

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

City of Dover, NH

Permit Year 3

EPA NPDES Permit Number NHR041000

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Illicit Discharge Detection and Elimination Plan

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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

2 Authority and Statement of IDDE Responsibilities

2.1 Legal Authority

The City of Dover has adopted a Section 147-2 of the Dover City Ordinances (Adopted by the City Council on 11-30-1988 as Ord. No. 25-88*; Amended on 06-11-2008 by Ord. No. 2008.05.28-004; Amendments noted where applicable) 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 City of Dove will periodically review its current ordinances and related land use regulations and policies for consistency with the 2017 MS4 Permit.

2.2 Statement of Responsibilities

The City of Dover, Community Services Department is the lead municipal 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 City of Dover Community Services Department is responsible for updating the stormwater system mapping pursuant to the 2017 MS4 Permit. The City of Dover 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**.

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 and include the following information:

- Outfalls and receiving waters (previously required by the MS4-2003 permit)
- Open channel conveyances (swales, ditches, etc.)
- Interconnections with other MS4s and other storm sewer systems
- Municipally owned stormwater treatment structures
- Water bodies identified by name and indication of all use impairments as identified on the most recent EPA approved New Hampshire Integrated List of Waters report
- Initial catchment delineations. Topographic contours and drainage system information may be used to produce initial catchment delineations.

The City of Dover has completed the following updates to its stormwater mapping to meet the Phase I requirements:

- Outfalls and receiving waters (previously required by the MS4-2003 permit)
- Open channel conveyances and pipe networks
- Interconnections with other MS4s and other storm sewer systems
- Most municipally owned stormwater treatment structures
- Water bodies identified by name and indication of all use impairments as identified on the most recent EPA approved Massachusetts Integrated List of Waters report

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 City of Dover has 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.

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.

5.2 Outfall and Interconnection Inventory and Initial Ranking

The Community Services Department 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 ≥ 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.

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**.

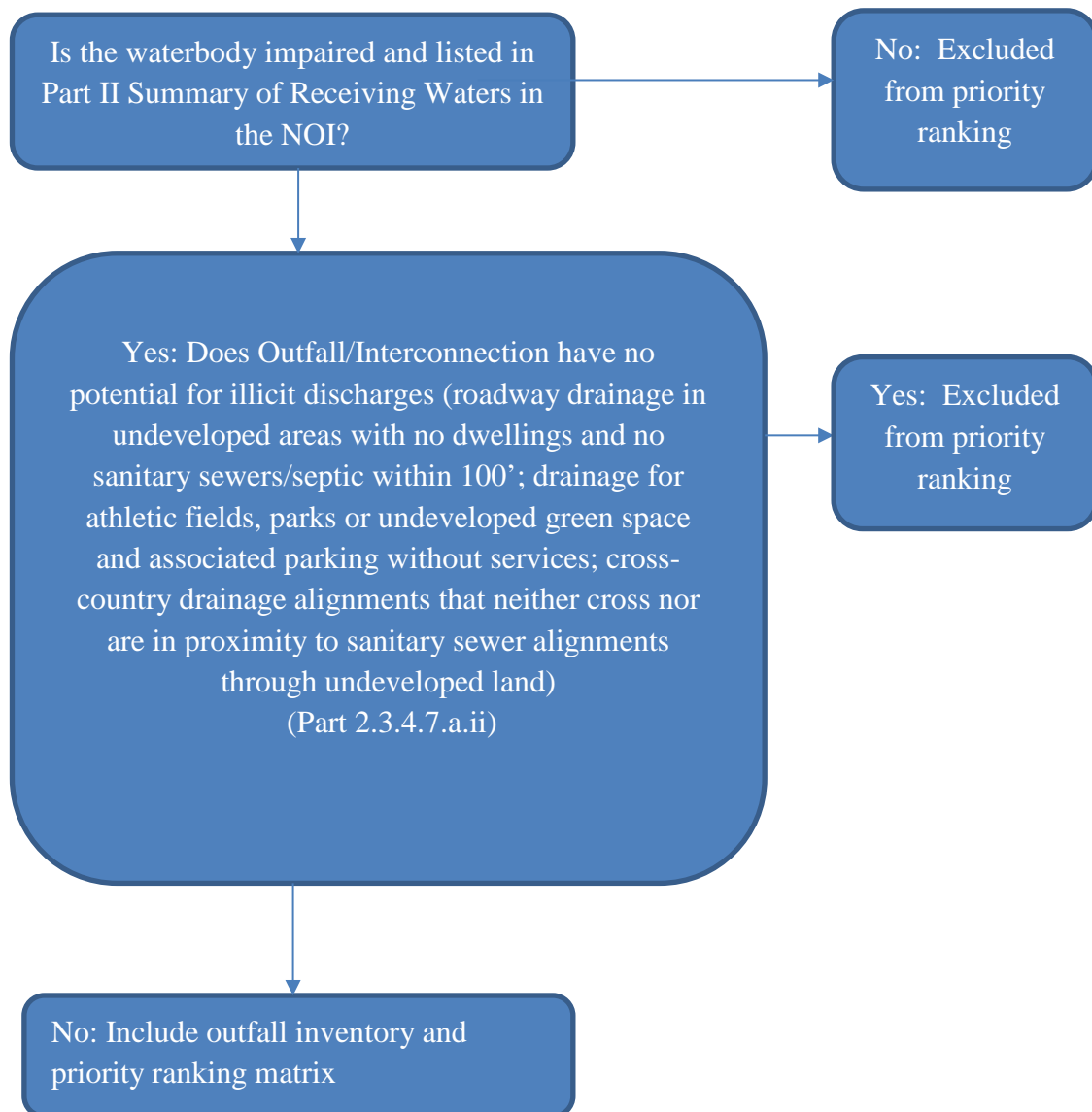
3. Low Priority Outfalls: Outfalls/interconnections determined by the permittee as low priority based on the characteristics listed below or other available information.

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 Community Services 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.

6.1 Interpreting Outfall Sampling Results

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

Benchmark Field Measurements for Select Parameters

Analyte or Parameter	Concentration Levels Indicating Need for Further Investigation
Ammonia	>0.5 mg/L
Specific conductance	>600 µS/cm
Surfactants	>0.25 mg/L
Total Chlorine	>0.02 mg/L
Indicator Bacteria: <i>E.coli</i> <i>Enterococcus</i>	<i>E.coli</i> : the most probable number should not exceed 88/100 mL (level for designated swimming beaches) or 406/100mL (for recreational waters) <i>Enterococcus</i> : the most probable number should not exceed 104/100 mL (level for designated coastal beaches)
Salinity	NA
Temperature	NA
Pollutants of concern: <i>Nitrogen</i>	TBD

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.

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

7.1 Map and Record Review

The City of Dover will review relevant mapping and historic plans and records to identify areas within the catchment with higher potential for illicit connections. The following information will be reviewed:

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

7.2 System Vulnerability Factors

As outlined in Appendix C of this plan, each catchment has been ranked as problem, high priority or low priority. Follow-up outfall testing will be conducted per this plan. If a bacteria hit occurs, the following catchment research shall be conducted and documented. Based on the Map and Records review, City of Dover will identify any of the following System Vulnerability Factors (SVFs). SVFs indicate a risk of sanitary or septic system inputs to the MS4 under wet weather conditions.

The City of Dover SVF inventory based on the following factors, will be incorporated into the Outfall and Catchment investigation table in Appendix C as outfall testing is completed:

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

- Areas formerly served by combined sewer systems.
- Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.
- Areas formerly served by combined sewer systems.
- Any storm drain infrastructure greater than 40 years old in medium and densely developed areas.
- Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).
- History of multiple health department actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance). Training

7.3 Dry Weather Catchment Investigation (Manhole Inspections)

After initial dry weather outfall sampling, the City of Dover will implement a dry weather storm drain network investigation that involves systematically and progressively observing, sampling and evaluating upstream catchbasins and key junction manholes in the MS4 to determine the approximate location of suspected illicit discharges.

The Community Services Department will be responsible for implementing the dry weather manhole inspection program and making updates as necessary. Infrastructure information will be incorporated into the storm system map, and catchment delineations will be refined based on the field investigation, where necessary. The SVF inventory will also be updated based on information obtained during the field investigations, where necessary.

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

- **Junction Manhole** is a manhole or structure with two or more inlets accepting flow from two or more MS4 alignments. Manholes with inlets solely from private storm drains, individual catch basins, or both are not considered junction manholes for these purposes.
- **Key Junction Manholes** are those junction manholes that can represent one or more junction manholes without compromising adequate implementation of the illicit discharge program. Adequate implementation of the illicit discharge program would not be compromised if the exclusion of a particular junction manhole as a key junction manhole would not affect the permittee's ability to determine the possible presence of an upstream illicit discharge. A permittee may exclude a junction manhole located upstream from another located in the immediate vicinity or that is serving a drainage alignment with no potential for illicit connections.

For all catchments identified for investigation, during dry weather, field crews will systematically inspect

key junction manholes for evidence of illicit discharges and confirm or identify potential system vulnerability factors. This program involves progressive inspection and sampling at manholes in the storm drain network to isolate and eliminate illicit discharges.

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

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

For most catchments, manhole inspections will proceed from the outfall moving up into the system. However, the decision to move up or down the system depends on the nature of the drainage system and the surrounding land use and the availability of information on the catchment and drainage system. Moving up the system can begin immediately when an illicit discharge is detected at an outfall, and only a map of the storm drain system is required. Moving down the system requires more advance preparation and reliable drainage system information on the upstream segments of the storm drain system, but may be more efficient if the sources of illicit discharges are believed to be located in the upstream portions of the catchment area. Once a manhole inspection methodology has been selected, investigations will continue systematically through the catchment.

Inspection of key junction manholes will proceed as follows:

1. Manholes will be opened and inspected for visual and olfactory evidence of illicit connections.
2. If flow is observed, a sample will be collected and analyzed at a minimum for ammonia, chlorine, and surfactants.
3. Where sampling results or visual or olfactory evidence indicate potential illicit discharges, the area draining to the junction manhole will be flagged for further upstream manhole investigation and/or isolation and confirmation of sources.
4. Subsequent key junction manhole inspections will proceed until the location of suspected illicit discharges can be isolated to a pipe segment between two manholes.
5. If no evidence of an illicit discharge is found, catchment investigations will be considered complete upon completion of key junction manhole sampling.

7.4 Wet Weather Catchment Investigation (Outfall Sampling)

Where a minimum of one (1) System Vulnerability Factor (SVF) is identified based on previous information or the catchment investigation, a wet weather investigation must also be conducted at the associated outfall. The Community Services Department will be responsible for implementing the wet weather outfall sampling program and making updates as necessary.

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

Wet weather outfall sampling will proceed as follows:

1. Wet weather sampling will occur during or after a storm event of sufficient depth or intensity to produce a stormwater discharge at the outfall.
 - a. To the extent feasible, sampling should occur during the spring (March through June) when groundwater levels are relatively high.
 - b. There is no specific rainfall amount that will trigger sampling, although minimum storm event intensities that are likely to trigger sanitary sewer interconnections are preferred.
 - c. Sampling during the initial period of discharge (“first flush”) will be avoided.
2. If wet weather outfall sampling indicates a potential illicit discharge, then additional wet weather source sampling will be performed, as warranted, or source isolation and confirmation procedures will be followed as described in Source Isolation and Confirmation
3. If wet weather outfall sampling does not identify evidence of illicit discharges, and no evidence of an illicit discharge is found during dry weather manhole inspections, catchment investigations will be considered complete.

7.5 Source Isolation and Confirmation

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

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

Public notification is an important aspect of a detailed source investigation program. Prior to smoke testing, dye testing, or TV inspections, the Community Services Department will notify property owners in the affected area.

7.6 Illicit Discharge Removal

When the specific source of an illicit discharge is identified, the City of Dover 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
- Estimate of the volume of flow removed.

7.6.1 Confirmatory Outfall Screening

Within one (1) year of removal of all identified illicit discharges within a catchment area, confirmatory outfall or interconnection screening will be conducted. The confirmatory screening will be conducted in dry weather unless System Vulnerability Factors have been identified, in which case both dry weather and wet weather confirmatory screening will be conducted. If confirmatory screening indicates evidence of additional illicit discharges, the catchment will be scheduled for additional investigation. Confirmatory screening is not required in catchments where no illicit discharges or System Vulnerability Factors have been identified and no previous screening indicated suspicious flows.

7.7 Follow-up Screening

Upon completion of all catchment investigations and illicit discharge removal and confirmation (if necessary), each outfall or interconnection will be scheduled for follow-up screening within five (5) years, or sooner based on the catchment's illicit discharge priority. Ongoing screening will consist of dry weather screening and sampling. Ongoing wet weather screening and sampling will also be conducted at outfalls where wet weather screening was required due to System Vulnerability Factors. All sampling results will be reported in the annual report.

7.8 Illicit Discharge Detection and Elimination Training

The City of Dover will implement a training program to employees involved in IDDE program about the program, including how to recognize illicit discharges. The permittee shall report on the frequency and type of employee training in the annual report.

8 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

Legal Authority (IDDE Bylaw or Ordinance)

DOVER CODE

WASTEWATER – The same materials as described in the definition of "sewage."

WASTEWATER TREATMENT PLANT – Any arrangement of devices and structures used for treating and disposing of sewage.

WSPCD – The Water Supply and Pollution Control Division of the New Hampshire Department of Environmental Services. [Added 12-16-92 by Ord. No. 33-92]

WASTEWATER WORKS – All facilities for collection, pumping, treating and disposing of sewage.

WATERCOURSE – A channel in which a flow of water occurs, either continuously or intermittently.

147-2. Prohibited Acts; Connection to Public Sewer Required.

- A. It shall be unlawful for any person to place, deposit or permit to be deposited any sewage, human or animal excrement, garbage or other objectionable waste on public or private property within the City of Dover or in any area under the jurisdiction of said city.
- B. It shall be unlawful to discharge to any natural outlet within the City of Dover or in any area under the jurisdiction of said city any wastewater, except where suitable treatment has been provided in accordance with subsequent provisions of this chapter.
- C. Except as hereinafter provided, it shall be unlawful to construct or maintain any privy, privy vault, septic tank, cesspool or other facility intended or used for the disposal of sewage.
- D. The owner(s) of all houses, buildings or properties used for human occupancy, employment, recreation or other purposes situated within the city and abutting on any street, alley or right-of-way in which there is now located or may in the future be located a public sanitary sewer of the city are hereby required at their expense to install suitable toilet facilities therein and to connect such facilities directly with the proper public sewer in accordance with the provisions of this chapter, within ninety (90) days after date of official notice to do so, provided that said public sewer is within one hundred (100) feet of the building.
- E. No person shall maliciously, willfully or negligently break, damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is a part of the municipal wastewater works. Any person violating this provision shall be subject to immediate arrest under charge of disorderly conduct.

Appendix B

Storm System Mapping

CITY OF DOVER
NEW HAMPSHIRE

New Hampshire DES
303(d) Impaired Water
2016 Not Adopted

Beach Area	Rivers	Lakes	NH DES Category	Description
			Category 1 (B)	There is an impairment by bacteria and nutrients. The water body is not impaired and does not require a TMDL. The water body is not impaired and does not require a TMDL.
			Category 2 (C)	There is an impairment by bacteria, nutrients, and metals. The water body is not impaired and does not require a TMDL. The water body is not impaired and does not require a TMDL.
			Category 3 (D)	There is an impairment by bacteria, nutrients, metals, and toxic substances. The water body is not impaired and does not require a TMDL. The water body is not impaired and does not require a TMDL.
			Category 4 (E)	There is an impairment by bacteria, nutrients, metals, toxic substances, and sediment. The water body is not impaired and does not require a TMDL. The water body is not impaired and does not require a TMDL.
			Category 5 (F)	There is an impairment by bacteria, nutrients, metals, toxic substances, sediment, and other pollutants. The water body is not impaired and does not require a TMDL. The water body is not impaired and does not require a TMDL.

Base Features

- Municipal Boundary
 - 2010 Urban Area
 - Boston, MA--NH--RI
 - Dover--Rochester, NH--ME
 - Epping, NH
 - Portsmouth, NH--ME
- Water Features**
- Surface Waterbody
 - Stream, River
- Roads by Legislative Class**
- Class I & II Roads
 - Class IV Urban Compact Road
 - Class V Local Road
 - Private



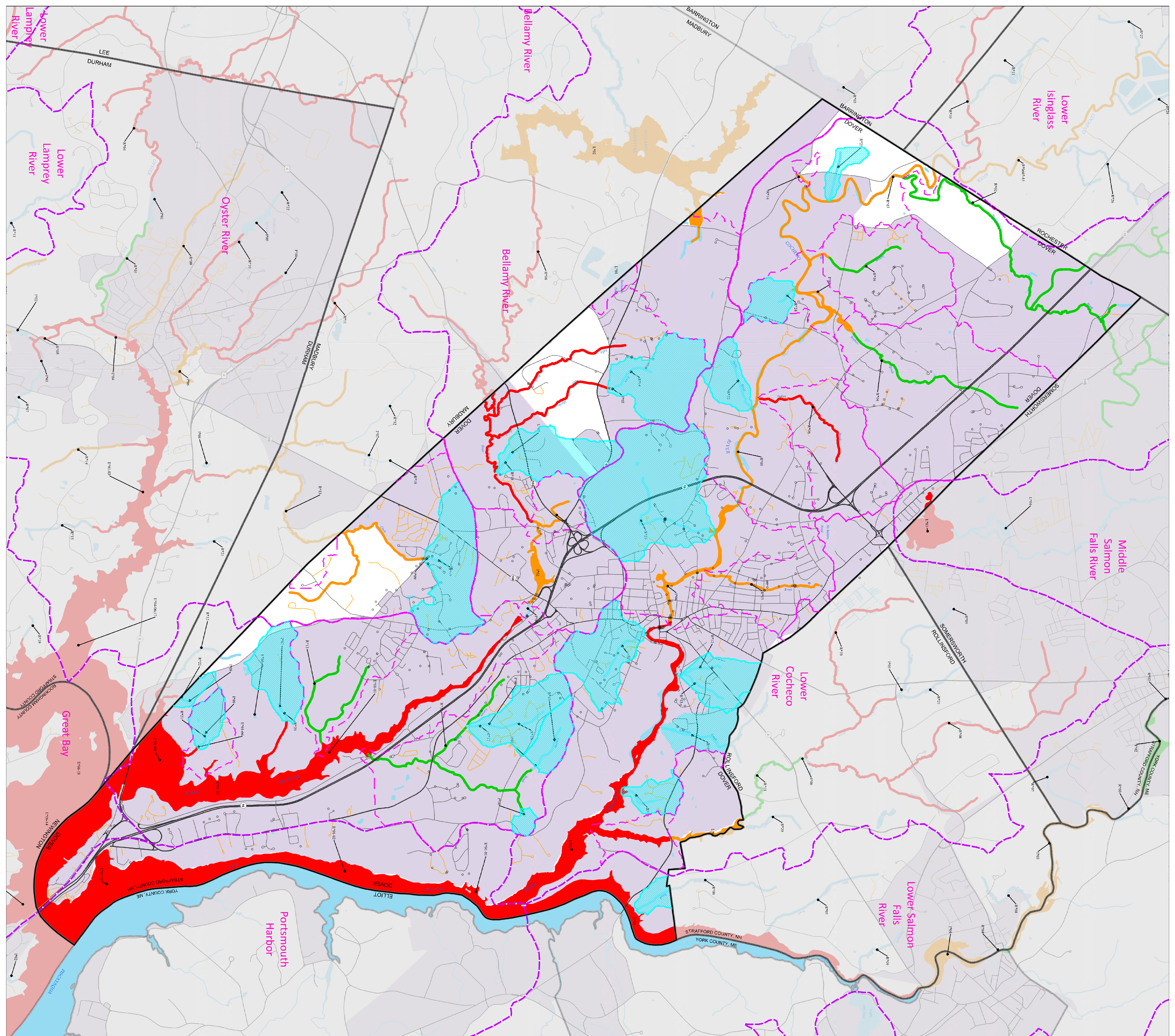
Basin Water Quality Assessments (BWA) and BWAID

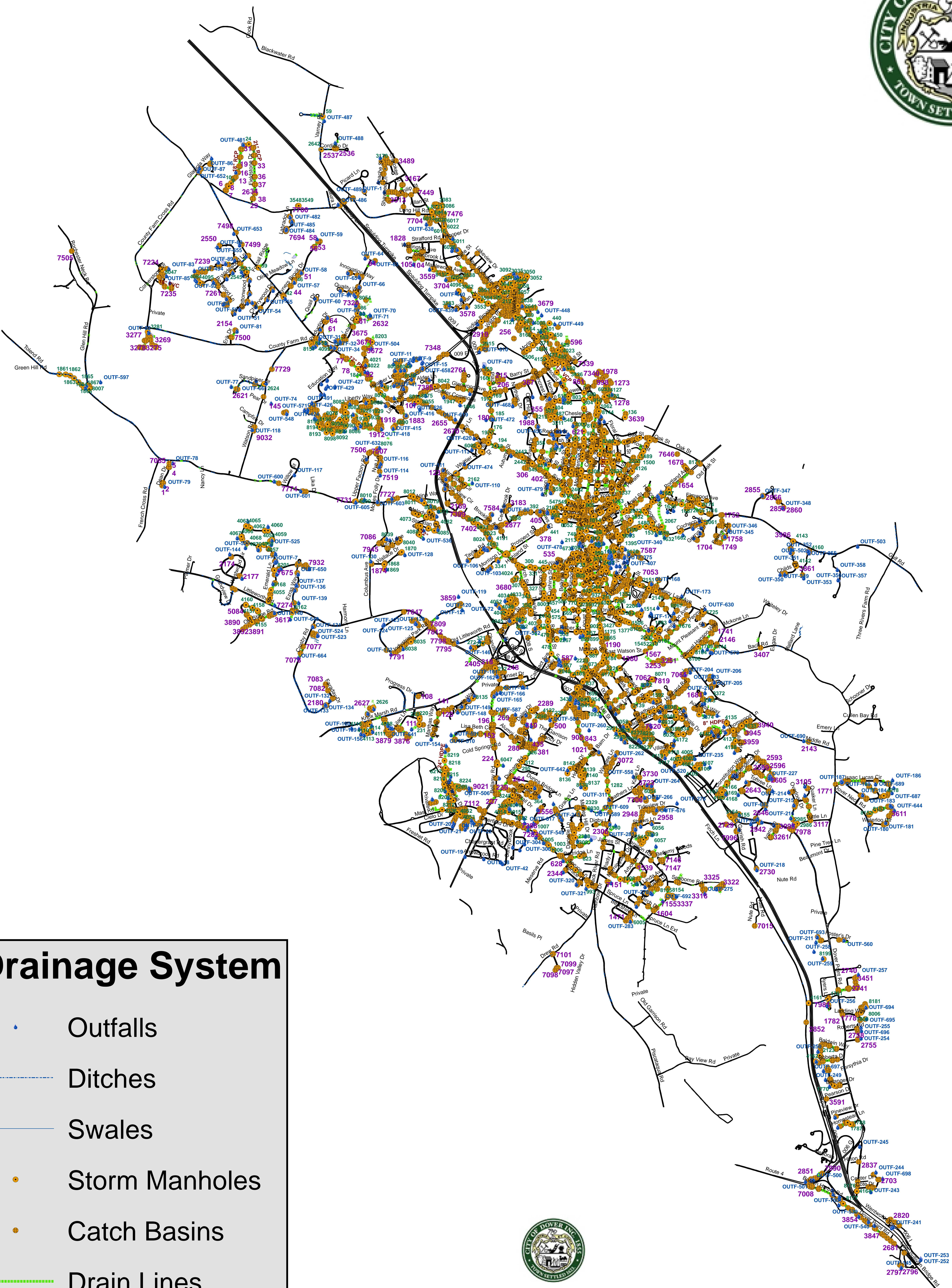
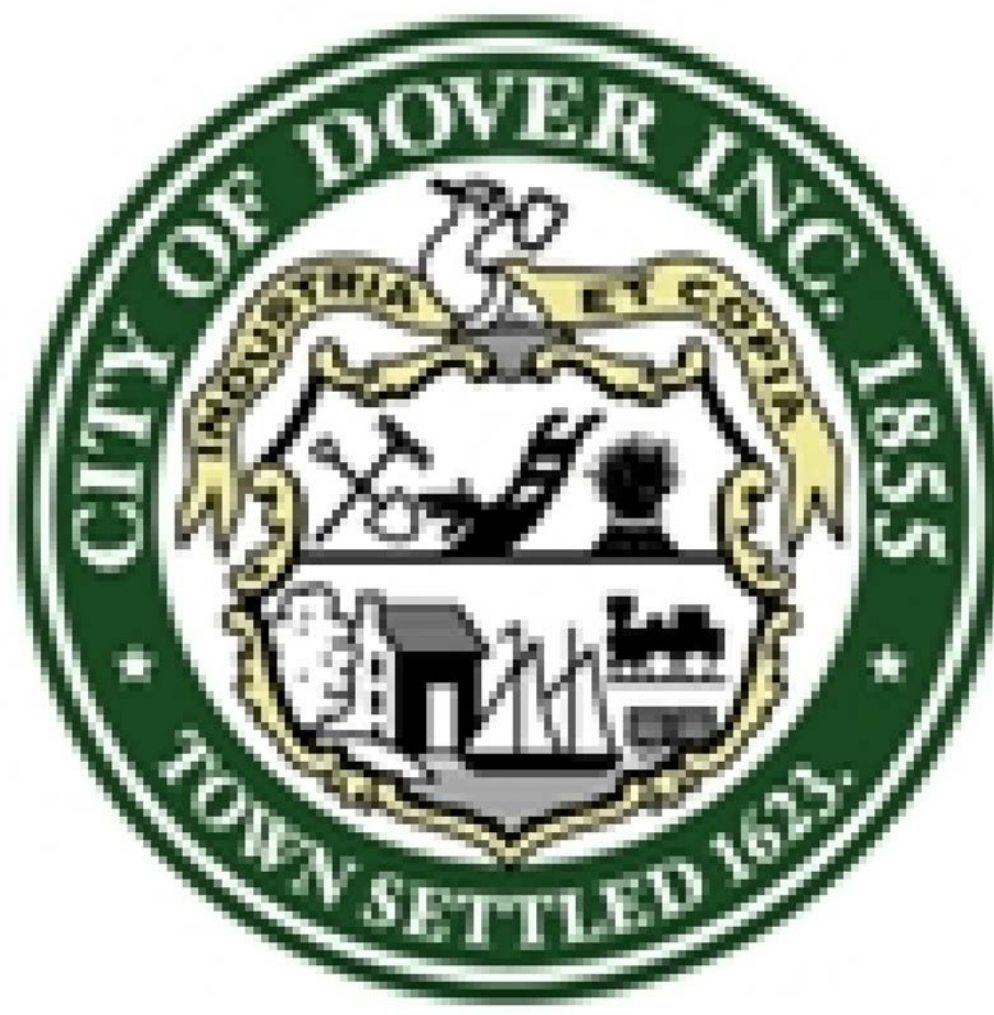
The Basin Water Quality Assessment Program produces two water quality documents every two years: the BWAID Report and the BWAID List. As the two documents use the same data, the BWAID Report and BWAID List were combined into one document for this project. The BWAID Report and BWAID List were combined into one document for this project. The BWAID Report and BWAID List were combined into one document for this project.

Data Sources

Data sources from NH GRANIT datasets. Digital data in NH GRANIT represent the water quality monitoring network. The data is derived from the NH GRANIT datasets. The data is derived from the NH GRANIT datasets. The data is derived from the NH GRANIT datasets.

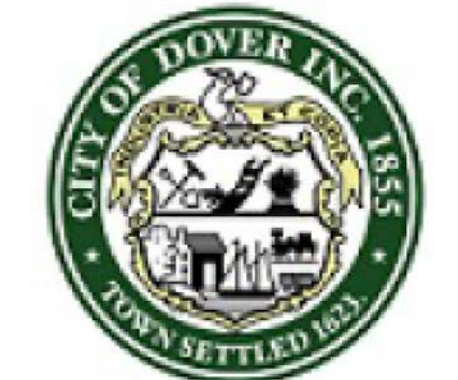
Data Disclaimer:
Data should be used for planning purposes only. Data were derived from various sources and may not be accurate. Please verify BWAID or BWAID at any given time or location.





Drainage System

- Outfalls
- - - Ditches
- - - Swales
- Storm Manholes
- Catch Basins
- - - Drain Lines
- Drainage Pond



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Appendix C

Outfall Inventory and Priority Ranking Matrix

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.⁴ Problem Outfalls need not be screened pursuant to Part 2.3.4.7.b.

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 the table with scores ≥ 11

Low Priority Outfalls: Outfalls/interconnections determined by the permittee as low priority based on the characteristics listed in the table with scores ≤ 10

Excluded outfalls: Outfalls/interconnections with no potential for illicit discharges may be excluded from the IDDE program.

This category is limited to roadway drainage in undeveloped areas with no dwellings and no sanitary sewers; drainage for athletic fields, parks or undeveloped green space and associated parking without services; cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.

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 draining to any waterbody impaired for the following shall be designated either Problem Catchments or HIGH priority

- bacteria or pathogens
- Nitrogen
- Phosphorus

³ Outfalls/interconnections that discharge to or in the vicinity of any of the following areas:

- Public Beaches
- Recreational Areas
- Drinking Water Supplies
- Shellfish beds

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.

Receiving Water	Outfall ID	City Reference	Previous Screening Results Indicate Likely Sewer Input? ¹	Receiving Water Body Impairment? ²	Discharging to Area of Concern to Public Health? ³	Frequency of Past Discharge Complaints	Density of Generating Sites ⁴	Development/Infrastructure ⁵	Historic Combined Sewers or Septic? ⁶	Aging Septic? ⁷	Culverted Streams? ⁸	Additional Characteristics	Score	Priority Ranking
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			Yes = 10 (Problem Outfall) No = 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		
E*01 COCHECHO RIVER	231	Gerrys Landing N	0	10	0	0	2	0	0	0	0	None	12	High Priority
	230	Gerrys Landing	0	10	0	0	2	0	0	0	0	None	12	High Priority
	229	Gerrys Landing N	0	10	0	0	2	0	0	0	0	None	12	High Priority
	272	111 Cochecho St	0	10	0	0	2	0	3	0	0	None	15	High Priority
	271	across from 88 Cochecho	0	10	0	0	2	0	3	0	0	None	15	High Priority
	12	75 Cochecho (police stable)	0	10	0	0	2	0	3	0	0	None	15	High Priority
	269	73 Cochecho St	0	10	0	0	2	0	3	0	0	None	15	High Priority
	270	73 Cochecho St	0	10	0	0	2	0	3	0	0	None	15	High Priority
	268	11 Cochecho St	0	10	0	0	2	0	3	0	0	None	15	High Priority
	239	Young St	0	10	0	0	2	0	3	0	0	None	15	High Priority
	255	Washington/River	0	10	0	0	3	0	0	0	0	None	13	High Priority
	267	31 River	0	10	0	0	2	2	3	0	0	None	17	High Priority
	266	6 River Street	0	10	0	0	2	2	3	0	0	None	17	High Priority
	337	River Street	0	10	0	0	2	3	3	0	0	None	18	High Priority
	265	Henry Law Park	0	10	0	0	3	3	3	0	0	None	19	High Priority
	264	Henry Law Park	0	10	0	0	3	3	3	0	0	None	19	High Priority
	263	Henry Law Park	0	10	0	0	3	3	3	0	0	None	19	High Priority
	262	6 Washington	0	10	0	0	3	3	3	0	0	None	19	High Priority
	258	6 Washington	0	10	0	0	3	3	3	0	0	None	19	High Priority
	257	7 Washington	0	10	0	0	3	3	3	0	0	None	19	High Priority
256	8 Washington	0	10	0	0	3	3	3	0	0	None	19	High Priority	
259	9 Washington	0	10	0	0	3	3	3	0	0	None	19	High Priority	
252	10 Washington	0	10	0	0	3	3	3	0	0	None	19	High Priority	
260	11 Washington	0	10	0	0	3	3	3	0	0	None	19	High Priority	
236	12 Washington	0	10	0	0	3	3	3	0	0	None	19	High Priority	
237	13 Washington	0	10	0	0	3	3	3	0	0	None	19	High Priority	
238	14 Washington	0	10	0	0	3	3	3	0	0	None	19	High Priority	
261	15 Washington	0	10	0	0	3	3	3	0	0	None	19	High Priority	
312	16 Washington	0	10	0	0	3	3	3	0	0	None	19	High Priority	
E*01-01 BELLAMY RIVER NORTH	180	7 McKenna	0	0	0	0	2	2	0	0	0	None	4	Low Priority
	380	behind Garrison School	0	0	0	0	1	2	0	0	0	None	3	Low Priority
	181	59 Shaws	0	0	0	0	2	2	0	0	0	None	4	Low Priority
	182	end of Shaws	0	0	0	0	2	2	0	0	0	None	4	Low Priority
	183	Tennis courts	0	0	0	0	1	2	0	0	0	None	3	Low Priority
	172	50 Back River	0	0	0	0	2	2	0	0	0	None	4	Low Priority
	212	50 Mill Street	0	0	0	0	2	2	0	0	0	None	4	Low Priority
	213	50 Mill Street	0	0	0	0	2	2	0	0	0	None	4	Low Priority
	214	50 Mill Street	0	0	0	0	2	2	0	0	0	None	4	Low Priority
E*01-03 BELLAMY RIVER SOUTH CLEMENT POINT	170	11 Bristol	0	0	0	0	2	2	0	0	0	None	4	Low Priority
	167	18 Lillians	0	0	0	0	2	2	0	0	0	None	4	Low Priority
	165	44 Belanger	0	0	0	0	2	2	0	0	0	None	4	Low Priority
	166	26 Belanger	0	0	0	0	2	2	0	0	0	None	4	Low Priority

	164	22 Belenger	0	0	0	0	2	2	0	0	0	0	None	4	Low Priority
	163	11 Homestead	0	0	0	0	2	2	0	0	0	0	None	4	Low Priority
E*01-04 BELLAMY RIVER SOUTH	320	Spur Rd and Rt 4	0	0	0	0	2	2	0	0	0	0	None	4	Low Priority
	319	Spur Rd and Rt 4	0	0	0	0	2	2	0	0	0	0	None	4	Low Priority
	321	Spur Rd and Rt 4	0	0	0	0	2	2	0	0	0	0	None	4	Low Priority
E*06-14 LOWER LITTLE BAY MARINA SZ	159	Rt 16 ramp	0	0	0	0	0	1	0	0	0	0	None	1	Low Priority
	160	Rt 16 ramp	0	0	0	0	0	1	0	0	0	0	None	1	Low Priority
	158	Rt 16 ramp	0	0	0	0	0	1	0	0	0	0	None	1	Low Priority
	157	Rt 16 ramp	0	0	0	0	0	1	0	0	0	0	None	1	Low Priority
	388	dover point road	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
	389	dover point road	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
	387	dover point road	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
E*01-01 UPPER PISCATAQUA RIVER-NH-NORTH	126	2 Isaac Lucas	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
	127	2 Isaac Lucas	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
	128	2 Isaac Lucas	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
	125	24 Isaac Lucas	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
	123	35 Isaac Lucas	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
	124	30 Isaac Lucas	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
	119	92 Waterloo	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
	120	73 Waterloo	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
	121	45 Waterloo	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
	122	38 Waterloo	0	0	0	0	2	1	0	0	0	0	None	3	Low Priority
E*01-02 DOVER WWTF SZ-NH	171	19 Riverside	0	10	0	0	2	2	0	0	0	0	None	14	High Priority
	169	12 Roberts Road	0	10	0	0	1	1	0	0	0	0	None	12	High Priority
E*01-03 UPPER PISCATAQUA RIVER-NH-SOUTH	162	27 Cote	0	0	0	0	1	2	0	0	0	0	None	3	Low Priority
	161	11 Cote	0	0	0	0	1	2	0	0	0	0	None	3	Low Priority
I*02 COCHECO RIVER - WATSON WALDRON DAM	92	51 Sandpiper	0	0	0	0	1	2	0	0	0	0	None	3	Low Priority
	91	11 Sandpiper	0	0	0	0	1	2	0	0	0	0	None	3	Low Priority
I*04 COCHECO RIVER - CENTRAL AVE DAM	482	16 Northam	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	468	21 Oak Hill	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	392	2 Autumn	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	125	51 Hampshire	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	5	Cochecho	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	513	Fourth Street	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	396	Fourth Street Bridge	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	395	Fourth Street Bridge	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	397	Fourth Street Bridge	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	111	Snows Ct & Prospect	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	4	Third & Grove	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	299	213 Washington	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	3	5 Green Street	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	398	Chestnut Street Bridge	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	400	Chestnut Street Bridge	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	399	Chestnut Street Bridge	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	2	40 Chestnut Street	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	1	Cochecho	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	401	400 Central Ave	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	403	Central Bridge	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	402	Central Bridge	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority
	405	Central Bridge	0	0	0	0	2	3	3	0	0	0	None	8	Low Priority

	404	Central Bridge	0	0	0	0	2	3	3	0	0	None	8	Low Priority
	406	421 Central Ave	0	0	0	0	2	3	3	0	0	None	8	Low Priority
I*02 BELLAMY RIVER - SAWYERS MILL DAM POND	305	Woodman Park School	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	303	Woodman Park School	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	302	Woodman Park School	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	301	Woodman Park School	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	502	Woodman Park Drive	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	501	Belknap Street	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	499	Fisher Street	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	500	Fisher Street	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	498	Rutland Street	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	300	16 Fisher Street	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	503	Locust Street	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	624		0	0	0	0	3	3	3	0	0	None	9	Low Priority
	306	Rutland & Cataract over Highway	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	497	Rutland Street	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	309	76 Rutland Street	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	307	1 Abbey Ln	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	496	Abby Ln	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	308	80 Rutland Street	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	310	271 Locust	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	178	41 Cataract	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	347	Central at Bellamy River	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	348	Central at Bellamy River	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	346	7 Central	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	350	2 Back River Road	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	345	23 Mill Street	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	351	Dover Middle School	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	504	Daley Drive	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	512	Daley Drive	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	506	Daley Drive	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	505	Daley Drive	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	182	62 Bellamy Drive	0	0	0	0	3	3	3	0	0	None	9	Low Priority
	565	Holiday Drive	0	0	0	0	3	3	3	0	0	None	9	Low Priority
L*03 WILLAND POND	458	45 New Rochester	0	10	10	0	3	3	0	0	0	None	26	High Priority
	460	56 New Rochester	0	10	10	0	3	3	0	0	0	None	26	High Priority
	459	53 New Rochester	0	10	10	0	3	3	0	0	0	None	26	High Priority
L*02 BELLAMY RESERVOIR	100	27 Westwood	0	0	0	0	2	2	0	3	0	None	7	Low Priority
	52	20 Dean	0	0	0	0	2	2	0	3	0	None	7	Low Priority
	51	4 Dean	0	0	0	0	2	2	0	3	0	None	7	Low Priority
R*02 BLACKWATER BROOK- CLARK BROOK	7	41 Fieldstone Dr	0	0	0	0	1	3	0	3	0	None	7	Low Priority
	6	57 Fieldstone Dr	0	0	0	0	1	3	0	3	0	None	7	Low Priority
	55	26 Gladiola	0	0	0	0	1	3	0	3	0	None	7	Low Priority
	56	Sixth and Gladiola	0	0	0	0	1	3	0	3	0	None	7	Low Priority
R*03 COCHECO RIVER - UNNAMED BROOK	336	Glenhill Road	0	0	0	0	1	3	0	3	0	None	7	Low Priority
R*05 COCHECO RIVER	79	34 Nye	0	0	0	0	2	3	0	3	0	None	8	Low Priority
	78	34 Nye	0	0	0	0	2	3	0	3	0	None	8	Low Priority
	77	38 Nye	0	0	0	0	2	3	0	3	0	None	8	Low Priority
	338	Tolend Road	0	0	0	0	2	3	0	3	0	None	8	Low Priority
	339	Tolend Road	0	0	0	0	2	3	0	3	0	None	8	Low Priority
	311	111 Whittier St	0	0	0	0	2	3	0	3	0	None	8	Low Priority
	76	20 Cassily	0	0	0	0	2	3	0	3	0	None	8	Low Priority

	310	15 Whittier St	0	0	0	0	2	3	0	3	0	None	8	Low Priority
	309	12 Whittier St	0	0	0	0	2	3	0	3	0	None	8	Low Priority
	307	67 Glenwood	0	0	0	0	2	3	0	3	0	None	8	Low Priority
	274	37 Conifer Commons	0	0	0	0	2	3	0	3	0	None	8	Low Priority
	273	20 Conifer Commons	0	0	0	0	2	3	0	3	0	None	8	Low Priority
R*06 INDIAN BROOK	23	420 Sixth St	0	10	0	0	3	3	0	3	0	None	19	High Priority
	25	20 Venture	0	10	0	0	3	3	0	3	0	None	19	High Priority
	22	Venture Dr	0	10	0	0	3	3	0	3	0	None	19	High Priority
	282	13 Sullivan	0	10	0	0	3	3	0	3	0	None	19	High Priority
	279	30 Sullivan	0	10	0	0	3	3	0	3	0	None	19	High Priority
	280	11 Evergreen	0	10	0	0	3	3	0	3	0	None	19	High Priority
	281	24 Evergreen	0	10	0	0	3	3	0	3	0	None	19	High Priority
	278	11 Stiles	0	10	0	0	3	3	0	3	0	None	19	High Priority
R*14 UNNAMED TRIB. TO COCHECO RIVER, DOVER (FROM LANDFILL)	53	610 Tolland Rd	0	0	0	0	3	3	0	0	0	landfill	6	Low Priority
	336	Glenhill Road	0	0	0	0	3	3	0	0	0	landfill	6	Low Priority
R*15 BERRY BROOK	241	76 Sixth St	0	10	0	0	3	3	3	0	0	None	19	High Priority
	242	76 Sixth St	0	10	0	0	3	3	3	0	0	None	19	High Priority
	302	34 Hough ST	0	10	0	0	3	3	3	0	0	None	19	High Priority
	301	46 Hough St	0	10	0	0	3	3	3	0	0	None	19	High Priority
	297	34 Ash	0	10	0	0	3	3	3	0	0	None	19	High Priority
	300	Horne and Ash	0	10	0	0	3	3	3	0	0	None	19	High Priority
	298	Horne and Ash	0	10	0	0	3	3	3	0	0	None	19	High Priority
	299	31 Horne	0	10	0	0	3	3	3	0	0	None	19	High Priority
	292	75 Redden	0	10	0	0	3	3	3	0	0	None	19	High Priority
	296	65 Maple	0	10	0	0	3	3	3	0	0	None	19	High Priority
	295	88 Redden	0	10	0	0	3	3	3	0	0	None	19	High Priority
	15	Snow Ave	0	10	0	0	3	3	3	0	0	None	19	High Priority
	14	Snow Ave	0	10	0	0	3	3	3	0	0	None	19	High Priority
	13	Snow Ave	0	10	0	0	3	3	3	0	0	None	19	High Priority
	294	44 Redden	0	10	0	0	3	3	3	0	0	None	19	High Priority
	303	67 Horne	0	10	0	0	3	3	3	0	0	None	19	High Priority
	305	88 Horne	0	10	0	0	3	3	3	0	0	None	19	High Priority
	304	26 Roosevelt	0	10	0	0	3	3	3	0	0	None	19	High Priority
	16	Roosevelt	0	10	0	0	3	3	3	0	0	None	19	High Priority
	290	12/14 Crescent	0	10	0	0	3	3	3	0	0	None	19	High Priority
	289	818 Central	0	10	0	0	3	3	3	0	0	None	19	High Priority
R*16 JACKSON BROOK	35	14 Ironwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	34	9 Ironwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	33	14 Ironwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	32	7 Cottonwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	30	47 Cottonwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	318	62 Cottonwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	29	76 Cottonwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	28	90 Cottonwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	313	Sixth and Wildwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	26	36 Wildwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	63	158 Boxwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	60	79 Boxwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	59	79 Boxwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	317	Boxwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	316	23 Boxwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	58	17 Boxwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	314	112 Cottonwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority
	57	114 Cottonwood	0	0	0	0	2	1	0	0	0	None	3	Low Priority

R*13 JOHNSON CREEK - GARISH BROOK	17	271 Mast	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	18	1 Arrow Brook	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	197	Mast Rd and Spruce	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	198	Mast Rd and Spruce	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	383	Spruce Ln	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	382	Spruce Ln	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	204	12 Harlans	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	203	8 Benjamin	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	207	33 Spruce	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	208	9 Spruce Dr	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	778	25 Spruce Dr	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	210	57 Spruce Dr	0	0	0	0	2	3	0	0	0	None	5	Low Priority
R*08 BELLAMY RIVER - KELLY BROOK - KNOX MARSH BROOK	99	5 Westwood	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	97	Susannah and Emerald	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	93	38 Ezra's	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	92	39 Ezra's	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	94	25 Ezra's	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	95	9 Ezra's	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	385	Emerald	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	96	3 Old Stage	0	0	0	0	2	3	0	3	0	None	8	Low Priority
	87	10 Crosby	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	88	6 Faraday	0	0	0	0	0	0	0	0	0	None	0	Low Priority
	90	180 Crosby	0	0	0	0	0	0	0	0	0	None	0	Low Priority
	89	180 Crosby	0	0	0	0	0	0	0	0	0	None	0	Low Priority
	377	Stonewall Drive	0	0	0	0	0	0	0	0	0	None	0	Low Priority
	379	Stonewall Drive	0	0	0	0	0	0	0	0	0	None	0	Low Priority
R*09 BELLAMY RIVER - UNNAMED BROOK	108	54 Cataract	0	0	0	0	3	3	0	0	0	None	6	Low Priority
	110	58 Cataract	0	0	0	0	3	3	0	0	0	None	6	Low Priority
	109	Bellamy Rd Bridge	0	0	0	0	3	3	0	0	0	None	6	Low Priority
	105	Bellamy and Sunset	0	0	0	0	3	3	0	0	0	None	6	Low Priority
	102	9 Beverly	0	0	0	0	3	3	0	0	0	None	6	Low Priority
	103	5 Beverly	0	0	0	0	3	3	0	0	0	None	6	Low Priority
R*11 VARNEY BROOK - CANNEY BROOK	150	85 Garish	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	151	91 Old Dover Point Road	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	149	3 Ivans	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	148	10 Overlook	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	147	26 Overlook	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	146	48 Overlook	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	144	34 Quaker	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	145	60 Quaker	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	152	53 Toftree	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	154	40 Dover Point Road	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	155	34 Dover Point Road	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	133	19 Applevale	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	132	11 Applevale	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	131	15 Middlebrook	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	137	17 Hawthorn	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	136	2 Hubbard	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	138	23 Governor Sawyer	0	0	0	0	2	3	0	0	0	None	5	Low Priority
R*13 GARRISON BROOK	177	14 Hemlock	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	178	14 Hemlock	0	0	0	0	2	3	0	0	0	None	5	Low Priority
	176	India and Hemlock	0	0	0	0	2	3	0	0	0	None	5	Low Priority

Appendix D

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

(N/A - information included in SOP)

Appendix E

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

Standard Operating Procedure for IDDE Catchment Investigation Procedure

Purpose

This document outlines the protocols for sample collection, use of field kits, storage and conveyance of samples, field data collection and storage, and catchment investigation in accordance with the City of Dover, NH Illicit Discharge Detection and Elimination (IDDE) Plan.

• Sample Collection Requirements

- All samples are to be collected during 'dry weather conditions' which is defined as less than 0.1 inches of rainfall over the previous 24-hour period and no significant snow melt is occurring.
- Prioritized outfalls are to be sampled first. Priority and ranking are determined according to the predetermined 'Outfall Assessment and Priority Ranking Procedure' outlined in the permit [Section 2.3.4.7] when dry weather discharge is observed at an outfall location. For purposes of this procedure dry weather discharge is considered any discharge from the outfall or interconnection that exceeds 50 gallons per day or 0.035 gallons per minute. Effectively what this means is that flow should be sufficient to collect the sample volume required within 5 minutes.
- All sampling personnel are to don proper personal protective equipment (PPE) during the sampling procedure (gloves, proper footwear, pants, etc.)
- Once the sampling is complete, samples are collected and transported to the laboratory in ice-filled coolers, and processed or refrigerators to maintain a temperature of 4°C. All samples are labeled and results recorded and saved in electronic and paper form. Samples that need to be sent to an external laboratory are labeled and packed in ice-filled coolers throughout transport to the laboratory. A chain-of-custody form template is included in the appendices. All laboratory samples documented so as to include:
 - Date of sampling event
 - Unique identification numbers that correspond to date and location of each sample
 - Unique field identification name
 - Sample analyses to be performed by the laboratory for each sample
 - Names and signatures of all persons handling the samples in the field and in the laboratory.

Materials Needed

Sampling (field)

- About 500 ml of water sample for all analyses.
- The *E. coli* sample should be taken separately.
- 3- 200 ml sterile HDPE sample bottles

- YSI sonde with appropriate sensors.
- Permanent marker for labeling.

Surfactant Screening (lab)

- Untreated (non-bleached) paper for sample collection and testing. Standard [yellow Post-It Notes](#) are perfect as they are small, inexpensive, and most importantly, they do not contain optical brighteners and fluoresce under UV light.
- [365 nm UV flashlight](#) (“black” light). This flashlight, for example, is 365 nm, rechargeable, and includes UV safety glasses. Note: many UV flashlights are 395 nm and may work but less effectively.
- *Optional but suggested:* UV enhancing safety glasses to protect eyes for prolonged exposure to UV light.

1. Field Kits

- Field kits will contain:
 - YSI handheld sampling device and appropriate sensors
 - Sample collection containers
 - Nitrile gloves
 - Data collection tablet/iPad
- Field kit maintenance:
 - After each day of sampling, all field kit supplies are to be replenished and sampling equipment is to be properly cleaned.
 - Refer to **YSI Pro Plus User Manual Page 58** for maintenance procedure.

2. Sample Storage and Conveyance

- *E. coli/ Enterococcus* samples are to be tested upon return from the field. Maximum holding time is 6 hours. (per EPA CFR Title 40, Chapter 1, Subchapter D, part 136) (per NEMI 9221 A, B, C, F).
- The maximum hold time for all samples will be 6 hours.
- Samples will be transported and held at 34-39°F (1-4° C) until testing occurs.
 - This is most simply done using a cooler containing ice packs. Do not allow the ice packs to come into direct contact with the sample containers.
 - A liquid thermometer should be kept in the cooler to allow for easy temperature monitoring. *We recommend affixing the thermometer to the inside of the cooler.

3. Field Data Collection and Storage

- All field data will be collected using the Survey123 data collection software on a tablet/iPad. See attachment.
- In the event that a tablet is unavailable, all the information will be collected on a paperform containing the same information.
- Collected information will include:
 - Outfall number

- Outfall location
- Date and time of sampling
- Weather conditions
- Time since last rainfall (hours)
- Amount of last rainfall (inches)
- Receiving water
- Shape, dimensions, physical condition, and material of outfall pipe
- Spatial location (coordinates provided by Survey123 or similar application)
- Data collected on the YSI handheld device will be uploaded into a spreadsheet and connected to the data point in the Survey123 map.
 - Refer to **YSI Pro Plus User Manual Pages 52-53** for data management procedure

1. Sampling Procedure

Locate outfall to be sampled. If the outfall is inaccessible, follow the stormwater drainage map to the next accessible upstream access point for sampling.

- a. Document outfall number and complete the field data collection form using the tablet/iPad Survey 123 form (template form included as an appendix).
- b. To start, Label your sterile *E. coli* (freshwater) or *Enterococci* (coastal) bottle and two additional sample bottles/containers with the date, time, and name of outfall/location.
- c. Fill each sample bottle separately.
- d. Take the sample bottle and unscrew the top.
 - i. Hold the bottle cap facing down so nothing can get onto the underside of the lid.
 - ii. Do NOT touch the underside of the lid to avoid transferring bacteria.
 - iii. Do NOT set it down on the ground because something could get on it.
 - iv. By following these steps, you greatly reduce the chance of bacteria getting into the bottle, so you will not get a false positive.
- e. Fill the bottle from the outfall making sure to not get any sand, sediment, or debris in the container.
 - i. *A very important note: the E. coli/enterococci samples must be run within six hours of them being taken. Make sure to plan enough time to run all the bacteria samples in the lab when done sampling.*
- f. Next, take your two other sample bottles/containers and fill them the same way but making sure to fill them to the 200 mL mark.

2. Conduct a field test using the YSI Pro Plus sonde

- a. Turn on the meter by pressing the green circle button.
- b. When the screen comes on, it should show at least a temperature reading in degrees Celsius or Fahrenheit depending on your chosen options, a barometric pressure reading in mmhg, and a specific conductivity reading in us/cm.
- c. The end of the cord attached to the meter should have a small metal port that is covered with a red cap. It is important to leave the red cap on until a probe is inserted into the port. The cap will keep water and debris from entering the hole and damaging or destroying the sensor port.
- d. The next step is to make sure that both the conductivity and salinity results are being displayed. To turn these on is a two-step process.
 - First you click the probe button and then select setup. Look at the row that says conductivity and see if it says on or off next to it. If it says on, then you are all set but if it says off, click on conductivity. The next screen has a box that just be clicked to turn on conductivity. Click the box and it will turn it on. Then press escape to return to the main screen where the results are displayed.
 - Probe → Setup → Conductivity → Escape to return to main screen.
 - To turn on salinity, click the probe button. Then scroll down to display. From there scroll down to conductivity and click it. Then scroll down to salinity and click that as well. In this screen you will see three options. You want to scroll down to ppt and click that. Then press the escape button which will take you back to the main menu.
 - Probe → Display → Conductivity → Salinity → PPT → Escape
- e. Attach the ammonia (NH₃) sensor to the probe by removing the red cap at the end and screwing the sensor into it. Caution, nothing should be forced in or screwed in with abnormal tightness. This could strip or damage the connections and ruin the instrument. If properly aligned the sensor should easily be installed and fall into alignment without much effort.
 - Then click the probe button and choose setup.
 - Scroll down to ISE1 and then choose NH₃. Then press the escape button which will take you back to the main menu.
 - Probe → Setup → ISE1 → NH₃ → Escape
- f. The YSI screen should now have the following units displayed.
 - The temperature in degrees Celsius/fahrenheit
 - The barometric pressure in mmHg
 - The conductivity in us/cm
 - The salinity in ppt
 - The ammonia in mg/L
- g. If there are multiple dashed lines or strange symbols through some of the result areas, don't worry about it for now. It just means that nothing is detected yet. If dashed lines or strange symbols are not replaced by real numbers when you start sampling, then there is a problem. If symbols are not replaced, start by repeating

step 2d and try again.

- h. Now take the end of the cord with the sensor and submerge it in one of the water sample bottles. The important things to note here are that the sensor is fully submerged and that the two holes near where the cord begins are fully submerged as well. You may have to jiggle the sensor to keep refreshing the sample within the probe. If the water level is too shallow such that the probe cannot be fully submerged, then you will have to add more sample water.
- i. It may take a few minutes for all of the readings on the YSI screen to stabilize. If the numbers keep jumping back and forth within a small range, you can take the average or one of the numbers it keeps stopping on.
- j. Record the ammonia, specific conductivity, salinity, and temperature on your tablet or field sheet making sure to note the units for each parameter.
- k. Once you are done sampling with the YSI meter, take off the metal cage, and then rinse the whole sensor area with DI or distilled water. Make sure to get water into the two holes at the top of the probe.
- l. You have gathered all the data and samples you will need for this outfall. You can move onto the next outfall sample. Remember, the *E.coli* samples must be run within six hours of collection.

3. Lab Test Procedure for *E. Coli* (fresh water) / *Enterococci* (salt or brackish water):

- a. In the lab, take your *E. coli* sample bottle and make sure your sample is 100 ml exactly. If you need to pour off some sample to get to 100 ml, be sure to shake the sample first.
- b. One packet of reagent will then be added to the sample. The cap is then replaced, and a swirling motion is performed until the reagent is dissolved into the sample. The reagent will have a hard time dissolving into an ice-cold sample, so be sure to let it sit for a short time.
 - i. For freshwater samples use Colilert, Brackish or saltwater samples will be run with Enterolert.
- c. Prep your Quanti-tray by writing on the back the sample name, location or other indicator and the date and time the sample was run. Use a soft tip sharpie so that you do not break through to one of the wells.
- d. Open the Quanti-tray by holding it in one hand and squeezing the sides, you can gently pull the tab if you need to. Be careful not to touch the inside of the tray. Gently tap the side to remove excess air bubbles.
- e. The sample is then carefully poured into the tray and placed onto the rubber sealer mat.
- f. The tray and sealer mat are then put through the sealer which should have been warming up for a few minutes. You will know it is ready when you have a green light.
- g. Place the tray and the rubber mat with the backing of the Quanti-tray facing up and the opening of the Quanti-tray facing out.
- h. Let the sealer grab the tray and pick it up a few seconds later from the back of the sealer.
- i. Once the sample tray comes out of the sealer it must be incubated:
 - i. For Colilert- put the Quanti-tray in the incubator at 95°F (35°C) +/- 0.5°C for 24 hours.
 - ii. For Enterolert- put the Quanti-tray in the incubator at 106°F (41°C) +/-0.5°C for 24 hours.
- j. AFTER the 24-hour incubation period:
 - i. Take tray out of incubator.
 - ii. If there is no color that indicates that no total coliforms are present.
 - iii. To check for *E. coli* / *enterococci* you will need to use a UV light to see how many wells fluoresce. Sometimes it is tricky to decide if what you are seeing is a positive. Use the comparator to help.
 - iv. Mark the number of wells with positive reaction on your datasheet.
 - v. Calculate the Most Probable Number (MPN) using the IDEXX 51-Well Quanti-Tray MPN Table or the IDEXX MPN generator software found at:
<https://www.idexx.com/en/water/resources/mpn-generator/>

IDEXX
51-Well Quanti-Tray®
MPN Table

No. of wells giving positive reaction	MPN per 100 ml sample	95% Confidence Limits	
		Lower	Upper
0	<1.0	0.0	3.7
1	1.0	0.3	5.6
2	2.0	0.6	7.3
3	3.1	1.1	9.0
4	4.2	1.7	10.7
5	5.3	2.3	12.3
6	6.4	3.0	13.9
7	7.5	3.7	15.5
8	8.7	4.5	17.1
9	9.9	5.3	18.8
10	11.1	6.1	20.5
11	12.4	7.0	22.1
12	13.7	7.9	23.9
13	15.0	8.8	25.7
14	16.4	9.8	27.5
15	17.8	10.8	29.4
16	19.2	11.9	31.3
17	20.7	13.0	33.3
18	22.2	14.1	35.2
19	23.8	15.3	37.3
20	25.4	16.5	39.4
21	27.1	17.7	41.6
22	28.8	19.0	43.9
23	30.6	20.4	46.3
24	32.4	21.8	48.7
25	34.4	23.3	51.2
26	36.4	24.7	53.9
27	38.4	26.4	56.6
28	40.6	28.0	59.5
29	42.9	29.7	62.5
30	45.3	31.5	65.6
31	47.8	33.4	69.0
32	50.4	35.4	72.5
33	53.1	37.5	76.2
34	56.0	39.7	80.1
35	59.1	42.0	84.4
36	62.4	44.6	88.8
37	65.9	47.2	93.7
38	69.7	50.0	99.0
39	73.8	53.1	104.8
40	78.2	56.4	111.2
41	83.1	59.9	118.3
42	88.5	63.9	126.2
43	94.5	68.2	135.4
44	101.3	73.1	146.0
45	109.1	78.6	158.7
46	118.4	85.0	174.5
47	129.8	92.7	195.0
48	144.5	102.3	224.1
49	165.2	115.2	272.2
50	200.5	135.8	387.6
51	> 200.5	146.1	infinite

IDEXX Sales and Technical Support
1-800-321-0207 or 1-207-856-0496
www.idexx.com/water

4. Lab Test Procedure for Surfactant Screening

- a. All UV testing should be performed in a dark room for best results.
- b. Prepare two reference papers to provide a clear positive and negative reference for comparing to samples. Run one reference paper under tap water and apply a known surfactant with optical brighteners to the other (most laundry detergents work well). The positive reference should be confirmed to fluoresce (bright bluish glow) under UV light. Label papers as "Ref. Pos." and "Ref. Neg." or similar.
- c. Label a Post-It Note (or selected sampling paper) with the sample ID at the top of the paper.
- d. Note that samples that are dried fluoresce brighter than wet samples.
- e. Apply the sample to the paper and allow to dry for best results. Simply pouring some of the sample onto the paper is sufficient.
- f. Put on your safety glasses if you are using them and turn off the lights.
- g. Expose the sample paper and references to UV light.
- h. Determine if the sample is *positive*, *negative*, or *retest*.
 - i. *Positive* – the sample will definitely fluoresce (glow) a bright bluish color and will resemble the positive laundry soap reference.
 - ii. *Negative* – the sample is dull with no glow and resembles the negative reference with tap water.
 - iii. *Retest* – may occur with some contamination and is not clearly positive or negative. Retest with the same sample or another sample may need to be collected.
- i. Turn on the lights, record the result, and dispose of the sample paper.
- j. Keep the positive and negative reference samples for future tests.

Threshold conditions:

The following are thresholds generally related to common water quality limits. Fecal Indicator Bacteria results that are above threshold conditions will require further catchment investigation. See catchment investigation procedure in the IDDE plan.

Test	EPA Benchmark	Concentration Levels Indicating Need for Further Investigation	Remarks
<i>E.coli</i>	> 235 <i>E. coli</i> /100 mL	>4000 <i>E. coli</i> /100 mL	Undiluted wastewater will generally have <i>E. coli</i> levels an order of magnitude or more, higher than the EPA benchmark. Pet waste, wildlife sources and regrowth of bacteria in storm drains have been shown to contribute to elevated <i>E. coli</i> levels above the benchmark.
Ammonia	> 0.5 mg/L	>0.5 mg/L	In the absence of other wastewater indicators, follow-up investigation is performed when the ammonia concentration is 0.5 mg/L or higher. If other wastewater indicators are present, then a 0.25 mg/L benchmark is used. Decomposing vegetation under anoxic conditions can release ammonia to water, which can be misleading.
Surfactants	> 0.25 mg/L	Presence	Detection of low concentrations (0.1- 0.3 mg/L) of surfactants is common at stormwater outfalls. Most detections are not correlated with other wastewater indicators and do not lead to a definite source. These detections may be attributable to outdoor vehicle or building washing.
Total Chlorine	> Reporting Limit	>0.50 mg/L	The field test used for total chlorine analysis is sufficiently sensitive to detect municipal potable water sources diluted by groundwater or runoff approximately 3 to 10 fold, depending on the strength of the potable chlorine residual and type of chlorination used. Total chlorine is a decent indicator of treated drinking water leaks and potentially graywater sources, but may also be permitted non-stormwater discharges. If high levels are consistently identified in a sample without other wastewater indicators,

			such as bacteria or ammonia, then discussions with water utility should precede comprehensive investigation of drainage area.
Specific Conductance	N/A	>600 $\mu\text{S}/\text{cm}$	Specific conductance alone is not a reliable indicator of wastewater contamination. Road salt and metals from pipe corrosion often result in levels in the 1,000-5,000 $\mu\text{S}/\text{cm}$ range. However, flows contaminated with wastewater generally have specific conductance above 600 $\mu\text{S}/\text{cm}$. Very high level (>5,000 $\mu\text{S}/\text{cm}$) may indicate an industrial illicit connection.
Total Phosphorus	N/A	>0.3 mg/l	Phosphorus alone is not a reliable indicator of wastewater sources. High levels of phosphorus may be present in stormwater discharges due to erosion in the drainage area or other natural sources. Treated drinking water may also be high in phosphorus to meet anti-corrosion requirements in drinking water distribution systems and may be identified during dry weather sampling if a water line flushing activity or other drinking water discharge is present in the storm drain system.
Total Nitrogen	N/A		Naturally occurring levels of nitrate and total nitrogen vary substantially across the country, and statistical analyses of water quality data suggest that appropriate reference levels range from 0.12 to 2.2 mg/L total N.

4. Catchment Investigation Procedure

- Upon completion of the Return Sampling Procedure and the isolation of an area of illicit discharge a catchment investigation can be conducted.
 1. Use the developed stormwater system map, historic plans and records, and other available data sources to identify locations of prior sewer/storm drain construction and maintenance, previous system failures, sanitary sewer surcharges, SSOs, and septic system breakouts within the area identified by the Return Sampling Procedure.
 2. Please refer to the 'Return Sampling Procedure' in Section 1 for 'manhole

- inspection methodology’.
3. Once the source of the illicit discharge is identified, convey the information to the appropriate team to remediate the discharge.

USER MANUALS

Ammonia, Chlorine, Conductivity, Salinity, Temperature

YSI Pro Plus: <https://www.ysi.com/File%20Library/Documents/Manuals/605596-YSI-ProPlus-User-Manual-RevD.pdf>

E. coli/ Enterococci

Quanti-Tray Sealer: <https://123.idexx.com/resource-library/water/quant-tray-sealer-plusmanual-en.pdf>

Colilert: <https://www.idexx.com/files/colilert-procedure-en.pdf>

Enterolert: <https://www.idexx.com/files/enterolert-procedure-en.pdf>

TABLES AND SOFTWARE

IDEXX 51-Well MPN table: <https://www.idexx.com/files/qt51mpntable.pdf>

IDEXX MPN generator software: <https://www.idexx.com/en/water/resources/mpn-generator/>

Appendix: Survey 123 questions
MS4 2020 Dry Weather Inspections

1) Facilities ID

1 **Facilities ID**
This should be printed on your map or found in Collector / uCAT

2) Reason for Inspection

- a. Initial Inspection
- b. Follow-up Inspection
- c. Dry Run
- d. Other

2 **Reason for Inspection**

3) Is Outfall Accessible?

- a. Yes
- b. No

3 **Is Outfall accessible?**

Yes No

4) Dry Weather Flow?

- a. No – No signs of dry weather flow
- b. No – Signs of dry weather flow
- c. Yes – Is flowing
- d. Other

4 **Dry Weather Flow?**
Is there anything flowing from the outfall?

5) Characteristics of Flow

- a. Example – color sheen, foam, odor, sediment, cloudiness, etc.

5 **Characteristics of flow**
Color, sheen, foam, odor, sediment, cloudiness, etc...

6) Characteristics of outfall

- a. Example – physical condition

6 **Characteristics of outfall**
Physical condition of outfall, etc...

7) Photo 1

7 **Photo 1**

Select image file



8) Photo 2

8 **Photo 2**

Select image file



9) Photo 3

9 **Photo 3**

Select image file 

10) Photo 4

10 **Photo 4**

Select image file 

11) Photo 5

11 **Photo 5**

Select image file 

12) Notes

12 **Notes**

13) Date/Time

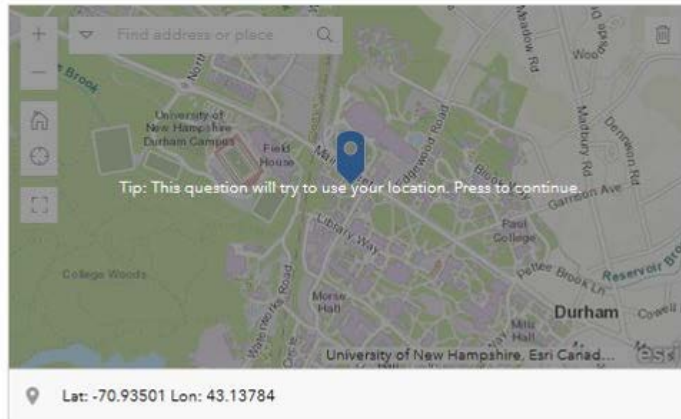
13 **Date/Time**

14) Inspector Name

14 **Inspector Name**

15) Map Location

Map Location



Submit

Appendix F

IDDE Employee Training Record

Appendix G

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