

## Westford Outfall Inventory and Dry Weather Screening Field Effort Summary

**To:** Paul Starratt, P.E., Town Engineer  
**COPY:** Jeremy Downs, P.E., Assistant Town Engineer  
Chip Barrett, Highway Superintendent  
**DATE:** June 29, 2018

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Per *Section 2.3.4.7.b Dry Weather Outfall and Interconnection Screening and Sampling* of the 2016 Small Municipal Separate Storm Sewer Systems (MS4) General Permit, “**all outfalls/interconnections ... shall be inspected for the presence of dry weather flow within three (3) years of the permit effective date.**” This memorandum presents a summary of Tighe & Bond’s outfall investigation field work and findings for approximately the first third of Westford’s mapped outfalls and interconnections. Tighe & Bond visited 237 previously mapped outfall locations and sampled at 2 outfalls or upstream drainage structures with dry weather flow. An additional 12 outfalls were located and mapped during the Fall 2017 field effort.

### 1. Summary of Fall 2017 Outfall Investigations

Section 1 of this memorandum provides a summary of the outfall inventory and dry weather screening investigations that were completed in Fall of 2017.

#### 1.1 Preparation for Field Work

To remain in compliance with General Permit *Section 2.3.4.6* requirements, Tighe & Bond developed a Westford-specific *Dry Weather Sampling Procedure* for outfall investigations and sampling efforts undertaken during this contract. This sampling procedure describes the steps to follow to prepare for and complete outfall investigations and dry weather flow sampling, including which constituents to sample for in each receiving waterbody’s watershed. Westford’s *Dry Weather Sampling Procedure* is available in Attachment 1. This sampling procedure should be added to Appendix H “Illicit Discharge Detection Procedures” of the June 2012 Illicit Discharge Detection and Elimination (IDDE) Plan by Woodard & Curran. Field test kits were used for chlorine analysis. Laboratory analysis was completed for surfactants, ammonia, and all water quality impairment samples (see Section 1.3 for more information about Westford’s impaired waters).

## 1.2 Field Data Collection Tablet Application

Prior to the Fall 2017 outfall investigations, Tighe & Bond developed a digital field form in Survey123 for ArcGIS Online, which was used to record outfall attribute information using a tablet during the field work. It was also used to note whether dry weather flow was present at each outfall and, if it was, the results of the sampling effort. Paper field sheets, which the tablet form is based on, were developed to be used in case of tablet error. An example of this field sheet is available in Attachment 2. This field sheet may be used for future outfall investigations and sampling efforts.

## 1.3 Impaired Waters

Westford, located within both the Merrimack River and Sudbury-Assabet-Concord (SuAsCo) Rivers watersheds, has a number of impaired waters. The following table lists the waterbody and the pollutants of concern that must be evaluated under the IDDE Program. More information pertaining to Westford's receiving waters and impairments is available in Appendix E of the *Stormwater Management Master Plan Volume 1* developed by Tighe & Bond in Spring 2016. For these pollutants of concern, the Town must include additional water quality analysis for outfalls directly discharging to the impaired water body. In the case of the Assabet River Total Maximum Daily Load (TMDL), the target phosphorous load allocation considers watershed-wide runoff, and all receiving waters within the watershed are subject to the TMDL. The *Dry Weather Sampling Procedure* in Attachment 1 provides the required analysis for each of the pollutants of concern listed in the table below.

Screenshot from Survey123

### Westford's Pollutants of Concern for Impaired Waters

Waterbody Name	Segment ID	Pollutants of Concern for Impairment or TMDL
Assabet River	MA82B-07	Total Phosphorus (EPA TMDL No. 35109) Fecal Coliform
Beaver Brook	MA84B-02	Total Suspended Solids Low pH Dissolved Oxygen
Stony Brook	MA84B-03	Fecal Coliform Turbidity
Stony Brook	MA84B-04	E. coli
Deep Brook	MA84A-21	Total Suspended Solids E. coli
Tadmuck Brook	MA84B-07	E. coli
Heart Pond	MA82059	E. coli

## 1.4 Fall 2017 Field Work Background

Tighe & Bond along with Westford Highway Department Staff completed outfall investigations on August 25, August 31, September 1, October 4, October 5, and December 21, 2017, including gathering outfall inventory<sup>1</sup> data and sampling at outfalls if dry weather flow<sup>2</sup> was present. The *Dry Weather Sampling Procedure* was followed for each outfall investigation and may be used for future outfall investigations. Tighe & Bond visited 251 outfalls, which was approximately 1/3 of the Town's outfalls at the start of the fieldwork effort. See Section 2 of this memorandum for results from the field effort.

Tighe & Bond will deliver updated GIS to the Town with the results of the outfall investigation and dry weather sampling, including photographs of the outfalls investigated, additional outfall attributes, and water quality screening and laboratory results.

The map in Attachment 3 shows the locations of all mapped outfalls in Westford. Each outfall is denoted as to whether the outfall inventory and dry weather screening were completed under the Fall 2017 field effort.

Attachment 4 contains the complete outfall inventory for Westford, including sampling requirements, investigation dates, and notes for each outfall investigated during the Fall 2017 field effort. Tighe & Bond will update this table during subsequent outfall investigations, and the Town is required to include the updated inventory in each Annual Report to EPA.

## 2. Results

Section 2 of this memorandum presents the results of the outfall investigations and dry weather flow sampling. The following is a summary of the Fall 2017 field work results:

- There were 251 attempted outfall investigations:
  - 190 outfalls were successfully investigated and are denoted with purple triangles in Attachment 3
  - 13 outfalls were visited but not fully investigated (this includes submerged outfalls and outfalls that could not be located per Sections 2.2 through 2.5 of this memorandum) and are denoted with orange triangles in Attachment 3
  - 48 additional outfalls were visited and should be removed from the outfall list since they are another stormwater asset (i.e., culvert ends or BMP structures). These were denoted as dark gray triangles in Attachment 3
- 2 outfalls had dry weather flow and were sampled and are denoted with green circles in Attachment 3 (see Section 2.1 of this memorandum for additional information)
- 14 unmapped outlets were discovered, mapped in GIS, and inventoried during this fall field effort (see Section 2.6). Two of the 14 were ultimately determined to be private and removed from the outfall inventory.

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<sup>1</sup> **Inventory:** This term refers to the General Permit requirement in *Section 2.3.4.7.a* to visually inspect each outfall during dry weather conditions and collect prescribed data such as location, size, and visual and olfactory evidence of an illicit discharge.

<sup>2</sup> **Dry Weather Flow:** This term refers to when there is flow present at an outfall/interconnection and there has been less than 0.10 inches of rainfall in the previous 24 hours and no significant snow melt is occurring.

- 437 mapped outfalls were not visited (to be investigated during subsequent field work efforts) and are denoted with light grey triangles in Attachment 3

## 2.1 Dry Weather Flow Sampling Results

Per General Permit requirements, ammonia, chlorine, conductivity, salinity, E. coli, surfactants, temperature, and pollutants of concern must be measured at every outfall where dry weather flow is found. Specific information about the pollutants of concern is included in the *Dry Weather Sampling Procedure*.

Per *Section 2.3.4.7.a.ii* of the General Permit, likely sewer input indicators include any of the following:

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

Class B waters, per *314 CMR 4.05*, are designated as a habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation. The E. coli water quality criteria for Class B waters are as follows:

- During the bathing season,
  - A single sample shall not exceed 235 colonies per 100 mL; and
  - The geometric mean of the five (5) most recent samples shall not exceed 126 colonies per 100 mL.
- During the non-bathing season,
  - A single sample shall not exceed 235 colonies per 100 mL; and
  - The geometric mean of all samples taken within the most recent six (6) months shall not exceed 126 colonies per 100 mL (typically based on a minimum of five [5] samples).

Additionally, Reed Brook is categorized as a Cold-Water Fishery and thus has differing water quality standards as pertains to dissolved oxygen and temperature per *314 CMR 4.05*. These standards are as follows:

- Dissolved oxygen shall not be less than 6.0 mg/L; and
- Temperature shall not exceed 68° F based on the mean of the daily maximum temperature over a seven-day period.

Per *Section 2.3.4.7.a* of the General Permit, all outfalls within the MS4 must be ranked as high priority or low priority outfalls. As described above, outfalls should be considered high priority if there is dry weather flow with pollutant concentrations or visual observations that meet the criteria for a likely sewer input. The permit also requires that discharges that may cause or contribute to an in-stream exceedance of surface water quality standards should be considered a high priority for catchment investigation.

Tighe & Bond sampled at two (2) outfalls with dry weather flow during the Fall 2017 field effort. These outfalls are listed in the table below.

#### Outfalls Where Dry Weather Sampling was Conducted (Fall 2017)

Outfall ID	Sampling Location	Street
OF_7	Outfall	Woodbine Terrace
OF_1043	Outfall	Pine Tree Trail

Sampling results are included in the Outfall Sampling Summary in Attachment 5. The Summary has a color-coded ranking system for the results of the outfall monitoring, which demonstrates the severity of the sampling results (i.e., a red result denotes a higher, potentially problematic concentration of a stormwater pollutant). The ranking system uses known EPA benchmarks and other water quality benchmarks from Federal and State resources for each pollutant analyzed. This system was used to clearly understand the water quality at each outfall and will be used to determine the follow-up outfall prioritization required by *Section 2.3.4.7.c* of the General Permit. A priority ranking of "low" or "high" will be given to each outfall depending on sampling results and its potential for the presence of an illicit discharge at the conclusion of the three (3) years of outfall investigation field work.

**Characteristics of Likely Sewer Input:** No location sampled during the Fall 2017 field effort met EPA's criteria for a likely sewer input. Although ammonia and chlorine levels slightly exceeded EPA benchmarks at OF\_1043, the levels of surfactants and E. coli were below the reporting limit. It is unlikely that there is a sewer input to OF\_1043. Similarly, while chlorine levels at OF\_7 exceeded the EPA benchmark, the levels of surfactants, ammonia, and E. coli were below reporting limits and it is not likely that there is a sewer input to OF\_7.

## 2.2 Outfalls That Could Not Be Located

The table below summarizes the outfalls that could not be located during this field effort after a significant attempt to do so. These outfalls are noted in Attachment 3 as "Visited" and additional notes are provided in Attachment 4. This will require further improvement of the Town's stormwater mapping to update connectivity and outfall location. Tighe & Bond recommends the Town visit these locations during or immediately after a significant rainfall in an attempt to locate the outfalls when flowing.

#### Outfalls That Could Not Be Located (Fall 2017)

Outfall ID	Street	Notes
OF_241	Ledgewood Drive	Could not field locate in area near GIS location
OF_432	North Street	Could not field locate in area near GIS location
OF_573	Loon Way	Could not field locate in area near GIS location
OF_1047	Moore Road	Could not field locate in area near GIS location
OF_1063	Sherwood Drive	Could not field locate in area near GIS location
OF_1069	Groton Road	Could not field locate in area near GIS location
OF_1073	Poplar Road	Could not field locate in area near GIS location

Based on field observations, OF\_1047 appears to discharge into the culvert under the bridge. The upstream drain manhole could not be opened at the time of investigation to determine the outlet direction. As the bridge was replaced recently, the Town should examine any as-builts in order to determine the outfall location. Additionally, the Town should examine as-builts in the area of OF\_1073. Based on field observations, the outlet is either buried or was extended back to connect with other drainage downstream to reduce/prevent flooding in the mapped location.

## 2.3 Submerged Outfalls

The outfalls included in the table below were at least partially submerged due to high water levels downstream. Per *Section 2.3.4.7.b.2.iii* of the General Permit, if an outfall is inaccessible or submerged, the investigator shall proceed to the first accessible upstream drain manhole or catch basin for the observation and sampling effort and report the location

with the screening results. Tighe & Bond was able to complete dry weather monitoring in upstream structures for 14 of the 16 submerged outfalls during this field effort. These outfalls are noted as "Inventory Complete" in Attachment 3 and additional notes are provided in Attachment 4. The remaining two outfalls, OF\_1007 and OF\_368, were unable to be inventoried because they were completely submerged. These outfalls are labeled as "Visited" in Attachment 3 and should be revisited in subsequent field efforts.

Submerged Outfalls (Fall 2017)

Outfall ID	Street	Notes
OF_ 97-1	North Hill Road	Partially submerged, checked upstream catch basin, no flow
OF_107	Winding Way	Partially submerged, checked upstream catch basin, no flow
OF_109	North Hill Road	Partially submerged, checked upstream catch basin, no flow
OF_139	Villanova Drive	Partially submerged, checked upstream catch basin, no flow
OF_146	Plain Road	Partially submerged, checked upstream catch basin, no flow
OF_161	Oak Hill Road	Partially submerged, checked upstream catch basin, no flow
OF_165	Moore Avenue	Partially submerged, checked upstream catch basin, no flow
OF_292	Fairview Drive	Partially submerged, checked upstream catch basin, no flow
OF_293	Tadmuck Lane	Partially submerged, checked upstream catch basin, no flow
OF_294	Tadmuck Lane	Partially submerged, checked upstream catch basin, no flow
OF_368	Groton Road	Partially submerged, source of dry weather flow tracked to a retaining wall at a private residence and the Water Dept. was notified
OF_538	Lakeside Terrace	Partially submerged, outlet from detention pond, overflow structure was not submerged and therefore outfall was not flowing
OF_1007	Tyngsboro Road	Submerged, checked upstream drain manhole, no flow
OF_1038	Cam Road	Partially submerged, checked upstream catch basin, no flow
OF_1065	Sherwood Drive	Partially submerged, checked upstream catch basin, no flow
OF_1066	Stratton Hill Road	Partially submerged, checked upstream catch basins, no flow

Outfall OF\_1007 was completely submerged and will need to be revisited to complete the outfall investigation once the downstream water levels have receded. Outfall OF\_368 was located and the source of dry weather flow was traced upstream to a residential property. The Water Department investigated as a possible water main break but determined that a fish pond at the property was leaking under a retaining wall into the street. It is unknown whether the property owners have resolved this issue, but this outfall will need to be investigated again during dry weather.

## 2.4 Outfalls That Could Not Be Accessed

Four (4) outfalls could not be accessed during this field effort. These outfalls are noted in Attachment 3 as “Visited” and additional notes are provided in Attachment 4. The Town should coordinate with the owner and attempt to locate and investigate these outfalls under a subsequent field effort.

### Inaccessible Outfalls (Fall 2017)

Outfall ID	Street	Notes
OF_39	Village View Road	Located behind fence
OF_1033	Nabnasset Street	Located on steep/overgrown slope
OF_1039	Williams Avenue	Overgrown
OF_1040	Links Road	Located on steep/overgrown slope

## 2.5 Outfalls to be Removed from the MS4

There were some mapped outfalls investigated in the Fall 2017 field work that were determined to be culvert inlets or outlets or inlets to Best Management Practices (BMPs) such as infiltration basins or detention ponds. **Note that while the General Permit does not require culverts to be investigated, culverts “longer than a simple road crossing” should be considered an outfall.** Additionally, MS4 discharges to any culvert should be evaluated for illicit discharge potential.

Additionally, private outfalls are not regulated under the Town’s MS4 permit and do not need to be included in the IDDE program. The following table contains a list of the previously mapped outfalls Tighe & Bond believes are either not regulated under the Town’s MS4 permit or are not considered outfalls due to being BMP inlets or culverts. These structures should be reviewed by the Town before final removal from the outfall inventory in the Town’s MS4 program.

### Outfalls to be Removed from the MS4 (Fall 2017)

Outfall ID	Street	Reason
OF_32	Mitchell Way	Inlet to BMP. Not an outfall.
OF_62	Adams Lane	Private
OF_70	Blanchard Lane	Private
OF_74	Blanchard Lane	Private
OF_122	Tenney Road	Culvert. Not an outfall.
OF_145	Villanova Drive	Culvert. Not an outfall.
OF_161	Oak Hill Road	Culvert. Not an outfall.
OF_241	Ledgewood Drive	Private
OF_336	Old Groton Road	Duplicate Point
OF_342	Groton Road	Culvert. Not an outfall.
OF_364	Woods Pond Road	Culvert. Not an outfall.
OF_434	Hopkins Place	Inlet to BMP. Not an outfall.
OF_435	Hopkins Place	Inlet to BMP. Not an outfall.
OF_436	Hopkins Place	BMP outlet control structure (point of compliance is UNK-15)
OF_438	Chatfield Circle	Inlet to BMP. Not an outfall.
OF_441	Hopkins Place	Inlet to BMP. Not an outfall.
OF_442	Hopkins Place	Inlet to BMP. Not an outfall.
OF_444	Hopkins Place	Inlet to BMP. Not an outfall.
OF_480	Curren Drive	Inlet to BMP. Not an outfall.
OF_532	Birchwood Drive	Inlet to BMP. Not an outfall.
OF_534	Pond View Circle	Inlet to BMP. Not an outfall.
OF_535	Pond View Circle	Inlet to BMP. Not an outfall.
OF_536	Pond View Circle	Inlet to BMP. Not an outfall.

Outfall ID	Street	Reason
OF_537	Pond View Circle	Inlet to BMP. Not an outfall.
OF_550	Gooseneck Lane	Inlet to BMP. Not an outfall.
OF_553	Blue Heron Drive	Duplicate Point
OF_900	Villanova Drive	Culvert. Not an outfall. Remove from inventory.
OF_901	Blanchard Lane	Private
OF_903	Blanchard Lane	Private
OF_904	Blanchard Lane	Private
OF_905	Blanchard Lane	Private
OF_1010	Groton Road	Inlet to BMP. Not an outfall.
OF_1011	Groton Road	Inlet to BMP. Not an outfall. Remove from inventory.
OF_1012	Groton Road	Inlet to BMP. Not an outfall. Remove from inventory.
OF_1013	Groton Road	Inlet to BMP. Not an outfall. Remove from inventory.
OF_1021	Rolling Meadow Lane	Inlet to BMP. Not an outfall. Remove from inventory.
OF_1036	Moore Avenue	Culvert. Not an outfall. Remove from inventory.
OF_1064	Stony Brook Road	Culvert. Not an outfall. Remove from inventory.
OF_1080	Moore Avenue	Culvert. Not an outfall. Remove from inventory.
UNK-6	Gooseneck Lane	Culvert. Not an outfall. Remove from inventory.
UNK_16	Hopkins Place	Does not exist.
UNK-25	Haywagon Circle	Culvert. Not an outfall. Remove from inventory.
UNK-38	Fernwood Drive	Inlet to BMP. Not an outfall. Remove from inventory.
UNK_43	Lorden Drive	Does not exist.
UNK-48	Strawberry Lane	Inlet to BMP. Not an outfall. Remove from inventory.
UNK-69	Blanchard Lane	Curb cut near OF_62
UNK-70	Blanchard Lane	Curb cut located between Bates Lane and Adams Lane
UNK-50	Strawberry Lanes	Inlet to BMP. Not an outfall. Remove from inventory.

## 2.6 Outfalls Not Previously Mapped

While completing outfall investigations in Fall 2017, Tighe & Bond mapped and inventoried 14 additional outlets. UNK-69 and UNK-70 on Blanchard Lane were confirmed to be private and were removed from the outfall inventory as stated in Section 2.5. The location and inventory for these outfalls are included in the GIS mapping to be delivered to the Town under separate cover.

### Outfalls Located and Mapped (Fall 2017)

Outfall ID	Street	Notes
UNK-63	Perham Circle	Outfall from BMP, located near OF_485
UNK-64	Fernwood Drive	Overflow outfall from BMP, located near OF_1019
UNK-65	Quarry Hill Road	Located near OF_1006
UNK-66	Cherry Lane	Appears to enter drainage basin (overflow structure is present). Located near OF_1067.

Outfall ID	Street	Notes
UNK-67	Cherry Lane	Appears to enter drainage basin (overflow structure is present). Located near OF_1067.
UNK-68	Tyngsboro Road	Curb cut near OF_1005
UNK-69	Blanchard Lane	Curb cut near OF_62 (Confirmed Private)
UNK-70	Blanchard Lane	Curb cut located between Bates Lane and Adams Lane (Confirmed Private)
UNK-71	Nutting Lane	Outfall near OF_136
UNK-72	North Street	Mapped near OF_254. Potentially a roof leader, requires further investigation.
UNK-73	Hidden Valley Road	Outfall for North Hill Road drainage
UNK-74	Tadmuck Lane	Curb cut near OF_293 and OF_294
UNK-75	Villanova Drive	Outfall discharges into culvert on Villanova Drive from southern CB. No flow.
UNK-76	Villanova Drive	Outfall discharges into culvert on Villanova Drive from eastern DMH. No flow.

## 2.7 Outfalls Requiring Maintenance

Some of the outfalls visited during Tighe & Bond's field efforts were partially or completely full of sediment, leaves, or debris. Tighe & Bond recommends that the outfall pipes and discharge areas of all outfalls are maintained on a regular basis for proper function of the drainage system. See also Section 4.2 of the *Stormwater Management Master Plan Volume 3: Town-wide Operation & Maintenance Plan (October 2016)*. The outfalls included in the table below were noted to have maintenance issues during the Tighe & Bond field effort and should be evaluated by Town staff and cleaned and/or repaired as soon as possible.

### Outfalls Requiring Maintenance (Fall 2017)

Outfall ID	Street	Reason
OF_110	Hidden Valley Road	Pipe fractured in multiple places. Outlet was not located. Needs to be exposed and replaced if needed.
OF_146	Plain Road	Partially buried in sediment, needs to be cleaned. Sediment buildup has created a damming effect, causing water to pool at the end of the outfall.
OF_292	Fairview Drive	Outfall discharges into a small ditch along a residents' property line and causes flooding issues at the residence.
OF_335	Old Groton Road	Partially buried in sediment, needs to be cleaned.
OF_349	Groton Road	Outfall is buried and needs to be exposed.
OF_540	Lakeside Terrace	Covered in yard waste, partially buried in sediment, needs to be cleaned
OF_1030	Tyngsboro Road	Covered in yard waste.
OF_1033	Nabnasset Street	Overgrown, steep slope.
OF_1037	Pine Tree Trail	Outfall almost completely buried in sediment, needs to be cleaned.
OF_1039	Williams Avenue	Overgrown.
OF_1045	Brookside Road	Covered in yard waste and debris.
OF_1063	Sherwood Drive	Covered in yard waste. Cannot locate.
OF_1069	Groton Road	Covered in yard waste.
OF_1072	Forrest Road	Covered in yard waste.
OF_1073	Poplar Road	Cannot locate. Appears to be buried.

OF\_292 discharges into a small ditch located on the property line between two residences. The ditch is in a low-lying area and travels approximately 75 feet east into adjacent wetlands. The ditch is quite small and the outlet is partially covered with sediment. When performing the outfall investigation, the resident at 13 Fairview Drive stated the water does not flow freely from the outfall to the wetlands and therefore floods his lawn and basement during

even some minor storm events. This outfall and swale should be further investigated and improved if needed.

During the inspection of outfalls 97-1, 97-2, 97-3 and 97-4, a homeowner approached the field crew and stated that he has been trying to maintain the outfalls and swale. However, it has become more difficult in recent years due to the extensive amount of cleaning required; a large amount of silt/sediment has built up over time and has started to impede the flow of water causing severe flooding in the yards and basements of surrounding homes during heavy storm events. The Town should confirm that this is not a private drainage system, and if so, the outfall and swale should be investigated and improved if needed.

### 3. Conclusions and Recommendations

This outfall investigation and dry weather monitoring effort was completed as part of the Town's IDDE Program, and begins to satisfy the requirements of General Permit *Section 2.3.4.7 Outfall/Interconnection Inventory and Initial Ranking and Dry Weather Outfall and Interconnection Screening and Sampling* for outfalls. This memorandum will be appended to the Town's written IDDE Plan as Appendix I.

As of the date of this memorandum, Tighe & Bond has visited 251 of Westford's mapped outfall locations and completed the outfall investigation and dry weather screening at 190 outfalls. The table below summarizes updates to the outfall mapping and inventory after field investigations. The remainder of the Town's known outfalls and interconnections will be located and investigated under subsequent field efforts to satisfy the Permit requirements.

Outfall Inventory Summary – June 2018

	Change	Subtotal
Total Mapped Outfalls at Beginning of Effort		674
Outfalls Discovered during Investigations	+14	688
Mapped Outfalls Removed from Inventory	-48	640
<b>Revised Total Number of Outfalls in Inventory</b>		<b>640</b>

No outfalls and upstream structures investigated during this field effort have evidence of a direct or indirect sanitary wastewater connection.

Specific recommendations based on field observations have been listed throughout this report. The following are additional recommendations for the Town. Note that the Town can complete these tasks, and/or they can be completed by a Contractor in subsequent Permit Years.

- **Continue to improve drainage mapping.** Westford should continue to improve drainage system mapping by digitizing record plans. Connectivity between structures and outfalls must be investigated and confirmed, and the GIS mapping updated accordingly. Currently, the outfall count is over-estimated due to some mapping inaccuracies (i.e., culverts, BMPs marked as outfalls) as well as duplicate mapping and mapping of private drainage. All should be resolved and labeled appropriately. Tighe & Bond has completed a preliminary assessment of outfall mapping delivered under a separate cover.
- **Continue to implement drainage system operation and maintenance.** The Town should continue to implement the drainage system maintenance program, which includes cleaning outfalls as necessary to keep the drainage system functional. Refer

to the *Stormwater Management Master Plan Volume 3: Town-wide Operation & Maintenance Plan*.

- **Complete outfall/interconnection investigation and priority ranking.** Per General Permit *Section 2.3.4.7*, the Town must locate, investigate and prioritize all outfalls and interconnections and investigate them for dry weather flow by Permit Year 3. Tighe & Bond has completed the Permit Year 1 outfall inventory and priority ranking and a summary memo and mapping has been provided under a separate cover. Of Westford's 640 mapped outfalls, 437 remain to be visited and investigated and another 13 will need to be revisited as discussed herein.
  
- **Public education and outreach.**
  - During the inspections of OF\_116 (Forrest Road) and OF\_1023 (Briarwood Drive), pet waste bags were observed near the outfalls and/or within the discharge channel. There were no other signs of illicit discharges. It appears that a resident(s) within the neighborhood disposes of their pets' waste in catch basins. Targeted public education and outreach on proper pet waste management is recommended in this neighborhood. As a first step the Town should apply the SuAsCo storm drain markers to neighborhood catch basins.
  - A number of outfalls throughout Town were found to be either completely buried or partially buried by yard waste (i.e. grass clippings, leaves, branches). It is recommended that targeted public education and outreach pertaining to the proper disposal of yard waste be performed in a number of neighborhoods. It is important for residents to understand how these practices may negatively impact their homes and neighborhoods (i.e. flooding, increase in drainage maintenance costs, etc.).
  - As noted above, a second 'outfall' was located during the inspection of OF\_254. Additionally, the origins of OF\_97-2, 97-3 and 97-4 are unknown. The Town should consider a public education campaign that focuses on what non-stormwater discharges to the storm drain are allowable (i.e. foundation drain discharges) and what are considered an "illicit discharge".
  
- **Follow-up investigations for OF\_298.** During the investigation OF\_298 (Fairview Drive) was not flowing. However, the pool downstream of the outfall had an orange and brown 'slime', an oily sheen, and a slight sewage odor was observed in the area. The area was revisited during the December 21<sup>st</sup> investigations. No flow was observed from the outfall but, foaming in the stream was observed. It is recommended this outfall is revisited to see if these issues persist and to try and identify the source. Additionally, it is recommended that the Town review any data that may have been collected in this area by the Stream Team.

## Attachments

- Attachment 1: Westford, MA Dry Weather Sampling Procedure
- Attachment 2: Outfall Reconnaissance Inventory/Sample Collection Field Sheet
- Attachment 3: 2017 Outfall Inventory and Sampling Map
- Attachment 4: 2017 Outfall Inventory Summary
- Attachment 5: Outfall Sampling Summary

# **Attachment 1**

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## **Dry Weather Sampling Procedure**

## **Westford, MA Dry Weather Sampling Procedure**

- 1) Review supplies of sampling bottles on a weekly basis and order as necessary for field sampling activities.
- 2) Notify the Town of Westford of sampling schedule prior to going into the field:
  - a. Engineering Department: 978-692-5520
  - b. Police Department: 978-692-2161
- 3) Observe the physical attributes of each outfall or sampling location.
- 4) If dry weather flow is present, note flow volume, odor, and all other characteristics listed on the data collection form. If using an iPad, fill in form fields or drop down menus as needed. Note: If there is a clear illicit discharge, determine the flow volume by placing a 1 L bottle under the flow and recording the time it takes to fill the bottle. Otherwise, simply note flow volume as trickling, moderate or substantial.
  - a. In the event that the flow is too slow to sample, place a sandbag upstream of the outfall to capture flow and return to the site in 24 hours to obtain a sample.
  - b. In the event that the outfall is partially or completely submerged in the receiving water, record as much outfall inventory information as possible, but do not take a sample. Proceed to the next upstream structure (manhole or catch basin). If flow is present in the upstream structure, sample from the pipe contributing the flow. If multiple pipes are entering the structure and flowing, sample from all pipes and record from which pipes the samples were taken. Do not sample from the pool present in the structure's sump. If there is no flow present in the upstream structure, mark the downstream outfall as "no dry weather flow."
  - c. In the event that the outfall is submerged in the receiving water and the next upstream structure is partially or completely full, continue to travel upstream to the next empty structure to complete the inspection procedure detailed in 4.b above.
- 5) Sample outfalls as close to the outfall opening as possible, wearing a fresh pair of disposable gloves.
- 6) Take a photograph of the outfall with an iPad or camera. If paper field forms are being used, hold a piece of paper or a white board with the unique identifier written on it in the photograph.
- 7) Meters: A properly calibrated meter should be used to record the following parameters directly from the stream or outfall:
  - a. Chlorine
  - b. Conductivity
  - c. Salinity
  - d. Temperature
  - e. pH (for applicable watersheds only)
  - f. Dissolved oxygen (for applicable watersheds only)

When flow volume or depth is insufficient to immerse the meter probe, a clean sample bottle may be used to collect a sufficient volume of water to immerse the probe. In such instances, meter readings should be taken immediately.

8) Threshold Levels: In situ readings will be compared to field thresholds as follows:

Parameter	Threshold Level	Source
Surfactants	≥ 0.25 mg/L	EPA New England Bacterial Source Tracking Protocol
Ammonia	≥ 0.5 mg/L	EPA New England Bacterial Source Tracking Protocol
Chlorine	≥ 0.02 mg/L	EPA 2016 General Permit
pH	< 5	Center for Watershed Protection
Conductivity	> 2,000 μS/cm	Center for Watershed Protection
Dissolved Oxygen (DO)	< 5.0 mg/L	314 CMR 4.00 for Class B Warm Water
	< 6.0 mg/L	Reed Brook only. Class B Cold Water.
Temperature (°F)	> 83 °F	314 CMR 4.00 for Class B Warm Water
	> 68 °F	Reed Brook only. Class B Cold Water.
Salinity	> 0.5 ppt Rivers	EPA Voluntary Estuary Monitoring Manual

9) Water quality samples will be taken for laboratory analysis according to the following table. Each bottle will be marked with time, date, and outfall identifier, and parameter to be analyzed. Once all required samples are taken for an individual outfall, the samples for that outfall should be placed in a Ziploc bag that has the outfall identifier, date and time recorded on the bag. The bag should then be placed in the cooler, on ice.

All Flowing Outfalls	Impaired Waters	EPA Approved Method for Analysis
<p><b>E. coli</b> samples should be collected first, in a separate sterile sample bottle.</p> <p><b>Ammonia</b></p> <p><b>Surfactants</b></p> <p><b>Chlorine</b> (<i>field test kit</i>)<sup>1</sup></p>	<p><b><u>Beaver Brook (MA84B-02):</u></b>  <i>(Class B, Warm Water)</i>                      Fecal Coliform                      BOD<sub>5</sub>                      TSS                      Total Phosphorus  <i>pH (meter)</i>  <i>Temperature (meter)</i>  <i>Dissolved Oxygen (meter)</i></p> <p><b><u>Stony Brook (MA84B-03):</u></b>  <i>(Class B, Warm Water)</i>                      Fecal Coliform                      TSS                      Turbidity</p> <p><b><u>Stony Brook (MA84B-04):</u></b>  <i>(Class B, Warm Water)</i>  <i>E. coli (already part of sampling requirements)</i></p> <p><b><u>Deep Brook (MA84A-21):</u></b>  <i>(Class B, High Quality)</i>                      TSS  <i>E. coli (already part of sampling requirements)</i></p> <p><b><u>Tadmuck Brook (MA84B-07):</u></b>  <i>(Class B, High Quality)</i>  <i>E. coli (already part of sampling requirements)</i></p> <p><b><u>Heart Pond (MA82059):</u></b>  <i>(Class B, High Quality)</i>  <i>E. coli (already part of sampling requirements)</i></p> <p><b><u>Assabet River (MA82B-07):</u></b>  <i>(Class B, Warm Water)</i>                      Total Phosphorus<sup>2</sup></p>	<p><b>E. coli:</b>                      1603 (preferred); 1103.1; Colilert® 12 16; Colilert-18® 12 15 16; mColiBlue-24®17</p> <p><b>Ammonia:</b>                      350.1</p> <p><b>Surfactants:</b>                      SM 5540C (MBAS)</p> <p><b>Fecal Coliform:</b>                      1680; 1681</p> <p><b>BOD<sub>5</sub>:</b>                      SM-5210</p> <p><b>Total Phosphorus:</b>                      365.1; 365.2; 365.3; SM 4500-P-E</p> <p><b>TSS:</b>                      160.2; 180.1</p> <p><b>Turbidity:</b>                      160.2; 180.1</p> <p><b>pH:</b>                      150.2</p> <p><b>Dissolved Oxygen:</b>                      360.1; 360.2</p> <p><b>Chlorine, Conductivity, Salinity, Temperature:</b>                      Field test kit or meter</p>

Notes: 1. Impaired waters constituents that are in *blue* will be analyzed by a meter or as part of the 2016 General Permit sampling requirements, and do not require additional lab analysis.  
 2. All outfalls discharging to receiving waters within the Assabet River watershed are subject to the phosphorus TMDL.

Results should be recorded and samples placed in a cooler on ice. If using an iPad, fill in all form fields for sampling data. **Make note of the first bacteria sample time for determining the hold limit until lab analysis.** Bacteria sample hold time is 6 hours. Additionally, Nashoba Analytical does NOT accept BOD<sub>5</sub> samples on Mondays so any locations where BOD<sub>5</sub> samples are to be taken should be screened on a different day.

Upon completion of sampling and return to the laboratory, all samples will be turned over to the appropriate sample custodian(s) and accompanied by an appropriate Chain-of-Custody ("COC") form.

**Be sure to upload all data entry before leaving the site. If there is any doubt whether data was captured, duplicate information on paper forms.**

**Field Equipment Needed:**

• **PAPERWORK**

- Signed Site Safety Plan
- Chain of Custody form
- Bottle Labels in Ziploc Bag
- Field sheets (inspection forms)
- Center for Watershed Protection Chapter 11
- Field maps
- Sampling Plan & Locations
- Notebook

- Sample bottles (from lab, with hold-time and storage requirements)
- Extra sample bottles in case of contamination, cracking, or loss
- Sampling Pole
- Distilled water and/or cleaning agent for decontamination of sampling pole if used
- Cooler with ice
- Carry Caddy
- Digital Camera or iPad
- Cell Phone or hand-held radio
- First aid kit
- Flashlight or head lamp
- Nitrile gloves
- Tape measure

- YSI Meter(s) (*YSI-556: temperature, pH, conductivity, salinity, dissolved oxygen*)
- 1 liter bottle
- Watch with a second hand
- Ziploc bags
- Duct tape
- Sharpies
- Paper Towels
- Hand sanitizer
- Trash bag for solo cups, gloves, etc.
- White board/paper for unique outfall ID for photograph
- Sandbags

• **PERSONAL GEAR**

- Waders (or other appropriate footwear)
- Insect repellent
- Sunscreen
- Steel-toed boots (if opening manholes)
- Safety goggles
- Light colored shirts and pants on-site
- Reflective safety vest
- Business cards

# **Attachment 2**

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**Outfall Reconnaissance Inventory /  
Sample Collection Field Sheet**

# OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

## Section 1: Background Data

SUBWATERSHED:	Outfall ID:	LOCATION:
Today's date:	Time (Military):	
INVESTIGATORS:		
TEMPERATURE (°F):	RAINFALL (IN.):	LAST 72 HOURS:                      LAST 24 HOURS:
Photo #s and short description:		
Land Use in Drainage Area (Check all that apply):		
<input type="checkbox"/> Industrial (Known Industries): _____	<input type="checkbox"/> Open Space – Field	
<input type="checkbox"/> Residential	<input type="checkbox"/> Open Space – Wooded	
<input type="checkbox"/> Commercial/Institutional	Other: _____	
Notes (e.g., origin of outfall, if known):		

## Section 2: Outfall Description

MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> DI/CI <input type="checkbox"/> Clay <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____  <b>SLOPE (DEGREES)</b> <input type="checkbox"/> Flat <input type="checkbox"/> Moderate <input type="checkbox"/> Steep
In Water: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully			
With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully			

<b>PIPE CONDITION</b>	<input type="checkbox"/> Good <input type="checkbox"/> Cracked <input type="checkbox"/> Clogged with Debris <input type="checkbox"/> Crushed <input type="checkbox"/> Deteriorated (concrete) <input type="checkbox"/> Corroded (metal) <input type="checkbox"/> Other: _____
<b>OUTLET STRUCTURE</b>	<input type="checkbox"/> Headwall <input type="checkbox"/> Riprap <input type="checkbox"/> Flared End <input type="checkbox"/> No Outfall Protection <input type="checkbox"/> Other: _____
<b>In-Stream</b> (applicable when collecting samples)	<input type="checkbox"/> Yes <input type="checkbox"/> No <b>Maintenance/Repair Needed?</b> <input type="checkbox"/> No <input type="checkbox"/> Yes (See Section 8 for more description)
<b>Flow Present?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>
<b>Flow Description</b>	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial                      (If present)

## Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS			
PARAMETER (Threshold Level)	RESULT	UNIT	EQUIPMENT
TEMPERATURE		°F	YSI Meter or Thermometer
CONDUCTIVITY (> 2,000 umhos/cm)		umhos/cm	YSI Meter
SALINITY (> 0.5 ppt)		ppt	YSI Meter
DISSOLVED OXYGEN (< 5.0 mg/l)		mg/l	YSI Meter
PH (< 5)			YSI Meter
CHLORINE (> 0.02 mg/l)		mg/l	Hach Pocket Colorimeter II

## Outfall Reconnaissance Inventory Field Sheet

### Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow?  Yes  No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
ODOR	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
COLOR	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
TURBIDITY	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
FLOATABLES -DOES NOT INCLUDE TRASH!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

### Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present?  Yes  No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
DEPOSITS/STAINS	<input type="checkbox"/>	<input type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Paper/Trash <input type="checkbox"/> Foam <input type="checkbox"/> Heavy sedimentation deposits <input type="checkbox"/> Other: _____	
SURROUNDING VEGETATION	<input type="checkbox"/>	<input type="checkbox"/> Little or No Distress <input type="checkbox"/> Moderate Distress <input type="checkbox"/> High Distress	
ABNORMAL VEGETATION IN OUTFALL	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
ERODIBILITY	<input type="checkbox"/>	<input type="checkbox"/> Little or No Erosion <input type="checkbox"/> Small Areas of Erosion <input type="checkbox"/> Many Eroded Areas	
POOR POOL QUALITY	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
PIPE BENTHIC GROWTH	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

### Section 6: OVERALL OUTFALL CHARACTERIZATION AS AN ILLICIT DISCHARGE

Unlikely   
  Potential (presence of two or more indicators)   
  Suspect (one or more indicators with a severity of 3)   
  Obvious

### Section 7: Data Collection

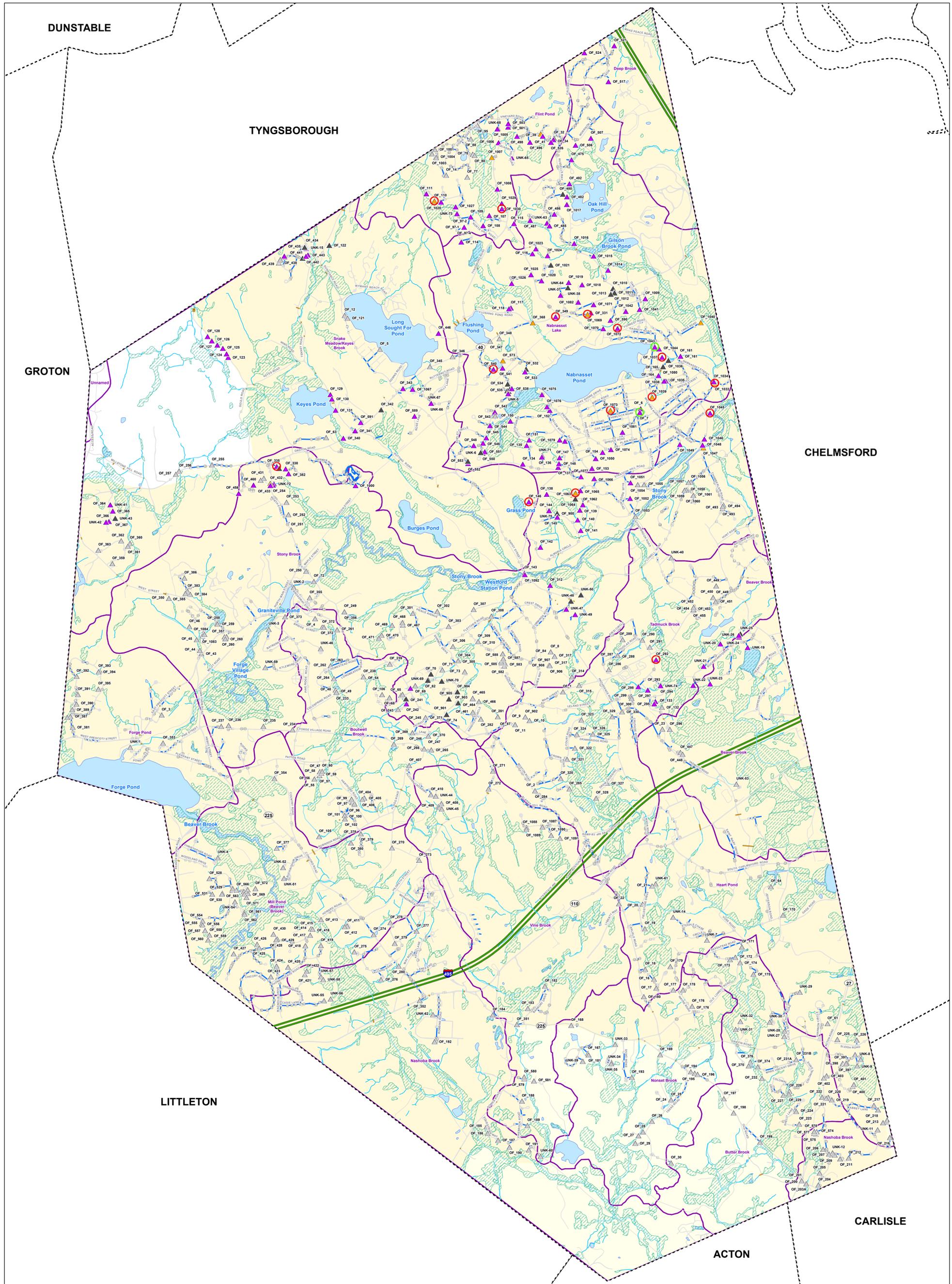
1. SAMPLE FOR THE LAB?	<input type="checkbox"/> Surfactants	<input type="checkbox"/> Ammonia	<input type="checkbox"/> E. Coli	<input type="checkbox"/> Fecal Coliform	<input type="checkbox"/> TSS	<input type="checkbox"/> Turbidity	<input type="checkbox"/> BOD <sub>5</sub>	<input type="checkbox"/> Total Phosphorus	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow		<input type="checkbox"/> Pool						
3. Intermittent flow trap recommended?	<input type="checkbox"/> Yes		<input type="checkbox"/> No						

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)? \_\_\_\_\_

# **Attachment 3**

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## **2017 Outfall Inventory & Sampling Map**



**Legend**

**Outfall Inventory**

- ▲ Investigation Complete
- ▲ Visited, Investigation Not Complete
- ▲ Remove from Inventory
- ▲ Did Not Visit
- Sampled
- Maintenance Needed
- Catch Basins
- Inlets
- Manholes
- Drain Pipes
- Culverts
- Stream/Intermittent Stream
- Sub-basin Boundary
- Urban Area (Census 2000)
- Urban Area (Census 2010)
- MassDEP Inland Wetlands
- Water Bodies
- Town Boundary



1 inch = 1,500 feet  
 0 1,500 3,000  
 Feet



**2017 OUTFALL INVENTORY AND SAMPLING**

Westford, Massachusetts

July 2018

**Tighe & Bond**  
 Engineers | Environmental Specialists

# **Attachment 4**

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## **2017 Outfall Inventory Summary**

**Outfall Inventory Summary**  
**Town of Westford, MA**



This is a summary of the Outfall Inventory required in the Small MS4 General Permit Steion 2.3.4.7.b.iii.1. Additional information for each outfall is in the Town's stormwater GIS, including date of inspections; outfall dimensions, shape, and material; spatial location; physical condition; and indicators of potential non-stormwater discharges.

Fieldwork ID	Outfall ID	Preliminary Prioritization Rank	Inventoried in 2017	Receiving Waterbody
OF_1000	OF_1000	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1005	OF_1005	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1006	OF_1006	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1008	OF_1008	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1009	OF_1009	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1014	OF_1014	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1015	OF_1015	Low Priority	Yes	Tributary/Wetland to Gilson Brook Pond
OF_1016	OF_1016	Low Priority	Yes	Tributary/Wetland to Gilson Brook
OF_1017	OF_1017	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1018	OF_1018	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1019	OF_1019	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1020	OF_1020	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1023	OF_1023	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1024	OF_1024	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1025	OF_1025	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1026	OF_1026	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1027	OF_1027	Low Priority	Yes	Isolated Unnamed Wetland
OF_1028	OF_1028	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1029	OF_1029	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1030	OF_1030	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1031	OF_1031	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1032	OF_1032	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1034	OF_1034	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1035	OF_1035	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1037	OF_1037	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1038	OF_1038	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1041	OF_1041	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1042	OF_1042	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1043	OF_1043	Low Priority	Yes	Tributary/Wetland to Nabnasset Lake MA84044
OF_1044	OF_1044	Low Priority	Yes	Tributary/Wetland to Nabnasset Lake MA84044
OF_1045	OF_1045	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1046	OF_1046	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1048	OF_1048	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1049	OF_1049	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1050	OF_1050	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1051	OF_1051	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1052	OF_1052	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1062	OF_1062	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1065	OF_1065	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1066	OF_1066	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1067	OF_1067	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_107	OF_107	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1070	OF_1070	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1071	OF_1071	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1072	OF_1072	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1074	OF_1074	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1075	OF_1075	Low Priority	Yes	Tributary/Wetland to Nabnasset Lake MA84044
OF_1076	OF_1076	Low Priority	Yes	Tributary/Wetland to Nabnasset Lake MA84044
OF_1077	OF_1077	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1078	OF_1078	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1079	OF_1079	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_108	OF_108	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1081	OF_1081	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1082	OF_1082	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_109	OF_109	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_1092	OF_1092	Low Priority	Yes	Direct Discharge to Stony Brook MA84B-03
OF_111	OF_111	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_114	OF_114	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_115	OF_115	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_116	OF_116	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_117	OF_117	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_118	OF_118	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_123	OF_123	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge

**Outfall Inventory Summary**  
**Town of Westford, MA**



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Fieldwork ID	Outfall ID	Preliminary Prioritization Rank	Inventoried in 2017	Receiving Waterbody
OF_124	OF_124	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_125	OF_125	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_126	OF_126	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_127	OF_127	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_128	OF_128	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_129	OF_129	Low Priority	Yes	Direct Discharge to Keyes Pond
OF_130	OF_130	Low Priority	Yes	Direct Discharge to Keyes Pond
OF_131	OF_131	Low Priority	Yes	Direct Discharge to Keyes Pond
OF_133	OF_133	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_134	OF_134	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_135	OF_135	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_136	OF_136	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_137	OF_137	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_138	OF_138	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_139	OF_139	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_140	OF_140	Low Priority	Yes	Tributary/Wetland to Stony Brook MA84B-03
OF_141	OF_141	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_142	OF_142	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_143	OF_143	Low Priority	Yes	Tributary/Wetland to Stony Brook MA84B-03
OF_144	OF_144	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_146	OF_146	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_147	OF_147	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_148	OF_148	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_150	OF_150	Low Priority	Yes	Tributary/Wetland to Nabnasset Lake MA84044
OF_151	OF_151	Low Priority	Yes	Tributary/Wetland to Nabnasset Lake MA84044
OF_152	OF_152	Low Priority	Yes	Tributary/Wetland to Nabnasset Lake MA84044
OF_153	OF_153	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_154	OF_154	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_161	OF_161	Low Priority	Yes	Tributary/Wetland to Nabnasset Lake MA84044
OF_164	OF_164	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_165	OF_165	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_240	OF_240	Low Priority	Yes	Direct Discharge to Coldspring Brook
OF_242	OF_242	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_254	OF_254	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_292	OF_292	Low Priority	Yes	Tributary/Wetland to Tadmuck Brook MA884B-07
OF_293	OF_293	Low Priority	Yes	Tributary/Wetland to Tadmuck Brook MA884B-07
OF_294	OF_294	Low Priority	Yes	Tributary/Wetland to Tadmuck Brook MA884B-07
OF_295	OF_295	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_297	OF_297	Low Priority	Yes	Tributary/Wetland to Tadmuck Brook MA884B-07
OF_298	OF_298	Low Priority	Yes	Tributary/Wetland to Tadmuck Brook MA884B-07
OF_312	OF_312	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_331	OF_331	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_335	OF_335	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_336	OF_336	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_338	OF_338	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_34	OF_34	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_340	OF_340	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_341	OF_341	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_343	OF_343	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_349	OF_349	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_35	OF_35	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_365	OF_365	Low Priority	Yes	Tributary/Wetland to Snake Meadow Brook
OF_366	OF_366	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_367	OF_367	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_382	OF_382	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_41	OF_41	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_433	OF_433	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_442	OF_442	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_443	OF_443	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_445	OF_445	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_446	OF_446	Low Priority	Yes	Tributary/Wetland to Long Sought-For Pond
OF_456	OF_456	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_459	OF_459	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge

**Outfall Inventory Summary**  
**Town of Westford, MA**



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Fieldwork ID	Outfall ID	Preliminary Prioritization Rank	Inventoried in 2017	Receiving Waterbody
OF_475	OF_475	Low Priority	Yes	Tributary/Wetland to Greystone Pond
OF_482	OF_482	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_485	OF_485	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_486	OF_486	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_487	OF_487	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_492	OF_492	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_496	OF_496	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_498	OF_498	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_501	OF_501	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_503	OF_503	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_506	OF_506	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_507	OF_507	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_517	OF_517	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_521	OF_521	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_524	OF_524	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_526	OF_526	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_533	OF_533	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_538	OF_538	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_540	OF_540	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_541	OF_541	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_542	OF_542	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_544	OF_544	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_545	OF_545	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_546	OF_546	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_548	OF_548	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_549	OF_549	Low Priority	Yes	Tributary/Wetland to Nabnasset Lake MA84044
OF_551	OF_551	Low Priority	Yes	Tributary/Wetland to Nabnasset Lake MA84044
OF_552	OF_552	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_589	OF_589	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_590	OF_590	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_591	OF_591	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_6	OF_6	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_7	OF_7	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_97-1	OF_97-1	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_97-2	OF_97-2	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_97-3	OF_97-3	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
OF_97-4	OF_97-4	Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-15		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-17		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-19		Low Priority	Yes	Tributary/Wetland to Tadmuck Swamp
UNK-20		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-21		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-22		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-23		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-24		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-26		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-37		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-41		Low Priority	Yes	Tributary/Wetland to Snake Meadow Brook
UNK-42		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-47		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-49		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-5		Low Priority	Yes	Outside Urban Area/Receiving Water Discharge
UNK-63		Low Priority	Yes	<a href="#">New Outfall Location</a>
UNK-64		Low Priority	Yes	<a href="#">New Outfall Location</a>
UNK-65		Low Priority	Yes	<a href="#">New Outfall Location</a>
UNK-66		Low Priority	Yes	<a href="#">New Outfall Location</a>
UNK-67		Low Priority	Yes	<a href="#">New Outfall Location</a>
UNK-68		Low Priority	Yes	<a href="#">New Outfall Location</a>
UNK-71		Low Priority	Yes	<a href="#">New Outfall Location</a>
UNK-72		Low Priority	Yes	<a href="#">New Outfall Location</a>
UNK-73		Low Priority	Yes	<a href="#">New Outfall Location</a>
UNK-74		Low Priority	Yes	<a href="#">New Outfall Location</a>
UNK-75	UNK_75	Low Priority	Yes	Tributary/Wetland to Stony Brook MA84B-03

**Outfall Inventory Summary**  
**Town of Westford, MA**



Engineers | Environmental Specialists

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Fieldwork ID	Outfall ID	Preliminary Prioritization Rank	Inventoried in 2017	Receiving Waterbody
UNK-76	UNK_76	Low Priority	Yes	Tributary/Wetland to Stony Brook MA84B-03
OF_10	OF_10	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1033	OF_1033	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1039	OF_1039	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1040	OF_1040	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1047	OF_1047	High Priority		Direct Discharge to Stony Brook MA84B-03
OF_105	OF_105	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1053	OF_1053	High Priority		Direct Discharge to Stony Brook MA84B-03
OF_1054	OF_1054	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1055	OF_1055	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1056	OF_1056	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1057	OF_1057	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1058	OF_1058	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1059	OF_1059	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1063	OF_1063	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1069	OF_1069	High Priority		Outside Urban Area/Receiving Water Discharge
OF_1073	OF_1073	High Priority		Outside Urban Area/Receiving Water Discharge
OF_11	OF_11	High Priority		Outside Urban Area/Receiving Water Discharge
OF_12	OF_12	High Priority		Outside Urban Area/Receiving Water Discharge
OF_121	OF_121	High Priority		Outside Urban Area/Receiving Water Discharge
OF_199	OF_199	High Priority		Tributary/Wetland to Butter Brook
OF_200	OF_200	High Priority		Outside Urban Area/Receiving Water Discharge
OF_201	OF_201	High Priority		Outside Urban Area/Receiving Water Discharge
OF_203A	OF_203A	High Priority		Outside Urban Area/Receiving Water Discharge
OF_203B	OF_203B	High Priority		Outside Urban Area/Receiving Water Discharge
OF_204	OF_204	High Priority		Outside Urban Area/Receiving Water Discharge
OF_205	OF_205	High Priority		Outside Urban Area/Receiving Water Discharge
OF_206	OF_206	High Priority		Outside Urban Area/Receiving Water Discharge
OF_221	OF_221	High Priority		Outside Urban Area/Receiving Water Discharge
OF_222	OF_222	High Priority		Outside Urban Area/Receiving Water Discharge
OF_223	OF_223	High Priority		Tributary/Wetland to Butter Brook
OF_224	OF_224	High Priority		Outside Urban Area/Receiving Water Discharge
OF_227	OF_227	High Priority		Tributary/Wetland to Butter Brook
OF_228	OF_228	High Priority		Outside Urban Area/Receiving Water Discharge
OF_229	OF_229	High Priority		Outside Urban Area/Receiving Water Discharge
OF_231A	OF_231A	High Priority		Outside Urban Area/Receiving Water Discharge
OF_231B	OF_231B	High Priority		Tributary/Wetland to Butter Brook
OF_232	OF_232	High Priority		Direct Discharge to Butter Brook
OF_233	OF_233	High Priority		Tributary/Wetland to Boutwell Brook
OF_234	OF_234	High Priority		Outside Urban Area/Receiving Water Discharge
OF_235	OF_235	High Priority		Outside Urban Area/Receiving Water Discharge
OF_236	OF_236	High Priority		Outside Urban Area/Receiving Water Discharge
OF_237	OF_237	High Priority		Outside Urban Area/Receiving Water Discharge
OF_250	OF_250	High Priority		Tributary/Wetland to Stony Brook MA84B-03
OF_252	OF_252	High Priority		Outside Urban Area/Receiving Water Discharge
OF_253	OF_253	High Priority		Outside Urban Area/Receiving Water Discharge
OF_256	OF_256	High Priority		Tributary/Wetland to Snake Meadow Brook
OF_257	OF_257	High Priority		Outside Urban Area/Receiving Water Discharge
OF_262	OF_262	High Priority		Tributary/Wetland to Boutwell Brook
OF_263	OF_263	High Priority		Tributary/Wetland to Boutwell Brook
OF_264	OF_264	High Priority		Tributary/Wetland to Boutwell Brook
OF_286	OF_286	High Priority		Tributary/Wetland to Tadmuck Brook MA884B-07
OF_3	OF_3	High Priority		Outside Urban Area/Receiving Water Discharge
OF_325	OF_325	High Priority		Tributary/Wetland to Tadmuck Brook MA884B-07
OF_326	OF_326	High Priority		Tributary/Wetland to Tadmuck Brook MA884B-07
OF_329	OF_329	High Priority		Tributary/Wetland to Tadmuck Brook MA884B-07
OF_353	OF_353	High Priority		Outside Urban Area/Receiving Water Discharge
OF_354	OF_354	High Priority		Tributary/Wetland to Beaver Brook MA84B-02
OF_372	OF_372	High Priority		Tributary/Wetland to Boutwell Brook
OF_372	OF_372	High Priority		Tributary/Wetland to Boutwell Brook
OF_373	OF_373	High Priority		Outside Urban Area/Receiving Water Discharge
OF_374	OF_374	High Priority		Outside Urban Area/Receiving Water Discharge
OF_377	OF_377	High Priority		Outside Urban Area/Receiving Water Discharge

**Outfall Inventory Summary**  
**Town of Westford, MA**

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Fieldwork ID	Outfall ID	Preliminary Prioritization Rank	Inventoried in 2017	Receiving Waterbody
OF_402	OF_402	High Priority		Outside Urban Area/Receiving Water Discharge
OF_413	OF_413	High Priority		Tributary/Wetland to Beaver Brook MA84B-02
OF_414	OF_414	High Priority		Outside Urban Area/Receiving Water Discharge
OF_415	OF_415	High Priority		Tributary/Wetland to Beaver Brook MA84B-02
OF_416	OF_416	High Priority		Outside Urban Area/Receiving Water Discharge
OF_417	OF_417	High Priority		Outside Urban Area/Receiving Water Discharge
OF_418	OF_418	High Priority		Outside Urban Area/Receiving Water Discharge
OF_419	OF_419	High Priority		Outside Urban Area/Receiving Water Discharge
OF_420	OF_420	High Priority		Outside Urban Area/Receiving Water Discharge
OF_425	OF_425	High Priority		Outside Urban Area/Receiving Water Discharge
OF_426	OF_426	High Priority		Outside Urban Area/Receiving Water Discharge
OF_427	OF_427	High Priority		Outside Urban Area/Receiving Water Discharge
OF_428	OF_428	High Priority		Outside Urban Area/Receiving Water Discharge
OF_429	OF_429	High Priority		Outside Urban Area/Receiving Water Discharge
OF_430	OF_430	High Priority		Outside Urban Area/Receiving Water Discharge
OF_47	OF_47	High Priority		Outside Urban Area/Receiving Water Discharge
OF_48	OF_48	High Priority		Tributary/Wetland to Boutwell Brook
OF_49	OF_49	High Priority		Tributary/Wetland to Boutwell Brook
OF_5	OF_5	High Priority		Direct Discharge to Long Sought-For Pond
OF_528	OF_528	High Priority		Outside Urban Area/Receiving Water Discharge
OF_529	OF_529	High Priority		Outside Urban Area/Receiving Water Discharge
OF_530	OF_530	High Priority		Outside Urban Area/Receiving Water Discharge
OF_543	OF_543	High Priority		Outside Urban Area/Receiving Water Discharge
OF_55	OF_55	High Priority		Outside Urban Area/Receiving Water Discharge
OF_558	OF_558	High Priority		Outside Urban Area/Receiving Water Discharge
OF_559	OF_559	High Priority		Outside Urban Area/Receiving Water Discharge
OF_56	OF_56	High Priority		Outside Urban Area/Receiving Water Discharge
OF_560	OF_560	High Priority		Outside Urban Area/Receiving Water Discharge
OF_561	OF_561	High Priority		Tributary/Wetland to Beaver Brook MA84B-02
OF_562	OF_562	High Priority		Outside Urban Area/Receiving Water Discharge
OF_563	OF_563	High Priority		Outside Urban Area/Receiving Water Discharge
OF_564	OF_564	High Priority		Outside Urban Area/Receiving Water Discharge
OF_565	OF_565	High Priority		Outside Urban Area/Receiving Water Discharge
OF_566	OF_566	High Priority		Outside Urban Area/Receiving Water Discharge
OF_567	OF_567	High Priority		Tributary/Wetland to Beaver Brook MA84B-02
OF_568	OF_568	High Priority		Tributary/Wetland to Beaver Brook MA84B-02
OF_569	OF_569	High Priority		Outside Urban Area/Receiving Water Discharge
OF_57	OF_57	High Priority		Tributary/Wetland to Boutwell Brook
OF_570	OF_570	High Priority		Tributary/Wetland to Beaver Brook MA84B-02
OF_571	OF_571	High Priority		Tributary/Wetland to Beaver Brook MA84B-02
OF_572	OF_572	High Priority		Tributary/Wetland to Beaver Brook MA84B-02
OF_574	OF_574	High Priority		Outside Urban Area/Receiving Water Discharge
OF_575	OF_575	High Priority		Outside Urban Area/Receiving Water Discharge
OF_576	OF_576	High Priority		Outside Urban Area/Receiving Water Discharge
OF_577	OF_577	High Priority		Outside Urban Area/Receiving Water Discharge
OF_578	OF_578	High Priority		Outside Urban Area/Receiving Water Discharge
OF_58	OF_58	High Priority		Outside Urban Area/Receiving Water Discharge
OF_59	OF_59	High Priority		Outside Urban Area/Receiving Water Discharge
OF_60	OF_60	High Priority		Outside Urban Area/Receiving Water Discharge
OF_63	OF_63	High Priority		Outside Urban Area/Receiving Water Discharge
OF_72	OF_72	High Priority		Tributary/Wetland to Stony Brook MA84B-03
OF_87	OF_87	High Priority		Outside Urban Area/Receiving Water Discharge
UNK-1		High Priority		Direct Discharge to Forge Pond MA84015
UNK-2		High Priority		Direct Discharge to Stony Brook MA84B-03
UNK-3		High Priority		Tributary/Wetland to Stony Brook MA84B-03
UNK-4		High Priority		Tributary/Wetland to Beaver Brook MA84B-02
UNK-46		High Priority		Outside Urban Area/Receiving Water Discharge
UNK-51		High Priority		Outside Urban Area/Receiving Water Discharge
UNK-52		High Priority		Outside Urban Area/Receiving Water Discharge
UNK-54		High Priority		Outside Urban Area/Receiving Water Discharge
UNK-59		High Priority		Outside Urban Area/Receiving Water Discharge
OF_1	OF_1	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_100	OF_100	Low Priority		Outside Urban Area/Receiving Water Discharge

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Fieldwork ID	Outfall ID	Preliminary Prioritization Rank	Inventoried in 2017	Receiving Waterbody
OF_1001	OF_1001	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1002	OF_1002	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1003	OF_1003	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1004	OF_1004	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1007	OF_1007	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_101	OF_101	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_102	OF_102	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_106	OF_106	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1060	OF_1060	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1061	OF_1061	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1083	OF_1083	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1084	OF_1084	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1085	OF_1085	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1086	OF_1086	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1087	OF_1087	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1088	OF_1088	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1089	OF_1089	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1090	OF_1090	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_1091	OF_1091	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_110	OF_110	Low Priority		Isolated Unnamed Wetland
OF_132	OF_132	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_14	OF_14	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_16	OF_16	Low Priority		Tributary/Wetland to Pond Brook
OF_167	OF_167	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_168	OF_168	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_169	OF_169	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_17	OF_17	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_170	OF_170	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_171	OF_171	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_172	OF_172	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_173	OF_173	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_174	OF_174	Low Priority		Direct Discharge to Butter Brook
OF_175	OF_175	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_176	OF_176	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_176	OF_176	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_177	OF_177	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_178	OF_178	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_179	OF_179	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_18	OF_18	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_180	OF_180	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_181	OF_181	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_182	OF_182	Low Priority		Tributary/Wetland to Vine Brook
OF_183	OF_183	Low Priority		Tributary/Wetland to Vine Brook
OF_184	OF_184	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_185	OF_185	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_186	OF_186	Low Priority		Tributary/Wetland to Nashoba Brook MA82B-14
OF_187	OF_187	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_188	OF_188	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_189	OF_189	Low Priority		Tributary/Wetland to Vine Brook
OF_19	OF_19	Low Priority		Tributary/Wetland to Pond Brook
OF_190	OF_190	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_191	OF_191	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_192	OF_192	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_193	OF_193	Low Priority		Tributary/Wetland to Nonset Brook
OF_194	OF_194	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_195	OF_195	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_196	OF_196	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_197	OF_197	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_198	OF_198	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_2	OF_2	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_20	OF_20	Low Priority		Direct Discharge to Pond Brook
OF_207	OF_207	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_208	OF_208	Low Priority		Outside Urban Area/Receiving Water Discharge

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Fieldwork ID	Outfall ID	Preliminary Prioritization Rank	Inventoried in 2017	Receiving Waterbody
OF_209	OF_209	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_21	OF_21	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_210	OF_210	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_211	OF_211	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_212	OF_212	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_213	OF_213	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_214	OF_214	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_215	OF_215	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_216	OF_216	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_217	OF_217	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_218	OF_218	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_219	OF_219	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_22	OF_22	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_220	OF_220	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_225	OF_225	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_226	OF_226	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_23	OF_23	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_238	OF_238	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_239	OF_239	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_24	OF_24	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_243	OF_243	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_244	OF_244	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_245	OF_245	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_246	OF_246	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_247	OF_247	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_249	OF_249	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_25	OF_25	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_251	OF_251	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_255	OF_255	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_258	OF_258	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_259	OF_259	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_26	OF_26	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_260	OF_260	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_260	OF_260	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_261	OF_261	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_265	OF_265	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_266	OF_266	Low Priority		Tributary/Wetland to Boutwell Brook
OF_269	OF_269	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_27	OF_27	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_270	OF_270	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_271	OF_271	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_272	OF_272	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_273	OF_273	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_274	OF_274	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_275	OF_275	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_276	OF_276	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_277	OF_277	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_278	OF_278	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_279	OF_279	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_28	OF_28	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_280	OF_280	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_281	OF_281	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_282	OF_282	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_284	OF_284	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_285	OF_285	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_287	OF_287	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_288	OF_288	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_289	OF_289	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_29	OF_29	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_290	OF_290	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_291	OF_291	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_296	OF_296	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_299	OF_299	Low Priority		Outside Urban Area/Receiving Water Discharge

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Fieldwork ID	Outfall ID	Preliminary Prioritization Rank	Inventoried in 2017	Receiving Waterbody
OF_30	OF_30	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_300	OF_300	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_301	OF_301	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_302	OF_302	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_303	OF_303	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_304	OF_304	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_305	OF_305	Low Priority		Tributary/Wetland to Coldspring Brook
OF_306	OF_306	Low Priority		Tributary/Wetland to Coldspring Brook
OF_307	OF_307	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_308	OF_308	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_309	OF_309	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_310	OF_310	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_314	OF_314	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_315	OF_315	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_317	OF_317	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_317	OF_317	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_318	OF_318	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_320	OF_320	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_321	OF_321	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_322	OF_322	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_323	OF_323	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_324	OF_324	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_327	OF_327	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_328	OF_328	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_330	OF_330	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_345	OF_345	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_346	OF_346	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_347	OF_347	Low Priority		Direct Discharge to Flushing Pond
OF_348	OF_348	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_350	OF_350	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_351	OF_351	Low Priority		Tributary/Wetland to Vine Brook
OF_352	OF_352	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_355	OF_355	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_356	OF_356	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_357	OF_357	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_358	OF_358	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_359	OF_359	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_360	OF_360	Low Priority		Direct Discharge to Snake Meadow Brook
OF_361	OF_361	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_362	OF_362	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_363	OF_363	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_368	OF_368	Low Priority		Direct Discharge to Blue Brook
OF_369	OF_369	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_370	OF_370	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_371	OF_371	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_375	OF_375	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_376	OF_376	Low Priority		Tributary/Wetland to Butter Brook
OF_378	OF_378	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_379	OF_379	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_380	OF_380	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_381	OF_381	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_383	OF_383	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_384	OF_384	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_385	OF_385	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_386	OF_386	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_387	OF_387	Low Priority		Tributary/Wetland to Forge Pond
OF_388	OF_388	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_389	OF_389	Low Priority		Tributary/Wetland to Forge Pond
OF_39	OF_39	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_390	OF_390	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_391	OF_391	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_392	OF_392	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_393	OF_393	Low Priority		Outside Urban Area/Receiving Water Discharge

**Outfall Inventory Summary**  
**Town of Westford, MA**



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Fieldwork ID	Outfall ID	Preliminary Prioritization Rank	Inventoried in 2017	Receiving Waterbody
OF_394	OF_394	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_395	OF_395	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_396	OF_396	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_397	OF_397	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_397	OF_397	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_398	OF_398	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_4	OF_4	Low Priority		Tributary/Wetland to Boutwell Brook
OF_400	OF_400	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_401	OF_401	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_403	OF_403	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_404	OF_404	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_405	OF_405	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_406	OF_406	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_407	OF_407	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_408	OF_408	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_409	OF_409	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_409	OF_409	Low Priority		Tributary/Wetland to Vine Brook
OF_410	OF_410	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_411	OF_411	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_412	OF_412	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_421	OF_421	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_422	OF_422	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_423	OF_423	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_424	OF_424	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_43	OF_43	Low Priority		Tributary/Wetland to Reed Brook
OF_431	OF_431	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_432	OF_432	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_439	OF_439	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_44	OF_44	Low Priority		Tributary/Wetland to Reed Brook
OF_440	OF_440	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_447	OF_447	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_448	OF_448	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_449	OF_449	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_449	OF_449	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_45	OF_45	Low Priority		Direct Discharge to Reed Brook
OF_450	OF_450	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_451	OF_451	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_452	OF_452	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_453	OF_453	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_454	OF_454	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_455	OF_455	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_46	OF_46	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_460	OF_460	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_461	OF_461	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_462	OF_462	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_463	OF_463	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_464	OF_464	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_465	OF_465	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_466	OF_466	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_467	OF_467	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_468	OF_468	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_469	OF_469	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_470	OF_470	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_471	OF_471	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_493	OF_493	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_493	OF_493	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_494	OF_494	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_531	OF_531	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_54	OF_54	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_554	OF_554	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_555	OF_555	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_556	OF_556	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_557	OF_557	Low Priority		Outside Urban Area/Receiving Water Discharge

**Outfall Inventory Summary**  
**Town of Westford, MA**



Engineers | Environmental Specialists

This is a summary of the Outfall Inventory required in the Small MS4 General Permit Steion 2.3.4.7.b.iii.1. Additional information for each outfall is in the Town's stormwater GIS, including date of inspections; outfall dimensions, shape, and material; spatial location; physical condition; and indicators of potential non-stormwater discharges.

Fieldwork ID	Outfall ID	Preliminary Prioritization Rank	Inventoried in 2017	Receiving Waterbody
OF_573	OF_573	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_579	OF_579	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_580	OF_580	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_581	OF_581	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_582	OF_582	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_583	OF_583	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_584	OF_584	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_585	OF_585	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_586	OF_586	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_587	OF_587	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_588	OF_588	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_61	OF_61	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_64	OF_64	Low Priority		Tributary/Wetland to Pond Brook
OF_65	OF_65	Low Priority		Tributary/Wetland to Coldspring Brook
OF_66	OF_66	Low Priority		Tributary/Wetland to Coldspring Brook
OF_67	OF_67	Low Priority		Tributary/Wetland to Coldspring Brook
OF_68	OF_68	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_69	OF_69	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_71	OF_71	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_73	OF_73	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_77	OF_77	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_78	OF_78	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_8	OF_8	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_80	OF_80	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_81	OF_81	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_82	OF_82	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_83	OF_83	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_84	OF_84	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_85	OF_85	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_86	OF_86	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_88	OF_88	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_9	OF_9	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_902	OF_902	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_906	OF_906	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_907	OF_907	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_908	OF_908	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_94	OF_94	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_95	OF_95	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_96	OF_96	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_96	OF_96	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_97	OF_97	Low Priority		Outside Urban Area/Receiving Water Discharge
OF_99	OF_99	Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-10		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-11		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-12		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-13		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-14		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-18		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-27		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-28		Low Priority		Tributary/Wetland to Butter Brook
UNK-29		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-30		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-31		Low Priority		Tributary/Wetland to Butter Brook
UNK-32		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-33		Low Priority		Tributary/Wetland to Nonset Brook
UNK-34		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-35		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-36		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-39		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-40		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-44		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-45		Low Priority		Tributary/Wetland to Vine Brook
UNK-53		Low Priority		Outside Urban Area/Receiving Water Discharge

**Outfall Inventory Summary  
Town of Westford, MA**

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Fieldwork ID	Outfall ID	Preliminary Prioritization Rank	Inventoried in 2017	Receiving Waterbody
UNK-55		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-56		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-57		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-58		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-60		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-61		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-62		Low Priority		Tributary/Wetland to Nashoba Brook MA82B-14
UNK-7		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-8		Low Priority		Outside Urban Area/Receiving Water Discharge
UNK-9		Low Priority		Tributary/Wetland to Fiske Street Pond

# **Attachment 5**

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## **Outfall Sampling Summary**

### Outfall Sampling Summary - Westford, MA

Location					Laboratory Analysis <sup>(1)</sup>								Water Quality Meter/Test Kit <sup>(1)</sup>					
Date	Time	Outfall ID	Street	Sample Location	Ammonia	Surfactants	E. coli	Fecal Coliform	Total Suspended Solids	Turbidity	BOD <sub>5</sub>	Total Phosphorus	Temperature	Salinity	Conductivity	pH	Dissolved Oxygen	Chlorine
					mg/L	mg/L	CFU/100mL	CFU/100mL	mg/L	mg/L	mg/L	mg/L	°F	ppt	µS/cm <sup>(2)</sup>		mg/L	mg/L
9/1/2017	11:30	OF_1043	Pine Tree Lane	Outfall	0.55	ND	10	-	-	-	-	-	64.9	0.19	0.393	6.89	8.3	0.03
9/1/2017	13:40	OF_7	Woodbine Terrace	Outfall	0.30	ND	20	-	-	-	-	-	62.4	0.39	0.933	-	-	0.02

**Notes:**  
 (1) "-" means no analysis was completed  
 (2) µS/cm is equivalent to µmhos/cm

**REPORTING LIMITS**  
 Ammonia = 0.1 mg/L  
 Surfactants = 0.025 mg/L  
 E. coli = 2 CFU/100mL  
 Fecal Coliform = 2 CFU/100mL  
 Total Suspended Solids = 1 mg/L  
 BOD<sub>5</sub> = 2 mg/L  
 Total Phosphorus = 0.01 mg/L

COLOR KEY (benchmarks are bold)														
	Ammonia	Surfactants	E. coli	Fecal Coliform				Toal Phosphorus	Temperature <sup>(a)</sup>	Salinity	Conductivity	pH	Dissolved Oxygen <sup>(a)</sup>	Chlorine
	mg/L	mg/L	CFU/100 mL	CFU/100 mL				mg/L	°F	ppt	µS/cm		mg/L	mg/L
	≥ 6	≥ 1.0	≥ 10,000	≥ 10,000				≥ 0.908		≥ 1.0	≥ <b>2,000</b>			≥ 1.0
	≥ 1.0	≥ 0.5	≥ 1,260	≥ 1,000				≥ 0.466		≥ 0.75	≥ 1,500	≤ 5		≥ 0.3
	≥ <b>0.5</b>	≥ <b>0.25</b>	≥ <b>235</b>	≥ <b>200</b>				≥ <b>0.024</b>	≥ <b>83</b>	≥ <b>0.5</b>	≥ 1,000	< 6.5 or > 8.3	< <b>5.0</b>	≥ <b>0.02</b>
	< 0.5	< 0.25	< 235	< 200				< 0.024	< 83	< 0.5	< 1,000	<b>6.5 to 8.3</b>	≥ 5.0	< 0.02

**Notes:**  
 (a) Reed Brook is a Class B cold water. Therefore, benchmarks for outfalls draining to this receiving water (OF\_43, OF\_44, and OF\_45) should be: Dissolved Oxygen < 6.0 mg/L, Temperature ≥ 68 °F

**Benchmark Sources:**  
 Ammonia, Surfactants, and Chlorine - EPA General Permit for Stormwater Discharges from Small MS4 in Massachusetts  
 E. coli, Temperature, and Dissolved Oxygen - 314 CMR 4.00: Massachusetts Surface Water Quality Standards  
 pH - 314 CMR 4.00: Massachusetts Surface Water Quality Standards and Center for Watershed Protection Illicit discharge Detection and Elimination Guidance Manual  
 Total Phosphorus - EPA Ambient Water Quality Criteria Recommendations for Rivers and Streams in Nutrient Ecoregion XIV  
 Fecal coliform - MWRA Water Quality Standards for Class B and Class SB Waters  
 Salinity - EPA Volunteer Estuary Monitoring: A Methods Manual  
 Conductivity - Center for Watershed Protection Illicit discharge Detection and Elimination Guidance Manual  
 TSS and BOD<sub>5</sub> have no quantitative benchmark for surface water grab samples