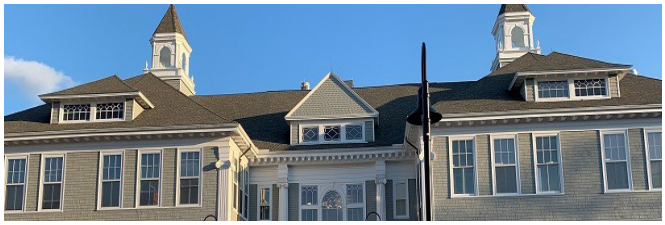

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ILLICIT DISCHARGE DETECTION AND ELIMINATION PLAN

MS4 GENERAL PERMIT COMPLIANCE

JUNE 2019

TOWN OF
Dedham
MASSACHUSETTS

idde

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1.0 INTRODUCTION

1.1 MS4 Program

This Illicit Discharge Detection and Elimination (IDDE) Plan has been developed by the Town of Dedham to address the requirements of the 2016 National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) set forth by the United States Environmental Protection Agency (USEPA).

Under the MS4 permit, Dedham is required to employ best management practices for the six minimal control measures in an effort to reduce the discharge of pollutants from the MS4 to the maximum extent practicable. The measures are as follows:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management); and
6. Good Housekeeping and Pollution Prevention for Permittee Owned Operations.

As part of Minimum Control Measure No. 3, Illicit Discharge Detection and Elimination (IDDE), the Town is required to implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its MS4 and implement procedures to prevent such discharges. This includes, but is not limited to, the following measures:

1. Developing a comprehensive map of the Town's drainage system that builds upon the outfalls and receiving waters that were previously mapped under the 2003 MS4 Permit.
2. Ensuring that appropriate regulatory mechanisms and enforcement procedures, as required under the 2003 MS4 Permit, are in place to prohibit illicit discharges.
3. Developing and implementing a written plan to detect and eliminate illicit discharges, which references the Town's authority to implement all aspects of the IDDE program, clearly identifies responsibilities with regard to eliminating illicit discharges, and outlines written procedures for dry and wet weather outfall screening and sampling and catchment investigations.
4. Providing training annually to employees involved in the IDDE program about the program, including how to recognize illicit discharges and SSOs.

Dedham has developed an IDDE Plan, outlined in this section and associated appendices, to address these requirements.

1.2 Purpose of the Plan

The MS4 Permit defines an illicit discharge as "any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a NPDES Permit (other than the MS4 Permit) and discharges resulting from fire-fighting activities."
The following categories of non-stormwater discharges are allowed under the MS4 Permit unless the Town, EPA, or the MassDEP identifies any category or individual discharge of non-stormwater discharge identified below as a significant contributor of pollutants to the MS4, then that category or individual discharge is not allowed, and shall be deemed an "illicit discharge" that must be addressed as part of the Town's Illicit Discharge Detection and Elimination (IDDE) Program.

1. Water line flushing
2. Landscape irrigation
3. Diverted stream flows
4. Rising ground water
5. Uncontaminated ground water infiltration (as defined at 40 CFR § 35.2005(20))
6. Uncontaminated pumped ground water
7. Discharge from potable water sources
8. Foundation drains
9. Air conditioning condensation
10. Irrigation water, springs
11. Water from crawl space pumps
12. Footing drains
13. Lawn watering
14. Individual resident car washing
15. Flows from riparian habitats and wetlands
16. De-chlorinated swimming pool discharges
17. Street wash waters
18. Residential building wash waters without detergents

Discharges or flows from firefighting activities are also allowed under the MS4 Permit and need only be addressed where they are identified as significant sources of pollutants to waters of the United States.

Illicit discharges could be categorized as: a fixed-point source, such as illegal/improper sanitary or floor drain connections; isolated or recurring discharges, such as illegal dumping and improper disposal of waste from boats/campers; or indirect sources, such as cracks/defects in the infrastructure that allow infiltration into the drainage system.

Illicit discharges result in contamination of the drainage system and the subsequent discharge of pollutants to the environment. Efforts should be made to identify and remove illicit discharges to the drainage system through development and implementation of a comprehensive IDDE Plan.

The purpose of this IDDE Plan is to remove pollutants from the stormwater discharged from municipal outfalls by identifying and allowing for elimination of illicit discharges to the drainage infrastructure tributary to the outfalls. The focus of the Plan is primarily the identification of fixed-point source discharges; however, some isolated/recurring direct, as well as indirect sources will likely be identified during the investigation.

1.3 Development of the Plan

1.3.1 Mapping

Dedham is required to build upon the outfall and receiving waters map that was required under the 2003 MS4 Permit. The revised map shall be completed in two phases as outlined below and is intended to facilitate the identification of key infrastructure and factors influencing proper system operation, and the potential for illicit discharges.

Phase 1: The system map is required to be updated within two (2) years of the permit effective date to include the following:

- Open channel conveyances (swales, ditches, etc.)
- Interconnections with other MS4s and other storm sewer systems
- Municipally-owned stormwater treatment structures (e.g. detention and retention basins, infiltration systems, bioretention areas, water quality swales, gross particle separators, oil/water separators, or other proprietary systems.)
- 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 pursuant to Clean Water Act sections 303(d) and 305(b).
- Initial catchment delineations. A catchment is the area that drains to an individual outfall or interconnection. Topographic contours and drainage system information may be used to produce initial catchment delineations.

Phase 2: The system map shall also be updated annually as the following information becomes available during implementation of catchment investigation procedures. This information must be included in the map for all outfalls within ten (10) years of the permit effective date:

- Outfall spatial location (latitude and longitude with a minimum accuracy of +/- 30 ft)
- Pipes
- Manholes
- Catch basins
- Refined catchment delineations. Catchment delineations shall be updated to reflect information collected during catchment investigations
- Municipal sanitary sewer

The following are recommended elements to be included in the system map as information becomes available:

- Storm sewer material, size (pipe diameter) and age
- Sanitary sewer system material, size (pipe diameter) and age
- Privately owned stormwater treatment structures
- Where a municipal sanitary sewer system exists, properties known or suspected to be served by a septic system, especially in high-density urban areas

- Area where the permittee's MS4 has received or could receive flow from septic system discharges (e.g., areas with poor soils, or high ground water elevations unsuitable for conventional subsurface disposal systems)
- Seasonal high-water table elevations impacting sanitary alignments
- Topography
- Orthophotography
- Alignments, dates and representation of work completed (with legend) of past illicit discharge investigations (e.g., flow isolation, dye testing, CCTV)
- Locations of suspected, confirmed and corrected illicit discharges (with dates and flow estimates).

The mapping will serve as a planning tool for the implementation and phasing of the Town's IDDE Program and demonstration of the extent of complete and planned investigations and corrections. The Town will update their mapping as needed to reflect newly discovered information and required corrections of modifications. The Town will report annually on the progress toward completion of the system map in their MS4 Annual Report.

1.3.2 Municipal Infrastructure

Dedham already has in place a comprehensive drainage GIS. In addition to mapping known outfalls and receiving waters as required by the 2003 MS4 Permit, the Town has also mapped much of their remaining MS4 infrastructure including storm drain manholes, catch basins, and drainage pipes. In addition, interconnections have been mapped, which show where the Town's MS4 discharges into a neighboring MS4. The Town's existing drainage map, which will be updated annually, can be found here: http://dedham.maps.arcgis.com/home/index.html.

1.3.3 Non-Municipal Infrastructure

Dedham has reviewed drainage infrastructure within town boundaries to determine ownership. Private infrastructure or infrastructure owned and operated by another municipality or a state entity has been determined and designated in the Town's drainage GIS. Dedham currently has interconnections with both MassDOT and the Boston Water & Sewer Commission.

1.4 Receiving Waters and Impairments

Table 1-1 lists impaired waters, based on the 2014 Massachusetts Integrated List of Waters developed by MassDEP, that are either located within the boundaries of Dedham's regulated area or to which Dedham is tributary to in the case of nutrient impairments. The 2014 Massachusetts Integrated List of Waters is the most recently approved list. A water body is impaired if it does not meet one or more of its designated use(s). For purposes of the MS4 Permit, "impaired" refers to categories 4 and 5 of the five-part categorization approach used for classifying the water quality standards attainment status for water segments under the TMDL program. Impaired waters compilations are also sometimes referred to as "303(d) lists." Category 5 waters are impaired because at least one designated use is not being supported or is threatened and a TMDL is needed. Category 4 waters indicate that at least one designated use is not being supported but a TMDL is not needed (4a indicates that a TMDL has been approved or established by EPA; 4b indicates other required control measures are expected in result in

the attainment of water quality standards in a reasonable period of time; and 4c indicates that the non-attainment of the water quality standard is the result of pollution (e.g. habitat) and is not caused by a pollutant).

Table 1-1: Impaired Waters Applicable to Dedham			
Water Body Name	Segment ID	Impairment(s)	Approved TMDL
Charles River	MA72-07	(Eurasian Water Milfoil, Myriophyllum spicatum*), (Fish-Passage Barrier*), (Non-Native Aquatic Plants*), (Other flow regime alterations*), DDT, E.Coli, Fishes Bioassessments, Nutrient Eutrophication/Biological Indicators, PCB in Fish Tissue, Total Phosphorus	Phosphorus (TMDL No. 40317) & Pathogens (TMDL No. 32370)
Neponset River	MA73-02	(Debris/Floatables/Trash*), DDT, E.coli, Fecal Coliform, Foams/Flocs/Scum/Oil Slicks, Other, Dissolved Oxygen, PCB in Fish Tissue, Turbidity	Bacteria (TMDL No. 2592)
Mother Brook	MA73-28	(Low Flow Alterations*), Color, DDT, E.coli, Fecal Coliform, Mercury in Fish Tissue, Dissolved Oxygen, PCB in Fish Tissue, Total Phosphorus, Taste & Odor	Bacteria (TMDL No. 2592)
Rock Meadow Brook	MA72-21	Aquatic Macroinvertebrate Bioassessments, Aquatic Plants (macrophytes), Excess Algal Growth, Nutrient/Eutrophication Biological Indicators, Dissolved Oxygen, Total Phosphorus	Phosphorus (TMDL No. 32370)

*TMDL not required (non-pollutant).

Impaired water bodies are shown on the map of the Town's drainage system located at http://dedham.maps.arcgis.com/home/index.html.

1.5 IDDE Program Goals

The goals of Dedham's IDDE program are to find and eliminate illicit discharges to the Town's municipal separate storm system and prevent illicit discharges in the future. The program consists of the following components:

- Legal authority and regulatory mechanism to prohibit discharges and enforce this prohibition
- Storm system mapping
- Inventory and ranking of outfalls

- Dry weather outfall screening
- Wet weather sampling
- Catchment investigations
- Identification/confirmation of illicit sources
- Illicit discharge removal
- Follow-up screening
- Employee training

A base timeline for each of these goals, set forth by the permit, is shown in Table 1-2.

Table 1-2: Milestones for IDDE Program Implementation

IDDE Program Requirement	Completion Date from Effective Date of Permit					
	1 Year	1.5 Years	2 Years	3 Years	7 Years	10 Years
IDDE Regulatory Mechanism or Bylaw (adopted under the 2003 MS4 Permit)						
Written IDDE Program Plan	X					
SSO Inventory	X					
Written Catchment Investigation Procedure		X				
Phase I Mapping			X			
Phase II Mapping						X
Dry Weather Outfall Screening and Sampling *(following initial ranking presented in Section 3)*				X		
Follow-up Ranking of Outfalls and Interconnections				X		
Catchment Investigations – Problem Outfalls *(to begin no later than two (2) years from permit effective date)*					X	
Catchment Investigations – Likely Sewer Input *(where dry weather outfall/interconnection sampling indicates likely sewer input)*					X	
Catchment Investigations – High and Low Priority Outfalls *(to follow ranking presented in Section 3)*						X
Wet Weather Screening and Sampling						X

1.6 Sanitary Sewer Overflows (SSOs)

Sanitary Sewer Overflows (SSOs) are included in the MS4 Permit's definition of illicit discharges and can be defined as discharges of untreated sanitary wastewater from a municipal sanitary sewer that can contaminate surface waters, cause serious water quality problems and property damage, and threaten public health. SSOs can be caused by blockages, line breaks, power failures, vandalism, and sewer defects. This includes SSOs resulting during dry or wet weather, from inadequate conveyance capacities, or where interconnectivity of the storm and sanitary sewer infrastructure allows for communication of flow between the systems.

Dedham will maintain and update annually an inventory, that identifies all known locations where SSOs have discharged to the MS4 within the five (5) years prior to the effective date of the MS4 Permit (July 1, 2018), and any SSOs that have occurred thereafter. This includes SSOs resulting, during dry or wet weather, from inadequate conveyance capacities, or where interconnectivity of the storm and sanitary sewer infrastructure allows for transmission of flow between the systems. The inventory will include the following information, when available:

- Location (approximate street crossing/address and receiving water, if any);
- A clear statement of whether the discharge entered a surface water directly or entered the MS4
- Date(s) and time(s) of each known SSO occurrence (i.e., beginning and end of any known discharge);
- Estimated volume of the occurrence;
- Description of the occurrence indicating known or suspected cause(s);
- Mitigation and corrective measures completed with dates implemented; and
- Mitigation and corrective measures planned with implementation schedules.

Upon detection of an SSO, Dedham will provide oral notice to EPA within 24 hours, a written notice to EPA within five (5) days and shall include the information in the updated inventory as identified above, and mitigate it as expeditiously as possible taking interim measures to minimize the discharge of pollutants to and from its MS4 until elimination is completed.

Dedham has not had any SSO occurrences in the five years prior to the permit effective date, nor have they had any since the permit became effective. The SSO inventory in Appendix A will be updated by the Town of Dedham when new SSOs are detected. The SSO inventory will be maintained as part of the Town's Stormwater Management Plan and will also be included in the Town's MS4 Annual Reports, including the status of mitigation and corrective measures to address each identified SSO.

2.0 AUTHORITY AND RESPONSIBLE PARTIES

2.1 Legal Authority

The Town of Dedham originally adopted Chapter 242, Storm Drains, to the Town's General Bylaws at Town Meeting on November 13, 2007. This bylaw was later further amended at Town Meeting on November 18, 2013. This chapter of the Town's bylaws prohibits illicit discharges and connections to the municipal storm drain system. A copy of this bylaw is provided in Appendix B. This bylaw provides the Town of Dedham with adequate legal authority to accomplish the following:

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

The Dedham Department of Public Works has the authority to administer, implement and enforce this bylaw.

2.2 Responsible Parties

The Director of Engineering is the lead person responsible for implementing the IDDE program pursuant to the provisions of Chapter 242, Storm Drains, which covers illicit discharges and connections. Other agencies, departments, or personnel with responsibility for aspects of the program include:

Table 2-1: Parties Responsible for IDDE Program Implementation

Department/Title	Responsibilities
Engineering/Director	Overall IDDE Program Implementation Conducts Annual IDDE Training Oversees the Monitoring and Repair of the Sanitary Sewer & Storm Drain Systems Oversees Mapping Updates in GIS
Department of Public Works	Administration/Implementation/Enforcement Actions Oversees Reporting of Citizen Service Requests
GIS/GIS Manager	Maintain Drainage System Geodatabase & Mapping
Health Department/ Inspector	Oversees Title V Septic System Inspections, Repairs & Construction
Building Department/ Plumbing & Gas Inspector	Plumbing Code Enforcement

3.0 CATCHMENT DELINEATON AND PRIORITY RANKING & CLASSIFICATION OF OUTFALLS/CATCHMENTS/INTERCONNECTIONS

The MS4 Permit requires an assessment and priority ranking of catchments in terms of their potential to have illicit discharges, SSOs, and other factors, related to public health. The ranking will determine the priority order for field screening of the outfalls and interconnections. Priority catchments will be investigated for evidence of illicit discharges. The ranking of catchments provides the basis for determining permit milestones as certain catchments need to be investigated by certain years of the Permit depending on their classification.

3.1 Catchment Delineations

A catchment is the land area that drains to an outfall or interconnection. The extent of an outfall's catchment is determined not only by localized topography and impervious cover but also by the location of drainage structures and the connectivity of MS4 pipes. The catchment delineation process considered each catch basin upstream from the outfall or interconnection and the area that would conceivably drain to that catch basin based on topography and impervious cover. As drainage infrastructure mapping becomes more complete over the course of the investigations performed throughout the permit term, this exercise will be refined and updated. Once the catchments were delineated, they were assessed for potential illicit discharges and SSOs based upon the presence of relevant factors outlined in the MS4 Permit.

3.2 Initial Ranking

The Town completed an initial inventory and priority ranking to assess the illicit discharge and SSO potential of each regulated catchment and the related public health significance. The ranking will determine the priority order for screening of outfalls and interconnections, catchment investigations for evidence of illicit discharges and SSOs, and provide the basis for determining permit milestones. This inventory and ranking will be updated annually throughout the permit term to reflect new findings from dry and wet-weather sampling and other IDDE program activities, and will be included in the Town's MS4 Annual Report.

Outfalls and interconnections are classified into one of the following categories:

1. Problem Outfalls: Outfalls/Interconnections with known or suspected contributions of illicit discharges based on existing information. This includes any outfalls/interconnection where previous screening indicates likely sewer input. Likely sewer input indicators are any of the following:

    a. Olfactory or visual evidence of sewage;
    b. 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
    c. Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine.

    Problem outfalls do not require dry weather screening.

2. High Priority Outfalls: Outfalls/interconnections that are not problem outfalls but do meet either of the following criteria:
    a. Discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds;
    b. Have been determined by the Town as high priority based upon the criteria included under the ranking rationale.

3. Low Priority Outfalls: Outfalls/interconnections determined by the Town as low priority based upon the criteria included under the ranking rationale.

4. Excluded Outfalls: Outfalls/interconnections with no potential for illicit discharges. Catchments that only include:

    a. Roadway drainage in undeveloped areas with no dwellings or sanitary sewers;
    b. Drainage for athletic fields, parks or undeveloped green space and associated parking without services; and
    c. Cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.

3.3 Ranking Rationale

The Town is required to priority rank outfalls and interconnections within each category (except for Excluded Outfalls), based on the following characteristics of the initial catchment area. The Town is required to, at a minimum, consider the following screening factors where relevant:

- 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 0.50 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.

- Additional relevant characteristics, including location-specific characteristics.

In order to rank all regulated catchment areas in Dedham, the Town assessed each catchment based on the following criteria using the rationale discussed:

1. Past discharge complaints and reports.

   Rationale for Ranking: Complaints most commonly result from visual or olfactory observations, which are the easiest illicit discharges to find. These catchments are "low hanging fruit" and provide the "biggest bang for the buck"; therefore, they offer the highest potential for finding and eliminating illicit discharges as quickly as possible. For regulated outfalls where there were past complaints or reports submitted to the Town, the associated catchment area will be categorized as a "High Priority".

2. Poor dry weather receiving water quality-the following guidelines are recommended to identify waters as having a high illicit discharge potential: exceeding water quality standards for bacteria; ammonia levels above 0.50 mg/l; or surfactants levels greater than or equal to 0.25 mg/l.

   Rationale for Ranking: Poor in-stream water quality is a good indicator of pollutant sources associated with illicit discharges, especially if there are identified hot spots. However, this priority requires the availability of existing in-stream data for the pollutants of concern, which is not available from the Town. Furthermore, for Dedham, receiving water quality has already been assessed and captured through the establishment of TMDLs for bacteria for both the Charles and Neponset Rivers.

3. 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.

   Rationale for Ranking: Areas of the town where these sites are located have been identified and prioritized accordingly. Generating sites were identified as either low, medium or high utilizing the data in Appendix A of the "Illicit Discharge Detection and Elimination, Technical Appendices, October 2004" as prepared by the Center for Watershed Protection. The percentage of the generating site area that intersected with a particular catchment area was then determined. A score was given to each catchment area where the following percentages of generating site was contained within that catchment.

Percentage of Generating Site Area within Each Catchment Area	Score		
	Low Generating	Medium Generating	High Generating
0-25%	1	2	3
26-50%	2	4	6
51-75%	3	6	9
76-100%	4	8	12

Please note that if there are no generating sites located within a particular catchment area, it will be scored with a 0.

4. Age of surrounding infrastructure – Areas where the sanitary sewer system is more than 40 years old.

   Rationale for Ranking: Exfiltration from aging or damaged sewers into drains is becoming a leading source of illicit discharge related pollutants found in MS4 discharges; however, these discharges are often very difficult to locate, and end up being identified only through an iterative investigation process. For this reason, these sources are listed as a slightly lower priority than pollutant sources that may be easier to locate and remove. All of Dedham is on sanitary sewer, and much of the sewer is more than 40 years old. For each catchment area, the total length of public sewer mains (in miles) located within that given catchment was determined. A score was given to each catchment area following the criteria in the table below.

Length of Sewer Main (miles) with each Catchment Area	Score
0 – 0.25	1
0.26 – 0.50	2
0.51 – 1	3
1.01 – 2	5
2.01 – 5	7
>5	9

   Please note that if no sewer main exist within a particular catchment area, it will be scored with a 0.

5. Age of surrounding development– Industrial areas greater than 40 years old.

   Rationale for Ranking: The age of industrial areas gains no further benefit to prioritization, unless the age of subsurface infrastructure is not known. When the age of the infrastructure is not known, the age of the development can be used to estimate that for the infrastructure. In areas where the age of subsurface infrastructure is unknown in Dedham, the age of development was used as a surrogate.

6. Sewer conversion – Catchments that were once serviced by septic systems but have been converted to sewer connections may have a high illicit discharge potential.

   Rationale for Ranking: Abandoned septic systems can still leach pollutants into the ground, which in turn, can migrate into drainage systems; however, soils do absorb/treat these pollutants over time. For this reason, this source should be a lower priority than active/existing septic systems and sewers that provide a greater and longer-term threat to water quality.

7. Historic combined sewer systems – Catchments that were once serviced by a combined sewer system, but have been separated may have a high illicit discharge potential.

   Rationale for Ranking: Dedham does not have any historically combined areas in Town.

8. Density of aging septic systems – Septic systems 30 years or older in residential land use areas.

   Rationale for Ranking: Failing septic systems discharge higher pollutant loads into the ground, which in turn, can migrate into nearby drainage infrastructure. Although similar to exfiltration from sewers, septic systems are generally located further away from drainage infrastructure than sewers, making their illicit discharge and pollutant loading potential lower. For this reason, aging septic systems are listed as a slightly lower priority than aging sewers. Approximately 5% of Dedham is currently served by septic systems. Catchment areas were analyzed to determine those locations where parcels that are currently served by septic systems intersect a particular catchment area. The percentage of septic system area that was located within a particular catchment area was then determined. A score was given to each catchment area following the criteria in the table below.

Percentage of Septic System Area within Catchment Area	Score
0 – 25%	1
26 – 50%	2
51 – 75%	3
76 – 100%	4

   Please note that if there are no problems with a septic system within a particular catchment area, it will be scored with a 0.

9. Culverted streams – any river or stream that is culverted for distances greater than a simple roadway crossing may be considered "high" potential.

   Rationale for Ranking: Culverts are only a concern if there are MS4 discharges located inside the culvert. The Town's stormwater system map will allow these locations to be identified and prioritized.

10. 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.

    Rationale for Ranking: For Dedham, this includes waters impaired for bacteria/pathogens (1st priority) and nutrient-related impacts (2nd priority) where impacts may be associated with failing septic systems. The Charles River Pathogens TMDL, the Charles River Phosphorus TMDL, and the Neponset River Bacteria TMDL are all applicable to Dedham. Mother Book, which is tributary to the Neponset River, is impaired for both E.coli and fecal coliform and is covered under the Neponset River Bacteria TMDL. For those catchments that discharge directly to a waterbody with an approved bacteria or nutrient TMDL or a known bacteria or nutrient impairment, scores were given to that catchment area as outlined in the table below. Please note that there are a few instances where the Town has an interconnection with another MS4's stormwater system, and the ultimate discharge point is unknown. In those instances, whether it discharges directly to a waterbody with an approved bacteria or nutrient TMDL or a receiving waterbody with a bacteria or nutrient impairment requiring a TMDL was listed as "unknown" and it was given a score of 5.

Discharges Directly to a Waterbody with a TMDL or Known Impairment	Score
No	0
Unknown	5
Yes	10

11. The permittee may add additional relevant factors, including location-specific screening factors.

    Rationale for Ranking: At this time, there are no other relevant factors for screening in Dedham that have not already been addressed under the list above. Should a new factor be identified, an appropriate priority will be assigned.

Appendix C provides a comprehensive table of all regulated catchments and interconnections within Dedham. This table identifies the applicability of relevant screening factors to a particular catchment. All screening factors are weighted, and each catchment is prioritized and ranked according to those screening factors. Table 3.1 provides a breakdown of those outfalls and interconnections by category.

Table 3-1: Catchment Priority Ranking by Category

Category	No. of Relevant Outfalls/Interconnections
Problem Outfalls/Interconnections	None
High Priority Outfalls/Interconnections	55
Low Priority Outfalls/Interconnections	131
Excluded Outfalls/Interconnections	0

Delineated catchments can be found on the Town's drainage map at the following location on the Town's website: http://dedham.maps.arcgis.com/home/index.html.

4.0 DRY WEATHER SCREENING AND SAMPLING

The MS4 Permit requires screening and sampling of all regulated outfalls and interconnections (with the exception of Problem and Excluded Outfalls) from the MS4 during dry weather conditions for evidence of illicit discharges and SSOs by June 30, 2021. All outfalls and interconnections are to be screened in accordance with their initial ranking as included in Appendix C. The Director of Engineering is responsible for facilitating the Town's dry weather outfall and interconnection screening and sampling efforts.

4.1 Dry Weather Criteria

Dry weather screening and sampling shall proceed when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period and no significant snowmelt is occurring. If these conditions are met, then the Town of Dedham will proceed with dry weather screening and sampling per the methodology outlined in Section 4.2.

4.2 Sampling Parameters and Methodology

4.2.1 General Procedure

Dry weather sampling shall follow these general steps:

1. Identify outfall(s) and interconnection(s) to be screened/sampled based on initial outfall inventory and priority ranking.
2. Acquire the necessary staff, mapping, and field equipment.
3. Conduct the outfall inspection during dry weather:
    a. Mark and photograph the outfall.
    b. Record the inspection information and outfall characteristics including:
        i. Unique identifier,
        ii. Receiving water,
        iii. Date of most recent inspection,
        iv. Dimensions,
        v. Shape,
        vi. Material (concrete, PVC),
        vii. Spatial location (latitude and longitude with a minimum accuracy of +/- 30 feet,
        viii. Physical condition
    c. Look for and record visual/olfactory evidence of non-stormwater discharges in flowing outfalls including odor, color, turbidity, floatable matter (suds, bubbles, excrement, toilet paper or sanitary products) and oil sheen. Also observe outfalls for deposits and stains, vegetation, and damage to outfall structures.
4. If flow is observed, sample and test the flow following the procedures described in the following sections.
5. If an outfall/interconnection is inaccessible or submerged, either partially or completely, proceed to the first accessible upstream manhole or structure for observation and sampling and report the location with the screening results. Field staff shall continue to the next upstream structure until there is no longer an influence from the receiving water on the visual inspection or sampling.

6. If no flow is observed, but evidence of illicit flow exists (illicit discharges are often intermittent or transitory), revisit the outfall during dry weather within one week of the initial observation, if practicable, to perform a second dry weather screening and sample any observed flow. Other techniques can be used to detect intermittent or transitory flows including conducting inspections during evenings or weekends.
7. Input results from screening and sampling into spreadsheet/database. Update the catchment and priority ranking matrix accordingly.
8. Include all outfall monitoring results in the Town's MS4 Annual Report. Outfall monitoring results shall include the date, outfall/interconnection identifier, location, weather conditions at time of sampling, precipitation in previous 48 hours, field screening parameter results, and results from all analyses.

4.2.2 Sample Collection

If flow is observed during dry weather conditions and a sample can be isolated, the sample shall be collected to test for the following parameters:

- Ammonia
- Surfactants (such as MBAS)
- Chlorine
- Conductivity
- Temperature
- Salinity
- E. Coli *(freshwater receiving water)*
- Pollutants of concern where the outfall or interconnection discharges directly into a water quality limited water or a water subject to an approved TMDL

Where an outfall or interconnections discharges directly into a water quality limited water or a water subject to an approved TMDL, the parameters identified in Table 4-1 must also be sampled based on the identified impairment as stated in Appendix G of the MS4 Permit.

Benchmark criteria for each parameter is included in Section 4.5.

Table 4-1: Sampling Parameters Specific to Pollutants of Concern				
Water Body Name	Segment ID	Impairment(s)	Required Sampling Parameters	Applicable Outfalls & Interconnections
Charles River	MA72-07	(Eurasian Water Milfoil, Myriophyllum spicatum*), (Fish-Passage Barrier*), (Non-Native Aquatic Plants*), (Other flow regime alterations*), DDT, E.Coli, Fishes Bioassessments, Nutrient Eutrophication/Biological Indicators, PCB in Fish Tissue, Total Phosphorus	Total Phosphorus	OF170, OF201, OF414, OF422, OF423, OF433, OF442, OF443, OF446, OF448, OF526, OF591, OF592, OF593, OF594, OF596, OF707, ITC001, ITC002, ITC003, ITC004, ITC005, ITC006, OF00855, ITC025, ITC026, ITC027
Mother Brook	MA73-28	(Low Flow Alterations*), Color, DDT, E.coli, Fecal Coliform, Mercury in Fish Tissue, Dissolved Oxygen, PCB in Fish Tissue, Total Phosphorus, Taste & Odor	Dissolved Oxygen BOD_5 Total Phosphorus *(Per EPA, fecal coliform is not required since the Town will be testing for E.coli.)*	OF152, OF153, OF167, OF168, OF169, OF408, OF459, OF464, OF465, OF466, OF471, OF472, OF473, OF484, OF485, OF486, OF504, OF559, OF600, OF601, OF602, OF603, OF604, OF654, OF655, OF656, OF657, OF658, OF660, OF704, OF705, OF747, OF750, OF771, OF710, OF403, OF402, OF401, OF572, OF713, OF714, OF715, OF716, OF717, OF719, OF776, OF777, ITC007, ITC008, ITC009, ITC010
Rock Meadow Brook	MA72-21	Aquatic Macroinvertebrate Bioassessments, Aquatic Plants (macrophytes), Excess Algal Growth, Nutrient/Eutrophication Biological Indicators, Dissolved Oxygen, Total Phosphorus	Dissolved Oxygen BOD_5 Total Phosphorus	The Town does not have any outfalls or interconnections that discharge directly to Rock Meadow Brook.
Neponset River	MA73-02	(Debris/Floatables/Trash*), DDT, E.coli, Fecal Coliform, Foams/Flocs/Scum/Oil Slicks, Other, Dissolved Oxygen, PCB in Fish Tissue, Turbidity	Dissolved Oxygen BOD_5 Total Phosphorus *(Per EPA, fecal coliform is not required since the Town will be testing for E.coli.)*	The Town does not have any outfalls or interconnections that discharge directly to the Neponset River.

*TMDL not required (non-pollutant).

The general procedure for collection of outfall samples is as follows:

1. Fill out all sample information on sample bottles and field sheets.
2. Put on protective gloves (nitrile/latex/other) before sampling.
3. Collect sample with dipper or directly in sample containers. If possible, collect water from the flow directly in the sample bottle. Be careful not to disturb sediments.
4. If using a dipper or other device, triple rinse the device with distilled water and then in water to be sampled (not for bacteria sampling).
5. Use test strips, test kits, and field meters for most parameters.
6. Place laboratory samples on ice for analysis of bacteria and pollutants of concern.
7. Fill out chain-of-custody form (Appendix D) for laboratory samples.
8. Deliver samples to RI Analytical in Warwick, RI; G&L Laboratories in Quincy, MA; or another EPA-approved laboratory.
9. Dispose of used test strips and test kit ampules properly.
10. Decontaminate all testing personnel and equipment.

4.3 Required Field Equipment

The following equipment shall be used during general field investigations:

Table 4-2: Recommended Field Equipment for IDDE Investigations

Equipment	Use/Notes
Clipboard	For organization of field sheets and writing surface
Field Sheets	Field sheets for both dry weather inspection and Dry weather sampling should be available with extras
Chain of Custody Forms	To ensure proper handling of all samples
Pens/Pencils/Permanent Markers	For proper labeling
Nitrile Gloves	To protect the sampler as well as the sample from contamination
Flashlight/headlamp w/batteries	For looking in outfalls or manholes, helpful in early mornings as well
Cooler with Ice	For transporting samples to the laboratory
Digital Camera	For documenting field conditions at time of inspection
Personal Protective Equipment	Reflective vest, Safety glasses and boots at a minimum
GPS	For taking spatial location data
Water Quality Sonde	If needed, for sampling conductivity, temperature, pH
Water Quality Meter	Hand held meter, if available, for testing for various water quality parameters such as ammonia, surfactants and chlorine
Test Kits	Have extra kits on hand to sample more outfalls than are anticipated to be screened in a single day
Label Type	For labeling sample containers
Sample Containers	Make sure all sample containers are clean. Keep extra sample containers on hand at all times. Make sure there are proper sample containers for what is being sampled for (i.e., bacteria analysis requires sterile containers).
Pry Bar or Pick	For opening catch basins and manholes when necessary
Sandbags	For damming low flows in order to take samples

Small Mallet or Hammer	Helping to free stuck manhole and catch basin covers
Utility Knife	Multiple uses
Measuring Tape	Measuring distances and depth of flow
Safety Cones	Safety
Hand Sanitizer	Disinfectant/decontaminant
Zip Ties/Duct Tape	For making field repairs
Rubber Boots/Waders	For accessing shallow streams/areas
Sampling Pole/Dipper	For accessing hard to reach outfalls and manholes

4.4 Guidelines for Sampling Analysis

All analyses, with the exception of indicator bacteria and pollutants of concern, can be performed with field test kits or instrumentation and are not subject to 40 CFR Part 136 requirements. The following guidelines shall be used during sample analysis:

Table 4-3: Outfall Screening Sampling Parameters and Analytical Methodology

Parameter	Analytical Method	Detection Limit	Max. Hold Time	Preservative	Instrumentation (Portable Meter)	Field Test Kit
Ammonia	**EPA**: 350.2, **SM**: 4500-NH3C	0.20 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2, No preservative required if analyzed immediately	CHEMetrics™ V-2000 Colorimeter Hach™ DR/890 Colorimeter Hach™ Pocket Colorimeter™ II	CHEMetrics™ K-1410 CHEMetrics™ K-1510 (series) Hach™ NI-SA Hach™ Ammonia Test Strips
Surfactants	**SM**: 5540-C	0.10 mg/L	48 hours	Cool ≤6°C	CHEMetrics™ I-2017	CHEMetrics™ K-9400 and K-9404 Hach™ DE-2
Chlorine	**SM**: 4500-Cl G	0.02 mg/L	Analyze within 15 minutes	None Required	CHEMetrics™ V-2000, K-2513 Hach™ Pocket Colorimeter™ II	N/A
Temperature	**SM**: 2550B	N/A	Immediate	None Required	YSI Pro30 YSI EC300A Oakton 450	N/A
Specific Conductance	**EPA**: 120.1, **SM**: 2510B	0.2 µs/cm	28 days	Cool ≤6°C	CHEMetrics™ I-1200 YSI Pro30 YSI EC300A Oakton 450	N/A
Salinity	**SM**: 2520B	0.04 ppt	28 days	Cool ≤6°C	YSI Pro30 YSI EC300A Oakton 450	N/A
E.coli	**EPA**: 1603 **SM**: 9221B, 9221F, 9223B	**EPA**: 1 cfu/100mL	6 hours	Cool ≤6°C, 0.0008% Na2S2O3	EPA certified laboratory	N/A

	Other: Colilert ®, Colilert-18®	**SM**: 10 MPN/100mL **Other**: 1 MPN/100mL		(sodium thiosulfate)	procedure (40 CFR § 136)	
Fecal Coliform	**EPA**: 1680 **SM**: 9221E, 9222D **Other**: Colilert-18®	**SM**: 10 CFU/100 mL	6 hours	Cool ≤6°C, 0.0008% Na2S2O3 (sodium thiosulfate)	EPA certified laboratory procedure (40 CFR § 136)	N/A
Total Phosphorus	**EPA**: Manual-365.3, Automated Ascorbic acid digestion-365.1 Rev. 2, ICP/AES4-200.7 Rev. 4.4 **SM**: 4500-P E-F	**EPA**: 0.01 mg/L **SM**: 0.02 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2	EPA certified laboratory procedure (40 CFR § 136)	N/A
Dissolved Oxygen	**SM**: 4500-O-G	N/A	Immediate	Cool ≤6°C,	EPA certified laboratory procedure (40 CFR § 136)	N/A
BOD_5	**SM**: 5210B	**SM**: 20 mg/L	48 hours	Cool ≤6°C,	EPA certified laboratory procedure (40 CFR § 136)	N/A

EPA = EPA Methods; SM = Standard Methods

All screening data collected will be submitted each year to EPA in the Town's MS4 Annual Report.

4.5 Benchmark Criteria for Selected Parameters for Outfall Sampling

The "benchmark" criteria included in Table 4-4 will be used to assess whether a contaminant concentration is above Water Quality Standards, or in the absence of a regulatory standard, industry-accepted concentrations based on typical characteristics of surface water and wastewater. High concentrations of ammonia are typically found in wastewater, and abnormal chlorine, temperature, or specific conductance also indicates the influence of wastewater. Escherichia Coliform is an indicator of contamination from the excrement of humans and primarily used in freshwater. High concentrations of surfactants generally indicate the presence of detergents, such as from clothing or car washing.

Table 4-4: Benchmark Criteria for Outfall Sampling

Parameter	Benchmark
Ammonia-Nitrogen	≥ 0.5 mg/L
Specific Conductance	>2,000 µs/cm
Escherichia Coliform	235 cfu/100mL
Surfactants	≥ 0.25 mg/L
Total Chlorine	>0.02 mg/L

Fecal Coliform	200 CFU/100 mL
Temperature	>83°F (>28.3°C)
Dissolved Oxygen	<5.0 mg/L
BOD_5	5 mg/L[(1)]
Total Phosphorus	>0.1 mg/L[(2)]

(1) A placeholder has been included here based on available literature. DEP has indicated that they will be providing additional guidance regarding benchmark criteria for parameters included in Appendix G of the 2016 MS4 Permit.

(2) The TMDL for Nutrients in the Upper/Middle Charles River lists the target mean daily Total Phosphorus concentration in flowing waters as <0.1 mg/L.

The following include likely sewer input indicators:

- 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.

4.6 Follow-up Ranking of Outfalls and Interconnections

Following the collection and analysis of dry weather sampling results, the Town will update their outfall and interconnection ranking to reprioritize outfalls and interconnections based on information gathered during dry weather screening. For those outfalls/interconnections where relevant information was found indicating sewer input to the MS4 or sampling results indicate sewer input to the MS4, the outfalls/interconnections shall be ranked at the top of the High Priority Outfalls category for investigation. The ranking will be updated continuously as dry weather screening information becomes available, but no later than June 30, 2021.

5.0 WET WEATHER SAMPLING

The MS4 Permit requires screening and sampling of all regulated outfalls and interconnections from the MS4, which have at least one System Vulnerability Factor, during wet weather conditions for evidence of illicit discharges and SSOs by June 30, 2028. The Director of Engineering is responsible for facilitating the Town's wet weather outfall and interconnection screening and sampling efforts.

5.1 Wet Weather Criteria

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

5.2 System Vulnerability Factors

For each catchment being investigated, the Town has taken into consideration relevant mapping, as well as historic plans and records, where available, to identify areas within each catchment with a higher potential for illicit connections. Information reviewed includes:

- Record drawing information related to storm drain system and sanitary sewer system construction to determine age of infrastructure and evaluate storm and sanitary sewer alignments
- Plans depicting areas of the Town's sewer system that have been investigated and any identified defects
- Health Department or other municipal data on septic system age and failures or required upgrades
- Records of complaint related to sewer system surcharging

The MS4 Permit specifically requires the Town to identify and record the presence of any of the following specific System Vulnerability Factors (SVFs):

- History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages;
- 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 where the sanitary system is shallower than the storm drain system;
- Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;
- Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints;
- Areas formerly served by combined sewer systems; and
- 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.

EPA also recommends that the Town include the following in their consideration of System Vulnerability Factors:

- Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs;
- Any sanitary sewer and storm drain infrastructure greater than 40 years old;
- Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance); and
- History of multiple Board of Health actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance).

Outfalls/interconnections with a minimum of one SVF are subject to wet-weather sampling requirements.

The Town completed a review to identify areas within each catchment with higher potential for illicit connections based on the presence of SVFs that indicate a risk of sanitary or septic system inputs to the Town's MS4 under wet weather conditions. SVFs that were analyzed and their applicability to Dedham include:

1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.

   Rationale for Ranking: Dedham does not have any chronic SSO locations.

2. Common or twin-invert manholes serving storm and sanitary sewer alignments.

   Rationale for Ranking: There are no known common/twin invert manholes in Dedham.

3. Common trench construction serving both storm and sanitary sewer alignments.

   Rationale for Ranking: When sewers and drains are constructed within the same trench, cross-contamination between the two systems can occur more easily. Although this source might be identified during dry-weather, hydraulic pressure in sewers carrying higher flows during wet-weather may increase the occurrence. Dedham does not have any locations in Town where sewers and drains are constructed in a common trench.

4. Crossings of storm and sanitary sewer alignments.

   Rationale for Ranking: When sewers cross through or over drains, cross-contamination between the two systems can occur more easily. Although this source might be identified during dry-weather, hydraulic pressure in sewers carrying higher flows during wet-weather may increase the occurrence. Dedham does not have any areas in Town where the sanitary sewer crosses through or over the storm drain. Sanitary sewers are at a lower elevation than the storm drain.

5. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system.

   Rationale for Ranking: There are no confirmed sanitary sewer underdrains in Dedham.

6. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.

   Rationale for Ranking: Surcharging, overflows from sewer-to-drain, and basement backups to sump pumps are some of the most commonly identified illicit discharges.

7. Areas formerly served by combined sewer systems.

   Rationale for Ranking: There are no combined sewers in Dedham.

8. Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.

   Rationale for Ranking: Although this source may be identified during dry-weather, surcharging or hydraulic pressure in sewers carrying higher flows during wet-weather may cause or increase the occurrence.

9. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.

   Rationale for Ranking: Dedham does not have a history of SSOs related to power/equipment failures or siphon blockages.

10. Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas.

    Rationale for Ranking: This source is already included in both dry-weather and "Sanitary sewer defects…" above; however, it needs to remain in the ranking in case it is the only SVF and, thus, triggers the wet-weather sampling requirement. Dedham does have sanitary sewer and storm drain infrastructure that is greater than 40 years old in many medium to densely developed areas of town. Where age of infrastructure was unknown, the age of surrounding infrastructure was used as a surrogate.

11. Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).

    Rationale for Ranking: Only approximately 5% of the Town is currently served by septic systems.

12. History of multiple Board of Health actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance).

Rationale for Ranking: Although this source might be identified during dry-weather, elevated groundwater elevations may increase the migration of pollutants from failing septic systems. As with dry weather, septic systems are lower priority than sewers due to typical location further away from drainage infrastructure. Approximately 5% of the properties within Dedham are served by septic systems.

Appendix C includes a table summarizing all regulated catchments within Dedham and identifies those SVFs applicable to each catchment. This documentation shall be included in the Town's MS4 Annual Report. This inventory must be updated as additional information, including presence of common manholes, directly piped connections between storm drains and sanitary sewer infrastructure, common weir walls, sanitary sewer underdrains connections, and other structural vulnerabilities where sanitary sewer discharges could enter the storm drain system during wet weather, is obtained during catchment investigations as outlined in Section 6.0.

5.3 Required Procedures for Wet Weather Sampling

Where a minimum of one (1) SVF is identified, a wet weather investigation must also be conducted at the associated outfall or interconnection. Outfalls will be inspected and sampled under wet weather conditions, to the extent necessary, to determine whether wet weather-induced high flows in sanitary sewers or high groundwater in areas served by septic systems result in discharges of sanitary flow to the MS4. Wet weather outfall sampling will proceed as follows:

1. At least one wet weather sample will be collected at each outfall or interconnection for the same parameters required during dry weather screening as identified in Section 4.2.2. This includes any applicable pollutants of concern as listed in Table 4-1. Sample collection procedures shall follow those procedures outlined in Section 4.2.2. Field equipment to be utilized in wet weather sampling shall be as outlined in Section 4.3. Sampling analyses for wet weather samples shall follow the methodologies outlined in Section 4.4.

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

3. If wet weather outfall sampling indicates a potential illicit discharge, then additional wet weather source sampling will be performed, as warranted, or source isolation and confirmation procedures will be followed as described in Section 6.0.

4. If wet weather outfall sampling does not identify evidence of illicit discharges, and no evidence of an illicit discharge is found during dry weather manhole inspections, investigation of that particular catchment will be considered complete.

5. Wet weather sampling will be performed upon completion of any dry weather investigation and before any catchment investigation is marked as complete.

6.0 CATCHMENT INVESTIGATION METHODOLOGY

Each catchment, irrespective of outfall and interconnection sampling results or whether evidence of an illicit discharge is observed at the outfall, must be inspected and investigated with the exception of excluded catchments. Investigation of catchments shall proceed in accordance with the catchment ranking described in Section 3 and identified in Appendix C, with problem outfalls being investigated first. 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.

6.1 Manhole Inspection Methodology

The MS4 Permit requires the Town to develop a storm drain network investigation that involves systematically and progressively observing, sampling and evaluating key junction manholes in the MS4 to determine the approximate location of suspected illicit discharges or SSOs. The manhole inspection methodology may either start from the outfall and work up the system or start from the upper parts of the catchment and work down the system or be a combination of both practices. Either method must, at a minimum, include an investigation of each key junction manhole within the MS4, even where no evidence of an illicit discharge is observed at the outfall.

The Director of Engineering 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 regulated catchments, during dry weather, field crews will systematically inspect **key junction manholes** for evidence of illicit discharges and confirm or identify potential system vulnerability factors. Progressive inspection and sampling at manholes in the storm drain network will be used 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. The decision to move up or down the system depends on the drainage system, the surrounding land use and the availability of information on the catchment and drainage system. When an illicit discharge is detected at an outfall, moving up the system can begin immediately with only a map of the storm drain system. 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:

- During a dry weather period, manholes will be opened and inspected for visual and olfactory evidence of illicit connections (e.g. excrement, toilet paper, gray filamentous bacterial growth, or sanitary products present). A sample field inspection form is provided in Appendix E.

- For structures observed to have dry-weather flow, the estimated quantity and visual characteristics such as color, odor, solids, or turbidity will also be documented. In key locations observed to have dry-weather flow, grab samples will be collected and analyzed at a minimum for ammonia, chlorine, and surfactants with test kits. Additional indicator sampling may also be used to assist in determining potential sources.

- 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. Further investigation of the drainage system will be stopped until such time as all illicit discharges to that drain segment are identified and removed, and repeat investigation shows no further evidence of contaminated dry-weather flow. If there is no dry-weather flow captured, or if sample results indicate contaminant concentrations below benchmark criteria, the investigation will proceed to the next drain segment downstream.

- Subsequent key junction manhole inspections will proceed until the location of suspected illicit discharges can be isolated to a pipe segment between two manholes.

- If no evidence of an illicit discharge is found, catchment investigations will be considered complete upon completion of key junction manhole sampling assuming that wet weather sampling has already been completed at the outfall serving the catchment area.

During investigations, pipe connectivity will be updated as needed, and catchment delineations will be refined.

6.2 Source Isolation and Confirmation

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

- Sandbagging
- Dye Testing
- ZoomCam Inspections
- Smoke Testing
- CCTV/Video Inspections

Public notification is an important aspect of a detailed source investigation program. Prior to smoke testing, dye testing, or any TV inspections, the Department of Public Works will notify property owners in the impacted area. For smoke testing, notices will be distributed to each property in advance of smoke testing and at the conclusion of smoke testing to inform property owners that the work is complete. Advertisements will also be placed in the local newspaper and a pre-smoke testing meeting will be held with stakeholders, and a telephone information line will be set up for property owners to call. For dye testing, in order to secure the right to enter private property in the project area in order to perform the dye testing, a letter will be mailed to property/business owners and residents for this purpose. Draft sample letters and notifications are included in Appendix E for reference.

The scope of field investigation in support of Dedham's IDDE Plan will be determined based on site-specific factors for each individual outfall including, but not limited to factors such as the size, density, and land uses in the tributary drainage area; the configuration, diameters, and total footage of drain pipe in the tributary area; the specific pollutants identified during monitoring; and other potential environmental influences.

The field investigation methods to be utilized include, but are not limited to the following, and may be utilized in combination:

- Sandbagging: If no flow is observed at a particular junction manhole or key junction manhole at the time of inspection, the drain segment in the area of concern can be isolated by placing sandbags within outlets to manholes to form a temporary dam that collects any intermittent flow for a 24 to 48-hour dry weather period to determine if any intermittent dry-weather flow is present. If intermittent flow is captured, grabs samples will be collected and analyzed at a minimum for ammonia, chlorine, and surfactants. If it is determined that no flow is captured behind the sand bag after a 24 to 48-hour period, the tributary drainage pipes can be excluded as the source of any intermittent discharge.
- Dyed-water Testing: For any connections that could not be visually confirmed in the field (i.e. to a nearby catch basin), follow-up dye testing will be conducted of plumbing fixtures in neighboring homes and buildings in an effort to confirm the source of the unknown connection. Dyed water tests will consist of pouring dyed-water into plumbing fixtures and observing the sanitary sewer and drainage system downstream in an attempt to confirm connection.
- ZoomCam Inspection: In selected tributary areas, or where indicated based on findings from other field investigation work, drainage structures will be inspected with a "zoom camera-on-a-stick" in an attempt to gather additional information and narrow the location of observed dry-weather flow.

- Smoke Testing of Drains: Smoke testing may be utilized in selected areas in an attempt to locate illicit connections. Smoke testing will consist of the introduction of a non-toxic smoke into drainage segments containing suspected illicit discharges and observing adjacent buildings for signs of illicit connections (e.g., smoke emanating from sewer vent stacks, floor drains, and cleanouts). Smoke testing is a relatively inexpensive method of locating illicit connections to the storm drain system. Once smoke testing is complete, follow-up dye testing should again be conducted to confirm the nature of suspected connections by pouring dyed water into a suspected illicit connection (location of the smoke leak) and observing the surrounding storm drain system for the presence of the dye.
- Television Inspection of Drains: In small tributary areas, or as confirmation of findings from other field investigation work, drain pipes will be internally inspected to pinpoint and evaluate connections. Television inspection will consist of passing a closed-circuit television camera through all or a portion of the drain segments containing suspected illicit connections.

Records of on-going and proposed field investigations are included in Appendix I of this Plan. Dedham will keep these records updated as IDDE field investigations are implemented.

6.3 Illicit Discharge Removal

Upon location of an illicit discharge, the Town will work to eliminate the illicit discharge as expeditiously as possible. When the specific source of an illicit discharge is identified, the Town of Dedham will exercise its authority as necessary to require its removal. The Town will notify all responsible parties of any such discharge and require immediate cessation of improper disposal practices in accordance with its legal authorities.

6.3.1 Illicit Discharges under Municipal Responsibility

The Town will undertake corrective action for illicit discharges under municipal responsibility by securing qualified construction contractors in accordance with federal, state, and local procurement laws/regulations in the event that the Town is unable to perform the work themselves. Removal will be accomplished as soon as practical based on the scope and cost of the removal effort, and available resources. Where elimination of an illicit discharge within 60 days of its identification is not possible, the Town will establish an expeditious schedule for its elimination and report the dates of identification and schedule for removal in the Town's MS4 Annual Report. In the interim, the Town will also take all reasonable and prudent measures to minimize the discharge of pollutants to and from its MS4.

6.3.2 Illicit Discharges under Non-Municipal Responsibility

The Town will undertake removal of illicit discharges under non-municipal responsibility through the Town's bylaw via prohibitions against illicit connections and provisions detailing legal authority for enforcement. Owners of private property will be required to eliminate illicit discharges from their properties through use of the following progressive enforcement steps taken as necessary:

- Written Order: The Department of Public Works or its authorized Agent may issue a written order to enforce the provisions of the bylaw, which may include: (a) elimination of illicit connections or discharges to the municipal separate storm sewer system; (b) performance of monitoring, analyses, and reporting; (c) that unlawful discharges, practices, or operations shall cease and

desist; and (d) remediation of contamination in connection therewith. A sample written order is included in Appendix G for reference.

- If the enforcing person determines that abatement or remediation of contamination is required, the order shall set forth a deadline by which such abatement or remediation must be completed. Said order shall further advise that, should the violator or property owner fail to abate or perform remediation within the specified deadline, the Town of Dedham may, at its option, undertake such work, and expenses thereof shall be charged to the violator.
- Within 30 days after completing all measures necessary to abate the violation or to perform remediation, the violator and the property owner will be notified of the costs incurred by the Town, including administrative costs. The violator or property owner may file a written request objecting to the amount or basis of costs with the Department of Public Works within 30 days of the receipt of the notification of the costs incurred. If the amount due is not received by the expiration of the time in which to file a protest or within 30 days following a decision of the Department of Public Works affirming or reducing the costs, or from a final decision of a court of competent jurisdiction, the costs shall become a special assessment against the property owner and shall constitute a lien on the owner's property for the amount of said costs.

As investigations proceed, a list of illicit discharges identified and removed will be tracked in Appendix H. The Town will maintain an updated list of illicit discharges identified and removed. The Town's 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; and
- Estimate of the volume of flow removed.

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

6.4 Ongoing Screening Results and Follow-up Catchment Ranking

Upon completion of all catchment investigations, and illicit discharge removal and confirmation where necessary, each outfall or interconnection will be reprioritized for screening in accordance with the ranking criteria outlined in Section 3.2 and scheduled for ongoing screening once every five years. Ongoing screening shall consist of dry weather screening and sampling consistent with Section 4.0. Wet weather screening and sampling will also be required at outfalls where wet weather screening was required due to SVFs in accordance with Section 5.0. All sampling results will be reported in the Town's MS4 Annual Report.

7.0 MUNICIPAL EMLPOYEE TRAINING

Training on the IDDE Program, including how to recognize illicit discharges and SSOs, will be provided to municipal employees involved in the implementation of the program on an annual basis. Additional training specific to the functions of particular personnel and their role within the framework of the IDDE program may also be provided. Training materials utilized, the dates on which training was held, and staff that attended each training will be maintained in Appendix I. The Town will report annually on the frequency and type of employee training in the MS4 Annual Report submitted to EPA.

8.0 REPORTING

The progress and success of the IDDE program will be evaluated on an annual basis. The success of the IDDE program will be measured by the IDDE activities completed within the required permit timelines. The evaluation will be documented in the Town's Annual Report and will include the following indicators of program progress:

- Measures that demonstrate efforts to locate illicit discharges.
- 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.
- Number of enforcement notices issued.
- All dry weather and wet weather screening and sampling results.
- Estimate of the volume of sewage removed, as applicable.
- Number of employees trained annually.

For outfall monitoring results submitted, the following information shall be included: the date, the outfall/interconnection identifier, the location, the weather conditions at time of sampling, precipitation occurring in the previous 48 hours, field screening parameter results and results from all other analyses.

9.0 REFERENCES

Central Massachusetts Regional Stormwater Coalition and Fuss & O'Neill. Illicit Discharge and Detection Plan (IDDE) Template. June 30, 2016.

United States Environmental Protection Agency. General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts. Issue date: April 4, 2016. Effective date: July 1, 2018. Modification date: November 7, 2018.

APPENDIX A

SSO Inventory

SSO Inventory								
SSO Location[1]	Discharge Point[2]	Date[3]	Time Start[3]	Time End[3]	Estimated Volume[4]	Description[5]	Mitigation Completed[6]	Mitigation Planned[7]

[1] Location (approximate street crossing/address and receiving water, if any)
[2] A clear statement of whether the discharge entered a surface water directly or entered the MS4
[3] Date(s) and time(s) of each known SSO occurrence (i.e., beginning and end of any known discharge)
[4] Estimated volume(s) of the SSO occurrence
[5] Description of the occurrence indicating known or suspected cause(s)
[6] Mitigation and corrective measures completed with dates implemented
[7] Mitigation and corrective measures planned with implementation schedules

APPENDIX B

IDDE Bylaw – Chapter 242, Storm Drains

Town of Dedham, MA
Wednesday, March 20, 2019

Chapter 242. Storm Drains

[HISTORY: Adopted by the Town Meeting of the Town of Dedham as indicated in article histories. Amendments noted where applicable.]

GENERAL REFERENCES
Sewers — See Ch. **229**.
Stormwater management — See Ch. **246**.

Article I. Illicit Discharges and Connections

[Adopted 11-13-2007 STM by Art. 11; amended 11-18-2013 STM by Art. 16]

§ 242-1. Purpose.

A. Increased volumes of stormwater and contaminated stormwater runoff are major causes of: (1) impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater; (2) contamination of drinking water supplies; (3) alteration or destruction of aquatic and wildlife habitat; and (4) flooding. The United States Environmental Protection Agency has identified land disturbance and polluted stormwater as major sources of water pollution. Regulation of illicit connections and discharges to the municipal storm drain system is necessary for the protection of the Town of Dedham's water bodies and groundwater, and to safeguard the public health, safety, welfare and the natural resources of the Town.

B. The objectives of this by-law are:

(1) To prevent pollutants from entering the Town of Dedham's municipal storm drain system;

(2) To prohibit illicit connections and unauthorized discharges to the Town;

(3) To require the removal of all such illicit connections;

(4) To comply with state and federal statutes and regulations relating to stormwater discharges; and

(5) To establish the legal authority to ensure compliance with the provisions of this by-law through inspection, monitoring, and enforcement;

§ 242-2. Definitions.

For the purposes of this by-law, the following shall mean:

CLEAN WATER ACT

The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.) as hereafter amended.

DISCHARGE OF POLLUTANTS

The addition from any source of any pollutant or combination of pollutants into the municipal storm drain system or into the waters of the United States or Commonwealth from any source.

GROUNDWATER

Water beneath the surface of the ground.

ILLICIT CONNECTION

A surface or subsurface drain or conveyance, which allows an illicit discharge into the municipal storm drain system, including without limitation sewage, process wastewater, or wash water and any connections from indoor drains, sinks, or toilets, regardless of whether said connection was previously allowed, permitted, or approved before the effective date of this by-law.

ILLICIT DISCHARGE

Direct or indirect discharge to the municipal storm drain system that is not composed entirely of stormwater, except as exempted in § **242-8**. The term does not include a discharge in compliance with an NPDES Stormwater Discharge Permit or a Surface Water Discharge Permit, or resulting from fire fighting activities exempted pursuant to § **242-8A(1)** of this by-law.

IMPERVIOUS SURFACE

Any material or structure on or above the ground that prevents water infiltrating the underlying soil. Impervious surface includes without limitation roads, paved parking lots, sidewalks, and rooftops.

MUNICIPAL STORM DRAIN SYSTEM OR MUNICIPAL SEPARATE STORM SEWER SYSTEM

The system of conveyances designed or used for collecting or conveying stormwater, including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel, reservoir, and other drainage structure that together comprise the storm drainage system owned or operated by the Town of Dedham.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER DISCHARGE PERMIT

A permit issued by United States Environmental Protection Agency or jointly with the State that authorizes the discharge of pollutants to waters of the United States.

NON-STORMWATER DISCHARGE

Discharge to the municipal storm drain system not composed entirely of stormwater.

PERSON

An individual, partnership, association, firm, company, trust, corporation, agency, authority, department or political subdivision of the Commonwealth or the federal government, to the extent permitted by law, and any officer, employee, or agent of such person.

POLLUTANT

Any element or property of sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter whether originating at a point or non-point source, that is or may be introduced into any sewage treatment works or waters of the Commonwealth. Pollutants shall include without limitation:

A. Paints, varnishes, and solvents;

B. Oil and other automotive fluids;

C. Non-hazardous liquid and solid wastes and yard wastes;

D. Refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordnances, accumulations and floatables;

E. Pesticides, herbicides, and fertilizers;

F. Hazardous materials and wastes; sewage, fecal coliform and pathogens;

G. Dissolved and particulate metals;

H. Animal wastes;

I. Rock, sand, salt, soils;

J. Construction wastes and residues; and

K. And noxious or offensive matter of any kind.

PROCESS WASTEWATER

Water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any material, intermediate product, finished product, or waste product.

RECHARGE

The process by which groundwater is replenished by precipitation through the percolation of runoff and surface water through the soil.

STORMWATER

Runoff from precipitation or snow melt.

SURFACE WATER DISCHARGE PERMIT

A permit issued by the Department of Environmental Protection (DEP) pursuant to 314 CMR 3.00 that authorizes the discharge of pollutants to waters of the Commonwealth of Massachusetts.

TOXIC OR HAZARDOUS MATERIAL OR WASTE

Any material, which because of its quantity, concentration, chemical, corrosive, flammable, reactive, toxic, infectious or radioactive characteristics, either separately or in combination with any substance or substances, constitutes a present or potential threat to human health, safety, welfare, or to the environment. Toxic or hazardous materials include any synthetic organic chemical, petroleum product, heavy metal, radioactive or infectious waste, acid and alkali, and any substance defined as Toxic or Hazardous under G.L. Ch.21C and Ch.21E, and the regulations at 310 CMR 30.000 and 310 CMR 40.0000.

WASTEWATER

Any sanitary waste, sludge, or septic tank or cesspool overflow, and water that during manufacturing, cleaning or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct or waste product.

WATERCOURSE

A natural or man-made channel through which water flows or a stream of water, including a river, brook or underground stream.

WATERS OF THE COMMONWEALTH

All waters within the jurisdiction of the Commonwealth, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, costal waters, and groundwater.

§ 242-3. Applicability.

This by-law shall apply to flows entering the municipal storm drainage system.

§ 242-4. Authority.

This by-law is adopted under the authority granted by the Home Rule Amendment of the Massachusetts Constitution and the Home Rule Procedures Act, and pursuant to the regulations of the Federal Clean Water Act found at 40 CFR 122.34, and the Phase II ruling from the Environmental Protection Agency found in the December 8, 1999 Federal Register.

§ 242-5. Responsibility for administration.

The Department of Public Works shall administer, implement and enforce this by-law. Any powers granted to or duties imposed upon the Department of Public Works may be delegated in writing by the Department of Public Works to its employees or agents.

§ 242-6. Regulations.

The Department of Public Works may promulgate rules and regulations to effectuate the purposes of this by-Law. Failure by the Department of Public Works to promulgate such rules and regulations shall not have the effect of suspending or invalidating this by-law.

§ 242-7. Prohibited activities.

Prohibited activities are as follows:

A. Illicit discharges. No person shall dump, discharge, cause or allow to be discharged any pollutant or non-stormwater discharge into the municipal storm drain system, into a watercourse, or into the waters of the Commonwealth.

B. Illicit connections. No person shall construct, use, allow, maintain or continue any illicit connection to the municipal storm drain system, regardless of whether the connection was permissible under applicable law, regulation or custom at the time of connection.

C. Obstruction of municipal storm drain system. No person shall obstruct or interfere with the normal flow of stormwater into or out of the municipal storm drain system without prior written approval from the Department of Public Works.

§ 242-8. Exemptions.

A. Exemptions from the by-law are as follows:

(1) Discharge or flow resulting from fire fighting activities.

(2) Discharge or flow that results from conditions that require immediate action and occurs during a state of emergency declared by any agency of the Federal or State Government, or by the Dedham Town Manager, Board or Selectmen or Board of Health.
[Amended 11-17-2014 ATM by Art. 18]

B. The following non-stormwater discharges or flows are exempt from the prohibition of non-stormwater provided that the source is not a significant contributor of a pollutant to the municipal storm drain system:

(1) Waterline flushing;

(2) Flow from potable water sources;

(3) Springs;

(4) Natural flow from riparian habitats and wetlands;

(5) Diverted stream flow;

(6) Rising groundwater;

(7) Uncontaminated groundwater infiltration as defined in 40 CFR 35.2005(20), or uncontaminated pumped groundwater;

(8) Water from exterior foundation drains, footing drains (not including active groundwater dewatering systems), crawl space pumps, or air conditioning condensation;

(9) Discharge from landscape irrigation or lawn watering;

(10) Water from individual residential car washing;

(11) Discharge from dechlorinated swimming pool water (less than one ppm chlorine) provided test data is submitted to the Town substantiating that the water meets the one ppm standard and the pool is drained in such a way as not to cause a nuisance or public safety issue, and complies with all applicable Town by-laws;

(12) Discharge from street sweeping;

(13) Dye testing;

(14)

Non-stormwater discharge permitted under an NPDES permit or a Surface Water Discharge Permit, waiver, or waste discharge order administered under the authority of the United States Environmental Protection Agency or the Department of Environmental Protection, provided that the discharge is in full compliance with the requirements of the permit, waiver, or order and applicable laws and regulations; and

(15) Discharge for which advanced written approval is received from the Conservation Commission and the Department of Public Works as necessary to protect public health, safety, welfare or the environment.

§ 242-9. Emergency suspension of storm drainage system access.

The Department of Public Works may suspend municipal storm drain system access to any person or property without prior written notice when such suspension is necessary to stop an actual or threatened discharge of pollutants that presents imminent risk of harm to the public health, safety, welfare or the environment. In the event any person fails to comply with an emergency suspension order, the Department of Public Works may take all reasonable steps to prevent or minimize harm to the public health, safety, welfare or the environment.

§ 242-10. Notification of spills.

Notwithstanding other requirements of local, state or federal law, as soon as a person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of or suspects a release of materials at that facility or operation resulting in or which may result in discharge of pollutants to the municipal drainage system or waters of the Commonwealth, the person shall take all necessary steps to ensure containment, and cleanup of the release. In the event of a release of oil or hazardous materials, the person shall immediately notify the municipal Fire and Police Departments, the Conservation Commission and the Department of Public Works. In the event of a release of non-hazardous material, the reporting person shall notify the Conservation Commission and the Department of Public Works no later than the next business day. The reporting person shall provide to the Conservation Commission and the Department of Public Works written confirmation of all telephone, facsimile or in-person notifications within three business days thereafter. If the discharge of prohibited materials is from a commercial or industrial facility, the facility owner or operator of the facility shall retain on-site a written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

§ 242-11. Enforcement.

A. Authorized agents. The Department of Public Works, or an authorized agent of the Department of Public Works, shall enforce this by-law, regulations, orders, violation notices, and enforcement orders, and may pursue all civil and criminal remedies for such violations.

B. Civil relief. If a person violates the provisions of this by-law, regulations, permit, notice, or order issued thereunder, the Department of Public Works may seek injunctive relief in

a court of competent jurisdiction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

C. Orders. The Department of Public Works, or an authorized agent of the Department of Public Works, may issue a written order to enforce the provisions of this by-law or the regulations thereunder, which may include: (a) elimination of illicit connections or discharges to the municipal separate storm sewer system; (b) performance of monitoring, analyses, and reporting; (c) that unlawful discharges, practices, or operations shall cease and desist; and (d) remediation of contamination in connection therewith.

D. If the enforcing person determines that abatement or remediation of contamination is required, the order shall set forth a deadline by which such abatement or remediation must be completed. Said order shall further advise that, should the violator or property owner fail to abate or perform remediation within the specified deadline, the Town of Dedham may, at its option, undertake such work, and expenses thereof shall be charged to the violator.

E. Within 30 days after completing all measures necessary to abate the violation or to perform remediation, the violator and the property owner will be notified of the costs incurred by the Town, including administrative costs. The violator or property owner may file a written protest objecting to the amount or basis of costs with the Department of Public Works within 30 days of receipt of the notification of the costs incurred. If the amount due is not received by the expiration of the time in which to file a protest or within 30 days following a decision of the Department of Public Works affirming or reducing the costs, or from a final decision of a court of competent jurisdiction, the costs shall become a special assessment against the property owner and shall constitute a lien on the owner's property for the amount of said costs. Interest shall begin to accrue on any unpaid costs at the statutory rate provided in G.L. Ch. 59, S. 57 after the 31st day at which the costs first become due.

F. Enforcement. The penalty for violations of any provision of this by-law, regulation, order or permit issued thereunder, shall be $300.

G. Entry to perform duties under this by-law. To the extent permitted by state law, or if authorized by the owner or other party in control of the property, the Department of Public Works, its agents, officers, and employees may enter upon privately owned property for the purpose of performing their duties under this by-law and regulations and may make or cause to be made such examinations, surveys or sampling as the Department of Public Works deems reasonably necessary.

H. Appeals. The decisions or orders of the Department of Public Works shall be final. Further relief shall be to a court of competent jurisdiction.

I. Remedies not exclusive. The remedies listed in this by-law are not exclusive of any other remedies available under any applicable federal, state or local law.

§ 242-12. Severability.

The provisions of this by-law are hereby declared to be severable. If any provision, paragraph, sentence, or clause, of this by-law or the application thereof to any person,

establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this by-law.

APPENDIX C

Catchment Assessment and Priority Ranking Matrix

(includes Catchment System Vulnerability Factor Inventory)

Catchment Assessment and Priority Ranking Matrix

Discharge Point ID	Discharge Group ID	Catchment Area ID	Catchment located within 300' of a Recreational Area (0=No, 1=Yes)	Catchment loacted within 1500' of drinking water Supplies (0=No, 1=Yes)	Sewer Inputs indicators found during dry weather screening (0=No, 1=Yes)	Know or suspected problem including 2003 MS4 screening (0=No, 1=Yes)	Past discharge complaints or reports (0=No, 1=Yes)	Area of septic locted within the catchment area (Sq. Ft.)	Percentage of septic located within the catchment area	Septic Score	Area of Low Loading Generating Sites Located Within Catchment Area (Sq. Ft.)	Percentage of Low Loading Generating Sites Located Within Catchment Area	Low Loading Generating Sites Score	Area of Medium Loading Generating Sites Located Within Catchment Area (Sq. Ft.)	Percentage of Medium Loading Generating Sites Located Within Catchment Area	Medium Loading Generating Sites Score	High Loading Generating Sites Score	Miles of Public Sewer Mains Located within the Catchment Area	Sewer Score	Discharge Point Discharges Directly to Waterbody with Approved TMDL or Known Impairment (0=No, 5=Unknown, 10=Yes)	MS4 Receiving Waterbody Name	EPA Priority	Total Score	Final Rank	System Vulnerabilty Factor Present (0=No, 1=Yes)
OF604	DG_368	DG_368_OF604_1	1	0	0	0	0	48027.80	2%	1	5306.58	0%	1	11668.77	1%	2	0	2.06	7	10	Mother Brook (MA73-28)	**High**	**21**	**1**	1
OF705	DG_263	DG_263_OF705_1	1	0	0	0	0	0.00	0%	0	5998.12	0%	1	6428.03	0%	2	0	1.31	5	10	Mother Brook (MA73-28)	**High**	**18**	**2**	1
OF704	DG_263	DG_263_OF704_1	1	0	0	0	0	0.00	0%	0	18537.68	1%	1	21509.18	1%	2	0	1.58	5	10	Mother Brook (MA73-28)	**High**	**18**	**3**	1
OF464	DG_263	DG_263_OF464_1	1	0	0	0	0	0.00	0%	0	10285.90	1%	1	10108.41	1%	2	0	0.66	3	10	Mother Brook (MA73-28)	**High**	**16**	**4**	1
OF471	DG_306	DG_306_OF471_1	1	0	0	0	0	11784.49	1%	1	7570.69	1%	1	5737.97	1%	2	0	0.50	2	10	Mother Brook (MA73-28)	**High**	**16**	**5**	1
OF403	DG_262	DG_262_OF403_1	1	0	0	0	0	0.00	0%	0	7700.04	1%	1	64409.42	7%	2	0	0.79	3	10	Mother Brook (MA73-28)	**High**	**16**	**6**	1
OF408	DG_280	DG_280_OF408_1	1	0	0	0	0	36075.63	3%	1	0.00	0%	0	9305.43	1%	2	0	0.67	3	10	Mother Brook (MA73-28)	**High**	**16**	**7**	1
OF152	DG_351_1	DG_351_1_OF152_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	14508.78	1%	2	0	0.91	3	10	Mother Brook (MA73-28)	**High**	**15**	**8**	1
OF448	DG_307	DG_307_OF448_1	1	1	0	0	0	13164.21	2%	1	389.00	0%	1	0.00	0%	0	0	0.72	3	10	Charles River (MA72-07)	**High**	**15**	**9**	1
OF446	DG_316	DG_316_OF446_1	1	1	0	0	0	0.00	0%	0	0.00	0%	0	200.52	0%	2	0	0.20	1	10	Charles River (MA72-07)	**High**	**13**	**10**	1
OF473	DG_249	DG_249_OF473_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	54.78	0%	2	0	0.11	1	10	Mother Brook (MA73-28)	**High**	**13**	**11**	1
OF504	DG_314	DG_314_OF504_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.60	3	10	Mother Brook (MA73-28)	**High**	**13**	**12**	1
OF465	DG_263	DG_263_OF465_1	1	0	0	0	0	0.00	0%	0	5362.44	7%	1	0.00	0%	0	0	0.04	1	10	Mother Brook (MA73-28)	**High**	**12**	**13**	1
OF459	DG_263	DG_263_OF459_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.27	2	10	Mother Brook (MA73-28)	**High**	**12**	**14**	1
OF486	DG_257	DG_257_OF486_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.01	1	10	Mother Brook (MA73-28)	**High**	**11**	**15**	1
OF713	DG_255	DG_255_OF713_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.01	1	10	Mother Brook (MA73-28)	**High**	**11**	**16**	1
OF167	DG_231	DG_231_OF167_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.02	1	10	Mother Brook (MA73-28)	**High**	**11**	**17**	1
OF485	DG_351_2	DG_351_2_OF485_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	1	10	Mother Brook (MA73-28)	**High**	**11**	**18**	1
OF603	DG_290_1	DG_290_1_OF603_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.18	1	10	Mother Brook (MA73-28)	**High**	**11**	**19**	1
OF714	DG_254	DG_254_OF714_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	1	10	Mother Brook (MA73-28)	**High**	**11**	**20**	1
OF716	DG_251	DG_251_OF716_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.02	1	10	Mother Brook (MA73-28)	**High**	**11**	**21**	1
OF717	DG_217	DG_217_OF717_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.06	1	10	Mother Brook (MA73-28)	**High**	**11**	**22**	1
OF168	DG_226	DG_226_OF168_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.03	1	10	Mother Brook (MA73-28)	**High**	**11**	**23**	1
OF715	DG_248	DG_248_OF715_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.01	1	10	Mother Brook (MA73-28)	**High**	**11**	**24**	1
OF169	DG_218	DG_218_OF169_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.08	1	10	Mother Brook (MA73-28)	**High**	**11**	**25**	1
OF472	DG_290_2	DG_290_2_OF472_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	1	10	Mother Brook (MA73-28)	**High**	**11**	**26**	1
OF710	DG_252	DG_252_OF710_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Mother Brook (MA73-28)	**High**	**10**	**27**	1
OF747	DG_283	DG_283_OF747_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Mother Brook (MA73-28)	**High**	**10**	**28**	1
OF602	DG_292	DG_292_OF602_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Mother Brook (MA73-28)	**High**	**10**	**29**	1
OF153	DG_300	DG_300_OF153_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Mother Brook (MA73-28)	**High**	**10**	**30**	1
OF433	DG_339	DG_339_OF433_1	0	1	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Charles River (MA72-07)	**High**	**10**	**31**	1
OF750	DG_277	DG_277_OF750_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Mother Brook (MA73-28)	**High**	**10**	**32**	0
OF526	DG_334	DG_334_OF526_1	0	1	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Charles River (MA72-07)	**High**	**10**	**33**	0
OF574	DG_156	DG_156_OF574_1	1	0	0	0	0	0.00	0%	0	28147.68	1%	1	48778.63	1%	2	0	4.65	7	0	Greenlodge Stream	**High**	**10**	**34**	1
OF722	DG_264	DG_264_OF722_1	1	0	0	0	0	0.00	0%	0	17543.27	1%	1	6166.04	0%	2	0	1.59	5	0	Wigwam Brook	**High**	**8**	**35**	1
OF575	DG_093	DG_093_OF575_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	1891.48	0%	2	0	1.21	5	0	Greenlodge Stream	**High**	**7**	**36**	1
OF449	DG_239_1	DG_239_1_OF449_1	1	0	0	0	0	0.00	0%	0	8624.02	1%	1	11750.88	1%	2	0	0.84	3	0	Wigwam Brook	**High**	**6**	**37**	1
OF429	DG_276	DG_276_OF429_1	0	1	0	0	0	52694.41	14%	1	6580.62	2%	1	4152.52	1%	2	0	0.27	2	0	Lowder Brook	**High**	**6**	**38**	1
OF775	DG_461	DG_461_OF775_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	17260.54	2%	2	0	0.91	3	0	Wigwam Brook	**High**	**5**	**39**	1
OF478	DG_090	DG_090_OF478_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	107709.84	45%	4	0	0.23	1	0	Greenlodge Stream	**High**	**5**	**40**	1
OF678	DG_267	DG_267_OF678_1	1	0	0	0	0	0.00	0%	0	49469.27	17%	1	11016.94	4%	2	0	0.37	2	0	Wigwam Brook	**High**	**5**	**41**	1
OF674	DG_106	DG_106_OF674_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	116188.46	50%	4	0	0.10	1	0	Greenlodge Stream	**High**	**5**	**42**	1
OF653	DG_272	DG_272_OF653_1	0	1	0	0	0	18.85	0%	1	0.00	0%	0	2294.95	4%	2	0	0.06	1	0	Lowder Brook	**High**	**4**	**43**	1
OF496	DG_447	DG_447_OF496_1	1	0	0	0	0	0.00	0%	0	10600.83	8%	1	2275.91	2%	2	0	0.09	1	0	Vine Rock Stream	**High**	**4**	**44**	1
OF677	DG_287	DG_287_OF677_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	497.75	1%	2	0	0.09	1	0	Wigwam Brook	**High**	**3**	**45**	1
OF00857	DG_097	DG_097_OF00857_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.11	1	0	Little Wigwam Stream	**High**	**1**	**46**	1
OF495	DG_448	DG_448_OF495_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.07	1	0	Vine Rock Stream	**High**	**1**	**47**	1
OF00847	DG_274	DG_274_OF00847_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.05	1	0	Wigwam Brook	**High**	**1**	**48**	1
OF452	DG_117	DG_117_OF452_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.04	1	0	Little Wigwam Stream	**High**	**1**	**49**	1
OF508	DG_203	DG_203_OF508_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.10	1	0	Wigwam Brook	**High**	**1**	**50**	1
OF607	DG_209	DG_209_OF607_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.01	1	0	Wigwam Brook	**High**	**1**	**51**	1
OF721	DG_214	DG_214_OF721_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Wigwam Brook	**High**	**0**	**52**	0
ITC020	DG_646	DG_646_ITC020_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Wigwam Brook	**High**	**0**	**53**	1
OF720	DG_210	DG_210_OF720_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Wigwam Brook	**High**	**0**	**54**	0
OF397	DG_208	DG_208_OF397_1	1	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Wigwam Brook	**High**	**0**	**55**	1
OF572	DG_207	DG_207_OF572_1	0	0	0	0	0	0.00	0%	0	13336.19	1%	1	63196.85	2%	2	0	2.24	7	10	Mother Brook (MA73-28)	**Low**	**20**	**56**	1
OF596	DG_449	DG_449_OF596_1	0	0	0	0	0	0.00	0%	0	42.24	0%	1	0.00	0%	0	0	1.07	5	10	Charles River (MA72-07)	**Low**	**16**	**57**	1
ITC001	DG_446	DG_446_ITC001_1	0	0	0	0	0	0.00	0%	0	7589.16	1%	1	17939.24	3%	2	0	0.70	3	10	Charles River (MA72-07)	**Low**	**16**	**58**	1
ITC007	DG_371	DG_371_ITC007_1	0	0	0	0	0	0.00	0%	0	1266.96	0%	1	580.55	0%	2	0	0.27	2	10	Mother Brook (MA73-28)	**Low**	**15**	**59**	1
OF777	DG_348	DG_348_OF777_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	2873.46	28%	4	0	0.04	1	10	Mother Brook (MA73-28)	**Low**	**15**	**60**	1
OF00855	DG_442	DG_442_OF00855_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	1549.36	0%	2	0	0.26	2	10	Charles River (MA72-07)	**Low**	**14**	**61**	1
OF201	DG_357	DG_357_OF201_1	0	0	0	0	0	545676.21	95%	4	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Charles River (MA72-07)	**Low**	**14**	**62**	1
OF484	DG_363	DG_363_OF484_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	3594.78	1%	2	0	0.32	2	10	Mother Brook (MA73-28)	**Low**	**14**	**63**	1
OF414	DG_400	DG_400_OF414_1	0	0	0	0	0	169496.83	50%	2	95884.07	28%	2	0.00	0%	0	0	0.00	0	10	Charles River (MA72-07)	**Low**	**14**	**64**	1
OF657	DG_341	DG_341_OF657_1	0	0	0	0	0	3382.37	2%	1	0.00	0%	0	4161.91	2%	2	0	0.17	1	10	Mother Brook (MA73-28)	**Low**	**14**	**65**	1
OF593	DG_456	DG_456_OF593_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.68	3	10	Charles River (MA72-07)	**Low**	**13**	**66**	1
OF423	DG_345	DG_345_OF423_1	0	0	0	0	0	164246.58	73%	3	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Charles River (MA72-07)	**Low**	**13**	**67**	1
ITC008	DG_371	DG_371_ITC008_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	10027.50	12%	2	0	0.11	1	10	Mother Brook (MA73-28)	**Low**	**13**	**68**	1
OF559	DG_284	DG_284_OF559_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	3214.45	1%	2	0	0.16	1	10	Mother Brook (MA73-28)	**Low**	**13**	**69**	1
OF422	DG_344	DG_344_OF422_1	0	0	0	0	0	47609.93	74%	3	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Charles River (MA72-07)	**Low**	**13**	**70**	1
ITC006	DG_440	DG_440_ITC006_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	2530.56	5%	2	0	0.07	1	10	Charles River (MA72-07)	**Low**	**13**	**71**	1
OF656	DG_271	DG_271_OF656_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	4481.31	4%	2	0	0.13	1	10	Mother Brook (MA73-28)	**Low**	**13**	**72**	1
OF600	DG_342_1	DG_342_1_OF600_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.60	3	10	Mother Brook (MA73-28)	**Low**	**13**	**73**	1
OF601	DG_342_2	DG_342_2_OF601_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.60	3	10	Mother Brook (MA73-28)	**Low**	**13**	**74**	1
OF414	DG_400	DG_400_OF414_1	0	0	0	0	0	36968.60	43%	2	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Charles River (MA72-07)	**Low**	**12**	**75**	1
OF591	DG_457	DG_457_OF591_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.34	2	10	Charles River (MA72-07)	**Low**	**12**	**76**	1
OF443	DG_366	DG_366_OF443_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.27	2	10	Charles River (MA72-07)	**Low**	**12**	**77**	1
OF442	DG_383	DG_383_OF442_1	0	0	0	0	0	0.00	0%	0	4061.79	10%	1	0.00	0%	0	0	0.05	1	10	Charles River (MA72-07)	**Low**	**12**	**78**	1
OF466	DG_281	DG_281_OF466_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.29	2	10	Mother Brook (MA73-28)	**Low**	**12**	**79**	1
ITC003	DG_440	DG_440_ITC003_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.47	2	10	Charles River (MA72-07)	**Low**	**12**	**80**	1
OF655	DG_464	DG_464_OF655_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.50	2	10	Mother Brook (MA73-28)	**Low**	**12**	**81**	1
OF660	DG_321	DG_321_OF660_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.19	1	10	Mother Brook (MA73-28)	**Low**	**11**	**82**	1
OF769	DG_418	DG_418_OF769_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	1	10	Charles River (MA72-07)	**Low**	**11**	**83**	1
OF170	DG_288	DG_288_OF170_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.07	1	10	Charles River (MA72-07)	**Low**	**11**	**84**	1
ITC010	DG_371	DG_371_ITC010_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.19	1	10	Mother Brook (MA73-28)	**Low**	**11**	**85**	1
OF719	DG_306	DG_306_OF719_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.04	1	10	Mother Brook (MA73-28)	**Low**	**11**	**86**	1
ITC009	DG_371	DG_371_ITC009_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.04	1	10	Mother Brook (MA73-28)	**Low**	**11**	**87**	1
ITC026	DG_440	DG_440_ITC026_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.19	1	10	Charles River (MA72-07)	**Low**	**11**	**88**	1
OF594	DG_452	DG_452_OF594_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.02	1	10	Charles River (MA72-07)	**Low**	**11**	**89**	1
OF592	DG_455	DG_455_OF592_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.08	1	10	Charles River (MA72-07)	**Low**	**11**	**90**	1
OF776	DG_355	DG_355_OF776_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.08	1	10	Mother Brook (MA73-28)	**Low**	**11**	**91**	1

Catchment Assessment and Priority Ranking Matrix

Discharge Point ID	Discharge Group ID	Catchment Area ID	Catchment located within 300' of a Recreational Area (0=No, 1=Yes)	Catchment loacted within 1500' of drinking water Supplies (0=No, 1=Yes)	Sewer Inputs indicators found during dry weather screening (0=No, 1=Yes)	Know or suspected problem including 2003 MS4 screening (0=No, 1=Yes)	Past discharge complaints or reports (0=No, 1=Yes)	Area of septic locted within the catchment area (Sq. Ft.)	Percentage of septic located within the catchment area	Septic Score	Area of Low Loading Generating Sites Located Within Catchment Area (Sq. Ft.)	Percentage of Low Loading Generating Sites Located Within Catchment Area	Low Loading Generating Sites Score	Area of Medium Loading Generating Sites Located Within Catchment Area (Sq. Ft.)	Percentage of Medium Loading Generating Sites Located Within Catchment Area	Medium Loading Generating Sites Score	High Loading Generating Sites Score	Miles of Public Sewer Mains Located within the Catchment Area	Sewer Score	Discharge Point Discharges Directly to Waterbody with Approved TMDL or Known Impairment (0=No, 5=Unknown, 10=Yes)	MS4 Receiving Waterbody Name	EPA Priority	Total Score	Final Rank	System Vulnerabilty Factor Present (0=No, 1=Yes)
OF654	DG_261	DG_261_OF654_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.02	1	10	Mother Brook (MA73-28)	Low	11	92	1
ITC005	DG_440	DG_440_ITC005_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.12	1	10	Charles River (MA72-07)	Low	11	93	1
OF402	DG_321	DG_321_OF402_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.17	1	10	Mother Brook (MA73-28)	Low	11	94	1
OF658	DG_459	DG_459_OF658_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.07	1	10	Mother Brook (MA73-28)	Low	11	95	1
ITC004	DG_440	DG_440_ITC004_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.02	1	10	Charles River (MA72-07)	Low	11	96	1
ITC002	DG_440	DG_440_ITC002_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.15	1	10	Charles River (MA72-07)	Low	11	97	1
OF401	DG_321	DG_321_OF401_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.18	1	10	Mother Brook (MA73-28)	Low	11	98	1
OF771	DG_289	DG_289_OF771_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Mother Brook (MA73-28)	Low	10	99	1
ITC025	DG_430	DG_430_ITC025_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	10	Charles River (MA72-07)	Low	10	100	1
ITC019	DG_100	DG_100_ITC019_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	2185.43	0%	2	0	0.26	2	5	Unknown	Low	9	101	1
OF314	DG_033	DG_033_OF314_1	0	0	0	0	0	1580.59	0%	1	0.00	0%	0	9432.51	0%	2	0	1.98	5	0	Greenlodge Stream	Low	8	102	1
OF701	DG_096	DG_096_OF701_1	0	0	0	0	0	0.00	0%	0	2141.04	0%	1	21806.76	2%	2	0	1.08	5	0	East Brook	Low	8	103	1
ITC012	DG_113	ITC012_1	0	0	0	0	0	472.74	0%	1	0.00	0%	0	0.00	0%	0	0	0.12	1	5	Unknown	Low	7	104	1
OF781	DG_064	DG_064_OF781_1	0	0	0	0	0	0.00	0%	0	8326.03	0%	1	0.00	0%	0	0	1.79	5	0	East Brook	Low	6	105	1
OF670	DG_148	DG_148_OF670_1	0	0	0	0	0	0.00	0%	0	20561.67	1%	1	0.00	0%	0	0	1.54	5	0	East Brook	Low	6	106	1
OF172	DG_075	DG_075_OF172_1	0	0	0	0	0	0.00	0%	0	22962.56	1%	1	0.00	0%	0	0	1.61	5	0	Greenlodge Stream	Low	6	107	1
ITC017	DG_067	ITC017_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.06	1	5	Unknown	Low	6	108	1
OF474	DG_055	DG_055_OF474_1	0	0	0	0	0	0.00	0%	0	6288.28	0%	1	0.00	0%	0	0	1.39	5	0	Greenlodge Stream	Low	6	109	1
OF242	DG_151_1	DG_151_1_OF242_1	0	0	0	0	0	17257.85	1%	1	0.00	0%	0	0.00	0%	0	0	1.05	5	0	Wigwam Brook	Low	6	110	1
OF539	DG_190	DG_190_OF539_1	0	0	0	0	0	0.00	0%	0	13743.18	1%	1	30718.32	2%	2	0	0.87	3	0	East Brook	Low	6	111	1
ITC016	DG_119	ITC016_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.16	1	5	Unknown	Low	6	112	1
ITC018	DG_072	ITC018_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.15	1	5	Unknown	Low	6	113	1
OF668	DG_148	DG_148_OF668_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	1.30	5	0	East Brook	Low	5	114	1
ITC023	DG_158	ITC023_1	0	0	0	0	0	42484.06	6%	1	0.00	0%	0	5394.62	1%	2	0	0.35	2	0	N/A	Low	5	115	1
OF801	DG_191	DG_191_OF801_1	0	0	0	0	0	0.00	0%	0	24924.36	7%	1	12725.35	4%	2	0	0.33	2	0	Lowder Brook	Low	5	116	1
OF395	DG_126	DG_126_OF395_1	0	0	0	0	0	0.00	0%	0	8825.72	3%	1	2325.72	1%	2	0	0.29	2	0	Wigwam Brook	Low	5	117	1
OF394	DG_126	DG_126_OF394_1	0	0	0	0	0	0.00	0%	0	8825.72	3%	1	2325.72	1%	2	0	0.29	2	0	Wigwam Brook	Low	5	118	1
OF671	DG_102	DG_102_OF671_1	0	0	0	0	0	0.00	0%	0	878.85	3%	1	1307.52	5%	2	0	0.07	1	0	East Brook	Low	4	119	1
OF586	DG_175	DG_175_OF586_1	0	0	0	0	0	139073.73	81%	4	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Stoney Lea Brook	Low	4	120	1
OF434	DG_268	DG_268_OF434_1	0	0	0	0	0	0.00	0%	0	1715.44	0%	1	0.00	0%	0	0	0.61	3	0	Lowder Brook	Low	4	121	1
OF697	DG_077	DG_077_OF697_1	0	0	0	0	0	0.00	0%	0	88128.03	8%	1	0.00	0%	0	0	0.92	3	0	East Brook	Low	4	122	1
OF673	DG_071	DG_071_OF673_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	1298.33	0%	2	0	0.46	2	0	Greenlodge Stream	Low	4	123	1
ITC015	DG_646	DG_646_ITC015_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	22163.23	8%	2	0	0.30	2	0	Wigwam Brook	Low	4	124	1
ITC024	DG_046	ITC024_1	0	0	0	0	0	0.00	0%	0	5396.19	0%	1	95025.22	4%	2	0	0.11	1	0	Little Wigwam Stream	Low	4	125	1
OF418	DG_325	DG_325_OF418_1	0	0	0	0	0	331601.21	89%	4	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Weld Stream	Low	4	126	1
OF399	DG_162	DG_162_OF399_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.72	3	0	East Brook	Low	3	127	1
OF487	DG_211	DG_211_OF487_1	0	0	0	0	0	0.00	0%	0	2281.91	1%	1	0.00	0%	0	0	0.39	2	0	Lowder Brook	Low	3	128	1
OF193	DG_369	DG_369_OF193_1	0	0	0	0	0	2779.64	72%	3	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Weld Stream	Low	3	129	1
OF520	DG_451	DG_451_OF520_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.72	3	0	Cutler Brook	Low	3	130	1
OF669	DG_109	DG_109_OF669_1	0	0	0	0	0	7306.02	4%	1	4459.65	2%	1	0.00	0%	0	0	0.17	1	0	East Brook	Low	3	131	1
OF430	DG_225	DG_225_OF430_1	0	0	0	0	0	62081.82	53%	3	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Lowder Brook	Low	3	132	1
OF779	DG_069_2	DG_069_2_OF779_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.62	3	0	Greenlodge Stream	Low	3	133	1
OF672	DG_367	DG_367_OF672_1	0	0	0	0	0	518898.29	52%	3	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Weld Stream	Low	3	134	1
ITC022	DG_158	ITC022_1	0	0	0	0	0	146380.52	67%	3	0.00	0%	0	0.00	0%	0	0	0.00	0	0	N/A	Low	3	135	1
OF198	DG_362	DG_362_OF198_1	0	0	0	0	0	893436.11	73%	3	0.00	0%	0	0.00	0%	0	0	0.00	0	0	MIT Endicott Brook	Low	3	136	1
OF667	DG_112	DG_112_OF667_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	6541.62	5%	2	0	0.10	1	0	East Brook	Low	3	137	1
OF583	DG_062	DG_062_OF583_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.31	2	0	Greenlodge Stream	Low	2	138	1
OF413	DG_305	DG_305_OF413_1	0	0	0	0	0	32504.32	32%	2	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Weld Stream	Low	2	139	1
OF567	DG_032	DG_032_OF567_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.41	2	0	Greenlodge Stream	Low	2	140	1
OF564	DG_069_2	DG_069_2_OF564_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.48	2	0	Greenlodge Stream	Low	2	141	1
OF437	DG_239_2	DG_239_2_OF437_1	0	0	0	0	0	0.00	0%	0	697.66	0%	1	0.00	0%	0	0	0.24	1	0	Lowder Brook	Low	2	142	1
OF666	DG_232	DG_232_OF666_1	0	0	0	0	0	24887.74	17%	1	0.00	0%	0	0.00	0%	0	0	0.03	1	0	Westfield Brook	Low	2	143	1
ITC011	DG_094	ITC011_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.27	2	0	Little Wigwam Stream	Low	2	144	1
OF876	DG_018	DG_018_OF876_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.33	2	0	Peanut Butter Brook	Low	2	145	1
OF421	DG_443	DG_443_OF421_1	0	0	0	0	0	0.00	0%	0	11832.42	16%	1	0.00	0%	0	0	0.01	1	0	Cutler Brook	Low	2	146	1
OF398	DG_061	DG_061_OF398_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.27	2	0	Little Wigwam Stream	Low	2	147	1
OF476	DG_027	DG_027_OF476_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.29	2	0	Greenlodge Stream	Low	2	148	1
OF568	DG_039	DG_039_OF568_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.41	2	0	Greenlodge Stream	Low	2	149	1
OF247	DG_379	DG_379_OF247_1	0	0	0	0	0	0.00	0%	0	5168.65	7%	1	0.00	0%	0	0	0.05	1	0	Arlington Stream	Low	2	150	1
OF552	DG_037	DG_037_OF552_1	0	0	0	0	0	47324.01	21%	1	0.00	0%	0	0.00	0%	0	0	0.20	1	0	Little Wigwam Stream	Low	2	151	1
OF462	DG_128	DG_128_OF462_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.12	1	0	East Brook	Low	1	152	1
OF450	DG_170	DG_170_OF450_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.22	1	0	East Brook	Low	1	153	1
OF570	DG_022	DG_022_OF570_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.20	1	0	Peanut Butter Brook	Low	1	154	1
OF546	DG_021	DG_021_OF546_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.24	1	0	Peanut Butter Brook	Low	1	155	1
OF00871	DG_065	DG_065_OF00871_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.09	1	0	Greenlodge Stream	Low	1	156	1
OF617	DG_238	DG_238_OF617_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.01	1	0	Ursuline Stream	Low	1	157	1
OF274	DG_149	DG_149_OF274_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.16	1	0	East Brook	Low	1	158	1
OF576	DG_038	DG_038_OF576_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.06	1	0	Greenlodge Stream	Low	1	159	1
OF406	DG_092	DG_092_OF406_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.05	1	0	Greenlodge Stream	Low	1	160	1
OF419	DG_204	DG_204_OF419_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.15	1	0	Lowder Brook	Low	1	161	1
OF637	DG_026	DG_026_OF637_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.10	1	0	Greenlodge Stream	Low	1	162	1
OF438	DG_179	DG_179_OF438_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.01	1	0	Lowder Brook	Low	1	163	1
OF230	DG_453	DG_453_OF230_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.09	1	0	Vine Rock Stream	Low	1	164	1
OF706	DG_024	DG_024_OF706_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.15	1	0	Greenlodge Stream	Low	1	165	1
OF270	DG_085	DG_085_OF270_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.06	1	0	Little Wigwam Stream	Low	1	166	1
ITC027	DG_646	DG_646_ITC027_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.04	1	0	Wigwam Brook	Low	1	167	1
OF436	DG_180	DG_180_OF436_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.01	1	0	Lowder Brook	Low	1	168	1
OF451	DG_167	DG_167_OF451_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.12	1	0	East Brook	Low	1	169	1
OF475	DG_023	DG_023_OF475_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.05	1	0	Greenlodge Stream	Low	1	170	1
OF682	DG_319	DG_319_OF682_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.17	1	0	Wigwam Brook	Low	1	171	1
ITC021	DG_646	DG_646_ITC021_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.08	1	0	Wigwam Brook	Low	1	172	1
OF212	DG_228	DG_228_OF212_1	0	0	0	0	0	564.87	3%	1	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Lowder Brook	Low	1	173	1
OF477	DG_014	DG_014_OF477_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.05	1	0	Peanut Butter Brook	Low	1	174	1
OF571	DG_020	DG_020_OF571_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.09	1	0	Peanut Butter Brook	Low	1	175	1
OF461	DG_143	DG_143_OF461_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.02	1	0	East Brook	Low	1	176	1
OF708	DG_049	DG_049_OF708_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.16	1	0	Greenlodge Stream	Low	1	177	1
OF391	DG_192	DG_192_OF391_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.01	1	0	Lowder Brook	Low	1	178	1
OF494	DG_450	DG_450_OF494_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.01	1	0	Vine Rock Stream	Low	1	179	1
OF439	DG_171	DG_171_OF439_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.03	1	0	Lowder Brook	Low	1	180	1
OF480	DG_385	DG_385_OF480_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	0	County Jail Brook	Low	0	181	1
OF435	DG_198	DG_198_OF435_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Lowder Brook	Low	0	182	1

Catchment Assessment and Priority Ranking Matrix

Discharge Point ID	Discharge Group ID	Catchment Area ID	Catchment located within 300' of a Recreational Area (0=No, 1=Yes)	Catchment loacted within 1500' of drinking water Supplies (0=No, 1=Yes)	Sewer Inputs indicators found during dry weather screening (0=No, 1=Yes)	Know or suspected problem including 2003 MS4 screening (0=No, 1=Yes)	Past discharge complaints or reports (0=No, 1=Yes)	Area of septic locted within the catchment area (Sq. Ft.)	Percentage of septic located within the catchment area	Septic Score	Area of Low Loading Generating Sites Located Within Catchment Area (Sq. Ft.)	Percentage of Low Loading Generating Sites Located Within Catchment Area	Low Loading Generating Sites Score	Area of Medium Loading Generating Sites Located Within Catchment Area (Sq. Ft.)	Percentage of Medium Loading Generating Sites Located Within Catchment Area	Medium Loading Generating Sites Score	High Loading Generating Sites Score	Miles of Public Sewer Mains Located within the Catchment Area	Sewer Score	Discharge Point Discharges Directly to Waterbody with Approved TMDL or Known Impairment (0=No, 5=Unknown, 10=Yes)	MS4 Receiving Waterbody Name	EPA Priority	Total Score	Final Rank	System Vulnerabilty Factor Present (0=No, 1=Yes)
OF455	DG_074	DG_074_OF455_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Little Wigwam Stream	**Low**	**0**	**183**	1
OF565	DG_034	DG_034_OF565_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Greenlodge Stream	**Low**	**0**	**184**	1
OF773	DG_199	DG_199_OF773_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	0	Lowder Brook	**Low**	**0**	**185**	1
OF417	DG_372	DG_372_OF417_1	0	0	0	0	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0	0.00	0	0	County Jail Brook	**Low**	**0**	**186**	1

APPENDIX D

Chain of Custody Forms for Laboratory Sampling Analysis

CHAIN OF CUSTODY RECORD

R.I. Analytical Laboratories, Inc.

41 Illinois Avenue
Warwick, RI 02888-3007
Tel: 800-937-2580
Fax: 401-738-1970

131 Coolidge St, Suite 105
Hudson, MA 01749-1331
Tel: 800-937-2580
Fax: 978-568-0078

08-28-19

Date Collected	Time Collected	Field Sample Identification	Grab or Composite	# of Containers & Type C	Preservation Code P *	Matrix Code M		Enterococcus	E.Coli (method 9213D)	Ammonia Nitrogen	Surfactants as MBAS	Specific Conductance												
			G	2 St	NP	O		X	X															
			G	1 P	S	O				X														
			G	1 P	NP	O					X	X												
			G	2 St	NP	O		X	X															
			G	1 P	S	O				X														
			G	1 P	NP	O					X	X												
			G	2 St	NP	O		X	X															
			G	1 P	S	O				X														
			G	1 P	NP	O					X	X												
			G	2 St	NP	O		X	X															
			G	1 P	S	O				X														
			G	1 P	NP	O					X	X												
			G	2 St	NP	O		X	X															
			G	1 P	S	O				X														
			G	1 P	NP	O					X	X												

Client Information		Project Information			
Company Name:		Project Name:			
Address:		P.O. Number:		Project Number:	
City / State / Zip:		Report To:		Phone:	Fax:
Telephone:		Sampled by:		Email report to these addresses:	
Contact Person:		Quote No:			

Relinquished By	Date	Time	Received By	Date	Time

Turn Around Time			
	Normal	X	EMAIL Report
X	5 Business days		
	Rush ______ (business days)		

Project Comments

Circle if applicable: GW-1, GW-2, GW-3, S-1, S-2, S-3 MCP Data Enhancement QC Package? **No**

* All samples kept on ice between sampling and analysis.

Lab Use Only	
	Sample Pick Up Only
	Shipped on ice
Workorder No:	

Containers: P=Poly, G=Glass, AG=Amber Glass, V=Vial, St=Sterile Preservatives: A=Ascorbic Acid, NH4=NH_4Cl, H=HCl, M=MeOH, N=HNO_3, NP=None, S=H_2SO_4, SB=$NaHSO_4$, SH=NaOH, T=$Na_2S_2O_3$, Z=ZnOAc
Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, SL=Sludge, A=Air, B=Bulk/Solid, O= **Stormwater**

CHAIN OF CUSTODY RECORD

R.I. Analytical Laboratories, Inc.

41 Illinois Avenue
Warwick, RI 02888-3007
Tel: 800-937-2580
Fax: 401-738-1970

131 Coolidge St, Suite 105
Hudson, MA 01749-1331
Tel: 800-937-2580
Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification	08-28-19 Grab or Composite	# of Containers & Type C	Preservation Code P *	Matrix Code M		Enterococcus	E.Coli (method 9213D)	Ammonia Nitrogen	Surfactants as MBAS	Specific Conductance												
			G	2 St	NP	O		X	X															
			G	1 P	S	O				X														
			G	1 P	NP	O					X	X												
			G	2 St	NP	O		X	X															
			G	1 P	S	O				X														
			G	1 P	NP	O					X	X												
			G	2 St	NP	O		X	X															
			G	1 P	S	O				X														
			G	1 P	NP	O					X	X												
			G	2 St	NP	O		X	X															
			G	1 P	S	O				X														
			G	1 P	NP	O					X	X												
			G	2 St	NP	O		X	X															
			G	1 P	S	O				X														
			G	1 P	NP	O					X	X												

Client Information		Project Information			
Company Name:		Project Name:			
Address:		P.O. Number:		Project Number:	
City / State / Zip:		Report To:		Phone:	Fax:
Telephone:		Sampled by:		Email report to these addresses:	
Contact Person:		Quote No:			

Relinquished By	Date	Time	Received By	Date	Time

Turn Around Time			
	Normal	X	EMAIL Report
X	5 Business days		
	Rush ______ (business days)		

Project Comments

Circle if applicable: GW-1, GW-2, GW-3, S-1, S-2, S-3 MCP Data Enhancement QC Package? **No**

* All samples kept on ice between sampling and analysis.

Lab Use Only	
	Sample Pick Up Only
	Shipped on ice
Workorder No:	

Containers: P=Poly, G=Glass, AG=Amber Glass, V=Vial, St=Sterile Preservatives: A=Ascorbic Acid, NH4=NH_4Cl, H=HCl, M=MeOH, N=HNO_3, NP=None, S=H_2SO_4, SB=$NaHSO_4$, SH=NaOH, T=$Na_2S_2O_3$, Z=ZnOAc

Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, SL=Sludge, A=Air, B=Bulk/Solid, O= **Stormwater**

CHAIN OF CUSTODY RECORD

R.I. Analytical Laboratories, Inc.

41 Illinois Avenue
Warwick, RI 02888-3007
Tel: 800-937-2580
Fax: 401-738-1970

131 Coolidge St, Suite 105
Hudson, MA 01749-1331
Tel: 800-937-2580
Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification	08-28-19 Grab or Composite	# of Containers & Type C	Preservation Code P *	Matrix Code M		Enterococcus	E.Coli (method 9213D)	Ammonia Nitrogen	Surfactants as MBAS	Specific Conductance												
			G	2 St	NP	O		X	X															
			G	1 P	S	O				X														
			G	1 P	NP	O					X	X												
			G	2 St	NP	O		X	X															
			G	1 P	S	O				X														
			G	1 P	NP	O					X	X												
			G	2 St	NP	O																		
			G	1 P	S	O																		
			G	1 P	NP	O																		
			G	2 St	NP	O																		
			G	1 P	S	O																		
			G	1 P	NP	O																		
			G	2 St	NP	O																		
			G	1 P	S	O																		
			G	1 P	NP	O																		

Client Information	Project Information	
Company Name:	Project Name:	
Address:	P.O. Number:	Project Number:
City / State / Zip:	Report To:	Phone: Fax:
Telephone:	Sampled by:	Email report to these addresses:
Contact Person:	Quote No:	

Relinquished By	Date	Time	Received By	Date	Time

Turn Around Time			
	Normal	X	EMAIL Report
X	5 Business days		
	Rush ______ (business days)		

Project Comments

Circle if applicable: GW-1, GW-2, GW-3, S-1, S-2, S-3 MCP Data Enhancement QC Package? **No**

* All samples kept on ice between sampling and analysis.

Lab Use Only	
	Sample Pick Up Only
	Shipped on ice
Workorder No:	

Containers: P=Poly, G=Glass, AG=Amber Glass, V=Vial, St=Sterile Preservatives: A=Ascorbic Acid, NH4=NH_4Cl, H=HCl, M=MeOH, N=HNO_3, NP=None, S=H_2SO_4, SB=$NaHSO_4$, SH=NaOH, T=$Na_2S_2O_3$, Z=ZnOAc

Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, SL=Sludge, A=Air, B=Bulk/Solid, O= **Stormwater**

APPENDIX E

Sample Field Investigation Forms

Draft Sample Letters and Notifications

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: Ammonia-Nitrogen
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: Surfactants
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: E-Coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: Ammonia-Nitrogen
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: Surfactants
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: Ammonia-Nitrogen
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: Surfactants
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: Ammonia-Nitrogen
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: Ammonia-Nitrogen
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: Surfactants
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: Ammonia-Nitrogen
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: Surfactants
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: Ammonia-Nitrogen
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: Surfactants
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: Surfactants
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: Ammonia-Nitrogen
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: Surfactants
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter:
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter:
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter:
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: Ammonia-Nitrogen
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: Surfactants
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: Ammonia-Nitrogen
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter: Surfactants
Sample Date:
Sample Time:
Sampled By:
Preservative: <10°C

NAME OF OUTFALL
Parameter:
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter:
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter:
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: Ammonia-Nitrogen
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: Surfactants
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: E-coli
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter: Ammonia-Nitrogen
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter:
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter:
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

NAME OF OUTFALL
Parameter:
Sample Date:
Sample Time:
Sampled By:
Preservative: <4°C

Town of Dedham, Massachusetts
Illicit Discharge Detection & Elimination Program
Drain Segment Isolation - Field Data Sheet

Date: _____
Sampler: _____

Outfall of Concern	Site Location	Sandbag Location	Sample Taken?	Comments	Sample Time

#N/A

Town of Dedham, Massachusetts
Illicit Discharge Detection & Elimination Program

Box Culvert Sampling

Date: _____

Sampler: _____

Site Location	Sample Location	Sample Time	Analysis Time	Chlorine (mg/L)	Temp. (°F)	Comments
	ex: Drain manhole					

#N/A

Town of Dedham, Massachusetts
Illicit Discharge Detection & Elimination Program

Dry-Weather Sampling

Date: _____

Sampler: _____

Outfall of Concern	Sample Location	Sample Time	Analysis Time	Chlorine (mg/L)	Temp. (°F)	Comments

#N/A

Town of Dedham, Massachusetts
Illicit Discharge Detection & Elimination Program

Dry-Weather Manhole Inspection

Date: _____

Inspector: _____

Outfall of Concern	Inspection Location	Findings

Town of Dedham, Massachusetts
Illicit Discharge Detection & Elimination Program

Dye Testing Field Data Sheet

Outfall of Concern	Date/Time	Site Location	Dye Introduced	Dye Test Result	Comments

DEDHAM, MASSACHUSETTS
STORMWATER SAMPLING
201X OUTFALL MONITORING REPORT

Outfall:

Outfall Name:_____ Pipe Diameter:_____ Pipe Material:_____

Descriptive:_____

_____

Inspection:

Date: _____ Date Last Precipitation: _____ Flow Observed? Yes ___ No ___

Time: _____ Time of Low Tide: _____ If yes: Estimated Flow_____ gpm

Weather: Dry ___ Wet ___ Inspector: _____

Visual Observations:

Odor_____

Color_____

Floatables (solid/liquid)_____

Settleable Solids_____

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli	Sterile Plastic	Grab	--	--	--	<10°C
Enterococcus	Sterile Plastic	Grab	--	--	--	< 10°C
Surfactants & Specific Conductance	Plastic	Grab	--	--	--	<4°C
Ammonia-nitrogen	Plastic	Grab	--	--	--	<4°C, H_2SO_4

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)				(same)			
Chlorine (mg/L)				(same)			

Outfall Photograph

NOTIFICATION OF DYE TESTING

Dear Property Owners and Residents:

The Town of Dedham is working to locate sources of illicit discharges to the Town's drainage system in an effort to improve water quality and meet the requirements of the 2016 General Permit for Discharges from the Municipal Separate Storm Sewer System (MS4 Permit). To locate sources of illicit discharges, the Town will be performing dye testing at your address some time between the hours of 8 am and 5 pm during the period from XXX through XXX. Dyed water testing involves putting dyed water into a sanitary plumbing fixture and noting if the dyed water enters a storm drain or sanitary sewer. The dye is non-toxic and is not a risk to individuals or structures. The dyed water will help to identify any plumbing fixtures that are inadvertently connected to the Town's drainage system.

As part of this work, field personnel will need to enter your building or home to complete the dye testing. Field personnel will knock on your door to get access to your property. If you are not at home when our field crews stop by, we will call you to schedule an appointment. Field personnel will carry a letter of introduction and photo identification. The police department has been notified of this investigation.

For more information, please contact:

Mr. Jason L. Mammone, PE
Director of Engineering
55 River Street
Dedham, MA 02026
(781) 751-9350

We appreciate your cooperation in our effort to improve water quality.

TOWN OF DEDHAM
NOTICE

SMOKE TESTING

In order to identify illicit connections to the storm drain system, the Town of Dedham will be conducting smoke testing of the *sanitary sewer or storm drain* from 7:00 a.m. to 5:00 p.m. between XXX and XXX.

During the test, white smoke is introduced to the *sanitary sewer system or storm drain system* via a smoke-generating machine. During this procedure, white smoke will be venting from holes in manhole covers located in the street and from plumbing vent pipes located on or near your roof surface. THIS IS NORMAL AND SHOULD NOT CAUSE ALARM.

Smoke should not enter your premises unless there is a dry trap in an unused fixture or a defect in your plumbing. You may wish to pour two gallons of water down your basement floor drain or unused plumbing fixture to ensure that the drain trap will be effective.

Should smoke be detected within your building, do not be alarmed. The smoke is NON-TOXIC, NON-STAINING, and dissipates quickly through open windows. IF YOU HAVE A LUNG AILMENT or RESPIRATORY CONDITION SUCH AS ASTHMA OR EMPHYSEMA, STAY AWAY FROM THE SMOKE. Any smoke within a building should be immediately reported to the persons conducting the tests.

PRIOR TO SMOKE TESTING, THE TOWN OF DEDHAM MUST IDENTIFY LOCATIONS OF RESIDENTS WITH POOR HEALTH CONDITIONS. ALTHOUGH THE SMOKE IS NON-TOXIC AND NON-STAINING, IT IS CAPABLE OF CAUSING IRRITATION, ESPECIALLY TO THOSE WITH LUNG AILMENTS SUCH AS ASTHMA OR EMPHYSEMA. IF YOU HAVE A RELATED HEALTH CONDITION PLEASE CONTACT THE TOWN AT xxx. PLEASE LEAVE A MESSAGE INCLUDING YOUR NAME, ADDRESS, AND TELEPHONE NUMBER SO THAT APPROPRIATE PRECAUTIONS MAY BE TAKEN.

THE TEST WILL BE PERFORMED ONE TO THREE BUSINESS DAYS AFTER YOU RECEIVE THE NOTICE AT YOUR HOME, PENDING WEATHER CONDITIONS.

PLEASE NOTE:

- YOU ARE NOT REQUIRED TO BE AT HOME DURING THE SMOKE TESTING.
- IF YOU WORK DURING THE DAY, PLEASE TAKE PRECAUTIONS TO VENTILATE THE AREA WHERE YOUR PET WILL BE.
- A FIREFIGHTER WILL BE ON-SITE WHILE SMOKE TESTING IS PERFORMED.

TOWN OF DEDHAM
NOTICE

SMOKE TESTING COMPLETED TODAY

Smoke testing was completed on your street today. Smoke should not have entered your premises unless there was a dry trap in an unused fixture or a defect in your plumbing.

Should smoke from the testing be detected within your building, do not be alarmed. The smoke is NON-TOXIC, NON-STAINING, and dissipates quickly through open windows. **IF YOU HAVE A LUNG AILMENT SUCH AS ASTHMA OR EMPHYSEMA, STAY AWAY FROM THE SMOKE.** Any smoke within a building should be reported to the Fire Department at 911.

If you have any additional questions, please contact the Town of Dedham at **(781)-751-9350**. Leave a message including your name, address, and telephone number and we will respond to you promptly.

THANK YOU FOR YOUR COOPERATION. THE TOWN OF DEDHAM.

APPENDIX F

Ongoing and Proposed Field Investigation Records

APPENDIX G

Sample Written Order

Recipient Name
Company Name
Street Address
Dedham, MA 02026

Re: Storm Drain (or Sanitary Sewer) Deficiency at *Address*

Dear Recipient Name:

Please be advised that the Town has become aware of a deficiency at your property located at XXXX related to your drainage system (or sewer system). *Provide a description of the problem identified.*

As required by the Town's General Permit for Discharges from the Municipal Separate Storm Sewer System (MS4 Permit), the Town is implementing a comprehensive Illicit Discharge Detection and Elimination (IDDE) program to identify non-stormwater discharges to the Town's drainage system that are impacting receiving water quality.

Chapter 242, Storm Drains, of the Town's General Bylaws prohibits the following activities and provides the Town with legal authority to ensure compliance with the provisions of this bylaw through inspection, monitoring and enforcement:

"A. Illicit Discharges. No person shall dump, discharge, cause or allow to be discharged any pollutant or non-stormwater discharge into the municipal storm drain system, into a watercourse, or into the waters of the Commonwealth.

B. Illicit Connections. No person shall construct, use, allow, maintain or continue any illicit connection to the municipal storm drain system, regardless of whether the connection was permissible under applicable law, regulation, or custom at the time of connection."

Failure to investigate and correct this deficient condition may result in the Town of Dedham instituting fines against you as long as you remain in non-compliance.

Abatement or remediation must be performed by *Insert Date*. Should you fail to perform the required abatement or remediation within the specified timeframe, the Town of Dedham may undertake such work, and levy back-charges. Please provide an update to the Town regarding your findings.

If you have any questions regarding this matter or wish to discuss this matter further, please contact me at (781) 751-9350.

Sincerely,

Jason L. Mammone, PE
Director of Engineering

APPENDIX H

Tracking List of Illicit Discharges Identified and Removed

Table 1
Dedham, Massachusetts
Illicit Discharge Detection & Elimination
201X Stormwater Outfall Monitoring
Dry Weather

Date of Sampling: ________________
Time of Low Tide: ________________
Date/Amount of Last Precipitation: ________________________

Outfall Information				Inspection Information								Sampling Information								
Location	**Dia. (in)**	**Pipe Mat.**	**Description of Outfall Location**	**Inspectors/ Samplers**	**Time Inspected**	**Inspection Observations**	**Flow (gpm)**	**Odor**	**Color**	**Floatables**	**Solids**	**Time Sampled**	**Time Analyzed**	**Temp (° F)**	**Chlorine (mg/l)**	**Ecoli (cfu/ 100ml)**	**Entero. (MPN/ 100mL)**	**Ammonia-Nitrogen (mg/l)**	**Surfact. (mg/l)**	***Specific Conductance (uMHOS/CM)***
ex. Outfall Name												12:00 AM								
												12:00 AM								
												12:00 AM								
												12:00 AM								
												12:00 AM								
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*Temperature analyses done on site with laboratory-grade thermometer and chlorine analysis done on site with Hach Colorimeter DR 820 (analysis date, time, & analyst on inspection sheets); all others done by R.I Analytical (analysis date, time, & analyst on lab report).
Bold indicates a value that exceed EPA benchmarks: E-coli >235 cfu/100mL; Enterococcus >104 cfu/100 mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l; chlorine >0.01mg/l.

Dedham, Massachusetts
Illicit Discharge Detection & Elimination
201X Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: ex. Outfall Name Pipe Diameter: 0 Pipe Material: 0

Descriptives: 0

Inspection:

Date: 01/00/00 Date Last Precipitation: 1/0/1900 Time of Low Tide: 12:00 AM

Time: 12:00 AM Flow Observed? Yes X No If yes, Estimated Flow: 0 gpm

Inspector: 0

Observations:

General: 0

Odor: N/A

Color: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli	Sterile Plastic	Grab	01/00/00	12:00 AM	0	<10ºC
Enterococcus	Sterile Plastic	Grab	01/00/00	12:00 AM	0	<10ºC
Surfactants & Specific Conductance	Plastic	Grab	01/00/00	12:00 AM	0	<4ºC
Ammonia-nitrogen	Plastic	Grab	01/00/00	12:00 AM	0	<4ºC, H_2SO_4

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	01/00/00	12:00 AM	0	01/00/00	12:00 AM	0	0
Chlorine (mg/L)	01/00/00	12:00 AM	0	01/00/00	12:00 AM	0	0.00

Outfall Photograph

Table 2
Dedham, Massachusetts
Illicit Discharge Detection & Elimination
201X Stormwater Outfall Monitoring
Wet Weather

Date of Sampling: ___________________
Time of Low Tide: ___________________
Date/Amount of Last Precipitation: ______________________________

Outfall Information				Inspection Information								Sampling Information								
Location	**Dia. (in)**	**Pipe Mat.**	**Description of Outfall Location**	**Inspectors/ Samplers**	**Time Inspected**	**Inspection Observations**	**Flow (gpm)**	**Odor**	**Color**	**Floatables**	**Solids**	**Time Sampled**	**Time Analyzed**	**Temp (° F)**	**Chlorine (mg/l)**	**Ecoli (cfu/ 100ml)**	**Entero. (MPN/ 100mL)**	**Ammonia-Nitrogen (mg/l)**	**Surfact. (mg/l)**	***Specific Conductance (uMHOS/CM)***
ex. Outfall Name												12:00 AM								
												12:00 AM								
												12:00 AM								
												12:00 AM								
												12:00 AM								
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*Temperature analyses done on site with laboratory-grade thermometer and chlorine analysis done on site with Hach Colorimeter DR 820 (analysis date, time, & analyst on inspection sheets); all others done by R.I Analytical (analysis date, time, & analyst on lab report).
Bold indicates a value that exceed EPA benchmarks: E-coli >235 cfu/100mL; Enterococcus >104 cfu/100 mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l; chlorine >0.01mg/l.
** Thermometer broke - no data

Dedham, Massachusetts
Illicit Discharge Detection & Elimination
201X Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: ex. Outfall Name Pipe Diameter: 0 Pipe Material: 0

Descriptives: 0

Inspection:

Date: 01/00/00 Date Last Precipitation: 1/0/1900 Time of Low Tide: 12:00 AM

Time: 12:00 AM Flow Observed? Yes X No If yes, Estimated Flow: 0 gpm

Inspector: 0

Observations:

General: 0

Odor: N/A

Color: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli	Sterile Plastic	Grab	01/00/00	12:00 AM	0	<10ºC
Enterococcus	Sterile Plastic	Grab	01/00/00	12:00 AM	0	<10ºC
Surfactants & Specific Conductance	Plastic	Grab	01/00/00	12:00 AM	0	<4ºC
Ammonia-nitrogen	Plastic	Grab	01/00/00	12:00 AM	0	<4ºC, H_2SO_4

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	01/00/00	12:00 AM	0	01/00/00	12:00 AM	0	0
Chlorine (mg/L)	01/00/00	12:00 AM	0	01/00/00	12:00 AM	0	0.00

Outfall Photograph

APPENDIX I

IDDE Municipal Employee Training Records

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

Dedham, Massachusetts

Date of Training: _____

Duration of Training: _____

Name	Title	Signature