

**New Hampshire Small MS4 General  
Permit**

**Illicit Discharge Detection and  
Elimination (IDDE) Plan**

**Town of Durham, NH**

**Permit Year 3**

**July 1, 2020 through June 30, 2021**

EPA NPDES Permit Number NHR041006



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# 1 IDDE Program Implementation Timeline

*Table 1-1. IDDE Program Implementation Timeline*

IDDE Program Requirement	Completion Date from Effective Date of Permit					
	1 Year	1.5 Years	2 Years	3 Years	7 Years	10 Years
Written IDDE Program Plan	X					
SSO Inventory	X					
Initial Outfall Ranking	X					
Written Catchment Investigation Procedure		X				
Phase I Mapping			X			
Phase II Mapping						X
IDDE Regulatory Mechanism or By-law (if not already in place)				X		
Dry Weather Outfall Screening				X		
Follow-up Ranking of Outfalls and Interconnections				X		
Catchment Investigations – Problem Outfalls					X	
Catchment Investigations – all Problem, High and Low Priority Outfalls						X

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## **2 Authority and Statement of IDDE Responsibilities**

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### **2.1 Legal Authority**

The Town of Durham has adopted Municipal Code Chapter 158: Water with adequate legal authority to:

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

The Town of Durham will review its current ordinances and related land use regulations and policies for consistency with the 2017 MS4 Permit.

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### **2.2 Statement of Responsibilities**

The Public Works Department is the lead municipal agency or department responsible for implementing the IDDE program. Other agencies or departments with responsibility for aspects of the program include but are not limited to the Planning Department and the Code Enforcement Department.

## 3 Stormwater System Mapping

A copy of the existing storm system map is provided in **Appendix B**.

The MS4 Permit requires the storm system map to be updated in two phases as outlined below. The Public Works Department is responsible for updating the stormwater system mapping pursuant to the 2017 MS4 Permit. The Public Works Department will report on the progress towards completion of the storm system map in each annual report. Updates to the stormwater mapping will be included in **Appendix B**.

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### 3.1 Phase I Mapping

Phase I mapping must be completed within two (2) years of the effective date of the permit (July 1, 2020) and include the information per Part 2.3.4.5.a of the MS4 Permit.

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### 3.2 Phase II Mapping

Phase II mapping must be completed within ten (10) years of the effective date of the permit (July 1, 2028) and include the information per Part 2.3.4.5.b of the MS4 Permit.

## 4 Sanitary Sewer Overflows (SSOs)

The Town of Durham has no municipally owned sewer and therefore no Sanitary Sewer Overflows (SSOs).

## 5 Assessment and Priority Ranking of Outfalls

The MS4 Permit requires an assessment and priority ranking of outfalls in terms of their potential to have illicit discharges related public health significance. The ranking helps determine the priority order for performing IDDE investigations and meeting permit milestones.

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### 5.1 Outfall Catchment Delineations

The catchments for each of the MS4 outfalls will be delineated to define contributing areas for investigation of potential sources of illicit discharges.

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### 5.2 Outfall and Interconnection Inventory and Initial Ranking

The Town of Durham will complete an initial outfall and interconnection inventory and priority ranking to assess illicit discharge potential based on existing information. The initial inventory and ranking will be completed within one (1) year from the effective date of the permit. An updated inventory and ranking will be provided in each annual report thereafter. The inventory will be updated annually to include data collected in connection with dry weather screening and other relevant inspections.

Outfalls and interconnections will be classified into one of the following categories:

**1. Excluded outfalls:**

- Outfalls/interconnections that do not discharge to an impaired waterbody or are not listed in Part II Summary of Receiving Waters in the NOI.
- Outfalls/interconnections with no potential for illicit discharges including roadway drainage in undeveloped areas with no dwellings and no sanitary sewers; drainage for athletic fields, parks or undeveloped green space and associated parking without services; cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.

**2. Problem Outfalls:** Outfalls/interconnections with known or suspected contributions of illicit discharges based on existing information shall be designated as Problem Outfalls. This shall include any outfalls/interconnections where previous screening indicates likely sewer input. Likely sewer input indicators are any of the following:

- Olfactory or visual evidence of sewage,



- Ammonia  $\geq 0.5$  mg/L, surfactants  $\geq 0.25$  mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
- Ammonia  $\geq 0.5$  mg/L, surfactants  $\geq 0.25$  mg/L, and detectable levels of chlorine.

**High Priority Outfalls:** Outfalls/interconnections that have not been classified as Problem Outfalls and that are:

- Discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds
- Determined by the permittee as high priority based on the characteristics listed in **Appendix C**.

3. **Low Priority Outfalls:** Outfalls/interconnections determined by the permittee as low priority based on the characteristics listed below or other available information.

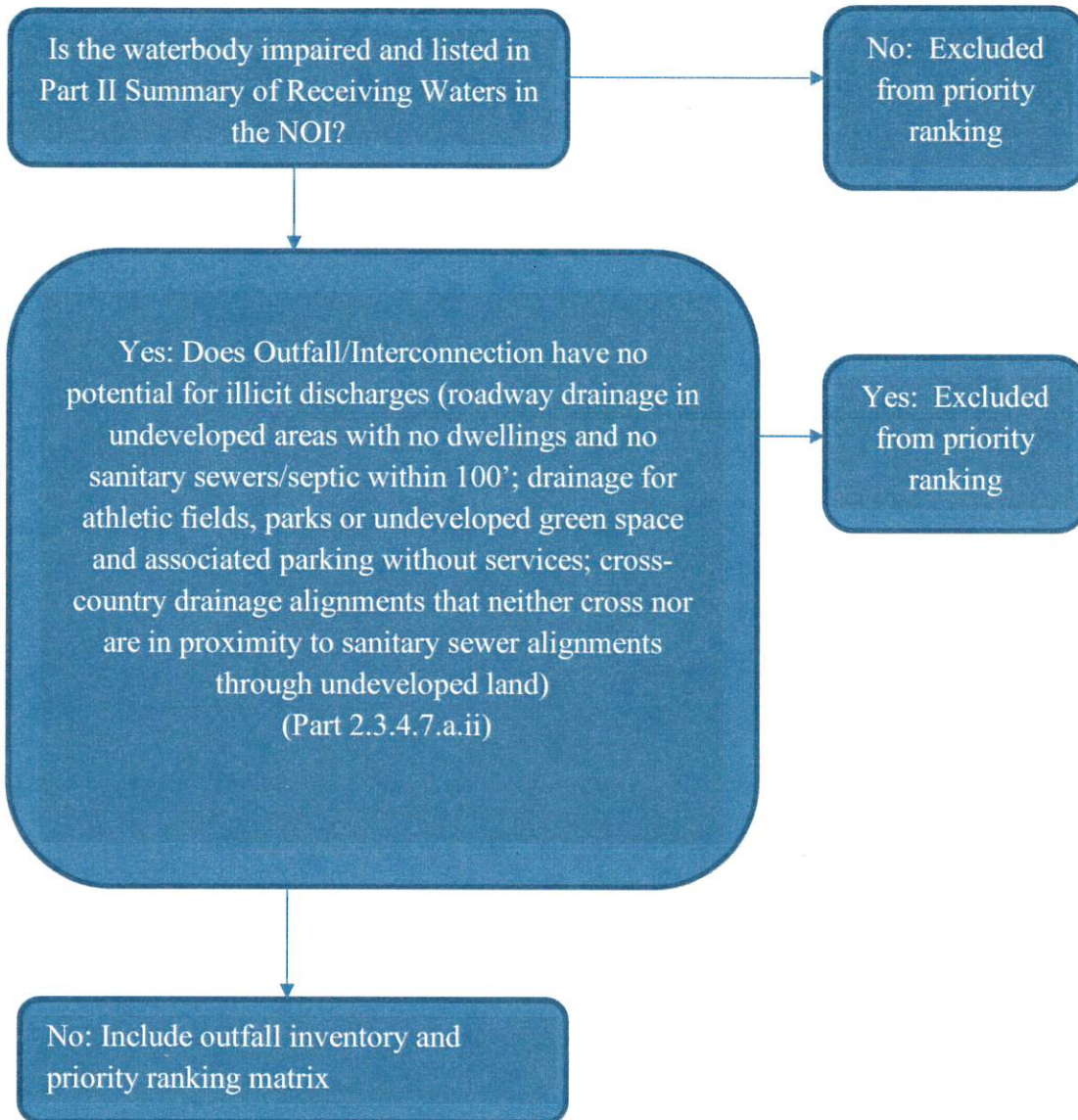
Outfalls will be ranked into the above priority categories (except for excluded outfalls, which may be excluded from the IDDE program) based on the following characteristics of the defined initial catchment areas, where information is available. To prioritize initial mapping and outfall assessment work the permittee is using location-specific characteristics of water body impairments to focus initial work as included in **Appendix B**. It is understood that not all currently excluded catchments will remain excluded throughout the 10 year assessment period, however for initial outfall ranking and catchment investigations this approach will target the worst areas first.

- **Previous screening results** – previous screening/sampling results indicate likely sewer input (see criteria above for Problem Outfalls).
- **Past discharge complaints and reports.**
- **Poor receiving water quality** – the following guidelines are recommended to identify waters as having a high illicit discharge potential:
  - Exceeding water quality standards for bacteria
  - Ammonia levels above 0.5 mg/l
  - Surfactants levels greater than or equal to 0.25 mg/l
- **Density of generating sites** – Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could contribute to illicit discharges. Examples of these sites include, but are not limited to, car dealers; car washes; gas stations; garden centers; and industrial manufacturing areas.
- **Age of development and infrastructure** – Industrial areas greater than 40 years old and areas where the sanitary sewer system is more than 40 years old will probably have a high

illicit discharge potential. Developments 20 years or younger will probably have a low illicit discharge potential.

- **Sewer conversion** – Contributing catchment areas that were once serviced by septic systems, but have been converted to sewer connections may have a high illicit discharge potential.
- **Historic combined sewer systems** – Contributing areas that were once serviced by a combined sewer system, but have been separated may have a high illicit discharge potential.
- **Surrounding density of aging septic systems** – Septic systems thirty years or older in residential land use areas are prone to have failures and may have a high illicit discharge potential.
- **Culverted streams** – Any river or stream that is culverted for distances greater than a simple roadway crossing may have a high illicit discharge potential.
- **Water quality limited waterbodies** that receive a discharge from the MS4 or waters with approved TMDLs applicable to the permittee, where illicit discharges have the potential to contain the pollutant identified as the cause of the water quality impairment.

The following is an initial outfall prioritization flowchart, see Appendix C for an outfall inventory and priority ranking matrix:



## **6 Dry Weather Outfall Screening and Sampling**

Dry weather flow is a common indicator of potential illicit connections. The MS4 Permit requires all outfalls/interconnections (excluding Problem and Excluded Outfalls) to be inspected for the presence of dry weather flow. The Public Works Department is responsible for conducting dry weather outfall screening, starting with High Priority outfalls, followed by Low Priority outfalls, based on the initial priority rankings described in the previous section by the end of Year 3.

Dry weather outfall Screening and Sampling shall be completed in accordance with Part 2.3.4.7.b of the MS4 Permit. Plans and procedures for such screening and sampling shall be incorporated into this plan.

## 7 Catchment Investigations

Once stormwater outfalls with evidence of illicit discharges have been identified, various methods can be used to trace the source of the potential discharge within the outfall catchment area. Catchment investigation techniques include but are not limited to review of maps, historic plans, and records; manhole observation; dry and wet weather sampling; video inspection; smoke testing; and dye testing.

Catchment Investigations shall be completed in accordance with Part 2.3.4.8 of the MS4 Permit. A written catchment investigation procedure shall be developed and incorporated into this plan within 18 months of the permit effective date. Investigations of catchments associated with Problem Outfalls shall begin no later than two (2) years from the permit effective date and shall be completed within seven (7) years.

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### 7.1 Illicit Discharge Removal

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

- The location of the discharge and its source(s)
- A description of the discharge
- The method of discovery
- Date of discovery
- Date of elimination, mitigation or enforcement action OR planned corrective measures and a schedule for completing the illicit discharge removal
- Estimate of the volume of flow removed.

## 8 Training

Annual IDDE training will be made available to employees involved in the IDDE program. This training will at a minimum include information on how to identify illicit discharges and SSOs and may also include additional training specific to the functions of particular personnel and their function within the framework of the IDDE program. Training records will be maintained in **Appendix F**. The frequency and type of training will be included in the annual report.

## 9 Progress Reporting

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

- Number of SSOs and illicit discharges identified and removed
- Number and percent of total outfall catchments served by the MS4 evaluated using the catchment investigation procedure
- Number of dry weather outfall inspections/screenings
- Number of wet weather outfall inspections/sampling events
- Estimate of the volume of sewage removed, as applicable
- Number of employees trained annually.

The success of the IDDE program will be measured by the IDDE activities completed within the required permit timelines.

## **Appendix A**

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Legal Authority (IDDE Bylaw or Ordinance)

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## Article 01: Administrative Provisions

### Municipal Code:

#### Chapter 158: Water

#### Details

[HISTORY: Adopted by the Water Department of the Town of Durham: Art. I, effective 1-1-1951. Adopted by the Board of Selectmen (now Town Council) of the Town of Durham: Art. II, 10-26-1981. Sections 158-8, 158-9, 158-12, 158-14A, 158-15A and C, 158-16, 158-19A and 158-20 amended at time of adoption of Code; see Ch. 1, General Provisions, Art. I. Other amendments noted where applicable.]

#### 158-1. General Provisions.

**Title.** This chapter shall be known and may be cited as the "Water Ordinance of the Town of Durham, New Hampshire" and herein under this chapter referred to as the "Ordinance".

**Authority.** This chapter is adopted pursuant to the authority granted by RSA-38:26.I, which allows municipalities with Public Water Systems to adopt such ordinances and bylaws relating to the system or structures as required for proper maintenance and operation, and RSA 147:1 in the support of the Health Officer for the protection of public health and safety, and RSA 149-I:6 for the protection and maintenance of wastewater and stormwater infrastructure.

**Purpose.** The purpose of this chapter is to promote the sustainable and secure management, administration, and operation of Durham's water resources and Public Water Systems, to protect public and environmental health and safety, by the prevention and removal of nuisances, and to comply with state and federal regulations.

**Applicability.** This Ordinance applies to all Residential, Commercial, and industrial Users of the Public Water Systems within the Town of Durham.

**Applicability to Governmental Use Including the University of New Hampshire.** The provision of this chapter shall be advisory with respect to governmental uses as identified by RSA 674:54, including the University Of New Hampshire (UNH) as defined by the Town's Zoning Ordinance Chapter 175-5.

#### 158-2. Definitions.

**A. Meaning of Words and Terms.** Unless otherwise expressly stated, the following terms shall, for the purpose of this chapter, have the meanings indicated in this section. Words used in the present tense include the future. The singular number includes plural and the plural includes singular. Where terms are not defined in this section, they shall have their meaning as defined in other chapters of the Town Code, or have their ordinary meanings, or such as the context may imply in NH statute, or elsewhere.

**B. Definitions.** As used in this chapter, the following terms shall have the meanings indicated:

**ACCESS FEE or CONNECTION FEE** - the fee paid for access or connect a service to the Public Water Systems within the Town Durham.

**ACCOUNT HOLDER** – an authorized User of the Public Water System whose name is on the account list maintained by the Town.

**APPLICANT** – a potential Account Holder who is applying for connection to the Town's Public Water Systems.



**APPROVED SOURCE** – a source of water utilized by a Public Water System for distribution to the public for consumptive purposes which has been approved by the Regulating Authorities for said use. Approved Source shall also mean Source Water.

**BACKFLOW** – the flow or Back Siphonage of water or other liquids, mixtures or substances into the distribution system of a potable supply of water from any source or sources other than the approved source.

**BACKFLOW PREVENTION DEVICE or ANTI-BACKFLOW DEVICE** – a device or means to prevent Backflow as required and approved by the Regulating Authorities.

**BACK SIPHONAGE** – a Backflow resulting from negative or reduced pressure in the distribution system of a potable water supply.

**COMMERCIAL** – premises or property primarily used for or characteristic of commerce. Commercial includes industrial.

**COMMITTEE** – the Durham Water/Wastewater/Stormwater Committee formerly known as the Water Policy Committee.

**CONNECTION** – either a single water service connection that is no greater than 2-inches in diameter or a fire service line for structures requiring fire suppression systems.

**CONTAMINANT** – any physical, chemical, biological, or radiological substance or matter that degrades or potentially degrades the water quality below applicable Drinking Water standards.

**CONTRACTOR** – an individual, partnership, or corporation hired to perform a designated task and its authorized agents and representatives thereof.

**CROSS-CONNECTION** – any actual or potential physical connection or arrangement between two otherwise separate systems, one of which contains potable water and the other of which contains water of unknown or questionable safety and/or steam, chemicals, gases, or other Contaminants whereby there may be a flow of unapproved water to a water supply.

**DEPARTMENT** – the Department of Public Works of the Town Durham, New Hampshire. Department shall also mean Water Department

**DESIGN STANDARD** – detailed engineering drawings and/or specifications promulgated by the Department for the design, construction, and maintenance of Public Water Systems infrastructure and components.

**DISCHARGE** – any spilling, leaking pumping, pouring, emptying, dumping, dispersing or conveying or material resulting from such actions.

**DISTRIBUTION SYSTEM** - all facilities and appurtenances for the conveyance of Drinking Water within the UNH/Durham Water System.

**DRINKING WATER or POTABLE WATER** – water that has been approved for human consumption by the regulating authorities.

**EMERGENCY CONDITIONS** – conditions that threaten or negatively impact the Source quantity and quality and the operations of the Public Water Systems that may render the water unusable or undesirable by Users and Account Holders.

**ENFORCEMENT AUTHORITY** – the Town's Director of Public Works and/or his/her duly appointed agent and/or the Town's Code Enforcement Officer/Health Officer.

**EPA** – the United States Environmental Protection Agency.

**EXTENSIONS** – Water Mains greater than 2-inch diameter required to serve multiple Service Connections.

**FEE SCHEDULE** – a list of fees to be paid to the Town by an Applicant or Account Holder for services, equipment, and products provided by the Town or the UDWS in association with the Public Water Systems of Durham.

**ILLICIT** – an activity or use not in compliance with this Ordinance or state or federal regulations.

**NHDES** – the New Hampshire Department of Environmental Services.

**NONRESIDENTIAL** – premises used for other than domestic dwelling.

**OUTSIDE or REMOTE READER** – the device placed by the Department on the outside surface of the Property Owner's premises permitting the Department to determine a Water Meter reading without entering the premises, and which may contain a radio transmitter/receiver.

**PETITIONER** – the Property Owner or duly authorized agent of the Property Owner of the premises who is requesting a Connection, or Water Main extension, or rebate for any purpose.

**POLLUTANT** – any solid, liquid, or Contaminant which is considered to constitute a nuisance or hazard or threat to the public health that causes or potentially contributes to the degradation or impairment of water clarity or water quality.

**PRIVATE WATER METER** – Water Meter that is not owned by the Department, but is installed on the Account Holder's side of the Department's Water Meter to monitor a separate portion of the Account Holder's premises.

PROPERTY OWNER – the rightful owner of property within the Town of Durham.

PUBLIC WATER SYSTEMS – water infrastructure and related resources that are used, operated, or maintained by the Town of Durham and its residents and visitors, including drinking water systems, stormwater drainage systems, and water resources.

REGULATING AUTHORITIES – the UDWS, NHDES or the EPA.

RESIDENTIAL – a property whose lot, parcel, real estate, or building is used for domestic dwelling only.

RESTRICTION – temporary measures imposed by the UDWS to restrict the use of water.

SERVICE CONNECTION or SERVICE – that part of the distribution system extending from a Water Main to a building on an improved property for an Account Holder's use.

SHUT OFF – the termination of water service to an individual Account Holder.

SPECIFICATIONS or STANDARDS - applicable standards, specifications, codes, or regulations required for the construction of water works and appurtenances as adopted by the Town and/or Regulating Authorities, as amended.

STATE PLUMBING CODE – the most current plumbing code adopted pursuant to RSA-329-A:15 and RSA 155-A.

STORMWATER – surface runoff and drainage that is generated from precipitation and snowmelt, including any debris, chemicals, sediment, or other substances carried along with the water.

STORMWATER DRAINAGE SYSTEM – a system of conveyances that is owned, operated and/or maintained by the Town and designed or used for collecting or conveying stormwater. Components include municipal streets and roads, drainage piping, culverts, catch basins, curbs, gutters, ditches, manmade and natural channels. "Stormwater Drainage System" also means Municipal Separate Storm Sewer ("MS4") as defined by the New Hampshire Small MS4 General Permit.

TOWN – the Town of Durham, New Hampshire, the Durham Town Council, or the Town Administrator or his/her designee.

TOWN ADMINISTRATOR – the Town staff person authorized by the Durham Town Council to administer, manage, and execute the affairs of the Town.

TREATMENT – the application of physical, chemical, or biological processes to reduce the amount of Pollutants in, or to alter the nature of, the properties in a water supply prior to consumption or use.

UNH/DURHAM WATER SYSTEM or UDWS – the combined drinking water system of the Town of Durham and the University of New Hampshire including all facilities and appurtenances for the withdrawal, treatment, storage, and conveyance of water.

UNIT – any dwelling accommodation, or household designed as an independent unit for the use by not more than one family equipped for permanent, seasonal or temporary occupancy with independent cooking, sleeping and sanitary facilities. "UNIT" shall also mean any store, office, or Commercial or industrial establishment in a building operated as an independent unit. Nonresidential units shall be further defined in terms of "EQUIVALENT UNITS". One "equivalent" unit shall be determined by dividing the actual or estimated water usage by the average usage of a single-family dwelling. Water usage for this purpose shall be estimated or established consistent with the rules established by NHDES at Env-Wq 1008.03(c) as amended. Unit shall also mean "residential unit".

USER – any person or entity using the Public Water Systems of the Town of Durham.

WATER MAIN – the supply pipe from which service connections are made to supply Drinking Water to improved properties.

WATER METER OR METER ASSEMBLY – an assembly of equipment and any component thereof specified by the Department for the measurement of water quantities to be used as a basis for determining charges for water services, and that may include a resetter, Backflow device, and outside reader.

WATER SUPPLY EMERGENCY – a management phase triggered by a severe drought, operational failure, or disaster that seriously compromises the UDWS's ability to provide adequate Drinking Water.

WATER SYSTEM IMPACT ANALYSIS – an analysis performed by the Department or its authorized agent to determine the likely impact on the Public Water Systems from a proposed development.

WATER TREATMENT PLANT – that portion of the UDWS that is designed to alter or improve the physical, chemical, biological, or radiological quality of the Source Water to comply with Drinking Water standards promulgated by the Regulating Authorities.

WATER/WASTEWATER/STORMWATER COMMITTEE – a committee consisting of no less than the Director of Public Works, Town Engineer, and two (2) officials of the University of New Hampshire.

### 158 -3. Water Resource Management

The water resources of the Town are essential to the health, wellbeing, and prosperity of its inhabitants and shall be managed responsibly to protect and conserve these resources for current and future generations in accordance with local, state and federal regulations.

A. **Water Resource Management Plan.** A Water Resource Management Plan (WRMP) shall be developed and maintained by the Department and the Durham Water/Wastewater/Stormwater Committee under the direction of the Director of Public Works and approval of the Town Administrator. The WRMP shall describe the management and operational practices necessary to sustainably and efficiently balance water resource demands with appropriate measures and best management practices in a compilation of adaptive plans that shall include by not limited to the following topics: resource protection, supply and demand, water conservation, dam management, source water management, and emergency preparedness and response.

B. **Resource Protection.** No person or entity shall Discharge or allow to be Discharged a Contaminant or Pollutant into Public Water Systems of the Town without a permit or beyond the terms or limits set by any such permit. Such non-compliant or unpermitted Discharges shall be considered illicit and shall be subject to enforcement action as deemed necessary.

**Water Conservation.** When necessary to conserve the Source Water supply, the Town and/or UDWS reserve the right to restrict or prohibit Users and Account Holder's use of water pursuant to the WRMP and the regulations contained herein and upon the approval of the Town Administrator.

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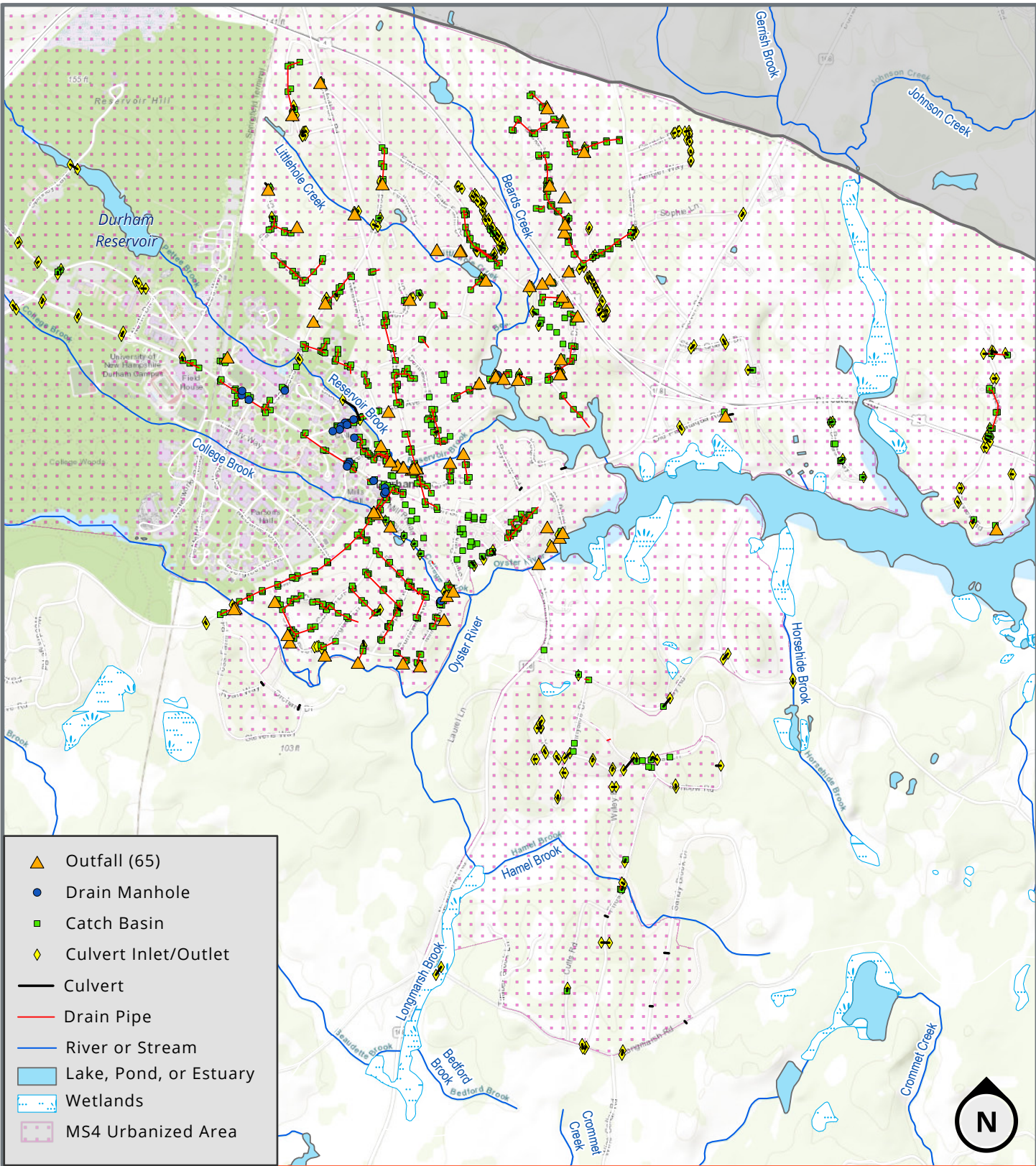










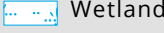

## **Appendix B**

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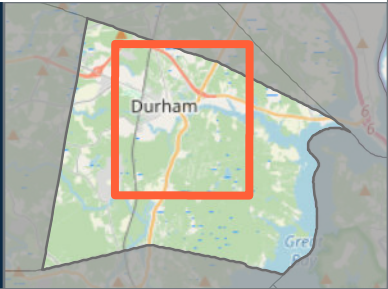
Storm System Mapping

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-  Outfall (65)
-  Drain Manhole
-  Catch Basin
-  Culvert Inlet/Outlet
-  Culvert
-  Drain Pipe
-  River or Stream
-  Lake, Pond, or Estuary
-  Wetlands
-  MS4 Urbanized Area

**Figure 1: Stormwater System**  
 Durham, New Hampshire



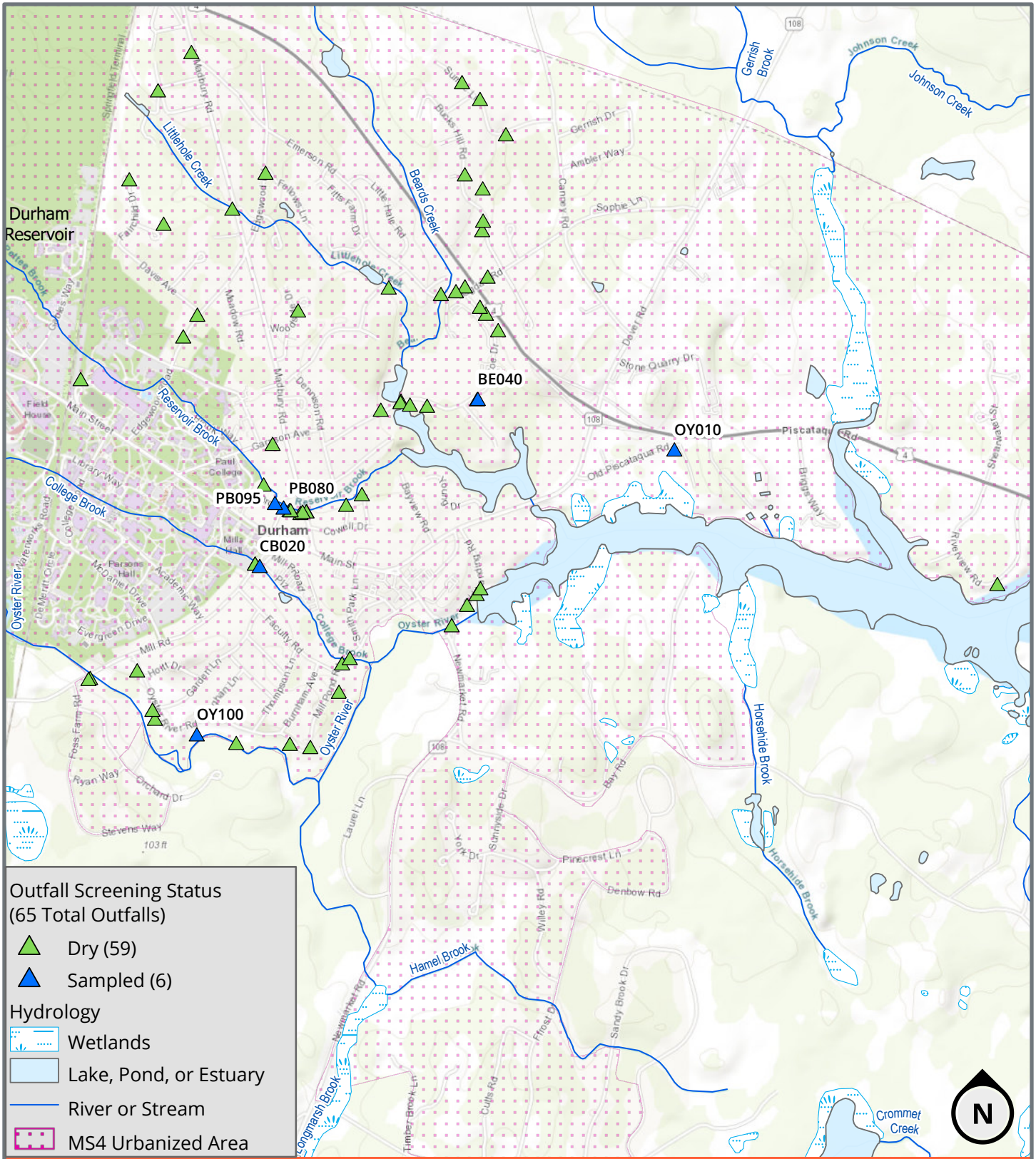
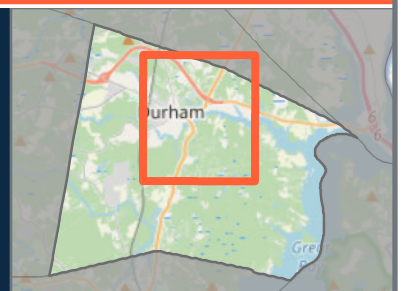
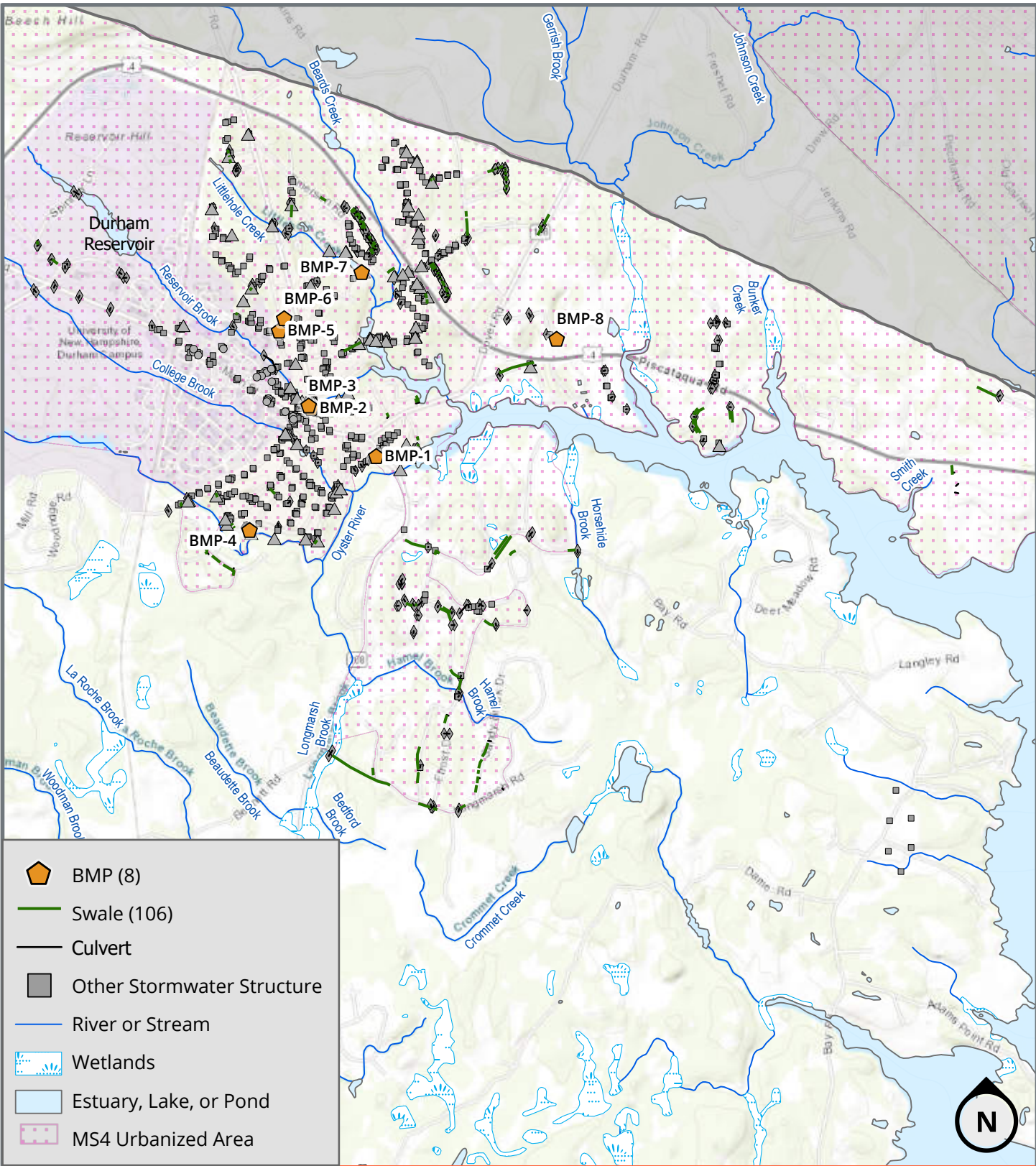


Figure 2: Stormwater Outfall Inventory

Durham, New Hampshire



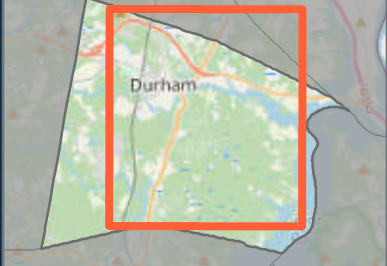


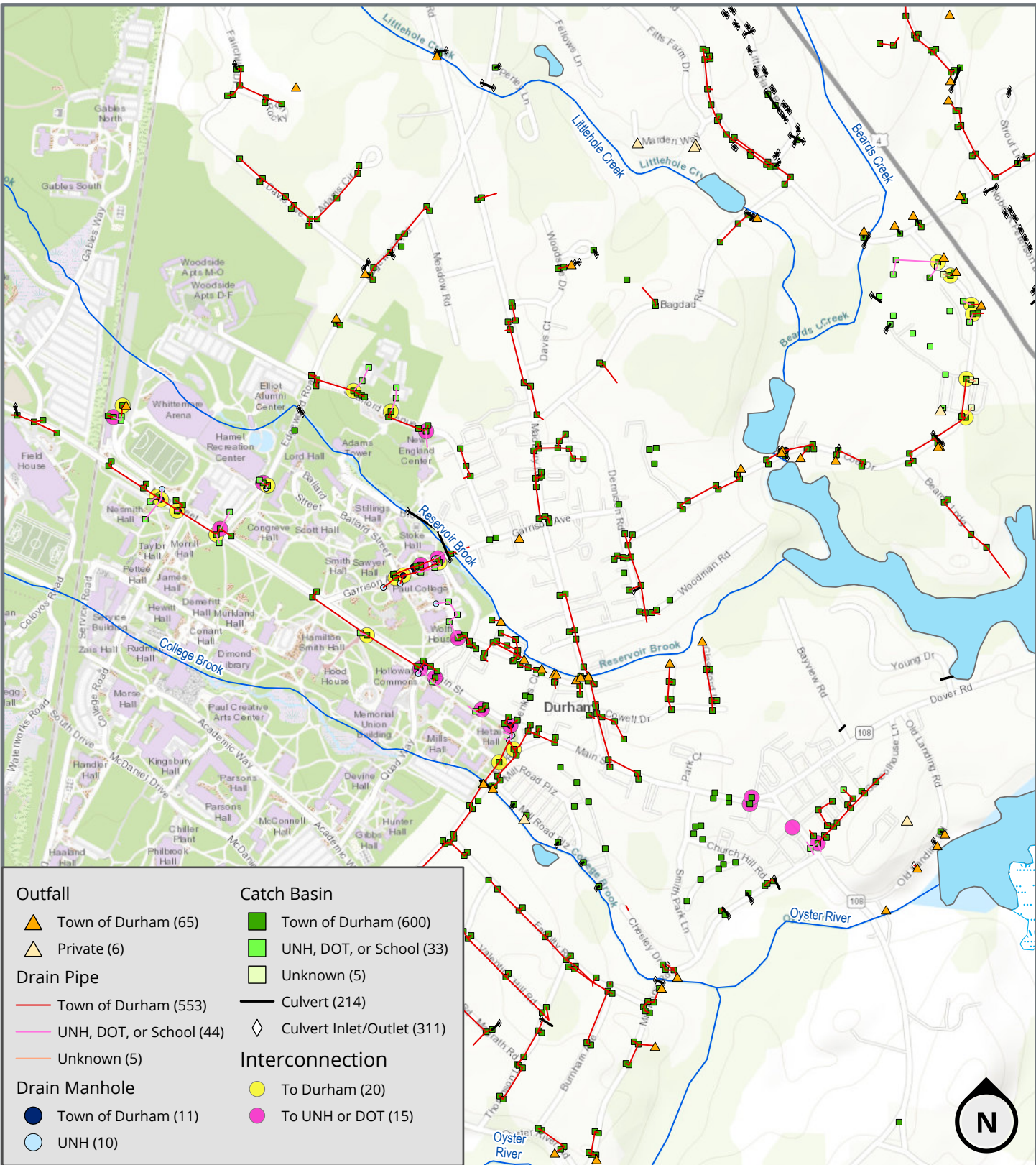
**Figure 3: Stormwater BMPs and Swales**

Durham, New Hampshire

0 1,500 3,000  
Feet

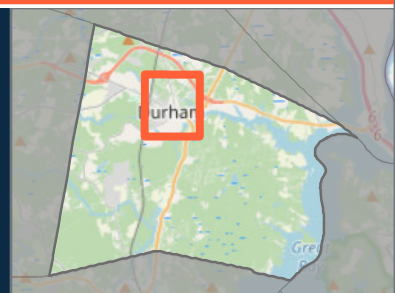
**ENVIRONMENTAL PARTNERS**



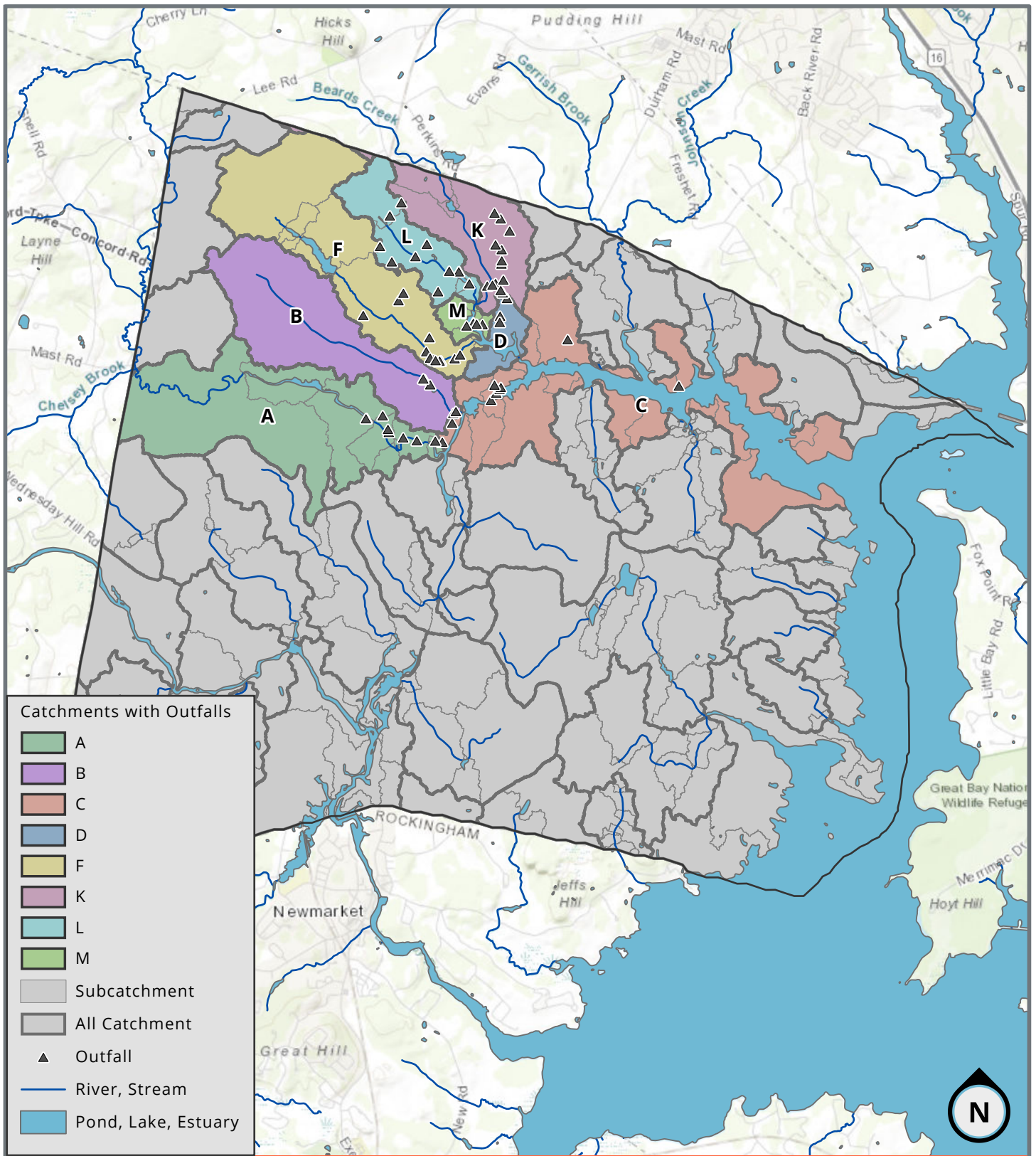


**Figure 4: Interconnections**

Durham, New Hampshire

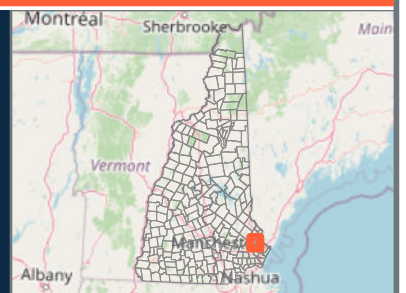


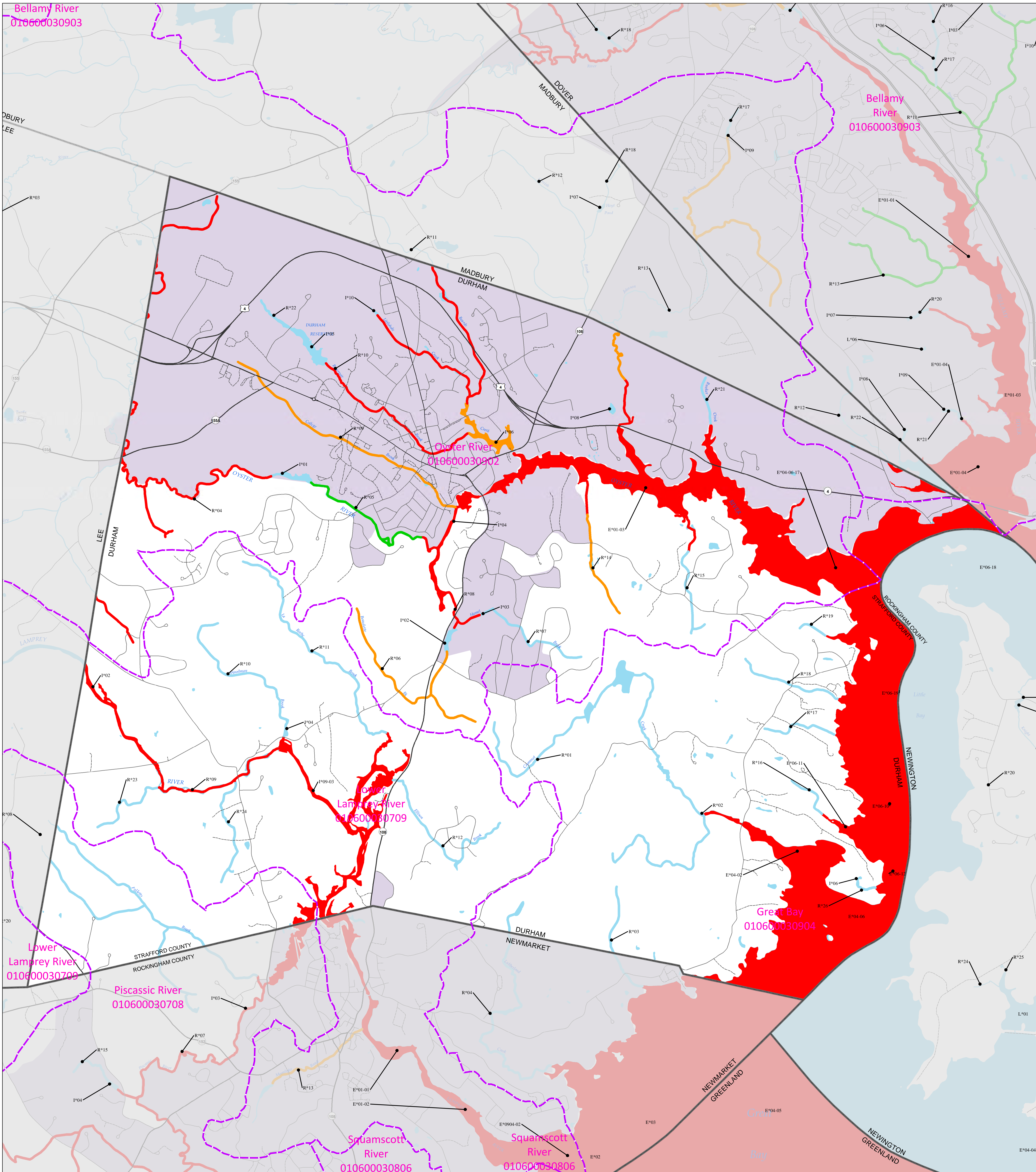




**Figure 5: Initial Catchment Delineation**

Durham, New Hampshire





# TOWN OF DURHAM NEW HAMPSHIRE

New Hampshire DES  
303(d) Impaired Water  
2016 Partially Adopted

Beach Area	Rivers Streams	Lakes Ponds	NH DES Category Description
			3-ND, 3-PA, 3-PNS - No data, insufficient data or limited data exists.
			Category 4 (4I) - There is an impairment by pollutant and a TMDL has been approved and completed. Or there is an impairment by a non-pollutant.
			Category 5-M - There is an impairment by pollutant which will require a TMDL.
			Category 5-P - There is an impairment by pollutant which will require a TMDL. This impairment causes poor water quality and is considered severe.
	HUC 12 Watershed Boundary		

Abbrev. Label      HUC 12

L\*03      010700060201

AUID = NH LAK700060201-03

### Base Features

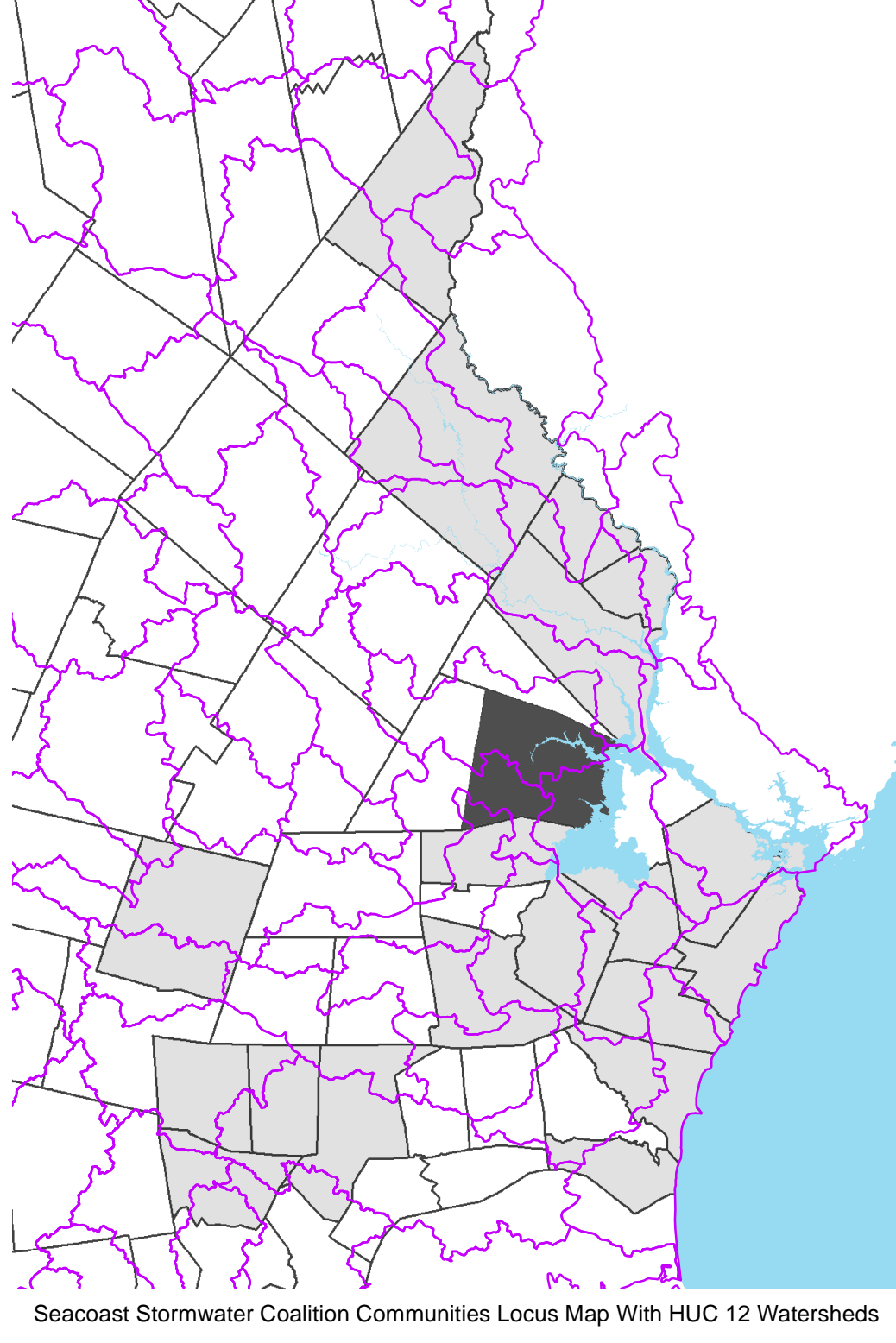
- Municipal Boundary
- MS4 Regulated Areas

### Water Features

- Surface Waterbody
- Stream, River

### Roads by Legislative Class

- Class I & II Roads
- Class IV Urban Compact Road
- Class V Local Road
- Private



A huge thank you to NH DES for their assistance in this mapping effort. Their patience, time, skill and guidance have been critical in this effort.

**Surface Water Quality Assessments 305(b) and 303(d)**  
The Surface Water Quality Assessment Program produces two surface water quality documents every two years, the "305(b) Report" and the "303(d) List". As the two documents use the same data, the 305(b) Report and 303(d) List were combined into one Integrated Report starting in 2002. The Integrated Report describes the quality of New Hampshire's surface waters and an analysis of the extent to which all such waters provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities in and on the water.

The Federal Water Pollution Control Act [PL 92-500, commonly called the Clean Water Act (CWA)], as last reauthorized by the Water Quality Act of 1987, requires each state to submit two surface water quality documents to the US Environmental Protection Agency (EPA) every two years. Section 305(b) of the CWA requires submittal of a report (commonly called the "305(b) Report"), that describes the quality of its surface waters and an analysis of the extent to which all such waters provide for the protection and propagation of a balanced population of shellfish, fish and wildlife, and allow recreational activities in and on the water.

The second document is typically called the "303(d) List," which is so named because it is a requirement of Section 303(d) of the CWA. The 303(d) List includes surface waters that are:  
 -> Impaired or threatened by a pollutant or pollutant(s).  
 -> Not expected to meet water quality standards within a reasonable time even after application of best available technology standards for point sources or best management practices for nonpoint sources.  
 -> Require development and implementation of a comprehensive water quality study (a Total Maximum Daily Load (TMDL) study) which is designed to meet water quality standards.

**Data Sources**  
Base features from NH GRANIT database. Digital data in NH GRANIT represent the efforts of the contributing agencies to record information from the cited source materials. Earth Systems Research Center (ESRC), under contract to the Office of Strategic Initiatives (OSI), and in consultation with cooperating agencies, maintains a continuing program to identify and correct errors in these data. Neither OSI nor ESRC make any claim as to the validity or reliability or to any implied uses of these data.

**Data Disclaimer**  
Data should be used for planning purposes only. Data were derived from various sources and were updated at different timeframes, with varying levels of accuracy. Please notify SRPC or RPC of any errors or omissions.

0 0.25 0.5 Miles

## **Appendix C**

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### Outfall Inventory and Priority Ranking Matrix



Town of Durham Outfall/Interconnection Ranking Table  
September 24, 2021

Receiving Water	Outfall or Interconnection?	Structure ID	Previous Screening Results Indicate Likely Sewer Input? <sup>1</sup>	Receiving Water Body Impairment? <sup>2</sup>	Discharging to Area of Concern to Public Health? <sup>3</sup>	Frequency of Past Discharge Complaints	Density of Generating Sites <sup>4</sup>	Age of Development/ Infrastructure <sup>5</sup>	Historic Combined Sewers or Septic? <sup>6</sup>	Aging Septic? <sup>7</sup>	Culverted Streams? <sup>8</sup>	Additional Characteristics <sup>9</sup>	Score	Priority Ranking	Dry Weather Screening Status	Dry Weather Screening Date
Information Source			Outfall inspections and sample results	Impaired Waters List	Maps	Town Staff	Land Use/GIS Maps, Aerial Photography	Land Use Information, Visual Observation	Town Staff, GIS Maps	Land Use, Town Staff	GIS and Storm System Maps	Other				
Scoring Criteria			Problem Outfall = 10 2 Indicator Parameters = 6 1 Indicator Parameter = 3  Flowing during dry weather, no indicator parameter = 1  Dry = 0	Yes = 10 (impairment listed as high priority in permit)  No = 0	Yes = 10  No = 0	Frequent = 3  Occasional = 2  None = 0	High = 3  Medium = 2  Low = 1	High = 3  Medium = 2  Low = 1	Yes = 3  No = 0	Yes = 3  No = 0	Yes = 3  No = 0	TBD				
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB080	6	10	0	0	3	2	0	0	0	None	21	High Priority	Sampled	2020-11-10
Beards Creek (I*06)	Outfall	BE040	6	10	0	0	3	1	0	0	0	None	20	High Priority	Sampled	2020-11-09
College Brook (R*09)	Outfall	CB020	3	10	0	0	3	2	0	0	0	None	18	High Priority	Sampled	2020-11-10
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB095	3	10	0	0	3	2	0	0	0	None	18	High Priority	Sampled	2021-01-26
Oyster River (E*01-03)	Outfall	OY010	3	10	0	0	1	2	0	0	0	None	16	High Priority	Sampled	2020-11-10
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB103	1	10	0	0	3	2	0	0	0	None	16	High Priority	Sampled	5/26/2021
College Brook (R*09)	Outfall	CB005	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2021-01-26
College Brook (R*09)	Outfall	CB010	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-09
College Brook (R*09)	Outfall	CB021	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-10
College Brook (R*09)	Outfall	CB025	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-10
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB030	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-10
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB040	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-10
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB045	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	5/17/2021
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB050	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-10
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB055	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-10
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB060	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-10
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB070	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-10
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB075	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-10
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB090	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-10
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB100	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-09
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB105	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	5/26/2021
Reservoir Brook (Pettee Brook) (R*10)	Outfall	PB110	0	10	0	0	3	2	0	0	0	None	15	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE000	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	5/14/2021
Beards Creek (I*06)	Outfall	BE005	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2021-01-26
Beards Creek (I*06)	Outfall	BE010	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE015	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-10
Beards Creek (I*06)	Outfall	BE020	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE025	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2021-01-26
Beards Creek (I*06)	Outfall	BE030	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE050	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE060	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE070	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE080	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE090	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE100	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE110	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE120	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE130	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE140	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE150	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE160	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE170	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Beards Creek (I*06)	Outfall	BE180	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Unnamed Wetlands	Outfall	DR010	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Unnamed Wetlands	Outfall	DR020	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Littlehale Creek (I*10)	Outfall	DR030	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Horsehide Brook (R14)	Outfall	HB010	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	5/17/2021
Horsehide Brook (R14)	Outfall	HB020	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	5/17/2021
Littlehale Creek (I*10)	Outfall	LI010	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Littlehale Creek (I*10)	Outfall	LI040	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Littlehale Creek (I*10)	Outfall	LI060	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Littlehale Creek (I*10)	Outfall	LI070	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09

Town of Durham Outfall/Interconnection Ranking Table  
September 24, 2021

Receiving Water	Outfall or Interconnection?	Structure ID	Previous Screening Results Indicate Likely Sewer Input? <sup>1</sup>	Receiving Water Body Impairment? <sup>2</sup>	Discharging to Area of Concern to Public Health? <sup>3</sup>	Frequency of Past Discharge Complaints	Density of Generating Sites <sup>4</sup>	Age of Development/Infrastructure <sup>5</sup>	Historic Combined Sewers or Septic? <sup>6</sup>	Aging Septic? <sup>7</sup>	Culverted Streams? <sup>8</sup>	Additional Characteristics	Score	Priority Ranking	Dry Weather Screening Status	Dry Weather Screening Date
Information Source			Outfall inspections and sample results	Impaired Waters List	Maps	Town Staff	Land Use/GIS Maps, Aerial Photography	Land Use Information, Visual Observation	Town Staff, GIS Maps	Land Use, Town Staff	GIS and Storm System Maps	Other				
Scoring Criteria			Problem Outfall = 10 2 Indicator Parameters = 6 1 Indicator Parameter = 3  Flowing during dry weather, no indicator parameter = 1  Dry = 0	Yes = 10 (impairment listed as high priority in permit)  No = 0	Yes = 10  No = 0	Frequent = 3  Occasional = 2  None = 0	High = 3  Medium = 2  Low = 1	High = 3  Medium = 2  Low = 1	Yes = 3  No = 0	Yes = 3  No = 0	Yes = 3  No = 0	TBD				
Littlehale Creek (I*10)	Outfall	LI080	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Littlehale Creek (I*10)	Outfall	LI090	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Littlehale Creek (I*10)	Outfall	LI100	0	10	0	0	3	1	0	0	0	None	14	High Priority	Dry	2020-11-09
Oyster River-Mill Pond Dam (I*04)	Outfall	OY100	1	10	0	0	1	2	0	0	0	None	14	High Priority	Sampled	2020-12-09
Oyster River (E*01-03)	Outfall	OY005	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2021-01-26
Oyster River (E*01-03)	Outfall	OY015	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	5/17/2021
Oyster River (E*01-03)	Outfall	OY020	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-11-10
Oyster River (E*01-03)	Outfall	OY030	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-11-10
Oyster River (E*01-03)	Outfall	OY040	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-11-10
Oyster River (E*01-03)	Outfall	OY050	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-11-10
Oyster River (E*01-03)	Outfall	OY060	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-11-10
Oyster Brook	Outfall	OY061	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	8/25/2021
Oyster Brook	Outfall	OY062	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	8/25/2021
Oyster Brook	Outfall	OY063	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	8/25/2021
Oyster Brook	Outfall	OY064	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	8/25/2021
Oyster River-Mill Pond Dam (I*04)	Outfall	OY080	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-11-09
Oyster River (E*01-03)	Outfall	OY085	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-12-09
Oyster River - Unnamed Brook (R*05)	Outfall	OY090	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-11-09
Oyster River - Unnamed Brook (R*05)	Outfall	OY110	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-11-09
Oyster River (E*01-03)	Outfall	OY115	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-11-09
Oyster River - Unnamed Brook (R*05)	Outfall	OY120	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-11-09
Oyster River - Unnamed Brook (R*05)	Outfall	OY130	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-11-09
Oyster River - Unnamed Brook (R*05)	Outfall	OY140	0	10	0	0	1	2	0	0	0	None	13	High Priority	Dry	2020-11-09
N/A	Interconnection	NHDOT-1	10	10	0	0			0	0	0	None	20	Problem Area	Sampled	5/26/2021
N/A	Interconnection	UNH-9	3	10	0	0			0	0	0	None	13	High Priority	Sampled	5/26/2021
N/A	Interconnection	NHDOT-2	0	10	0	0			0	0	0	None	10	Low Priority	Dry	5/17/2021
N/A	Interconnection	NHDOT-3	0	10	0	0			0	0	0	None	10	Low Priority	Dry	5/17/2021
N/A	Interconnection	UNH-13	0	10	0	0			0	0	0	None	10	Low Priority	Dry	5/17/2021
N/A	Interconnection	UNH-14	0	10	0	0			0	0	0	None	10	Low Priority	Dry	5/17/2021
N/A	Interconnection	UNH-18	0	10	0	0			0	0	0	None	10	Low Priority	Dry	5/17/2021
N/A	Interconnection	UNH-2	0	10	0	0			0	0	0	None	10	Low Priority	Dry	5/26/2021
N/A	Interconnection	UNH-22	0	10	0	0			0	0	0	None	10	Low Priority	Dry	5/17/2021
N/A	Interconnection	UNH-4	0	10	0	0			0	0	0	None	10	Low Priority	Dry	5/26/2021
N/A	Interconnection	UNH-5	0	10	0	0			0	0	0	None	10	Low Priority	Dry	5/26/2021
N/A	Interconnection	UNH-6	0	10	0	0			0	0	0	None	10	Low Priority	Dry	5/26/2021

## Appendix D

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### Field Forms, Sample Bottle Labels, and Chain of Custody Forms

*Appendix to include copies of the following field sampling documents once fully developed in accordance with the 2017 MS4 Permit:*

- Dry weather outfall inspection/sampling form*
  - Wet weather outfall inspection/sampling form*
  - Manhole inspection form*
  - Example sample labels (provided by laboratory)*
  - Example chain-of-custody form(s) (provided by laboratory(s))*
-

## Appendix E

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

*Appendix to include copies of water quality analysis instructions, procedures, and SOPs for all sample parameters and all meters or field test kits that are used for analysis once fully developed in accordance with the 2017 MS4 Permit. This includes the manufacturer's instructions for how to use field test kits as well as the manufacturer's instructions or user's manual for any field instrumentation.*

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## **Appendix F**

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IDDE Employee Training Record

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## **2018 MS4 and IDDE - Durham Public Works Training Session - June 24, 2021**

12:30 PM

Presenters: April Talon, PE, Town Engineer  
Richard Reine, M.S.C.E., CA, Public Works Director  
Sam Hewitt, Assistant Public Works Director

### **Topics Reviewed**

What is the MS4 program?

What comprises a Municipal Separate Storm Sewer System? - swales, culverts, outfalls, Catch basins, manholes, other BMP's

When was the Federal Permit Issued by EPA?

Permit has 6 MCM'd or minimal control measures

Public Ed and outreach

Public Involvement

IDDE - Illicit Discharge Detection and Elimination

Mgmt. of Construction Site Runoff

Mgmt. of Post Construction Site Runoff

Good Housekeeping in Municipal Operations

### **IDDE**

- Required to proactively remove non-storm sewer connections from MS4

- Outfall Prioritization Low Medium High Risk
- Wet and Dry Weather outfall Testing
- Up the Trunk investigations
- Develop Storm Sewer Map

During operations we ask that you notify Doug, April or Rich if you see any potential illicit connections or pollutants at any time within the Town's MS4 - examples: dumping of paint or material in catch basins, unknown pipe connection in catch basin, floor drains connected to drainage system, etc.



## **2018 MS4 and IDDE – Durham Wastewater Treatment Plant Training Session - June 28, 2021**

12:30 PM

Presenters: April Talon, PE, Town Engineer

### **Topics Reviewed**

What is the MS4 program?

What comprises a Municipal Separate Storm Sewer System? - swales, culverts, outfalls, Catch basins, manholes, other BMP's

When was the Federal Permit Issued by EPA?

Permit has 6 MCM'd or minimal control measures

Public Ed and outreach

Public Involvement

IDDE - Illicit Discharge Detection and Elimination

Mgmt. of Construction Site Runoff

Mgmt. of Post Construction Site Runoff

Good Housekeeping in Municipal Operations

### **IDDE**

- Required to proactively remove non-storm sewer connections from MS4

- Outfall Prioritization Low Medium High Risk
- Wet and Dry Weather outfall Testing
- Up the Trunk investigations
- Develop Storm Sewer Map

During operations we ask that you notify Doug, April or Rich if you see any potential illicit connections or pollutants at any time within the Town's MS4 - examples: dumping of paint or material in catch basins, unknown pipe connection in catch basin, floor drains connected to drainage system, etc.



# TOWN OF DURHAM

Department of Public Works

100 Stone Quarry Drive • Durham, NH 03824

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publicworks@ci.durham.nh.us

Job \_\_\_\_\_

Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by \_\_\_\_\_ Date \_\_\_\_\_

Checked by \_\_\_\_\_ Date \_\_\_\_\_

Scale \_\_\_\_\_

## IDDE Training

June 24, 2021

Cameron Thibodeau

Nathan Trull

John Baker

Christopher Starkweather

Arthur Notten

John Page

Jim Couch

Jay Palmer

Shane Dalton

Thomas Macaione

MICHAEL MURPHY

- B.J. Ash

- Spencer Deland

- Dana Smith

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

***##MUNICIPALITY***

Date	Type of Training	Participants

## Appendix G

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Source Isolation and Confirmation Methods:  
Instructions, Manuals, and SOPs

*Appendix to provide manufacturer instructions, manuals and procedures and any in-house SOPs used to perform source isolation and confirmation for illicit discharges once fully developed in accordance with the 2017 MS4 Permit.*

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