3. *Respond to any illicit discharge complaints*
4. *Continue SSO investigations*

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

| **Location** (Lat long/ street crossing /address and receiving water) | **Date and duration of occurrence** | **Discharge to MS4 or surface water** | **Estimated volume discharged** | **Known or suspected cause / Responsible party** | **Corrective measures planned and completed** (include dates) | **Sampling data** (if applicable) |
|---|---|---|---|---|---|---|
| *Nicholas Road* | *7/13/2018* | *Catch Basin on Nicholas Road* | *Unknown* | *A resident utilizing an RV was found to have been dumping the RV waste tank into the storm drain.* | *DEEP was contacted, as well as the Town. The resident was instructed that further dumping would result in fines. The resident was also provided a list of authorized RV waste dumping sites.* | *None.* |

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| *Old Gate Road.* | *9/2/2019* | *Catch basin on Old Gate Road* | *Unknown* | *A septic system pipe was found to have been illegally connected to the MS4 system, and was discharging to the storm drain.* | *The homeowner was instructed to and completed a capping of a 4" diameter PVC pipe that had been found discharging sanitary sewage into the Town's catch basin.* | *None.* |
| *Durham Road* | *4/24/2020* | *Asmund Brook* | *Unknown* | *A retention pond utilized by a facility for washing quarried stone was found to have insufficient runoff controls. This in turn caused runoff to enter into the Asmund Brook, causing a distinct green discoloration of the water.* | *Based on the location of the discharge (Wallingford and Durham), this illicit discharge falls under the jurisdiction of Durham, and is currently under investigation.* | *Elevated concentrations of chromium, copper, nickel, zinc, and total suspended solids were found.* |
| *Unknown* | *6/1/2020* | -- | -- | *Residential property-potential septic failure.* | *The Town completed an investigation, and determined that the discharge was groundwater from a nearby sump pump. No further action necessary.* | *None.* |
| *530 South Cherry Street* | | | | | | |
| *37 Country Way* | | | | | | |
| *33 Summerwood Drive* | | | | | | |

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

| Method used to track illicit discharge reports | Location and nature of structure with failing septic systems | Actions taken to respond to and address the failures | Impacted waterbody or watershed, if known | Dept. / Person responsible |
|---|---|---|---|---|
| *The Farmington Valley Health District (FVHD) received and maintains records of septic failures along with actions taken. All sanitary sewer connections and system extensions are managed by the Town Health Department. The Town will begin to formally coordinate with FVHD regarding records of septic failures. In coordination with Atlas, the Town is currently investigating any septic repairs and/or failures through the FVHD as well.* | | | | |
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### 3.5 Briefly describe the method and effectiveness of said method used to track illicit discharge reports.

*Residents of the Town can report illicit discharges to the Engineering Department through an online reporting form, which is available at https://www.wallingford.ct.us/government/departments/public-works/stormwater-and-you/. The Town then conducts follow-up investigations of reported IDDEs, and implements and/or enforces the discharge elimination.*

### 3.6 IDDE reporting metrics

| Metrics | |
|---|---|
| Estimated or actual number of MS4 outfalls | *1,113* |
| Estimated or actual number of interconnections | *37* |
| Outfall mapping complete | *95% (ongoing updates throughout permit lifetime.* |
| Interconnection mapping complete | *80% (Mapping of the CTDOT interconnections and several other surrounding towns has been completed. Interconnection screenings are still under investigation.* |
| System-wide mapping complete (detailed MS4 infrastructure) | *95% (Ongoing updates* |

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| | *throughout permit lifetime).* |
| Outfall assessment and priority ranking | *95% (The majority of outfalls to impaired waterbocdies have been inspected and sampled. Six (6) priority outfalls have been chosen. Priority rankings have also been mapped, and may change throughout the permit lifetime based on future data.* |
| Dry weather screening of all High and Low priority outfalls complete | *70% (The majority of dry weather screening at outfalls in high priority outfalls and discharging to impaired waterbodies have been investigated. Outfalls throughout the entirety of the Town are continually being investigated.* |
| Catchment investigations complete | *90%. All catchments (utilizing basins for assessment purposes), have been ranked and prioritized. Due to the lengthy time needed to investigate all* |

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| | *septic repairs and/or failures, refer to **Appendix III** for the compelted Catchment Investigations.* |
| Estimated percentage of MS4 catchment area investigated | *45%* |

**3.7 Briefly describe the IDDE training for employees involved in carrying out IDDE tasks including what type of training is provided and how often it is given** (minimum once per year).

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| *Annual training is generally provided to all Department of Public Works staff to recognize and report illicit discharges. Due to Covid-19 concerns, annual training was not provided to all Department of Public Works staff. Several meetings were held in coordination with Atlas and pertinent engineering and Department of Public Works staff pertaining to the MS4 permit. An annual training for all Department of Public Works is scheduled for spring of 2022.* |

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

### 4.1 BMP Summary

| **BMP** | **Status** (Complete, Ongoing, In Progress, or Not started) | **Activities in current reporting period** | **Measurable Goal** | **Department / Person Responsible** | **Date completed or projected completion date** (include the start date for anything that is 'in progress') | **Additional details** |
|---|---|---|---|---|---|---|
| 4-1 Implement, upgrade, and enforce land use regulations or other legal authority to meet requirements of MS4 general permit (Due 7/1/20) | *Completed.* | *The Town has revised specific zoning and wetlands regulations to meet the needs for stormwater management as it pertains to construction.* | *Revise land-use regulations* | *Planning and Zoning, Wetlands.* | *July 1, 2017.* | *Ordinance No. 621: https://ecode360.com/33393542* |
| 4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval (Ongoing) | *Completed* | *Site plan reviews are completed by applicable departments.* | *Utilize interdepartmental coordination in site plan review and approval, as it pertains to the MS4 permit.* | *Planning and Zoning, Wetlands* | *June 30, 2018- ongoing throughout permit lifetime.* | |
| 4-3 Review site plans for stormwater quality concerns (Ongoing) | *Completed* | *Site plans are reviewed for compliance with the contractor's Stormwater Management Plan.* | *Review revised plans for MS4 compliance, and issue review comments.* | *Planning and Zoning, Wetlands.* | *July 1, 2017- ongoing throughout permit lifetime.* | *Projects that fall under the Planning and Zoning department are reviewed for compliance with the CTDOT drainage manual. The Town is also working towards modifying zoning ordiances in an effore to improve stormwater quality in priority areas, and within the Watershed Protection District.* |
| 4-4 Conduct site inspections (Ongoing) | | | *Document inspections and actions.* | | | |

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| 4-5 Implement procedure to allow public comment on site development (Ongoing) | *Completed* | *Site inspections are completed on an as-needed basis.* | *Provide an opportunity for public comment/involvement.* | *Planning and Zoning, Wetlands* | *July 1, 2017-ongoing throughout permit lifetime.* | |
| 4-6 Implement procedure to notify developers about DEEP construction stormwater permit (Ongoing) | *Completed* | *Brochures and fliers are posted throughout applicable departments pertiaing to the DEEP construction stormwater permit.* | *Include comments to applications.* | *Planning and Zoning, Wetlands* | *July 1, 2017-ongoing throuhogut permit lifetime.* | *The Town is looking to add this requirement to future applications for the Planning and Zoning department, as well as the wetlands department.* |
| ***Additional BMP:*** *4-7 Require Waste Control onsite* | | | *Notify developers about DEEP permitting obligations.* | | *July 31, 2019-ongoing throughout permit lifetime.* | |

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

The Commission has hired a peer reviewer for proposed soil erosion and sediment control measures. as well as site inspections during construction. Most, if not all, permitted construction projects are subject to a Soil Erosion Bond with the Planning & Zoning Office, as well as site inspections of which observe soil erosion and sediment control measures throughout construction.

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

### 5.1 BMP Summary

| **BMP** | **Status** (Complete, Ongoing, In Progress, or Not started) | **Activities in current reporting period** | **Measurable Goal** | **Department / Person Responsible** | **Date completed or projected completion date** (include the start date for anything that is 'in progress') | **Additional details** |
|---|---|---|---|---|---|---|
| 5-1 Establish and/or update legal authority and guidelines regarding LID and runoff reduction in site development planning (Due 7/1/22) | *Ongoing* | *Currently, regulations exist and are utilized for the enforcement of runoff reduction. The Town is looking to strengthen these regulations.* | *Adopt BMPs for any activity, operation, or facility which may cause or contribut to the pollution or contamination of stormwater, the storm drain system, or waters of the U.S.* | *Planning and Zoning, Wetlands.* | *July 1, 2020-ongoing* | |
| 5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects (Due 7/1/22) | *Completed* | *A Stormwater Maintenance Plan is required for any area that is equal to or greater than 1 acre of disturbance.* | *Enforce regulations and guidelines of LID and runoff reductions.* | *Planning and Zoning* | *July 1, 2019-ongoing throughout permit lifetime.* | |
| 5-3 Identify retention and detention ponds in priority areas (Due 7/1/20) | *Completed* | *All detention, retention, and sediment basins have been identified for the Town. Inspections are completed annually and cleaned where basins are found to have 50% of sediment in excess.* | *Compile a list and compelte mapping of Town-owned detention basins.* | *Engineering* | *July 1, 2019-ongoing throughout permit lifetime.* | |
| 5-4 Implement long-term maintenance plan for stormwater basins and treatment structures (Ongoing) | *Completed* | *The Department of Public Works and Engineering department coordinate inspections of basins on an annual basis, and facilitate maintenance on an as-needed basis.* | *Annually inspect and maintain facilities.* | *Engineering, Department of Public Works.* | *July 1, 2019-ongoing throughout permit lifetime.* | |

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|---|---|---|---|---|---|---|
| 5-5 DCIA mapping (Due 7/1/20) | *Completed* | *The Town's DCIA was calculated with assistance from Nathan L Jacobson & Associates. Atlas has mapped all DCIA areas through a GIS system.* | *Provide an understanding of the Town's overall DCIA to the MS4 infrastructure.* | *Engineering, Nathan L. Jacobson & Associates, Atlas.* | *June 2019* | |
| 5-6 Address post-construction issues in areas with pollutants of concern | *Completed* | *In post-construction areas, if erosion or high accumulation of sedimentation are found during the annual inspections conducted under the long-term maintenance plan, the Town will prioritize these areas for DCIA retrofit projects.* | *Adress post-construction areas where erosion or high accumulation of sedimentation are found during annual inspections.* | *Engineering* | *July 1, 2020-ongoing throughout permit lifetime.* | |

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

1. *The Town will continue to monitor, clean, and repair settling/silting bsins, catch basins, outfalls, swales, etc.*
2. *Develop process for annual inspections of Post-Construction Stormwater Management activities*

**5.3 Post-Construction Stormwater Management reporting metrics**

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

| **Metrics** | |
|---|---|
| Baseline (2012) Directly Connected Impervious Area (DCIA) | 573.76 acres |
| DCIA disconnected (redevelopment plus retrofits) | acres this year (TBD) / acres total (TBD) |
| Retrofit projects completed | Under development |
| DCIA disconnected | % this year (TBD) / % total since 2012 (TBD) |
| Estimated cost of retrofits | $TBD |
| Detention or retention ponds identified | 17 this year /17 total |

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

The DCIA Mapping was conducted in substantial accordance with the methodologies presented in the October 25, 2017 UConn CLEAR Webinar entitled CT MS4 Mapping Details, Clarifications and Tools, the October 19, 2018 UConn CLEAR Workshop entitled CT MS4 Mapping Workshop as well

as information contained in the EPA reference entitled Estimating Change in Impervious Area (IA) and Directly Connected Impervious Area (DCIA) for Massachusetts Small MS4 Permit utilizing Sutherland equations.

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

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

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

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

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

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

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

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

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

50% was assigned to the high connectivity Sutherland Equation where DCIA% = 0.40*(IA%)1.2

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

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

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

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

### 6.1 BMP Summary

| **BMP** | **Status** (Complete, Ongoing, In Progress, or Not started) | **Activities in current reporting period** | **Measurable Goal** | **Department / Person Responsible** | **Date completed or projected completion date** (include the start date for anything that is 'in progress') | **Additional details** |
|---|---|---|---|---|---|---|
| 6-1 Develop/implement formal employee training program (Ongoing) | *Completed Annually* | *All Department of Public Works personnel are trained with proper stormwater management procedures and spill control.* | *Eliminate non-stormwater discharges into the storm sewers.* | *Department of Public Works* | *Ongiong throughout permit lifetime* | *Due to Covid-19, restrictions of training were implemented. An annual training is planned for spring 2022.* |
| 6-2 Implement MS4 property and operations maintenance (Ongoing) | *Completed* | *The Town utilizes a Spill Response Team through the local fire department. An SPCC plan is also implemented at the DPW facility.* | *Eliminates/minimizes spills and/or pollutant relases to the environment and navigable waterways.* | *Department of Public Works, Local Fire Department* | *December 31, 2019-ongoing throughout permit lifetime* | |
| 6-3 Implement coordination with interconnected MS4s | *Completed* | *Coordination of the MS4 interconnection mapping began in 2019. CTDOT interconnections have been mapped, and coordination between the Town and surrounding areas is ongoing.* | *Update the GIS system with interconnected locations.* | *Engineering, Department of Public Works* | *December 31, 2018-ongoing throughout permit lifetime.* | |
| 6-4 Develop/implement program to control other sources of pollutants to the MS4 | | *A Spill Response Team has been developed in the Town utilizing the local fire department.* | *Reduce other possible pollutants to the MS4.* | *Department of Public Works, Local Fire Department* | *Ongoing throughout permit lifetime.* | |
| 6-5 Evaluate additional measures for discharges to impaired waters* | *Ongoing* | *Wet weather sampling events have been conducted, and priority outfalls were identified throughout the Town. Dry weather inspections are continuing to be conducted for the entirety of the Town. As catchments are investigated, the Town will coordinate with Atlas on future measures pertaining to the reduction of bacterial discharge to impaired waters.* | *Pending further investigations, create a program or plan of action to redcue bacterial discharge to impaired waters.* | *Engineering, Atlas* | *Ongoing-started in 2021.* | |

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| 6-6 Track projects that disconnect DCIA (Ongoing) | *Ongoing* | *A Stormwater Retrofit Program has been drafted, and will be utilized as a method of tracking future DCIA disconnects.* | *Track DCIA disconnects.* | *Engineering* | *Ongoing-drafted in 2021* | |
| 6-7 Implement infrastructure repair/rehab program (Due 7/1/21) | *Ongoing* | *The Town currently assesses and maintains stormwater structures throughout the Town. The Town implementes repairs or rehabilitation on an as-needed basis.* | *Reduce/eliminate causes or contributions of pollution or contaminaton of stormwater, the storm drain system, or waters of the U.S.* | *Department of Public Works, Engineering* | *Ongoing throughout permit lifetime.* | |
| 6-8 Develop/implement plan to identify/prioritize retrofit projects (Due 7/1/20) | *Ongoing* | *A Stormwater Retrofit Program has been drafted. Prioritized areas and/or sites were identified based off of DCIA calculations, impaired waterbodies, current stormwater infrastructure, and the MEP of the Town.* | *Develop retrofit projects.* | *Planning and Zoning, Engineering* | *Ongoing-started in 2021* | |
| 6-9 Implement retrofit projects to disconnect 2% of DCIA (Due 7/1/22) | *Ongoing* | *As Retrofit Projects are identified, the Town will utilize the Impervious Cover Tracking Sheet to track and work towards disconnecting 2% of DCIA, or the MEP of the Town.* | *Track and reduce DCIA impacts.* | *Planning and Zoning, Engineering* | *Ongoing-started in 2021* | |
| 6-10 Develop/implement street sweeping program (Ongoing) | *Completed annually* | *All streets are swept at least once a year to remove sand and/or other debris.* | *Track swept lane miles.* | *Department of Public Works.* | *Completed Annually.* | |
| 6-11 Develop/implement catch basin cleaning program (Ongoing) | *Completed* | *The Town inspects approximately 1,000 catch basins a year. If a catch basin is found to have a sediment load of 50% or greater, then the sediment is removed.* | *Track material usage, and update plan as needed.* | *Department of Public Works.* | *Completed Annually.* | |
| 6-12 Develop/implement snow management practices (Due 7/1/18) | *Completed* | *Snow management is implemented on an annual basis. Department of Public Works staff are aware of risks associated with snow distribution as well as the potential effects of runoff. Generally, excess snow is staged at* | *Track material usage, and update plan as needed.* | *Department of Public Works* | *Completed Annually.* | |

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| | | *the property in which it is managed, and/or on the sides of raodways. Excess snow is transported and disposed of at the Town's Pent Road facility.* | | | | |
| **Additional BMP:** *6-13 New Road Construction Projects* | *Completed* | *The Town has implemented the use of sheet flow drainage in an effort to eliminate or reduce the use of catch basins. This sheet flow drainage will be utilized as a BMP when road re-paving is underway.* | *Reduce pollutants to the MS4, specifically sediment overload.* | *Department of Public Works* | *As needed* | *Reason for addition: Reduce sedimentation of waterways* |

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

1. *The Town will continue to conduct annual stormwater compliance training*
2. *Assess and implement repairs/rehabilitation as-needed at MS4 basins.*

### 6.3 Pollution Prevention/ Good Housekeeping reporting metrics

| **Metrics** | |
|---|---|
| Employee training provided for key staff | Covid restricted / Scheduled for Spring 2022 |
| Street sweeping | |
| | |
| Curb miles swept | miles |
| Volume (or mass) of material collected | lbs or tons |
| Catch basin cleaning | |
| Total catch basins in priority areas (value will be less than or equal to total catch basins town or institution-wide) | 8,727 |
| Total catch basins town- (or institution-) wide | 9,819 |
| Catch basins inspected | # |
| Catch basins cleaned | # |
| Volume (or mass) of material removed from all catch basins | lbs or tons |
| Volume removed from catch basins to impaired waters (if known) | lbs or tons |
| Snow management | |
| Type(s) of deicing material used | |
| Total amount of each deicing material applied | lbs or tons |
| Type(s) of deicing equipment used | |
| Lane-miles treated (A lane-mile is a mile of roadway in a single driving lane) | miles |
| Snow disposal location | |

| | |
|---|---|
| Staff training provided on application methods & equipment | (y/n) / dates(s) |
| Municipal turf management program actions (for permittee properties in basins with N/P impairments) | |
| Reduction in application of fertilizers (since start of permit) | lbs or % |
| Reduction in turf area (since start of permit) | acres |
| Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems) | |
| Cost of mitigation actions/retrofits | $TBD |

### 6.4 Catch basin cleaning program

| **Provide any updates or modifications to your catch basin cleaning program.** |
|---|
| *Approximatley 1,000 catch basins are inspected by the Department of Public Works on an annual basis. Catch basins that are found with over a 50% sediment load are cleaned. Catch basins in priority areas as well as catch basins with known historical issues are focuses on. A limited amount of staff and equipment perform this task.* |

### 6.5 Retrofit program

| **Briefly describe the Retrofit Program identification and prioritization process, the projects selected for implementation, the rationale for the selection of those projects and the total DCIA to be disconnected upon completion of each project. (Due 7/1/20)** |
|---|
| The Stormwater Retrofit Program was drafted by the Town and Atlas in 2021. The Program was designed to provide guidance on implementing LID, runoff reduction measures, or other means to disconnect or improve stormwater quality. To meet the 2% MEP disconnection goal, DCIA calculations, Urbanized areas, Impaired Waterbodies, and Catchment Rankings were utilized in identifying and prioritizing areas and/or projects to be selected for retrofits.<br><br>DCIA by Catchment was identified utilizing the the following formulas:<br><br>**High Connectivity**<br>DCIA%=0.4*(IA %)^1.2<br>Directly Connected Area= (DCIA)(IC Acres)<br><br>**Average Connectivity**<br>DCIA%=0.1*(IA%)^1.5<br>Directly Connected Area= (DCIA)(IC Acres)<br><br>***Partial Connectivity***<br>DCIA%=0.04*(IA%)^1.7<br>Directly Connected Area= (DCIA)(IC Acres)<br><br>***Slight Connectivity***<br>DCIA%=0.01*(IA%)^2.0<br>Directly Connected Area= (DCIA)(IC Acres) |

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

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

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

Based on these calculations, 72 catchments were identified with Urbanized Areas.

20 catchments containing impaired waterbodies were identified for the Town.

Catchment Priority Rankings were conducted for all Sub-Basins in the Town. Multiple factors were taken into consideration when scoring each catchment, including but not limited to DCIA calculations, previous screening results, age of development/structures, density of generating sites, nearby sewer repairs, urbanized areas, and impaired waterbodies. 66 catchments were identified as Problem or High Priority.

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

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

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

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

**Part II: Impaired waters investigation and monitoring**

## 1. Impaired waters investigation and monitoring program

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

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

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

**1.2 Describe program status**

| **Discuss 1) the status of monitoring work completed, 2) a summary of the results and any notable findings, and 3) any changes to the Stormwater Management Plan based on monitoring results.** |
|---|
| *To date, 112 outfalls discharging to impaired waterbodies have been investigated, 88 of which have been sampled during wet weather events, including six (6) priority outfalls on an annual basis. Stormwater discharge analytical results are indicative of elevated bacterial concetnrations. Outfalls that discharge to impaired waterbodies with "other pollutant of concern" have indicated generally low turnbidity, with the exception of select outfalls to Wharton's Brook. Additional sampling and dry-weather screening for remaining outfalls continues.* |

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

**2.1 Screening data**

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

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

| **Outfall ID** | **Latitude / Longitude** | **Sample date** | **Parameter** (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern) | **Results** | **Name of Laboratory (if used)** | **Follow-up required? *** |
|---|---|---|---|---|---|---|
| LH-2 | 41.435775/ -72.824375 | 6/10/2019 | Other | Turbidity: <5 NTU | N/A | None. |
| LH-3 | 41.434435/ -72.824212 | 6/10/2019 | Other | Turbidity 19.32 NTU | N/A | Yes |
| LH-6 | *41.43099/ -72.820112* | 6/10/2019 | Other | Turbidity 10.67 NTU | N/A | Yes |
| LH-7 | *41.430894/ -72.819874* | 6/10/2019 | Other | Turbidity: 9.67 NTU | N/A | Yes |
| LH-8 | *41.431369/ -72.817063* | 6/10/2019 | Other | Turbidity: 23.99 NTU | N/A | Yes |
| LH-9 | *41.433966/ -72.813953* | 6/10/2019 | Other | Turbidity: 7.32 NTU | N/A | Yes |
| MR-2 | *41.406323/ -72.803502* | 6/10/2019 | Other | Turbidity: 0.16 NTU | N/A | No |
| MR-3 | *41.406275/ -72.803362* | 6/10/2019 | Other | Turbidity: 0.01 NTU | N/A | No |
| WB-48 | *41.432293/ -72.832283* | 6/10/2019 | Other | Turbidity: 0.48 NTU | N/A | No |
| WB-28 | *41.450357/ -72.814351* | 6/10/2019 | Other | Turbidity: 5.86 NTu | N/A | Yes |

| | | | | | | |
|---|---|---|---|---|---|---|
| WB-29 | *41.450074/ -72.81412* | 6/10/2019 | Other | Turbidity: 47.02 NTU | N/A | Yes |
| WB-30 | *41.449968/ -72.813939* | 6/10/2019 | Other | Turbidity: 45.02 NTU | N/A | Yes |
| WB-31 | | 6/10/2019 | Other | Turbidity: 16.3 NTU | N/A | Yes |
| WB-33 | *41.448559/ -72.815494* | 6/10/2019 | Other | Turbidity: 11.6 NTU | N/A | Yes |
| QR-11 | *41.462104/ -72.826282* | 6/10/2019 | Other | Turbidity: 17.59 NTU | N/A | Yes |
| QR-12 | *41.459841/ -72.827471* | 6/10/2019 | Other | Turbidity: 6.62 NTU | N/A | Yes |
| WB-11 | *41.463681/ -72.795415* | 6/25/2019 | Other | Turbidity: 3.6 NTu | N/A | No |
| WB-17 | *41.460981/ -72.797429* | 6/25/2019 | Other | Turbidity 3.1 NTU | N/A | No |
| WB-18 | *41.460693/ -72.797471* | 6/25/2019 | Other | Turbidity: 6.8 NTU | N/A | Yes |
| WB-20 | *41.459926/ -72.797676* | 6/25/2019 | Other | Turbidity: 6.1 NTU | N/A | Yes |
| WB-21 | *41.458646/ -72.798128* | 6/25/2019 | Other | Turbidity: 10.6 NTU | N/A | Yes |
| WB-22 | *41.45617/ -72.803508* | 6/25/2019 | Other | Turbidity: 17.4 NTU | N/A | Yes |
| WB-23 | *41.456125/ -72.803435* | 6/25/2019 | Other | Turbidity: 44.1 NTU | N/A | Yes |
| WB-34 | *41.448097/ -72.81762* | 6/25/2019 | Other | Turbidity: 61.5 NTU | N/A | Yes |
| WB-35 | | 6/25/2019 | Other | Turbidity: 107.4 NTU | N/A | Yes |
| QR-13 | *41.458836/ -72.835459* | 6/25/2019 | Other | Turbidity: 16.2 NTU | N/A | Yes |
| QR-15 | *41.458434/ -72.835647* | 6/25/2019 | Other | Turbidity: 14.6 NTU | N/A | Yes |
| QR-16 | *41.458395/ -72.835737* | 6/25/2019 | Other | Turbidity: 14.8 NTU | N/A | Yes |
| QR-17 | *41.458125/ -72.836198* | 6/25/2019 | Other | Turbidity: 46.8 NTU | N/A | Yes |
| QR-23 | *41.432676/ -72.85064* | 6/25/2019 | Other | Turbidity: 44.1 NTU | N/A | Yes |
| LH-12 | *41.435807/ -72.808388* | 6/25/2019 | Other | Turbidity: 26.9 NTU | N/A | Yes |
| WB-1 | *41.482996/ -72.782988* | 3/13/2020 | Other | Turbidity: 19.48 NTU | N/A | Yes |

| | | | | | | |
|---|---|---|---|---|---|---|
| WB-2 | *41.479369/ -72.785385* | 3/13/2020 | Other | Turbidity: 13.35 NTU | N/A | Yes |
| WB-3 | *41.477169/ -72.785469* | 3/13/2020 | Other | Turbidity: 10.67 NTU | N/A | Yes |
| WB-4 | *41.475873/ -72.78748* | 3/13/2020 | Other | Turbidity: 8.67 NTU | N/A | Yes |
| WB-5 | *41.472614/ -72.793405* | 3/13/2020 | Other | Turbidity: 12.56 NTU | N/A | Yes |
| WB-6 | *41.470504/ -72.794556* | 3/13/2020 | Other | Turbidity: 8.83 NTU | N/A | Yes |
| WB-7 | *41.470374/ -72.794619* | 3/13/2020 | Other | Turbidity: 8.83 NTU | N/A | Yes |
| WB-8 | *41.469592/ -72.795031* | 3/13/2020 | Other | Turbidity: 9.29 NTU | N/A | Yes |
| WB-12 | *41.463192/ -72.795656* | 3/13/2020 | Other | Turbidity: 160.9 NTU | N/A | Yes |
| WB-13 | *41.46227/ -72.796111* | 3/13/2020 | Other | Turbidity: 17.24 NTU | N/A | Yes |
| WB-14 | *41.463438/ -72.796459* | 3/13/2020 | Other | Turbidity: 12.06 NTU | N/A | Yes |
| WB-16 | *41.461334/ -72.79699* | 3/13/2020 | Other | Turbidity: 24.19 NTU | N/A | Yes |
| WB-18 | *41.460693/ -72.797471* | 3/13/2020 | Other | Turbidity: 31.11 NTU | N/A | Yes |
| WB-20 | *41.459926/ -72.797676* | 3/13/2020 | Other | Turbidity: 1.61 NTU | N/A | No |
| WB-21 | *41.458646/ -72.798128* | 3/13/2020 | Other | Turbidity: 2.19 NTU | N/A | No |
| WB-22 | *41.45617/ -72.803508* | 3/13/2020 | Other | Turbidity: 19.91 NTU | N/A | Yes |
| WB-23 | *41.456125/ -72.803435* | 3/13/2020 | Other | Turbidity: 18.63 NTU | N/A | Yes |
| WB-24 | *41.453328/ -72.804466* | 3/13/2020 | Other | Turbidity: 11.18 NTU | N/A | Yes |
| WB-25 | *41.451907/ -72.813452* | 3/13/2020 | Other | Turbidity: 25.61 NTU | N/A | Yes |
| WB-26 | *41.451921/ -72.813353* | 3/13/2020 | Other | Turbidity: 10.61 NTU | N/A | Yes |
| WB-27 | *41.45189/ -72.813288* | 3/13/2020 | Other | Turbidity: 90.81 NTU | N/A | Yes |
| WB-28 | *41.450357/ -72.814351* | 3/13/2020 | Other | Turbidity: 11.24 NTU | N/A | Yes |
| WB-29 | *41.450074/ -72.81412* | 3/13/2020 | Other | Turbidity: 38.57 NTU | N/A | Yes |

| | | | | | | |
|---|---|---|---|---|---|---|
| WB-30 | *41.449968/ -72.813939* | 3/13/2020 | Other | Turbidity: 9.16 NTU | N/A | Yes |
| WB-31 | | 3/13/2020 | Other | Turbidity: 25.50 NTU | N/A | Yes |
| WB-32 | *41.449435/ -72.815047* | 3/13/2020 | Other | Turbidity: 22.46 NTU | N/A | Yes |
| WB-33 | *41.438152/ -72.824277* | 3/13/2020 | Other | Turbidity: 20.65 NTU | N/A | Yes |
| WB-34 | *41.448097/ -72.81762* | 3/13/2020 | Other | Turbidity: 20.72 NTU | N/A | Yes |
| WB-35 | | 3/13/2020 | Other | Turbidity: 20.68 NTU | N/A | Yes |
| WB-36 | *41.446483/ -72.819608* | 3/13/2020 | Other | Turbidity: 20.44 NTU | N/A | Yes |
| WB-37 | *41.444777/ -72.818079* | 3/13/2020 | Other | Turbidity: 10.12 NTU | N/A | Yes |
| WB-38 | *41.44401/ -72.82061* | 3/13/2020 | Other | Turbidity: 15.64 NTU | N/A | Yes |
| WB-39 | *41.443093/ -72.818226* | 3/13/2020 | Other | Turbidity: 12.63 NTU | N/A | Yes |
| WB-41 | *41.442284/ -72.819275* | 3/13/2020 | Other | Turbidity: 15.96 NTU | N/A | Yes |
| WB-24 | *41.453328/ -72.804466* | 4/21/2020 | Other | Turbidity: <5 NTU | N/A | No |
| WB-25 | *41.451907/ -72.813452* | | Other | Outfall destroyed. No samples collected. | N/A | |
| WB-26 | *41.451921/ -72.813353* | 4/21/2020 | Other | Turbidity: >5 NTU | N/A | Yes |
| WB-27 | *41.45189/ -72.813288* | 4/21/2020 | Other | Turbidity: >5 NTU | N/A | Yes |
| QR-1 | *41.503345/ -72.824605* | 4/21/2020 | Other | Turbidity: >5 NTU | N/A | Yes |
| QR-3 | *41.499705/ -72.818617* | 4/21/2020 | Other | Turbidity: >5 NTU | N/A | Yes |
| QR-5 | *41.487679/ -72.818601* | 4/21/2020 | Other | Turbidity: >5 NTU | N/A | Yes |
| QR-7 | *41.487413/ -72.820477* | 4/24/2020 | Other | Turbidity: <5 NTU | N/A | No |
| WB-12 | *41.463192/ -72.795656* | 4/24/2020 | Other | Turbidity: 29.32 NTU | N/A | Yes |
| WB-13 | *41.46227/ -72.796111* | 4/24/2020 | Other | Turbidity: 9.55 NTU | N/A | Yes |

| | | | | | | |
|---|---|---|---|---|---|---|
| WB-32 | *41.449435/ -72.815047* | 4/24/2020 | Other | Turbidity: 7.89 NTU | N/A | Yes |
| WB-36 | *41.446483/ -72.819608* | 4/24/2020 | Other | Turbidity: 8.75 NTU | N/A | Yes |
| WB-41 | *41.442284/ -72.819275* | 4/24/2020 | Other | Turbidity: 2.39 NTU | N/A | No |
| WB-45 | *41.436769/ -72.831613* | 4/24/2020 | Other | Turbidity: 4.16 NTU | N/A | No |
| MR-1 | *41.405734/ -72.804528* | 04/30/2020 | Bacteria, Other | E.coli: **5,790** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| MR-2 | 41.406323/ -72.803502 | 9/10/2020 | Bacteria, Other | E. coli: **3,870** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| QR-6 | 41.487533/ -72.820636 | 04/24/2020 | Bacteria, Other | E.coli: **4,610** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| QR-8 | 41.485489/ -72.822444 | 04/24/2020 | Bacteria, Other | E.coli: **631** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| QR-9 | 41.46664/ -72.823797 | 04/30/2020, 9/10/2020 | Bacteria, Other | E.coli: **8,160** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| QR-10 | 41.46408/ -72.824739 | 9/10/2020 | Bacteria, Other | E.coli: **>24,200** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| QR-11 | 41.462104/ -72.826282 | 9/10/2020 | Bacteria, Other | E. coli: **>24,200** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| QR-17 | 41.458125/ -72.836198 | 04/13/2020 | Bacteria, Other | E.coli: **3,450** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| AB-1 | 41.424694/ -72.825552 | 9/10/2020 | Bacteria | E. coli: **24,200** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| AB-2 | 41.424813/ -72.823668 | 9/10/2020 | Bacteria | E. coli: **3,870** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| AB-3 | 41.428012/ -72.813003 | 9/10/2020 | Bacteria | E. coli: **880** Total Coliform: >24,200 | Phoenix Environmental | Yes |
| AB-4 | 41.428283/ -72.811922 | 9/10/2020 | Bacteria | E. coli: **195** Total Coliform: **>24,200** | Phoenix Environmental | Yes |

| | | | | | | |
|---|---|---|---|---|---|---|
| OF-247 | 41.49404/ -72.809227 | 9/1/2021 | Bacteria, Other | E. coli: 97 Total Coliform: **>24,200** Turbidity: **11.81** NTU | Phoenix Environmental | Yes |
| OF-54 | 41.499899/ -72.818361 | 9/1/2021 | Bacteria, Other | E. coli: **6,870** Total Coliform: **>24,200** Phosphorus: 0.207 mg/L | Phoenix Environmental | Yes |
| OF-269 | 41.504222/ -72.820081 | 9/1/2021 | Bacteria, Other | E. coli: **6,870** Total Coliform: **>24,200** Turbidity: **159.8** NTU | Phoenix Environmental | Yes |
| OF-270 | 41.506531/ -72.818521 | 9/1/2021 | Bacteria, Other | E. coli: **19,900** Total Coliform: **>24,200** Turbidity: **41.69** NTU | Phoenix Environmental | Yes |
| QR-6 | 41.487533/ -72.820636 | 9/1/2021 | Bacteria, Other | E. coli: **>24,200** Total Coliform: **>24,200** Phosphorus: 0.171 mg/L | Phoenix Environmental | Yes |
| QR-8 | 41.485489/ -72.822444 | 9/1/2021 | Bacteria, Other | E. coli: **>24,200** Total Coliform: **>24,200** Phosphorus: 0.236 mg/L | Phoenix Environmental | Yes |
| QR-10 | 41.46664/ -72.823797 | 9/1/2021 | Bacteria, Other | E. coli: **2,910** Total Coliform: **>24,200** Phosphorus: 0.182 mg/L | Phoenix Environmental | Yes |
| QR-11 | 41.46408/ -72.824739 | 9/1/2021 | Bacteria, Other | E. coli: **816** Total Coliform: **>24,200** Phosphorus: 0.063 mg/L | Phoenix Environmental | Yes |
| QR-17 | 41.462104/ -72.826282 | 9/1/2021 | Bacteria, Other | E. coli: **>24,200** Total Coliform: **>24,200** Phosphorus: **0.458** mg/L | Phoenix Environmental | Yes |

| | | | | | | |
|---|---|---|---|---|---|---|
| AB-1 | 41.424694/ -72.825552 | 9/1/2021 | Bacteria | E. coli: **670** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| AB-2 | 41.424813/ -72.823668 | 9/1/2021 | Bacteria | E. coli: 20 Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| AB-3 | 41.428012/ -72.813003 | 9/1/2021 | Bacteria | E. coli: **3,130** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| AB-4 | 41.428283/ -72.811922 | 9/1/2021 | Bacteria | E. coli: **1,270** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| MR-1 | *41.405734/ -72.804528* | 9/1/2021 | Bacteria | E. coli: **11,200** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| MR-2 | 41.406323/ -72.803502 | 9/1/2021 | Bacteria | E. coli: **3,870** Total Coliform: **>24,200** | Phoenix Environmental | Yes |
| | | | | | | |

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

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

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

Provide the following information for outfalls exceeding the pollutant threshold.

| **Outfall ID** | **Status of drainage area investigation** | **Control measure to address impairment** |
|---|---|---|
| *See above-listed outfalls.* | *Investigations are being conducted on the surrounding drainage areas, with a focus on surrounding runoff from agricultural land, septic rpairs, and septic failures.* | *Potential measures that may be used in addressing bacterial impairments include aquatic vegetative buffers, control runoff measures implemented. Discussions are* |

| | | |
|---|---|---|
| | | *underway within the Town on how to address potential septic failures or repairs at privately-owned properties.* |

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

Once outfall sampling has been completed for at least 50% of outfalls to impaired waters, identify 6 of the highest contributors of any pollutants of concern. Begin monitoring these outfalls on an annual basis by July 1, 2021. **You may also attach an excel spreadsheet with the same data rather than copying it to this table.** If you do attach a spreadsheet, please write "See Attachment" below.

| Outfall | Latitude / Longitude | Sample Date | Parameter(s) | Results | Name of Laboratory (if used) |
|---|---|---|---|---|---|
| | | | | | |
| QR-6 | 41.487533/ -72.820636 | 04/24/2020 | Bacteria, Other | E.coli: **4,610**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| QR-8 | 41.485489/ -72.822444 | 04/24/2020 | Bacteria, Other | E.coli: **631**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| QR-10 | 41.46664/ -72.823797 | 04/30/2020, 9/10/2020 | Bacteria, Other | E.coli: **8,160**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| QR-11 | 41.46408/ -72.824739 | 9/10/2020 | Bacteria, Other | E.coli: **>24,200**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| QR-17 | 41.462104/ -72.826282 | 9/10/2020 | Bacteria, Other | E. coli: **>24,200**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| AB-1 | 41.424694/ -72.825552 | 9/10/2020 | Bacteria | E. coli: **24,200**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| AB-2 | 41.424813/ -72.823668 | 9/10/2020 | Bacteria | E. coli: **3,870**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| AB-3 | 41.428012/ -72.813003 | 9/10/2020 | Bacteria | E. coli: **880**<br>Total Coliform: >24,200 | Phoenix Environmental |
| AB-4 | 41.428283/ -72.811922 | 9/10/2020 | Bacteria | E. coli: **195**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| MR-1 | *41.405734/ -72.804528* | 04/30/2020 | Bacteria, Other | E.coli: **5,790**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| MR-2 | 41.406323/ -72.803502 | 9/10/2020 | Bacteria, Other | E. coli: **3,870**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| QR-6 | 41.487533/ -72.820636 | 9/1/2021 | Bacteria, Other | E. coli: **>24,200**<br>Total Coliform: **>24,200**<br>Phosphorus: 0.171 mg/L | Phoenix Environmental |
| QR-8 | 41.485489/ -72.822444 | 9/1/2021 | Bacteria, Other | E. coli: **>24,200**<br>Total Coliform: **>24,200**<br>Phosphorus: 0.236 mg/L | Phoenix Environmental |
| QR-10 | 41.46664/ -72.823797 | 9/1/2021 | Bacteria, Other | E. coli: **2,910**<br>Total Coliform: **>24,200** | Phoenix Environmental |

| | | | | | |
|---|---|---|---|---|---|
| | | | | Phosphorus: 0.182 mg/L | |
| QR-11 | 41.46408/ -72.824739 | 9/1/2021 | Bacteria, Other | E. coli: **816**<br>Total Coliform: **>24,200**<br>Phosphorus: 0.063 mg/L | Phoenix Environmental |
| QR-17 | 41.462104/ -72.826282 | 9/1/2021 | Bacteria, Other | E. coli: **>24,200**<br>Total Coliform: **>24,200**<br>Phosphorus: **0.458** mg/L | Phoenix Environmental |
| AB-1 | 41.424694/ -72.825552 | 9/1/2021 | Bacteria | E. coli: **670**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| AB-2 | 41.424813/ -72.823668 | 9/1/2021 | Bacteria | E. coli: 20<br>Total Coliform: **>24,200** | Phoenix Environmental |
| AB-3 | 41.428012/ -72.813003 | 9/1/2021 | Bacteria | E. coli: **3,130**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| AB-4 | 41.428283/ -72.811922 | 9/1/2021 | Bacteria | E. coli: **1,270**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| MR-1 | *41.405734/ -72.804528* | 9/1/2021 | Bacteria | E. coli: **11,200**<br>Total Coliform: **>24,200** | Phoenix Environmental |
| MR-2 | 41.406323/ -72.803502 | 9/1/2021 | Bacteria | E. coli: **3,870**<br>Total Coliform: **>24,200** | Phoenix Environmental |

**Part III: Additional IDDE Program Data**

## 1. Assessment and Priority Ranking of Catchments data (Appendix B (A)(7)(c) / page 5)

Provide a list of all catchments with ranking results (DEEP basins may be used instead of manual catchment delineations).

| 1. Catchment ID (DEEP Basin ID) | 2. Category | 3. Rank |
|---|---|---|
| 4606-00-1 | Low Priority | 2 |
| 4606-01-1 | Low Priority | 2 |
| 4606-02-1 | Low Priority | 2 |
| 4607-10-1-L1 | Low Priority | 2 |
| 5112-00-2-L1 | Problem | 7 |
| 5112-02-1 | Problem | 6 |

| | | |
|---|---|---|
| 5112-02-1-D1 | Low Priority | 3 |
| 5112-02-1-L1 | Low Priority | 2 |
| 5112-03-1 | Problem | 6 |
| 5200-00-4-L3 | High Priority | 11 |
| 5200-00-4-R10 | High Priority | 13 |
| 5200-00-4-R11 | Problem | 9 |
| 5200-00-4-R12 | High Priority | 11 |
| 5200-00-4-R7 | High Priority | 15 |
| 5200-00-4-R8 | High Priority | 13 |
| 5200-10-1 | High Priority | 11 |
| 5200-10-2-R1 | High Priority | 13 |
| 5200-11-1 | High Priority | 11 |
| 5200-12-1 | High Priority | 12 |
| 5200-12-1-L1 | High Priority | 12 |
| 5200-13-1 | High Priority | 16 |
| 5200-14-1 | Low Priority | 4 |
| 5200-14-1-L1 | Problem | 9 |
| 5200-15-1 | Problem | 9 |
| 5200-16-1 | Low Priority | 2 |
| 5200-17-1 | Low Priority | 4 |
| 5200-19-1-L1 | Low Priority | 5 |
| 5204-00-2-L1 | Low Priority | 5 |

| | | |
|---|---|---|
| 5204-01-1 | Low Priority | 3 |
| 5204-02-1 | Low Priority | 5 |
| 5206-01-1-L1 | Low Priority | 4 |
| 5206-02-1-L1 | High Priority | 10 |
| 5207-00-1 | High Priority | 13 |
| 5207-00-1-L1 | Low Priority | 4 |
| 5207-00-1-L2 | High Priority | 12 |
| 5207-00-2-R1 | High Priority | 13 |
| 5207-00-2-R2 | High Priority | 12 |
| 5207-01-1 | High Priority | 13 |
| 5207-02-1 | Problem | 6 |
| 5207-02-1-L1 | High Priority | 13 |
| 5208-00-1 | Problem | 7 |
| 5208-00-1-L1 | Problem | 10 |
| 5208-00-2-R1 | Problem | 7 |
| 5208-00-3-L2 | Low Priority | 5 |
| 5208-00-3-L3 | High Priority | 10 |
| 5208-00-3-R1 | Problem | 9 |
| 5208-00-3-R2 | High Priority | 10 |
| 5208-00-3-R3 | High Priority | 10 |
| 5208-00-3-R4 | Problem | 6 |
| 5208-00-3-R5 | Problem | 6 |

| | | |
|---|---|---|
| 5208-01-1 | Problem | 8 |
| 5208-02-1 | Low Priority | 3 |
| 5208-02-1-L1 | Problem | 6 |
| 5208-02-2-R1 | Problem | 8 |
| 5208-03-1 | Problem | 7 |
| 5208-04-1 | Low Priority | 5 |
| 5208-04-1-L1 | Low Priority | 3 |
| 5208-05-1 | Low Priority | 3 |
| 5208-05-1-L1 | Low Priority | 4 |
| 5208-06-1 | Problem | 8 |
| 5208-07-1 | Low Priority | 5 |
| 5208-08-1 | Problem | 8 |
| 5208-09-1 | Low Priority | 3 |
| 5302-02-1 | Problem | 8 |
| 5302-04-1-L1 | High Priority | 11 |

## 2. Outfall and Interconnection Screening and Sampling data (Appendix B (A)(7)(d) / page 7)

### 2.1 Dry weather screening and sampling data from outfalls and interconnections

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

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

| Outfall / Interconnection ID | Latitude / Longitude | Screening / sample date | Ammonia | Chlorine | Conductivity | Salinity | E. coli or enterococcus | Surfactants | Water Temp | Pollutant of concern | If required, follow-up actions taken |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *OF-64* | | *10/20/2021* | - | - | - | - | - | - | - | *None* | *During dry weather screenings, this outfall was found tot have a very slight discharge. Atlas conducted further field investigations, and it was concluded that the discharge was soley that of groundwater influence on the MS4 system, and not of an IDDE.* |

**2.2 Wet weather sample and inspection data**

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

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

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

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

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

### 3.1 System Vulnerability Factor Summary

For those catchments being investigated for illicit discharges (i.e. categorized as high priority, low priority, or problem) document the presence or absence of System Vulnerability Factors (SVF). If present, report which SVF's were identified. An example is provided below.

| Outfall ID | Receiving Water | System Vulnerability Factors |
|---|---|---|
| *The Town of Wallingford's sanitary sewer is currently managed by the Town of Walllingford's Water Pollution Control Authority (WPCA). The storm sewer and sanitary sewer have historically been separate, and remain so in the present day. Therefore, SVFs 4, 5, 6, 7, 8, and 9 are not applicable to the Town. Other SVFs are currently under investigation, and will be updated in the next annual report. These investigations include coordination between the WPCF, as well as the (FVDH).* | | |

Where SVFs are:

1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.
2. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.
3. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.
4. Common or twin-invert manholes serving storm and sanitary sewer alignments.
5. Common trench construction serving both storm and sanitary sewer alignments.
6. Crossings of storm and sanitary sewer alignments.
7. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;
8. Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.
9. Areas formerly served by combined sewer systems.
10. Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas.
11. Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance).
12. History of multiple local health department or sanitarian actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance).

### 3.2 Key junction manhole dry weather screening and sampling data

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

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

### 3.3 Wet weather investigation outfall sampling data

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

| Outfall ID | Latitude / Longitude | Sample date | Ammonia | Chlorine | Surfactants |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

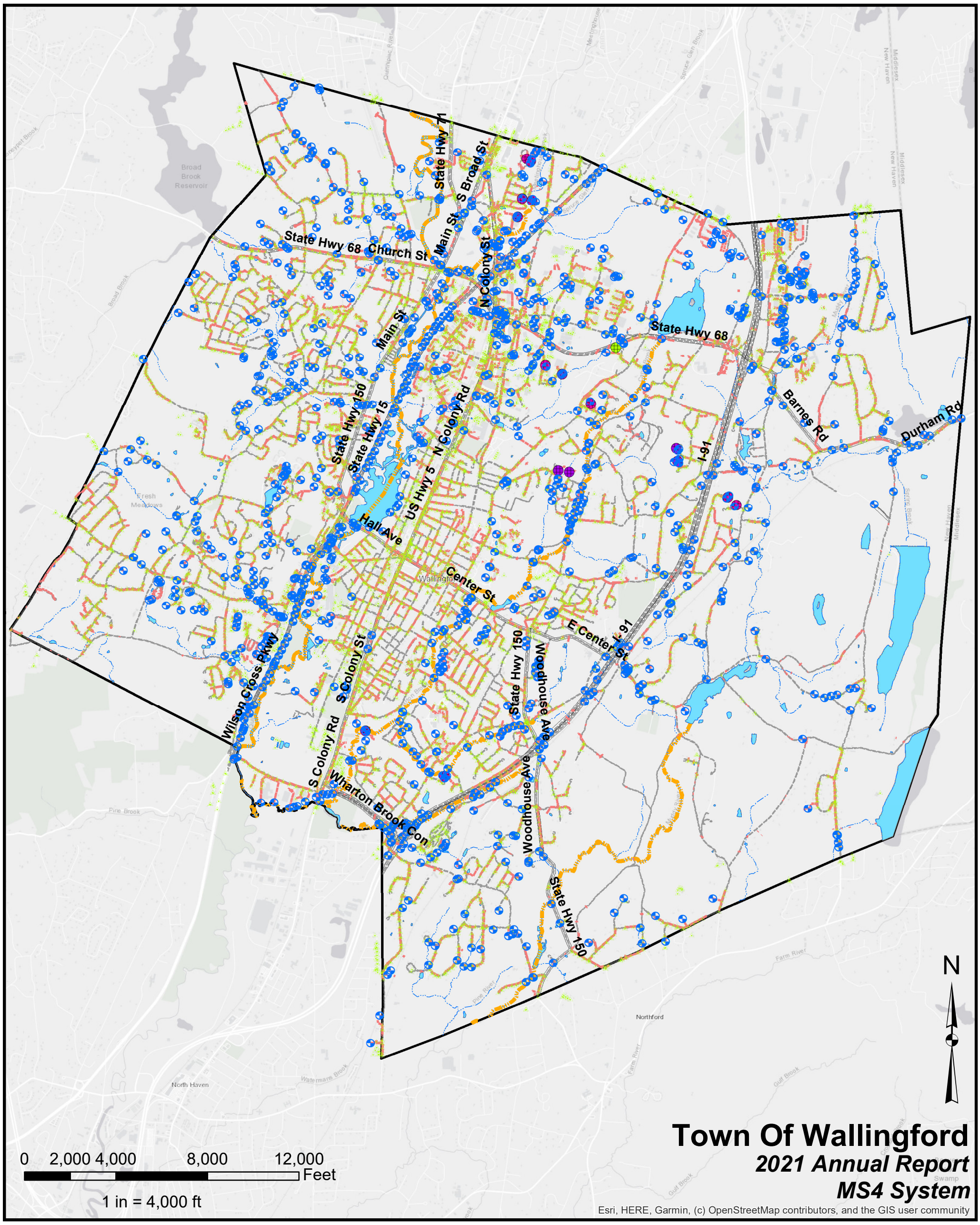
### 3.4 Data for each illicit discharge source confirmed through the catchment investigation procedure

| Discharge location | Source location | Discharge description | Method of discovery | Date of discovery | Date of elimination | Mitigation or enforcement action | Estimated volume of flow removed |
|---|---|---|---|---|---|---|---|
| *QR-11* | *Senior Center* | *Murky, iridescent* | *Dry Weather Screening* | *5-17-2019* | *N/A* | *N/A* | *N/A* |
| *OF-64* | | *Clear, no odor, slight trickle* | *Dry Weather Screening* | *10-20-2021* | *N/A* | *None.* | *N/A* |

## Part IV: Certification

| "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute." | |
|---|---|
| Chief Elected Official or Principal Executive Officer | Document Prepared by |
| Print name: Robert Baltramaitis, P.E.<br>Wallingford Department of Public Works | Print name:<br>Kay Lehoux, Environmental Scientist |
| Signature / Date: 4/11/22 | Signature / Date: 4/1/2022 |
| Email: publicworks@wallingfordct.gov | Email:<br>kay.lehoux@oneatlas.com |

# FIGURES




# Town Of Wallingford

## *2021 Annual Report*

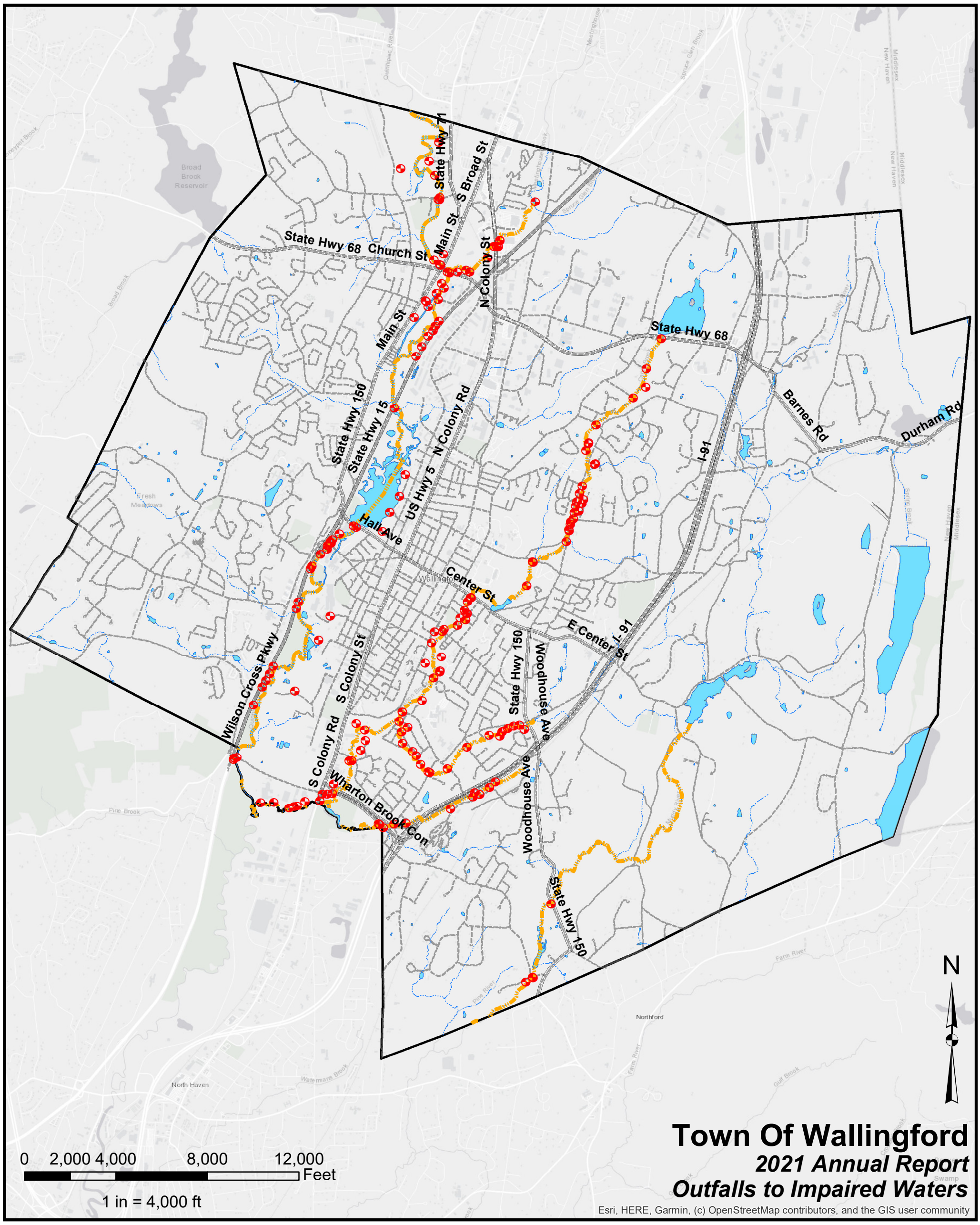
## *MS4 System*

## Legend

- Outfall
- Detention Basin
- Detention Pond
- Sediment Basin
- Catch Basin
- Gravity Main
- Impaired Waterbody
- Surface Water
- Main Road
- Town Line

| |
|---|
| **Fig No. 1** |
| **Drawn By: KLL** |
| **Checked by: LRW** |
| **Date: 2021** |


**290 Roberts Street Suite 301**
**East Hartford,CT 06108**




# Town Of Wallingford

## *2021 Annual Report*

## *Outfalls to Impaired Waters*

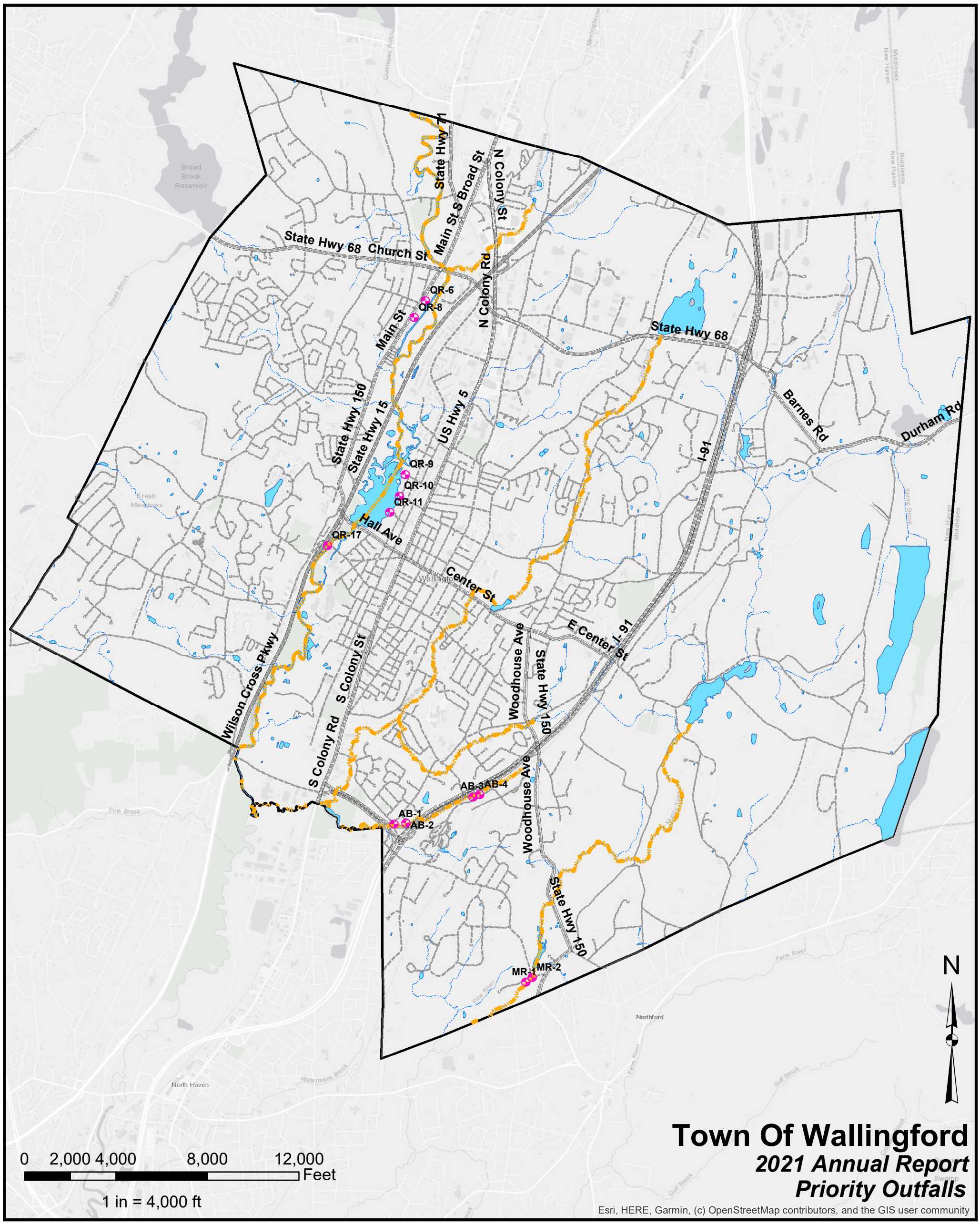
## Legend

- Outfall to Impaired Waterbody
- Impaired Waterbody
- Surface Water
- Main Road
- Town Line

| |
|---|
| **Fig No. 2** |
| **Drawn By: KLL** |
| **Checked by: LRW** |
| **Date: 2021** |


ATLAS

**290 Roberts Street Suite 301**
**East Hartford,CT 06108**




# Town Of Wallingford

## *2021 Annual Report*

## *Priority Outfalls*

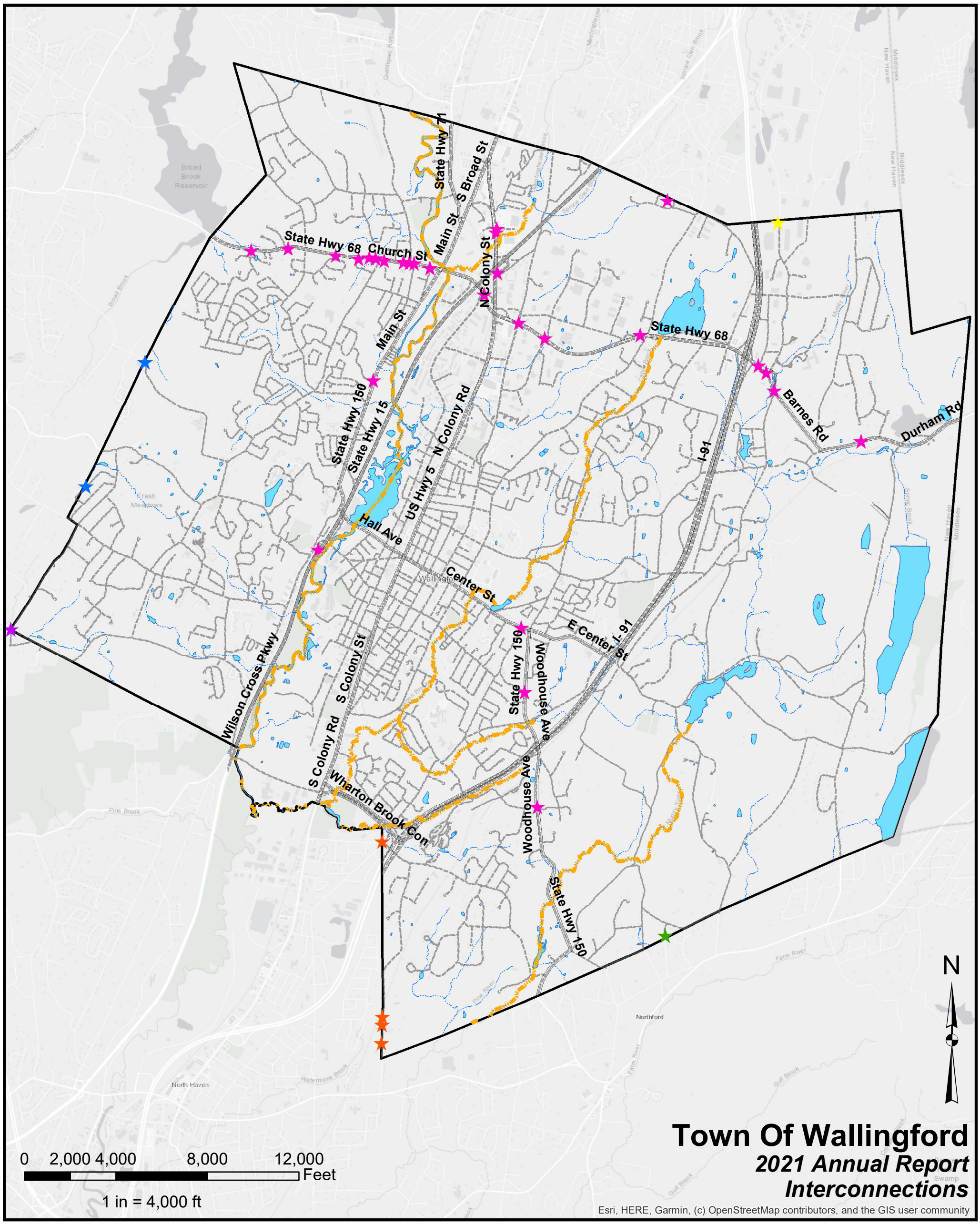
## Legend

- Priority Outfall
- Impaired Waterbody
- Surface Water
- Main Road
- Town Line

| |
|---|
| **Fig No. 3** |
| **Drawn By: KLL** |
| **Checked by: LRW** |
| **Date: 2021** |


ATLAS

**290 Roberts Street Suite 301**
**East Hartford,CT 06108**




## Legend

- Impaired Waterbody
- Surface Water
- Main Road
- Town Line

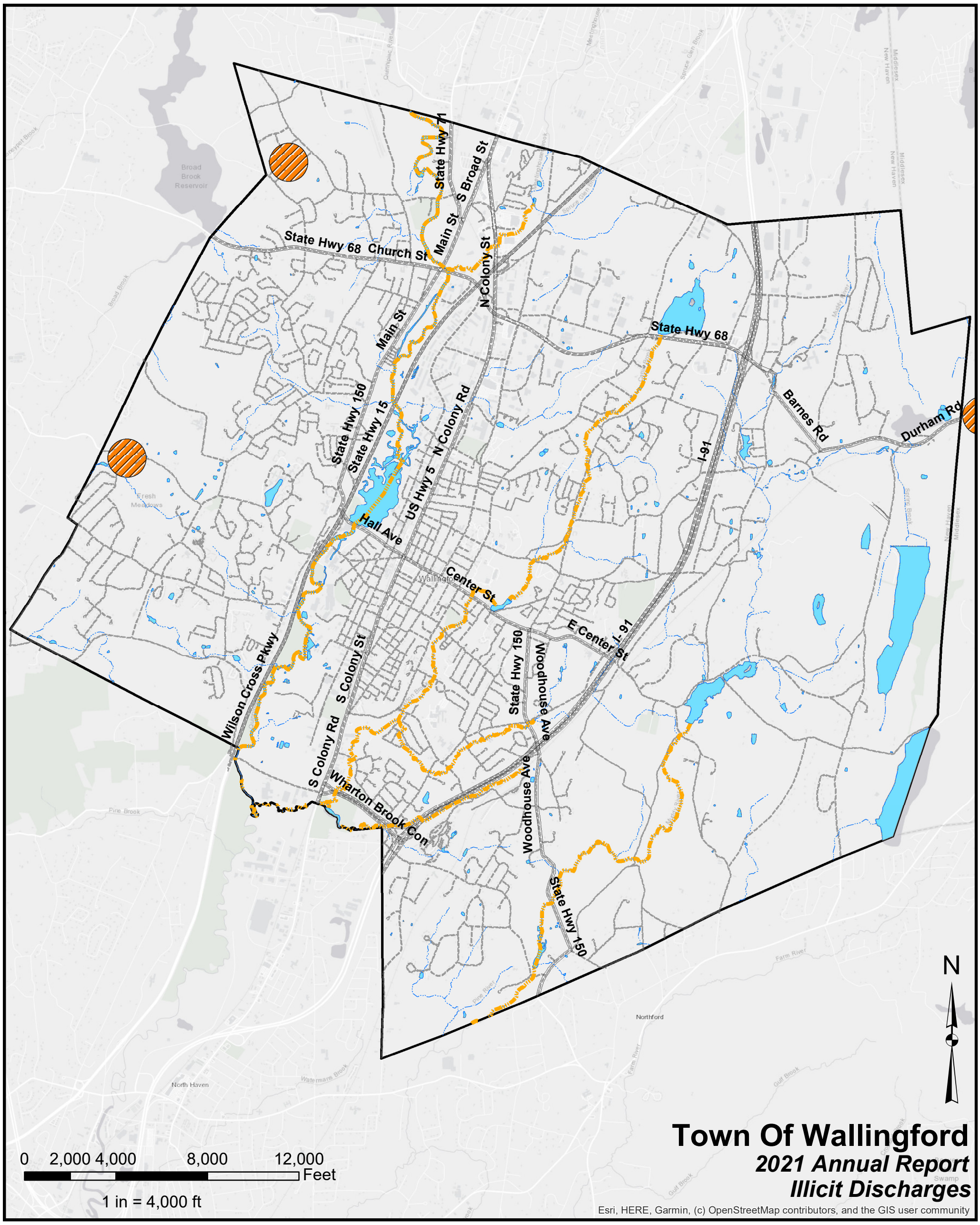
**Interconnections**

- CTDOT
- Cheshire
- Hamden
- Meriden
- North Haven
- Northford

| |
|---|
| **Fig No. 4** |
| **Drawn By: KLL** |
| **Checked by: LRW** |
| **Date: 2021** |


ATLAS

**290 Roberts Street Suite 301**
**East Hartford,CT 06108**




# Town Of Wallingford

## *2021 Annual Report*

## *Illicit Discharges*



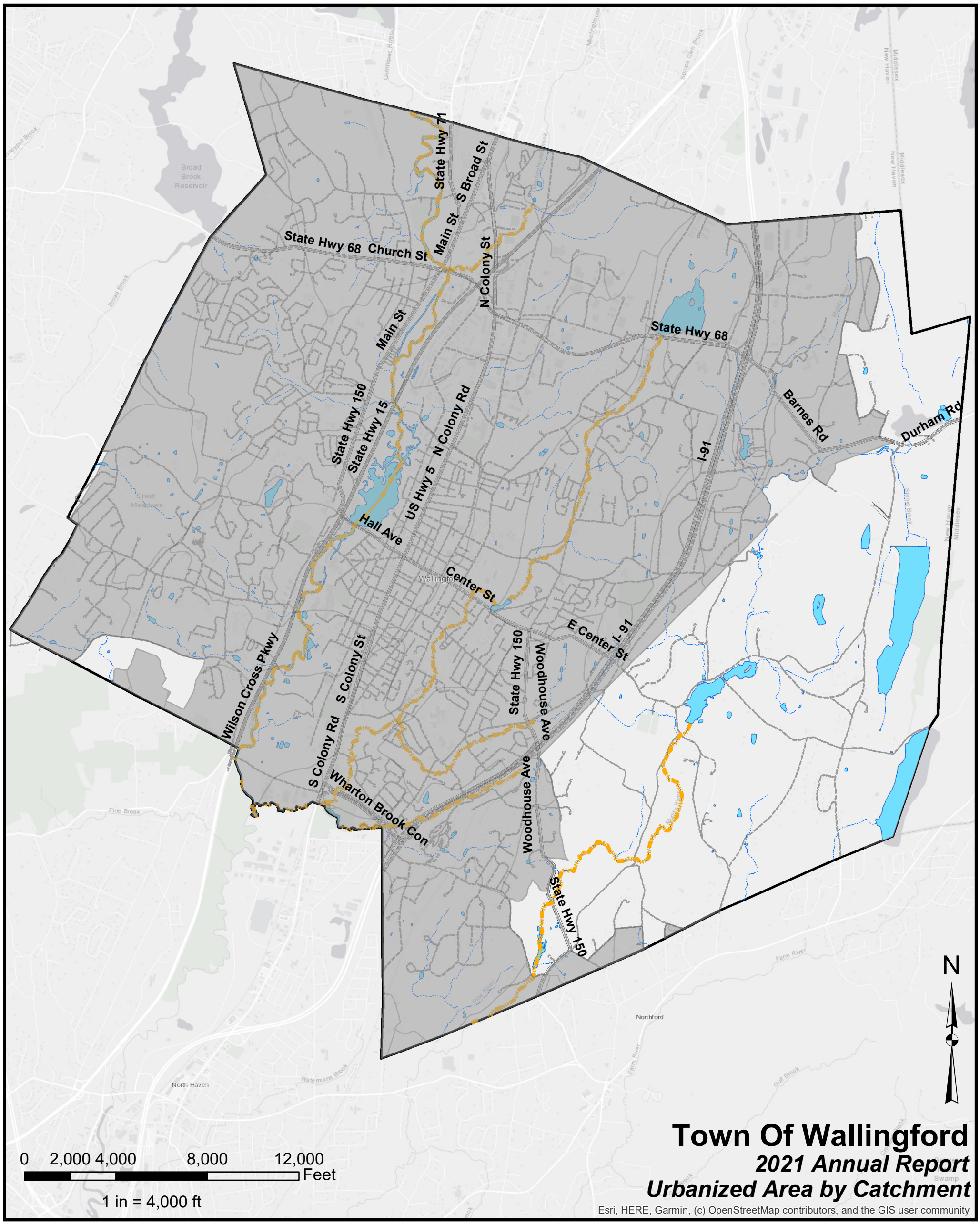
## Legend

- Illicit Discharge (Englarged to show location)
- Impaired Waterbody
- Surface Water
- Main Road
- Town Line

| |
|---|
| **Fig No. 5** |
| **Drawn By: KLL** |
| **Checked by: LRW** |
| **Date: 2021** |

ATLAS

**290 Roberts Street Suite 301**
**East Hartford,CT 06108**




## Legend

- Urbanized Area by Catchment
- Impaired Waterbody
- Surface Water
- Main Road
- Town Line

| |
|---|
| Fig No. 6 |
| Drawn By: KLL |
| Checked by: LRW |
| Date: 2021 |

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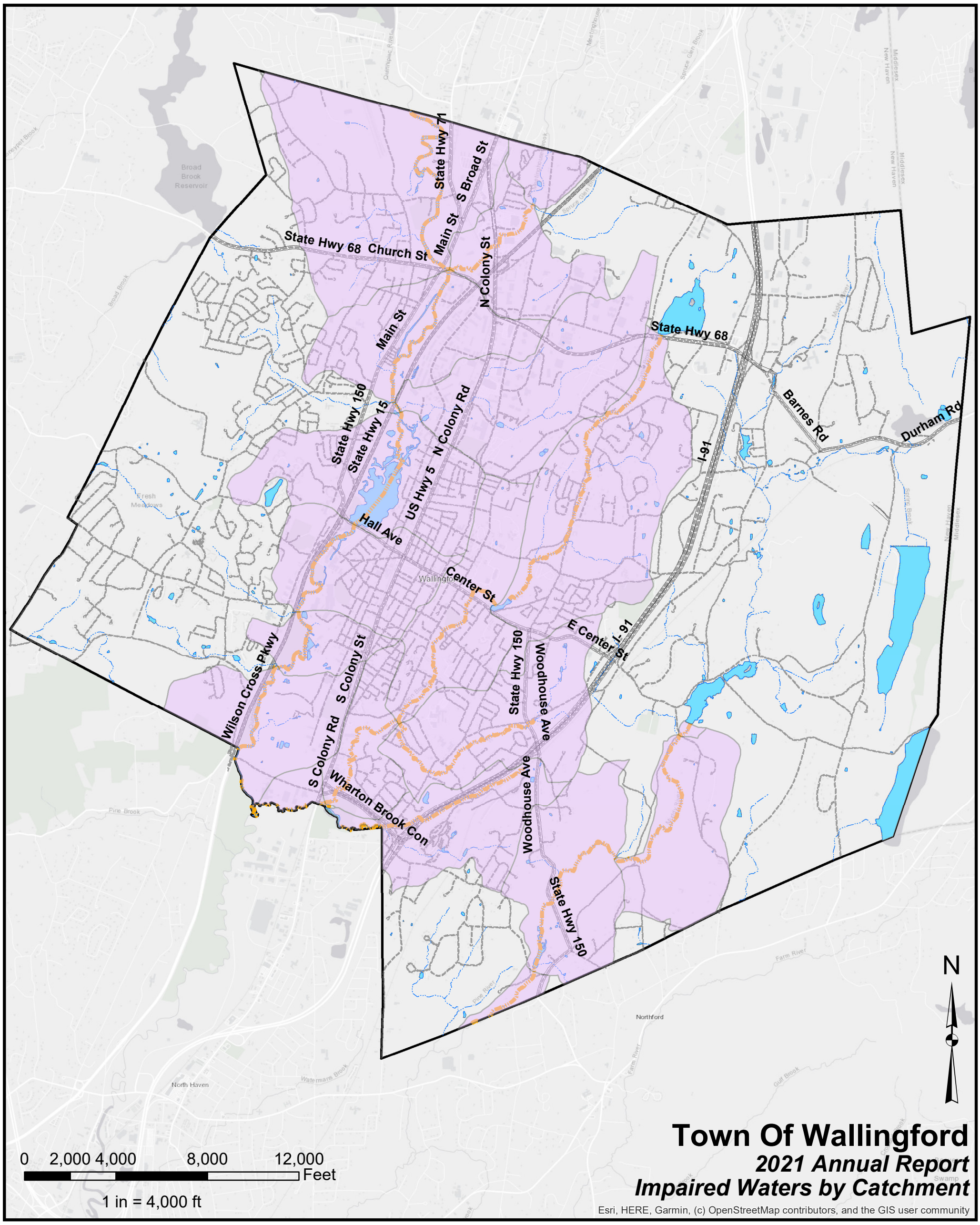
290 Roberts Street Suite 301
East Hartford,CT 06108




## Legend

- Catchments Associated with Impaired Waters
- Impaired Waterbody
- Surface Water
- Main Road
- Town Line

| |
|---|
| Fig No. 7 |
| Drawn By: KLL |
| Checked by: LRW |
| Date: 2021 |

ATLAS
290 Roberts Street Suite 301
East Hartford,CT 06108

# ATTACHMENT I –Dry Weather Inspections

290 Roberts Street, Suite 301
East Hartford, CT 06108
Telephone 860-282-9924
Fax 737-207-8276
www.oneatlas.com

# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 9:01 AM**

**OUTFALL ID: OF-270**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | -- |
| Subtype | -- |
| Diameter | -- |
| Condition | -- |
| Erosion Control | -- |

**Notes**

Could not locate outfall. Outfall is in the discharge area of a scrapyard. Several swales that conjoin to one larger trench are in the approximate location of outfall. Trenches are highly eroded with rip rap lining the bottom

**Outfall:**

290 Roberts Street, Suite 301
East Hartford, CT 06108
Telephone 860-282-9924
Fax 737-207-8276
www.oneatlas.com

# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 2:00 PM**

**OUTFALL ID: OF-92**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Plastic |
| Subtype | Flared End |
| Diameter | 15” |
| Condition | Good |
| Erosion Control | Yes |

**Notes**

Slightly overgrown, standing water in pipe, cut down debris thrown on top of outfall.

**Outfall:**

290 Roberts Street, Suite 301
East Hartford, CT 06108
Telephone 860-282-9924
Fax 737-207-8276
www.oneatlas.com

# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 1:54 PM**

**OUTFALL ID: OF-66**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Plastic |
| Subtype | -- |
| Diameter | 6” |
| Condition | Excellent |
| Erosion Control | Yes |

**Notes**

Outfall pipe is suspended but drainage lands on rip rap, little to no erosion, no trash or other debris.

**Outfall:**

290 Roberts Street, Suite 301
East Hartford, CT 06108
Telephone 860-282-9924
Fax 737-207-8276
www.oneatlas.com

# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 1:47 PM**

**OUTFALL ID: OF-67**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Plastic |
| Subtype | Flared End |
| Diameter | 15” |
| Condition | Excellent |
| Erosion Control | Yes |

**Notes**

Drains into a closed depression, minimal erosion, some rip rap

**Outfall:**

290 Roberts Street, Suite 301
East Hartford, CT 06108
Telephone 860-282-9924
Fax 737-207-8276
www.oneatlas.com

# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 1:36 PM**

**OUTFALL ID: OF-68**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Concrete |
| Subtype | -- |
| Diameter | 12” |
| Condition | Good |
| Erosion Control | Unknown |

**Notes**

Outfall goes directly into river, submerged under water, could not determine discharge or condition of opening.

**Outfall:**

290 Roberts Street, Suite 301
East Hartford, CT 06108
Telephone 860-282-9924
Fax 737-207-8276
www.oneatlas.com

# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 1:22 PM**

**OUTFALL ID: OF-73**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Concrete |
| Subtype | Flared End |
| Diameter | |
| Condition | Poor |
| Erosion Control | No |

**Notes**

Completely blocked and covered by debris, some rip rap in discharge channel.

**Outfall:**

290 Roberts Street, Suite 301
East Hartford, CT 06108
Telephone 860-282-9924
Fax 737-207-8276
www.oneatlas.com

# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 1:21 PM**

**OUTFALL ID: OF-72**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Plastic |
| Subtype | -- |
| Diameter | 15” |
| Condition | Good |
| Erosion Control | Yes |

**Notes**

Slightly overgrown, trash present in discharge channel.

**Outfall:**

290 Roberts Street, Suite 301
East Hartford, CT 06108
Telephone 860-282-9924
Fax 737-207-8276
www.oneatlas.com

# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 1:09 PM**

**OUTFALL ID: OF-71**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Plastic |
| Subtype | Flared End |
| Diameter | 15” |
| Condition | Good |
| Erosion Control | Yes |

**Notes**

Metal flared end on plastic, overgrown, some rip rap in discharge channel, minimal erosion

**Outfall:**

290 Roberts Street, Suite 301
East Hartford, CT 06108
Telephone 860-282-9924
Fax 737-207-8276
www.oneatlas.com

# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 1:05 PM**

**OUTFALL ID: OF-70**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Metal |
| Subtype | -- |
| Diameter | 36” |
| Condition | Excellent |
| Erosion Control | No |

**Notes**

Metal pipe, drains directly into flowing part of river.

**Outfall:**

290 Roberts Street, Suite 301
East Hartford, CT 06108
Telephone 860-282-9924
Fax 737-207-8276
www.oneatlas.com

# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 1:03 PM**

**OUTFALL ID: OF-69**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Metal |
| Subtype | -- |
| Diameter | 24” |
| Condition | Good |
| Erosion Control | No |

**Notes**

Metal pipe, discharging directly into inlet stream, film on top of water at outfall, trash all along inlet stream.

**Outfall:**

290 Roberts Street, Suite 301
East Hartford, CT 06108
Telephone 860-282-9924
Fax 737-207-8276
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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 12:42 PM**

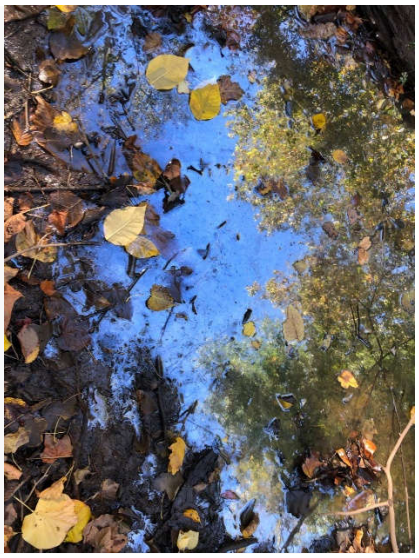
**OUTFALL ID: OF-59**
**INSPECTION DATE: OCTOBER 20, 2021**

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

**Notes**

Debris is opening of pipe likely to block water flow, rip rap in channel leading to river. Oily sheen on water at end of channel

**Outfall:**



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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 12:25 PM**

**OUTFALL ID:**
**INSPECTION DATE:**

| | |
|---|---|
| Material | |
| Subtype | |
| Diameter | ” |
| Condition | |
| Erosion Control | |

**Notes**

Could not locate outfall

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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 12:08 PM**

**OUTFALL ID: OF-65**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Concrete |
| Subtype | Other |
| Diameter | 12” |
| Condition | Good |
| Erosion Control | Yes |

**Notes**

Eroded sediment in front of outfall has caused a void where water goes rather than flow over rip rap and into river.

**Outfall:**

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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 12:05 PM**

**OUTFALL ID: OF-64**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Concrete |
| Subtype | Other |
| Diameter | 36” |
| Condition | Excellent |
| Erosion Control | No |

**Notes**

Drains directly into river. Discharge present but was determined to be groundwater, clear and odorless.

**Outfall:**

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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 12:03 PM**

**OUTFALL ID: OF-63**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Concrete |
| Subtype | Flared End |
| Diameter | 12” |
| Condition | Fair |
| Erosion Control | No |

**Notes**

Eroded depression in front of outfall preventing water from flowing downhill, causing ponding. Rip rap present on hillside down to river.

**Outfall:**

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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 11:33 AM**

**OUTFALL ID: OF-255**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | |
| Subtype | |
| Diameter | |
| Condition | |
| Erosion Control | |

**Notes**

Could not locate, dense vegetation, significant amounts of rip rap along hillside down to river

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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 11:04 AM**

**OUTFALL ID: OF-249**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Concrete |
| Subtype | Flared End |
| Diameter | 24” |
| Condition | Excellent |
| Erosion Control | Yes |

**Notes**

Excellent condition, no erosion trash or sediment. Rip rap whole way down to river

**Outfall:**

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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 10:56 AM**

**OUTFALL ID: OF-246**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Plastic |
| Subtype | Flared End |
| Diameter | 24” |
| Condition | Good |
| Erosion Control | Yes |

**Notes**

Sediment accumulation in base and mouth of pipe, trash present, moderate vegetation, rip rap lining drainage area.

**Outfall:**

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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 10:47 AM**

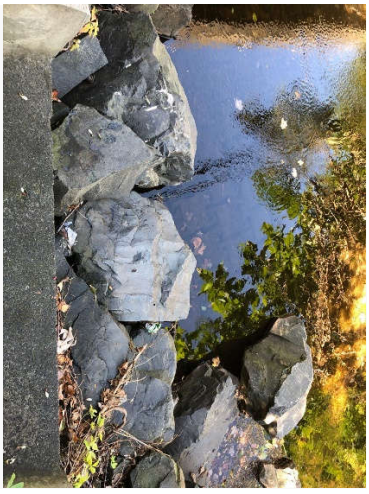
**OUTFALL ID: OF-247**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Precast |
| Subtype | Flared End |
| Diameter | 36” |
| Condition | Excellent |
| Erosion Control | Yes |

**Notes**

Excellent condition, drains directly into stream, located directly across stream from OF-248,

**Outfall:**



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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 10:41 AM**

**OUTFALL ID: OF-248**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Precast |
| Subtype | |
| Diameter | 24” |
| Condition | Excellent |
| Erosion Control | Yes |

**Notes**

Excellent condition, located next to gas station, no erosion or trash, drains directly into river.

**Outfall:**

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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 10:33 AM**

**OUTFALL ID: OF-244**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Plastic |
| Subtype | -- |
| Diameter | 6” |
| Condition | Good |
| Erosion Control | No |

**Notes**

Plastic pipe, water falls out onto exposed soil and has moderately eroded discharge channel, some trash present, moderate vegetation, located behind gas station and liquor store.

**Outfall:**

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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 10:27 AM**

**OUTFALL ID: OF-245**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Precast |
| Subtype | |
| Diameter | 12” |
| Condition | Good |
| Erosion Control | No |

**Notes**

Outfall pipe in excellent condition, trash present in discharge channel, located behind gas station and liquor store. No erosion controls in place, channel is moderately eroded down to the river.

**Outfall:**

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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 10:14 AM**

**OUTFALL ID: OF-54**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | Precast |
| Subtype | Other |
| Diameter | 15” |
| Condition | Excellent |
| Erosion Control | Yes |

**Notes**

Excellent condition, minimal vegetation, rip rap leading down to river, no erosion.

**Outfall:**

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# WALLINGFORD DRY WEATHER INSPECTIONS

**SUBMITTED BY: ATC GROUP SERVICES, LLC**
**SUBMITTED TIME: OCTOBER 20, 2021 9:38 AM**

**OUTFALL ID: OF-269**
**INSPECTION DATE: OCTOBER 20, 2021**

| | |
|---|---|
| Material | -- |
| Subtype | -- |
| Diameter | -- |
| Condition | Poor |
| Erosion Control | Yes |

**Notes**

Outfall is completely blocked, cannot determine material or diameter, by overlying asphalt collapse. Standing water present, trash also present around outfall. Rip rap places along discharge channel leading to river, minimal channel erosion.

**Outfall:**

**Town of Wallingford**

***MS4 Interconnection Inspections***

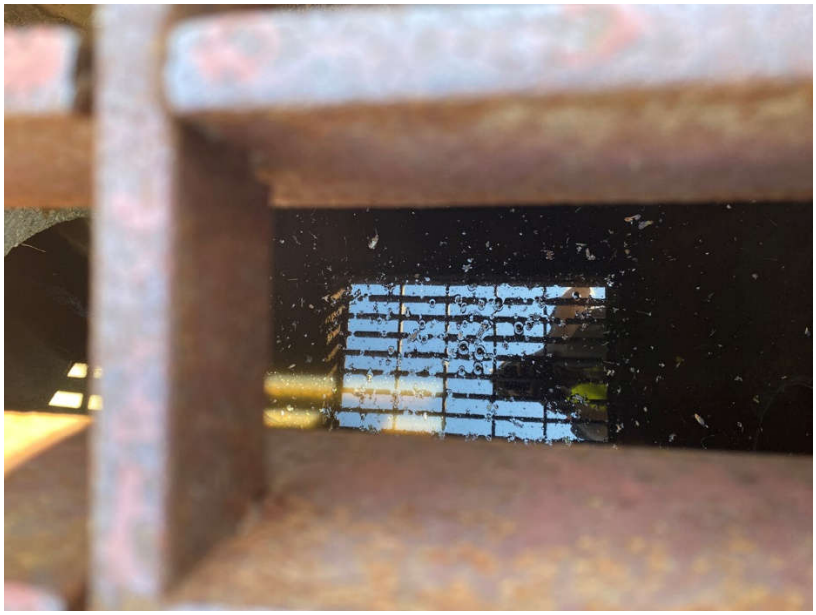
| Interconnection ID | MS4 | Inspection Date | Material | Condition | Erosion Control | Notes | Discharge | Longitute | Latitude |
|---|---|---|---|---|---|---|---|---|---|
| IC-21 | CTDOT | 5/17/2021 | Unk. | Good | Good | Good condition, no discharge. Some trash/debris present. | No | -72.83775044 | 41.45765206 |
| IC-20 | CTDOT | 5/17/2021 | Unk. | Good | Fair | Some grass clippings in CB. | No | -72.82897425 | 41.47793953 |
| IC-13 | CTDOT | 6/7/2021 | Concrete | Good | Excellent | Good condition, no discharge. | No | -72.80576778 | 41.48488412 |
| IC-14 | CTDOT | 6/7/2021 | Concrete | Good | Good | Good condition, no discharge. | No | -72.80165863 | 41.48300739 |
| IC-16 | CTDOT | 6/7/2021 | Unk. | Poor | Poor | Last 2 CBs on Thorpe Ave completely silted in. No interconnection possible. | No | -72.76756239 | 41.47972799 |
| IC-17 | CTDOT | 6/7/2021 | Concrete | Good | Good | Good condition, no discharge. | No | -72.76628566 | 41.478884 |
| IC-18 | CTDOT | 6/7/2021 | Concrete | Good | Good | Some trash around CB. | No | -72.76505185 | 41.47676996 |
| IC-15 | CTDOT | 6/7/2021 | Unk. | Good | Fair | Trash/debris around CB. | No | -72.78639418 | 41.48340524 |
| IC-11 | CTDOT | 5/17/2021 | Unk. | Good | Good | Good condition, no discharge. | No | -72.81997544 | 41.49142214 |
| IC-10 | CTDOT | 5/17/2021 | Unk. | Poor | Poor | CB heavily silted in; vegetation growing inside CB | No | -72.82250208 | 41.49196862 |
| IC-9 | CTDOT | 5/17/2021 | Unk. | Good | Good | Good condition, no discharge. | No | -72.82322628 | 41.49205702 |
| IC-8 | CTDOT | 5/17/2021 | Unk. | Excellent | Good | Good condition, no discharge. | No | -72.82421333 | 41.49213738 |
| IC-7 | CTDOT | 5/17/2021 | Unk. | Good | Good | Good condition, no discharge. | No | -72.82724959 | 41.49229409 |
| IC-6 | CTDOT | 5/17/2021 | Unk. | Good | Fair | Some sediment in CB. | No | -72.82860142 | 41.49257536 |
| IC-5 | CTDOT | 5/17/2021 | Unk. | -- | -- | Unable to open manhole. | -- | -72.82965821 | 41.49264769 |
| IC-4 | CTDOT | 5/17/2021 | Unk. | Good | Poor | Slight discharge coming from W, along state road, not MS4. Next in-line MS4 CB heavily silted in. | Yes | -72.83134801 | 41.49252313 |
| IC-3 | CTDOT | 5/17/2021 | Unk. | Good | Good | Good condition, no discharge. | No | -72.83499581 | 41.49292896 |
| IC-1 | CTDOT | 5/17/2021 | Unk. | Good | Good | Good condition, no discharge. | No | -72.84848732 | 41.49352364 |
| IC-30 | Cheshire/CTDOT | 5/17/2021 | Unk. | Fair | Fair | CB partially filled with leaves/sediment. | No | -72.86538524 | 41.48007764 |
| IC-31 | Cheshire/CTDOT | 5/17/2021 | Unk. | Fair | Fair | Moderate amount of sediment in CB. | No | -72.87481588 | 41.46522191 |
| IC-32 | Hamden/CTDOT | 5/17/2021 | Unk. | Good | Fair | Some sediment in CB. | No | -72.88678927 | 41.44804676 |
| IC-33 | North Haven/CTDOT | 5/17/2021 | Unk. | Excellent | Good | Good condition, no discharge. | No | -72.82743734 | 41.40158031 |
| IC-34 | North Haven/CTDOT | 5/17/2021 | Unk. | Good | Good | Good condition, no discharge. | No | -72.82748026 | 41.40062264 |
| IC-35 | North Haven/CTDOT | 5/17/2021 | Unk. | Excellent | Good | Good condition, no discharge. | No | -72.82757682 | 41.39844166 |
| IC-36 | Northford/CTDOT | 5/17/2021 | Unk. | Excellent | Good | Good condition, no discharge. | No | -72.7823655 | 41.4113333 |
| IC-24 | CTDOT | 5/17/2021 | Unk. | Excellent | Good | Good condition, no discharge. | No | -72.80277175 | 41.42674036 |
| IC-23 | CTDOT | 5/17/2021 | Unk. | Fair | Good | CB partially filled with sediment/leaf debris. | No | -72.80481023 | 41.44061565 |
| IC-22 | CTDOT | 5/17/2021 | Unk. | Fair | Fair | CB covered with leaf debris | No | -72.80537886 | 41.44828399 |
| IC-19 | CTDOT | 6/7/2021 | Unk. | Excellent | Good | Inspection completed at last in-line CB on Tammy Hill Rd. Good condition, no discharge. Homeowner had placed garbage cans directly on CB. | No | -72.75116873 | 41.47071684 |
| IC-25 | CTDOT | 5/17/2021 | Unk. | Good | Good | Good condition, no discharge. | No | -72.80930829 | 41.49615546 |
| IC-26 | CTDOT | 5/17/2021 | Unk. | Good | Good | Good condition, no discharge. | No | -72.80940485 | 41.49569741 |
| IC-27 | CTDOT | 5/17/2021 | Unk. | Fair | Fair | Trash/debris in area of CB. | No | -72.80920101 | 41.49086762 |
| IC-12 | CTDOT | 5/17/2021 | Unk. | Good | Good | Good condition, no discharge. | No | -72.81129313 | 41.48827176 |
| IC-29 | Mericden/CTDOT | 6/7/2021 | Concrete | Fair | Good | Good condition, no discharge. | No | -72.76441933 | 41.49692016 |

:Interconnection of concern

# PHOTOGRAPHIC LOG

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

| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** | |
|---|---|
| IC-1 |  |

| **Interconnection ID** | |
|---|---|
| IC-3 |  |

# PHOTOGRAPHIC LOG

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

| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** | |
|---|---|
| IC-4 |  |

| **Interconnection ID** | |
|---|---|
| IC-6 |  |

# PHOTOGRAPHIC LOG

ATC Group Services LLC
290 Roberts Street, Suite 301
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|---|---|---|

| **Interconnection ID** | |
|---|---|
| IC-7 |  |

| **Interconnection ID** | |
|---|---|
| IC-8 |  |

# PHOTOGRAPHIC LOG

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|---|---|---|

| **Interconnection ID** | |
|---|---|
| IC-9 |  |

| **Interconnection ID** | |
|---|---|
| IC-10 |  |

# PHOTOGRAPHIC LOG

ATC Group Services LLC
290 Roberts Street, Suite 301
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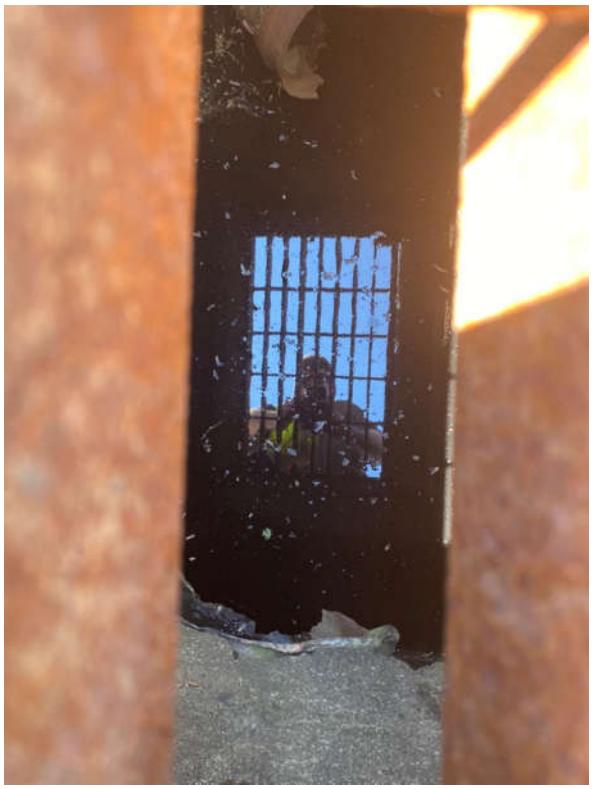
| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** |
|---|
| IC-12 |



| **Interconnection ID** |
|---|
| IC-13 |

# PHOTOGRAPHIC LOG

ATC Group Services LLC
290 Roberts Street, Suite 301
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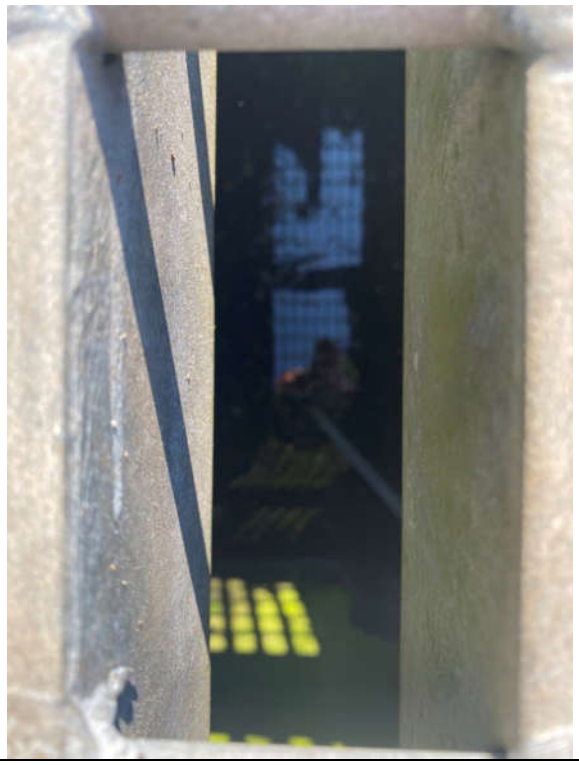
| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** |
|---|
| IC-14 |

| **Interconnection ID** |
|---|
| IC-15 |



# PHOTOGRAPHIC LOG

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290 Roberts Street, Suite 301
East Hartford, CT 06108

| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** |
|---|
| IC-16 |

| **Interconnection ID** |
|---|
| IC-17 |

# PHOTOGRAPHIC LOG

ATC Group Services LLC
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| **Client Name:** | **Site Location:** | **Date:** |
|---|---|---|
| *Town of Wallingford* | *Town of Wallingford*<br>*Interconnection Screenings* | *May 17 & June 7, 2021* |

| **Interconnection ID** |
|---|
| IC-18 |

| **Interconnection ID** |
|---|
| IC-19 |

# PHOTOGRAPHIC LOG

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

| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** |
|---|
| IC-20 |

| **Interconnection ID** |
|---|
| IC-21 |

# PHOTOGRAPHIC LOG

ATC Group Services LLC
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| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** |
|---|
| IC-22 |

| **Interconnection ID** |
|---|
| IC-23 |

# PHOTOGRAPHIC LOG

ATC Group Services LLC
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East Hartford, CT 06108

| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** |
|---|
| IC-24 |

| **Interconnection ID** |
|---|
| IC-25 |

# PHOTOGRAPHIC LOG

ATC Group Services LLC
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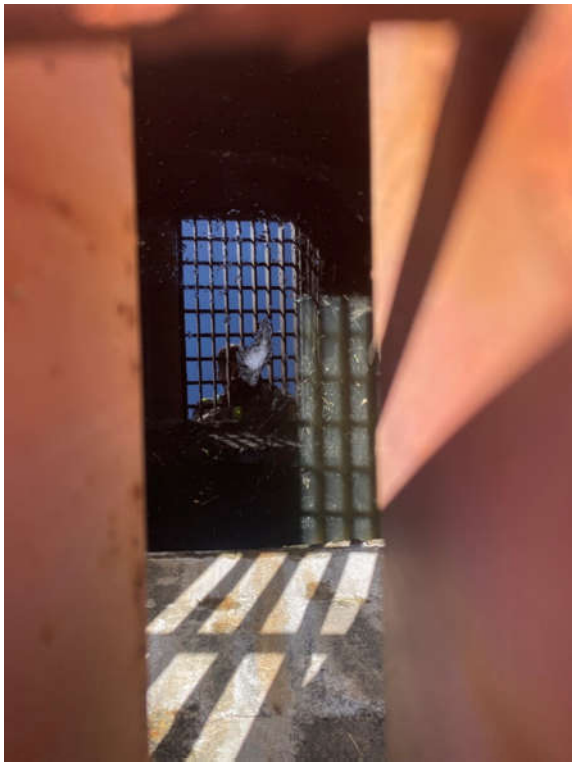
| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** |
|---|
| IC-26 |



| **Interconnection ID** |
|---|
| IC-27 |

# PHOTOGRAPHIC LOG

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

| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** |
|---|
| IC-29 |

| **Interconnection ID** |
|---|
| IC-31 |

# PHOTOGRAPHIC LOG

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

| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** | |
|---|---|
| IC-32 |  |

| **Interconnection ID** | |
|---|---|
| IC-33 |  |

# PHOTOGRAPHIC LOG

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

| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** |
|---|
| IC-34 |

| **Interconnection ID** |
|---|
| IC-35 |

# PHOTOGRAPHIC LOG

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

| **Client Name:** *Town of Wallingford* | **Site Location:** *Town of Wallingford Interconnection Screenings* | **Date:** *May 17 & June 7, 2021* |
|---|---|---|

| **Interconnection ID** |
|---|
| IC-36 |

# ATTACHMENT II –Wet Weather Inspections

**Town of Wallingford**

***MS4 General Permit***

*Priority Outfall Sampling*

| Outfall ID | Inspection Date | Condition | Discharge Visual | Other Parameters | Bacterial | |
|---|---|---|---|---|---|---|
| | | | | Phosphorus (mg/L) | Escheriachia Coli | Total Coliforms |
| | | | | | MPN/100mL | |
| QR-6 | 9/1/21 | Excellent |  | 0.171 | **>24,200** | **>24,200** |
| QR-8 | 9/1/21 | Good |  | 0.236 | **>24,200** | **>24,200** |
| QR-10 | 9/1/21 | Good |  | 0.182 | **2,910** | **>24,200** |
| QR-11 | 9/1/21 | Excellent |  | 0.053 | **816** | **>24,200** |
| QR-17 | 9/1/21 | Good |  | 0.458 | **>24,200** | **>24,200** |
| AB-1 | 9/1/21 | Good |  | -- | **670** | **>24,200** |
| AB-2 | 9/1/21 | Good |  | -- | **20** | **>24,200** |
| AB-3 | 9/1/21 | Good |  | -- | **3,130** | **>24,200** |
| AB-4 | 9/1/21 | Good |  | -- | **1,270** | **>24,200** |
| MR-1 | 9/1/21 | Good |  | -- | **11,200** | **>24,200** |
| MR-2 | 9/1/21 | Good |  | -- | **3,870** | **>24,200** |

**Notes:**

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

*Highlighting is based on the following criteria;

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

# ATTACHMENT III- Catchment Assessment and Priority Ranking Matrix

# Town of Wallingford MS4 General Permit

***Catchment Assessment and Priority Ranking***

| Catchment ID | Outfalls Included | Receiving Water(s) | Previous Screening Results Indicate Likely Sewer Input? [1] | Discharging to Area of Concern to Public Health? [2] | Frequency of Past Discharge Complaints | Receiving Water Quality [3] | Density of Generating Sites [4] | Age of Development/ Infrastructure [5] | Historic Combined Sewers or Septic? [6] | Aging Septic? [7] | Culverted Streams? [8] | Additional Characteristics | Sewer Repair Nearby? | Urbanized Area | DCIA >11% | Impaired Waterbody | Score | Priority Ranking<br>0-5: Low Priority<br>6-9: Problem<br>≥: 10 high Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| **4606-00-1** | 0 | None | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 0 | 0 | 0 | 2 | Low Priority |
| **4606-01-1** | 0 | None | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 0 | 0 | 0 | 2 | Low Priority |
| **4606-02-1** | 0 | Unnamed Stream | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 0 | 0 | 0 | 2 | Low Priority |
| **4607-10-1-L1** | 0 | None | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 0 | 0 | 0 | 2 | Low Priority |
| **5112-00-2-L1** | 2 | Unnamed Stream | | 0 | | 0 | 1 | 2 | 0 | | 3 | Wooded, some residential housing, light agricultural land | | 1 | 0 | 0 | 7 | Problem |
| **5112-02-1** | 4 | Unnamed Stream | | 0 | | 0 | 1 | 2 | 0 | | 3 | Wooded, cleared land, light residential housing | | 0 | 0 | 0 | 6 | Problem |
| **5112-02-1-D1** | 0 | None | | 0 | | 0 | 1 | 2 | 0 | | 0 | Wooded, agricultural land | | 0 | 0 | 0 | 3 | Low Priority |
| **5112-02-1-L1** | 0 | Unnamed Stream | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded and Pitsapaug Pond | | 0 | 0 | 0 | 2 | Low Priority |
| **5112-03-1** | 1 | Unnamed Stream | | 0 | | 0 | 1 | 2 | 0 | | 3 | Wooded, cleared land, some agricultural land and residential housing | | 0 | 0 | 0 | 6 | Problem |
| **5200-00-4-L3** | 49 | Quinnipiac River, Community Lake | | 0 | | 3 | 3 | 2 | 0 | | 0 | Wooded, some commercial and residential housing | | 1 | 1 | 1 | 11 | High Priority |
| **5200-00-4-R10** | 45 | Quinnipiac River | | 0 | | 2 | 3 | 2 | 0 | | 3 | Commercial development, some residential housing and wooded areas | | 1 | 1 | 1 | 13 | High Priority |
| **5200-00-4-R11** | 20 | Quinnipiac River | | 0 | | 2 | 2 | 2 | 0 | | 0 | Wooded and commercial, some residential housing | | 1 | 1 | 1 | 9 | Problem |
| **5200-00-4-R12** | 27 | Quinnipiac River | | 0 | | 2 | 2 | 1 | 0 | | 3 | Wooded, some agricultural land and commercial, light residential | | 1 | 1 | 1 | 11 | High Priority |

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| Information Source | | | Catchment inspections and sample results | GIS Maps | Municipal Staff | Impaired Waters List | Land Use/GIS Maps, Aerial Photography | Land Use Information, Visual Observation | Municipal Staff, GIS Maps | Land Use, Municipal Staff | GIS and Storm System Maps | Other | Municipal Staff, GIS Maps | CLEAR | Nathan L Jacobson & Associates | CLEAR | | |
| Scoring Criteria | | | Yes = 3 (Problem Catchment)<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 | Description | Yes=2<br>No=0 | Yes =1<br>No = 0 | Yes =1<br>No = 0 | Yes =1<br>No = 0 | | |
| **5200-00-4-R7** | 84 | Quinnipiac River | | 3 | | 2 | 2 | 2 | 0 | | 3 | Commercial, some residential housing, light wooded areas | | 1 | 1 | 1 | 15 | High Priority |
| **5200-00-4-R8** | 81 | Quinnipiac River | | 3 | | 2 | 3 | 2 | 0 | | 0 | Commercial and residential housing, light wooded areas | | 1 | 1 | 1 | 13 | High Priority |
| **5200-10-1** | 14 | Meetinghouse Brook | | 3 | | 0 | 2 | 1 | 0 | | 3 | Residential housing, some commercial and wooded areas | | 1 | 1 | 0 | 11 | High Priority |
| **5200-10-2-R1** | 69 | Meetinghouse Brook | | 3 | | 0 | 3 | 2 | 0 | | 3 | Commercial, light residential housing and wooded, highway | | 1 | 1 | 0 | 13 | High Priority |
| **5200-11-1** | 15 | Spruce Glen Brook | | 3 | | 0 | 2 | 2 | 0 | | 3 | Residential housing, some wooded, light agricultural land, highway | | 1 | 0 | 0 | 11 | High Priority |
| **5200-12-1** | 2 | Unnamed Stream | | 3 | | 0 | 2 | 2 | 0 | | 3 | Commercial, some wooded | | 1 | 1 | 0 | 12 | High Priority |
| **5200-12-1-L1** | 49 | Unnamed Stream | | 3 | | 0 | 2 | 2 | 0 | | 3 | Wooded, some residential housing, light commercial and athletic fields | | 1 | 1 | 0 | 12 | High Priority |
| **5200-13-1** | 62 | Padens Brook | | 3 | | 2 | 3 | 2 | 0 | | 3 | Commercial, some residential housing, light wooded and agricultural land | | 1 | 1 | 1 | 16 | High Priority |
| **5200-14-1** | 38 | Unnamed Pond | | 0 | | 0 | 1 | 1 | 0 | | 0 | Pond, light wooded and residential | | 1 | 1 | 0 | 4 | Low Priority |
| **5200-14-1-L1** | 3 | Unnamed Stream | | 0 | | 0 | 2 | 2 | 0 | | 3 | Some wooded and residential housing | | 1 | 1 | 0 | 9 | Problem |
| **5200-15-1** | 34 | Unnamed Streams, Peanuts Pond, Farms Pond, Fergusons Pond | | 0 | | 0 | 3 | 2 | 0 | | 3 | Residential housing, some agricultural land, light wooded | | 1 | 0 | 0 | 9 | Problem |
| **5200-16-1** | 0 | None | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 0 | 0 | 0 | 2 | Low Priority |
| **5200-17-1** | 0 | None | | 0 | | 0 | 1 | 2 | 0 | | 0 | Light residential housing | | 1 | 0 | 0 | 4 | Low Priority |
| **5200-19-1-L1** | 0 | None | | 0 | | 0 | 1 | 2 | 0 | | 0 | Light residential housing | | 1 | 1 | 0 | 5 | Low Priority |
| **5204-00-2-L1** | 10 | Broad Brook | | 0 | | 0 | 2 | 2 | 0 | | 0 | Wooded, some residential housing | | 1 | 0 | 0 | 5 | Low Priority |
| **5204-01-1** | 0 | Broad Brook | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 1 | 0 | 0 | 3 | Low Priority |
| **5204-02-1** | 4 | Broad Brook | | 0 | | 0 | 2 | 2 | 0 | | 0 | Wooded, some residential housing | | 1 | 0 | 0 | 5 | Low Priority |

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| Scoring Criteria | | | Yes = 3 (Problem Catchment)<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 | Description | Yes=2<br>No=0 | Yes =1<br>No = 0 | Yes =1<br>No = 0 | Yes =1<br>No = 0 | | |
| **5206-01-1-L1** | 0 | High Hill Pond | | 0 | | 0 | 1 | 2 | 0 | | 0 | Wooded area with a small cleared portion for overhead electrical lines. | | 1 | 0 | 0 | 4 | Low Priority |
| **5206-02-1-L1** | 6 | North Farms Reservoir into Wharton Brook | | 0 | | 2 | 3 | 2 | 0 | | 0 | Developed with commercial or industrial sites. High impermeable areas. Lightly wooded areas | | 1 | 1 | 1 | 10 | High Priority |
| **5207-00-1** | 44 | Wharton Brook | | 0 | | 2 | 3 | 2 | 0 | | 3 | Residential houisng, some cleared land | | 1 | 1 | 1 | 13 | High Priority |
| **5207-00-1-L1** | 17 | North Farms Reservoir | | 0 | | 0 | 1 | 2 | 0 | | 0 | Some commercial, wooded, agricultural land, light residential | | 1 | 0 | 0 | 4 | Low Priority |
| **5207-00-1-L2** | 66 | Wharton Brook, Catlin Brook | | 0 | | 2 | 3 | 2 | 0 | | 3 | Residential housing, some wooded and agricultural land | | 1 | 0 | 1 | 12 | High Priority |
| **5207-00-2-R1** | 11 | Wharton Brook | | 0 | | 2 | 3 | 2 | 0 | | 3 | Residential housing, some commecial, light wooded | | 1 | 1 | 1 | 13 | High Priority |
| **5207-00-2-R2** | 9 | Wharton Brook | | 0 | | 2 | 2 | 2 | 0 | | 3 | Commercial, light wooded | | 1 | 1 | 1 | 12 | High Priority |
| **5207-01-1** | 46 | Unnamed Stream | | 0 | | 2 | 3 | 2 | 0 | | 3 | Residential houisng, commercial, golf course | | 1 | 1 | 1 | 13 | High Priority |
| **5207-02-1** | **0** | Unnamed Stream | | 0 | | 2 | 1 | 1 | 0 | | 0 | Wooded | | 1 | 0 | 1 | 6 | Problem |
| **5207-02-1-L1** | 47 | Allen Brook | | 0 | | 2 | 3 | 2 | 0 | | 3 | Commercial and residential housing, highway, golf course | | 1 | 1 | 1 | 13 | High Priority |
| **5208-00-1** | 1 | Unnamed Stream | | 0 | | 0 | 1 | 2 | 0 | | 3 | Wooded, light residential housing | | 1 | 0 | 0 | 7 | Problem |
| **5208-00-1-L1** | 74 | Muddy River | | 0 | | 2 | 2 | 1 | 0 | | 3 | Wooded and commercial, light residential housing | | 1 | 0 | 1 | 10 | Problem |
| **5208-00-2-R1** | 5 | Unnamed Stream | | 0 | | 0 | 1 | 2 | 0 | | 3 | Wooded and residential hoiusing | | 1 | 0 | 0 | 7 | Problem |

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| **5208-00-3-L2** | 11 | Mackenzie Reservoir,Unnamed Stream | | 0 | | 0 | 2 | 2 | 0 | | 0 | Agricultural land, some wooded and residential houisng | | 1 | 0 | 0 | 5 | Low Priority |
| **5208-00-3-L3** | 11 | Muddy River | | 0 | | 2 | 1 | 2 | 0 | | 3 | Wooded, light residential housing and cleared land | | 1 | 0 | 1 | 10 | High Priority |
| **5208-00-3-R1** | 0 | Muddy River | | 0 | | 2 | 1 | 2 | 0 | | 3 | Wooded, light residential housing | | 0 | 0 | 1 | 9 | Problem |
| **5208-00-3-R2** | 3 | Muddy River | | 0 | | 2 | 2 | 2 | 0 | | 3 | Wooded and agricultural land, some residential housing | | 0 | 0 | 1 | 10 | High Priority |
| **5208-00-3-R3** | 3 | Muddy River | | 0 | | 2 | 1 | 2 | 0 | | 3 | Wooded and some residential houisng | | 1 | 0 | 1 | 10 | High Priority |
| **5208-00-3-R4** | 0 | Muddy River | | 0 | | 2 | 1 | 1 | 0 | | 0 | Wooded | | 1 | 0 | 1 | 6 | Problem |
| **5208-00-3-R5** | 0 | Muddy River | | 0 | | 2 | 1 | 1 | 0 | | 0 | Wooded and cleared land | | 1 | 0 | 1 | 6 | Problem |
| **5208-01-1** | 8 | Unnamed Stream | | 0 | | 0 | 2 | 2 | 0 | | 3 | Commercial and wooded, some residential housing, highway | | 1 | 0 | 0 | 8 | Problem |
| **5208-02-1** | 4 | Spring Brook | | 0 | | 0 | 1 | 2 | 0 | | 0 | Wooded, some commercial, light residential housing and agricultural land | | 0 | 0 | 0 | 3 | Low Priority |
| **5208-02-1-L1** | 1 | Ulbrich Reservoir, Spring Brook | | 0 | | 0 | 1 | 2 | 0 | | 3 | Reservoir, some wooded and agricultural land, light residential housing | | 0 | 0 | 0 | 6 | Problem |
| **5208-02-2-R1** | 10 | Spring Brook | | 0 | | 0 | 2 | 2 | 0 | | 3 | Residential housing and wooded | | 1 | 0 | 0 | 8 | Problem |
| **5208-03-1** | 11 | Unnamed Stream | | 0 | | 0 | 1 | 2 | 0 | | 3 | Wooded and residential housing, light commercial | | 1 | 0 | 0 | 7 | Problem |
| **5208-04-1** | 9 | Unnamed Stream | | 0 | | 0 | 1 | 1 | 0 | | 3 | Pond | | 0 | 0 | 0 | 5 | Low Priority |
| **5208-04-1-L1** | 0 | Scards Pond | | 0 | | 0 | 1 | 2 | 0 | | 0 | Wooded, agricultural land, light residential housing | | 0 | 0 | 0 | 3 | Low Priority |
| **5208-05-1** | 0 | Mackenzie Reservoir | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded, reservoir | | 0 | 1 | 0 | 3 | Low Priority |
| **5208-05-1-L1** | 25 | Unnamed Streams | | 0 | | 0 | 1 | 2 | 0 | | 0 | Wooded, some residential housing and agricultural land, highway | | 1 | 0 | 0 | 4 | Low Priority |

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| **5208-06-1** | 25 | Unnamed Stream | | 0 | | 0 | 2 | 2 | 0 | | 3 | Agricultural land, some residential, highway | | 1 | 0 | 0 | 8 | Problem |
| **5208-07-1** | 0 | Unnamed Stream | | 0 | | 0 | 1 | 1 | 0 | | 3 | Wooded | | 0 | 0 | 0 | 5 | Low Priority |
| **5208-08-1** | 23 | Pine River, Unnamed Streams | | 0 | | 0 | 2 | 2 | 0 | | 3 | Wooded with residential housing, light cleared land | | 1 | 0 | 0 | 8 | Problem |
| **5208-09-1** | 0 | None | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 1 | 0 | 0 | 3 | Low Priority |
| **5302-02-1** | 0 | Unnamed Stream | | 0 | | 0 | 2 | 2 | 0 | | 3 | Residential housing, some wooded areas and marsh, golf course | | 1 | 0 | 0 | 8 | Problem |
| **5302-04-1-L1** | 16 | Butterwoth Brook | | 3 | | 0 | 2 | 2 | 0 | | 3 | Wooded with residential housing | | 1 | 0 | 0 | 11 | High Priority |

**Scoring Criteria:**

[1] Previous screening results indicate likely sewer input if any of the following are true:

- Olfactory or visual evidence of sewage,
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine

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

[3] Receiving water quality based on latest version of State of Connecticut Integrated Water Quality Report.

- Poor = Waters with approved TMDLs (Category 4a Waters) where illicit discharges have the potential to contain the pollutant identified as the cause of the impairment
- Fair = Water quality limited waterbodies that receive a discharge from the MS4 (Category 5 Waters)
- Good = No water quality impairments

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

[5] Age of development and infrastructure:

- High = Industrial areas greater than 40 years old and areas where the sanitary sewer system is more than 40 years old
- Medium = Developments 20-40 years old
- Low = Developments less than 20 years old

[6] Areas once served by combined sewers and but have been separated, or areas once served by septic systems but have been converted to sanitary sewers.

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

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

[9] Based off of CT NEMO DCIA Calculations

Pending investigation

# ATTACHMENT IV- Stormwater Retrofit Program


# STORMWATER RETROFIT PROGRAM

## TOWN OF WALLINGFORD

**PREPARED FOR:**

Town of Wallingford

**PREPARED BY:**

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

February 2, 2022

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

December 2021

Project No. 2419022001

MR. ROBERT BALTRAMAITIS
TOWN OF WALLINGFORD
CONNECTICUT 06492

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

Dear Mr. Baltramaitis,

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

Respectfully submitted,
**Atlas**

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

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

## CONTENTS



## TABLES

## GRAPHICS



## APPENDICES

## EXECUTIVE SUMMARY

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

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

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

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

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

## 1. OBJECTIVES AND BENEFITS OF STORMWATER RETROFITS

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

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

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

## 2. WHEN IS RETROFITTING APPROPRIATE?

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

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

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

*Source: NEMO (N.D)*

# 3. STORMWATER RETROFIT OPTIONS

## 3.1 Low Impact Development (LID) Management Practices

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

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

### 3.1.1 Bioretention and Infiltration Basins

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

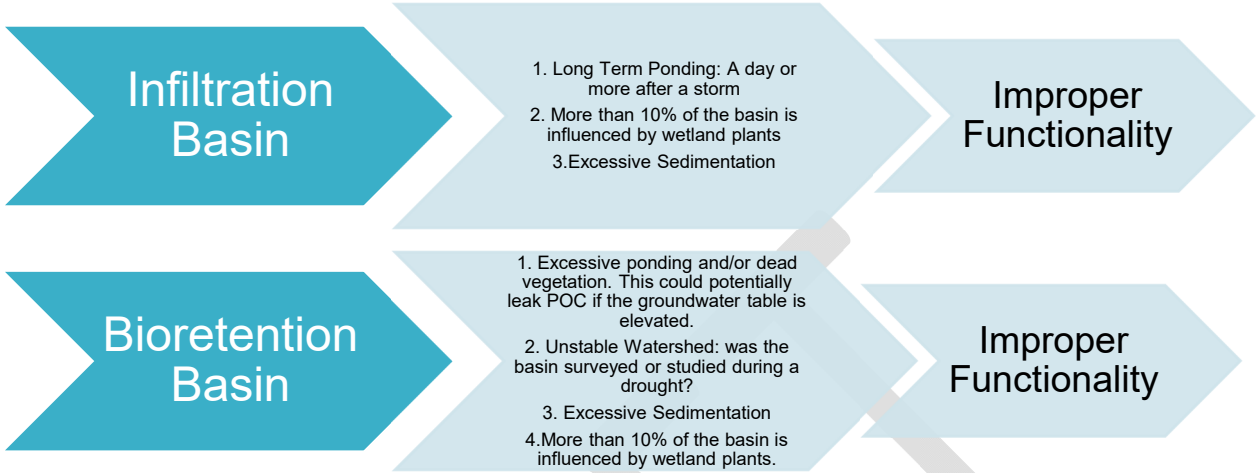
Typically, an infiltration basin has more potential in reducing peak flow or total water volume, as well as removing POC. Infiltration basins often have an increased advantage of phosphorus and nitrogen uptake, as well as some anaerobic conditions for bacterial removal (UCONN, 2021). *Infiltration basins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

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

#### Properly Functioning Bioretention or Infiltration Basins

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

**Graphic 1: Improper Functionality of Bioretention or Infiltration Basins**




*Source: Created by Atlas Technical Consultants (2021).*

## Considerations on the Rehabilitation of Bioretention or Infiltration Basins

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

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

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

*Source: Created by Atlas Technical Consultants (2021)*

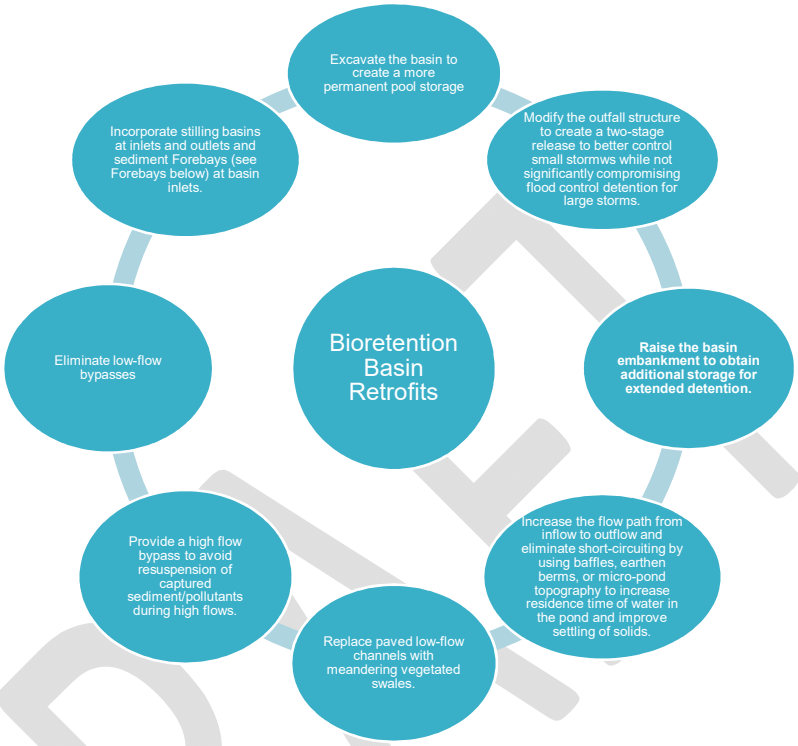
### 3.1.2 Bioretention and Infiltration Basins Variations

#### CONVENTIONAL BIORETENTION BASIN

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

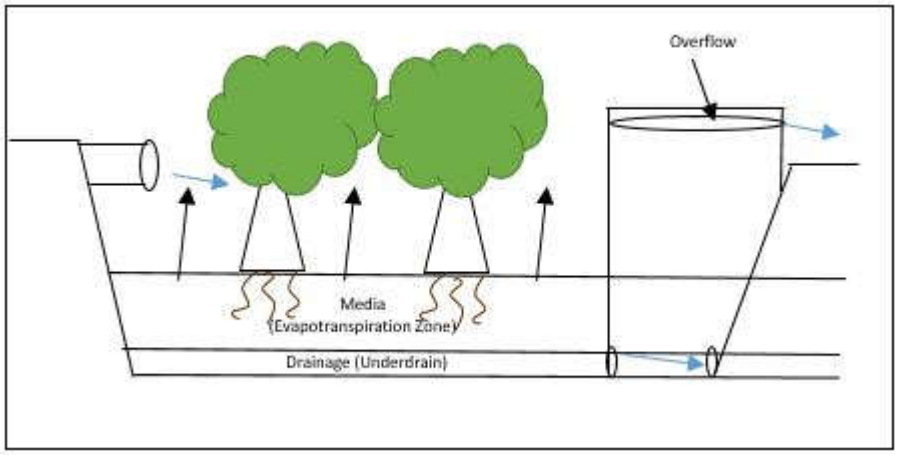
**Graphic 2** summarizes modifications to existing Bioretention basins for improved water quality mitigation. **<u>If the following modifications are made to a basin that is directly connected to the MS4 System, then it can be considered a Retrofit Project.</u>**

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




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

### Graphic 3: Conventional Bioretention Basin




*Source: Created by Atlas Technical Consultants (2021),*

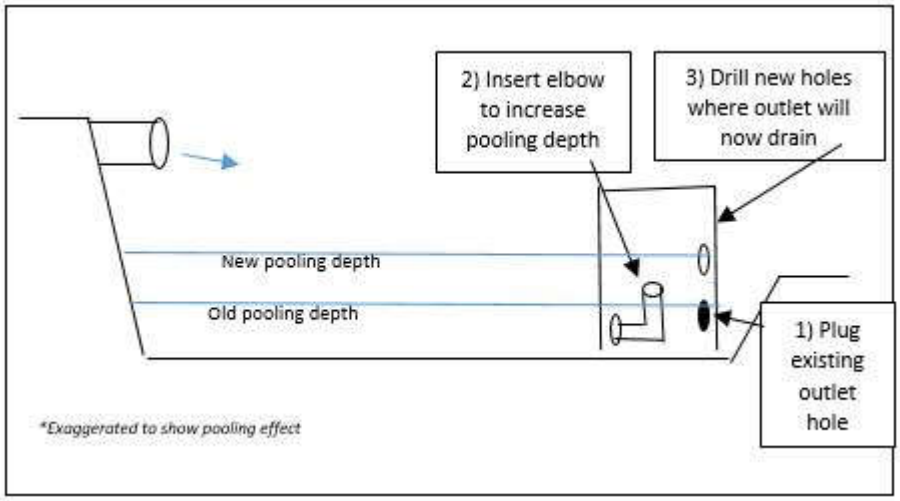
## SOGGY BIORETENTION BASINS

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

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

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

**Graphic 4: From Bioretention to Wetlands or Detention Basins**




*Source: Created by Atlas Technical Consultants (2021),*

## NATURALIZED BASIN

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

Woody systems (naturalized basin) allow for a higher rate of water volume to be infiltrated. Based on this higher rate of infiltrated stormwater, the POC load removed is greater than bioretention or

infiltration basins functioning normally. Trees will occupy approximately 1% of water uptake in bioretention or infiltration basins, as opposed to no woody vegetation (UCONN, 2021). Other benefits include less maintenance and lower costs. There is a high potential of attracting mosquito populations for naturalized basins. *It is recommended that naturalized basins not be constructed within 500 feet (ft.) of a public area.*

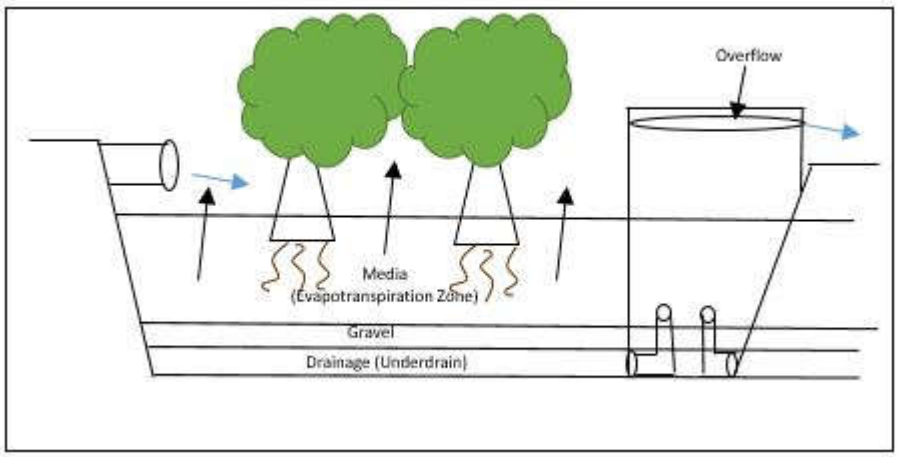
Studies have not been conducted on whether old woody growth or new woody growth is more beneficial in the uptake of POC or water. In theory, newer growth would promote soil movement due to root growth, and would increase the surface area for higher rates of infiltration (UCONN, 2021).

## INTERNAL WATER STORAGE (IWS)

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

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

**Graphic 5: Internal Water Storage**




*Source: Created by Atlas Technical Consultants (2021),*

## FOREBAYS

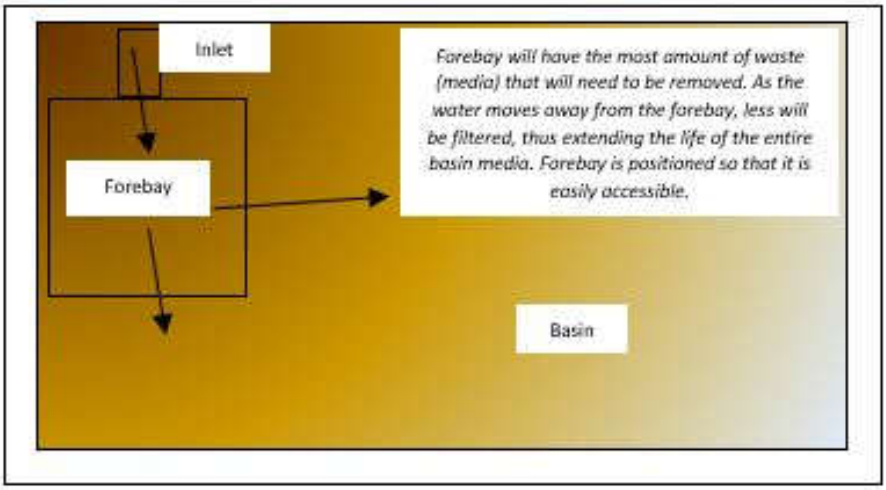
Forebays are designed and utilized to slow stormwater runoff, as well as provide pretreatment of runoff and facilitate the separation of suspended solids (MADEP, N.D). Advantages include the following:

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

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

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

**Graphic 6: Forebays**




*Source: Created by Atlas Technical Consultants (2021).*

**Graphic 7: Forebay Implementation**

*Source: MADEP. No Date. Sediment Forebays.*

## MEDIA AMENDMENTS FOR AGEING SYSTEMS

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

**Table 3– Media Amendments**

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

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

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

### 3.1.3 Bioretention or Infiltration Basin Inspections

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

**Table 4– Bioretention or Infiltration Basin Checklist**

| Factor | Consideration | Observations | Maintenance Performed |
|---|---|---|---|
| Bed Surface | Is there excessive sediment, caking, trash, or moldy mulch? | | |
| Evidence of Underdrainage or Observation Wells | Is this system functioning properly? Is there excessive sediment or clogging? | | |
| Mulch/Media | Does the media need replaced? Is there standing water that is not infiltrating? | | |
| Bed Drainage | Time your bed drainage: Is water ponding for longer than a day? | | |
| Outlet Structure | Is there evidence of clogging or outflow release velocities that are great than the designed flow? | | |

*Source: Created by Atlas Technical Consultants (2021), adapted from MADEP and UCONN NEMO.*

### 3.1.4 Rain Gardens

Rain gardens are a relatively easy and aesthetic Retrofit Project option for small communities or homes. According to NEMO, a rain garden is "a depression (about 6 inches deep), that collects stormwater runoff from a roof, driveway, or yard, and allows it to infiltrate into the ground" (CLEAR, 2021.). Typically, a residential rain garden is 50 to 100 square feet, and includes a variety of native shrubs and plants. *A rain garden should never be installed in a low area or an area that is wet; it is not a water garden or wetland.*

**Graphic 8: Rain Garden Retrofit Benefits**


*Source: Created by Atlas Technical Consultants (2021)*

Promoting the installation of rain gardens is easy; encourage the utilization of the Rain Garden Application, created by the CT NEMO Program. Once a community or home has installed a rain garden, encourage citizen reporting to track disconnects and retrofits. **To track these Retrofit Projects, communities considering the implementation of a rain garden should be defined internally as to whether it is directly connected to the MS4 system.**

## 3.2 Rainwater Harvesting/Stormwater Reuse & Rain Barrel Programs

Managing stormwater in areas of tight spaces, highly commercialized or industrial areas, as well as intensely residential communities can pose issues with volume control, increased flooding and erosion, and an increase in non-point source pollution. The implementation of a rainwater harvesting/ stormwater reuse and rain barrel program can greatly reduce the aforementioned issues related to stormwater in these area types, as well as reducing the cost of potable water, promote potable water resource conservation, remove 100% of solids, nutrients, metals, pathogens, and toxins, and increase soil moisture for urban greenery (PCA. 2021). **Areas that implement a Rainwater Harvesting/Stormwater Reuse & Rain Barrel Programs of which are directly connected to the Town's MS4 system can be considered a Retrofit Project.**

Data compiled from the Neighborhood Rain Barrel Partnership Project indicated, "…the average 50-gallon rain barrel could capture a 0.26-inch precipitation event, or 64 percent of the 28 precipitation events monitored" (EPA, 2008). The implementation of such a program could greatly increase the quality of stormwater, as well as involve the community in protecting the Town's navigable waterways.

Potentially, with the utilization of ordinances or other legal means, the Town could require rain harvesting of an agreed upon percentage for commercial developments. Other considerations include historical land uses, facilities, or industrial uses may contaminate rainwater harvesting (PCA, 2021). **Table 5** describes the implementation, applications, and considerations of executing such a program.

**Table 5– Rainwater Harvesting/Stormwater Reuse & Rain Barrel Programs**

| Program | Implementation | Application | Considerations |
|---|---|---|---|
| **Rain Barrels** | ❖ Rain Barrels are typically small scale (25-100-gallons).<br>❖ Install at the downspout of a gutter system.<br>❖ Gravity is the simplest method of delivery; complex systems can be designed to deliver water from several barrels.<br>❖ Town may want to offer an agreed upon rebate residents or businesses that purchase specified rain barrels. | ❖ Collects and store rainwater for watering landscapes and gardens<br>❖ Cumulative effect includes volume reduction over entire watershed area<br>❖ Removes 100% of 100% of solids, nutrients, metals, pathogens, & toxins that would have potentially reached MS4 system. | ❖ Typical costs range from $50 to $230 for a 55-gallon drum.<br>❖ Plastic, food-grade 55-gallon drums range from $15 to $20.<br>❖ Barrel should include overflow deflection<br>❖ Routing features should be installed to keep water away from structure foundations<br>❖ Not to be utilized for tar & gravel, asbestos shingle, or treated cedar shake roof types.<br>❖ A fine screen over all openings or emptying of barrels should be conducted to prevent mosquito breeding.<br>❖ Disconnected in the winter to prevent deformation of the system |
| **Cisterns** | ❖ Greater storage capacity<br>❖ Stored above or below ground<br>❖ Delivered utilized a pump system<br>❖ A surface stormwater pond (Bioretention or infiltration basin) could be designed to overflow into the cistern as well. | ❖ Typically utilized to irrigate landscapes, gardens, and ballparks on a regular basis<br>❖ Reduces strain on municipal water supplies during peak summer months.<br>❖ Potential for use in non-potable services (toilets, urinal flushing) | ❖ Typical costs range from $200 to $10,000 based on size, materials, and structural requirements<br>❖ Often complex system that requires continuous maintenance<br>❖ Designed overflow from a basin may need treatment prior to use for irrigation purposes. |

*Source: Created by Atlas Technical Consultants (2021), resourced from the Minnesota Pollution Control Agency (PCA) Pollution Prevention & the MS4 Program.*

## 3.3 Credit Trading Program

Stormwater POC have long afflicted navigable waterways, with negative effects including algae blooms, resource degradation, toxicity, and even an increase in drinking water treatment costs. Options in reducing stormwater POC often include LID-implementation, community participation, ordinances, and legal action. However, these practices may not always have the desired effect, particularly in areas of high industrial or commercialized infrastructure (point sources). A Credit

Trading Program may be the solution, as it holds businesses accountable for stormwater pollution and promotes the increased quality of stormwater discharge.

To find a successful Trading Credit Program, one need not look far. The Connecticut and New York Credit Trading Program (known as the Nitrogen Control Program for Long Island Sound) has been found to be incredibly effective in the reduction of nitrogen discharged to the Sound. The reduction of nitrogen input into the Sound was achieved by first achieving the total maximum daily load (TMDL) of nitrogen that could be discharged, and the implementation of an initiative nitrogen-trading program among sewage treatment plants located throughout the state. Established in 2002, by 2014 65 percent of nitrogen loading from sewage treatment plants had been reduced (CTDEEP, 2020).

To reduce the amount of the POC discharged, participating developers purchase credits from the Town. **Developers directly connected to the MS4 system that participate in this program can be considered a Retrofit Project, as it pertains specifically to the area of previously connected surface that was disconnected.** The amount of credits purchased is the equivalent of the POC in mass. Developers would then pay a fee on a per/lb. basis over a 30-year reduction period, for example. Developers then create and/or monitor POC removal from the stormwater infrastructure. The removal of the POC would be reported in mass. *Developers that remove over the standards for their specific POC removal goal can sell credits to other developers who cannot meet their POC removal goal.* **Table 6** demonstrates the annual re-evaluation of developers of trading versus treating.

**Table 6 – Performance of the NCE, 2002-2009**

| Trading Year | Credit Prices (Dollars) | Purchased (Dollars) | Sold (Dollars) | Purchased (1,000 Credits) | Sold (1,000 Credits) |
|---|---|---|---|---|---|
| 2002 | $1.65 | $1,317,223 | $2,357,323 | 798 | 1,429 |
| 2003 | $2.14 | $2,116,875 | $2,428,636 | 989 | 1,135 |
| 2004 | $1.90 | $1,786,736 | $2,659,804 | 940 | 1,400 |
| 2005 | $2.11 | $2,467,757 | $1,315,392 | 1,170 | 623 |
| 2006 | $3.40 | $3,828,114 | $2,394,956 | 1,126 | 704 |
| 2007 | $4.36 | $5,159,019 | $2,072,001 | 1,183 | 475 |
| 2008 | $4.50 | $6,148,327 | $2,660,688 | 1,366 | 591 |
| 2009 | $4.54 | $4,390,023 | $2,835,447 | 967 | 625 |
| Total | | $27,214,074 | $18,724,247 | 8,539 | 6,982 |

Source: CTDEEP. 2020.

The implementation of a Credit Trading Program may create economic activity within the Town, motivate developers through monetary incentive, and create an annual re-evaluation on treating versus trading based on annual increases or decreases in credit costs. Considerations should be made in the potential buy back of credits - *if all developers meet the POC removal goal within the threshold (ex. 30-years), the Town will be liable for buying back all credits.* Funding may be available through the Clean Water State Revolving Fund (CWSRF) (EPA, 2021).

## 3.4 Buffer Ordinance

A buffer can be defined as “small areas or strips of land in permanent vegetation, designed to intercept pollutants and manage other environmental concerns” (PCA, N.D.). *Buffers present numerous advantages, including POC removal, erosion reduction, restore the integrity of water resources, contribute organic matter to aquatic ecosystems, provide riparian wildlife habitat, and bring scenic or recreational opportunity to the area* (EPA, 2002). **Buffers implemented in areas directly connected to the Town’s MS4 system can be considered a Retrofit Project, as it pertains specifically to the area of previously connected surface that was disconnected.**

The United States Environmental Protection Agency (EPA) has created a model buffer ordinance, with suggested language or guidance in creating buffer ordinances, and is included in **Appendix III**. Design standards of a buffer ordinance, at a minimum, should include the following:

**Table 7 – Buffer Ordinance Design Standards**

| Standard | Considerations |
|---|---|
| Establish minimum width to apply to all buffers. | Customize requirements according to functions, values, and water body size. |
| Determine how areas are to be calculated. | Identify flexibility in standard (using an average buffer width, etc.) Should allow changes to be made to adjust for slope, soils, encroaching land uses, or water utilization. |
| Vegetative Specifications | Vegetative mixes based on soils, slope, region. |
| Signage | Specify minimum spacing of signage to identify buffer and prevent encroachment |

Source: Created by Atlas Technical Consultants (2021). Adapted from PCA Pollution Prevention and the MS4 Program.

Following the implementation of a buffer ordinance, a Town-wide campaign can be utilized to inform developers and property owners of the benefits of a vegetated buffer. To reach the desired audience, brochures, signage at municipal locations, workshops, or seminars can be provided by the Town (PCA, N.D.).

Maintenance of buffers will generally consist of mowing, removal of refuse or debris, inspections for erosion and infiltration, and the replacement of damaged or dead plants. The installation of a vegetated buffer is estimated at $0.50 per square foot, as well as costs relating to labor or maintenance supplies (PCA, N.D.). Applications of a vegetated buffer can include natural drainage in residential areas, along roads in place of curbing, parking lot islands, low-flow conveyance in place of structural conveyance, pretreatment prior to discharge to open water, provide aesthetic appeal, and provide a natural habitat within urbanized areas (PCA, N.D).

## 3.5 Additional Disconnect Strategies

### 3.5.1 Curbless Streets

Curbless streets, or streets that are sloped to vegetative areas, allow stormwater to drain into permeable areas adjacent to the property. By eliminating curbs or gutters, there are fewer infrastructure costs and higher infiltration rates (PCA, 2021). *If curbs cannot be eliminated, then they can sometimes be slotted to re-route runoff to vegetated areas.* Existing stormwater infrastructure should be evaluated and expanded if needed (NEMO, 2004). **Curbs or gutters that are eliminated in areas that discharge directly to the MS4 system can be considered a Retrofit Project.**

### 3.5.2 Permeable Pavement

As the Town continues to maintain its properties, permeable paving materials can be utilized during upgrades. *Examples of permeable materials include modular concrete paving blocks, modular concrete, plastic lattice, cast-in-place concrete grids, and/or designed permeable pavement*. Considerations pertaining to site-specific factors should include "traffic volumes, soil permeability, maintenance, sediment loads, and land use…" (NEMO, 2004). **Sites that implement permeable pavements of which were previously directly connected to the Town's MS4 system can be considered a Retrofit Project.**

# 4. STORMWATER DISCONNECT TRACKING

## 4.1 Directly Connected Impervious Areas (DCIA)

Under the Pollution Prevention/Good Housekeeping portion of the general permit, the Town must develop a retrofit program to disconnect existing DCIA by 1% per year, or a total of 2% to the maximum extent practicable (MEP). *Previous disconnections going back to 2012 can be counted toward this disconnection requirement.*

According to the MS4 General Permit, the Town must make a serious attempt to comply with DCIA disconnects. However, based on attenuating factors, including MS4 size, the ability to finance, the capacity to perform operations and maintenance, and local conditions, the MEP may be less than a total of 2% disconnected for the Town. (CTDEEP. 2017)

For the purpose of maximum extent practicable (MEP) for the Town, an investigation was conducted by Nathan L. Jacobson & Associates on DCIA for each catchment in the Town. Catchments were defined by utilizing the Town Sub-Basins. High Connectivity, Average Connectivity, Partial Connectivity, and Slight Connectivity were calculated utilizing the following:

**High Connectivity**

*DCIA%=0.4*(IA %)^1.2*

*Directly Connected Area= (DCIA)(IC Acres)*

**Average Connectivity**

*DCIA%=0.1*(IA%)^1.5*

*Directly Connected Area= (DCIA)(IC Acres)*

***Partial Connectivity***

*DCIA%=0.04*(IA%)^1.7*

*Directly Connected Area= (DCIA)(IC Acres)*

***Slight Connectivity***

*DCIA%=0.01*(IA%)^2.0*

*Directly Connected Area= (DCIA)(IC Acres)*

The High Connectivity calculation was utilized in assessing the Town's DCIA connectivity based on the majority of land utilization defined as commercialized or industrial and moderate residential communities,. Based on the calculations provided, the following catchments have a connectivity of 11% or greater. Refer to **Appendix IV** for the Town's complete DCIA Computations.

Please note that in all tables henceforth, catchments are organized by drainage waterbodies. Refer to *Section 4.3* for information regarding impaired waters in the Town. **Figures** pertaining to all future sections are located in **Appendix II**.

**Table 8 – DCIA**

| Catchment ID | Basin Total Acreage (Ac.) | Town Impervious Area Acreage (Ac) | Town Impervious Area Percentage (%) | DCIA Acreage (High Connectivity) (Ac) | DCIA Percentage (High Connectivity) (%) |
|---|---|---|---|---|---|
| **Sawmill Brook** | | | | | |
| 4606-00-1 | 659.5 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4606-01-1 | 491.8 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4606-02-1 | 1,134.6 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Coginchaug River** | | | | | |
| 4607-10-1-L1 | 1,311.6 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Farm River** | | | | | |
| 5112-00-2-L1 | 344.90 | 3.24 | 2.03 | 0.00 | 0.00 |
| 5112-02-1 | 376.5 | 6.61 | 4.28 | 0.00 | 0.00 |
| 5112-02-1-D1 | 138.8 | 7.91 | 5.70 | 0.00 | 0.00 |
| 5112-02-1-L1 | 455.1 | 7.94 | 9.93 | 0.00 | 0.00 |
| 5112-03-1 | 619.4 | 15.92 | 3.09 | 0.00 | 0.00 |
| **Quinnipiac River** | | | | | |
| 5200-00-4-L3 | 934.4 | 233.87 | 25.03 | 44.58 | 19.06 |
| 5200-00-4-R10 | 675.6 | 253.40 | 37.51 | 78.49 | 30.97 |
| 5200-00-4-R11 | 274.4 | 87.51 | 31.89 | 22.31 | 25.50 |
| 5200-00-4-R12 | 737.8 | 113.38 | 16.96 | 11.95 | 6.77 |
| 5200-00-4-R7 | 2,322.3 | 235.74 | 14.87 | 12.03 | 10.21 |
| 5200-00-4-R8 | 766.4 | 263.37 | 34.36 | 73.44 | 27.89 |
| 5200-10-1 | 1,214.3 | 26.14 | 16.35 | 1.49 | 11.43 |
| 5200-10-2-R1 | 528.6 | 176.15 | 33.32 | 47.34 | 26.88 |
| 5200-11-1 | 993.9 | 33.01 | 7.20 | 0.00 | 0.00 |
| 5200-12-1 | 30.7 | 8.31 | 27.07 | 1.74 | 20.94 |
| 5200-12-1-L1 | 1,118.1 | 209.04 | 18.70 | 28.08 | 13.43 |
| 5200-13-1 | 1,121.2 | 319.74 | 28.52 | 71.28 | 22.29 |
| 5200-14-1 | 416.3 | 84.79 | 20.37 | 12.62 | 14.89 |
| 5200-14-1-L1 | 26.4 | 5.93 | 22.46 | 0.99 | 16.74 |
| 5200-15-1 | 606.2 | 12.57 | 2.09 | 0.00 | 0.00 |
| 5200-16-1 | 1,059.3 | 0.01 | 1.33 | 0.00 | 0.00 |
| 5200-17-1 | 1,112.8 | 1.44 | 11.09 | 0.00 | 0.00 |

| Catchment ID | Basin Total Acreage (Ac.) | Town Impervious Area Acreage (Ac) | Town Impervious Area Percentage (%) | DCIA Acreage (High Connectivity) (Ac) | DCIA Percentage (High Connectivity) (%) |
|---|---|---|---|---|---|
| 5200-19-1-L1 | 896.3 | 6.55 | 18.28 | 0.86 | 13.07 |
| **Broad Brook** | | | | | |
| 5204-00-2-L1 | 1,884.7 | 29.16 | 8.64 | 0.00 | 0.00 |
| 5204-01-1 | 268.5 | 4.37 | 6.93 | 0.23 | 10.53 |
| 5204-02-1 | 289.2 | 15.66 | 15.26 | 0.00 | 0.00 |
| **Harbor Brook** | | | | | |
| 5206-01-1-L1 | 65.30 | 0.08 | 3.08 | 0.00 | 0.00 |
| 5206-02-1-L1 | 681.40 | 49.26 | 25.47 | 9.59 | 19.47 |
| **Wharton Brook** | | | | | |
| 5207-00-1 | 736.5 | 197.50 | 26.82 | 40.90 | 20.71 |
| 5207-00-1-L1 | 488.1 | 46.48 | 9.68 | 0.00 | 0.00 |
| 5207-00-1-L2 | 1,397.1 | 206.41 | 14.77 | 10.45 | 10.13 |
| 5207-00-2-R1 | 380.8 | 100.30 | 26.34 | 20.33 | 20.27 |
| 5207-00-2-R2 | 161.2 | 35.31 | 38.63 | 11.33 | 32.09 |
| 5207-01-1 | 906.2 | 157.28 | 17.36 | 9.66 | 12.29 |
| 5207-02-1 | 2.4 | 0.28 | 20.00 | 0.04 | 14.56 |
| 5207-02-1-L1 | 822.4 | 136.05 | 20.66 | 20.60 | 15.14 |
| **Muddy River** | | | | | |
| 5208-00-1 | 26.0 | 3.70 | 14.23 | 0.18 | 9.68 |
| 5208-00-1-L1 | 858.7 | 123.95 | 14.49 | 6.13 | 9.90 |
| 5208-00-2-R1 | 54.7 | 7.98 | 14.59 | 0.40 | 9.97 |
| 5208-00-3-L2 | 891.4 | 47.21 | 5.30 | 0.00 | 0.00 |
| 5208-00-3-L3 | 881.4 | 36.85 | 4.40 | 0.00 | 0.00 |
| 5208-00-3-R1 | 12.4 | 0.89 | 7.18 | 0.00 | 0.00 |
| 5208-00-3-R2 | 701.2 | 26.46 | 3.81 | 0.00 | 0.00 |
| 5208-00-3-R3 | 167.2 | 4.92 | 6.72 | 0.00 | 0.00 |
| 5208-00-3-R4 | 28.1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5208-00-3-R5 | 198.4 | 0.15 | 0.67 | 0.00 | 0.00 |
| 5208-01-1 | 305.5 | 46.19 | 15.12 | 2.40 | 10.41 |
| 5208-02-1 | 510.9 | 8.67 | 1.80 | 0.00 | 0.00 |
| 5208-02-1-L1 | 664.2 | 15.25 | 2.31 | 0.00 | 0.00 |
| 5208-02-2-R1 | 592.0 | 41.49 | 7.01 | 0.00 | 0.00 |
| 5208-03-1 | 717.1 | 36.78 | 6.19 | 0.00 | 0.00 |
| 5208-04-1 | 479.6 | 20.43 | 4.26 | 0.00 | 0.00 |

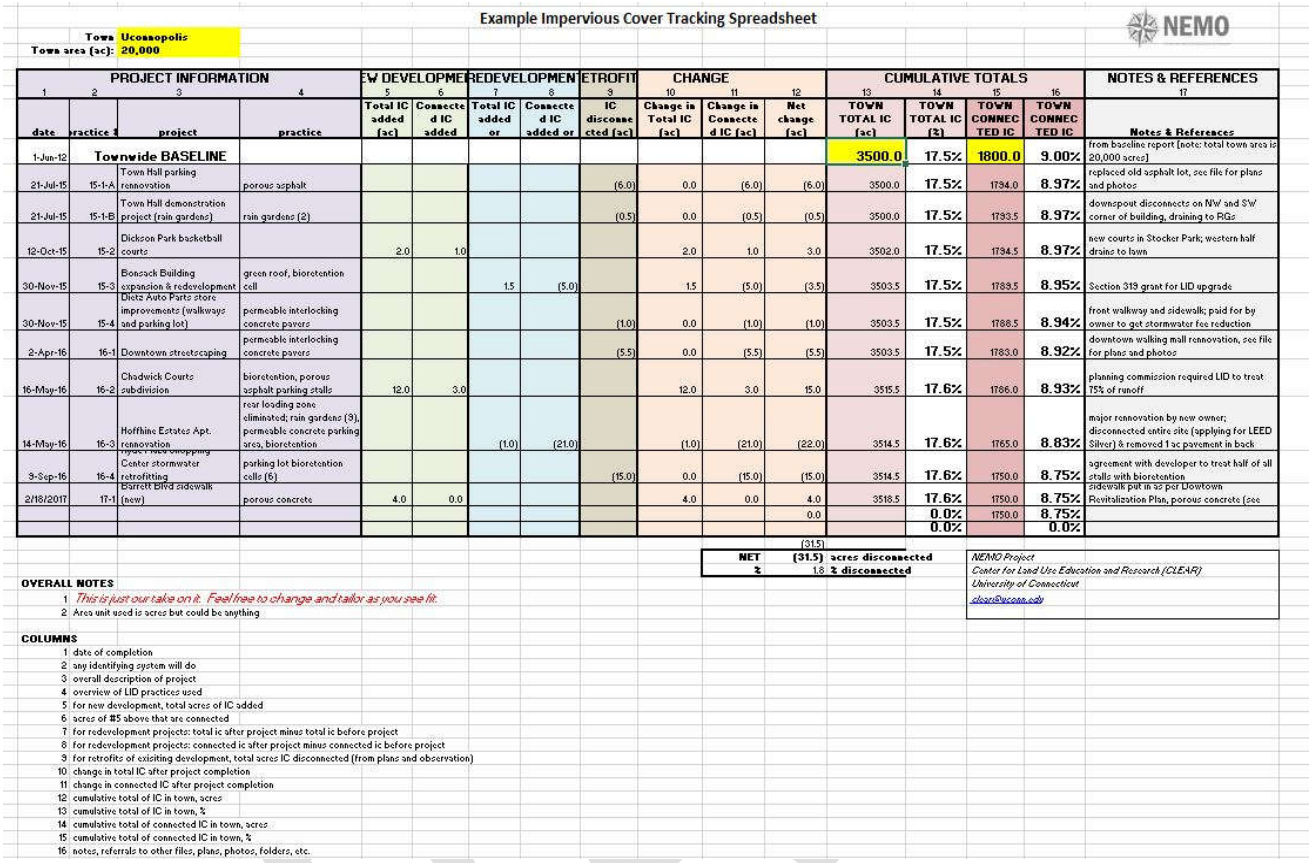
| Catchment ID | Basin Total Acreage (Ac.) | Town Impervious Area Acreage (Ac) | Town Impervious Area Percentage (%) | DCIA Acreage (High Connectivity) (Ac) | DCIA Percentage (High Connectivity) (%) |
|---|---|---|---|---|---|
| 5208-05-1-L1 | 540.1 | 56.16 | 10.40 | 0.05 | 17.10 |
| 5208-06-1 | 444.9 | 28.13 | 6.32 | 0.00 | 0.00 |
| 5208-07-1 | 137.2 | 1.83 | 1.33 | 0.00 | 0.00 |
| 5208-08-1 | 840.9 | 73.69 | 8.98 | 0.00 | 0.00 |
| 5208-09-1 | 536.0 | 0.15 | 1.73 | 0.00 | 0.77 |
| **Mill River** | | | | | |
| 5302-02-1 | 1,077.6 | 64.39 | 9.44 | 0.00 | 0.00 |
| 5302-04-1-L1 | 1,521.3 | 48.01 | 10.26 | 0.00 | 0.00 |
| Source: Created by Atlas Technical Consultants (2021). Referenced from Nathan L. Jacobson & Associates DCIA Calculations. | | | | | |

### 4.1.1 Impervious Cover Tracking

Existing DCIA by 1% per year, or a total of 2% disconnect to the maximum extent practicable (MEP) is required under the MS4 Permit. A disconnect is defined as infiltrating the first inch of rain. Previous disconnections going back to 2012 can be counted toward this disconnection requirement. Stormwater should not be infiltrated in Aquifer Protection Areas where there is a high pollutant load, at sites with existing subsurface contamination, or a drinking water wellhead area (UCONN, 2020).

UConn, along with CT NEMO, have provided a tool- the Impervious Cover Disconnection Spreadsheet-that is useful for DCIA disconnection tracking purposes. Included in the Disconnection Spreadsheet is Project Information, New Developments, Redevelopments, Retrofits, Change, and Cumulative Totals. This spreadsheet will allow the Town to easily track and compute disconnects from the MS4 system during redevelopment or retrofitting, or connections to the MS4 system with new developments. **Graphic 9** provides an example of disconnection tracking. This spreadsheet is included in **Appendix V**.

**Graphic 9: Impervious Cover Disconnection Spreadsheet**



Example Impervious Cover Tracking Spreadsheet

NEMO

Town: Uconnopolis
Town area (ac): 20,000

| PROJECT INFORMATION | | | | NEW DEVELOPMENT | | REDEVELOPMENT | | RETROFIT | CHANGE | | | CUMULATIVE TOTALS | | | | NOTES & REFERENCES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| date | practice # | project | practice | Total IC added (ac) | Connected IC added | Total IC added or | Connected IC added or | IC disconnected (ac) | Change in Total IC (ac) | Change in Connected IC (ac) | Net change (ac) | TOWN TOTAL IC (ac) | TOWN TOTAL IC (%) | TOWN CONNECTED IC | TOWN CONNECTED IC | Notes & References |
| 1-Jun-12 | Townwide BASELINE | | | | | | | | | | | 3500.0 | 17.5% | 1800.0 | 9.00% | from baseline report (note: total town area is 20,000 acres) |
| 21-Jul-15 | 15-1-A | Town Hall parking renovation | porous asphalt | | | | | (6.0) | 0.0 | (6.0) | (6.0) | 3500.0 | 17.5% | 1794.0 | 8.97% | replaced old asphalt lot, see file for plans and photos |
| 21-Jul-15 | 15-1-B | Town Hall demonstration project (rain gardens) | rain gardens (2) | | | | | (0.5) | 0.0 | (0.5) | (0.5) | 3500.0 | 17.5% | 1793.5 | 8.97% | downspout disconnects on NW and SW corner of building, draining to RGs |
| 12-Oct-15 | 15-2 | Dickson Park basketball courts | | 2.0 | 1.0 | | | | 2.0 | 1.0 | 3.0 | 3502.0 | 17.5% | 1794.5 | 8.97% | new courts in Stocker Park; western half drains to lawn |
| 30-Nov-15 | 15-3 | Bonsack Building expansion & redevelopment | green roof, bioretention cell | | | 1.5 | (5.0) | | 1.5 | (5.0) | (3.5) | 3503.5 | 17.5% | 1789.5 | 8.95% | Section 319 grant for LID upgrade |
| 30-Nov-15 | 15-4 | Dietz Auto Parts store improvements (walkways and parking lot) | permeable interlocking concrete pavers | | | | | (1.0) | 0.0 | (1.0) | (1.0) | 3503.5 | 17.5% | 1788.5 | 8.94% | front walkway and sidewalk; paid for by owner to get stormwater fee reduction |
| 2-Apr-16 | 16-1 | Downtown streetscaping | permeable interlocking concrete pavers | | | | | (5.5) | 0.0 | (5.5) | (5.5) | 3503.5 | 17.5% | 1783.0 | 8.92% | downtown walking mall renovation, see file for plans and photos |
| 16-May-16 | 16-2 | Chadwick Courts subdivision | bioretention, porous asphalt parking stalls | 12.0 | 3.0 | | | | 12.0 | 3.0 | 15.0 | 3515.5 | 17.6% | 1786.0 | 8.93% | planning commission required LID to treat 75% of runoff |
| 14-May-16 | 16-3 | Hoffhine Estates Apt. renovation | rear loading zone eliminated; rain gardens (3), permeable concrete parking area, bioretention | | | (1.0) | (21.0) | | (1.0) | (21.0) | (22.0) | 3514.5 | 17.6% | 1765.0 | 8.83% | major renovation by new owner; disconnected entire site (applying for LEED Silver) & removed 1 ac pavement in back |
| 3-Sep-16 | 16-4 | Hyper Mart Shopping Center stormwater retrofitting | parking lot bioretention cells (5) | | | | | (15.0) | 0.0 | (15.0) | (15.0) | 3514.5 | 17.6% | 1750.0 | 8.75% | agreement with developer to treat half of all stalls with bioretention |
| 2/18/2017 | 17-1 | Barrett Blvd sidewalk (new) | porous concrete | 4.0 | 0.0 | | | | 4.0 | 0.0 | 4.0 | 3518.5 | 17.6% | 1750.0 | 8.75% | sidewalk put in as per Downtown Revitalization Plan, porous concrete (see |
| | | | | | | | | | | | 0.0 | | 0.0% | 1750.0 | 8.75% | |
| | | | | | | | | | | | | | 0.0% | | 0.0% | |
| | | | | | | | | | | | (31.5) | | | | | |
| | | | | | | | | | NET | | (31.5) | acres disconnected | | | | |
| | | | | | | | | | % | | 1.8 | % disconnected | | | | |

NEMO Project
Center for Land Use Education and Research (CLEAR)
University of Connecticut
clear@uconn.edu

**OVERALL NOTES**

1. *This is just our take on it. Feel free to change and tailor as you see fit.*
2. Area unit used is acres but could be anything

**COLUMNS**

1. date of completion
2. any identifying system will do
3. overall description of project
4. overview of LID practices used
5. for new development, total acres of IC added
6. acres of #5 above that are connected
7. for redevelopment projects: total ic after project minus total ic before project
8. for redevelopment projects: connected ic after project minus connected ic before project
9. for retrofits of exisiting development, total acres IC disconnected (from plans and observation)
10. change in total IC after project completion
11. change in connected IC after project completion
12. cumulative total of IC in town, acres
13. cumulative total of IC in town, %
14. cumulative total of connected IC in town, acres
15. cumulative total of connected IC in town, %
16. notes, referrals to other files, plans, photos, folders, etc.

## 4.2 Urbanized Areas

The 2010 Census of Urban Classification defines an Urban Area as “densely developed territory, and encompass [es] residential, commercial, and other non-residential urban land use (Census. 2010)”. There are two clearly defined Urban Area types: an Urbanized Area must contain 50,000 or more people, and an Urban Cluster must contain at least 2,500 and less than 50,000 people. (Census. 2010) For purposes of the Stormwater Retrofit Program, data pertaining to an Urbanized Area was utilized.

Atlas was provided with a shapefile of the 2010 Urbanized Areas for the Town, which was imported into ArcGIS for calculation purposes. Utilizing the Overlay-Intersect tool, Atlas was able to extract the total Urbanized Area acreage per catchment, and then calculate the Urbanized Area percentage per catchment utilizing the following formula:

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

**Table 9** includes catchments found to contain Urbanized Areas only, as well as the results of the Urbanized Area Acreage extraction and Urbanized Area Percentage results. **Figure 1** depicts the Urbanized Areas and corresponding catchments.

**Table 9 – Urbanized Areas by Catchment**

| Catchment ID | Basin Total Acreage (Ac.) | Urbanized Area (Ac) | Urbanized Area Percentage (%) |
|---|---|---|---|
| **Farm River** | | | |
| 5112-00-2-L1 | 344.90 | 39.02 | 11.31 |
| 5112-02-1 | 376.5 | 0.20 | 0.05 |
| 5112-02-1-L1 | 455.1 | 0.14 | 0.03 |
| **Quinnipiac River** | | | |
| 5200-00-4-L3 | 934.4 | 934.37 | 100.00 |
| 5200-00-4-R10 | 675.6 | 675.64 | 100.01 |
| 5200-00-4-R11 | 274.4 | 274.36 | 99.99 |
| 5200-00-4-R12 | 737.8 | 635.86 | 86.18 |
| 5200-00-4-R7 | 2,322.3 | 1,572.75 | 67.72 |
| 5200-00-4-R8 | 766.4 | 766.45 | 100.01 |
| 5200-10-1 | 1,214.3 | 157.46 | 12.97 |
| 5200-10-2-R1 | 528.6 | 528.60 | 100.00 |
| 5200-11-1 | 993.9 | 459.38 | 46.22 |
| 5200-12-1 | 30.7 | 30.69 | 99.97 |
| 5200-12-1-L1 | 1,118.1 | 1,118.05 | 100.00 |
| 5200-13-1 | 1,121.2 | 1,121.18 | 100.00 |
| 5200-14-1 | 416.3 | 416.32 | 100.00 |
| 5200-14-1-L1 | 26.4 | 26.43 | 100.11 |
| 5200-15-1 | 606.2 | 526.82 | 86.91 |
| 5200-16-1 | 1,059.3 | 0.64 | 0.06 |
| 5200-17-1 | 1,112.8 | 12.24 | 1.10 |
| 5200-19-1-L1 | 896.3 | 374.92 | 41.83 |
| **Broad Brook** | | | |
| 5204-00-2-L1 | 1,884.7 | 342.66 | 18.18 |
| 5204-01-1 | 268.5 | 28.13 | 10.48 |
| 5204-02-1 | 289.2 | 230.32 | 79.64 |
| **Harbor Brook** | | | |
| 5206-01-1-L1 | 65.30 | 2.73 | 4.18 |
| 5206-02-1-L1 | 681.40 | 189.83 | 27.86 |
| **Wharton Brook** | | | |
| 5207-00-1 | 736.5 | 736.49 | 100.00 |
| 5207-00-1-L1 | 488.1 | 484.20 | 99.20 |
| 5207-00-1-L2 | 1,397.1 | 1,397.11 | 100.00 |
| 5207-00-2-R1 | 380.8 | 380.84 | 100.01 |

| Catchment ID | Basin Total Acreage (Ac.) | Urbanized Area (Ac) | Urbanized Area Percentage (%) |
|---|---|---|---|
| 5207-00-2-R2 | 161.2 | 89.59 | 55.58 |
| 5207-01-1 | 906.2 | 819.99 | 90.49 |
| 5207-02-1 | 2.4 | 1.39 | 57.92 |
| 5207-02-1-L1 | 822.4 | 651.76 | 79.25 |
| **Muddy River** | | | |
| 5208-00-1 | 26.0 | 25.97 | 99.88 |
| 5208-00-1-L1 | 858.7 | 810.15 | 94.35 |
| 5208-00-2-R1 | 54.7 | 54.71 | 100.02 |
| 5208-00-3-L2 | 891.4 | 148.75 | 16.69 |
| 5208-00-3-L3 | 881.4 | 219.21 | 24.87 |
| 5208-00-3-R2 | 701.2 | 2.99 | 0.43 |
| 5208-00-3-R3 | 167.2 | 67.25 | 40.22 |
| 5208-00-3-R4 | 28.1 | 0.88 | 3.13 |
| 5208-00-3-R5 | 198.4 | 22.60 | 11.39 |
| 5208-01-1 | 305.5 | 305.50 | 100.00 |
| 5208-02-2-R1 | 592.0 | 347.38 | 58.68 |
| 5208-03-1 | 717.1 | 38.25 | 5.33 |
| 5208-05-1-L1 | 540.1 | 323.32 | 59.86 |
| 5208-06-1 | 444.9 | 129.99 | 29.22 |
| 5208-08-1 | 840.9 | 794.03 | 94.43 |
| 5208-09-1 | 536.0 | 7.49 | 1.40 |
| **Mill River** | | | |
| 5302-02-1 | 1,077.6 | 670.90 | 62.26 |
| 5302-04-1-L1 | 1,521.3 | 393.13 | 25.84 |

## 4.3 Impaired Waterbodies

CT ECO, a partnership between the CTDEEP and UConn, has based the state's impaired waters on the following specifications; waters listed as impaired by the EPA and waters that were listed as having adopted a Total Maximum Daily Load (TMDL) for either one or all of the following: phosphorus, nitrogen, bacteria, or mercury. These were then combined into a Stormwater Impaired Waters layer through CT ECO for the use in a GIS system.

Utilizing the 2020 CT Stormwater Impaired Waters shapefile, Atlas was able to identify impaired waters that directly flow through the Town. The Quinnipiac River, Meetinghouse Brook, Wharton Brook, an unnamed tributary to Wharton Brook, and the Muddy River were all identified with impairments. Catchments containing the aforementioned impaired waters are listed in **Table 10**, below. **Figure 2** depicts the locations of the impaired waters and associated catchments.

## Table 10 –Catchments Containing Impaired Waterbodies

| Catchment ID | Basin Total Acreage (Ac.) | Town Impervious Acreage (AC) | Town Impervious Area Percentage (%) | Impaired Waterbody | Location |
|---|---|---|---|---|---|
| **Quinnipiac River** | | | | | |
| 5200-00-4-L3 | 934.4 | 233.87 | 25.03 | *Quinnipiac River (North Haven/Meriden)-02* | *Toelles Road crossing (head of tide, just east Route 15), Wallingford/North Haven town border, US to Hanover Pond outlet dam, Meriden. (Segment includes Community Lake portion)* |
| 5200-00-4-R10 | 675.6 | 253.40 | 37.51 | *Quinnipiac River (North Haven/Meriden)-02* | *Toelles Road crossing (head of tide, just east Route 15), Wallingford/North Haven town border, US to Hanover Pond outlet dam, Meriden. (Segment includes Community Lake portion)* |
| 5200-00-4-R11 | 274.4 | 87.51 | 31.89 | *Quinnipiac River (North Haven/Meriden)-02* | *Toelles Road crossing (head of tide, just east Route 15), Wallingford/North Haven town border, US to Hanover Pond outlet dam, Meriden. (Segment includes Community Lake portion)* |
| 5200-00-4-R12 | 737.8 | 113.38 | 16.96 | *Quinnipiac River (North Haven/Meriden)-02* | *Toelles Road crossing (head of tide, just east Route 15), Wallingford/North Haven town border, US to Hanover Pond outlet dam, Meriden. (Segment includes Community Lake portion)* |
| 5200-00-4-R7 | 2,322.3 | 235.74 | 14.87 | *Quinnipiac River (North Haven/Meriden)-02* | *Toelles Road crossing (head of tide, just east Route 15), Wallingford/North Haven town border, US to Hanover Pond outlet dam, Meriden. (Segment includes Community Lake portion)* |
| 5200-00-4-R8 | 766.4 | 263.37 | 34.36 | *Quinnipiac River (North Haven/Meriden)-02* | *Toelles Road crossing (head of tide, just east Route 15), Wallingford/North Haven town border, US to Hanover Pond outlet dam, Meriden. (Segment includes Community Lake portion)* |
| 5200-00-4-R9 | | | | *Quinnipiac River (North Haven/Meriden)-02* | *Toelles Road crossing (head of tide, just east Route 15), Wallingford/North Haven town border, US to Hanover Pond outlet dam, Meriden. (Segment includes Community Lake portion)* |
| 5200-10-1 | 1,214.3 | 26.14 | 16.35 | *Meetinghouse Brook (Wallingford)-01* | *Mouth on Quinnipiac River, at Route 68 crossing, US to confluence with Spruce Glen* |

| Catchment ID | Basin Total Acreage (Ac.) | Town Impervious Acreage (AC) | Town Impervious Area Percentage (%) | Impaired Waterbody | Location |
|---|---|---|---|---|---|
| | | | | | *Brook, parallel to Route 15, Wallingford.* |
| 5200-10-2-R1 | 528.6 | 176.15 | 33.32 | *Meetinghouse Brook (Wallingford)-01* | *Mouth on Quinnipiac River, at Route 68 crossing, US to confluence with Spruce Glen Brook, parallel to Route 15, Wallingford.* |
| 5200-13-1 | 1,121.2 | 319.74 | 28.52 | *Quinnipiac River (North Haven/Meriden)-02* | *Toelles Road crossing (head of tide, just east Route 15), Wallingford/North Haven town border, US to Hanover Pond outlet dam, Meriden. (Segment includes Community Lake portion)* |
| **Wharton Brook** | | | | | |
| 5207-00-1 | 736.5 | 197.50 | 26.82 | *Wharton Brook-01* | *From mouth at confluence with Quinnipiac River (DS of Route 5 and Railroad crossing), Wallingford/North Haven town borders, US to Simpson Pond outlet dam (US of Center Street (Route 150) crossing), Wallingford.* |
| 5207-00-1-L2 | 1,397.1 | 206.41 | 14.77 | *Wharton Brook-02* | *From inlet to Simpson Pond, US to North Farms Reservoir outlet dam (just US of Church Street (Route 68) crossing), Wallingford.* |
| 5207-00-2-R1 | 380.8 | 100.30 | 26.34 | *Wharton Brook-01* | *From mouth at confluence with Quinnipiac River (DS of Route 5 and Railroad crossing), Wallingford/North Haven town borders, US to Simpson Pond outlet dam (US of Center Street (Route 150) crossing), Wallingford.* |
| 5207-00-2-R2 | 161.2 | 35.31 | 38.63 | *Wharton Brook-01* | *From mouth at confluence with Quinnipiac River (DS of Route 5 and Railroad crossing), Wallingford/North Haven town borders, US to Simpson Pond outlet dam (US of Center Street (Route 150) crossing), Wallingford.* |
| 5207-01-1 | 906.2 | 157.28 | 17.36 | *Unnamed Tributary to Wharton Brook (Wallingford)-01* | *Mouth at confluence with Wharton Brook, just DS of Reskin Drive crossing (off of Pond Hill Road), US to confluence with another unnamed trib, just US of Route 150 crossing and between Airline Road and I91, Wallingford.* |
| 5207-02-1-L1 | 822.4 | 136.05 | 20.66 | *Allen Brook (Wallingford)-02* | *Inlet to Allen Brook Pond in Wharton Brook State Park which includes swimming area* |

| Catchment ID | Basin Total Acreage (Ac.) | Town Impervious Acreage (AC) | Town Impervious Area Percentage (%) | Impaired Waterbody | Location |
|---|---|---|---|---|---|
| | | | | | *(south exit 13 on/off ramp, I91), Wallingford/North Haven town border, US to HW (under I91, parallel along east side of I91 and west side RR track), Wallingford.* |
| **Muddy River** | | | | | |
| 5208-00-3-L3 | 881.4 | 36.85 | 4.40 | *Muddy River (North Haven)-02a* | *Muddy River Pond inlet (east side of I91), North Haven, US to confluence with unnnamed tributary (outlet for Tamarac Swamp), just DS of Tyler Mill Road crossing, Wallingford.* |
| 5208-00-3-R1 | 12.4 | 0.89 | 7.18 | *Muddy River (Wallingford)-02b* | *From confluence with unnnamed tributary (outlet for Tamarac Swamp), just DS of Tyler Mill Road crossing, Wallingford, US to MacKenzie Reservoir outlet dam (US of Northford Road crossing), Wallingford.* |
| 5208-00-3-R2 | 701.2 | 26.46 | 3.81 | *Muddy River (Wallingford)-02b* | *From confluence with unnnamed tributary (outlet for Tamarac Swamp), just DS of Tyler Mill Road crossing, Wallingford, US to MacKenzie Reservoir outlet dam (US of Northford Road crossing), Wallingford.* |
| 5208-00-3-R3 | 167.2 | 4.92 | 6.72 | *Muddy River (North Haven)-02a* | *Muddy River Pond inlet (east side of I91), North Haven, US to confluence with unnnamed tributary (outlet for Tamarac Swamp), just DS of Tyler Mill Road crossing, Wallingford.* |

*Source: Created by Atlas (2021).*

## 4.4 Catchment Priority Rankings

Based on current investigatory results, High Priority areas are focused along the western and southwestern side of the Town, extending eastwards. One “finger”-like High Priority protrusion extends from the central portion to the northeastern edge of the Town. The High Priority areas in the Town are a mixture of residential, industrial or commercial, and some agricultural land. Most High Priority areas in the Town include several outfalls, however not all discharge to impaired waterbodies.

Multiple factors were taken into consideration when scoring each catchment, including but not limited to DCIA calculations, previous screening results, age of development/structures, density of generating sites, nearby sewer repairs, urbanized areas, and impaired waterbodies. Refer to

**Table 11** below for a list of the Town's High and Problem catchments.* **Figure 3** depicts the location of the Town's High, Problem, and Low Priority Catchment Ranking.

**Table 11 – High Priority and Problem Catchments**

| Catchment ID | Number of Outfalls Included | Priority Ranking<br>*Low Priority: 0-5*<br>*Problem: 6-9*<br>*High Priority: ≥10* |
|---|---|---|
| **Farm River** | | |
| 5112-00-2-L1 | 2 | Problem |
| 5112-02-1 | 4 | Problem |
| 5112-02-1-D1 | 0 | Low Priority |
| 5112-02-1-L1 | 0 | Low Priority |
| 5112-03-1 | 1 | Problem |
| **Quinnipiac River** | | |
| 5200-00-4-L3 | 49 | Problem |
| 5200-00-4-R10 | 45 | High Priority |
| 5200-00-4-R11 | 20 | Problem |
| 5200-00-4-R12 | 27 | High Priority |
| 5200-00-4-R7 | 84 | High Priority |
| 5200-00-4-R8 | 81 | High Priority |
| 5200-10-1 | 14 | High Priority |
| 5200-10-2-R1 | 69 | High Priority |
| 5200-11-1 | 15 | High Priority |
| 5200-12-1 | 2 | High Priority |
| 5200-12-1-L1 | 49 | High Priority |
| 5200-13-1 | 62 | High Priority |
| 5200-14-1-L1 | 3 | Problem |
| 5200-15-1 | 34 | Problem |
| **Harbor Brook** | | |
| 5206-02-1-L1 | 6 | High Priority |
| **Wharton Brook** | | |
| 5207-00-1 | 44 | High Priority |
| 5207-00-1-L2 | 66 | High Priority |
| 5207-00-2-R1 | 11 | High Priority |
| 5207-00-2-R2 | 9 | High Priority |
| 5207-01-1 | 46 | High Priority |
| 5207-02-1 | 0 | Problem |
| 5207-02-1-L1 | 47 | High Priority |
| **Muddy River** | | |

| Catchment ID | Number of Outfalls Included | Priority Ranking<br>*Low Priority: 0-5*<br>*Problem: 6-9*<br>*High Priority: ≥10* |
|---|---|---|
| 5208-00-1 | 1 | Problem |
| 5208-00-1-L1 | 74 | Problem |
| 5208-00-2-R1 | 5 | Problem |
| 5208-00-3-L3 | 11 | High Priority |
| 5208-00-3-R2 | 0 | Problem |
| 5208-00-3-R3 | 3 | High Priority |
| 5208-00-3-R4 | 3 | High Priority |
| 5208-00-3-R5 | 0 | Problem |
| 5208-01-1 | 0 | Problem |
| 5208-02-2-R1 | 8 | Problem |
| 5208-05-1-L1 | 1 | Problem |
| 5208-06-1 | 10 | Problem |
| 5208-08-1 | 11 | Problem |
| **Mill River** | | |
| 5302-02-1 | 0 | Problem |
| 5302-04-1-L1 | 16 | High Priority |

**Source**: Created by Atlas Technical Consultants (2021)

**Exempt and Low Priority Catchments are not included in this table. For a complete list of the Priority Catchment Rankings and factors applied in scoring, refer to **Appendix VI**.*

# 5. RETROFIT PLANNING

According to the MS4 General Permit,

> *"By the end of this permit term, the permittee shall commence the implementation of the retrofit projects identified in subparagraph (b)…with a goal of disconnecting one percent (1%) per year of the permittee's DCIA for the fourth and fifth years of this general permit, or a total of 2%, to the MEP. The two percent (2%) goal may be achieved by compiling the total disconnected DCIA tracked…or the retrofit projects designated…or a combination of the two" (CTDEEP. 2017).*

If the two percent (2%) goal will not be met, then the MEP standard shall be utilized. The Town must make a serious attempt to comply with DCIA disconnects. However, based on attenuating factors, including MS4 size, the ability to finance, the capacity to perform operations and maintenance, and local conditions, the MEP may be less than a total of 2% disconnected for the Town. (CTDEEP, 2017). Following the fifth year of the MS4 Permit, the Town will continue the Retrofit Program with a goal to disconnect one percent (1%) of DCIA each year thereafter (CTDEEP, 2017). *Section 5.1* details Town-owned facilities, as well as parks and conservation areas located through the Town. **Figure 4** depicts the location of the aforementioned locations.

## 5.1 Municipal Owned Facilities and Parks

Town owned or operated properties, parks, and other facilities are the recommended focus for the initial Retrofit Project planning. By controlling the point or non-point source pollutions at municipal-owned properties, the Town can implement control practices and pollution prevention, most of which are non-structural and require minimal or no land area. In addition, by implementing control practices and pollution prevention, the Town will contribute to public education and outreach (UCONN, 2004).

As specified in Section 6 (H)(ii) in the MS4 Permit, for impaired waters where bacteria is a POC, the Town shall develop, fund, implement, and prioritize a Retrofit Project to correct bacterial contribution to impaired waterbodies. Atlas will continue to investigate and develop recommendations for Retrofit Projects pertaining to dog parks, parks with open water, sites with failing septic systems, etc., that will contribute to source management of bacterial contribution.

**Table 12** details Town-owned facilities, parks, and/or conservation areas owned by other investors. Locations shaded brown signify sites under investigation. As these sites are investigated, Atlas will submit addendums to the Town pertaining to the updated information.

**Table 12 – Municipal Owned**

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 98 NICHOLAS RD | 0.26 | | MUNICIPAL M96 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 1448 TUTTLE AVE | 1.88 | | MUNICIPAL M96 | | |
| | 4 SCHOOLHOUSE RD | 2.02 | | MUNI LAND M00 | | |
| | 131 CHESHIRE RD | 19.9 | | MUNI LAND M00 | | |
| | 136 CHESHIRE RD | 29.8 | | MUNI LAND M00 | | |
| | CHESHIRE RD | 16.74 | | MUNI LAND M00 | | |
| | 291 HALL AVE | 11.6 | | MUNI LAND M00 | | |
| Wallingford Fire Marshall | 75 MASONIC AVE | 2.6 | TBD | MUN FIRE | Stormwater across this site is generally flat, with a slope towards the east-northeast. A catch basin is located on the eastern side of the site, connecting to the MS4. It is presumed that due to the flat roof on the main building, drains are utilized and directly connected to the MS4. It is also presumed that stormwater runoff from the other outbuildings runs off the pitched roofs and directly onto paved areas. The neighboring site to the west is steeply sloped an agricultural. | Roof drains, catch basins, unknown if there is an oil water separator located onsite. |
| Wallingford Compost Center | 157 JOHN ST | | TBD | TBD | The site is relatively flat, with slopes towards the west- | Slope, catch basins |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | | | | | southwest. Stormwater is either infiltrated into the ground, or directed through catch basins or impermeable material to an outfall. | |
| Wallingford Recycling Center | 25 PENT RD | | TBD | TBD | Topography at the site is relatively flat, with a slope towards the north-northeast Stormwater is directed to catch basins through slope and/or gutters. | Catch basins, gutters |
| | 287 HALL AVE | 175.88 | | MUNI LAND M00 | | |
| | 115 HOSFORD ST | 0.17 | | MUNI LAND M00 | | |
| | 302 WASHINGTON ST | 4.94 | | MUNICIPAL M94 | | |
| | 320 WASHINGTON ST | 2.03 | | MIXED USE M96 | | |
| | 12 LAKE ST | 1.65 | | MUNICIPAL M01 | | |
| | 590 NORTH MAIN ST | 0.48 | | MUNI LAND M00 | | |
| | 79 MAPLEWOOD AVE | 0.56 | | MUNI LAND M00 | | |
| | 42 SUNRISE CIR | 2.93 | | MUNICIPAL M96 | | |
| | FARM HILL RD | 0.06 | | MUNICIPAL M96 | | |
| | HILLHOUSE AVE | 1.03 | | MUNI LAND M00 | | |
| | WILLIAMS RD REAR | 1.43 | | MUNICIPAL M96 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 491 WILLIAMS RD | 35 | | MUNI LAND M00 | | |
| | DIBBLE EDGE RD | 10.83 | | MUNI LAND M00 | | |
| | 114 DIBBLE EDGE RD | 2.77 | | MUNI LAND M00 | | |
| | 118 DIBBLE EDGE RD | 2.74 | | MUNI LAND M00 | | |
| | 112 DIBBLE EDGE RD | 3.13 | | MUNI LAND M00 | | |
| Cook Hill Elementary School | 57 HALL RD | 0 | | MUN FIRE | Topography across the site is generally flat, with the property sloping towards the southeast, east, and north. Stormwater on buildings is presumed to flow into roof drains and directly to the MS4 system. Stormwater is expected to flow across paved areas, where curbing directs stormwater into catch basins. | Roof drains, catch basins |
| | 5 DOUGLAS CT | 0.1 | | MUNI LAND M00 | | |
| | 128 ALGONQUIN DR | 0.34 | | MUNI LAND M00 | | |
| | 345 QUINNIPIAC ST | 13.96 | | INDUSTRIAL M96 | | |
| | 358 HALL AVE | 13.96 | | INDUSTRIAL M96 | | |
| | 358 HALL AVE | 13.96 | | INDUSTRIAL M96 | | |
| | 10 CHESHIRE RD | 45.23 | | MUNICIPAL M96 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 33 NORTH CHERRY ST | 0.33 | | REST/CLUBS M94 | | |
| | 120 HALL AVE | 0.45 | | MUNI LAND M00 | | |
| | 87 QUINNIPIAC ST | 0.53 | | MUNI LAND M00 | | |
| | 51 QUINNIPIAC ST | 0.67 | | MUNICIPAL M94 | | |
| | 20 WILLIAM ST | 0.16 | | MUNI LAND M00 | | |
| | 15 MEADOW ST | 0.36 | | MUNI LAND M00 | | |
| | 6 MEADOW ST | 0.21 | | MUNI LAND M00 | | |
| | 200 NORTH MAIN ST | 3.61 | | MUNICIPAL M94 | | |
| Moses Y Beach Elementary School | 340 NORTH MAIN ST | 7.16 | | MUN PUB SC M94 | Topography across the site slopes towards the southwest and west. Curbed, paved areas direct stormwater runoff into catch basins located throughout the site. It is presumed that roof drains direct stormwater into the MS4 system. | Roof drains, catch basins |
| | 105 NORTH BRANFORD RD | 378.68 | | MUNI LAND M00 | | |
| | 105 NORTH BRANFORD RD | 378.68 | | MUNI LAND M00 | | |
| | 237 COOK HILL RD | 0.53 | | MUNI LAND M00 | | |
| | 154 COOK HILL RD | 0.06 | | MUNICIPAL M96 | | |
| | 4 SOUTH ST | 9.29 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 260 QUINNIPIAC ST | 1.41 | | MUNI LAND M00 | | |
| | 45 SOUTH MAIN ST | 2.13 | | MUNICIPAL M94 | | |
| | 23 NORTH ORCHARD ST | 0.17 | | MUNI LAND M00 | | |
| | 1 CENTER ST | 9.69 | | MUNICIPAL M96 | | |
| | 37 WASHINGTON ST | 0.63 | | MUNI LAND M00 | | |
| | 390 CENTER ST | 0.12 | | MUNI LAND M00 | | |
| | 11 WALLACE AVE | 0.1 | | MUNI LAND M00 | | |
| | 29 WALLACE AVE | 0.54 | | MUNI LAND M00 | | |
| | 45 WALLACE AVE | 0.72 | | MUNI LAND M00 | | |
| | 135 NORTH MAIN ST | 0.57 | | MUNI LAND M00 | | |
| | 43 WALLACE AVE | 1 | | MUNICIPAL M94 | | |
| | 95 NORTH MAIN ST | 0.26 | | MUN FIRE | | |
| | 121 NORTH MAIN ST | 0.82 | | MUN POLICE | | |
| | BURKE HEIGHTS DR | 0.06 | | MUNI LAND M00 | | |
| | 9 OLD ROCK HILL RD | 43.01 | | MUNI LAND M00 | | |
| | 910 OLD ROCK HILL RD | 14.72 | | MUN PUB SC M94 | | |
| | 14 CHERYL AVE | 0.24 | | Single Family | | |
| | 300 NORTH BRANFORD RD | 34.88 | | MUNI LAND M00 | | |
| | 1 ASHLEY LN | 0.94 | | Mun Pump Hse | | |
| | 90 APPLE TREE LN | 0.32 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 84 SOUTH TURNPIKE RD | 0.14 | | MUNI LAND M00 | | |
| | 51 JOHN ST | 1.07 | | MUNICIPAL M96 | | |
| | 228 EAST ST | 0.12 | | MUNI LAND M00 | | |
| | 100 JOHN ST | 2.94 | | MUNICIPAL M94 | | |
| | 78 SOUTH ELM ST | 14.24 | | MUNI LAND M00 | | |
| | 78 SOUTH ELM ST | 14.24 | | MUNI LAND M00 | | |
| | 748 CENTER ST | 0.29 | | MUNI LAND M00 | | |
| | CENTER ST | 0.41 | | MUNI LAND M00 | | |
| | CENTER ST | 0.44 | | MUNI LAND M00 | | |
| | 37 BURKE HEIGHTS DR | 5.31 | | HSNG AUTH M94 | | |
| | 1222 OLD COLONY RD | 0.35 | | Mun Res Lnd | | |
| | 296 NORTH BRANFORD RD | 0.21 | | MUNI LAND M00 | | |
| | 75 NORTH BRANFORD RD | 57.3 | | MUNICIPAL M96 | | |
| | 129 SOUTH TURNPIKE RD | 0.3 | | MUNICIPAL M96 | | |
| | 13 MANSION RD | 3.44 | | MUNI LAND M00 | | |
| | 3 OLIVER CREEK RD | 20 | | MUNI LAND M00 | | |
| | 5 PENT RD | 0.23 | | MUNICIPAL M96 | | |
| | 349 SOUTH ELM ST | 0.03 | | MUNI LAND M00 | | |
| | 23 TREMPER DR | 0.25 | | Single Family | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 3 LONDONDERRY DR | | | Unknown | | |
| | 995C EAST CENTER ST | 93.72 | | MUNI LAND M00 | | |
| | EAST CENTER ST | 45.02 | | MUNI LAND M00 | | |
| | 1070 EAST CENTER ST | 10.92 | | MUNI LAND M00 | | |
| | 1299 SCARD RD | 26.15 | | MUNI LAND M00 | | |
| | WHIRLWIND HILL RD | 2.88 | | MUNI LAND M00 | | |
| | 1200 SCARD RD | 4.49 | | MUNI LAND M00 | | |
| | 1250 SCARD RD | 0.78 | | MUNI LAND M00 | | |
| | 1351 SCARD RD | 12.79 | | MUNI LAND M00 | | |
| | 1364 SCARD RD | 37.75 | | MUNI LAND M00 | | |
| | 40 GEORGE WASHINGTON TRL | 9.31 | | MUNI LAND M00 | | |
| | 80 WHARTON BROOK DR | 3.11 | | MUNI LAND M00 | | |
| | 36 RESKIN DR | 2.88 | | MUNI LAND M00 | | |
| | 611 SOUTH ELM ST | 6.2 | | MUNI LAND M00 | | |
| | 97 KONDRACKI LN | 1.83 | | MUNI LAND M00 | | |
| | EAST CENTER ST | 116.27 | | MUNI LAND M00 | | |
| | EAST CENTER ST | 38.82 | | MUNI LAND M00 | | |
| | 70 TYLER MILL RD | 0.06 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 11 NORTHFORD RD | 0.42 | | MUNI LAND M00 | | |
| | 32 NORTHFORD RD | 57.92 | | MUNICIPAL M96 | | |
| | EAST CENTER ST | 0.95 | | MUNI LAND M00 | | |
| | 1390 WHIRLWIND HILL RD | 63.41 | | MUNICIPAL M01 | | |
| | 28A CARDINAL DR | 3 | | MUNI LAND M00 | | |
| | 14A POGMORE DR | 1.06 | | MUN PUB SC M00 | | |
| | 35 TAMARAC SWAMP RD | 28.58 | | MUNI LAND M00 | | |
| | 70 TAMARAC SWAMP RD | 25.22 | | MUNI LAND M00 | | |
| | 22 TAMARAC SWAMP RD | 2.6 | | MUNI LAND M00 | | |
| | 21 TYLER MILL RD | 6.69 | | MUNI LAND M00 | | |
| | 1675 WHIRLWIND HILL RD | 192 | | MUNICIPAL M96 | | |
| | 15 BIRCH DR | 3.49 | | MUNI LAND M00 | | |
| | TYLER MILL RD | 0 | | Unknown | | |
| | 75 TYLER MILL RD | 2.64 | | Single Family | | |
| | 80 TYLER MILL RD | 3.05 | | MUN PUB SC M00 | | |
| | 41 TYLER MILL RD | 4.64 | | MUNI LAND M00 | | |
| | 63 TYLER MILL RD | 8.45 | | MUNI LAND M00 | | |
| | 31 TYLER MILL RD | 5.73 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | COOKE RD | 80 | | MUNI LAND M00 | | |
| | 237R POND HILL RD | | | Unknown | | |
| Pond Hill Elementary School | 299 POND HILL RD | 9.44 | | MUN PUB SC M94 | Topography slopes to the southeast at this site, with steep slopes on the northeast, northwest, and southeast corners. Stormwater in contact with buildings is presumed to flow into roof drains connected to the MS4. Stormwater runs along paved areas and curbing into catch basins throughout the site. | Roof drains, catch basins |
| | 14 HAYLEDGE CT | 1.97 | | MUNI LAND M00 | | |
| | TYLER MILL RD | 0 | | Unknown | | |
| | 200 NORTHFORD RD | 105.1 | | MUNI LAND M00 | | |
| | 116 WEST DAYTON HILL RD | 73.73 | | MUNI LAND M00 | | |
| | 549 WOODHOUSE AVE | 723.38 | | MUNI LAND M00 | | |
| | WILDLIFE DR | 0.4 | | MUNICIPAL M96 | | |
| | TYLER MILL RD | 0 | | Unknown | | |
| | 118 WEST DAYTON HILL RD | 2.2 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 37 OAK ST YALES | 29.31 | | MUNICIPAL M96 | | |
| | 50 OAK ST YALES | 0.41 | | MUNI LAND M00 | | |
| | 15 OLD COLONY RD | 3.02 | | MUNICIPAL M96 | | |
| | 1110 YALE AVE | 0.5 | | MUNI LAND M00 | | |
| | 13 PARTRIDGE RUN | 0.74 | | MUNI LAND M00 | | |
| | SHARON DR (REAR) | 0.17 | | MUNICIPAL M96 | | |
| | 415 CHURCH ST YALESVILLE | 6.84 | | MUN PUB SC M94 | | |
| | 980 NORTH MAIN ST EXT | 0.55 | | MUNICIPAL M96 | | |
| | TOWER DR | 0.91 | | Mun Pump Hse | | |
| | 130 THORPE AVE | 1.67 | | MUNICIPAL M96 | | |
| | 16 DONAT DR | 8 | | MUNI LAND M00 | | |
| | 21 RIDGEFIELD RD | 0.14 | | MUNI LAND M00 | | |
| | 141 HOPE HILL RD | 40.31 | | MUN PUB SC M94 | | |
| | 143 HOPE HILL RD | 0.92 | | MUN FIRE | | |
| | 140 HOPE HILL RD | 44.46 | | MUN PUB SC M94 | | |
| | 200 HIGHLAND AVE | 13.99 | | MUN PUB SC M94 | | |
| | 326 MAIN ST | 0.16 | | MUNI LAND M00 | | |
| | MAIN ST | 13.23 | | MUNI LAND M00 | | |
| | 361 MAIN ST | 0.07 | | MUNI LAND M00 | | |
| | MAIN ST | 9.32 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 6 FAIRFIELD BLVD | 3.79 | | MUNICIPAL M94 | | |
| | 3 CARPENTER LN | 1 | | MUNI LAND M00 | | |
| | 218 HIGH HILL RD | 94.2 | | MUNI LAND M00 | | |
| | 30 RIDGENOLL RD | 3.73 | | MUNI LAND M00 | | |
| | 33 RIDGENOLL RD | 0.23 | | MUNI LAND M00 | | |
| | 58 RIDGEFIELD RD | 5.54 | | MUNI LAND M00 | | |
| | 101 RIDGEWOOD RD | 0.08 | | MUNI LAND M00 | | |
| | 67 RIDGEWOOD RD | 3.62 | | MUNI LAND M00 | | |
| | 11 RIDGELAND RD | 0.09 | | MUNI LAND M00 | | |
| | 75 JENNA RD | 4.96 | | MUNI LAND M00 | | |
| | 205 MAIN ST | 20.16 | | MUNI LAND M00 | | |
| | 202 MAIN ST | 28.69 | | MUNI LAND M00 | | |
| | 864 NORTH FARMS RD | 10.29 | | MUNI LAND M00 | | |
| | 1211 BARNES RD | 2.44 | | MUNI LAND M00 | | |
| | CT ROUTE 68 | 0.26 | | MUNI LAND M00 | | |
| | WISK-KEY WIND RD | 5.42 | | MUNI LAND M00 | | |
| | 162 HIGH HILL RD | 53.1 | | MUNI LAND M00 | | |
| | GAYLORD FARM RD | 2.4 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 30 PARKER FARMS RD | 20 | | MUN PUB SC M94 | | |
| | 60 PARKER FARMS RD | 1 | | Vacant Unb Lnd | | |
| | 99 NORTH TURNPIKE RD | 0.44 | | MUNI LAND M00 | | |
| | 91 NORTH TURNPIKE RD | 18.43 | | MUNI LAND M00 | | |
| | 109 NORTH TURNPIKE RD | 0.07 | | MUNI LAND M00 | | |
| | 107 NORTH TURNPIKE RD | 1.86 | | MUNICIPAL M96 | | |
| | 155 GRIEB RD | 7.19 | | MUNI LAND M00 | | |
| | 2 CATLIN RD | 0.91 | | MUNI LAND M00 | | |
| | 243 GRIEB RD | 0.39 | | MUNI LAND M00 | | |
| | 1 GRIEB RD | 0.59 | | MUNICIPAL M96 | | |
| | 1300 BARNES RD | 2.25 | | MUNI LAND M00 | | |
| | 159 CHESHIRE RD | 21 | | MUNI LAND M00 | | |
| | TUTTLE AVE | 0.46 | | MUNI LAND M00 | | |
| | 18 MOHICAN LN | 4.04 | | MUNI LAND M00 | | |
| | 29 TOWN FARM RD | 7.05 | | MUNICIPAL M94 | | |
| | 700 NORTH MAIN ST EXT | 15.44 | | MUNI LAND M00 | | |
| | 739 NORTH MAIN ST EXT | 7.1 | | MUNICIPAL M96 | | |
| | 1207 DURHAM RD | 0.06 | | MUNI LAND M00 | | |
| | 47 GRIEB TRL | 0.1 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 14 CARTER TRL | 0.31 | | MUNI LAND M00 | | |
| | 531 NORTH BRANFORD RD | 67.78 | | MUNI LAND M00 | | |
| | 98 NICHOLAS RD | | | MUNICIPAL M96 | | |
| | 98 NICHOLAS RD | 0.26 | | MUNICIPAL M96 | | |
| | 1448 TUTTLE AVE | 1.88 | | MUNI LAND M00 | | |
| | 4 SCHOOLHOUSE RD | 2.02 | | MUNI LAND M00 | | |
| | 131 CHESHIRE RD | 19.9 | | MUNI LAND M00 | | |
| | 136 CHESHIRE RD | 29.8 | | MUNI LAND M00 | | |
| | CHESHIRE RD | 16.74 | | MUNI LAND M00 | | |
| | 291 HALL AVE | 11.6 | | MUN FIRE | | |
| | 75 MASONIC AVE | 2.6 | | MUNI LAND M00 | | |
| | 287 HALL AVE | 175.88 | | MUNI LAND M00 | | |
| | 287 HALL AVE | 175.88 | | MUNI LAND M00 | | |
| | 287 HALL AVE | 175.88 | | MUNI LAND M00 | | |
| | 115 HOSFORD ST | 0.17 | | Unknown | | |
| | 302 WASHINGTON ST | | | MUNICIPAL M94 | | |
| | 302 WASHINGTON ST | 4.94 | | Unknown | | |
| | 302 WASHINGTON ST | 0 | | MIXED USE M96 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 320 WASHINGTON ST | 2.03 | | MUNICIPAL M01 | | |
| | 12 LAKE ST | 1.65 | | MUNI LAND M00 | | |
| | 590 NORTH MAIN ST | 0.48 | | MUNI LAND M00 | | |
| | 79 MAPLEWOOD AVE | 0.56 | | MUNICIPAL M96 | | |
| | 42 SUNRISE CIR | 2.93 | | MUNICIPAL M96 | | |
| | FARM HILL RD | 0.06 | | MUNI LAND M00 | | |
| | HILLHOUSE AVE | 1.03 | | MUNICIPAL M96 | | |
| | WILLIAMS RD REAR | 1.43 | | MUNI LAND M00 | | |
| | 491 WILLIAMS RD | 35 | | MUNI LAND M00 | | |
| | DIBBLE EDGE RD | 10.83 | | MUNI LAND M00 | | |
| | 114 DIBBLE EDGE RD | 2.77 | | MUNI LAND M00 | | |
| | 118 DIBBLE EDGE RD | 2.74 | | MUNI LAND M00 | | |
| | 112 DIBBLE EDGE RD | 3.13 | | MUN FIRE | | |
| | 37 HALL RD | 0 | | MUNI LAND M00 | | |
| | 5 DOUGLAS CT | 0.1 | | MUNI LAND M00 | | |
| | 128 ALGONQUIN DR | 0.34 | | INDUSTRIAL M96 | | |
| | 345 QUINNIPIAC ST | 13.96 | | INDUSTRIAL M96 | | |
| | 358 HALL AVE | 13.96 | | INDUSTRIAL M96 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 358 HALL AVE | 13.96 | | MUNICIPAL M96 | | |
| | 10 CHESHIRE RD | 45.23 | | REST/CLUBS M94 | | |
| | 33 NORTH CHERRY ST | 0.33 | | MUNI LAND M00 | | |
| | 120 HALL AVE | 0.45 | | MUNI LAND M00 | | |
| | 87 QUINNIPIAC ST | 0.53 | | MUNICIPAL M94 | | |
| | 51 QUINNIPIAC ST | 0.67 | | MUNI LAND M00 | | |
| | 20 WILLIAM ST | 0.16 | | MUNI LAND M00 | | |
| | 15 MEADOW ST | 0.36 | | MUNI LAND M00 | | |
| | 6 MEADOW ST | 0.21 | | MUNICIPAL M94 | | |
| | 200 NORTH MAIN ST | 3.61 | | MUN PUB SC M94 | | |
| | 340 NORTH MAIN ST | 7.16 | | MUNI LAND M00 | | |
| | 105 NORTH BRANFORD RD | 378.68 | | MUNI LAND M00 | | |
| | 105 NORTH BRANFORD RD | 378.68 | | MUNI LAND M00 | | |
| | 237 COOK HILL RD | 0.53 | | MUNICIPAL M96 | | |
| | 154 COOK HILL RD | 0.06 | | MUNI LAND M00 | | |
| | 4 SOUTH ST | 9.29 | | MUNI LAND M00 | | |
| | 260 QUINNIPIAC ST | 1.41 | | MUNICIPAL M94 | | |
| | 45 SOUTH MAIN ST | 2.13 | | MUNI LAND M00 | | |
| | 23 NORTH ORCHARD ST | 0.17 | | MUNICIPAL M96 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 1 CENTER ST | 9.69 | | MUNI LAND M00 | | |
| | 37 WASHINGTON ST | 0.63 | | MUNI LAND M00 | | |
| | 390 CENTER ST | 0.12 | | MUNI LAND M00 | | |
| | 11 WALLACE AVE | 0.1 | | MUNI LAND M00 | | |
| | 29 WALLACE AVE | 0.54 | | MUNI LAND M00 | | |
| | 45 WALLACE AVE | 0.72 | | MUNI LAND M00 | | |
| | 135 NORTH MAIN ST | 0.57 | | MUNICIPAL M94 | | |
| | 43 WALLACE AVE | 1 | | MUN FIRE | | |
| | 95 NORTH MAIN ST | 0.26 | | MUN POLICE | | |
| | 121 NORTH MAIN ST | 0.82 | | MUNI LAND M00 | | |
| | BURKE HEIGHTS DR | 0.06 | | MUNI LAND M00 | | |
| | 9 OLD ROCK HILL RD | 43.01 | | MUN PUB SC M94 | | |
| | 910 OLD ROCK HILL RD | 14.72 | | Single Family | | |
| | 14 CHERYL AVE | 0.24 | | MUNI LAND M00 | | |
| | 300 NORTH BRANFORD RD | 34.88 | | Mun Pump Hse | | |
| | 1 ASHLEY LN | 0.94 | | MUNI LAND M00 | | |
| | 90 APPLE TREE LN | 0.32 | | MUNI LAND M00 | | |
| | 84 SOUTH TURNPIKE RD | 0.14 | | MUNICIPAL M96 | | |
| | 51 JOHN ST | 1.07 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 228 EAST ST | 0.12 | | MUNICIPAL M94 | | |
| | 100 JOHN ST | 2.94 | | MUNI LAND M00 | | |
| | 78 SOUTH ELM ST | 14.24 | | MUNI LAND M00 | | |
| | 78 SOUTH ELM ST | 14.24 | | MUNI LAND M00 | | |
| | 748 CENTER ST | 0.29 | | MUNI LAND M00 | | |
| | CENTER ST | 0.41 | | MUNI LAND M00 | | |
| | CENTER ST | 0.44 | | HSNG AUTH M94 | | |
| | 37 BURKE HEIGHTS DR | 5.31 | | Mun Res Lnd | | |
| | 1222 OLD COLONY RD | 0.35 | | MUNI LAND M00 | | |
| | 296 NORTH BRANFORD RD | 0.21 | | MUNICIPAL M96 | | |
| | 75 NORTH BRANFORD RD | 57.3 | | MUNICIPAL M96 | | |
| | 129 SOUTH TURNPIKE RD | 0.3 | | MUNI LAND M00 | | |
| | 13 MANSION RD | 3.44 | | MUNI LAND M00 | | |
| | 3 OLIVER CREEK RD | 20 | | MUNICIPAL M96 | | |
| | 5 PENT RD | 0.23 | | MUNI LAND M00 | | |
| | 349 SOUTH ELM ST | 0.03 | | Single Family | | |
| | 23 TREMPER DR | 0.25 | | Unknown | | |
| | 3 LONDONDERRY DR | | | MUNI LAND M00 | | |
| | 995C EAST CENTER ST | 93.72 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | EAST CENTER ST | 45.02 | | MUNI LAND M00 | | |
| | 1070 EAST CENTER ST | 10.92 | | MUNI LAND M00 | | |
| | 1299 SCARD RD | 26.15 | | MUNI LAND M00 | | |
| | WHIRLWIND HILL RD | 2.88 | | MUNI LAND M00 | | |
| | 1200 SCARD RD | 4.49 | | MUNI LAND M00 | | |
| | 1250 SCARD RD | 0.78 | | MUNI LAND M00 | | |
| | 1351 SCARD RD | 12.79 | | MUNI LAND M00 | | |
| | 1364 SCARD RD | 37.75 | | MUNI LAND M00 | | |
| | 40 GEORGE WASHINGTON TRL | 9.31 | | MUNI LAND M00 | | |
| | 80 WHARTON BROOK DR | 3.11 | | MUNI LAND M00 | | |
| | 36 RESKIN DR | 2.88 | | MUNI LAND M00 | | |
| | 611 SOUTH ELM ST | 6.2 | | MUNI LAND M00 | | |
| | 97 KONDRACKI LN | 1.83 | | MUNI LAND M00 | | |
| | EAST CENTER ST | 116.27 | | MUNI LAND M00 | | |
| | EAST CENTER ST | 38.82 | | MUNI LAND M00 | | |
| | 70 TYLER MILL RD | 0.06 | | MUNI LAND M00 | | |
| | 11 NORTHFORD RD | 0.42 | | MUNICIPAL M96 | | |
| | 32 NORTHFORD RD | 57.92 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | EAST CENTER ST | 0.95 | | MUNICIPAL M01 | | |
| | 1390 WHIRLWIND HILL RD | 63.41 | | MUNI LAND M00 | | |
| | 28A CARDINAL DR | 3 | | MUN PUB SC M00 | | |
| | 14A POGMORE DR | 1.06 | | MUNI LAND M00 | | |
| | 35 TAMARAC SWAMP RD | 28.58 | | MUNI LAND M00 | | |
| | 70 TAMARAC SWAMP RD | 25.22 | | MUNI LAND M00 | | |
| | 22 TAMARAC SWAMP RD | 2.6 | | MUNI LAND M00 | | |
| | 21 TYLER MILL RD | 6.69 | | MUNICIPAL M96 | | |
| | 1675 WHIRLWIND HILL RD | 192 | | MUNI LAND M00 | | |
| | 15 BIRCH DR | 3.49 | | Unknown | | |
| | TYLER MILL RD | 0 | | Single Family | | |
| | 75 TYLER MILL RD | 2.64 | | MUN PUB SC M00 | | |
| | 80 TYLER MILL RD | 3.05 | | MUNI LAND M00 | | |
| | 41 TYLER MILL RD | 4.64 | | MUNI LAND M00 | | |
| | 63 TYLER MILL RD | 8.45 | | MUNI LAND M00 | | |
| | 31 TYLER MILL RD | 5.73 | | MUNI LAND M00 | | |
| | COOKE RD | 80 | | Unknown | | |
| | 237R POND HILL RD | | | MUN PUB SC M94 | | |
| | 299 POND HILL RD | 9.44 | | MUNI LAND M00 | | |
| | 14 HAYLEDGE CT | 1.97 | | Unknown | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | TYLER MILL RD | 0 | | MUNI LAND M00 | | |
| | 200 NORTHFORD RD | 105.1 | | MUNI LAND M00 | | |
| | 116 WEST DAYTON HILL RD | 73.73 | | MUNI LAND M00 | | |
| | 549 WOODHOUSE AVE | 723.38 | | MUNICIPAL M96 | | |
| | WILDLIFE DR | 0.4 | | Unknown | | |
| | TYLER MILL RD | 0 | | MUNI LAND M00 | | |
| | 118 WEST DAYTON HILL RD | 2.2 | | MUNICIPAL M96 | | |
| | 37 OAK ST YALES | 29.31 | | MUNI LAND M00 | | |
| | 50 OAK ST YALES | 0.41 | | MUNICIPAL M96 | | |
| | 15 OLD COLONY RD | 3.02 | | MUNI LAND M00 | | |
| | 1110 YALE AVE | 0.5 | | MUNI LAND M00 | | |
| | 13 PARTRIDGE RUN | 0.74 | | MUNICIPAL M96 | | |
| | SHARON DR (REAR) | 0.17 | | MUN PUB SC M94 | | |
| | 415 CHURCH ST YALESVILLE | 6.84 | | MUNICIPAL M96 | | |
| | 980 NORTH MAIN ST EXT | 0.55 | | Mun Pump Hse | | |
| | TOWER DR | 0.91 | | MUNICIPAL M96 | | |
| | 130 THORPE AVE | 1.67 | | MUNI LAND M00 | | |
| | 16 DONAT DR | 8 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 21 RIDGEFIELD RD | 0.14 | | MUN PUB SC M94 | | |
| | 141 HOPE HILL RD | 40.31 | | MUN FIRE | | |
| | 143 HOPE HILL RD | 0.92 | | MUN PUB SC M94 | | |
| | 140 HOPE HILL RD | 44.46 | | MUN PUB SC M94 | | |
| | 200 HIGHLAND AVE | 13.99 | | MUNI LAND M00 | | |
| | 326 MAIN ST | 0.16 | | MUNI LAND M00 | | |
| | MAIN ST | 13.23 | | MUNI LAND M00 | | |
| | 361 MAIN ST | 0.07 | | MUNI LAND M00 | | |
| | MAIN ST | 9.32 | | MUNICIPAL M94 | | |
| | 6 FAIRFIELD BLVD | 3.79 | | MUNI LAND M00 | | |
| | 3 CARPENTER LN | 1 | | MUNI LAND M00 | | |
| | 218 HIGH HILL RD | 94.2 | | MUNI LAND M00 | | |
| | 30 RIDGENOLL RD | 3.73 | | MUNI LAND M00 | | |
| | 33 RIDGENOLL RD | 0.23 | | MUNI LAND M00 | | |
| | 58 RIDGEFIELD RD | 5.54 | | MUNI LAND M00 | | |
| | 101 RIDGEWOOD RD | 0.08 | | MUNI LAND M00 | | |
| | 67 RIDGEWOOD RD | 3.62 | | MUNI LAND M00 | | |
| | 11 RIDGELAND RD | 0.09 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 75 JENNA RD | 4.96 | | MUNI LAND M00 | | |
| | 205 MAIN ST | 20.16 | | MUNI LAND M00 | | |
| | 202 MAIN ST | 28.69 | | MUNI LAND M00 | | |
| | 864 NORTH FARMS RD | 10.29 | | MUNI LAND M00 | | |
| | 1211 BARNES RD | 2.44 | | MUNI LAND M00 | | |
| | CT ROUTE 68 | 0.26 | | MUNI LAND M00 | | |
| | WISK-KEY WIND RD | 5.42 | | MUNI LAND M00 | | |
| | 162 HIGH HILL RD | 53.1 | | MUNI LAND M00 | | |
| | GAYLORD FARM RD | 2.4 | | MUN PUB SC M94 | | |
| | 30 PARKER FARMS RD | 20 | | Vacant Unb Lnd | | |
| | 60 PARKER FARMS RD | 1 | | MUNI LAND M00 | | |
| | 99 NORTH TURNPIKE RD | 0.44 | | MUNI LAND M00 | | |
| | 91 NORTH TURNPIKE RD | 18.43 | | MUNI LAND M00 | | |
| | 109 NORTH TURNPIKE RD | 0.07 | | MUNICIPAL M96 | | |
| | 107 NORTH TURNPIKE RD | 1.86 | | MUNI LAND M00 | | |
| | 155 GRIEB RD | 7.19 | | MUNI LAND M00 | | |
| | 2 CATLIN RD | 0.91 | | MUNI LAND M00 | | |
| | 243 GRIEB RD | 0.39 | | MUNICIPAL M96 | | |
| | 1 GRIEB RD | 0.59 | | MUNI LAND M00 | | |

| Title | Location | Acres | Year Built | Utilization or Land Class | Stormwater Flow[1] | Current Infrastructures |
|---|---|---|---|---|---|---|
| | 1300 BARNES RD | 2.25 | | MUNI LAND M00 | | |
| | 159 CHESHIRE RD | 21 | | MUNI LAND M00 | | |
| | TUTTLE AVE | 0.46 | | MUNI LAND M00 | | |
| | 18 MOHICAN LN | 4.04 | | MUNICIPAL M94 | | |
| Department of Public Works | 29 TOWN FARM RD | 7.05 | | MUNI LAND M00 | Topography across the site is generally flat, with a gentle slope in a north-northeasterly direction. Stormwater runoff is directed to catch basins, where it eventually discharges to an unnamed stream to the north. | Oil/Water Separator, catch basins. |
| | 700 NORTH MAIN ST EXT | 15.44 | | MUNICIPAL M96 | | |
| | 739 NORTH MAIN ST EXT | 7.1 | | MUNI LAND M00 | | |
| | 1207 DURHAM RD | 0.06 | | MUNI LAND M00 | | |
| | 47 GRIEB TRL | 0.1 | | MUNI LAND M00 | | |
| | 14 CARTER TRL | 0.31 | | MUNI LAND M00 | | |
| | 531 NORTH BRANFORD RD | 67.78 | | MUNICIPAL M96 | | |

Source: Created by Atlas (2021).

## 5.2 Non-Municipal Retrofitting

Retrofit Projects can be applied to non-municipal facilities, parks, communities, or other developments, and be counted towards the Town's disconnect percentage. Atlas recommends applying ordinances, post-construction maintenance plans, or other legal regulations associated with the construction, upgrade, and/or rehabilitation of non-Town owned properties to achieve retrofitting.

Specific criteria was utilized in defining priority areas for the implementation of non-municipal Retrofit Projects. The criteria utilized in defining priority areas of non-municipal Retrofit Projects included High or Problem catchment priority rankings, catchments containing an impaired waterbody, and catchments identified with an urbanized area. Utilizing ArcGIS, Atlas extracted catchments where two (2) or more of the aforementioned criteria were found. **Table 13** details these catchments, and may act as a guide for the Town to focus non-municipal retrofitting efforts. **Figure 5** depicts the location of the extracted catchments prioritized for non-municipal Retrofit Projects.

**Table 13 – Non-Municipal Retrofitting**

| Catchment ID | Total Acres (Ac.) | Priority Ranking | Impaired Waterbody | Urbanized Area Percentage (%) |
|---|---|---|---|---|
| **Quinnipiac River** | | | | |
| 5200-00-4-L3 | 934.4 | Problem | Quinnipiac River (North Haven/Meriden)-02 | 100.00 |
| 5200-00-4-R10 | 675.6 | High Priority | Quinnipiac River (North Haven/Meriden)-02 | 100.00 |
| 5200-00-4-R11 | 274.4 | Problem | Quinnipiac River (North Haven/Meriden)-02 | 99.99 |
| 5200-00-4-R12 | 737.8 | High Priority | Quinnipiac River (North Haven/Wallingford)-01 | 86.18 |
| 5200-00-4-R7 | 2,322.3 | High Priority | Quinnipiac River (North Haven/Meriden)-02 | 67.72 |
| 5200-00-4-R8 | 766.4 | High Priority | Quinnipiac River (North Haven/Meriden)-02 | 100.00 |
| 5200-10-1 | 1,214.3 | High Priority | Meetinghouse Brook (Wallingford)-01 | 12.97 |
| 5200-10-2-R1 | 528.6 | High Priority | Meetinghouse Brook (Wallingford)-01 | 100.00 |
| 5200-13-1 | 1,121.2 | High Priority | Quinnipiac River (North Haven/Meriden)-02 | 100.00 |
| **Wharton Brook** | | | | |
| 5207-00-1 | 736.5 | High Priority | Unnamed Tributary to Wharton Brook (Wallingford)-01 | 100.00 |
| 5207-00-1-L1 | 488.1 | Low Priority | Wharton Brook-02 | 99.20 |
| 5207-00-1-L2 | 1,397.1 | High Priority | Wharton Brook-02 | 100.00 |
| 5207-00-2-R1 | 380.8 | High Priority | Allen Brook (Wallingford/North Haven)-01 | 100.00 |

| Catchment ID | Total Acres (Ac.) | Priority Ranking | Impaired Waterbody | Urbanized Area Percentage (%) |
|---|---|---|---|---|
| 5207-00-2-R2 | 161.2 | High Priority | Meetinghouse Brook (Wallingford)-01 | 55.58 |
| 5207-01-1 | 906.2 | High Priority | Unnamed Tributary to Wharton Brook (Wallingford)-01 | 90.49 |
| 5207-02-1 | 2.4 | Problem | Allen Brook (Wallingford/North Haven)-01 | 57.92 |
| 5207-02-1-L1 | 822.4 | High Priority | Allen Brook (Wallingford)-02 | 79.25 |
| **Muddy River** | | | | |
| 5208-00-3-L2 | 891.4 | Low Priority | Muddy River (North Haven)-02a | 16.69 |
| 5208-00-3-L3 | 881.4 | High Priority | Muddy River (North Haven)-02a | 24.87 |
| 5208-00-3-R2 | 701.2 | Problem | Muddy River (North Haven)-02a | 0.43 |
| 5208-00-3-R3 | 167.2 | High Priority | Muddy River (North Haven)-02a | 40.22 |

**Source**: Created by Atlas Technical Consultants (2021)

## 5.3 Retrofit Planning

The following Retrofit Projects are recommended for implementation by the Town. This Program is ongoing, and is dependent on available information, costs, installation periods, and town-wide discussions. As Retrofit Projects are implemented, the Town should update the Impervious Cover Tracking Spreadsheet, located in **Appendix V**. Atlas will continue to assess and recommend Retrofit Projects for the Town's municipal sites. As these sites are assessed, addendums to **Table 14** will be submitted to the Town.

**Table 14 – Retrofit Planning**

| Title | Location(s) | Retrofit(s) Recommended | Projected Disconnected Area (Ac.) | Cost Analysis | Projected Implementation Date |
|---|---|---|---|---|---|
| Department of Public Works | 29 TOWN FARM RD | Install rain barrels to catch roof runoff. Utilize runoff to irrigate neighboring baseball fields. | 1.15 | Refer to *Section 3.2.* | 2022-2025 |
| Pond Hill Elementary School | 299 POND HILL RD | Install rain barrels or cistern to catch roof runoff. Utilize runoff to water the site's grassy areas. | 0.91 | Refer to *Section 3.2* | 2022-2025 |
| | | Remove or slot curbing to allow for stormwater infiltration into grassy areas. | 1.64 | Refer to *Section 3.5.1* | 2022-2025 |
| Wallingford Fire Marshall | 75 MASONIC AVE | Install rain barrels to catch roof runoff. Utilize runoff to water grassy areas. | 0.33 | Refer to *Section 3.2.* | 2022-2025 |
| | | Remove or slot curbing to allow for stormwater infiltration into grassy areas. | 1.45 | Refer to *Section 3.5.1* | 2022-2025 |
| | | During repaving, redirect MS4 catch basins and associated piping to a bioretention or infiltration basin. | 1.78 | Refer to *Section 3.1.3* | 2022-2025 |
| Wallingford Recycling Center | 25 PENT RD | Remove or slot curbing to allow for stormwater infiltration into grassy areas. | 1.36 | Refer to *Section 3.5.1* | 2022-2025 |
| | | During repaving, redirect MS4 catch basins and associated piping to a bioretention or infiltration basin. | 1.42 | Refer to *Section 3.1.3* | 2022-2025 |

| Title | Location(s) | Retrofit(s) Recommended | Projected Disconnected Area (Ac.) | Cost Analysis | Projected Implementation Date |
|---|---|---|---|---|---|
| Cook Hill Elementary School | 57 HALL RD | During repaving, redirect MS4 catch basins and associated piping to a bioretention or infiltration basin. | 3.37 | Refer to *Section 3.1.3* | 2022-2025 |
| | | Remove or slot curbing to allow for stormwater infiltration into grassy areas. | 1.91 | Refer to *Section 3.5.1* | 2022-2025 |
| | | Install rain barrels to catch roof runoff. Utilize runoff to water grassy areas. | 1.46 | Refer to *Section 3.2* | 2022-2025 |
| Moses Y Beach Elementary School | 340 NORTH MAIN ST | Remove or slot curbing to allow for stormwater infiltration into grassy areas. | 1.28 | Refer to *Section 3.5.1* | 2022-2025 |
| | | Reroute roof runoff to constructed rain gardens. | 1.03 | Refer to *Section 3.1.4* | 2022-2025 |
| | | Install rain barrels to catch roof runoff. Utilize runoff to water grassy areas or the neighboring baseball field. | 1.03 | Refer to *Section 3.2* | 2022-2025 |

*Source: Created by Atlas 2021.*

# APPENDIX I
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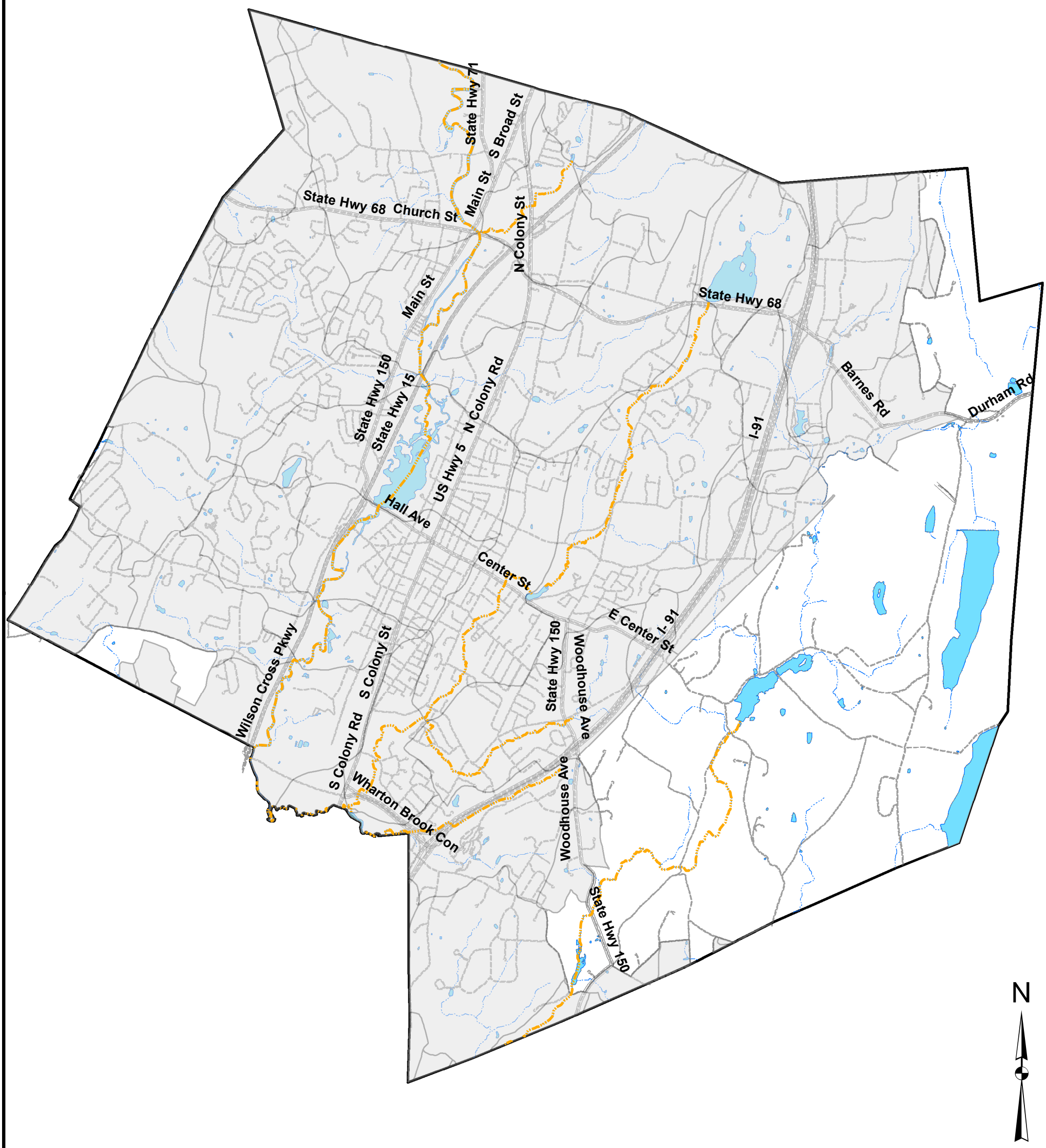
# APPENDIX II
# FIGURES




# Town Of Wallingford

## *Stormwater Retrofit Program*

## *Urbanized Areas by Catchment*

### Legend

- Impaired Waterbody
- Surface Water
- Urbanized Area by Catchment
- Town Line
- Main Road

| |
|---|
| **Fig No. 1** |
| **Drawn By: KLL** |
| **Checked by: LRW** |
| **Date: 2021** |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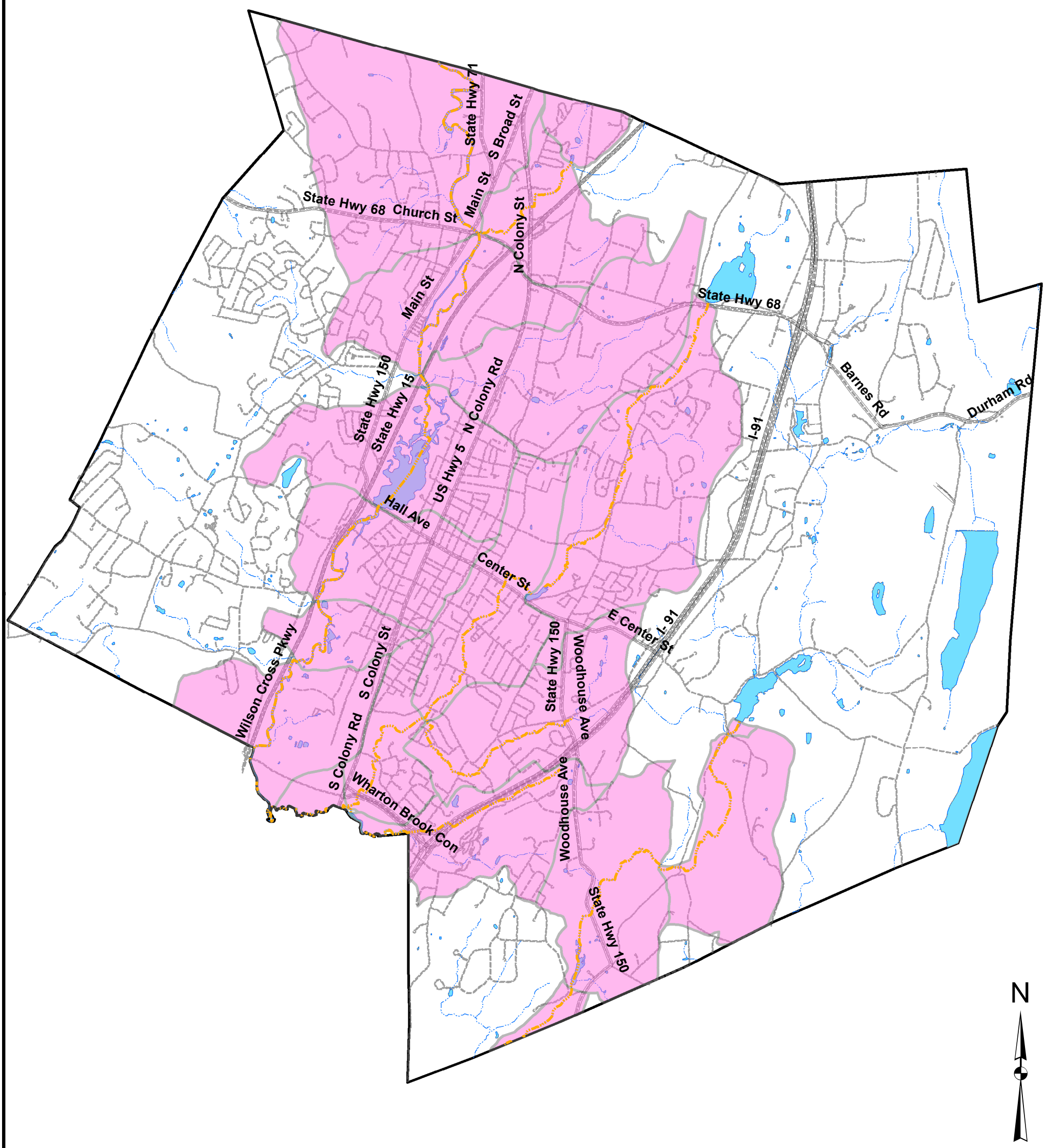


# Town Of Wallingford

## *Stormwater Retrofit Program*

## *Impaired Waterbodies by Catchment*

### Legend

- Impaired Waterbody
- Main Road
- Surface Water
- Town Line
- Impaired Waters by Catchment

| |
|---|
| Fig No. 2 |
| Drawn By: KLL |
| Checked by: LRW |
| Date: 2021 |


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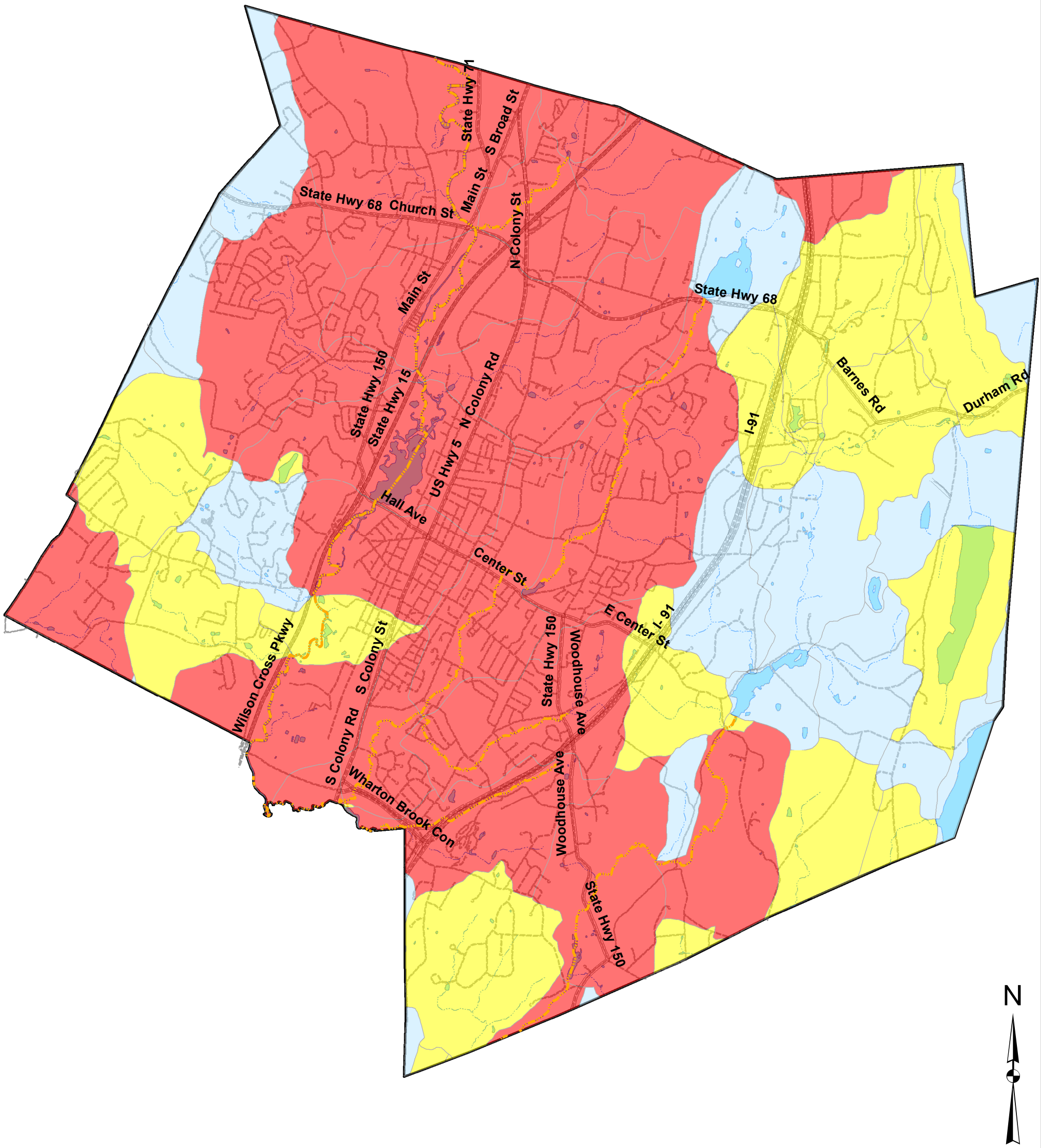


# Town Of Wallingford

## *Stormwater Retrofit Program*

## *Catchment Rankings*

**Legend**

- Impaired Waterbody
- Main Road
- Surface Water
- Town Line
- High Priority
- Problem
- Low Priority

| |
|---|
| **Fig No. 3** |
| **Drawn By: KLL** |
| **Checked by: LRW** |
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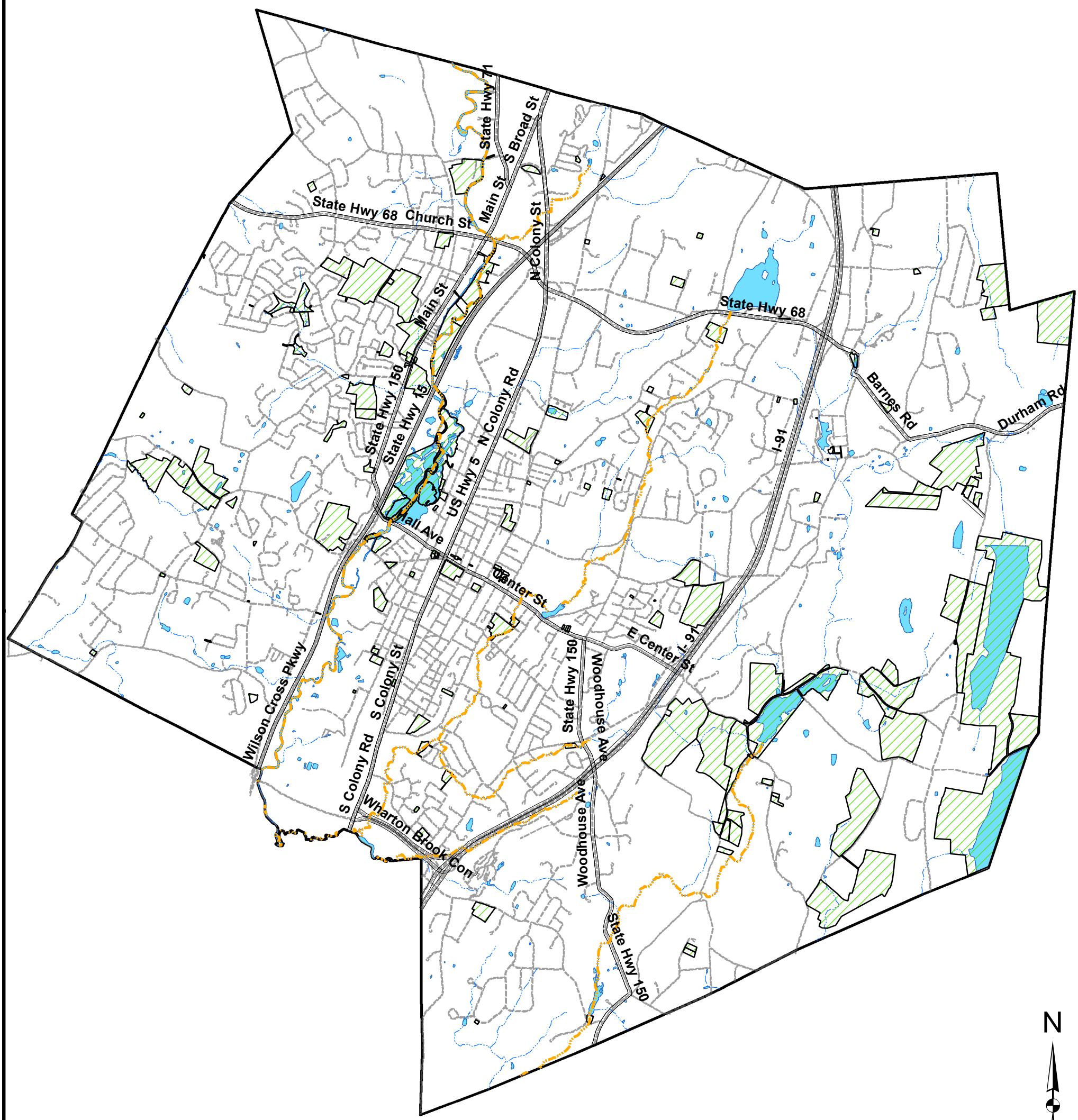


0 2,000 4,000 8,000 12,000 Feet

1 in = 4,000 ft

# Town Of Wallingford

***Stormwater Retrofit Program***

***Municipal Owned Facilities and Parks***

## Legend

- Impaired Waterbody
- Main Road
- Surface Water
- Town Line
- Municipal Owned

| |
|---|
| **Fig No. 4** |
| **Drawn By: KLL** |
| **Checked by: LRW** |
| **Date: 2021** |


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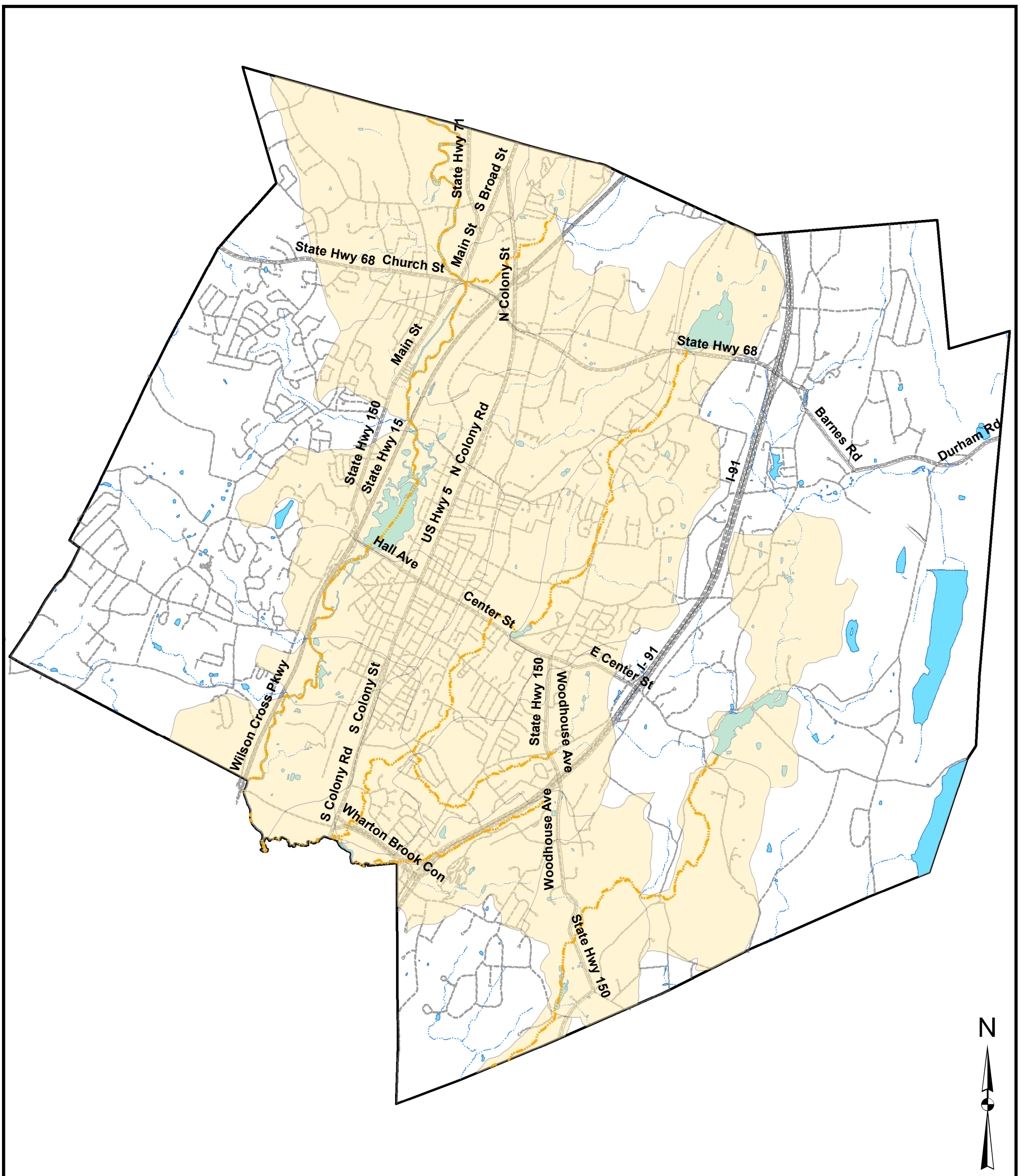


# Town Of Wallingford

## *Stormwater Retrofit Program*

## *Non-Municipal Retrofitting by Catchment*

**Legend**

- Impaired Waterbody
- Prioritized Non-Municipal Retrofit by Catchment
- Main Road
- Surface Water
- Town Line

| |
|---|
| **Fig No. 5** |
| **Drawn By: KLL** |
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| **Date: 2021** |

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# APPENDIX III
# BUFFER ORDIANCE TEMPLATE

# Aquatic Buffer Model Ordinance

☞ *This ordinance focuses primarily on stream buffers. Communities creating coastal buffers may wish to incorporate additional features. For an example of a coastal buffer ordinance, see the Rhode Island ordinance.*

## Section I. Background

Buffers adjacent to stream systems and coastal areas provide numerous environmental protection and resource management benefits that can include the following:

1) Restoring and maintaining the chemical, physical, and biological integrity of the water resources
2) Removing pollutants delivered from urban stormwater
3) Reducing erosion and sediment entering the stream
4) Stabilizing stream banks
5) Providing infiltration of stormwater runoff
6) Maintaining base flow of streams
7) Contributing the organic matter that is a source of food and energy for the aquatic ecosystem
8) Providing tree canopy to shade streams and promote desirable aquatic organisms

☞ *This benefit applies primarily to forested buffer systems. In some communities, such as prairie settings, the native vegetation may not be forest. See the example ordinance from Omaha, Nebraska, for an example.*

9) Providing riparian wildlife habitat
10) Furnishing scenic value and recreational opportunity

It is the desire of the _____(*Natural Resources or Planning Agency*) to protect and maintain the native vegetation in riparian and wetland areas by implementing specifications for the establishment, protection, and maintenance of vegetation along all stream systems and/or coastal zones within our jurisdictional authority.

## Section II. Intent

The purpose of this ordinance is to establish minimal acceptable requirements for the design of buffers to protect the streams, wetlands, and floodplains of _____ (*jurisdiction*); to protect the water quality of watercourses, reservoirs, lakes, and other significant water resources within _____(*jurisdiction*); to protect _____'s (Jurisdiction's) riparian and aquatic ecosystems; and to provide for the environmentally sound use of _____'s (*jurisdiction's*) land resources.

## Section III. Definitions

| | |
|---|---|
| Active Channel | The area of the stream channel that is subject to frequent flows (approximately once per one and a half years) and that includes the portion of the channel below the floodplain. |
| Best Management Practices (BMPs) | Conservation practices or management measures that control soil loss and reduce water quality degradation caused by nutrients, animal wastes, toxics, sediment, and runoff. |

**Buffer** — A vegetated area, including trees, shrubs, and herbaceous vegetation, that exists or is established to protect a stream system, lake, reservoir, or coastal estuarine area. Alteration of this natural area is strictly limited.

**Development**

1) The improvement of property for any purpose involving building
2) Subdivision or the division of a tract or parcel of land into two or more parcels
3) The combination of any two or more lots, tracts, or parcels of property for any purpose
4) The preparation of land for any of the above purposes

**Nontidal Wetlands** — Those areas not influenced by tidal fluctuations that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

☞ *The definition of "nontidal wetland" here is adapted from the definition of "wetland" used by the USEPA and the US Army Corps of Engineers.*

**Nonpoint Source Pollution** — Pollution that is generated by various land use activities rather than from an identifiable or discrete source and is conveyed to waterways through natural processes, such as rainfall, stormwater runoff, or groundwater seepage rather than direct discharges.

**One Hundred-Year Floodplain** — The area of land adjacent to a stream that is subject to inundation during a storm event that has a recurrence interval of 100 years.

**Pollution** — Any contamination or alteration of the physical, chemical, or biological properties of any waters that will render the waters harmful or detrimental to

1) Public health, safety, or welfare
2) Domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses
3) Livestock, wild animals, or birds
4) Fish or other aquatic life

**Stream Channel** — Part of a watercourse either naturally or artificially created that contains an intermittent or perennial base flow of groundwater origin. Base flows of groundwater origin can be distinguished by any of the following physical indicators:

1) Hydrophytic vegetation, hydric soil, or other hydrologic indicators in the area(s) where groundwater enters the stream channel in the vicinity of the stream headwaters, channel bed, or channel banks
2) Flowing water not directly related to a storm event
3) Historical records of a local high groundwater table, such as well and stream gauge records.

**Stream Order** — A classification system for streams based on stream hierarchy. The smaller the stream, the lower its numerical classification. For example, a first-order stream

does not have tributaries and normally originates from springs and/or seeps. (See Figure 1.)

Stream System — A stream channel together with one or both of the following:
1) 100-year floodplain
2) Hydrologically related nontidal wetland

Streams — Perennial and intermittent watercourses identified through site inspection and US Geological Survey (USGS) maps. Perennial streams are those which are depicted on a USGS map with a solid blue line. Intermittent streams are those which are depicted on a USGS map with a dotted blue line.

☞ *Defining the term "stream" is perhaps the most contentious issue in the definition of stream buffers. This term determines the origin and the length of the stream buffer. Although some jurisdictions restrict the buffer to perennial or "blue line" streams, others include both perennial and intermittent streams in the stream buffer program. Some communities do not rely on USGS maps and instead prepare local maps of all stream systems that require a buffer.*

Water Pollution Hazard — A land use or activity that causes a relatively high risk of potential water pollution.

**Section IV. Applications**

A) This ordinance shall apply to all proposed development except for that development which meets waiver or variance criteria as outlined in Section IX of this regulation.
B) This ordinance shall apply to all timber harvesting activities, except those timber harvesting operations which are implementing a forest management plan that has been deemed to be in compliance with the regulations of the buffer ordinance and has received approval from _____(*state forestry agency*).
C) This ordinance shall apply to surface mining operations except that the design standards shall not apply to active surface mining operations that are operating in compliance with an approved _____(*state or federal agency*) surface mining permit.
D) The ordinance shall not apply to agricultural operations that are covered by an approved Natural Resources Conservation Service (NRCS) conservation plan that includes the application of BMPs.

☞ *Communities should carefully consider whether exempt agricultural operations from the buffer ordinance because buffer regulations may take land out of production and impose a financial burden on family farms. Many communities exempt agricultural operations if they have an approved NRCS conservation plan. In some regions, agricultural buffers may be funded through the Conservation Reserve Program (CRP). For further information, consult the Conservation Technology Information Center (CTIC) at www.ctic.perdue.edu.*

☞ *Livestock operations near and around streams may be regulated by communities. Livestock can significantly degrade the stream system and accelerate streambank erosion. The King County Livestock Management Ordinance is one example of a local livestock ordinance. For more information, contact the King County Department of Development and Environmental Services at (206) 296-6602.*

E) Except as provided in Section IX, this ordinance shall apply to all parcels of land, structures, and activities that are causing or contributing to

1) Pollution, including nonpoint source pollution, of the waters of the jurisdiction adopting this ordinance
2) Erosion or sedimentation of stream channels
3) Degradation of aquatic or riparian habitat

**Section V. Plan Requirements**

A) In accordance with Section IV of this ordinance, a plan approved by the appropriate agency is required for all development, forest harvesting operations, surface mining operations, and agricultural operations.
B) The plan shall set forth an informative, conceptual, and schematic representation of the proposed activity by means of maps, graphs, charts, or other written or drawn documents so as to enable the agency an opportunity to make a reasonably informed decision regarding the proposed activity.
C) The plan shall contain the following information:

☞ *The ordinance can identify the scale of maps to be included with the analyses in items 2) through 7). A 1"=50' to 1"=100' scale will generally provide sufficient detail.*

1) A location or vicinity map
2) Field-delineated and surveyed streams, springs, seeps, bodies of water, and wetlands (include a minimum of 200 feet into adjacent properties)
3) Field delineated and surveyed forest buffers
4) Limits of the ultimate 100-year floodplain

☞ *The limits of the ultimate floodplain (i.e., the floodplain under "built-out" conditions) might not be available in all locations.*

5) Hydric soils mapped in accordance with the NRCS soil survey of the site area
6) Steep slopes greater than 15 percent for areas adjacent to and within 200 feet of streams, wetlands, or other waterbodies

☞ *The ordinance may also explicitly define how slopes are measured. For example, the buffer may be divided into sections of a specific width (e.g., 25 feet) and the slope for each segment reported. Alternatively, slopes can be reported in segments divided by breaks in slope.*

7) A narrative of the species and distribution of existing vegetation within the buffer

D) The buffer plan shall be submitted in conjunction with the required grading plan for any development,and the forest buffer should be clearly delineated on the final grading plan.
E) Permanent boundary markers, in the form of signage approved by _____(*natural resources or planning agency*), shall be installed prior to final approval of the required clearing and grading plan. Signs shall be placed at the edge of the middle zone (See Section VI.I).

**Section VI. Design Standards for Forest Buffers**

A) A forest buffer for a stream system shall consist of a forested strip of land extending along both sides of a stream and its adjacent wetlands, floodplains, or slopes. The forest buffer width shall be adjusted to include contiguous sensitive areas, such as steep slopes or erodible soils, where development or disturbance may adversely affect water quality, streams, wetlands, or other waterbodies.

B) The forest buffer shall begin at the edge of the stream bank of the active channel.
C) The required width for all forest buffers (i.e., the base width) shall be a minimum of 100 feet, with the requirement to expand the buffer depending on
   1) Stream order
   2) Percent slope
   3) 100-year floodplain
   4) Wetlands or critical areas

☞ *The width of the stream buffer varies from 20 feet to 200 feet in ordinances throughout the United States (Heraty, 1993). The width chosen by a jurisdiction will depend on the sensitivity and characteristics of the resource being protected and the political realities in the community.*

B) In third-order and higher streams, 25 feet shall be added to the base width of the forest buffer.
C) The forest buffer width shall be modified if steep slopes are within close proximity to the stream and drain into the stream system. In those cases, the forest buffer width may be adjusted.

☞ *Several methods may be used to adjust buffer width for steep slopes. Two examples ifollow:*

*Method A*

| Percent | Width of Buffer |
|---|---|
| 15%-17% | add 10 feet |
| 18%-20% | add 30 feet |
| 21%-23% | add 50 feet |
| 24%-25% | add 60 feet |

*Method B*

| | Type of Stream Use | |
|---|---|---|
| Percent Slope | Water Contact Recreational Use | Sensitive Stream Habitat |
| 0% to 14% | no change | add 50 feet |
| 15% to 25% | add 25 feet | add 75 feet |
| Greater than 25% | add 50 feet | add 100 feet |

D) Forest buffers shall be extended to encompass the entire 100-year floodplain and a zone with a minimum width of 25 feet beyond the edge of the floodplain.
E) When wetland or critical areas extend beyond the edge of the required buffer width, the buffer shall be adjusted so that the buffer consists of the extent of the wetland plus a 25-foot zone extending beyond the wetland edge.

H) Water Pollution Hazards
The following land uses and/or activities are designated as potential water pollution hazards

and must be set back from any stream or waterbody by the distance indicated below:

1) Storage of hazardous substances—(150 feet)
2) Aboveground or underground petroleum storage facilities—(150 feet)
3) Drainfields from onsite sewage disposal and treatment systems (i.e., septic systems)—(100 feet)
4) Raised septic systems—(250 feet)
5) Solid waste landfills or junkyards—(300 feet)
6) Confined animal feedlot operations—(250 feet)
7) Subsurface discharges from a wastewater treatment plant—(100 feet)
8) Land application of biosolids—(100 feet)

☞ *For surface water supplies, the setbacks should be doubled.*

☞ *A community should carefully consider which activities or land uses should be designated as potential water pollution hazards. The list of potential hazards shown above is not exhaustive, and others may need to be added depending on the major pollutants of concern and the uses of water.*

I) The forest buffer shall be composed of three distinct zones, with each zone having its own set of allowable uses and vegetative targets as specified in this ordinance. (See Figure 2.)

☞ *Although a three-zone buffer system is highly recommended, the widths and specific uses allowed in each zone may vary between jurisdictions.*

I) Zone 1, Streamside Zone
   a) Protects the physical and ecological integrity of the stream ecosystem.
   b) Begins at the edge of the stream bank of the active channel and extends a minimum of 25 feet from the top of the bank.
   c) Allowable uses within this zone are highly restricted to
      i) Flood control structures
      ii) Utility right of ways
      iii) Footpaths
      iv) Road crossings, where permitted
   d) Target for the streamside zone is undisturbed native vegetation.

☞ *This ordinance assumes that the native vegetation in the stream corridor is forest. In some regions of the United States, other vegetation such as prairie may be native. See the Omaha, Nebraska, buffer ordinance for an example of a stream buffer ordinance that protects nonforested systems.*

2) Zone 2, Middle Zone
   a) Protects key components of the stream and provides distance between upland development and the streamside zone.
   b) Begins at the outer edge of the streamside zone and extends a minimum of 50 feet plus any additional buffer width as specified in this section.
   c) Allowable uses within the middle zone are restricted to
      i) Biking or hiking paths
      ii) Stormwater management facilities, with the approval of _____ *(local agency responsible for stormwater*).

iii) Recreational uses as approved by _____ (*planning agency*).
iv) Limited tree clearing with approval from _____ (*forestry agency or planning agency*).

d) Targets mature native vegetation adapted to the region.

3) Zone 3, Outer Zone
   a) Prevents encroachment into the forest buffer and filters runoff from residential and commercial development.
   b) Begins at the outward edge of the middle zone and provide a minimum width of 25 feet between Zone 2 and the nearest permanent structure.
   c) Restricts septic systems, permanent structures, or impervious cover, with the exception of paths.
   d) Encourages the planting of native vegetation to increase the total width of the buffer.

**Section VII. <u>Buffer Management and Maintenance</u>**

A) The forest buffer, including wetlands and floodplains, shall be managed to enhance and maximize the unique value of these resources. Management includes specific limitations on alteration of the natural conditions of these resources. The following practices and activities are restricted within Zones 1 and 2 of the forest buffer, except with approval by _____ _____ (*forestry, planning or natural resources agency*)
   1) Clearing of existing vegetation
   2) Soil disturbance by grading, stripping, or other practices
   3) Filling or dumping
   4) Drainage by ditching, underdrains, or other systems
   5) Use, storage, or application of pesticides, except for spot spraying of noxious weeds or non-native species consistent with recommendations of _____(*forestry agency*)
   6) Housing, grazing, or other maintenance of livestock
   7) Storage or operation of motorized vehicles, except for maintenance and emergency use approved by _____(*forestry, planning, or natural resources agency*)

B) The following structures, practices, and activities are permitted in the forest buffer, with specific design or maintenance features, subject to the review of _____ (*forestry, planning, or natural resources agency)*:
   1) Roads, bridges, paths, and utilities:
      a) An analysis needs to be conducted to ensure that no economically feasible alternative is available.
      b) The right-of-way should be the minimum width needed to allow for maintenance access and installation.
      c) The angle of the crossing shall be perpendicular to the stream or buffer to minimize clearing requirements
      d) The minimum number of road crossings should be used within each subdivision, and no more than one fairway crossing is allowed for every 1,000 feet of buffer.
   2) Stormwater management:
      e) An analysis needs to be conducted to ensure that no economically feasible alternative is available and that the project either is necessary for flood control or significantly improves the water quality or habitat in the stream.
      f) In new developments, onsite and nonstructural alternatives will be preferred over larger facilities within the stream buffer.

g) When constructing stormwater management facilities (i.e., BMPs), the area cleared will be limited to the area required for construction and adequate maintenance access as outlined in the most recent edition of _____ (*refer to stormwater manual*).

☞ *Rather than placing specific stormwater BMP design criteria in an ordinance, it is often preferable to reference a manual. With this approach, specific design information can be changed over time without going through the formal process needed to change ordinance language.*

☞ *The* Maryland Stormwater Design Manual *is one example of an up-to-date stormwater design manual. For more information, go to www.mde.state.md.us. Under topics, choose "Stormwater Design Manual."*

h) Material dredged or otherwise removed from a BMP shall be stored outside the buffer.

3) Stream restoration projects, facilities, and activities approved by _____ (*forestry, planning, or natural resources agency*) are permitted within the forest buffer.
4) Water quality monitoring and stream gauging are permitted within the forest buffer, as approved by _____(*forestry, planning or natural resources agency*):.
5) Individual trees within the forest buffer that are in danger of falling, causing damage to dwellings or other structures, or causing blockage of the stream may be removed.
6) Other timber cutting techniques approved by the agency may be undertaken within the forest buffer under the advice and guidance of _____ (*state or federal forestry agency*) if necessary to preserve the forest from extensive pest infestation, disease infestation, or threat from fire.

C) All plans prepared for recording and all right-of-way plans shall clearly
1) Show the extent of any forest buffer on the subject property
2) Label the forest buffer
3) Provide a note to reference any forest buffer stating: “There shall be no clearing, grading, construction or disturbance of vegetation except as permitted by the agency.”
4) Provide a note to reference any protective covenants governing all forest buffer areas stating: “Any forest buffer shown hereon is subject to protective covenants that may be found in the land records and that restrict disturbance and use of these areas.”

D) All forest buffer areas shall be maintained through a declaration of protective covenant, which is required to be submitted for approval by _____ (*planning board or agency*). The covenant shall be recorded in the land records and shall run with the land and continue in perpetuity.

☞ *This protective covenant can be kept either by the local government agency responsible for management of environmental resources or by an approved nonprofit organization. An example conservation easement is included later in this section.*

E) All lease agreements must contain a notation regarding the presence and location of protective covenants for forest buffer areas and shall contain information on the management and maintenance requirements for the new property owner.

F) An offer of dedication of a forest buffer area to the agency shall not be interpreted to mean that this automatically conveys to the general public the right of access to this area.

G) _____ (*responsible individual or group*) shall inspect the buffer annually and immediately following severe storms for evidence of sediment deposition, erosion, or concentrated flow channels and corrective actions taken to ensure the integrity and functions

of the forest buffer.

*A local ordinance will need to designate the individual or group responsible for buffer maintenance. Often, the responsible party will be identified in protective covenants associated with the property.*

H) Forest buffer areas may be allowed to grow into their vegetative target state naturally, but methods to enhance the successional process such as active reforestation may be used when deemed necessary by _____ (*natural resources or forestry agency*) to ensure the preservation and propagation of the buffer area. Forest buffer areas may also be enhanced through reforestation or other growth techniques as a form of mitigation for achieving buffer preservation requirements.

*Explicit forestry management criteria are often included in a forestry or natural resources conservation ordinance. An example forest conservation ordinance from Frederick County, Maryland is included in the miscellaneous ordinances section of this site.*

**Section VIII. <u>Enforcement Procedures</u>**

A) _____ (*director of responsible agency)* or his/her designee is authorized and empowered to enforce the requirements of this ordinance in accordance with the procedures of this section.

B) If, upon inspection or investigation, the director or his/her designee is of the opinion that any person has violated any provision of this ordinance, he/she shall with reasonable promptness issue a correction notice to the person. Each such notice shall be in writing and shall describe the nature of the violation, including a reference to the provision within this ordinance that has been violated. In addition, the notice shall set a reasonable time for the abatement and correction of the violation.

C) If it is determined that the violation or violations continue after the time fixed for abatement and correction has expired, the director shall issue a citation by certified mail to the person who is in violation. Each such notice shall be in writing and shall describe the nature of the violation, including a reference to the provision within this ordinance that has been violated and what penalty, if any, is proposed to be assessed. The person charged has 30 days within which to contest the citation or proposed assessment of penalty and to file a request for a hearing with the director or his/her designee. At the conclusion of this hearing, the director or his/her designee will issue a final order, subject to appeal to the appropriate authority. If, within 30 days from the receipt of the citation issued by the director, the person fails to contest the citation or proposed assessment of penalty, the citation or proposed assessment of penalty shall be deemed the final order of the director.

B) Any person who violates any provision of this ordinance may be liable for any cost or expenses incurred as a result thereof by the agency.

C) Penalties that may be assessed for those deemed to be in violation may include the following:

1) A civil penalty not to exceed $1,000.00 for each violation. Every day that such violation(s) continue will be considered a separate offense.
2) A criminal penalty in the form of a fine of not more than $1,000.00 for each violation, imprisonment for not more than 90 days, or both. Every day that such violation(s) continue will be considered a separate offense.
3) Anyone who knowingly makes any false statements in any application, record, or plan required by this ordinance shall upon conviction be punished by a fine of not more than $1,000.00 for each violation, imprisonment for not more than 30 days, or both.

☞ *Specific penalties will vary between communities, and should reflect realistically enforceable penalties given the political realities of a jurisdictin.*

F) In addition to any other sanctions listed in this ordinance, a person who fails to comply with the provisions of this buffer ordinance shall be liable to the agency in a civil action for damages in an amount equal to twice the cost of restoring the buffer. Damages that are recovered in accordance with this action shall be used for the restoration of buffer systems or for the administration of programs for the protection and restoration of water quality, streams, wetlands, and floodplains.

**Section IX**. **Waivers/Variances**

A) This ordinance shall apply to all proposed development except for activities that were completed prior to the effective date of this ordinance and had received the following:
   1) A valid, unexpired permit in accordance with development regulations
   2) A current, executed public works agreement
   3) A valid, unexpired building permit
   4) A waiver in accordance with current development regulations.

B) The director of the agency may grant a variance for the following:
   1) Those projects or activities for which it can be demonstrated that strict compliance with the ordinance would result in a practical difficulty or financial hardship
   2) Those projects or activities serving a public need where no feasible alternative is available
   3) The repair and maintenance of public improvements where avoidance and minimization of adverse impacts to nontidal wetlands and associated aquatic ecosystems have been addressed
   4) Those developments which have had buffers applied in conformance with previously issued requirements

C) Waivers for development may also be granted in two additional forms, if deemed appropriate by the director:
   1) The buffer width made be reduced at some points as long as the average width of the buffer meets the minimum requirement. This averaging of the buffer may be used to allow for the presence of an existing structure or to recover a lost lot, as long as the streamside zone (Zone I) is not disturbed by the reduction and no new structures are built within the 100-year floodplain.
   2) _____ (*planning agency*) may offer credit for additional density elsewhere on the site in compensation for the loss of developable land due to the requirements of this ordinance. This compensation may increase the total number of dwelling units on the site up to the amount permitted under the base zoning.

D) The applicant shall submit a written request for a variance to the director of the agency. The application shall include specific reasons justifying the variance and any other information necessary to evaluate the proposed variance request. The agency may require an alternative analysis that clearly demonstrates that no other feasible alternatives exist and that minimal impact will occur as a result of the project or development.

E) In granting a request for a variance, the director of the agency may require site design, landscape planting, fencing, signs, and water quality best management practices to reduce adverse impacts on water quality, streams, wetlands, and floodplains.

**Section X.** **Conflict With Other Regulations**

Where the standards and management requirements of this buffer ordinance are in conflict with other laws, regulations, and policies regarding streams, steep slopes, erodible soils, wetlands, floodplains, timber harvesting, land disturbance activities, or other environmental protective measures, the more restrictive shall apply.

**Figure 1: Stream Order (Source: Schueler, 1995)**

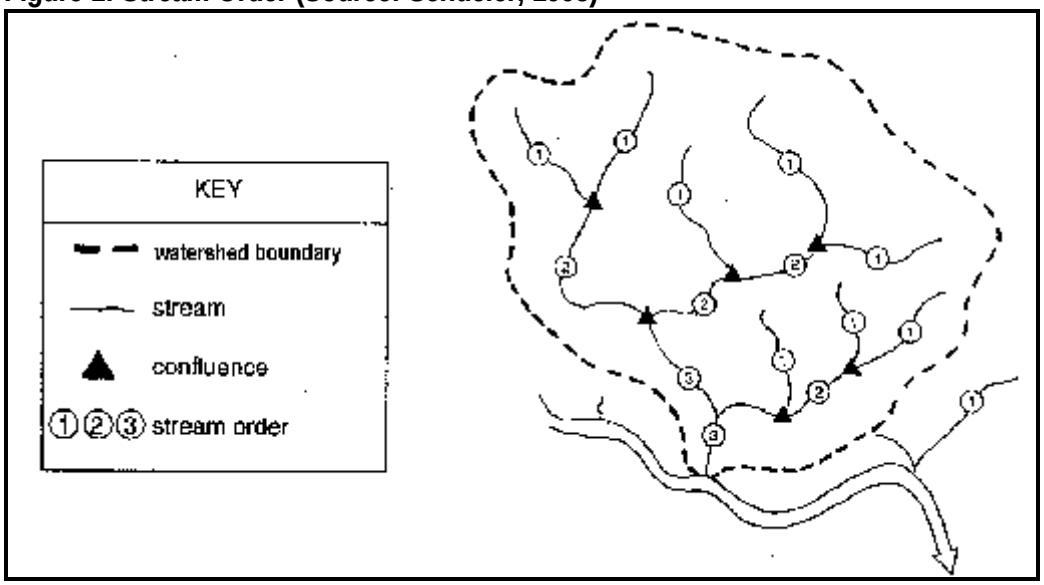
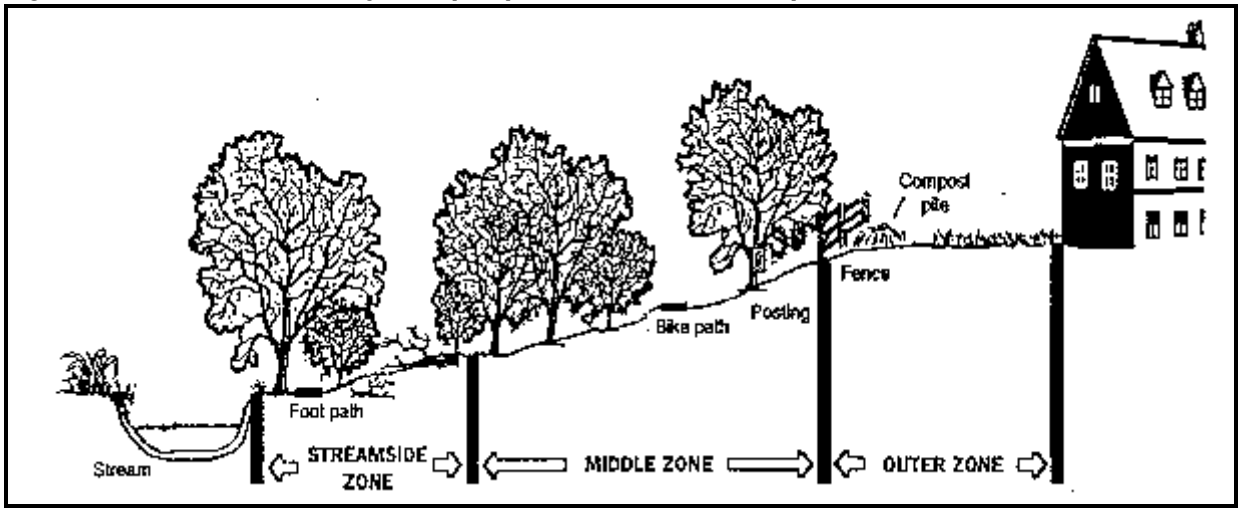



**Figure 2: Three Zone Buffer System (Adapted from Welsch, 1991)**



**References**

Heraty, M. 1993. Riparian buffer programs: a guide to developing and implementing a riparian buffer program as an urban best management practice. Metropolitan Washington Council of Governments, USEPA Office of Wetlands, Oceans and Watersheds. Washington, DC.

Schueler, T. 1995. Site planning for urban stream protection. Metropolitan Washington Council of Governments, USEPA Office of Wetlands, Oceans and Watersheds. Washington, DC.

Welsch, D. 1991. Riparian forest buffers. FS Pub. No. NA-PR-07-91. US Department of Agriculture, Forest Service. Forest Resources Management, Radnor, PA.

# APPENDIX IV
# DCIA CALCULATIONS

## CT DEEP MS4 General Permit

### Drainage Basin Area, Drainage Sub-Basin Area and Impervious Area (IA) Tabulations and Directly Connected Impervious Area (DCIA) Computations

### Wallingford - GSM000050

| Town Area Acres | CT DEEP Regional Drainage Basin No. | Town Basin Area Acres | CT DEEP Drainage Sub-Basin No. | Total Basin Area Ac. | Impervious Area (Ac) Buildings | Roads | Other | Total | % | CT ECO State Road Imp. Area Ac. | Town Imp. Area Ac. | Town Imp. Area % | CT ECO Town Road Imp. Area Ac. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **25,821.30** | Uconn CLEAR Website | | | | **1088.52** | **1040.91** | **1938.86** | **4,068.29** | **15.76** | **272.59** | | | **768.32** |
| **25,822** | NEMO Website | | | | | | | | | | | | |
| *9,414.1* | **5200** | **9,419.58** | **Quinnipiac River** | | | | | | | | | | |
| *Check* | *Clipped Basin* | *458.26* | *5200-11-1* | *993.9* | *13.93* | *11.24* | *14.58* | *39.76* | ***8.68*** | *6.75* | *33.01* | ***7.20*** | *4.49* |
| | *Clipped Basin* | *159.92* | *5200-10-1* | *1,214.3* | *7.53* | *7.80* | *10.82* | *26.14* | ***16.35*** | *0.00* | *26.14* | ***16.35*** | *7.80* |
| | *Clipped Basin* | *1,584.95* | *5200-00-4-R7* | *2,322.3* | *64.35* | *54.11* | *134.91* | *253.36* | ***15.99*** | *17.62* | *235.74* | ***14.87*** | *36.49* |
| | | **528.6** | 5200-10-2-R1 | 528.6 | 46.50 | 33.38 | 113.89 | 193.78 | ***36.66*** | 17.63 | 176.15 | **33.32** | 15.76 |
| | | **766.4** | 5200-00-4-R8 | 766.4 | 77.06 | 44.06 | 160.93 | 282.05 | ***36.80*** | 18.68 | 263.37 | **34.36** | 25.37 |
| | | **1,118.1** | 5200-12-1-L1 | 1,118.1 | 66.65 | 60.26 | 83.33 | 210.24 | ***18.80*** | 1.20 | 209.04 | **18.70** | 59.06 |
| | | **1,121.2** | 5200-13-1 | 1,121.2 | 95.76 | 59.29 | 177.81 | 332.86 | ***29.69*** | 13.12 | 319.74 | **28.52** | 46.17 |
| | | **30.7** | 5200-12-1 | 30.7 | 2.37 | 2.20 | 4.99 | 9.56 | ***31.14*** | 1.25 | 8.31 | **27.07** | 0.95 |
| | | **934.4** | 5200-00-4-L3 | 934.4 | 69.75 | 60.06 | 121.83 | 251.64 | ***26.93*** | 17.77 | 233.87 | **25.03** | 42.29 |
| | | **26.4** | 5200-14-1-L1 | 26.4 | 3.34 | 0.57 | 2.01 | 5.93 | ***22.46*** | 0.00 | 5.93 | **22.46** | 0.57 |
| | | **416.3** | 5200-14-1 | 416.3 | 26.52 | 22.90 | 35.56 | 84.98 | ***20.41*** | 0.19 | 84.79 | **20.37** | 22.71 |
| | | **675.6** | 5200-00-4-R10 | 675.6 | 87.91 | 59.49 | 126.35 | 273.76 | ***40.52*** | 20.36 | 253.40 | **37.51** | 39.13 |
| | | **274.4** | 5200-00-4-R11 | 274.4 | 18.74 | 15.55 | 58.01 | 92.31 | ***33.64*** | 4.80 | 87.51 | **31.89** | 10.75 |
| | *Clipped Basin* | *600.71* | *5200-15-1* | *606.2* | *26.30* | *21.94* | *31.18* | *13.22* | ***2.20*** | *0.65* | *12.57* | ***2.09*** | *21.29* |
| | *Clipped Basin* | *668.60* | *5200-00-4-R12* | *737.8* | *24.86* | *20.37* | *77.34* | *122.50* | ***18.32*** | *9.12* | *113.38* | ***16.96*** | *11.25* |
| | *Clipped Basin* | *35.84* | *5200-19-1-L1* | *896.3* | *1.33* | *1.22* | *4.00* | *6.55* | ***18.28*** | *0.00* | *6.55* | ***18.28*** | *1.22* |
| | *Clipped Basin* | *12.99* | *5200-17-1* | *1,112.8* | *0.35* | *0.54* | *0.73* | *1.62* | ***12.47*** | *0.18* | *1.44* | ***11.09*** | *0.36* |
| | *Clipped Basin* | *0.75* | *5200-16-1* | *1,059.3* | *0.00* | *0.00* | *0.01* | *0.01* | ***1.33*** | *0.00* | *0.01* | ***1.33*** | *0.00* |
| *8,534.1* | **5208** | **8,563.18** | **Muddy River** | | | | | | | | | | |
| *Check* | *Clipped Basin* | *820.65* | *5208-08-1* | *840.9* | *20.01* | *21.81* | *31.87* | *73.69* | ***8.98*** | *0.00* | *73.69* | ***8.98*** | *21.81* |
| | *Clipped Basin* | *73.25* | *5208-00-3-R3* | *167.2* | *1.27* | *1.83* | *2.41* | *5.51* | ***7.52*** | *0.59* | *4.92* | ***6.72*** | *1.24* |
| | *Clipped Basin* | *837.62* | *5208-00-3-L3* | *881.4* | *9.04* | *14.15* | *18.71* | *41.89* | ***5.00*** | *5.04* | *36.85* | ***4.40*** | *9.11* |
| | *Clipped Basin* | *694.39* | *5208-00-3-R2* | *701.2* | *6.02* | *9.28* | *11.16* | *26.46* | ***3.81*** | *0.00* | *26.46* | ***3.81*** | *9.28* |
| | | **137.2** | 5208-07-1 | 137.2 | 0.03 | 1.73 | 0.06 | 1.83 | ***1.33*** | 0.00 | 1.83 | **1.33** | 1.73 |
| | | **444.9** | 5208-06-1 | 444.9 | 6.83 | 18.71 | 12.14 | 37.69 | ***8.47*** | 9.56 | 28.13 | **6.32** | 9.16 |
| | | **540.1** | 5208-05-1-L1 | 540.1 | 12.10 | 32.23 | 28.12 | 72.46 | ***13.42*** | 16.30 | 56.16 | **10.40** | 15.94 |
| *3/11/2020* | *Last Revised Date* | | | | | | | | | | | | |

# CT DEEP MS4 General Permit

## Drainage Basin Area, Drainage Sub-Basin Area and Impervious Area (IA) Tabulations and Directly Connected Impervious Area (DCIA) Computations

## Wallingford - GSM000050

| CT DEEP Drainage Sub-Basin No. | Town Basin Area Acres | CT DEEP Drainage Sub-Basin No. | Total Imp. Area Ac. | Town Imp. Area % | High Connectivity DCIA% = 0.4*(IA%)^1.2 Imp. Ac. | High Connectivity DCIA% = 0.4*(IA%)^1.2 DCIA % | High Connectivity DCIA% = 0.4*(IA%)^1.2 DCIA Ac. | Average Connectivity DCIA% = 0.1*(IA%)^1.5 Imp. Ac. | Average Connectivity DCIA% = 0.1*(IA%)^1.5 DCIA % | Average Connectivity DCIA% = 0.1*(IA%)^1.5 DCIA Ac. | Partial Connectivity DCIA% = 0.04*(IA%)^1.7 Imp. Ac. | Partial Connectivity DCIA% = 0.04*(IA%)^1.7 DCIA % | Partial Connectivity DCIA% = 0.04*(IA%)^1.7 DCIA Ac. | Slight Connectivity DCIA% = 0.01*(IA%)^2.0 Imp. Ac. | Slight Connectivity DCIA% = 0.01*(IA%)^2.0 DCIA % | Slight Connectivity DCIA% = 0.01*(IA%)^2.0 DCIA Ac. | DCIA Ac. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | HDR | | | MDR | Comm. | Ind. | LDR | | | Forest | Ag. | | |
| | | | | | | | | Urban Public/Institutional | | | | | | | | | |
| | | | | | | | | Open Land | | | | | | | | | |
| **5200** | 9,419.58 | **Quinnipiac River** | | | | | | | | | | | | | | | |
| | *458.3* | 5200-11-1 | *33.01* | ***7.20*** | 0.00 | 0.00 | 0.00 | 16.51 | 1.93 | 0.32 | 16.51 | 1.15 | 0.19 | 0.00 | 0.00 | 0.00 | **0.51** |
| | *159.9* | 5200-10-1 | *26.14* | ***16.35*** | 13.07 | 11.43 | 1.49 | 13.07 | 6.61 | 0.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **2.36** |
| | *1,585.0* | 5200-00-4-R7 | *235.74* | ***14.87*** | 117.87 | 10.21 | 12.03 | 117.87 | 5.74 | 6.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **18.79** |
| | **528.6** | 5200-10-2-R1 | 176.15 | **33.32** | 176.15 | 26.88 | 47.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **47.34** |
| | **766.4** | 5200-00-4-R8 | 263.37 | **34.36** | 263.37 | 27.89 | 73.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **73.44** |
| | **1,118.1** | 5200-12-1-L1 | 209.04 | **18.70** | 209.04 | 13.43 | 28.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **28.08** |
| | **1,121.2** | 5200-13-1 | 319.74 | **28.52** | 319.74 | 22.29 | 71.28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **71.28** |
| | **30.7** | 5200-12-1 | 8.31 | **27.07** | 8.31 | 20.94 | 1.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **1.74** |
| | **934.4** | 5200-00-4-L3 | 233.87 | **25.03** | 233.87 | 19.06 | 44.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **44.58** |
| | **26.4** | 5200-14-1-L1 | 5.93 | **22.46** | 5.93 | 16.74 | 0.99 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.99** |
| | **416.3** | 5200-14-1 | 84.79 | **20.37** | 84.79 | 14.89 | 12.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **12.62** |
| | **675.6** | 5200-00-4-R10 | 253.40 | **37.51** | 253.40 | 30.97 | 78.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **78.49** |
| | **274.4** | 5200-00-4-R11 | 87.51 | **31.89** | 87.51 | 25.50 | 22.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **22.31** |
| | *600.7* | 5200-15-1 | *12.57* | ***2.09*** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 12.57 | 0.14 | 0.02 | 0.00 | 0.00 | 0.00 | **0.02** |
| | *668.6* | 5200-00-4-R12 | *113.38* | ***16.96*** | 56.69 | 11.95 | 6.77 | 56.69 | 6.98 | 3.96 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **10.73** |
| | *35.8* | 5200-19-1-L1 | *6.55* | ***18.28*** | 6.55 | 13.07 | 0.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.86** |
| | *13.0* | 5200-17-1 | *1.44* | ***11.09*** | 0.00 | 0.00 | 0.00 | 0.72 | 3.69 | 0.03 | 0.72 | 2.39 | 0.02 | 0.00 | 0.00 | 0.00 | **0.04** |
| | *0.8* | 5200-16-1 | *0.01* | ***1.33*** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** |
| **5208** | 8,563.18 | **Muddy River** | | | | | | | | | | | | | | | |
| | *820.7* | *5208-08-1* | *73.69* | ***8.98*** | *0.00* | *0.00* | *0.00* | *36.85* | *2.69* | *0.99* | *36.85* | *1.67* | *0.62* | *0.00* | *0.00* | *0.00* | ***1.61*** |
| | *73.3* | *5208-00-3-R3* | *4.92* | ***6.72*** | *0.00* | *0.00* | *0.00* | *2.46* | *1.74* | *0.04* | *2.46* | *1.02* | *0.03* | *0.00* | *0.00* | *0.00* | ***0.07*** |
| | *837.6* | *5208-00-3-L3* | *36.85* | ***4.40*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *36.85* | *0.50* | *0.18* | *0.00* | *0.00* | *0.00* | ***0.18*** |
| | *694.4* | *5208-00-3-R2* | *26.46* | ***3.81*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *26.46* | *0.39* | *0.10* | *0.00* | *0.00* | *0.00* | ***0.10*** |
| | **137.2** | 5208-07-1 | 1.83 | **1.33** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.83 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** |
| | **444.9** | 5208-06-1 | 28.13 | **6.32** | 0.00 | 0.00 | 0.00 | 14.07 | 1.59 | 0.22 | 14.07 | 0.92 | 0.13 | 0.00 | 0.00 | 0.00 | **0.35** |
| | **540.1** | 5208-05-1-L1 | 56.16 | **10.40** | 0.00 | 0.00 | 0.00 | 28.08 | 3.35 | 0.94 | 28.08 | 2.14 | 0.60 | 0.00 | 0.00 | 0.00 | **1.54** |

## CT DEEP MS4 General Permit

### Drainage Basin Area, Drainage Sub-Basin Area and Impervious Area (IA) Tabulations and Directly Connected Impervious Area (DCIA) Computations

### Wallingford - GSM000050

| Town Area Acres | CT DEEP Regional Drainage Basin No. | Town Basin Area Acres | CT DEEP Drainage Sub-Basin No. | Total Basin Area Ac. | Impervious Area (Ac) Buildings | Roads | Other | Total | % | CT ECO State Road Imp. Area Ac. | Town Imp. Area Ac. | Town Imp. Area % | CT ECO Town Road Imp. Area Ac. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **891.4** | 5208-00-3-L2 | 891.4 | 11.00 | 14.36 | 21.84 | 47.21 | **5.30** | 0.00 | 47.21 | **5.30** | 14.36 |
| | | **1.4** | 5208-05-1 | 1.4 | 0.00 | 0.32 | 0.00 | 0.32 | **22.86** | 0.00 | 0.32 | **22.86** | 0.32 |
| | | **12.4** | 5208-00-3-R1 | 12.4 | 0.21 | 0.22 | 0.46 | 0.89 | **7.18** | 0.00 | 0.89 | **7.18** | 0.22 |
| | | **479.6** | 5208-04-1 | 479.6 | 4.03 | 8.24 | 8.15 | 20.43 | **4.26** | 0.00 | 20.43 | **4.26** | 8.24 |
| | *Clipped Basin* | *660.46* | 5208-02-1-L1 | *664.2* | *2.91* | *5.85* | *6.48* | *15.25* | ***2.31*** | *0.00* | *15.25* | ***2.31*** | *5.85* |
| | *Clipped Basin* | *481.10* | 5208-02-1 | *510.9* | *0.93* | *3.01* | *4.72* | *8.67* | ***1.80*** | *0.00* | *8.67* | ***1.80*** | *3.01* |
| | | **592.0** | 5208-02-2-R1 | 592.0 | 10.67 | 12.89 | 22.45 | 46.01 | **7.77** | 4.52 | 41.49 | **7.01** | 8.36 |
| | *Clipped Basin* | *594.22* | 5208-03-1 | *717.1* | *7.09* | *10.13* | *22.69* | *39.90* | ***6.71*** | *3.12* | *36.78* | ***6.19*** | *7.00* |
| | *Clipped Basin* | *855.20* | 5208-00-1-L1 | *858.7* | *27.82* | *49.76* | *68.65* | *146.23* | ***17.10*** | *22.28* | *123.95* | ***14.49*** | *27.48* |
| | | **305.5** | 5208-01-1 | 305.5 | 10.23 | 21.27 | 27.53 | 59.04 | **19.33** | 12.85 | 46.19 | **15.12** | 8.42 |
| | | **26.0** | 5208-00-1 | 26.0 | 0.92 | 1.59 | 1.19 | 3.70 | **14.23** | 0.00 | 3.70 | **14.23** | 1.59 |
| | | **54.7** | 5208-00-2-R1 | 54.7 | 1.85 | 2.48 | 3.64 | 7.98 | **14.59** | 0.00 | 7.98 | **14.59** | 2.48 |
| | *Clipped Basin* | *22.43* | 5208-00-3-R5 | *198.4* | *0.00* | *0.00* | *0.15* | *0.15* | ***0.67*** | *0.00* | *0.15* | ***0.67*** | *0.00* |
| | *Clipped Basin* | *8.69* | 5208-09-1 | *536.0* | *0.05* | *0.00* | *0.10* | *0.15* | ***1.73*** | *0.00* | *0.15* | ***1.73*** | *0.00* |
| | *Clipped Basin* | *0.91* | 5208-00-3-R4 | *28.1* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** | *0.00* | *0.00* | ***0.00*** | *0.00* |
| *4,652.0* | **5207** | **4,654.02** | **Wharton Brook** | | | | | | | | | | |
| *Check* | *Clipped Basin* | *658.6* | *5207-02-1-L1* | *822.4* | *27.10* | *48.18* | *35.99* | *159.68* | ***24.25*** | *23.63* | *136.05* | ***20.66*** | *24.55* |
| | *Clipped Basin* | *91.4* | *5207-00-2-R2* | *161.2* | *11.87* | *2.37* | *18.24* | *36.35* | ***39.77*** | *1.04* | *35.31* | ***38.63*** | *1.33* |
| | *Clipped Basin* | *1.4* | *5207-02-1* | *2.4* | *0.02* | *0.00* | *0.19* | *0.28* | ***20.00*** | *0.00* | *0.28* | ***20.00*** | *0.00* |
| | *Clipped Basin* | *480.0* | *5207-00-1-L1* | *488.1* | *12.53* | *11.72* | *22.59* | *49.17* | ***10.24*** | *2.69* | *46.48* | ***9.68*** | *9.03* |
| | | **1,397.1** | 5207-00-1-L2 | 1,397.1 | 59.98 | 65.49 | 84.74 | 210.21 | **15.05** | 3.80 | 206.41 | **14.77** | 61.69 |
| | | **736.5** | 5207-00-1 | 736.5 | 63.14 | 44.99 | 91.85 | 199.98 | **27.15** | 2.48 | 197.50 | **26.82** | 42.51 |
| | | **906.2** | 5207-01-1 | 906.2 | 48.35 | 55.97 | 70.60 | 174.92 | **19.30** | 17.64 | 157.28 | **17.36** | 38.33 |
| | | **380.8** | 5207-00-2-R1 | 380.8 | 29.14 | 27.71 | 51.25 | 108.09 | **28.38** | 7.79 | 100.30 | **26.34** | 19.92 |
| *1,149.7* | **5302** | **1,149.37** | **Mill River** | | | | | | | | | | |
| *Check* | *Clipped Basin* | *681.93* | 5302-02-1 | 1,077.6 | 16.26 | 19.29 | 28.84 | 64.39 | ***9.44*** | *0.00* | *64.39* | ***9.44*** | 19.29 |
| | *Clipped Basin* | *467.77* | 5302-04-1-L1 | 1,521.3 | 12.65 | 15.92 | 19.44 | 48.01 | ***10.26*** | *0.00* | *48.01* | ***10.26*** | 15.92 |
| *03/11/20* | *Last Revised Date* | | | | | | | | | | | | |

# CT DEEP MS4 General Permit

## Drainage Basin Area, Drainage Sub-Basin Area and Impervious Area (IA) Tabulations and Directly Connected Impervious Area (DCIA) Computations

## Wallingford - GSM000050

| CT DEEP Drainage Sub-Basin No. | Town Basin Area Acres | CT DEEP Drainage Sub-Basin No. | Total Imp. Area Ac. | Town Imp. Area % | High Connectivity DCIA% = 0.4*(IA%)^1.2 Imp. Ac. | High Connectivity DCIA% = 0.4*(IA%)^1.2 DCIA % | High Connectivity DCIA% = 0.4*(IA%)^1.2 DCIA Ac. | Average Connectivity DCIA% = 0.1*(IA%)^1.5 Imp. Ac. | Average Connectivity DCIA% = 0.1*(IA%)^1.5 DCIA % | Average Connectivity DCIA% = 0.1*(IA%)^1.5 DCIA Ac. | Partial Connectivity DCIA% = 0.04*(IA%)^1.7 Imp. Ac. | Partial Connectivity DCIA% = 0.04*(IA%)^1.7 DCIA % | Partial Connectivity DCIA% = 0.04*(IA%)^1.7 DCIA Ac. | Slight Connectivity DCIA% = 0.01*(IA%)^2.0 Imp. Ac. | Slight Connectivity DCIA% = 0.01*(IA%)^2.0 DCIA % | Slight Connectivity DCIA% = 0.01*(IA%)^2.0 DCIA Ac. | DCIA Ac. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Muddy River (Continued)** | | | | | | | | | | | | | | | |
| | **891.4** | 5208-00-3-L2 | 47.21 | **5.30** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 47.21 | 0.68 | 0.32 | 0.00 | 0.00 | 0.00 | **0.32** |
| | **1.4** | 5208-05-1 | 0.32 | **22.86** | 0.32 | 17.10 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.05** |
| | **12.4** | 5208-00-3-R1 | 0.89 | **7.18** | 0.00 | 0.00 | 0.00 | 0.45 | 1.92 | 0.01 | 0.45 | 1.14 | 0.01 | 0.00 | 0.00 | 0.00 | **0.01** |
| | **479.6** | 5208-04-1 | 20.43 | **4.26** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 20.43 | 0.47 | 0.10 | 0.00 | 0.00 | 0.00 | **0.10** |
| | *660.5* | 5208-02-1-L1 | *15.25* | ***2.31*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *15.25* | *0.17* | *0.03* | *0.00* | *0.00* | *0.00* | ***0.03*** |
| | *481.1* | 5208-02-1 | *8.67* | ***1.80*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *8.67* | *0.11* | *0.01* | *0.00* | *0.00* | *0.00* | ***0.01*** |
| | **592.0** | 5208-02-2-R1 | 41.49 | **7.01** | 0.00 | 0.00 | 0.00 | 20.75 | 1.86 | 0.38 | 20.75 | 1.10 | 0.23 | 0.00 | 0.00 | 0.00 | **0.61** |
| | *594.2* | 5208-03-1 | *36.78* | ***6.19*** | *0.00* | *0.00* | *0.00* | *18.39* | *1.54* | *0.28* | *18.39* | *0.89* | *0.16* | *0.00* | *0.00* | *0.00* | ***0.45*** |
| | *855.2* | 5208-00-1-L1 | *123.95* | ***14.49*** | *61.98* | *9.90* | *6.13* | *61.98* | *5.52* | *3.42* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***9.55*** |
| | **305.5** | 5208-01-1 | 46.19 | **15.12** | 23.10 | 10.41 | 2.40 | 23.10 | 5.88 | 1.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **3.76** |
| | **26.0** | 5208-00-1 | 3.70 | **14.23** | 1.85 | 9.68 | 0.18 | 1.85 | 5.37 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.28** |
| | **54.7** | 5208-00-2-R1 | 7.98 | **14.59** | 3.99 | 9.97 | 0.40 | 3.99 | 5.57 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.62** |
| | *22.4* | 5208-00-3-R5 | *0.15* | ***0.67*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.15* | *0.02* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** |
| | *8.7* | 5208-09-1 | *0.15* | ***1.73*** | *0.08* | *0.77* | *0.00* | *0.00* | *0.00* | *0.00* | *0.15* | *0.10* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** |
| | *0.9* | 5208-00-3-R4 | *0.00* | ***0.00*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** |
| **5207** | 4,654.02 | **Wharton Brook** | | | | | | | | | | | | | | | |
| | *658.6* | 5207-02-1-L1 | *136.05* | ***20.66*** | *136.05* | *15.14* | *20.60* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***20.60*** |
| | *91.4* | 5207-00-2-R2 | *35.31* | ***38.63*** | *35.31* | *32.09* | *11.33* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***11.33*** |
| | *1.4* | 5207-02-1 | *0.28* | ***20.00*** | *0.28* | *14.56* | *0.04* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.04*** |
| | *480.0* | 5207-00-1-L1 | *46.48* | ***9.68*** | *0.00* | *0.00* | *0.00* | *23.24* | *3.01* | *0.70* | *23.24* | *1.90* | *0.44* | *0.00* | *0.00* | *0.00* | ***1.14*** |
| | **1,397.1** | 5207-00-1-L2 | 206.41 | **14.77** | 103.21 | 10.13 | 10.45 | 103.21 | 5.68 | 5.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **16.31** |
| | **736.5** | 5207-00-1 | 197.50 | **26.82** | 197.50 | 20.71 | 40.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **40.90** |
| | **906.2** | 5207-01-1 | 157.28 | **17.36** | 78.64 | 12.29 | 9.66 | 78.64 | 7.23 | 5.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **15.35** |
| | **380.8** | 5207-00-2-R1 | 100.30 | **26.34** | 100.30 | 20.27 | 20.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **20.33** |
| **5302** | 1,149.37 | **Mill River** | | | | | | | | | | | | | | | |
| | *681.9* | 5302-02-1 | 64.39 | **9.44** | 0.00 | 0.00 | 0.00 | 32.20 | 2.90 | 0.93 | 32.20 | 1.82 | 0.59 | 0.00 | 0.00 | 0.00 | **1.52** |
| | *467.8* | 5302-04-1-L1 | 48.01 | **10.26** | 0.00 | 0.00 | 0.00 | 24.01 | 3.29 | 0.79 | 24.01 | 2.10 | 0.50 | 0.00 | 0.00 | 0.00 | **1.29** |
| *03/11/20* | *Last Revised Date* | | | | | | | | | | | | | | | | |

## CT DEEP MS4 General Permit

### Drainage Basin Area, Drainage Sub-Basin Area and Impervious Area (IA) Tabulations and Directly Connected Impervious Area (DCIA) Computations

### Wallingford - GSM000050

| Town Area Acres | CT DEEP Regional Drainage Basin No. | Town Basin Area Acres | CT DEEP Drainage Sub-Basin No. | Total Basin Area Ac. | Impervious Area (Ac) Buildings | Roads | Other | Total | % | CT ECO State Road Imp. Area Ac. | Town Imp. Area Ac. | Town Imp. Area % | CT ECO Town Road Imp. Area Ac. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *1,048.6* | **5112** | **1048.83** | **Farm River** | | | | | | | | | | |
| *Check* | *Clipped Basin* | *159.69* | 5112-02-1-L1 | *344.90* | *0.50* | *1.63* | *1.12* | *3.24* | ***2.03*** | *0.00* | *3.24* | ***2.03*** | *1.63* |
| | | **138.8** | 5112-02-1-D1 | 138.8 | 1.87 | 3.01 | 3.03 | 7.91 | **5.70** | 0.00 | 7.91 | **5.70** | 3.01 |
| | *Clipped Basin* | *154.51* | 5112-02-1 | 376.5 | 1.31 | 2.36 | 2.94 | 6.61 | ***4.28*** | *0.00* | *6.61* | ***4.28*** | 2.36 |
| | *Clipped Basin* | *515.63* | 5112-03-1 | 619.4 | 3.59 | 4.00 | 8.33 | 15.92 | ***3.09*** | *0.00* | *15.92* | ***3.09*** | 4.00 |
| | *Clipped Basin* | *79.95* | 5112-00-2-L1 | 455.1 | 2.07 | 2.06 | 3.81 | 7.94 | ***9.93*** | *0.00* | *7.94* | ***9.93*** | 2.06 |
| *592.1* | **5204** | **591.47** | **Broad Brook** | | | | | | | | | | |
| *Check* | *Clipped Basin* | *337.32* | 5204-00-2-L1 | *1,884.7* | *8.4* | *10.75* | *13.01* | *32.16* | ***9.53*** | *3.00* | *29.16* | ***8.64*** | *7.75* |
| | *Clipped Basin* | *226.1* | 5204-02-1 | *289.2* | *3.37* | *5.71* | *6.58* | *15.66* | ***6.93*** | *0.00* | *15.66* | ***6.93*** | *5.71* |
| | *Clipped Basin* | *28.63* | 5204-01-1 | *268.5* | *1.55* | *1.93* | *0.88* | *4.37* | ***15.26*** | *0.00* | *4.37* | ***15.26*** | 1.93 |
| *196.0* | **5206** | **195.91** | **Harbor Brook** | | | | | | | | | | |
| *Check* | *Clipped Basin* | *193.40* | 5206-02-1-L1 | *681.40* | *18.56* | *12.20* | *24.65* | *55.41* | ***28.65*** | *6.15* | *49.26* | ***25.47*** | *6.04* |
| | *Clipped Basin* | *2.60* | 5206-01-1-L1 | *65.30* | *0.00* | *0.00* | *0.08* | *0.08* | ***3.08*** | *0.00* | *0.08* | ***3.08*** | *0.00* |
| *194.3* | **4606** | **194.28** | **Sawmill Brook** | | | | | | | | | | |
| *Check* | *Clipped Basin* | *156.03* | 4606-02-1 | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** | *0.00* | *0.00* | ***0.00*** | *0.00* |
| | *Clipped Basin* | *0.96* | 4606-01-1 | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** | *0.00* | *0.00* | ***0.00*** | *0.00* |
| | *Clipped Basin* | *37.29* | 4606-00-1 | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** | *0.00* | *0.00* | ***0.00*** | *0.00* |
| *5.5* | **4607** | **5.53** | **Coginchaug River** | | | | | | | | | | |
| *Check* | *Clipped Basin* | *5.53* | 4607-10-1-L1 | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** | *0.00* | *0.00* | ***0.00*** | *0.00* |
| *03/11/20* | *Last Revised Date* | | | | | | | | | | | | |

# CT DEEP MS4 General Permit

## Drainage Basin Area, Drainage Sub-Basin Area and Impervious Area (IA) Tabulations and Directly Connected Impervious Area (DCIA) Computations

## Wallingford - GSM000050

| CT DEEP Drainage Sub-Basin No. | Town Basin Area Acres | CT DEEP Drainage Sub-Basin No. | Total Imp. Area Ac. | Town Imp. Area % | High Connectivity DCIA% = 0.4*(IA%)^1.2 Imp. Ac. | High Connectivity DCIA% = 0.4*(IA%)^1.2 DCIA % | High Connectivity DCIA% = 0.4*(IA%)^1.2 DCIA Ac. | Average Connectivity DCIA% = 0.1*(IA%)^1.5 Imp. Ac. | Average Connectivity DCIA% = 0.1*(IA%)^1.5 DCIA % | Average Connectivity DCIA% = 0.1*(IA%)^1.5 DCIA Ac. | Partial Connectivity DCIA% = 0.04*(IA%)^1.7 Imp. Ac. | Partial Connectivity DCIA% = 0.04*(IA%)^1.7 DCIA % | Partial Connectivity DCIA% = 0.04*(IA%)^1.7 DCIA Ac. | Slight Connectivity DCIA% = 0.01*(IA%)^2.0 Imp. Ac. | Slight Connectivity DCIA% = 0.01*(IA%)^2.0 DCIA % | Slight Connectivity DCIA% = 0.01*(IA%)^2.0 DCIA Ac. | DCIA Ac. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **5112** | 1048.83 | **Farm River** | | | | | | | | | | | | | | | |
| | *159.7* | 5112-02-1-L1 | *3.24* | ***2.03*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *3.24* | *0.13* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** |
| | **138.8** | 5112-02-1-D1 | 7.91 | **5.70** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.91 | 0.77 | 0.06 | 0.00 | 0.00 | 0.00 | **0.06** |
| | *154.5* | 5112-02-1 | *6.61* | ***4.28*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *3.31* | *0.47* | *0.02* | *0.00* | *0.00* | *0.00* | ***0.02*** |
| | *515.6* | 5112-03-1 | *15.92* | ***3.09*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *15.92* | *0.27* | *0.04* | *0.00* | *0.00* | *0.00* | ***0.04*** |
| | *80.0* | 5112-00-2-L1 | *7.94* | ***9.93*** | *0.00* | *0.00* | *0.00* | *3.97* | *3.13* | *0.12* | *3.97* | *1.98* | *0.08* | *0.00* | *0.00* | *0.00* | ***0.20*** |
| **5204** | 591.47 | **Broad Brook** | | | | | | | | | | | | | | | |
| | *337.3* | 5204-00-2-L1 | *29.16* | ***8.64*** | *0.00* | *0.00* | *0.00* | *14.58* | *2.54* | *0.37* | *14.58* | *1.57* | *0.23* | *0.00* | *0.00* | *0.00* | ***0.60*** |
| | *226.1* | 5204-02-1 | *15.66* | ***6.93*** | *0.00* | *0.00* | *0.00* | *7.83* | *1.82* | *0.14* | *7.83* | *1.07* | *0.08* | *0.00* | *0.00* | *0.00* | ***0.23*** |
| | *28.6* | 5204-01-1 | *4.37* | ***15.26*** | *2.19* | *10.53* | *0.23* | *2.19* | *5.96* | *0.13* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.36*** |
| **5206** | 195.91 | **Harbor Brook** | | | | | | | | | | | | | | | |
| | *193.4* | 5206-02-1-L1 | *49.26* | ***25.47*** | *49.26* | *19.47* | *9.59* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***9.59*** |
| | *2.6* | 5206-01-1-L1 | *0.08* | ***3.08*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.08* | *0.27* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** |
| **4606** | 194.28 | **Sawmill Brook** | | | | | | | | | | | | | | | |
| | *156.0* | 4606-02-1 | *0.00* | ***0.00*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** |
| | *1.0* | 4606-01-1 | *0.00* | ***0.00*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** |
| | *37.3* | 4606-00-1 | *0.00* | ***0.00*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** |
| **4607** | 5.53 | **Coginchaug River** | | | | | | | | | | | | | | | |
| | 5.5 | 4607-10-1-L1 | *0.00* | ***0.00*** | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | ***0.00*** |
| | | | | | | | | | | | | | | | | **Total DCIA (Ac.) =** | **573.76** |
| *03/11/20* | *Last Revised Date* | | | | | | | | | | | | | | | *NLJA No. 1191-0001* | |

# APPENDIX V
# IMPERVIOUS COVER TRACKING SPREADSHEET

# Impervious Cover Tracking Spreadsheet

Town: **Wallingford**
Town area (ac): **25,821.30** *Based off of 2020 DCIA Calculations

| PROJECT INFORMATION | | | | NEW DEVELOPMENT | | REDEVELOPMENT | | RETROFITS | CHANGE | | | CUMULATIVE TOTALS | | | | NOTES & REFERENCES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| Date | Practice # | Project | Practice | Total IC added (ac) | Connected IC added (ac) | Total IC added or subtracted (ac) | Connected IC added or subtracted (ac) | IC disconnected (ac) | Change in Total IC (ac) | Change in Connected IC (ac) | Net change (ac) | TOWN TOTAL IC (ac) | TOWN TOTAL IC (%) | TOWN CONNECTED IC (ac) | TOWN CONNECTED IC (%) | Notes & References |
| **Townwide BASELINE** | | | | | | | | | | | | **4068.29** | **15.76%** | | **0.00%** | |
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|---|---|---|
| **NET** | **0.0** | **acres disconnected** |
| **%** | #DIV/0! | **% disconnected** |


*NEMO Project*
*Center for Land Use Education and Research (CLEAR)*
*University of Connecticut*
*clear@uconn.edu*


**OVERALL NOTES**

1 *This is just our take on it. Feel free to change and tailor as you see fit.*
2 Area unit used is acres but could be anything

**COLUMNS**

1 date of completion
2 any identifying system will do
3 overall description of project
4 overview of LID practices used
5 for new development, total acres of IC added
6 acres of #5 above that are connected
7 for redevelopment projects: total ic after project minus total ic before project
8 for redevelopment projects: connected ic after project minus connected ic before project
9 for retrofits of exisiting development, total acres IC disconnected (from plans and observation)
10 change in total IC after project completion
11 change in connected IC after project completion
12 cumulative total of IC in town, acres
13 cumulative total of IC in town, %
14 cumulative total of connected IC in town, acres
15 cumulative total of connected IC in town, %
16 notes, referrals to other files, plans, photos, folders, etc.

# APPENDIX VI
# CATCHMENT RANKINGS

# Town of Wallingford MS4 General Permit

***Catchment Assessment and Priority Ranking***

| Catchment ID | Outfalls Included | Receiving Water(s) | Previous Screening Results Indicate Likely Sewer Input? [1] | Discharging to Area of Concern to Public Health? [2] | Frequency of Past Discharge Complaints | Receiving Water Quality [3] | Density of Generating Sites [4] | Age of Development/ Infrastructure [5] | Historic Combined Sewers or Septic? [6] | Aging Septic? [7] | Culverted Streams? [8] | Additional Characteristics | Sewer Repair Nearby? | Urbanized Area | DCIA >11% | Impaired Waterbody | Score | Priority Ranking<br>0-5: Low Priority<br>6-9: Problem<br>≥: 10 high Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Information Source | | | Catchment inspections and sample results | GIS Maps | Municipal Staff | Impaired Waters List | Land Use/GIS Maps, Aerial Photography | Land Use Information, Visual Observation | Municipal Staff, GIS Maps | Land Use, Municipal Staff | GIS and Storm System Maps | Other | Municipal Staff, GIS Maps | CLEAR | Nathan L Jacobson & Associates | CLEAR | | |
| Scoring Criteria | | | Yes = 3 (Problem Catchment)<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 | Description | Yes=2<br>No=0 | Yes =1<br>No = 0 | Yes =1<br>No = 0 | Yes =1<br>No = 0 | | |
| **4606-00-1** | 0 | None | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 0 | 0 | 0 | 2 | Low Priority |
| **4606-01-1** | 0 | None | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 0 | 0 | 0 | 2 | Low Priority |
| **4606-02-1** | 0 | Unnamed Stream | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 0 | 0 | 0 | 2 | Low Priority |
| **4607-10-1-L1** | 0 | None | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 0 | 0 | 0 | 2 | Low Priority |
| **5112-00-2-L1** | 2 | Unnamed Stream | | 0 | | 0 | 1 | 2 | 0 | | 3 | Wooded, some residential housing, light agricultural land | | 1 | 0 | 0 | 7 | Problem |
| **5112-02-1** | 4 | Unnamed Stream | | 0 | | 0 | 1 | 2 | 0 | | 3 | Wooded, cleared land, light residential housing | | 0 | 0 | 0 | 6 | Problem |
| **5112-02-1-D1** | 0 | None | | 0 | | 0 | 1 | 2 | 0 | | 0 | Wooded, agricultural land | | 0 | 0 | 0 | 3 | Low Priority |
| **5112-02-1-L1** | 0 | Unnamed Stream | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded and Pitsapaug Pond | | 0 | 0 | 0 | 2 | Low Priority |
| **5112-03-1** | 1 | Unnamed Stream | | 0 | | 0 | 1 | 2 | 0 | | 3 | Wooded, cleared land, some agricultural land and residential housing | | 0 | 0 | 0 | 6 | Problem |
| **5200-00-4-L3** | 49 | Quinnipiac River, Community Lake | | 0 | | 3 | 3 | 2 | 0 | | 0 | Wooded, some commercial and residential housing | | 1 | 1 | 1 | 11 | High Priority |
| **5200-00-4-R10** | 45 | Quinnipiac River | | 0 | | 2 | 3 | 2 | 0 | | 3 | Commercial development, some residential housing and wooded areas | | 1 | 1 | 1 | 13 | High Priority |
| **5200-00-4-R11** | 20 | Quinnipiac River | | 0 | | 2 | 2 | 2 | 0 | | 0 | Wooded and commercial, some residential housing | | 1 | 1 | 1 | 9 | Problem |
| **5200-00-4-R12** | 27 | Quinnipiac River | | 0 | | 2 | 2 | 1 | 0 | | 3 | Wooded, some agricultural land and commercial, light residential | | 1 | 1 | 1 | 11 | High Priority |

# Town of Wallingford MS4 General Permit

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Information Source | | | Catchment inspections and sample results | GIS Maps | Municipal Staff | Impaired Waters List | Land Use/GIS Maps, Aerial Photography | Land Use Information, Visual Observation | Municipal Staff, GIS Maps | Land Use, Municipal Staff | GIS and Storm System Maps | Other | Municipal Staff, GIS Maps | CLEAR | Nathan L Jacobson & Associates | CLEAR | | |
| Scoring Criteria | | | Yes = 3 (Problem Catchment)<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 | Description | Yes=2<br>No=0 | Yes =1<br>No = 0 | Yes =1<br>No = 0 | Yes =1<br>No = 0 | | |
| **5200-00-4-R7** | 84 | Quinnipiac River | | 3 | | 2 | 2 | 2 | 0 | | 3 | Commercial, some residential housing, light wooded areas | | 1 | 1 | 1 | 15 | High Priority |
| **5200-00-4-R8** | 81 | Quinnipiac River | | 3 | | 2 | 3 | 2 | 0 | | 0 | Commercial and residential housing, light wooded areas | | 1 | 1 | 1 | 13 | High Priority |
| **5200-10-1** | 14 | Meetinghouse Brook | | 3 | | 0 | 2 | 1 | 0 | | 3 | Residential housing, some commercial and wooded areas | | 1 | 1 | 0 | 11 | High Priority |
| **5200-10-2-R1** | 69 | Meetinghouse Brook | | 3 | | 0 | 3 | 2 | 0 | | 3 | Commercial, light residential housing and wooded, highway | | 1 | 1 | 0 | 13 | High Priority |
| **5200-11-1** | 15 | Spruce Glen Brook | | 3 | | 0 | 2 | 2 | 0 | | 3 | Residential housing, some wooded, light agricultural land, highway | | 1 | 0 | 0 | 11 | High Priority |
| **5200-12-1** | 2 | Unnamed Stream | | 3 | | 0 | 2 | 2 | 0 | | 3 | Commercial, some wooded | | 1 | 1 | 0 | 12 | High Priority |
| **5200-12-1-L1** | 49 | Unnamed Stream | | 3 | | 0 | 2 | 2 | 0 | | 3 | Wooded, some residential housing, light commercial and athletic fields | | 1 | 1 | 0 | 12 | High Priority |
| **5200-13-1** | 62 | Padens Brook | | 3 | | 2 | 3 | 2 | 0 | | 3 | Commercial, some residential housing, light wooded and agricultural land | | 1 | 1 | 1 | 16 | High Priority |
| **5200-14-1** | 38 | Unnamed Pond | | 0 | | 0 | 1 | 1 | 0 | | 0 | Pond, light wooded and residential | | 1 | 1 | 0 | 4 | Low Priority |
| **5200-14-1-L1** | 3 | Unnamed Stream | | 0 | | 0 | 2 | 2 | 0 | | 3 | Some wooded and residential housing | | 1 | 1 | 0 | 9 | Problem |
| **5200-15-1** | 34 | Unnamed Streams, Peanuts Pond, Farms Pond, Fergusons Pond | | 0 | | 0 | 3 | 2 | 0 | | 3 | Residential housing, some agricultural land, light wooded | | 1 | 0 | 0 | 9 | Problem |
| **5200-16-1** | 0 | None | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 0 | 0 | 0 | 2 | Low Priority |
| **5200-17-1** | 0 | None | | 0 | | 0 | 1 | 2 | 0 | | 0 | Light residential housing | | 1 | 0 | 0 | 4 | Low Priority |
| **5200-19-1-L1** | 0 | None | | 0 | | 0 | 1 | 2 | 0 | | 0 | Light residential housing | | 1 | 1 | 0 | 5 | Low Priority |
| **5204-00-2-L1** | 10 | Broad Brook | | 0 | | 0 | 2 | 2 | 0 | | 0 | Wooded, some residential housing | | 1 | 0 | 0 | 5 | Low Priority |
| **5204-01-1** | 0 | Broad Brook | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 1 | 0 | 0 | 3 | Low Priority |
| **5204-02-1** | 4 | Broad Brook | | 0 | | 0 | 2 | 2 | 0 | | 0 | Wooded, some residential housing | | 1 | 0 | 0 | 5 | Low Priority |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Information Source | | | Catchment inspections and sample results | GIS Maps | Municipal Staff | Impaired Waters List | Land Use/GIS Maps, Aerial Photography | Land Use Information, Visual Observation | Municipal Staff, GIS Maps | Land Use, Municipal Staff | GIS and Storm System Maps | Other | Municipal Staff, GIS Maps | CLEAR | Nathan L Jacobson & Associates | CLEAR | | |
| Scoring Criteria | | | Yes = 3 (Problem Catchment)<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 | Description | Yes=2<br>No=0 | Yes =1<br>No = 0 | Yes =1<br>No = 0 | Yes =1<br>No = 0 | | |
| **5206-01-1-L1** | 0 | High Hill Pond | | 0 | | 0 | 1 | 2 | 0 | | 0 | Wooded area with a small cleared portion for overhead electrical lines. | | 1 | 0 | 0 | 4 | Low Priority |
| **5206-02-1-L1** | 6 | North Farms Reservoir into Wharton Brook | | 0 | | 2 | 3 | 2 | 0 | | 0 | Developed with commercial or industrial sites. High impermeable areas. Lightly wooded areas | | 1 | 1 | 1 | 10 | High Priority |
| **5207-00-1** | 44 | Wharton Brook | | 0 | | 2 | 3 | 2 | 0 | | 3 | Residential houisng, some cleared land | | 1 | 1 | 1 | 13 | High Priority |
| **5207-00-1-L1** | 17 | North Farms Reservoir | | 0 | | 0 | 1 | 2 | 0 | | 0 | Some commercial, wooded, agricultural land, light residential | | 1 | 0 | 0 | 4 | Low Priority |
| **5207-00-1-L2** | 66 | Wharton Brook, Catlin Brook | | 0 | | 2 | 3 | 2 | 0 | | 3 | Residential housing, some wooded and agricultural land | | 1 | 0 | 1 | 12 | High Priority |
| **5207-00-2-R1** | 11 | Wharton Brook | | 0 | | 2 | 3 | 2 | 0 | | 3 | Residential housing, some commecial, light wooded | | 1 | 1 | 1 | 13 | High Priority |
| **5207-00-2-R2** | 9 | Wharton Brook | | 0 | | 2 | 2 | 2 | 0 | | 3 | Commercial, light wooded | | 1 | 1 | 1 | 12 | High Priority |
| **5207-01-1** | 46 | Unnamed Stream | | 0 | | 2 | 3 | 2 | 0 | | 3 | Residential houisng, commercial, golf course | | 1 | 1 | 1 | 13 | High Priority |
| **5207-02-1** | **0** | Unnamed Stream | | 0 | | 2 | 1 | 1 | 0 | | 0 | Wooded | | 1 | 0 | 1 | 6 | Problem |
| **5207-02-1-L1** | 47 | Allen Brook | | 0 | | 2 | 3 | 2 | 0 | | 3 | Commercial and residential housing, highway, golf course | | 1 | 1 | 1 | 13 | High Priority |
| **5208-00-1** | 1 | Unnamed Stream | | 0 | | 0 | 1 | 2 | 0 | | 3 | Wooded, light residential housing | | 1 | 0 | 0 | 7 | Problem |
| **5208-00-1-L1** | 74 | Muddy River | | 0 | | 2 | 2 | 1 | 0 | | 3 | Wooded and commercial, light residential housing | | 1 | 0 | 1 | 10 | Problem |
| **5208-00-2-R1** | 5 | Unnamed Stream | | 0 | | 0 | 1 | 2 | 0 | | 3 | Wooded and residential hoiusing | | 1 | 0 | 0 | 7 | Problem |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Information Source | | | Catchment inspections and sample results | GIS Maps | Municipal Staff | Impaired Waters List | Land Use/GIS Maps, Aerial Photography | Land Use Information, Visual Observation | Municipal Staff, GIS Maps | Land Use, Municipal Staff | GIS and Storm System Maps | Other | Municipal Staff, GIS Maps | CLEAR | Nathan L Jacobson & Associates | CLEAR | | |
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| **5208-00-3-L2** | 11 | Mackenzie Reservoir,Unnamed Stream | | 0 | | 0 | 2 | 2 | 0 | | 0 | Agricultural land, some wooded and residential houisng | | 1 | 0 | 0 | 5 | Low Priority |
| **5208-00-3-L3** | 11 | Muddy River | | 0 | | 2 | 1 | 2 | 0 | | 3 | Wooded, light residential housing and cleared land | | 1 | 0 | 1 | 10 | High Priority |
| **5208-00-3-R1** | 0 | Muddy River | | 0 | | 2 | 1 | 2 | 0 | | 3 | Wooded, light residential housing | | 0 | 0 | 1 | 9 | Problem |
| **5208-00-3-R2** | 3 | Muddy River | | 0 | | 2 | 2 | 2 | 0 | | 3 | Wooded and agricultural land, some residential housing | | 0 | 0 | 1 | 10 | High Priority |
| **5208-00-3-R3** | 3 | Muddy River | | 0 | | 2 | 1 | 2 | 0 | | 3 | Wooded and some residential houisng | | 1 | 0 | 1 | 10 | High Priority |
| **5208-00-3-R4** | 0 | Muddy River | | 0 | | 2 | 1 | 1 | 0 | | 0 | Wooded | | 1 | 0 | 1 | 6 | Problem |
| **5208-00-3-R5** | 0 | Muddy River | | 0 | | 2 | 1 | 1 | 0 | | 0 | Wooded and cleared land | | 1 | 0 | 1 | 6 | Problem |
| **5208-01-1** | 8 | Unnamed Stream | | 0 | | 0 | 2 | 2 | 0 | | 3 | Commercial and wooded, some residential housing, highway | | 1 | 0 | 0 | 8 | Problem |
| **5208-02-1** | 4 | Spring Brook | | 0 | | 0 | 1 | 2 | 0 | | 0 | Wooded, some commercial, light residential housing and agricultural land | | 0 | 0 | 0 | 3 | Low Priority |
| **5208-02-1-L1** | 1 | Ulbrich Reservoir, Spring Brook | | 0 | | 0 | 1 | 2 | 0 | | 3 | Reservoir, some wooded and agricultural land, light residential housing | | 0 | 0 | 0 | 6 | Problem |
| **5208-02-2-R1** | 10 | Spring Brook | | 0 | | 0 | 2 | 2 | 0 | | 3 | Residential housing and wooded | | 1 | 0 | 0 | 8 | Problem |
| **5208-03-1** | 11 | Unnamed Stream | | 0 | | 0 | 1 | 2 | 0 | | 3 | Wooded and residential housing, light commercial | | 1 | 0 | 0 | 7 | Problem |
| **5208-04-1** | 9 | Unnamed Stream | | 0 | | 0 | 1 | 1 | 0 | | 3 | Pond | | 0 | 0 | 0 | 5 | Low Priority |
| **5208-04-1-L1** | 0 | Scards Pond | | 0 | | 0 | 1 | 2 | 0 | | 0 | Wooded, agricultural land, light residential housing | | 0 | 0 | 0 | 3 | Low Priority |
| **5208-05-1** | 0 | Mackenzie Reservoir | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded, reservoir | | 0 | 1 | 0 | 3 | Low Priority |
| **5208-05-1-L1** | 25 | Unnamed Streams | | 0 | | 0 | 1 | 2 | 0 | | 0 | Wooded, some residential housing and agricultural land, highway | | 1 | 0 | 0 | 4 | Low Priority |

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| **5208-06-1** | 25 | Unnamed Stream | | 0 | | 0 | 2 | 2 | 0 | | 3 | Agricultural land, some residential, highway | | 1 | 0 | 0 | 8 | Problem |
| **5208-07-1** | 0 | Unnamed Stream | | 0 | | 0 | 1 | 1 | 0 | | 3 | Wooded | | 0 | 0 | 0 | 5 | Low Priority |
| **5208-08-1** | 23 | Pine River, Unnamed Streams | | 0 | | 0 | 2 | 2 | 0 | | 3 | Wooded with residential housing, light cleared land | | 1 | 0 | 0 | 8 | Problem |
| **5208-09-1** | 0 | None | | 0 | | 0 | 1 | 1 | 0 | | 0 | Wooded | | 1 | 0 | 0 | 3 | Low Priority |
| **5302-02-1** | 0 | Unnamed Stream | | 0 | | 0 | 2 | 2 | 0 | | 3 | Residential housing, some wooded areas and marsh, golf course | | 1 | 0 | 0 | 8 | Problem |
| **5302-04-1-L1** | 16 | Butterwoth Brook | | 3 | | 0 | 2 | 2 | 0 | | 3 | Wooded with residential housing | | 1 | 0 | 0 | 11 | High Priority |

**Scoring Criteria:**

[1] Previous screening results indicate likely sewer input if any of the following are true:

- Olfactory or visual evidence of sewage,
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine

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

[3] Receiving water quality based on latest version of State of Connecticut Integrated Water Quality Report.

- Poor = Waters with approved TMDLs (Category 4a Waters) where illicit discharges have the potential to contain the pollutant identified as the cause of the impairment
- Fair = Water quality limited waterbodies that receive a discharge from the MS4 (Category 5 Waters)
- Good = No water quality impairments

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

[5] Age of development and infrastructure:

- High = Industrial areas greater than 40 years old and areas where the sanitary sewer system is more than 40 years old
- Medium = Developments 20-40 years old
- Low = Developments less than 20 years old

[6] Areas once served by combined sewers and but have been separated, or areas once served by septic systems but have been converted to sanitary sewers.

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

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

[9] Based off of CT NEMO DCIA Calculations

Pending investigation