ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PLAN

Agawam DPW

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June 2019

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1 Introduction

1.1 MS4 Program

This Illicit Discharge Detection and Elimination (IDDE) Plan has been developed by the Town of Agawam to address the requirements of the United States Environmental Protection Agency's (USEPA's) 2016 National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in Massachusetts, hereafter referred to as the "2016 Massachusetts MS4 Permit" or "MS4 Permit."

The 2016 Massachusetts MS4 Permit requires that each permittee, or regulated community, address six Minimum Control Measures. These measures include the following:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination Program
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.

Under Minimum Control Measure 3, the permittee is required to implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its municipal separate storm sewer system and implement procedures to prevent such discharges. The IDDE program must also be recorded in a written (hardcopy or electronic) document. This IDDE Plan has been prepared to address this requirement.

1.2 Illicit Discharges

An "illicit discharge" is any discharge to a drainage system that is not composed entirely of stormwater, with the exception of discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire-fighting activities.

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

Some illicit discharges are intentional, such as dumping used oil (or other pollutant) into catch basins, a resident or contractor illegally tapping a new sewer lateral into a storm drain pipe to avoid

the costs of a sewer connection fee and service, and illegal dumping of yard wastes into surface waters.

Some illicit discharges are related to the unsuitability of original infrastructure to the modern regulatory environment. Examples of illicit discharges in this category include connected floor drains in old buildings, as well as sanitary sewer overflows that enter the drainage system. Sump pumps legally connected to the storm drain system may be used inappropriately, such as for the disposal of floor washwater or old household products, in many cases due to a lack of understanding on the part of the homeowner.

Elimination of some discharges may require substantial costs and efforts, such as funding and designing a project to reconnect sanitary sewer laterals. Others, such as improving self-policing of dog waste management, can be accomplished by outreach in conjunction with the minimal additional cost of dog waste bins and the municipal commitment to disposal of collected materials on a regular basis.

Regardless of the intention, when not addressed, illicit discharges can contribute high levels of pollutants, such as heavy metals, toxics, oil, grease, solvents, nutrients, and pathogens to surface waters.

1.3 Allowable Non-Stormwater Discharges

The following categories of non-stormwater discharges are allowed under the MS4 Permit unless the permittee, USEPA or Massachusetts Department of Environmental Protection (MassDEP) identifies any category or individual discharge of non-stormwater discharge as a significant contributor of pollutants to the MS4:

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising groundwater
- Uncontaminated groundwater infiltration (as defined at 40 CFR 35.2005(20))
- Uncontaminated pumped groundwater
- Discharge from potable water sources
- Foundation drains
- Air conditioning condensation
- Irrigation water, springs
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Individual resident car washing
- De-chlorinated swimming pool discharges
- Street wash waters
- Residential building wash waters without detergents

If these discharges are identified as significant contributors to the MS4, they must be considered an "illicit discharge" and addressed in the IDDE Plan (i.e., control these sources so they are no longer significant contributors of pollutants, and/or eliminate them entirely).

1.4 Receiving Waters and Impairments

Table 1-1 lists the "impaired waters" within the boundaries of the Town of Agawam's regulated area based on the Final Massachusetts Year 2014 Integrated List of Waters produced by MassDEP every two years. Impaired waters are water bodies that do not meet water quality standards for one or more designated use(s) such as recreation or aquatic habitat.

Table 1-1. Impaired Waters

Agawam, Massachusetts

Water Body Name	Segment ID	Category	Impairment(s)	Associated Approved TMDL
Connecticut River	MA34-05	Category 5	Escherichia coli, PCB in Fish Tissue, Total Suspended Solids (TSS)	None
Westfield River	MA32-05	Category 5	Aquatic Macroinvertebrate Bioasessments, Excess Algal Growth, Taste and Odor, Turbidity	None

Category 5 Waters – impaired water bodies that require a TMDL (Total Maximum Daily Load).
A TMDL is the maximum amount of a specific pollutant that can be discharged to a body of water while still meeting water quality standards.
"Approved TMDLs" are those that have been approved by EPA as of the date of issuance of the 2016 MS4 Permit.

1.5 IDDE Program Goals, Framework, and Timeline

The goals of the IDDE program are to find and eliminate illicit discharges to municipal separate storm sewer system and to prevent illicit discharges from happening in the future. The program consists of the following major components as outlined in the MS4 Permit:

- Legal authority and regulatory mechanism to prohibit illicit discharges and enforce this prohibition
- Storm system mapping
- Inventory and ranking of outfalls
- Dry weather outfall screening
- Catchment investigations
- Identification/confirmation of illicit sources

- Illicit discharge removal
- Followup screening
- Employee training.

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

Figure 1-1. IDDE Investigation Procedure Framework

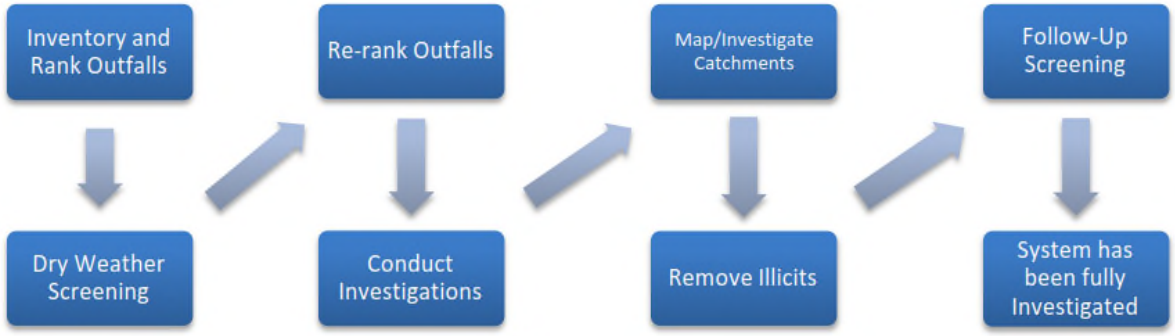

Table 1-2. IDDE Program Implementation Timeline

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

1.6 Work Completed to Date

The 2003 MS4 Permit required each MS4 community to develop a plan to detect illicit discharges using a combination of storm system mapping, adopting a regulatory mechanism to prohibit illicit discharges and enforce this prohibition, and identifying tools and methods to investigate suspected illicit discharges. Each MS4 community was also required to define how confirmed discharges would be eliminated and how the removal would be documented.

The Town of Agawam has completed the following IDDE program activities consistent with the 2003 MS4 Permit requirements:

Storm and Sanitary Sewer Mapping

The Town of Agawam, in conjunction with the engineering company Tighe & Bond, has completed a comprehensive GIS based map of the existing MS4 and the existing sanitary sewer system. The map shows the locations of all known stormwater and sanitary structures and features including catch basins, manholes, pipes, outflows, detention basins, and road culverts. The map is constantly updated as new construction is completed and new information about existing drainage is discovered in the field.

Through the efforts of the Pioneer Valley Planning Commission, the Town of Agawam has collaborated with several other communities in order to purchase an integrated mapping and data collection system that will help fulfill the requirements of the 2016 Massachusetts MS4 Permit. Even though the infrastructure of the Agawam storm and sanitary sewer systems has been mapped, the collection system will assist the DPW in scheduling the cleaning and repair of drainage structures, prioritizing problem catchments, tracking illicit discharges and recording the results of outfall inspections. The Town and other participating communities received help from the PVPC to research, analyze and identify a suitable collection system via a District Local Technical Assistance Grant.

Non-Stormwater Discharge Ordinance

On May 15, 2006, the Agawam City Council approved a revision to the Town of Agawam Ordinance Chapter 175: Water and Sewers which included regulations prohibiting the discharge of non-stormwater flows into the MS4.

Public Education

The Town of Agawam uses various educational materials to inform municipal employees, businesses and residents regarding illicit discharges and the non-stormwater discharge ordinance including signs, handouts and posters.

Video Inspections

The Town of Agawam uses a pushrod video camera system to inspect sanitary laterals and small diameter pipes (typically 8 inches in diameter or less) for illicit connections to the MS4. For larger diameter pipes, the Town invested in a portable video camera mounted on a remote-controlled tractor. Video inspections are used to determine if there are any illicit connections, if any pipes or outfalls have fallen into disrepair and to assist in mapping of the Town's drainage system. If it is necessary, the DPW can contract out the use of a professional video camera system as it has done in the past.

Failing Septic Systems

The Agawam Health Department currently keeps records of septic system failures and maintains records on all inspections involving septic systems. All septic system failures since 2003 have been incorporated into the GIS map. This information will help the Town prioritize future sewer proposals and also help residents understand where problematic areas in town are located. Analyzing septic information in GIS will also help to determine which areas of town should be classified as a high risk of illicit discharge.

Catch Basin Marking

The Town of Agawam organizes and supervises volunteer groups to mark catch basins with storm drain markers in order to educate the public about stormwater flow and to help prevent non-point source pollutants such as trash, cigarette butts, pet waste, leaves and grass clippings from entering the MS4. The Town has a goal to identify and mark 200 catch basins per year depending on volunteer participation.

Stormwater Utility Fee

In 2016, the Town of Agawam was awarded a 319 Nonpoint Source Pollution Grant to study the possibility of establishing a new stormwater utility fee for all properties within the Town.

In 2017 & 2018, a local advisory task force comprised of Town employees, business owners, City Council members, Town residents and members of the clergy, was formed to research the major needs, priorities, and costs for Agawam's MS4 management program and to evaluate the feasibility of establishing a stormwater utility fee to fund future maintenance activities and capital projects.

The task force worked with the consulting firm of Wood Group (formerly Amec Foster Wheeler) to conduct research for a stormwater utility fee. Over the course of 6 meetings, the task force discussed past and current funding available for stormwater maintenance, necessary repairs to the drainage system, known areas of flooding, and options for a billing rate structure for the utility fee. The task force was also involved in public outreach and held additional meetings focused on open discussions with Town leaders, senior citizens, members of the clergy and local business owners.

The Town is currently in the process of working with the City Council to develop a comprehensive plan for the stormwater utility fee, including a rate structure and possible credits for residents and businesses, based on the research and recommendations of the task force. The Town will also create a priority list of stormwater projects to be funded by the utility fee.

2 Authority and Statement of IDDE Responsibilities

2.1 Legal Authority

On May 15, 2006, the Town of Agawam adopted a revision to the Water and Sewers Ordinance to include an Illicit Discharges and Connections Ordinance. A copy of the Illicit Discharges and Connections Ordinance (Section 175-36 of the Water and Sewers Ordinance) is provided in Appendix A. The Illicit Discharges and Connections Ordinance provides the Town of Agawam with adequate legal authority to:

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

The Town of Agawam will review its current Illicit Discharges and Connections Ordinance and related land use regulations and policies for consistency with the 2016 MS4 Permit.

2.2 Statement of Responsibilities

The Agawam Department of Public Works (DPW) is the lead municipal department responsible for implementing the IDDE program pursuant to the provisions of the Illicit Discharges and Connections Ordinance. Responsibilities of the DPW include, but are not limited to:

- Coordinates compliance with the Phase II NPDES MS4 Stormwater Permit
- Enforces ordinances associated with the NPDES MS4 Stormwater Permit adopted by the Town of Agawam
- Review and inspects construction projects for stormwater compliance in accordance with local, state and federal codes
- Performs on-site inspections and field investigations to verify that the Illicit Discharges and Connections Ordinance has been met
- Documents suspected illicit discharges and providing for appropriate investigation, including but not limited to water quality monitoring, closed-circuit television inspection, smoke testing, and dye testing
- Performs any repair, removal or installation of storm or sewer pipes or structures necessary to eliminate an illicit discharge caused by Town-owned utilities
- Maintains a current and accurate map of the storm and sanitary sewer systems, updating as necessary
- Ensures that staff receives training in illicit discharge detection and elimination procedures
- Explains, justifies and defends Department programs, policies and activities; negotiates and resolves sensitive and controversial issues
- Provides for effective management and financing of the Town of Agawam's storm and sanitary sewer systems

- Coordinates with other departments, including the Water and Sewer Department and Highway and Grounds Department, for new utility connections

Other agencies or departments with responsibility for aspects of the IDDE program include:

Mayor's Office

- Coordinates with the DPW Superintendent and/or SWMP Team Coordinator to ensure compliance with the Phase II NPDES MS4 Stormwater Permit
- Enforces ordinances adopted by the Town of Agawam
- Explains, justifies and defends Department programs, policies and activities; negotiates and resolves sensitive and controversial issues
- Coordinates with the Inspection Services Department to investigate complaints of possible code violations and initiates appropriate remedial action to ensure compliance
- Ensures that staff receives training in illicit discharge detection and elimination procedures
- Coordinates with other departments, including the Water and Sewer Department and Highway and Grounds Department, for new utility connections
- Review and inspects all construction projects in accordance with local, state and federal codes
- Coordinates with the DPW to provide effective management and financing of the Town of Agawam's storm and sanitary sewer systems
- Ensures public health, safety and welfare is secured

Engineering Department

- Coordinates with the DPW Superintendent and/or SWMP Team Coordinator to ensure compliance with the Phase II NPDES MS4 Stormwater Permit
- Assists in the enforcement of ordinances associated with the NPDES MS4 Stormwater Permit adopted by the Town of Agawam
- Maintains a current and accurate map of the storm and sanitary sewer systems, updating as necessary
- Review and inspects construction projects for stormwater compliance in accordance with local, state and federal codes
- Performs on-site inspections and field investigations to verify that the Illicit Discharges and Connections Ordinance has been met
- Responds to complaints, investigates potential storm sewer system failures and takes/recommends appropriate action/remediation
- Documents suspected illicit discharges and providing for appropriate investigation, including but not limited to water quality monitoring, closed-circuit television inspection, smoke testing, and dye testing
- Coordinates with the DPW Superintendent and/or SWMP Team Coordinator to ensure that staff receives training in illicit discharge detection and elimination procedures
- Explains, justifies and defends Department programs, policies and activities; negotiates and resolves sensitive and controversial issues
- Coordinates with other departments, including the Water and Sewer Department and Highway and Grounds Department, for new utility connections

Highway and Grounds Department

- Coordinates with the DPW Superintendent and/or SWMP Team Coordinator to ensure compliance with the Phase II NPDES MS4 Stormwater Permit
- Documents suspected illicit discharges and providing for appropriate investigation, including but not limited to water quality monitoring, closed-circuit television inspection, smoke testing, and dye testing
- Assists in the enforcement of ordinances associated with the NPDES MS4 Stormwater Permit adopted by the Town of Agawam
- Performs on-site inspections and field investigations to verify that the Illicit Discharges and Connections Ordinance has been met
- Performs any repair, removal or installation of storm or sewer pipes or structures necessary to eliminate an illicit discharge caused by Town-owned utilities
- Coordinates with the DPW Superintendent and/or SWMP Team Coordinator to ensure that staff receives training in illicit discharge detection and elimination procedures
- Explains, justifies and defends Department programs, policies and activities; negotiates and resolves sensitive and controversial issues
- Coordinates with other departments, including the Engineering Department and Water and Sewer Department, for new utility connections

Water and Sewer Department

- Coordinates with the DPW Superintendent and/or SWMP Team Coordinator to ensure compliance with the Phase II NPDES MS4 Stormwater Permit
- Assists in documenting suspected illicit discharges and providing for appropriate investigation, including but not limited to water quality monitoring, closed-circuit television inspection, smoke testing, and dye testing
- Maintain an inventory of existing and removed Sanitary Sewer Overflows (SSOs) within the Town
- Assists with the enforcement of ordinances associated with the NPDES MS4 Stormwater Permit adopted by the Town of Agawam
- Performs on-site inspections and field investigations to verify that the Illicit Discharges and Connections Ordinance has been met
- Responds to complaints, investigates potential sanitary sewer system failures and takes/recommends appropriate action/remediation
- Performs any repair, removal or installation of sanitary sewer pipes or structures necessary to eliminate an illicit discharge caused by Town-owned utilities
- Coordinates with the DPW Superintendent and/or SWMP Team Coordinator to ensure that staff receives training in illicit discharge detection and elimination procedures
- Explains, justifies and defends Department programs, policies and activities; negotiates and resolves sensitive and controversial issues
- Coordinates with other departments, including the Engineering Department and Highway and Grounds Department, for new utility connections

Building Inspector/Code Enforcement Officer

- Enforces ordinances adopted by the Town of Agawam
- Review and inspects construction projects in accordance with local, state and federal codes
- Explains, justifies and defends Department programs, policies and activities; negotiates and resolves sensitive and controversial issues

- Ensures public health, safety and welfare is secured
- Performs on-site inspections and field investigations to verify that building codes have been met
- Investigates complaints of possible code violations and initiates appropriate remedial action to ensure compliance
- Coordinates with the DPW Superintendent and/or SWMP Team Coordinator to ensure that staff receives training in illicit discharge detection and elimination procedures

Plumbing Inspector

- Enforces ordinances adopted by the Town of Agawam
- Review and inspects private utility installation at all construction projects in accordance with local, state and federal codes
- Ensures public health, safety and welfare is secured
- Performs on-site inspections and field investigations to verify that plumbing codes have been met
- Investigates complaints of possible code violations and initiates appropriate remedial action to ensure compliance
- Coordinates with the DPW Superintendent and/or SWMP Team Coordinator to ensure that staff receives training in illicit discharge detection and elimination procedures

Health Department

- Enforces ordinances adopted by the Town of Agawam
- Ensures public health, safety and welfare is secured
- Review and inspects all construction projects for stormwater compliance in accordance with local, state and federal codes
- Investigates and reports on all health hazards, complaints and nuisances
- Conducts health inspections of public places
- Maintains records or database of private septic disposal systems and reviews records on a regular basis
- Responds to complaints, investigates potential septic system failures and takes/recommends appropriate action/remediation
- Coordinates with the DPW Superintendent and/or SWMP Team Coordinator to ensure that staff receives training in illicit discharge detection and elimination procedures

Conservation Commission

- Coordinates with the DPW Superintendent and/or SWMP Team Coordinator to ensure compliance with the Phase II NPDES MS4 Stormwater Permit
- Enforces ordinances associated with the NPDES MS4 Stormwater Permit adopted by the Town of Agawam and the Massachusetts Wetlands Protection Act
- Review and inspects construction projects for stormwater compliance in accordance with local, state and federal codes
- Performs on-site inspections and field investigations to verify that the Illicit Discharges and Connections Ordinance has been met
- Responds to complaints, investigates potential wetland code violations and takes/recommends appropriate action/remediation
- Documents suspected illicit discharges

- Explains, justifies and defends Department programs, policies and activities; negotiates and resolves sensitive and controversial issues

Planning Department

- Enforces ordinances adopted by the Town of Agawam
- Review and inspects construction projects in accordance with local, state and federal codes
- Explains, justifies and defends Department programs, policies and activities; negotiates and resolves sensitive and controversial issues
- Performs on-site inspections and field investigations to verify that Planning Board requirements have been met

3 Stormwater System Mapping

The Town of Agawam, in conjunction with the engineering company Tighe & Bond, originally developed mapping of its storm sewer system to meet the requirements of the 2003 MS4 Permit. A current copy of the existing storm system map is available for viewing at the DPW and is included within the Online GIS Map posted on the Town of Agawam website. The 2016 MS4 Permit requires a more detailed storm system map than was required by the 2003 MS4 Permit. The revised mapping is intended to facilitate the identification of key infrastructure, factors influencing proper system operation, and the potential for illicit discharges.

The 2016 MS4 Permit requires the storm system map to be updated in two phases as outlined below. The Agawam Department of Public Works is responsible for updating the stormwater system mapping pursuant to the 2016 MS4 Permit. The Town of Agawam will report on the progress towards completion of the storm system map in each annual report.

3.1 Phase I Mapping

Phase I mapping must be completed within two (2) years of the effective date of the permit (July 1, 2020) and include the following information:

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

The Town of Agawam has incorporated the following information into its stormwater mapping to meet the Phase I requirements:

- Outfalls and receiving waters (last updated June 7, 2017)
- Drainage Easements (last updated December 18, 2017)

- Water bodies identified by name (last updated October 22, 2004)
- Open channel conveyances (last updated October 13, 2004)
- Culverts (last updated September 28, 2011)
- Interconnections with other MS4s and other storm sewer systems (No known connections)
- Town-owned and private detention basins (last updated April 3, 2013)
- Initial catchment delineations (last updated June 20, 2019)

3.2 Phase II Mapping

Phase II mapping must be completed within ten (10) years of the effective date of the permit (July 1, 2028) and include the following information:

- Outfall spatial location (latitude and longitude with a minimum accuracy of +/-30 feet)
- Pipes
- Manholes
- Catch basins
- Refined catchment delineations. Catchment delineations must be updated to reflect information collected during catchment investigations.
- Municipal Sanitary Sewer system (if available)
- Municipal combined sewer system (if applicable)

The Town of Agawam has completed the following updates to its stormwater mapping to meet the Phase II requirements:

- Storm sewer pipes (last updated July 3, 2018)
- Catch Basins (last updated July 3, 2018)
- Drain Manholes (last updated July 19, 2017)
- Headwalls, Flared End Structures, Riprap (last updated December 12, 2016)

A copy of the storm system maps which include the required Phase I Mapping and currently available Phase II Mapping information has been included in Appendix B. The Town of Agawam will update its stormwater mapping by July 1, 2028 to include the remaining Phase II information.

3.3 Additional Recommended Mapping Elements

Although not a requirement of the 2016 MS4 Permit, the following elements are recommended for inclusion on the storm system mapping:

- Physical characteristics of storm and sanitary sewer pipes including, but not limited to: material, pipe diameter, invert elevation, year of installation
- Physical characteristics of storm and sanitary sewer structures including, but not limited to: rim/grate elevation, invert elevation, year of installation
- Locations of privately owned stormwater treatment structures
- Locations of failed septic systems

- Area where the MS4 has received or could receive flow from septic system discharges
- Topography
- Orthophotography
- Alignments, dates and representation of work completed of past illicit discharge investigations
- Locations of suspected confirmed and corrected illicit discharges with dates and flow estimates.

4 Sanitary Sewer Overflows (SSOs)

The 2016 MS4 Permit requires municipalities to prohibit illicit discharges, including sanitary sewer overflows (SSOs), to the separate storm sewer system. SSOs are 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, sewer defects that allow stormwater and groundwater to overload the system, power failures, improper sewer design, and vandalism.

The Town of Agawam has completed an inventory of SSOs that have discharged to the MS4 within the five (5) years prior to the effective date of the 2016 MS4 Permit, based on review of available documentation pertaining to SSOs (Table 4-1). The inventory includes all SSOs that occurred during wet or dry weather resulting from inadequate conveyance capacities or where interconnectivity of the storm and sanitary sewer infrastructure allows for transfer of flow between systems.

Upon detection of an SSO, the Town of Agawam will eliminate it as expeditiously as possible and take interim measures to minimize the discharge of pollutants to and from its MS4 until the SSO is eliminated. Upon becoming aware of an SSO to the MS4, the Town of Agawam will provide oral notice to EPA within 24 hours and written notice to EPA and MassDEP within five (5) days of becoming aware of the SSO occurrence.

The inventory in Table 4-1 will be updated by the Agawam Water and Sewer Department when new SSOs are detected. The SSO inventory will be included in the annual report, including the status of mitigation and corrective measures to address each identified SSO.

Table 4-1. SSO Inventory

Town of Agawam, Massachusetts
Revision Date: June 17, 2019

SSO Location[1]	Discharge Statement[2]	Date[3]	Time Start[3]	Time End[3]	Estimated Volume[4]	Description[5]	Mitigation Completed[6]	Mitigation Planned[7]
"The Meadows" property off Meadow Street	Sewage flowed overland to the Westfield River.	3/18/2011			> 10 gallons	A private contractor caused a break in a sewer pipe running to the pumping station behind the Hood building.	Town of Agawam repaired sewer pipe.	Sewage flowed overland to the Westfield River.
22 Federal Street	Sewage out of SMH and pooled around SMH in depression	9/12/2011			c. 5,500 gallons	Restriction at Westfield River Pump Station caused backup	Pump Station bypassed, restrction freed itself and station back to normal	Sewage out of SMH and pooled around SMH in depression
982 River Road (River Road PS)	Sewage flowed overland from SMH to CT River	10/29/2011	7:00 PM	10/31/2011	c. 80,100 gallons	Power failure and faulty generator	Portable generator brought to site and connected until power could be restored	Sewage flowed overland from SMH to CT River
150 Hendom St	Sewage flow to brook next to pump station	10/31/2011	9:00 AM	12:15 PM	c. 1,950 gallons	Power failure and faulty generator	Generator repaired	Sewage flow to brook next to pump station
28 South Street	Sewage flow to brook next to pump station	11/1/2011	8:20 AM		c. 5,400 gallons	Power failure and faulty generator	Generator repaired (fuel filter replaced)	Sewage flow to brook next to pump station
Westfield River Interceptor Sewer at point where the sewer crosses the river	Sewage into Connecticut River	5/18/2012			> 10 gallons	A break was discovered in the sewer line going across the Westfield River.	New sewer valve was installed and broken pipe was replaced.	Sewage into Connecticut River
95 N. Westfield St	Sewage into CB in parking lot	12/20/2012	4:00 PM	6:30 PM	25 - 40 gallons	Sewer blocked with roots	Line vacuumed and jetted	Sewage into CB in parking lot
Rear of #223 Garden Street	Sewage to pond in Threemile Brook tributary	2/4/2013	2:00	5:00	540 gallons	A plug in the cross-country sewer caused a backup of sewage to flow overland to the pond.	The plug in the pipe was removed.	Sewage to pond in Threemile Brook tributary
57 Wright Street	Sewage from parking lot to Threemile Brook	2/16/2013			121,960 gallons	A blockage in the sewer line caused sewage to overflow via a manhole and flow into Threemile Brook.	The blockage was removed and the sewer pipe was degreased.	Sewage from parking lot to Threemile Brook
142 Meadow Street	Sewage to CB to swamp	3/13/2013	7:15	8:30	375 gallons	Pipe blockage	Line jetted	Sewage to CB to swamp
104 Horsham Place (xc easement)	Sewage to White Brook	4/8/2013	6:00 PM	7:20 PM	800 gallons	Pipe blockage	Line jetted	Sewage to White Brook

SSO Location[1]	Discharge Statement[2]	Date[3]	Time Start[3]	Time End[3]	Estimated Volume[4]	Description[5]	Mitigation Completed[6]	Mitigation Planned[7]
Main St, 200 ft south of Meadow Street	Sewage to CB	9/7/2013	8:00 AM	10: 00 AM	250 gallons	leaky bypass hose	Hose repaired	Sewage to CB
56 Poinsetta St	Sewage to CB	3/29/2013	12:00 PM		25 gallons	Pipe blockage	linge jetted, wipes/rags	Sewage to CB
66 Cooper St	Sewage to CB	11/5/2014	8:05 AM	9:00 AM	50 gallons	Pipe blockage	Line jetted, grease/rags	Sewage to CB
140 Hendom Dr	Sewage to brook	12/17/2014	4:15 PM		300 gallons	Pipe blockage	Line Jetted, grease	Sewage to brook
57 Wright Street	Sewage to parking lot/cb	3/6/2015	9:15 AM		50 gallons	Force Main Break	Repair Clamp applied to FM	Sewage to parking lot/cb
1178 Suffield St	Sewage to CB	3/9/2016	10:45 AM	11:30 AM	300 gallons	Pipe blockage	Line jetter, grease/rags	Sewage to CB
157 Clover Hill Dr	Sewage to CB	5/28/2016	10:45 AM					Sewage to CB
1278 Main St (rear, XC easement)	Sewage to brook	12/15/2016	8:45 AM	11:00 AM	40,320 gallons	Pipe blockage	Line hand rodded, grease/rags	Sewage to brook
94 Raymond Circ	Sewage to CB	3/30/2017	8:14 AM		10 gallons	Pipe blockage	Jetted Line, rags & gravel	Sewage to CB
74 Cooper Street	Sewage to CB	4/14/2017	11:15 AM		10 gallons	Pipe Blockage	Line Jetted	Sewage to CB
87 Perry Lane	Sewage to CB (Threemile Brook)	11/1/2017	11:00 AM		< 100 gallons	Pipe Blockage	L:ine Jetted, Blocked w/ Grease and personal care products	Sewage to CB (Threemile Brook)
55 Cooper Street	Sewage to CB	1/10/2018	7:00 AM	7:45 AM	225 - 400 gallons	Pipe Blockage	Line Jetted, Blocked w/ wipes and personal care products	Sewage to CB
74 Moore St	Sewage to CB	4/11/2018	8:37 AM	9:10 AM	45 - 90 gallons	Pipe Blockage	Line Jetted, blocked w/ wipes	74 Moore St
25 Valentine St (rear xc easement)	Sewage to brook	1/7/2019	3:26 PM	4:30 PM	186 - 248 gallons	Pipe blockage	Line jetted	25 Valentine St (rear xc easement)
Leonard St at River Rd	Sewage to CB	1/24/2019	4:00 PM	6:00 PM	240 gallons	Pipe over capacity due to rain (I/I)	Line jetted & degreased, some grease observed may have limited flow	Leonard St at River Rd
1623 Main St	Sewage to area drain	5/7/2019	4:00 PM	5/15/2019 11:00 AM	9,000 gallons	Old FM repair leaking	Removed piece of pipe and repaired w/ PVC	1623 Main St

[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 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

5 Assessment and Priority Ranking of Outfalls

The 2016 MS4 Permit requires an assessment and priority ranking of outfalls in terms of their potential to have illicit discharges and SSOs and the related public health significance. The ranking helps determine the priority order for performing IDDE investigations and meeting permit milestones.

5.1 Outfall Catchment Delineations

A catchment is the area that drains to an individual outfall[1] or interconnection.[2] The catchments for each of the MS4 outfalls will be delineated to define contributing areas for investigation of potential sources of illicit discharges. Catchments are typically delineated based on topographic contours and mapped drainage infrastructure, where available. As mentioned in Section 3, initial catchment delineations will be completed as part of the Phase I mapping, and refined catchment delineations will be completed as part of the Phase II mapping to reflect information collected during catchment investigations

5.2 Outfall and Interconnection Inventory and Initial Ranking

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

The outfall and interconnection inventory will identify each outfall and interconnection discharging from the MS4, record its location and condition, and provide a framework for tracking inspections, screenings and other IDDE program activities.

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

1. **Problem Outfalls**: Outfalls/interconnections with known or suspected contributions of illicit discharges based on existing information shall be designated as Problem Outfalls. This shall

[1] **Outfall** means a point source as defined by 40 CFR § 122.2 as the point where the municipal separate storm sewer discharges to waters of the United States. An outfall does not include open conveyances connecting two municipal separate storm sewers or pipes, tunnels or other conveyances that connect segments of the same stream or other waters of the United States and that are used to convey waters of the United States. Culverts longer than a simple road crossing shall be included in the inventory unless the permittee can confirm that they are free of any connections and simply convey waters of the United States.

[2] **Interconnection** means the point (excluding sheet flow over impervious surfaces) where the permittee's MS4 discharges to another MS4 or other storm sewer system, through which the discharge is conveyed to waters of the United States or to another storm sewer system and eventually to a water of the United States.

include any outfalls/interconnections where previous screening indicates likely sewer input. Likely sewer input indicators are any of the following:

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

Dry weather screening and sampling, as described in Section 6 of this IDDE Plan and Part 2.3.4.7.b of the MS4 Permit, is not required for Problem Outfalls.

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

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

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

4. **Excluded outfalls**: Outfalls/interconnections with no potential for illicit discharges may be excluded from the IDDE program. This category is limited to roadway drainage in undeveloped areas with no dwellings and no sanitary sewers; drainage for athletic fields, parks or undeveloped green space and associated parking without services; cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.

Outfalls will be ranked into the above priority categories (except for excluded outfalls, which may be excluded from the IDDE program) based on the following characteristics of the defined initial catchment areas, where information is available. Additional relevant characteristics, including location-specific characteristics, may be considered but must be documented in this IDDE Plan.

- **Previous screening results** – Previous screening/sampling results may indicate likely sewer input (see criteria above for Problem Outfalls).

- **Past discharge complaints and reports**

- **Poor receiving water quality** – the following guidelines are recommended to identify waters as having a high illicit discharge potential:
  - Exceeding water quality standards for bacteria
  - Ammonia levels above 0.5 mg/l
  - Surfactants levels greater than or equal to 0.25 mg/l

- **Density of generating sites** – Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could contribute to illicit discharges. Examples of these sites include, but are not limited to: car dealerships, 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.

Table 5-1 illustrates the spreadsheet format for the current outfall inventory and priority ranking matrix. The copy of the inventory is included in Appendix C.

Table 5-1. Outfall Inventory and Priority Ranking Matrix Template

Town of Agawam, Massachusetts
Revision Date: ##DATE OF LAST UPDATE

Outfall ID	Receiving Water	Previous Screening Results Indicate Likely Sewer Input? [1]	Discharging to Area of Concern to Public Health? [2]	Frequency of Past Discharge Complaints	Receiving Water Quality [3]	Density of Generating Sites [4]	Age of Development/ Infrastructure [5]	Historic Combined Sewers or Septic? [6]	Aging Septic? [7]	Density of Septic Failures since 2003?	Culverted Streams? [8]	Additional Characteristics	Score	Priority Ranking
Information Source		Outfall inspections and sample results	GIS Maps	Town Staff	Impaired Waters List	Land Use/GIS Maps, Aerial Photography	Land Use Information, Visual Observation	Town Staff, GIS Maps	Land Use, Town Staff	Town Staff, GIS Maps	GIS and Storm System Maps	Other		
Scoring Criteria		Yes = 3 (Problem Outfall) No = 0	Yes = 3 No = 0	Frequent = 3 Occasional = 2 None = 0	Poor = 3 Fair = 2 Good = 0	High = 3 Medium = 2 Low = 1	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	Yes = 3 No = 0	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	TBD		
Sample 1	XYZ River	3	0	2	0	2	1	0	0	0	3	None	11	Problem
Sample 2	XYZ Lake	0	3	0	3	1	2	0	3	3	3	None	18	High Priority
Sample 3	XYZ Stream	0	0	2	0	1	1	0	0	1	0	None	5	Low Priority

Scoring Criteria:

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

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

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

[3] Receiving water quality based on latest version of MassDEP Integrated List of Waters.

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

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

[5] Age of development and infrastructure:

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

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

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

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

6 Dry Weather Outfall Screening and Sampling

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

6.1 Weather Conditions

Dry weather outfall screening and sampling may occur when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period and no significant snow melt is occurring. For purposes of determining dry weather conditions, program staff will use precipitation data from the Chicopee Falls/Westover Air Force Base weather station. If said station is not available or not reporting current weather data, then the weather station at the Barnes Municipal Airport in Westfield will be used as a back-up.

6.2 Dry Weather Screening/Sampling Procedure

6.2.1 General Procedure

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

1. Identify outfall(s) to be screened/sampled based on initial outfall inventory and priority ranking
2. Acquire the necessary staff, mapping, and field equipment (see Table 6-1 for list of potential field equipment)
3. Conduct the outfall inspection during dry weather:
    a. Mark and photograph the outfall
    b. Record the inspection information and outfall characteristics using the Outfall Inspection form
    c. Look for and record visual/olfactory evidence of pollutants in flowing outfalls including odor, color, turbidity, and floatable matter (suds, bubbles, excrement, toilet paper or sanitary products). Also observe outfalls for deposits and stains, vegetation, and damage to outfall structures.
4. If flow is observed, sample and test the flow following the procedures described in the following sections.
5. 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 and using optical brighteners.

6. Input results from screening and sampling into spreadsheet/database. Include pertinent information in the outfall/interconnection inventory and priority ranking.
7. Include all screening data in the annual report.

Previous outfall screening/sampling conducted under the 2013 MS4 Permit may be used to satisfy the dry weather outfall/screening requirements of the 2016 MS4 Permit only if the previous screening and sampling was substantially equivalent to that required by the 2016 MS4 Permit, including the list of analytes outlined in Section 2.3.4.7.b.iii.4 of the 2016 permit.

6.2.2 Field Equipment

Table 6-1 lists field equipment commonly used for dry weather outfall screening and sampling.

Table 6-1. Field Equipment – Dry Weather Outfall Screening and Sampling

Equipment	Use/Notes
Clipboard	For organization of field sheets and writing surface
Field sheets	Field sheets for both dry weather 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 with batteries	For looking in outfalls or manholes, helpful in early mornings as well
Cooler with ice	For transporting samples to the laboratory
Digital camera	For documenting field conditions at time of inspection
Personal Protective Equipment (PPE)	Reflective vest, Safety glasses and boots at a minimum
GPS receiver	For taking spatial location data
Water quality sonde	If needed, for sampling conductivity, temperature, pH
Water quality meter	Hand held meter, if available, for testing for various water quality parameters such as ammonia, surfactants and chlorine
Test kits	Have extra kits on hand to sample more outfalls than are anticipated to be screened in a single day
Label tape	For labeling sample containers
Sample containers	Make sure all sample containers are clean. 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 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	Redirecting traffic to protect staff

Equipment	Use/Notes
Hand sanitizer	Disinfectant/decontaminant
Zip ties/duct tape	For making field repairs
Rubber boots/waders	For accessing shallow streams/areas
Sampling pole/dipper/sampling cage	For accessing hard to reach outfalls and manholes

6.2.3 Physical Indicators of Non-Stormwater Flow

During dry weather field inspections, a variety of physical parameters will be recorded at each site to assess conditions. At flowing outfalls, this includes odor, color, turbidity, and the presence or absence of floatables. These physical indicators do not always reliably predict an illicit discharge. However, they are important in detecting the most severe or obvious discharges.

Odor

Since noses have different sensitivities, the entire field crew should reach a consensus about whether an odor is present and how severe it is. Make sure the origin of the odor is the outfall. Sometimes shrubs, trash, carrion, or even the spray paint used to mark the outfall can confuse the noses of field crews.

Fill a sample bottle at least halfway with sample water and hold about six inches away from your nose. Use your free hand to fan the scent to your nose. Never inhale the air directly off the top of a sample or observed flow as many potential contaminants are harmful to nasal membranes and lung tissue.

Table 2-2. Odors and Potential Illicit Discharge Sources

Odor	Potential source
Musty	**Presence of raw or partially treated sewage, livestock waste**
Sewage/Septic	**SSO, cross connection with santiary sewer, failed septic system**
Rotten Egg	**Raw sewage, decomposing organic matter**
Gasoline	**Industrial discharge, illegal dumping of wastes, waste water**
Detergent	**Washwater**
Fish	**Dead fish due to a lack of oxygen, excessive nutrients or organic matter, sewage discharge**

Color

Collect a sample of the discharge in a clear test tube or sampling bottle and hold it up to the light. Do not try to assess water color by looking directly into the waterway. Water depth, substrate composition, aquatic plants and sky conditions can all influence your perception of the water color.

Field crews should also look for downstream plumes of color that appear to be associated with the outfall.

Table 3-3. Colors and Potential Illicit Discharge Sources

Color	Potential source
Tan to light brown	Suspended solids common after rainfall, construction runoff, soil erosion caused by vegetation removal
Pea green, bright green, yellow, brown, brown-green, brown-yellow, blue-green	Algae or plankton bloom – color depends on type of algae or plankton, sewage, fertilizer runoff, vehicle wash water
Tea/coffee	Dissolved or decaying organic matter from soil or leaves. Commonly associated with tree overhangs, woodlands or swampy areas
Milky white	Paint, lime, milk, grease, concrete, swimming pool filter backwash
Milky or dirty dishwater gray	Gray water or wastewater, musty odor present
Milky gray-black	Raw sewage discharge or other oxygen-demanding waste (rotten egg or hydrogen sulfide odor may be present)
Clear black	Caused from turnover of oxygen-depleted water or sulfuric acid spill
Dark red, purple, blue, black	Fabric dyes, inks from paper and cardboard manufacturers
Orange-red	Leachate from iron deposits, deposits on stream beds often associated with oil well operations (check for petroleum odor)
White crusty deposits	Common in dry/arid areas or during periods of low rainfall where evaporation of water leaves behind salt deposits, also found in association with brine water discharge from oil production areas (a petroleum odor or an oily sheen may be present along banks)

Turbidity

Collect a sample of the discharge in a clear test tube or sampling bottle and use a Secchi tube, turbidity meter or turbidity comparator.

Turbidity can be caused by soil erosion, runoff from construction sites or areas without vegetation, algae blooms or disturbances of the stream bottom. Field crews should look for turbidity in the outfall discharge and the plunge pool below the outfall. Any downstream turbidity plumes that appear to be related to the outfall should be noted.

Field crews can sometimes confuse turbidity with color, which are related but are not the same. Turbidity is a measure of how easily light can penetrate through the sample bottle. Color is defined by the tint or intensity of the observed color.

Floatables

Sewage, oil sheen and suds are all examples of floatables. The presence of trash and debris should be noted, but are typically not indicators of an illicit discharge.

- **Sewage:** The observation of sewage at an outfall location indicates that there is a severe problem with the MS4 and should be looked at as to where the source for the sewage is emanating from.
- **Oil sheen:** Sheens can be naturally-produced by bacteria or synthetic due to a discharge of petroleum. The source of a sheen can be determined by disturbing it, such as with a pole or stick. A sheen caused by oil or petroleum will remain intact and move in a swirl pattern and often has a rainbow tint. A sheen caused by bacteria will crack when disturbed and are usually silver or relatively dull in color.
- **Suds:** Like sheens, suds can occur naturally. Some suds are formed by the movement of water within a stream and break apart quickly. Foam can also be found naturally in waters with high organic content such as bog lakes, streams that originate from bog lakes, productive lakes, wetlands or woody areas. If the suds are accompanied by a strong organic or sewage odor, it may indicate a sanitary sewer leak or illicit connection. If the suds have a fragrant odor, it may indicate the presence of laundry or similar wash waters.

Even if no flow is present at an outfall, there may still be an intermittent or transitory illicit discharge. Physical indicators of illicit discharges in outfalls without flow include: outfall damage, deposits or stains on the pipe, headwall or nearby stones, abnormal or excessive vegetation, poor water quality in the plunge pool or benthic growth within the outfall pipe.

6.2.4 Sample Collection and Analysis

If flow is present during a dry weather outfall inspection, a sample will be collected and analyzed for the required permit parameters[3] listed in Table 6-4. A single grab sample of the flow shall be taken if the water quality of the discharge is expected to be homogeneous, or unchanging, in nature. A flow-weighted composite sample – consisting of a series of grab samples over a known period of time – can be used if the water quality of the discharge is expected to be heterogeneous, or fluctuating, in nature. Grab samples are more common for dry weather outfall inspections due to the time-sensitive nature of the process.

The following protocols shall be followed when collecting samples:

1. Do not eat, drink or smoke during sample collection and processing.
2. Do not collect or process samples near a running vehicle.

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

3. Do not park vehicles in the immediate sample collection area, including both running and non-running vehicles.
4. Fill out all sample information on sample bottles and field sheets
5. Always wear clean, powder-free nitrile gloves when handling sample containers and lids.
6. Collect samples using a dipper or directly in sample containers. 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). Collect samples while facing upstream and so as not to disturb water or sediments in the outfall pipe or ditch. Slowly lower the bottle into the water to avoid bottom disturbance and stirring up sediment.
7. Never touch the inside surface of a sample container or lid, even with gloved hands.
8. Never allow the inner surface of a sample container or lid to be contacted by any material other than the sample water.
9. Do not overfill sample containers and do not dump out any liquid in them. Liquids are often added to sample containers intentionally by the analytical laboratory as a preservative or for pH adjustment.
10. Do not allow any object or material to fall into or contact the collected water sample. Do not allow rainwater to drip from rain gear or other surfaces into sample containers.
11. Replace and tighten sample container lids immediately after sample collection.
12. Use test strips, test kits, and field meters (rinse similar to dipper) for most parameters (see Table 6-4). Dispose of used test strips and test kit ampules properly.
13. Accurately label the sample with the time and location.
14. Place laboratory samples on ice for analysis of bacteria and pollutants of concern
15. Fill out chain-of-custody form for laboratory samples
16. Document on the digital Outfall Inspection form that analytical samples were collected and specify which pollutants the samples will be tested for.
17. Deliver samples to laboratory
18. Decontaminate all testing personnel and equipment

In the event that an outfall is submerged, either partially or completely, or inaccessible, field staff will proceed to the first accessible upstream manhole or structure for the observation and sampling and report the location with the screening results. Field staff will continue to the next upstream structure until there is no longer an influence from the receiving water on the visual inspection or sampling.

Field test kits or field instrumentation are permitted for all parameters except indicator bacteria and any pollutants of concern. Field kits need to have appropriate detection limits and ranges. Table 6-4 lists various field test kits and field instruments that can be used for outfall sampling associated with the 2016 MS4 Permit parameters, other than indicator bacteria and any pollutants of concern.

Table 4-4. Sampling Parameters and Analysis Methods

Analyte or Parameter	Instrumentation (Portable Meter)	Field Test Kit
Ammonia	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 (Detergents)	CHEMetrics™ I-2017	CHEMetrics™ K-9400 and K-9404 Hach™ DE-2
Chlorine	CHEMetrics™ V-2000, K-2513 Hach™ Pocket Colorimeter™ II	NA
Conductivity	CHEMetrics™ I-1200 YSI Pro30 YSI EC300A Oakton 450	NA
Temperature	YSI Pro30 YSI EC300A Oakton 450	NA
Salinity	YSI Pro30 YSI EC300A Oakton 450	NA
Temperature	YSI Pro30 YSI EC300A Oakton 450	NA
Indicator Bacteria: *E. coli* (freshwater) or Enterococcus (saline water)	EPA certified laboratory procedure (40 CFR § 136)	NA
Pollutants of Concern[1]	EPA certified laboratory procedure (40 CFR § 136)	NA

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

Testing for indicator bacteria and any pollutants of concern must be conducted using analytical methods and procedures found in 40 CFR § 136.[4] Samples for laboratory analysis must also be stored and preserved in accordance with procedures found in 40 CFR § 136. Table 6-5 lists analytical methods, detection limits, hold times, and preservatives for laboratory analysis of dry weather sampling parameters.

[4] 40 CFR § 136: http://www.ecfr.gov/cgi-bin/text-idx?SID=b3b41fdea0b7b0b8cd6c4304d86271b7&mc=true&node=pt40.25.136&rgn=div5

Table 5-5. Required Analytical Methods, Detection Limits, Hold Times and Preservatives

Analyte or Parameter	Analytical Method	Detection Limit	Max. Hold Time	Preservative
Ammonia	**EPA**: 350.2, **SM**: 4500-NH3C	0.05 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2, No preservative required if analyzed immediately
Surfactants	**SM**: 5540-C	0.01 mg/L	48 hours	Cool ≤6°C
Chlorine	**SM**: 4500-Cl G	0.02 mg/L	Analyze within 15 minutes	None Required
Temperature	**SM**: 2550B	*NA*	Immediate	None Required
Specific Conductance	**EPA**: 120.1, **SM**: 2510B	0.2 µs/cm	28 days	Cool ≤6°C
Salinity	**SM**: 2520	-	28 days	Cool ≤6°C
Indicator Bacteria: *E.coli* Enterococcus	*E.coli* **EPA**: 1603 **SM**: 9221B, 9221F , 9223 B **Other**: Colilert®, Colilert-18® *Enterococcus* **EPA**: 1600 **SM**: 9230 C **Other**: Enterolert®	*E.coli* **EPA**: 1 cfu/100mL **SM**: 2 MPN/100mL **Other**: 1 MPN/100mL *Enterococcus* **EPA**: 1 cfu/100mL **SM**: 1 MPN/100mL **Other**: 1 MPN/100mL	8 hours	Cool ≤10°C, 0.0008% $Na_2S_2O_3$
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** : 0.01 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2
Total Nitrogen (Ammonia + Nitrate/Nitrite, methods are for Nitrate-Nitrite and need to be combined with Ammonia listed above.)	**EPA**: Cadmium reduction (automated)-353.2 Rev. 2.0, **SM**: 4500-NO_3 E-F	**EPA**: 0.05 mg/L **SM** : 0.05 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2

SM = Standard Methods

6.3 Interpreting Outfall Sampling Results

Outfall analytical data from dry weather sampling can be used to help identify the major type or source of discharge. Table 6-6 shows values identified by the U.S. EPA and the Center for Watershed Protection as typical screening values for select parameters. These represent the typical concentration (or value) of each parameter expected to be found in stormwater. Screening values that exceed these benchmarks may be indicative of pollution and/or illicit discharges.

Table 6-6. Benchmark Field Measurements for Select Parameters

Analyte or Parameter	Benchmark
Ammonia	>0.5 mg/L
Conductivity	>2,000 µS/cm
Surfactants	>0.25 mg/L
Chlorine	>0.02 mg/L (detectable levels per the 2016 MS4 Permit)
Indicator Bacteria[5]: *E.coli* *Enterococcus*	*E.coli*: the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 126 colonies per 100 ml and no single sample taken during the bathing season shall exceed 235 colonies per 100 ml *Enterococcus:* the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 33 colonies per 100 ml and no single sample taken during the bathing season shall exceed 61 colonies per 100 ml

6.4 Follow-up Ranking of Outfalls and Interconnections

The Town of Agawam will update and re-prioritize the initial outfall and interconnection rankings based on information gathered during dry weather screening. The rankings will be updated periodically as dry weather screening information becomes available, but will be completed within three (3) years of the effective date of the permit (July 1, 2021).

Outfalls/interconnections where relevant information was found indicating sewer input to the MS4 or sampling results indicating sewer input are highly likely to contain illicit discharges from sanitary sources. Such outfalls/interconnections will be ranked at the top of the High Priority Outfalls category for investigation. Other outfalls and interconnections may be re-ranked based on any new information from the dry weather screening.

7 Catchment Investigations

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

[5] Massachusetts Water Quality Standards: http://www.mass.gov/eea/docs/dep/service/regulations/314cmr04.pdf

trace the source of potential illicit discharges. All data collected as part of the catchment investigations will be recorded and reported in each annual report.

7.1 System Vulnerability Factors

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

- Plans related to the construction of the storm sewer network
- Plans related to the construction of the sanitary sewer network
- Prior work on storm drains or sewer lines
- Board of Health or other municipal data on septic systems
- Complaint records related to SSOs
- Septic system breakouts.

Based on the review of this information, the presence of any of the following System Vulnerability Factors (SVFs) will be identified for each catchment:

- 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
- 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
- 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)
- 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).

A SVF inventory will be documented for each catchment (see Table 7-1), retained as part of this IDDE Plan, and included in the annual report. A copy of the SVF inventory will also be posted on the Town of Agawam website.

Table 7-1. Outfall Catchment System Vulnerability Factor (SVF) Inventory

Town of Agawam, Massachusetts
Revision Date: ##DATE OF LAST UPDATE

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

Presence/Absence Evaluation Criteria:

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

7.2 Dry Weather Manhole Inspections

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

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

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

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

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

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

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

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

upstream segments of the storm drain system, but may be more efficient if the sources of illicit discharges are believed to be located in the upstream portions of the catchment area. Once a manhole inspection methodology has been selected, investigations will continue systematically through the catchment.

Inspection of key junction manholes will proceed as follows:

1. Manholes will be opened and inspected for visual and olfactory evidence of illicit connections.

2. If flow is observed, a sample will be collected and analyzed at a minimum for ammonia, chlorine, and surfactants. Field kits can be used for these analyses. Sampling and analysis will be in accordance with procedures outlined in Section 6. Additional indicator sampling may assist in determining potential sources (e.g., bacteria for sanitary flows, conductivity to detect tidal backwater, etc.).

3. Where sampling results or visual or olfactory evidence indicate potential illicit discharges or SSOs, the area draining to the junction manhole will be flagged for further upstream manhole investigation and/or isolation and confirmation of sources.

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

5. If no evidence of an illicit discharge is found, catchment investigations will be considered complete upon completion of key junction manhole sampling.

7.3 Wet Weather Outfall Sampling

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

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

Wet weather outfall sampling will proceed as follows:

1. At least one wet weather sample will be collected at the outfall for the same parameters required during dry weather screening.

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. 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. 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 7.4.

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

7.4 Source Isolation and Confirmation

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

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

Public notification is an important aspect of a detailed source investigation program. Prior to smoke testing, dye testing, or TV inspections, the Department of Public Works will notify property owners in the affected area with robocalls, informational door hangers, and/or written letters for single family homes, businesses and building lobbies for multi-family dwellings.

7.4.1 Sandbagging

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

7.4.2 Smoke Testing

Smoke testing involves injecting non-toxic smoke into drain lines and noting the emergence of smoke from sanitary sewer vents in illegally connected buildings or from cracks and leaks in the

system itself. Typically a smoke bomb or smoke generator is used to inject the smoke into the system at a catch basin or manhole and air is then forced through the system. Test personnel are place in areas where there are suspected illegal connections or cracks/leaks, noting any escape of smoke (indicating an illicit connection or damaged storm drain infrastructure). It is important when using this technique to make proper notifications to area residents and business owners as well as local police and fire departments.

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

It should be noted that smoke may cause minor irritation of respiratory passages. Residents with respiratory conditions may need to be monitored or evacuated from the area of testing altogether to ensure safety during testing.

7.4.3 Dye Testing

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

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

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

7.4.4 CCTV/Video Inspection

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

7.4.5 Optical Brightener Monitoring

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

7.4.6 IDDE Canines

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

7.5 Illicit Discharge Removal

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

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

7.5.1 Confirmatory Outfall Screening

Within one (1) year of removal of all identified illicit discharges within a catchment area, confirmatory outfall or interconnection screening will be conducted. The confirmatory screening will be conducted in dry weather unless System Vulnerability Factors have been identified, in which case both dry weather and wet weather confirmatory screening will be conducted. If confirmatory screening indicates evidence of additional illicit discharges, the catchment will be scheduled for additional investigation.

7.6 Ongoing Screening

Upon completion of all catchment investigations and illicit discharge removal and confirmation (if necessary), each outfall or interconnection will be re-prioritized for screening and scheduled for ongoing screening once every five (5) years. Ongoing screening will consist of dry weather screening and sampling consistent with the procedures described in Section 6 of this plan. Ongoing wet weather screening and sampling will also be conducted at outfalls where wet weather screening was required due to System Vulnerability Factors and will be conducted in accordance with the procedures described in Section 7.3. All sampling results will be reported in the annual report.

8 Training

Annual IDDE training will be made available to all employees involved in the IDDE program. This training will at a minimum include information on how to identify illicit discharges and SSOs and may also include additional training specific to the functions of particular personnel and their function within the framework of the IDDE program. A template of the training log form used by the Town is included in Appendix D. The frequency and type of training will be included in the annual report.

9 Progress Reporting

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

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

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

Appendix A

Legal Authority (IDDE Bylaw or Ordinance)

§ 175-36 **Illicit discharges and connections.**

[Amended 5-15-2006 by TOR-2006-2]

A. Deposit of certain materials into sewer, manhole or catch basin prohibited. No person shall place or throw any dead or decaying animal or vegetable matter, ashes, bottles, broken glass, tin cans, stones, earth or any other foreign substances into any sewer, manhole or catch basin.

B. Prohibited discharges to sanitary system. No person shall discharge or cause to be discharged any stormwater, surface water, groundwater, roof runoff, subsurface drainage, uncontaminated cooling water or unpolluted industrial process waters to any sanitary sewer.

C. Prohibited discharges to storm drain system. In order to prevent pollutants from entering the Town's municipal separate storm sewer system (MS4), the following activities are prohibited.

(1) Illicit discharges. No person shall dump, discharge, cause or allow to be discharged any pollutant or nonstormwater discharge into the municipal separate storm sewer system (MS4). Examples of illicit discharges include, but are not limited to, antifreeze, motor oil, pesticides, cleaning products, pet wastes, concentrated fertilizers, concentrated herbicides, bleach, concrete wash water, sediment laden construction runoff.

(2) Illicit connection. No person shall construct, use, allow, maintain or continue any illicit connection to the MS4, regardless of whether the connection was permissible under applicable law, regulation or custom at the time of connection.

(3) Obstruction of MS4. 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 Superintendent.

(4) Exemptions.

(a) Emergency activities that are immediately necessary for the protection of life, property or the environment as determined by the Department of Public Works, Police Department, or Fire Department.

(b) Roadway maintenance activities essential to public health and safety.

(c) The following nonstormwater discharges or flows are exempt from the prohibition of nonstormwaters, provided that the source is not a significant contributor of a pollutant to the municipal storm drain system.

[1] Waterline flushing.

[2] Flow from portable 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 and nonprofit or charitable organization as part of a fund-raising activity on behalf of said organization.

[11] Discharge from dechlorinated swimming pool water (less than one ppm chlorine), provided that the water is allowed to stand for one week prior to draining and the pool is drained in such a way as not to cause a nuisance.

[12] Discharge from street sweeping.

[13] Dye testing, provided that verbal notification is given to the DPW Superintendent prior to the time of the test.

[14] Nonstormwater 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.

[15] Discharge for which advanced written approval is received from the Superintendent as necessary to protect public health, safety, welfare or the environment.

[16] Agricultural activities for normal maintenance or improvement of land as defined by the Massachusetts Wetlands Protection Act 310 CMR 10.04 and other implementing regulations as appropriate. Activities not exempted include spill of materials onto roadways from hauling agricultural products or fertilizers.

§ 175-37 **Discharge of unpolluted drainage.**

Stormwater and all other unpolluted drainage shall be discharged to a natural outlet if such outlet is reasonably accessible. If no such outlet is available, such unpolluted wastes may be discharged into combined sewers or storm sewers if approved by the Superintendent.

§ 175-38 **Prohibited discharges.**

[Amended 7-9-1984]

No person shall discharge or cause to be discharged any of the following described waters or wastes to any public sewer:

A. Any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid or gas.

B. Any waters or wastes containing toxic or poisonous solids, liquids or gases in sufficient quantity, either singly or by interaction with other wastes, to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, create a public nuisance or create any hazard in the receiving waters of the sewage treatment plant.

C. Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers or other interference with the proper operation of the sewage works, such as but not limited to ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, unground garbage, whole blood, paunch manure, hair and fleshings, entrails and paper dishes, cups, milk containers, etc., either whole or ground by garbage grinders.

§ 175-39 **Discharge of harmful substances.**

No person shall discharge or cause to be discharged any substances, materials, waters or wastes if it appears likely, in the opinion of the Superintendent, that such substances, materials, water or wastes can harm either the sewers, sewage treatment process or equipment, have an adverse effect on the receiving stream or can otherwise endanger life, limb or public property or constitute a nuisance. In forming this opinion as to the acceptability of these substances, materials, waters or wastes, the Superintendent will give consideration to such factors as the quantities of subject wastes in relation to flows and velocities in the sewers, the materials of construction of the sewers, the nature of the sewage treatment process, the capacity of the sewage treatment plant, the degree of treatability of wastes in the sewage treatment plant and other pertinent factors. This prohibition shall include but not be limited to the following:

Appendix B

Storm System Mapping

Town of Agawam Initial Catchment Rankings

Legend

Outfall

Owner

- Owned by municipality
- Owned by state
- Privately owned
- <all other values>

Priority_Rank

- Problem
- High
- Low
- Excluded
- Road Edges
- Waterbodies

N

W E

S

0 2,000 4,000

Feet

Town of Agawam Municipal Storm Sewer System

Legend

Drain Features

FeatureType

- Culvert
- Endwall; Headwall
- Flared end structure
- Rip-rap
- Catch Basin
- <all other values>

Status

- Abandoned
- Active

Outfall

metaReliability

- To be determined
- Excellent quality
- Fairly accurate but not reliably known

Drain Line

- <all other values>

Status

- Abandoned
- Active
- OpenChannel
- Culverts
- DetentionBasin
- DrainEasement
- Road Edges
- Waterbodies

N
W E
S

0 2,000 4,000
Feet

Appendix C

Outfall Inventory and Priority Ranking Matrix

Town of Agawam - Outfall Inventory and Priority Ranking Matrix

Outfall ID	Receiving Water	Owner	Previous Screening Results Indicate Likely Sewer Input? [1]	Discharging to Area of Concern to Public Health? [2]	Frequency of Past Discharge Complaints	Receiving Water Quality [3]	Density of Generating Sites [4]	Age of Development/ Infrastructure	Density of Historic Combined Sewers or Septic? [5]	Aging Septic?	Density of Septic Failures since 2003?	Culverted Streams? [6]	Additional Characteristics	Score	Initial Priority Ranking
Infomration Source			Outfall Inspections and Sample Results	GIS Maps	Town Staff	Impaird Waters List	Land Use/GIS Maps, Aerial Photography	Land Use Information, Site Plans, Visual Observation	Town Staff, Site Plans, GIS Maps	Land Use, Town Staff	Town Staff, GIS Maps	GIS Maps, Site Plans	Other		
Scoring Criteria			Yes = 3 (Problem Outfall) No = 0	Yes = 3 No = 0	Frequent = 3 Occasional = 2 None = 0	Poor = 3 Fair = 2 Good = 1	High = 3 Medium = 2 Low = 1	> 40 Years = 3 20 - 40 Years = 2 < 20 Years = 1	High = 3 Medium = 2 Low = 1	> 30 Years = 3 < 30 Years = 0	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	TBD		
CT-48-1076	Connecticut River	Municipality													HIGH
CT-48-608	Connecticut River	Municipality													HIGH
CT-48-940	Connecticut River	Municipality													HIGH
CT-50-600	Connecticut River	Municipality													HIGH
CT-50-602	Connecticut River	Municipality													HIGH
CT-50-941	Connecticut River	Municipality													HIGH
CT-52-631	Connecticut River	State													HIGH
CT-52-632	Connecticut River	State													HIGH
CT-52-633	Connecticut River	State													HIGH
CT-52-762	Connecticut River	Municipality													HIGH
CT-52-763	Connecticut River	State													HIGH
CT-52-764	Connecticut River	State													HIGH
CT-58-656	Connecticut River	State													HIGH
CT-58-657	Connecticut River	State													HIGH
CT-58-658	Connecticut River	State													HIGH
CT-58-659	Connecticut River	State													HIGH
CT-58-660	Connecticut River	Municipality													HIGH
CT-58-661	Connecticut River	State													HIGH
CT-58-963	Connecticut River	Municipality													HIGH
CT-59-663	Connecticut River	Municipality													HIGH
CT-59-664	Connecticut River	State													HIGH
CT-59-665	Connecticut River	State													HIGH
CT-59-666	Connecticut River	State													HIGH
CT-59-667	Connecticut River	Municipality													HIGH
CT-59-668	Connecticut River	State													HIGH
CT-59-669	Connecticut River	State													HIGH
CT-59-670	Connecticut River	Municipality													HIGH
CT-59-671	Connecticut River	State													HIGH
CT-60-1040	Connecticut River	State													HIGH
CT-60-673	Connecticut River	State													HIGH
CT-60-674	Connecticut River	State													HIGH
CT-60-676	Connecticut River	State													HIGH
CT-60-681	Connecticut River	Municipality													HIGH
CT-60-959	Connecticut River	State													HIGH
CT-60-962	Connecticut River	State													HIGH
CT-62-686	Connecticut River	State													HIGH
CT-62-687	Connecticut River	State													HIGH
CT-62-688	Connecticut River	Municipality													HIGH
CT-62-966	Connecticut River	Municipality													HIGH
FM-47-1096	Fourmile Brook	Municipality													LOW
FM-47-570	Fourmile Brook	Municipality													HIGH
FM-47-582	Fourmile Brook	Municipality													LOW
FM-47-584	Fourmile Brook	Municipality													LOW
FM-47-585	Fourmile Brook	Municipality													LOW
FM-47-586	Fourmile Brook	Municipality													LOW
FM-47-591	Fourmile Brook	Municipality													LOW
FM-47-593	Fourmile Brook	Municipality													LOW
FM-47-596	Fourmile Brook	Municipality													LOW
FM-47-855	Fourmile Brook	Municipality													HIGH
FM-47-933	Fourmile Brook	Municipality													LOW
GW-20-1004	Groundwater	Municipality													LOW
GW-27-1103	Groundwater	Municipality													LOW
GW-28-1105	Groundwater	Municipality													HIGH
GW-29-1003	Groundwater	Municipality													LOW
GW-29-1104	Groundwater	Municipality													LOW
GW-29-1106	Groundwater	Municipality													HIGH
MAY-10-249	May Hollow	Municipality													LOW
MAY-10-250	May Hollow	Municipality													LOW
MAY-10-843	May Hollow	Municipality													LOW

Town of Agawam - Outfall Inventory and Priority Ranking Matrix

Outfall ID	Receiving Water	Owner	Previous Screening Results Indicate Likely Sewer Input? [1]	Discharging to Area of Concern to Public Health? [2]	Frequency of Past Discharge Complaints	Receiving Water Quality [3]	Density of Generating Sites [4]	Age of Development/ Infrastructure	Density of Historic Combined Sewers or Septic? [5]	Aging Septic?	Density of Septic Failures since 2003?	Culverted Streams? [6]	Additional Characteristics	Score	Initial Priority Ranking
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Scoring Criteria			Yes = 3 (Problem Outfall) No = 0	Yes = 3 No = 0	Frequent = 3 Occasional = 2 None = 0	Poor = 3 Fair = 2 Good = 1	High = 3 Medium = 2 Low = 1	> 40 Years = 3 20 - 40 Years = 2 < 20 Years = 1	High = 3 Medium = 2 Low = 1	> 30 Years = 3 < 30 Years = 0	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	TBD		
MAY-10-844	May Hollow	Municipality													LOW
MAY-11-1081	May Hollow	Municipality													LOW
MAY-11-238	May Hollow	Municipality													LOW
MAY11-239	May Hollow	Municipality													LOW
MAY-11-240	May Hollow	Municipality													LOW
MAY-11-241	May Hollow	Municipality													LOW
MAY-11-483	May Hollow	Municipality													LOW
MAY-11-845	May Hollow	Municipality													LOW
MAY-11-847	May Hollow	Municipality													LOW
MAY-12-1061	May Hollow	Municipality													LOW
MAY-12-1062	May Hollow	Municipality													LOW
MAY-12-255	May Hollow	Municipality													LOW
MAY-15-1107	May Hollow	Municipality													LOW
MAY-15-491	May Hollow	Municipality													LOW
MAY-15-846	May Hollow	Municipality													LOW
MAY-9-258	May Hollow	Municipality													LOW
MAY-9-862	May Hollow	Municipality													LOW
MAY-9-865	May Hollow	Municipality													LOW
MAY-9-972	May Hollow	Municipality													LOW
MI-13-484	Miller Brook	Municipality													HIGH
MI-14-1067	Miller Brook	Municipality													LOW
MI-14-1068	Miller Brook	Municipality													LOW
MI-16-259	Miller Brook	Municipality													LOW
MI-16-260	Miller Brook	Municipality													LOW
MI-16-261	Miller Brook	Municipality													LOW
MI-16-311	Miller Brook	Municipality													LOW
MI-16-312	Miller Brook	Municipality													LOW
MI-16-494	Miller Brook	Municipality													LOW
MI-16-495	Miller Brook	Municipality													LOW
MI-16-501	Miller Brook	Municipality													LOW
MI-16-848	Miller Brook	Municipality													LOW
MI-17-498	Miller Brook	Municipality													LOW
MI-17-499	Miller Brook	Municipality													LOW
MI-17-500	Miller Brook	Municipality													LOW
MI-18-1022	Miller Brook	Municipality													LOW
MU-23-1063	Muddy Brook	Municipality													HIGH
MU-23-1099	Muddy Brook	Municipality													LOW
MU-23-926	Muddy Brook	Municipality													HIGH
MU-23-927	Muddy Brook	Municipality													HIGH
MU-2-476	Muddy Brook	Municipality													HIGH
PH-18-502	Philo Brook	Municipality													HIGH
PH-19-525	Philo Brook	Municipality													HIGH
PH-19-526	Philo Brook	Municipality													HIGH
PH-19-851	Philo Brook	Private													HIGH
PH-20-1071	Philo Brook	Municipality													LOW
PH-21-1045	Philo Brook	Municipality													HIGH
PH-21-1046	Philo Brook	Municipality													LOW
PH-21-1058	Philo Brook	Municipality													HIGH
PH-21-506	Philo Brook	Municipality													LOW
PH-21-507	Philo Brook	Municipality													LOW
PH-21-528	Philo Brook	Municipality													HIGH
PH-21-529	Philo Brook	Municipality													LOW
PH-21-530	Philo Brook	Municipality													HIGH
PH-21-531	Philo Brook	Municipality													HIGH
PH-21-918	Philo Brook	Municipality													LOW
PH-21-919	Philo Brook	Municipality													EXCLUDED
PH-21-920	Philo Brook	Municipality													EXCLUDED
PH-22-1034	Philo Brook	Municipality													HIGH
PH-22-1109	Philo Brook	Municipality													HIGH

Town of Agawam - Outfall Inventory and Priority Ranking Matrix

Outfall ID	Receiving Water	Owner	Previous Screening Results Indicate Likely Sewer Input? [1]	Discharging to Area of Concern to Public Health? [2]	Frequency of Past Discharge Complaints	Receiving Water Quality [3]	Density of Generating Sites [4]	Age of Development/ Infrastructure	Density of Historic Combined Sewers or Septic? [5]	Aging Septic?	Density of Septic Failures since 2003?	Culverted Streams? [6]	Additional Characteristics	Score	Initial Priority Ranking
Infomration Source			Outfall Inspections and Sample Results	GIS Maps	Town Staff	Impaird Waters List	Land Use/GIS Maps, Aerial Photography	Land Use Information, Site Plans, Visual Observation	Town Staff, Site Plans, GIS Maps	Land Use, Town Staff	Town Staff, GIS Maps	GIS Maps, Site Plans	Other		
Scoring Criteria			Yes = 3 (Problem Outfall) No = 0	Yes = 3 No = 0	Frequent = 3 Occasional = 2 None = 0	Poor = 3 Fair = 2 Good = 1	High = 3 Medium = 2 Low = 1	> 40 Years = 3 20 - 40 Years = 2 < 20 Years = 1	High = 3 Medium = 2 Low = 1	> 30 Years = 3 < 30 Years = 0	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	TBD		
PH-22-924	Philo Brook	Municipality													HIGH
PH-23-1070	Philo Brook	Municipality													HIGH
PH-65-691	Philo Brook	Municipality													HIGH
PH-65-693	Philo Brook	Municipality													HIGH
PH-65-694	Philo Brook	Municipality													HIGH
PH-66-695	Philo Brook	Municipality													LOW
PH-66-696	Philo Brook	Municipality													HIGH
PH-66-697	Philo Brook	Municipality													HIGH
PH-7-1064	Philo Brook	Municipality													HIGH
PH-Jr High-1038	Philo Brook	Municipality													LOW
SL-33-1086	Silver Lake	Municipality													LOW
SL-33-351	Silver Lake	Municipality													LOW
SL-33-518	Silver Lake	Municipality													LOW
SL-33-538	Silver Lake	Municipality													LOW
SL-33-539	Silver Lake	Municipality													LOW
ST-15-489	Still Brook	Municipality													HIGH
ST-15-988	Still Brook	Municipality													HIGH
ST-18-1021	Still Brook	Municipality													LOW
ST-22-1100	Still Brook	Municipality													EXCLUDED
ST-22-1101	Still Brook	Municipality													LOW
ST-22-508	Still Brook	Municipality													HIGH
ST-22-543	Still Brook	Municipality													LOW
ST-2-291	Still Brook	Municipality													HIGH
ST-22-925	Still Brook	Municipality													EXCLUDED
ST-22-942	Still Brook	Municipality													EXCLUDED
ST-22-943	Still Brook	Municipality													EXCLUDED
ST-23-509	Still Brook	Municipality													HIGH
ST-2-522	Still Brook	Municipality													HIGH
ST-2-523	Still Brook	Municipality													HIGH
ST-3-1024	Still Brook	Municipality													HIGH
ST-3-292	Still Brook	Municipality													HIGH
ST-3-477	Still Brook	Municipality													HIGH
ST-3-478	Still Brook	Municipality													HIGH
ST-3-479	Still Brook	Municipality													HIGH
ST-4-1057	Still Brook	Municipality													LOW
ST-4-463	Still Brook	Municipality													LOW
ST-4-464	Still Brook	Municipality													HIGH
ST-4-465	Still Brook	Municipality													LOW
ST-4-482	Still Brook	Municipality													HIGH
ST-4-485	Still Brook	Municipality													HIGH
ST-4-486	Still Brook	Municipality													HIGH
ST-4-487	Still Brook	Municipality													LOW
ST-4-726	Still Brook	Municipality													HIGH
ST-4-759	Still Brook	Municipality													LOW
ST-4-760	Still Brook	Municipality													LOW
ST-5-1023	Still Brook	Municipality													HIGH
ST-5-1077	Still Brook	Municipality													HIGH
ST-5-272	Still Brook	Municipality													HIGH
ST-5-273	Still Brook	Municipality													HIGH
ST-5-954	Still Brook	Municipality													HIGH
ST-6-263	Still Brook	Municipality													LOW
ST-6-264	Still Brook	Municipality													HIGH
ST-64-1092	Still Brook	Municipality													HIGH
ST-6-466	Still Brook	Municipality													LOW
ST-6-467	Still Brook	Municipality													LOW
ST-6-468	Still Brook	Municipality													LOW
ST-64-953	Still Brook	Municipality													HIGH
ST-6-912	Still Brook	Municipality													LOW
ST-6-975	Still Brook	Municipality													LOW

Town of Agawam - Outfall Inventory and Priority Ranking Matrix

Outfall ID	Receiving Water	Owner	Previous Screening Results Indicate Likely Sewer Input? [1]	Discharging to Area of Concern to Public Health? [2]	Frequency of Past Discharge Complaints	Receiving Water Quality [3]	Density of Generating Sites [4]	Age of Development/ Infrastructure	Density of Historic Combined Sewers or Septic? [5]	Aging Septic?	Density of Septic Failures since 2003?	Culverted Streams? [6]	Additional Characteristics	Score	Initial Priority Ranking
Infomration Source			Outfall Inspections and Sample Results	GIS Maps	Town Staff	Impaird Waters List	Land Use/GIS Maps, Aerial Photography	Land Use Information, Site Plans, Visual Observation	Town Staff, Site Plans, GIS Maps	Land Use, Town Staff	Town Staff, GIS Maps	GIS Maps, Site Plans	Other		
Scoring Criteria			Yes = 3 (Problem Outfall) No = 0	Yes = 3 No = 0	Frequent = 3 Occasional = 2 None = 0	Poor = 3 Fair = 2 Good = 1	High = 3 Medium = 2 Low = 1	> 40 Years = 3 20 - 40 Years = 2 < 20 Years = 1	High = 3 Medium = 2 Low = 1	> 30 Years = 3 < 30 Years = 0	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	TBD		
ST-6-976	Still Brook	Municipality													LOW
ST-6-977	Still Brook	Municipality													LOW
ST-7-469	Still Brook	Municipality													LOW
ST-8-1043	Still Brook	Municipality													HIGH
ST-8-1079	Still Brook	Municipality													HIGH
ST-8-470	Still Brook	Municipality													HIGH
ST-8-480	Still Brook	Municipality													HIGH
ST-8-913	Still Brook	Municipality													HIGH
ST-9-1037	Still Brook	Municipality													HIGH
ST-9-1108	Still Brook	Municipality													HIGH
ST-9-471	Still Brook	Municipality													HIGH
ST-9--472	Still Brook	Municipality													HIGH
ST-9-914	Still Brook	Municipality													HIGH
TK-44-565	Tarkill Brook	Municipality													LOW
TK-44-566	Tarkill Brook	Municipality													LOW
TK-45-1082	Tarkill Brook	Municipality													LOW
TK-45-422	Tarkill Brook	Municipality													LOW
TK-45-427	Tarkill Brook	Municipality													LOW
TK-45-567	Tarkill Brook	Municipality													HIGH
TK-45-568	Tarkill Brook	Municipality													HIGH
TK-45-577	Tarkill Brook	Municipality													LOW
TK-45-945	Tarkill Brook	Municipality													HIGH
TK-46-561	Tarkill Brook	Municipality													LOW
TK-46-761	Tarkill Brook	Municipality													HIGH
TK-66-700	Tarkill Brook	Municipality													HIGH
TM-20-1025	Threemile Brook	Municipality													LOW
TM-20-293	Threemile Brook	Municipality													LOW
TM-20-852	Threemile Brook	Municipality													HIGH
TM-25-1017	Threemile Brook	Municipality													LOW
TM-25-1020	Threemile Brook	Municipality													LOW
TM-25-298	Threemile Brook	Municipality													LOW
TM-25-299	Threemile Brook	Municipality													LOW
TM-25-510	Threemile Brook	Municipality													LOW
TM-30-513	Threemile Brook	Municipality													LOW
TM-30-532	Threemile Brook	Municipality													LOW
TM-30-533	Threemile Brook	Municipality													LOW
TM-30-547	Threemile Brook	Municipality													LOW
TM-30-549	Threemile Brook	Municipality													LOW
TM-30-915	Threemile Brook	Municipality													LOW
TM-30-916	Threemile Brook	Municipality													LOW
TM-31-515	Threemile Brook	Municipality													LOW
TM-31-517	Threemile Brook	Municipality													LOW
TM-32-1111	Threemile Brook	Municipality													HIGH
TM-32-519	Threemile Brook	Municipality													HIGH
TM-32-537	Threemile Brook	Municipality													LOW
TM-32-928	Threemile Brook	Municipality													HIGH
TM-33-1018	Threemile Brook	Municipality													LOW
TM-33-550	Threemile Brook	Municipality													HIGH
TM-33-939	Threemile Brook	Municipality													LOW
TM-33-969	Threemile Brook	Municipality													LOW
TM-34-1072	Threemile Brook	Municipality													LOW
TM-34-1075	Threemile Brook	Municipality													HIGH
TM-34-1093	Threemile Brook	Municipality													LOW
TM-34-340	Threemile Brook	Municipality													LOW
TM-34-347	Threemile Brook	Municipality													LOW
TM-34-514	Threemile Brook	Municipality													LOW
TM-35-337	Threemile Brook	Municipality													LOW
TM-35-929A	Threemile Brook	Municipality													LOW
TM-35-929B	Threemile Brook	Municipality													LOW

Town of Agawam - Outfall Inventory and Priority Ranking Matrix

Outfall ID	Receiving Water	Owner	Previous Screening Results Indicate Likely Sewer Input? [1]	Discharging to Area of Concern to Public Health? [2]	Frequency of Past Discharge Complaints	Receiving Water Quality [3]	Density of Generating Sites [4]	Age of Development/ Infrastructure	Density of Historic Combined Sewers or Septic? [5]	Aging Septic?	Density of Septic Failures since 2003?	Culverted Streams? [6]	Additional Characteristics	Score	Initial Priority Ranking
Infomration Source			Outfall Inspections and Sample Results	GIS Maps	Town Staff	Impaird Waters List	Land Use/GIS Maps, Aerial Photography	Land Use Information, Site Plans, Visual Observation	Town Staff, Site Plans, GIS Maps	Land Use, Town Staff	Town Staff, GIS Maps	GIS Maps, Site Plans	Other		
Scoring Criteria			Yes = 3 (Problem Outfall) No = 0	Yes = 3 No = 0	Frequent = 3 Occasional = 2 None = 0	Poor = 3 Fair = 2 Good = 1	High = 3 Medium = 2 Low = 1	> 40 Years = 3 20 - 40 Years = 2 < 20 Years = 1	High = 3 Medium = 2 Low = 1	> 30 Years = 3 < 30 Years = 0	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	TBD		
TM-36-540	Threemile Brook	Municipality													LOW
TM-41-552	Threemile Brook	Municipality													LOW
TM-41-738	Threemile Brook	Municipality													HIGH
TM-42-1080	Threemile Brook	Municipality													LOW
TM-42-938	Threemile Brook	Municipality													HIGH
TM-42-947	Threemile Brook	Municipality													LOW
TM-42-970	Threemile Brook	Municipality													LOW
TM-43-1019	Threemile Brook	Municipality													LOW
TM-43-1041	Threemile Brook	Municipality													HIGH
TM-43-554	Threemile Brook	Private													LOW
TM-43-555	Threemile Brook	Private													LOW
TM-43-560	Threemile Brook	Municipality													LOW
TM-43-641	Threemile Brook	Municipality													LOW
TM-43-971	Threemile Brook	Municipality													HIGH
TM-44-353	Threemile Brook	Municipality													HIGH
TM-44-553	Threemile Brook	Municipality													LOW
TM-44-562	Threemile Brook	Municipality													LOW
TM-45-571	Threemile Brook	Municipality													LOW
TM-46-579	Threemile Brook	Municipality													LOW
TM-46-580	Threemile Brook	Municipality													LOW
TM-46-610	Threemile Brook	Municipality													LOW
TM-47-573	Threemile Brook	Municipality													LOW
TM-47-581	Threemile Brook	Municipality													LOW
TM-47-587	Threemile Brook	Municipality													LOW
TM-47-595	Threemile Brook	Municipality													LOW
TM-47-956	Threemile Brook	Municipality													HIGH
TM-47-965	Threemile Brook	Municipality													HIGH
TM-49-964	Threemile Brook	Municipality													LOW
TM-51-618	Threemile Brook	Municipality													LOW
TM-53-611	Threemile Brook	Municipality													LOW
TM-53-625	Threemile Brook	Municipality													LOW
TM-53-936	Threemile Brook	Municipality													LOW
TM-54-639	Threemile Brook	Municipality													LOW
TM-54-642	Threemile Brook	Municipality													HIGH
TM-54-643	Threemile Brook	Municipality													HIGH
TM-68-1083	Threemile Brook	Municipality													HIGH
TM-68-1084	Threemile Brook	Municipality													HIGH
UN-1-284	Unknown Stream	Municipality													HIGH
UN-1-285	Unknown Stream	Municipality													HIGH
UN-13-1089	Unknown Stream	Municipality													LOW
UN-13-243	Unknown Stream	Municipality													LOW
UN-13-539	Unknown Stream	Municipality													HIGH
UN-14-1066	Unknown Stream	Municipality													HIGH
UN-14-247	Unknown Stream	Municipality													LOW
UN-2-289	Unknown Stream	Municipality													HIGH
UN-2-474	Unknown Stream	Municipality													HIGH
UN-28-317	Unknown Stream	Municipality													LOW
UN-28-512	Unknown Stream	Municipality													HIGH
UN-51-613	Unknown Stream	Municipality													LOW
UN-51-616	Unknown Stream	Municipality													HIGH
UN-51-937	Unknown Stream	Municipality													LOW
UN-52-628	Unknown Stream	Municipality													LOW
UN-52-634	Unknown Stream	Municipality													LOW
UN-53-627	Unknown Stream	Municipality													LOW
UN-53-853	Unknown Stream	Municipality													LOW
UN-56-955	Unknown Stream	Municipality													LOW
UN-57-1085	Unknown Stream	Municipality													LOW
UN-57-648	Unknown Stream	Municipality													LOW
UN-57-649	Unknown Stream	Municipality													LOW

Town of Agawam - Outfall Inventory and Priority Ranking Matrix

Outfall ID	Receiving Water	Owner	Previous Screening Results Indicate Likely Sewer Input? [1]	Discharging to Area of Concern to Public Health? [2]	Frequency of Past Discharge Complaints	Receiving Water Quality [3]	Density of Generating Sites [4]	Age of Development/ Infrastructure	Density of Historic Combined Sewers or Septic? [5]	Aging Septic?	Density of Septic Failures since 2003?	Culverted Streams? [6]	Additional Characteristics	Score	Initial Priority Ranking
Infomration Source			Outfall Inspections and Sample Results	GIS Maps	Town Staff	Impaird Waters List	Land Use/GIS Maps, Aerial Photography	Land Use Information, Site Plans, Visual Observation	Town Staff, Site Plans, GIS Maps	Land Use, Town Staff	Town Staff, GIS Maps	GIS Maps, Site Plans	Other		
Scoring Criteria			Yes = 3 (Problem Outfall) No = 0	Yes = 3 No = 0	Frequent = 3 Occasional = 2 None = 0	Poor = 3 Fair = 2 Good = 1	High = 3 Medium = 2 Low = 1	> 40 Years = 3 20 - 40 Years = 2 < 20 Years = 1	High = 3 Medium = 2 Low = 1	> 30 Years = 3 < 30 Years = 0	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	TBD		
UN-57-650	Unknown Stream	Municipality													LOW
UN-57-651	Unknown Stream	Municipality													LOW
UN-57-652	Unknown Stream	Municipality													LOW
UN-57-653	Unknown Stream	Municipality													LOW
UN-57-655	Unknown Stream	Municipality													LOW
UN-59-1074	Unknown Stream	Municipality													LOW
UN-60-646	Unknown Stream	Municipality													LOW
UN-60-677	Unknown Stream	Municipality													LOW
UN-60-679	Unknown Stream	Municipality													LOW
UN-60-680	Unknown Stream	Municipality													LOW
UN-60-683	Unknown Stream	Municipality													LOW
UN-62-1036	Unknown Stream	Municipality													LOW
UN-62-951	Unknown Stream	Municipality													LOW
WB-36-1090	Westfield Brook	Municipality													LOW
WB-36-325	Westfield Brook	Municipality													LOW
WB-39-708	Westfield Brook	Municipality													HIGH
WB-39-714	Westfield Brook	Municipality													LOW
WB-40-705	Westfield Brook	Municipality													LOW
WB-41-715	Westfield Brook	Municipality													HIGH
WF-11-1060	Westfield River	Municipality													LOW
WF-11-232	Westfield River	Municipality													LOW
WF-11-235	Westfield River	Municipality													LOW
WF-27-968	Westfield River	Municipality													LOW
WF-37-723	Westfield River	Municipality													LOW
WF-37-725	Westfield River	Municipality													HIGH
WF-37-952	Westfield River	Municipality													HIGH
WF-38-1088	Westfield River	Municipality													HIGH
WF-38-730	Westfield River	Municipality													HIGH
WF-38-731	Westfield River	Municipality													HIGH
WF-38-732	Westfield River	Municipality													HIGH
WF-38-734	Westfield River	Municipality													HIGH
WF-39-1112	Westfield River	Municipality													HIGH
WF-39-710	Westfield River	Municipality													HIGH
WF-39-711	Westfield River	Municipality													HIGH
WF-39-713	Westfield River	Municipality													HIGH
WF-39-930	Westfield River	Municipality													HIGH
WF-39-931	Westfield River	Municipality													HIGH
WF-39-958	Westfield River	Municipality													HIGH
WF-40-706	Westfield River	Municipality													HIGH
WF-40-716	Westfield River	Municipality													HIGH
WF-40-720	Westfield River	Municipality													HIGH
WF-55-644	Westfield River	Municipality													HIGH
WF-55-741	Westfield River	Municipality													LOW
WF-61-685	Westfield River	Municipality													LOW
WF-61-950	Westfield River	Municipality													LOW
WF-62-1035	Westfield River	Municipality													HIGH
WF-62-689	Westfield River	Municipality													LOW
WH-16-313	White Brook	Municipality													HIGH
WH-16-521	White Brook	Municipality													LOW
WH-17-304	White Brook	Municipality													LOW
WH-17-496	White Brook	Municipality													LOW
WH-17-497	White Brook	Municipality													LOW
WH-17-524	White Brook	Municipality													LOW
WH-17-849	White Brook	Municipality													LOW
WH-19-302	White Brook	Municipality													LOW
WH-25-511	White Brook	Municipality													HIGH
WH-26-544	White Brook	Municipality													LOW
WH-26-545	White Brook	Municipality													LOW
WH-26-908	White Brook	Municipality													LOW

Town of Agawam - Outfall Inventory and Priority Ranking Matrix															
Outfall ID	**Receiving Water**	**Owner**	**Previous Screening Results Indicate Likely Sewer Input? [1]**	**Discharging to Area of Concern to Public Health? [2]**	**Frequency of Past Discharge Complaints**	**Receiving Water Quality [3]**	**Density of Generating Sites [4]**	**Age of Development/ Infrastructure**	**Density of Historic Combined Sewers or Septic? [5]**	**Aging Septic?**	**Density of Septic Failures since 2003?**	**Culverted Streams? [6]**	**Additional Characteristics**	**Score**	**Initial Priority Ranking**
Infomration Source			Outfall Inspections and Sample Results	GIS Maps	Town Staff	Impaird Waters List	Land Use/GIS Maps, Aerial Photography	Land Use Information, Site Plans, Visual Observation	Town Staff, Site Plans, GIS Maps	Land Use, Town Staff	Town Staff, GIS Maps	GIS Maps, Site Plans	Other		
Scoring Criteria			Yes = 3 (Problem Outfall) No = 0	Yes = 3 No = 0	Frequent = 3 Occasional = 2 None = 0	Poor = 3 Fair = 2 Good = 1	High = 3 Medium = 2 Low = 1	> 40 Years = 3 20 - 40 Years = 2 < 20 Years = 1	High = 3 Medium = 2 Low = 1	> 30 Years = 3 < 30 Years = 0	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	TBD		
WH-26-909	White Brook	Municipality													LOW
WH-26-910	White Brook	Municipality													LOW
WH-26-917	White Brook	Municipality													LOW
WH-27-546	White Brook	Municipality													HIGH
WH-27-911	White Brook	Municipality													LOW
WO-47-1097	Worthington Brook	Municipality													LOW
WO-47-583	Worthington Brook	Municipality													LOW
WO-47-588	Worthington Brook	Municipality													LOW
WO-47-589	Worthington Brook	Municipality													LOW
WO-66-701	Worthington Brook	Municipality													HIGH
WO-66-702	Worthington Brook	Municipality													LOW
WO-67-703	Worthington Brook	Municipality													HIGH
WO-67-704	Worthington Brook	Municipality													HIGH

Appendix D

Employee Training Log Template

Town of Agawam
TOPIC

Sign-in Sheet

DATE:		
SPECIFIC TOPICS DISCUSSED		
TRAINING GIVEN BY:.		
IN ATTENDANCE:		
Name	**Signature**	**Position/Title**