

**The Buzzards Bay Stormwater Collaborative
Healthy Communities Grant Water Quality Data Report
6 May 2019 - Final**



<http://stormwater.buzzardsbay.org/>
<http://buzzardsbayaction.org/index.html>

Prepared by the
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Town of Mattapoisett

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Project Overview

The Buzzards Bay Stormwater Collaborative Project was a regional inter-municipal program of the Buzzards Bay Action Committee (BBAC) and five municipalities (Acushnet, Dartmouth, Fairhaven, Mattapoisett, and Wareham). The purpose of the program was to map stormwater collection networks and monitor stormwater discharges that are contributing to shellfish bed closures and other pollution-caused impairments in the Buzzards Bay watershed. Funding for the program was provided by a U.S. Environmental Protection Agency (EPA) Healthy Communities grant program to the BBAC. The Buzzards Bay National Estuary Program (NEP) provided planning and technical support to the Stormwater Collaborative. One of the goals of the effort was to identify illicit discharges to stormwater networks contributing to these water quality impairments. With this knowledge, municipalities can take action to eliminate illicit discharges, or treat stormwater discharges conveying non-point sources of pollution, thereby reducing the water quality impairments. Because there are thousands of stormwater discharges along Buzzards Bay, an important first step is to prioritize discharges to impaired waters for further study or management action. For the five participating municipalities, this report is the first step in that process.

The Buzzards Bay Stormwater Collaborative operated through cost sharing of resources and expertise to monitor discharges and map stormwater networks. Water quality data was collected from the summer of 2016 through the fall of 2017 by the BBAC Stormwater Collaborative. Deliverables of this project include this report and the supporting GIS and water quality data available online¹. A final report was prepared for each town that included all collected stormwater quality data, dry weather inspection information, maps based on collected stormwater infrastructure GIS data, identification of possible illicit connections, and recommended priorities for municipal action to manage these stormwater discharges. This data is organized as a comprehensive summary for each discharge with prioritization based on water quality analysis; identification of potential illicit connections; and recommendations related to that discharge. This information will assist participating municipalities to make informed decisions about actions they can take to improve water quality.

Stormwater Mapping Initiative

The water quality of an outfall pipe or roadcut discharge may be related to nearby sources, or inputs hundreds or thousands of feet away. Solving local stormwater issues requires an understanding of the character and connectivity of the stormwater infrastructure. The water quality at an outfall discharge is defined by pollution sources within the catchment. A catchment can be small or cover several hundred acres. Defining that catchment requires the knowledge of both land surface topography and the connectivity of the catchbasins, manholes, and pipes that cumulate to the outfall discharge.

Recognizing the relationship between stormwater infrastructure and water quality of Buzzards Bay, the Buzzards Bay NEP began mapping stormwater discharges and catchbasins over 20 years ago, culminating in the Buzzards Bay Stormwater Atlas, first released in 2003, and last updated 2012. The Stormwater Atlas data enabled the 2016 Stormwater Collaborative effort to implement quickly a stormwater monitoring program, and provided the basis for a strategic monitoring plan, including potential monitoring site

¹ Available at <http://stormwater.buzzardsbay.org/>

locations. Without the previous inventory, the start of the monitoring program would have been significantly delayed. At the outset of the project, preselected sampling locations were found, evaluated, and documented for the monitoring program by Buzzards Bay NEP staff. This analysis resulted in the selection of 250 monitoring sites to be the focus of the monitoring effort.

The 2012 Atlas also provided a sound basis for a more detailed and refined GIS database. Updating, improving, and expanding the Atlas was a major accomplishment of this project. A systematic approach to GIS data development was used to map stormwater structures and their connectivity. The mapping component of this project began with verification of existing Atlas feature locations with a mapping grade GPS. Many new above ground structures were discovered and added to the Atlas and all structures were more accurately located. In four participating towns (Dartmouth, Fairhaven, Mattapoisett, and Wareham), all previously mapped manholes and catch basins were GPS verified. In the heavily urbanized Town of Acushnet, GPS verification manholes and catch basins covered only 15%, principally in the catchment area of the stormwater discharges being monitored.

After surface-level stormwater infrastructure were mapped, the next step in the mapping process was to scan stormwater network engineering plans, and geo-reference them in GIS. All plans made available from the five towns were scanned and geo-referenced. This step is essential to define stormwater infrastructure connectivity. The towns of Dartmouth and Fairhaven were able to provide geo-referenced plans through efforts they had funded. Under this Healthy Communities grant, the effort to scan and georeference paper engineering plans of stormwater networks was focused on the Towns of Acushnet, Mattapoisett, and Fairhaven. The Town of Mattapoisett had limited plan coverage, and all plans were scanned and georeferenced. In the Town of Acushnet all plans within the catchments of the monitored discharges were scanned and georeferenced. The Town of Wareham has an extensive coastline and hundreds of paper plans on file. Only a portion of these maps were scanned and georeferenced through the Healthy Communities grant, but the Buzzards Bay NEP is continuing the effort.

In the final step of the GIS analysis, stormwater pipes from the stormwater network plans are added to the GIS database using the GPS-located above ground structures to stretch the plans to the appropriate scale, and allow for a heads-up digitization of pipe infrastructure shown on the plans. The level of completeness of the effort varied with each town, and was dependent on of the amount of infrastructure, quantity and quality of stormwater network plans, and area covered by the project. The addition of stormwater pipe infrastructure to the GIS database was completed for the towns of Fairhaven and Dartmouth under the grant, and the Buzzards Bay NEP is continuing the effort for the other three participating towns. In limited areas, attributes were added to the GIS database from information shown on the plans. This process to develop a comprehensive GIS database for all five participating municipalities, as well as other municipalities in the Buzzards Bay watershed, is an ongoing effort of the Buzzards Bay NEP.

When undertaking a GIS analysis like the one described above, sometimes plans and GPS feature data did not always agree. In those cases, field verification of existing conditions was required to resolve uncertainties. This field work is labor intensive and requires participation of the municipal department of public works to provide institutional knowledge, open manhole covers, clear catchbasins, and use metal

detectors to find structures. A limited amount of this work has been done in each town and will be a focus of future efforts by the Buzzards Bay NEP and municipalities as mapping and water quality issues are examined.

Summary of Sampling Methods

This project investigated 250 discharges in five municipalities, which included both pipe outfalls and roadcuts. 547 monitoring site visits were completed, and resulted in the collection of 657 water quality samples. Water samples were tested for nine different parameters, which were indicators of potential illicit connections or other sources of contamination. In addition, 724 “no-flow/no-sample” observations were made and documented for many outfalls. Through dry weather monitoring, the monitoring program was able to document discharge pipes with no dry weather flow. Documenting the absence of dry weather flow is an important characteristic of a discharge network, and is required observation under the MS4 permit. An observation of ‘no-flow’ does not preclude the possibility of an illicit connection, just that it is less likely. Table 1 summarizes data collection by town.

Table 1 - Summary of site visits, discharges and samples.

| Municipality | Total Number of Discharges | Number of Investigated Discharges | Number of Stormwater Samples | No-Flow No-Sample Observations |
|---------------------|-----------------------------------|--|-------------------------------------|---------------------------------------|
| Acushnet | 119 | 15 | 77 | 72 |
| Dartmouth | 575 | 47 | 70 | 111 |
| Fairhaven | 354 | 65 | 266 | 173 |
| Mattapoisett | 557 | 26 | 106 | 87 |
| Wareham | 930 | 97 | 138 | 281 |
| Total | 2535 | 250 | 657 | 724 |

The water quality data collection effort consisted of three components – field observations and testing, indoor analysis of nitrates and surfactants, and certified laboratory analysis for bacteria. The basic methods and equipment for each component is described below in Tables 2, 3, and 4. The QAPP for the study contains additional details.

Table 2 - Field Testing

| Parameter | Equipment | Operating Range | Resolution | Accuracy |
|------------------|-------------------------|---|--|-------------------------------|
| Ammonia | Hach Test Strips | 0-6ppm | 0.25ppm | +/- one half of a color block |
| Conductivity | HachPocket Pro, Multi 2 | 0 to 200 μ S/cm or 2.00-19.9 mS/cm (auto-range) | 0.01mS/0.1 μ S/1.0uS (range dependent) | \pm 1.0% |
| Salinity | HachPocket Pro, Multi 2 | 0 to 10 ppt | 0.01 ppt | \pm 1% |
| Temperature | HachPocket Pro, Multi 2 | 0 to 50°C (32 to 122°F) | 0.1°C | \pm 0.5°C |
| pH | HachPocket Pro, Multi 2 | 0.0-14.0 | 0.01 | 0.02 |

Table 3 – Indoor (in-office) Analysis

| Parameter | Equipment | Operating Range | Resolution | Accuracy | Holding Time |
|-------------------------------------|---|------------------|------------------------------|-------------|--------------|
| Surfactants (detergents as MBAS) | CHEMetrics K-9400 ¹ | 0-3 ppm | + 1 color standard increment | + 30% error | 48 hours |
| Nitrates | LaMotte Nitrate-Nitrogen test kit (3615-01) | 0.00 to 1.00 ppm | 0.1ppm | 0.1ppm | 24 hours |

Table 4 - Certified Laboratory Analysis

| Parameter | Sample Container | Holding Time | Field Processing/ | Method | Units |
|----------------|-------------------------------|--------------|-----------------------------------|--|-----------|
| Fecal Coliform | 100 ml sterilize polyethylene | 6 hours | Collect, label, store on blue ice | Membrane Filtration, wastewater, SM9222D, 21 th Edition 2005 | cfu/100ml |
| Enterococci | 100 ml sterilize polyethylene | 6 hours | Collect, label, store on blue ice | EPA Office of Water, Method 1600, Membrane Filter Test EPA 821-R-97-004. | cfu/100ml |

Relation of Project to MS4 Permit

As noted above, the primary area of focus for the Stormwater Collaborative was to monitor discharges and map connections of stormwater outfalls that directly discharge into shellfish beds and other impaired coastal waters. Many of these discharges must also be monitored, and their stormwater collection systems mapped, as part of the U.S. EPA Small Municipal Separate Storm Sewer Systems (MS4) permit. For the most part, the Stormwater Collaborative's discharge monitoring program adheres to the EPA MS4 permit monitoring requirements. The activities of the Stormwater Collaborative will partially help participating municipalities meet the MS4 permit monitoring requirements, outreach and education efforts, and water quality testing training. The Stormwater Collaborative only monitored and mapped a fraction of each participating town's MS4 discharges and discharge networks through this program. The program directed efforts towards discharges associated with impaired waters that impact shellfish beds. For example, inland discharges affecting fresh-waterbodies and streams (non-shellfish waters) were not monitored under this program, but are required to be considered for the MS4 permit.

Under the MS4 permit program, each municipality must assess discharges to any impaired waters or wetlands from their "Urbanized Area," not just discharges to coastal waters. The new small MS4 permits in Massachusetts became effective on July 1, 2018. This 2018 permit is a continuation of the 2003 MS4 permit, and but includes additional monitoring and mapping requirements, and may also include an expansion of the 2003 Urbanized Area.

Each municipality's first obligation under the 2018 MS4 permit is to prepare and submit a Notice of Intent (NOI) by September 29, 2018. The NOI provides an update of the 2003 permit and an outline of future activities within the scope of the 2018 permit requirements. By July 1, 2019, each permittee must develop a Storm Water Management Plan (SWMP) describing in more detail how activities outlined in your NOI will

be accomplished. To summarize, the key differences between the Buzzards Bay Stormwater Collaborative Program efforts and the MS4 permit requirements are:

- The activities of the Collaborative were limited to monitoring discharges and mapping discharge networks directly affecting impaired coastal waters. These discharges may or may not be within Urbanized Areas as defined by EPA;
- EPA's MS4 permit requires that municipalities obtain a permit and evaluate all stormwater discharges serving their Urbanized Area Stormwater collection networks. Discharges to impaired waters outside the Urbanized Area are not included in the 2018 MS4 permit.

Another factor to consider with the MS4 permitting process is the concentration of bacteria when monitoring. Much of the output from this report has been based on bacteria levels chosen for appropriate analysis in the context of this study. These levels are different from Massachusetts Department of Environmental Protection regulatory standards as described in 314 CMR the Massachusetts Surface Water Quality Standards. See Table 5 for some examples of regulatory thresholds for bacteria levels.

Table 5 – Massachusetts Surface Water Quality Standards Summary

| Receiving Water Class | Parameter | Standard |
|------------------------------|----------------------|----------------------------|
| Unfiltered WS - A | Fecal coliform [CFU] | < = 20 in six month period |
| Filtered WS –A & B | Enterococci [CFU] | < = 126 geometric mean |
| Filtered WS –A & B | E. coli [CFU] | < = 33 in six month period |
| SA (Shellfish) | Fecal coliform [CFU] | < = 14 geometric mean |
| SA/SB (Beaches) | Enterococci [CFU] | < = 35 geometric mean |
| SB (w/ depuration) | Fecal coliform [CFU] | < = 88 geometric mean |





Summary Maps

Included in this report are overview maps that show discharges monitored within the participating municipalities. Each discharge on the map is coded for a Stormwater Classification priority as shown in Table 6 and coded for the potential Illicit Discharge Classification priority shown in Table 7. Each map shows the Facility ID number for the discharge, which can be used to reference the corresponding data sheet. A comprehensive, interactive version of this data is available in the online map. The process for determining these classifications is based on criteria applied to the water quality data based on professional judgments by the Buzzards Bay NEP. Different criteria would have resulted in different rankings. Consequently, informed decision-making may require additional monitoring and field investigations of priority sites. Below is a description of the methods used for the symbols on the maps.

Stormwater Classification:

Criteria: freshwater (non-tidal) samples only; samples from flows only; wet weather samples only; and based on maximum observation of bacteria (Fecal coliform [CFU] or Enterococci [CFU]).





Table 6 - Map Legend for Stormwater Classification

| Symbol | | Bacteria |
|---|----------------|-------------|
|  | High Concern | > 10,000 |
|  | Medium Concern | 50 - 10,000 |
|  | Low Concern | < 50 |
|  | Not Determined | No Data |

Illicit Discharge Classification:

Criteria: freshwater (non-tidal) samples only; samples from flows only; wet or dry weather samples; and based on the maximum observation of bacteria (Fecal coliform [CFU] or Enterococci [CFU]) with the number of water quality parameters above a threshold. These thresholds are: > 0.50 ppm for Ammonia (NH₃), > 0.25 ppm for Surfactants, and > = 0.44 ppm for Nitrate (NO₃).

Table 7 - Map Legend for Illicit Discharge Classification

| Symbol | | Bacteria | | Water Quality Parameter |
|---|--------------------|-------------|----------|---------------------------|
|  | Elevated Potential | > 10,000 | and / or | 3 above threshold |
|  | Some Potential | 50 - 10,000 | and / or | 2 above threshold |
|  | Low Potential | < 50 | and | 1 or less above threshold |
|  | Not Determined | No Data | | |

Discharge Data Sheets

Included in this report are individual data sheets for each discharge studied. These sheets include basic information about the outfall, results of water quality analysis, and some interpretation of the results. A sample data sheet is provided below with an explanation of each field. Additional raw data about field conditions, unusual observations, rainfall details, and various notes are all maintained in the water quality database. The information shown on these data sheets can provide insights to causes of stormwater impairments, and help focus resources to address stormwater related impairments.

Sample data sheet

Stormwater Report for: AIH1028PI **1**
in the Town of Acushnet **2**
 Main St near Shady Tree Lane

Water Body: Acushnet River Qualifier: SFR, CSO **4**
 Urbanized: Yes Sewered: Yes Class: SB Category: 5 **5**
 MS4 Ranking: High Priority Outfall **6**
 Status: Some Concern Warranted - Continue Monitoring **7**

DW: Low to Moderate levels of Bact. (4 out of 6). DW Rank: Bact (1), Nitrates(1), Total 2. WW: Moderate Bact levels and elevated Amm, Nitrates, and Surf in WW. WW rank: Bact (1), Amm/Nitrates/Surf (1 ea), Total 4. Recommend: Continue to monitor both DW and WW. If DW, collect sample only if flow is evident, if stagnant (no flow), make a note on data sheet indicating no flow. Investigate for potential ID. Impair: None, discharge into trib of Acu R.



Rating
 Wet Weather: 4 **10**
 Dry Weather: 2
 2 'No Sample Visits' **11**



Report Created on: 8/13/2018

| FacilityID | SampleDate | SampleID | Sample Type | Water Classification | Last Rain | 12 hr. Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enterococcus | Fecal Coliform |
|------------|------------|----------------|-------------|----------------------|-----------|-------------|------|------|----------|------|---------|---------|--------------|----------------|
| AIH1028PI | 6/2/2016 | 6AC02JUN03-A | pipe | Fresh Water | 51 hrs | 0 in | 6.43 | 17.9 | 0.34 | 0.25 | 4.40 | 0.100 | 3200 | 5900 |
| AIH1028PI | 6/8/2016 | 6AC08JUN03-A | pipe | Fresh Water | 60 hrs | 0 in | 6.32 | 19.9 | 0.32 | 0.25 | 4.40 | 0.000 | 82 | 9 |
| AIH1028PI | 6/14/2016 | 6AC14JUN03-A | pipe | Fresh Water | 65 hrs | 0 in | 6.34 | 20.1 | 0.25 | 0.00 | 4.40 | 0.000 | 64 | 9 |
| AIH1028PI | 6/20/2016 | 6AC20JUN03-S | pipe | Fresh Water | 56 hrs | 0 in | 6.22 | 21.2 | 0.24 | 0.25 | 4.40 | 0.100 | 9 | 55 |
| AIH1028PI | 6/21/2016 | 6AC21JUN06-A | pipe | Fresh Water | 5 hrs | 0.73 in | 6.30 | 21.5 | 0.21 | 0.00 | 3.52 | 0.200 | 3400 | 490 |
| AIH1028PI | 6/21/2016 | 6AC21JUN06-A | pipe | Fresh Water | 5 hrs | 0.73 in | 6.29 | 20.5 | 0.21 | 0.25 | 4.40 | 0.200 | 2800 | 550 |
| AIH1028PI | 7/5/2016 | 6AC05JUL05-A | pipe | Fresh Water | 2 hrs | 0.61 in | 6.49 | 22.8 | 0.06 | | 0.00 | 0.300 | 7000 | 7400 |
| AIH1028PI | 6/5/2017 | 7AC05JUN03-A | pipe | Fresh Water | 2 hrs | 0.41 in | 6.30 | 16.2 | 0.31 | 0.25 | 4.40 | 0.100 | 700 | |
| AIH1028PI | 7/11/2017 | 7AC11JUL02-A-D | pipe | Fresh Water | 0 hrs | 0.13 in | 7.40 | 23.4 | 0.00 | 1.00 | 4.40 | 1.000 | 7100 | |
| AIH1028PI | 7/11/2017 | 7AC11JUL02-A | pipe | Fresh Water | 0 hrs | 0.13 in | 7.90 | 23.4 | 0.00 | 1.00 | 4.40 | 1.000 | 2800 | |

Key

1. Name of the discharge and associated catchment
2. Town and location of discharge
3. Map showing area near discharge along with Facility ID numbers for nearby infrastructure
4. MassDEP 2014 Integrated List of Waters (305(b)/303(d)); Name of receiving water body along with Class, Category, and Qualifier of water body
5. Indication if discharge is in a MS4 urbanized area and if the catchment area has sewer service
6. MS4 Ranking for discharge based on permit language; possible ranks include:
 - Not Determined
 - Problem Outfall
 - High Priority Outfall
 - Medium Priority Outfall
 - Low Priority Outfall
 - Excluded Outfall
7. BBNEP summary status; possible status suggestions include:
 - Evaluation Not Complete
 - Requires Additional Monitoring
 - No Apparent Issues – Allocate Resources Elsewhere

- Some Concern Warranted – Continue Monitoring
 - Some Concern Warranted – Consider Corrective Action
 - Requires Immediate Attention
8. BBNEP specific analysis and recommendation
 9. Photograph of discharge point (if available)
 10. Rating of discharge based on water quality data (objective determination)
 - Only freshwater (<6 ppt salinity) and flowing waters used for scoring
 - Maximum of observed sample values used for scoring
 - If parameter above threshold, 1 point each for ammonia, nitrate, and surfactants - These thresholds are > 0.50 ppm for Ammonia (NH₃), > 0.25 ppm for Surfactants, and > = 0.44 ppm for Nitrate (NO₃).
 - Bacteria could be either Fecal coliform or Enterococci
 - Bacteria scored between 0 for > 50 CFU, 1 for 50 to 10,000 CFU, and 2 for >10,000 CFU
 - Total scores range between 0 and 5
 - Separate scores for Dry Weather and Wet Weather (>0.02 inches in 4 hours previous to sample)
 11. Number of dry weather visits where no flow was observed and thus no samples taken
 12. Water quality data:
 - **FacilityID** – facility identifier for location of sample; may vary and be different than discharge ID
 - **SampleDate** - date the water sample was taken
 - **SampleID** – sample identification number used to track internally and at laboratory
 - **Sample Type** - type of sample collected: pipe, stream, surface, or sump
 - **Water Classification** – Fresh Water if <6 ppt salinity else classified as Brackish or Sea Water
 - **Last Rain** – number of hours since last rain and time of sample
 - **12 hr. Rain** – number of inches of rain in previous 12 hours
 - **pH** – sample pH
 - **Temp** – sample temperature in degrees centigrade
 - **Salinity** – sample salinity in parts per thousand
 - **Ammo** – sample ammonia concentration in parts per million
 - **Nitrate** – sample nitrate concentration in parts per million
 - **Surfact** – sample surfactants concentration in parts per million (detergent indicator)
 - **Enterococcus** – laboratory results for enterococcus bacteria colony forming units per 100 ml
 - **Fecal Coliform** - laboratory results for fecal coliform bacteria colony forming units per 100 ml




Mattapoissett 1 Stormwater Report 8/14/2018



Stormwater Classification

-  High Concern
-  Medium Concern
-  Low Concern
-  Not Determined

Illicit Discharge Classification

-  Elevated Potential
-  Some Potential
-  Not Determined

Buzzards Bay






Mattapoissett 2 Stormwater Report 8/14/2018

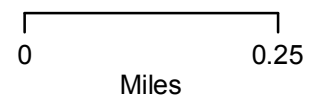
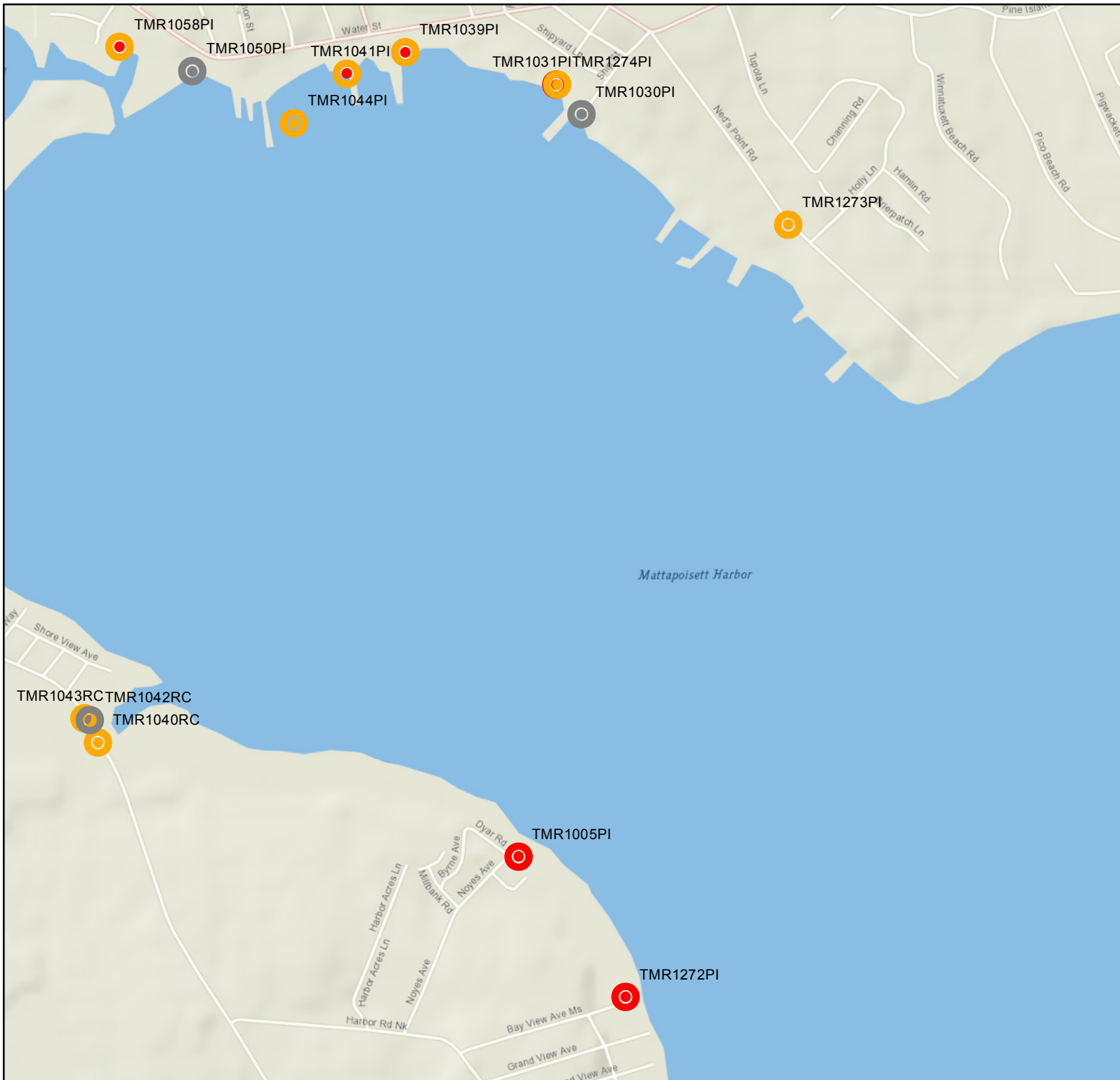


Stormwater Classification

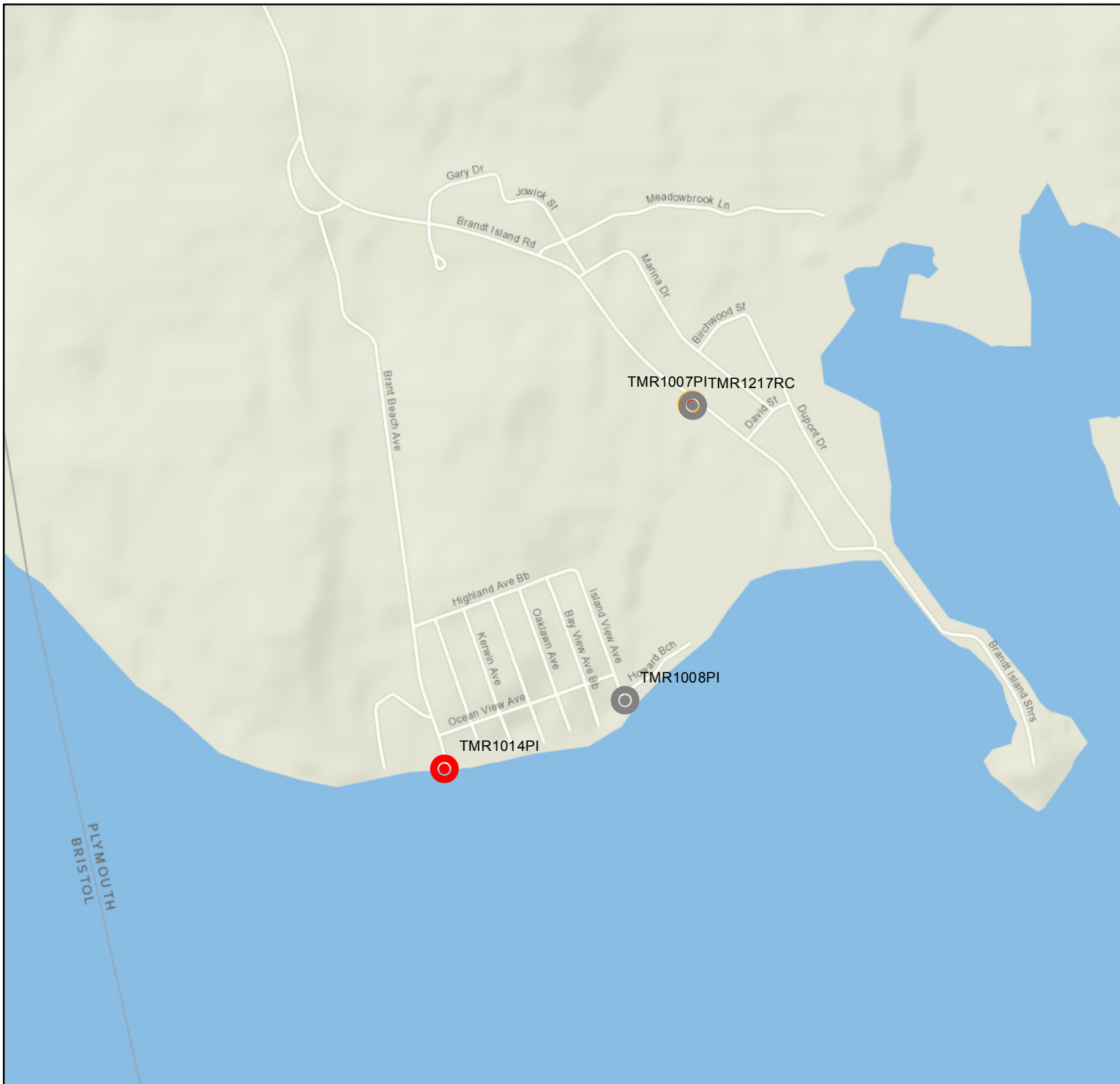
-  High Concern
-  Medium Concern
-  Low Concern
-  Not Determined

Illicit Discharge Classification

-  Elevated Potential
-  Some Potential
-  Not Determined



Mattapoissett 3 Stormwater Report 8/14/2018



Stormwater Classification

- High Concern
- Medium Concern
- Low Concern
- Not Determined

Illicit Discharge Classification

- Elevated Potential
- Some Potential
- Not Determined

Buzzards Bay



National Estuary
Program



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Mattapoissett

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Stormwater Report for: TMR1273PI in the Town of Mattapoissett

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Neds Point Rd

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

Although there were 2 no flow events, there were also 3 samples with water flowing during dry events, one of which had moderate levels of bact. DW rank: Bact (1), Surf (1), Total 2. WW Rank (1 sample): Bact (1), Nitrates/Surf (1 ea), Total 3.
Recommend: Continue monitoring for DW and WW. Matt Har Impair: Bact and N

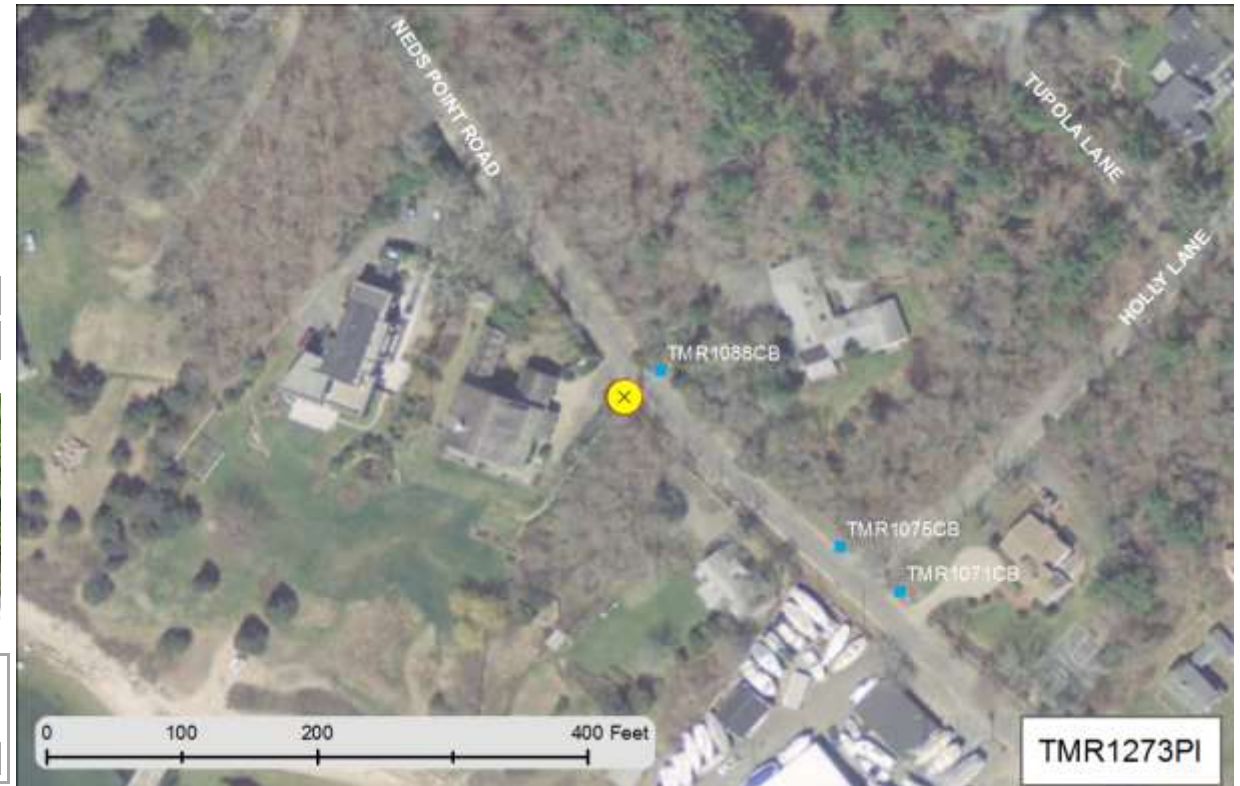


Rating by Weather (0-5):

Wet :

Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|----------------|------------|-----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1273PI | 7/12/2016 | 6MT12JUL06-S | surface | Fresh Water | 36 hrs | 0 in | 6.34 | 23.0 | 0.25 | 0.20 | 0.00 | =0.1 | 100 | 100 |
| TMR1273PI | 7/18/2016 | 6MT18JUL09-S | surface | Fresh Water | 92 hrs | 0 in | 6.74 | 27.9 | 2.02 | 0.25 | 0.00 | =0.25 | 80 | 2200 |
| TMR1273PI | 7/19/2016 | 6MT19JUL10-S-D | surface | Brackish or Sea Water | 117 hrs | 0 in | 6.76 | 28.6 | 7.07 | | 0.00 | =0.65 | 1500 | 1100 |
| TMR1273PI | 7/19/2016 | 6MT19JUL10-S | surface | Fresh Water | 117 hrs | 0 in | 6.90 | 28.2 | 4.43 | | 0.00 | =0.75 | 1300 | 1400 |
| TMR1273PI | 7/24/2017 | 7MT24JUL01-A-D | pipe | Fresh Water | 0 hrs | 0.04 in | 6.71 | 17.7 | 0.22 | 0.25 | 4.40 | =0.5 | 2600 | |
| TMR1273PI | 7/24/2017 | 7MT24JUL01-A | pipe | Fresh Water | 0 hrs | 0.04 in | 6.77 | 17.5 | 0.25 | 0.25 | 4.40 | =0.5 | 2800 | |
| TMR1088CB | 7/26/2018 | 8MT26JUL01-A | surface | Fresh Water | 0 hrs | 0.11 in | 7.63 | 24.5 | 1.02 | 0.25 | 3.52 | =0.5 | 1320 | 1210 |

Stormwater Report for: TMR1030PI in the Town of Mattapoissett

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Ship St

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW: No flow, no issues. Recommend:
Collect WW samples for evaluation
(none collected). Matt Har Impair:
Bact and N

Rating by Weather (0-5):
Wet :
Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

Stormwater Report for: TMR1031PI in the Town of Mattapoissett

Shipyard Lane across from Foster St

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

1CB with 2 DP (TMR1031PI) and (TMR1274PI). Probably TMR1031PI replaced TMR1274PI. DW rank: Bact (1), Amm, Nitrates, Surf (1 ea), Total 4. WW Rank (1 sample) Bact (2), Amm/Nitrates/Surf (1 ea), Tot. 5. Recommend: Continue DW and WW monitoring. If collecting a DW sample in sump, make note in data sheet if the sump is flowing (not stagnant). Investigate stormdrain for potential ID . Matt Har Impair: Bact and N

Rating by Weather (0-5):
 Wet :
 Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|--------------|------------|-----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1031PI | 6/20/2016 | 6MT20JUN10-A | pipe | Fresh Water | 211 hrs | 0 in | 7.69 | 24.2 | 0.15 | 0.00 | 4.40 | =0.1 | | |
| TMR1174CB | 7/12/2016 | 6MT12JUL05-S | sump | Fresh Water | 35 hrs | 0 in | 7.36 | 23.1 | 0.23 | 0.20 | 4.40 | =0.1 | 2000 | 300 |
| TMR1188CB | 7/18/2016 | 6MT18JUL08-S | sump | Fresh Water | 92 hrs | 0 in | 7.10 | 27.9 | 0.14 | 0.80 | 4.40 | =0.65 | 4600 | 1500 |
| TMR1188CB | 7/18/2016 | 6MT18JUL08-A | surface | Fresh Water | 92 hrs | 0 in | 6.40 | 28.2 | 0.15 | 0.50 | 4.40 | =0 | 10 | 10 |
| TMR1188CB | 7/19/2016 | 6MT19JUL09-S | sump | Fresh Water | 116 hrs | 0 in | 7.49 | 27.9 | 0.13 | | 4.40 | =0.15 | 4600 | 8300 |
| TMR1174CB | 8/22/2016 | 6MT22AUG08-S | sump | Brackish or Sea Water | 4 hrs | 0.31 in | 7.18 | 28.6 | 9.01 | 0.10 | 4.40 | =1.5 | 7400 | 16000 |
| TMR1174CB | 9/1/2016 | 6MT01SEP09-A | pipe | Fresh Water | 0 hrs | 0.06 in | 6.09 | 24.1 | 0.03 | 0.25 | 4.40 | =1 | 1400 | |
| TMR1031PI | 7/24/2017 | 7MT24JUL03-A | pipe | Fresh Water | 0 hrs | 0.27 in | 7.53 | 17.6 | 0.12 | 1.00 | 4.40 | =0.25 | 32000 | |

Stormwater Report for: TMR1274PI in the Town of Mattapoissett

Shipyard Lane across from Foster St

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

There are two pipes in close proximity (TMR1031PI). Check TMR1174CB as this may not be a functioning pipe, replaced by TMR1031PI? Follow recommendations for TMR1031PI - Recommend: Continue DW and WW monitoring. If collecting a DW sample in sump, make note in data sheet if the sump is flowing (not stagnant). Investigate stormdrain for potential ID . Matt Har Impair: Bact and N.

Rating by Weather (0-5):

Wet :

Dry :

'No Sample Visits'

Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019



| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|--------------|------------|-----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1274PI | 7/24/2017 | 7MT24JUL02-A | pipe | Brackish or Sea Water | 0 hrs | 0.27 in | 7.66 | 17.7 | 10.00 | 0.25 | 4.40 | =3 | 100 | |
| TMR1274PI | 6/26/2018 | 8MT26JUN01-A | pipe | Fresh Water | 31 hrs | 0 in | 7.93 | | 0.68 | | 4.40 | =0.25 | 1000 | 560 |

Stormwater Report for: TMR1039PI in the Town of Mattapoisett

Water St across from playground

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

The drainage on this site is complicated, 2 drainage systems into 1 discharge, one system, stormwater from North and Water St flows through an infiltration treatment BMP. The other system drains some of Water Street, plus the drainage ditch north of Water Street. DW: All pipe samples indicate a moderate Bact count. DW Rank: Bact (1) Nitrates/Surf (1 ea), Tot. 3. WW: 1 Sample at pipe high for Bact. WW Rank: Bact (2), Nitrates/Surf (1 ea), Tot. 4. Recommend: Continue to monitor for Bact.



Rating by Weather (0-5):

Wet :

Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|--------------|------------|-----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1039PI | 6/15/2016 | 6MT15JUN03-A | pipe | Fresh Water | 88 hrs | 0 in | 7.02 | 21.0 | 2.36 | 0.25 | 1.32 | =0.25 | 660 | 250 |
| TMR1039PI | 6/20/2016 | 6MT20JUN09-A | pipe | Fresh Water | 212 hrs | 0 in | 6.94 | 24.1 | 3.71 | 0.15 | 2.64 | =0.7 | | |
| TMR1039PI | 7/12/2016 | 6MT12JUL04-A | pipe | Fresh Water | 35 hrs | 0 in | 6.90 | 22.7 | 3.15 | 0.00 | 3.52 | =0.75 | 1200 | 1100 |
| TMR1016MH | 7/18/2016 | 6MT18JUL07-S | sump | Brackish or Sea Water | 92 hrs | 0 in | 7.22 | 28.6 | 9.83 | 0.25 | 1.76 | =2 | 340 | 300 |
| TMR1016MH | 7/19/2016 | 6MT19JUL08-S | sump | Brackish or Sea Water | 116 hrs | 0 in | 7.36 | 27.2 | 9.73 | 0.00 | 2.64 | =2 | 320 | 60 |
| TMR1016MH | 8/22/2016 | 6MT22AUG07-S | sump | Brackish or Sea Water | 4 hrs | 0.31 in | 7.04 | 28.9 | 9.21 | 0.35 | 3.52 | =2 | 14000 | 13000 |
| TMR1016MH | 9/1/2016 | 6MT01SEP08-S | sump | Brackish or Sea Water | 0 hrs | 0.06 in | 7.33 | 25.3 | 10.00 | 0.00 | 0.88 | =2 | 100 | |
| TMR1039PI | 7/24/2017 | 7MT24JUL04-A | pipe | Fresh Water | 0 hrs | 0.27 in | 6.93 | 17.7 | 1.33 | 0.50 | 2.64 | =0.5 | 43000 | |

Stormwater Report for: TMR1041PI in the Town of Mattapoissett

Water St opposite Mechanic St

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW: Low to moderate Bact counts,
DW Rank: Bact (1), Nitrates (1), Tot. 2.
WW: High Bact counts, WW Rank:
Bact (2), Nitrates (1), Tot. 3.
Recommend: Continue WW
monitoring. Matt Har Impair: Bact and
N

Rating by Weather (0-5):

Wet :

Dry :

'No Sample Visits'

Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019



| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|----------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1110MH | 7/12/2016 | 6MT12JUL03-A-D | pipe | Fresh Water | 35 hrs | 0 in | 7.36 | 23.6 | 0.27 | 0.20 | 2.64 | =0.1 | 600 | 500 |
| TMR1110MH | 7/12/2016 | 6MT12JUL03-A | pipe | Fresh Water | 35 hrs | 0 in | 7.38 | 23.6 | 0.28 | 0.20 | 2.64 | =0.1 | 400 | 200 |
| TMR1110MH | 7/18/2016 | 6MT18JUL06-A | pipe | Fresh Water | 91 hrs | 0 in | 7.51 | 26.8 | 0.25 | 0.25 | 3.52 | =0.1 | 10 | 70 |
| TMR1110MH | 7/19/2016 | 6MT19JUL07-A | pipe | Fresh Water | 116 hrs | 0 in | 7.47 | 25.6 | 0.28 | 0.25 | 1.76 | =0 | 30 | 20 |
| TMR1110MH | 8/22/2016 | 6MT2AUG06-A | pipe | Fresh Water | 4 hrs | 0.31 in | 6.93 | 29.5 | 0.04 | 0.25 | 4.40 | =0.25 | 17000 | 51000 |
| TMR1110MH | 9/1/2016 | 6MT01SEP07-A | pipe | Fresh Water | 0 hrs | 0.06 in | 7.80 | 24.2 | 0.18 | 0.10 | 4.40 | =0 | 900 | |
| TMR1041PI | 6/12/2018 | 8MT12JUN01-A | pipe | Fresh Water | 86 hrs | 0 in | 6.84 | 24.0 | 1.47 | 0.25 | 2.64 | =0.25 | | |

Stormwater Report for: TMR1044PI in the Town of Mattapoissett

Water St at town pier

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW rank (3 pipe samples): Bact (1) and Nitrates/Surf (1 ea), Total 3. WW Rank (1 Sample) Nitrates/Surf (1 ea), Total 3. Recommend: continue to monitor DW and WW. Matt Har Impair: Bact and N

Rating by Weather (0-5):

Wet :

Dry :

'No Sample Visits'

Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019



| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|--------------|------------|-----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1019MH | 6/15/2016 | 6MT15JUN02-S | sump | Fresh Water | 88 hrs | 0 in | 7.60 | 21.8 | 0.99 | 0.25 | 2.64 | =1.5 | 64 | 64 |
| TMR1019MH | 6/20/2016 | 6MT20JUN08-S | sump | Brackish or Sea Water | 211 hrs | 0 in | 7.09 | 23.9 | 9.90 | 0.00 | 1.76 | =2 | | |
| TMR1019MH | 6/20/2016 | 6MT20JUN08-A | pipe | Fresh Water | 211 hrs | 0 in | 7.44 | 26.1 | 1.11 | 0.00 | 1.32 | =1 | | |
| TMR1019MH | 7/12/2016 | 6MT12JUL02-S | sump | Fresh Water | 34 hrs | 0 in | 7.32 | 23.1 | 1.41 | 0.25 | 4.40 | =0.5 | 1600 | 400 |
| TMR1021MH | 7/18/2016 | 6MT18JUL05-A | pipe | Fresh Water | 91 hrs | 0 in | 7.58 | 26.9 | 0.53 | 0.25 | 1.76 | =0.15 | 40 | 3600 |
| TMR1021MH | 7/19/2016 | 6MT19JUL06-A | pipe | Fresh Water | 116 hrs | 0 in | 7.52 | 26.9 | 0.89 | 0.00 | 0.88 | =0.25 | 160 | 6700 |
| TMR1019MH | 8/22/2016 | 6MT22AUG05-S | sump | Fresh Water | 4 hrs | 0.31 in | 6.90 | 29.2 | 0.68 | 0.25 | 4.40 | =0.45 | 4200 | 8000 |
| TMR1019MH | 9/1/2016 | 6MT01SEP06-S | sump | Brackish or Sea Water | 0 hrs | 0.05 in | 7.07 | 24.5 | 10.00 | 0.00 | 1.76 | =2.5 | 100 | |

Stormwater Report for: TMR1050PI in the Town of Mattapoissett

Main St just before Pearl St at bend

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW no flow, no issues. Recommend:
Collect WW samples for evaluation
(no samples taken). Matt Har Impair:
Bact and N

Rating by Weather (0-5):
Wet :
Dry :

'No Sample Visits'

Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019



| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|--------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1034MH | 6/20/2016 | 6MT20JUN07-S | sump | Fresh Water | 211 hrs | 0 in | 6.26 | 25.2 | 0.13 | 0.00 | 0.00 | =0.5 | | |
| TMR1034MH | 7/12/2016 | 6MT12JUL01-S | sump | Fresh Water | 34 hrs | 0 in | 6.43 | 22.3 | 0.02 | 0.50 | 1.32 | =0.25 | 9700 | 4100 |

Stormwater Report for: TMR1058PI in the Town of Mattapoissett

Main St and Church St

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW, No flow, no issues. WW (1 sample) Rank: Bact (2), Nitrates/Surf (1 ea) Total 4. Investigate for potential ID. Recommend: Continue to monitor during WW. Matt Har Impair: Bact and N



Rating by Weather (0-5):

Wet :

Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|--------------|------------|-----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1058PI | 6/20/2016 | 6MT20JUN06-S | pipe | Brackish or Sea Water | 209 hrs | 0 in | 6.82 | 27.4 | 10.00 | 0.15 | 0.00 | =3 | | |
| TMR1050MH | 7/29/2016 | 6MT29JUL13-A | pipe | Fresh Water | 0 hrs | 0.28 in | 6.91 | 25.8 | 0.02 | 0.35 | 0.88 | =0.3 | 20000 | 40000 |
| TMR1050MH | 9/1/2016 | 6MT01SEP05-S | sump | Brackish or Sea Water | 0 hrs | 0.05 in | 6.99 | 23.4 | 10.00 | 0.25 | 0.88 | =3 | 700 | |

Stormwater Report for: TMR1067PI in the Town of Mattapoissett

Fairhaven Rd at Tub Mill Brook

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW: Although there were 3 DW, no flows, there was 1 DW sample that had some flow with moderate levels of bact. DW rank Bact (1) Nitrates/Surf (1 ea), Total 3. WW Rank (1 sample): Bact (2), Nitrates/Surf (1 ea), Total 4. Recommend: Continue monitoring DW and WW. DW only monitoring when flow is evident (not stagnant). If not flowing make a note on data sheets. In conjunction with monitoring TMR1067PI, monitor TMR1068PI and TMR1070PI



Rating by Weather (0-5):
Wet :
Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|--------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1067PI | 7/29/2016 | 6MT29JUL12-A | pipe | Fresh Water | 0 hrs | 0.28 in | 6.96 | 25.7 | 0.07 | 0.25 | 0.88 | =0.3 | 15000 | 20000 |
| TMR1062MH | 9/1/2016 | 6MT01SEP04-S | sump | Fresh Water | 0 hrs | 0.05 in | 6.69 | 23.0 | 4.69 | 0.00 | 4.40 | =1 | 1100 | |
| TMR1067PI | 7/24/2017 | 7MT24JUL05-A | pipe | Fresh Water | 0 hrs | 0.27 in | 7.26 | 17.6 | 0.06 | 0.25 | 1.76 | =0.5 | 2800 | |
| TMR1067PI | 6/26/2018 | 8MT26JUN02-A | pipe | Fresh Water | 31 hrs | 0 in | 7.50 | | 0.34 | 0.25 | 4.40 | =0.25 | 62 | 34 |

Stormwater Report for: TMR1088PI in the Town of Mattapoisett

Shaw St at end of residential houses

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW no flow, no issues. WW (2 pipe samples) Rank: Bact (1), Amm/Nitrates (1 ea), Total 3.
Recommend: Continue monitoring in WW to confirm presence of ID and consider potential BMP for bact. Matt R Impair: Bact

Rating by Weather (0-5):
Wet :
Dry :

'No Sample Visits'

Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019



| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Entero. | Fecal C. |
|------------|------------|----------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|---------|----------|
| TMR1073MH | 6/21/2016 | 6MT21JUN01-A | pipe | Fresh Water | 1 hrs | 0.86 in | 6.90 | 20.8 | 0.07 | 0.60 | 1.32 | =0.125 | 870 | 730 |
| TMR2199CB | 7/19/2016 | 6MT19JUL05-S | sump | Fresh Water | 115 hrs | 0 in | 6.53 | 26.9 | 0.08 | 0.00 | 0.00 | =0.15 | 120 | 330 |
| TMR1073MH | 7/29/2016 | 6MT29JUL11-A-D | pipe | Fresh Water | 0 hrs | 0.23 in | 6.67 | 25.9 | 0.01 | 0.25 | 0.44 | =0.1 | 3200 | 2300 |
| TMR1073MH | 7/29/2016 | 6MT29JUL11-A | pipe | Fresh Water | 0 hrs | 0.23 in | 6.68 | 26.1 | 0.01 | 0.25 | 0.44 | =0.1 | 3400 | 2800 |
| TMR1073MH | 8/22/2016 | 6MT22AUG04-S | sump | Fresh Water | 3 hrs | 0.31 in | 7.32 | 30.1 | 0.01 | 0.00 | 0.88 | =0 | 1700 | 11000 |
| TMR1073MH | 9/1/2016 | 6MT01SEP03-S-D | sump | Fresh Water | 0 hrs | 0.04 in | 6.93 | 24.7 | 0.04 | 1.00 | 4.40 | =0.5 | 2100 | |
| TMR1073MH | 9/1/2016 | 6MT01SEP03-S | sump | Fresh Water | 0 hrs | 0.04 in | 6.89 | 24.9 | 0.04 | 1.00 | 4.40 | =0.5 | 6600 | |

Stormwater Report for: TMR1080PI in the Town of Mattapoissett

Fairhaven Rd at Mattapoissett River

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW no flow, no issues. WW (2 samples) Rank: Bact (2), Amm/Nitrates/Surf (1 ea), Total 5. Recommend: Continue monitoring for WW. Begin investigating for sources of bacteria and potential ID especially from town drainage. Monitor consecutively with TMR1082PI. Notify Mass DOT of monitoring and investigative results. Matt R Impair: Bact

Rating by Weather (0-5):
Wet :
Dry :

'No Sample Visits'

Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019



| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|--------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1080PI | 6/20/2016 | 6MT20JUN05-A | pipe | Fresh Water | 209 hrs | 0 in | 6.27 | 27.1 | 0.26 | 0.38 | 4.40 | =0.15 | 10 | 27 |
| TMR1080PI | 7/29/2016 | 6MT29JUL09-A | pipe | Fresh Water | 0 hrs | 0.23 in | 7.14 | 25.4 | 0.04 | 0.50 | 0.88 | =0.3 | 3800 | 5600 |
| TMR1080PI | 7/24/2017 | 7MT24JUL07-A | pipe | Fresh Water | 0 hrs | 0.34 in | 7.21 | 17.0 | 0.09 | 1.00 | 1.32 | =0.5 | 48000 | |

Stormwater Report for: TMR1082PI in the Town of Mattapoissett

Fairhaven Rd opposite River Rd

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW no flow, no issues. WW (2 samples) Rank: Bact 2, Amm/Nitrates/Surf (1 ea), Total 5. Begin investigating for sources of bacteria and potential ID especially from town drainage. Monitor consecutively with TMR1080PI. Notify Mass DOT of monitoring and investigative results. Matt R Impair: Bact

Rating by Weather (0-5):
Wet :
Dry :

'No Sample Visits'

Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019



| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|--------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1082PI | 7/29/2016 | 6MT29JUL10-A | pipe | Fresh Water | 0 hrs | 0.23 in | 7.11 | 25.6 | 0.03 | 0.50 | 1.76 | =0.3 | 2500 | 4800 |
| TMR1082PI | 7/24/2017 | 7MT24JUL06-A | pipe | Fresh Water | 0 hrs | 0.34 in | 7.16 | 17.1 | 0.06 | 1.00 | 1.32 | =0.5 | 15000 | |

Stormwater Report for: TMR1036PI in the Town of Mattapoissett

West Hill Rd opposite creek

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW: Although there are 2 no flow DW observations, there are some dry weather discharges indicating potential ID. DW Rank: Bact (1), Nitrates, Surf (1 ea), Tot. 4. WW: (2 samples with moderate to high Bact. Also one stream sample near the pipe with also high levels of Bact. WW Rank Bact (2), Amm, Nitrates, Surf (1 ea) Total 5. Recommend: Investigate for potential ID. Continue DW and WW monitoring. Any DW sump sample indicate if sump is flowing (not stagnant). Matt Har Impair: Bact and N



Rating by Weather (0-5):

Wet :

Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|--------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1036PI | 6/20/2016 | 6MT20JUN03-A | pipe | Fresh Water | 208 hrs | 0 in | 7.01 | 27.4 | 0.16 | 0.50 | 4.40 | =1 | 10 | 18 |
| TMR1036PI | 6/21/2016 | 6MT21JUN05-A | stream | Fresh Water | 3 hrs | 0.86 in | 6.70 | 24.2 | 0.11 | 0.30 | 0.88 | =0.25 | 10800 | 10500 |
| TMR1036PI | 7/12/2016 | 6MT12JUL08-A | pipe | Fresh Water | 37 hrs | 0 in | 7.05 | 26.8 | 0.19 | 0.25 | 3.52 | =0.5 | 400 | 1200 |
| TMR1218CB | 7/18/2016 | 6MT18JUL03-S | sump | Fresh Water | 90 hrs | 0 in | 7.19 | 27.2 | 0.18 | 0.40 | 4.40 | =0.35 | 100 | 290 |
| TMR1218CB | 7/19/2016 | 6MT19JUL02-S | sump | Fresh Water | 114 hrs | 0 in | 7.28 | 24.8 | 0.18 | 0.00 | | | 90 | 1500 |
| TMR1036PI | 7/29/2016 | 6MT29JUL02-A | pipe | Fresh Water | 0 hrs | 0.03 in | 7.43 | 25.1 | 0.09 | 2.00 | 3.52 | =0.75 | 2500 | 16000 |
| TMR1218CB | 8/22/2016 | 6MT22AUG02-S | sump | Fresh Water | 2 hrs | 0.31 in | 6.94 | 28.1 | 0.02 | 1.00 | 4.40 | =0.5 | 56000 | 17000 |
| TMR1036PI | 8/22/2018 | 8MT22AUG01-A | pipe | Fresh Water | 3 hrs | 0.14 in | 8.14 | 24.5 | 0.98 | 0.25 | 0.88 | =3 | 25000 | 15000 |

Stormwater Report for: TMR1271PI in the Town of Mattapoissett

West Hill Rd opposite Tara Rd

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

This discharge should not been part of the monitoring program. Not sure if the pipe is actually located in this area or does it flow to TMR1036PI

Rating by Weather (0-5):
Wet :
Dry :

'No Sample Visits'

Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019



| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|--------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1183CB | 6/20/2016 | 6MT20JUN04-S | sump | Fresh Water | 208 hrs | 0 in | 6.29 | 27.9 | 0.16 | 0.25 | 0.00 | | 820 | 100 |
| TMR1183CB | 6/21/2016 | 6MT21JUN06-A | pipe | Fresh Water | 4 hrs | 0.86 in | 6.64 | 24.3 | 0.12 | 0.40 | 4.40 | =0.5 | 4600 | 1530 |
| TMR1196CB | 7/18/2016 | 6MT18JUL04-S | sump | Fresh Water | 90 hrs | 0 in | 6.56 | 24.2 | 0.18 | 0.50 | 4.40 | | 180 | 3200 |
| TMR1196CB | 7/19/2016 | 6MT19JUL04-S | sump | Fresh Water | 114 hrs | 0 in | 6.64 | 23.2 | 0.18 | 0.25 | 4.40 | =3 | 200 | 3100 |

Stormwater Report for: TMR1063RC in the Town of Mattapoissett

Mattapoissett Neck Rd at entrance to public lot

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

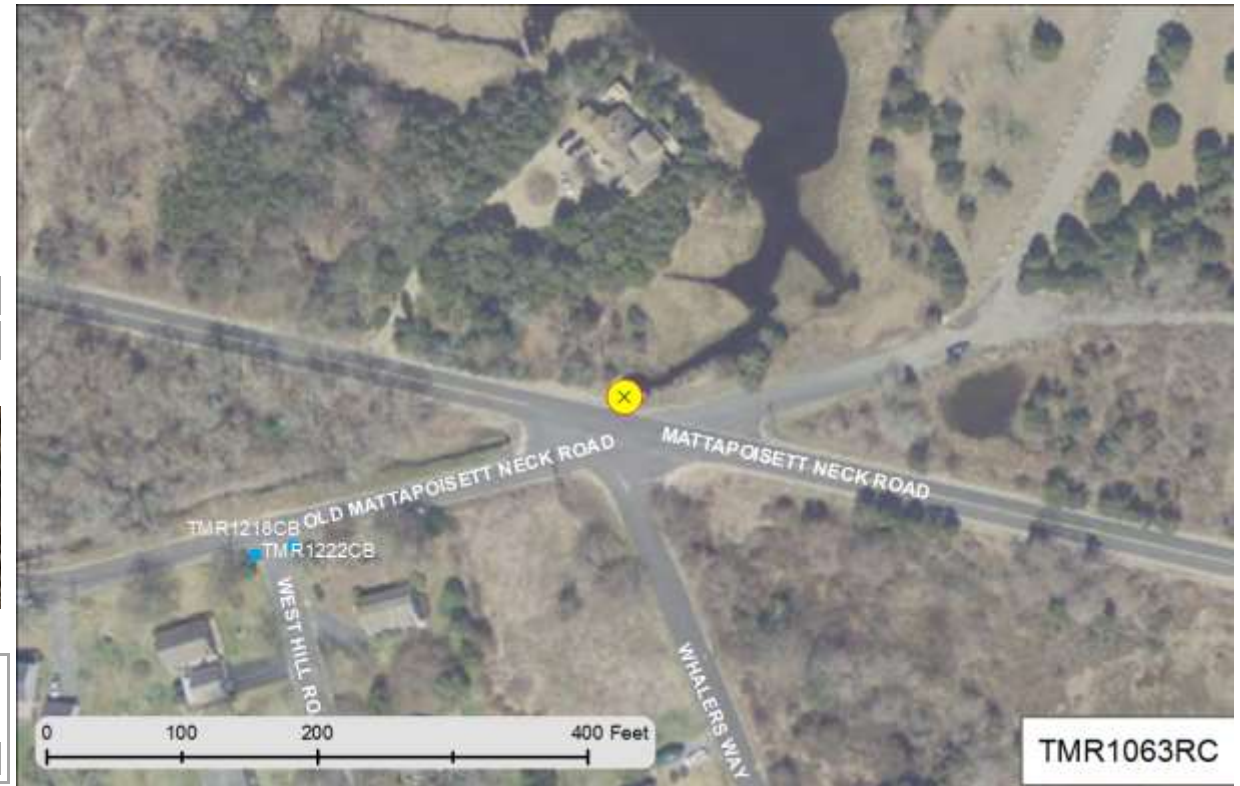
Status:

DW: no flow, no issues (RC). WW (1 sample) Bact (1), Nitrates/Surfactants (1 ea), Total 3. Recommend: Continue monitoring WW. Make note of contributing watershed flows as this may be a potential ID. Matt R Impair: Bact



Rating by Weather (0-5):
 Wet :
 Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Entero. | Fecal C. |
|------------|------------|--------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|---------|----------|
| TMR1063RC | 7/29/2016 | 6MT29JUL04-A | surface | Fresh Water | 0 hrs | 0.06 in | 7.05 | 25.4 | 0.02 | 0.50 | 1.76 | =1 | 3700 | 4200 |

Stormwater Report for: TMR1064RC in the Town of Mattapoissett

Mattapoissett Neck Rd and Whalers Way

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW: no flow, no issues (RC). WW (1 sample) Bact (1), Nitrates/Surfactants (1 ea), Total 3. Recommend: Continue monitoring WW. Make note of contributing watershed flows as this may be a potential ID. Matt R Impair: Bact



Rating by Weather (0-5):
 Wet :
 Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Entero. | Fecal C. |
|------------|------------|--------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|---------|----------|
| TMR1064RC | 7/29/2016 | 6MT29JUL03-A | surface | Fresh Water | 0 hrs | 0.03 in | 6.33 | 26.1 | 0.01 | 0.50 | 1.76 | =0.75 | 3100 | 9000 |

Stormwater Report for: TMR1043RC in the Town of Mattapoissett

Mattapoissett Neck Rd at 2nd large culvert

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

WW Rank (1 sample) Bact (1),
Nitrates/Surf (1 ea). Tot. 3.
Recommend: Investigate drainage
area including surface flows onto
Matt Neck Rd. Continue monitoring
WW. Matt Har Impair: Bact and N



Rating by Weather (0-5):

Wet :

Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Entero. | Fecal C. |
|------------|------------|--------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|---------|----------|
| TMR1043RC | 7/29/2016 | 6MT29JUL05-A | surface | Fresh Water | 0 hrs | 0.06 in | 5.88 | 25.5 | 0.01 | 0.50 | 0.88 | =0.75 | 1000 | 900 |

Stormwater Report for: TMR1042RC in the Town of Mattapoissett

Mattapoissett Neck Road

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

1 DW sample, No WW, Recommend:
Continue to monitor DW and WW .
Matt Har Impair: Bact and N



Rating by Weather (0-5):
Wet :
Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

**Stormwater Report for: TMR1040RC
in the Town of Mattapoissett**

Mattapoissett Neck Rd past 2nd large culvert

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

No Samples. Recommend: Collect WW samples for evaluation. Matt Har Impair: Bact and N



Rating by Weather (0-5):

Wet :

Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Entero. | Fecal C. |
|------------|------------|--------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|---------|----------|
| TMR1040RC | 7/29/2016 | 6MT29JUL06-A | surface | Fresh Water | 0 hrs | 0.19 in | 6.14 | 25.3 | 0.01 | 0.50 | 0.88 | =0.25 | 800 | 900 |

Stormwater Report for: TMR1005PI in the Town of Mattapoissett

Noyes Ave near Innes Rd

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW no flow, no issues. WW: only 1 sample, Rank: Bact (2), Nitrate (1), Total 3. WW Recommend: Continue monitoring for WW. Matt Har Impair: Bact and N.

Rating by Weather (0-5):
Wet :
Dry :

'No Sample Visits'

Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019



| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Entero. | Fecal C. |
|------------|------------|--------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|---------|----------|
| TMR1029CB | 7/29/2016 | 6MT29JUL08-A | pipe | Fresh Water | 0 hrs | 0.19 in | 6.90 | 24.3 | 0.02 | 0.50 | 1.76 | =0.2 | 32000 | 39000 |

Stormwater Report for: TMR1272PI in the Town of Mattapoissett

end of Bay View Ave

Water Body: Category:

Urbanized: Sewered:

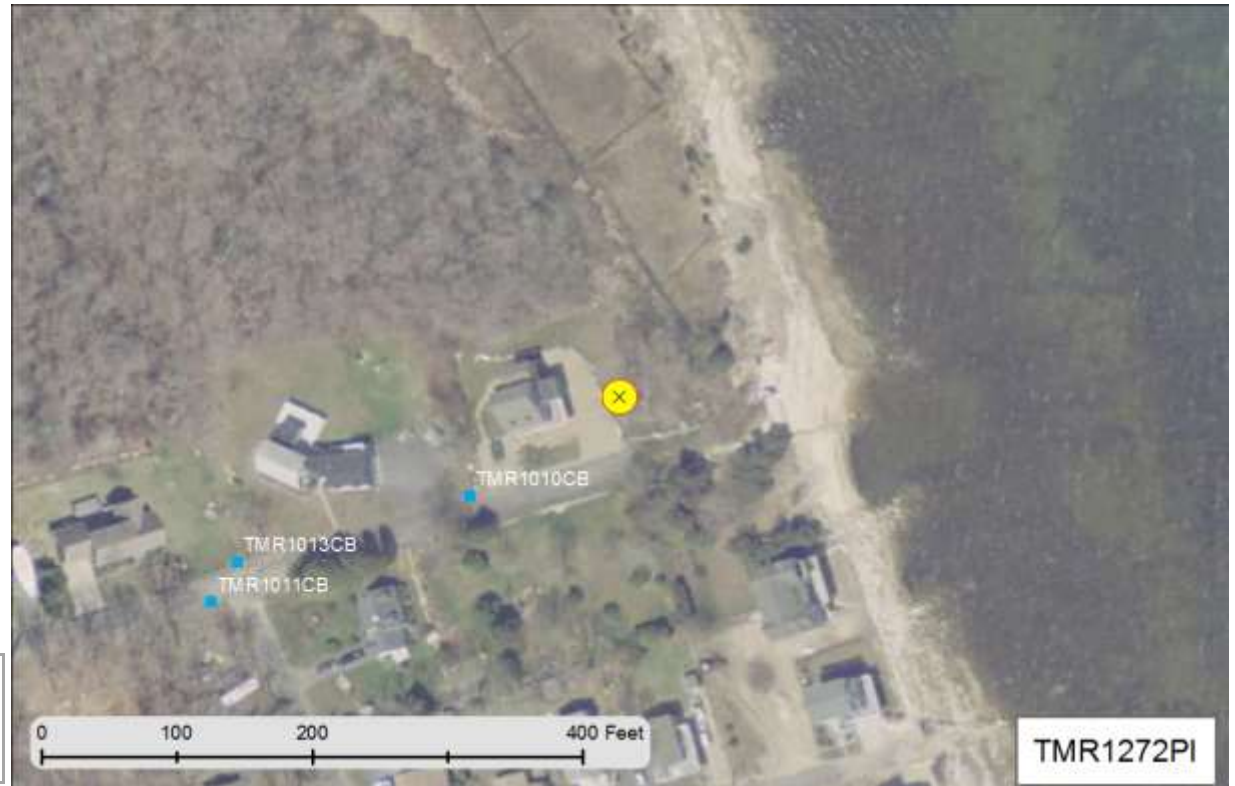
MS4 Ranking:

Status:

Although most of these samples were in the CBs sumps, the data indicates the presence of an ID and should be investigated. DW Bact ranged from moderate to high and surfactants over the testing capabilities. Comments in the data sheets referred to the water as gray in color. DW Rank: Bact (2), Amm/Surf (1 ea). Total 4. WW Rank: Bact (2), Amm/Nitrates/Surf (1 ea), Total 5. Recommend: Investigate for potential ID connection including any failed septic systems. Matt Har Impair: Bact

Rating by Weather (0-5):
Wet :
Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|----------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR1010CB | 6/15/2016 | 6MT15JUN04-S-D | sump | Fresh Water | 91 hrs | 0 in | 7.14 | 28.7 | 0.79 | 0.25 | 0.00 | >3 | | |
| TMR1010CB | 6/15/2016 | 6MT15JUN04-S | sump | Fresh Water | 91 hrs | 0 in | 7.14 | 28.7 | 0.79 | 0.25 | 0.00 | >3 | | |
| TMR1013CB | 6/20/2016 | 6MT20JUN02-S | sump | Fresh Water | 208 hrs | 0 in | 7.31 | 28.1 | 0.27 | 1.00 | 0.00 | >3 | 1500 | 7200 |
| TMR1010CB | 6/21/2016 | 6MT21JUN04-S-D | sump | Fresh Water | 3 hrs | 0.86 in | 6.01 | 24.3 | 0.05 | 4.00 | 1.76 | >3 | 159000 | 250000 |
| TMR1010CB | 6/21/2016 | 6MT21JUN04-S | sump | Fresh Water | 3 hrs | 0.86 in | 6.06 | 24.3 | 0.06 | 4.00 | 2.64 | >3 | 155000 | 250000 |
| TMR1010CB | 7/12/2016 | 6MT12JUL09-S | sump | Fresh Water | 37 hrs | 0 in | 7.02 | 28.4 | 0.09 | 0.20 | | | 124000 | 4100 |
| TMR1010CB | 7/18/2016 | 6MT18JUL02-S | sump | Fresh Water | 90 hrs | 0 in | 7.34 | 25.6 | 0.16 | 0.60 | 0.00 | >3 | 8000 | 5000 |
| TMR1010CB | 7/19/2016 | 6MT19JUL03-S | sump | Fresh Water | 114 hrs | 0 in | 7.49 | 27.0 | 0.21 | 0.50 | 0.00 | | 70 | 2500 |
| TMR1010CB | 7/29/2016 | 6MT29JUL07-A | surface | Fresh Water | 0 hrs | 0.19 in | 6.50 | 25.0 | 0.02 | 1.00 | 2.64 | =0.3 | 42000 | 54000 |
| TMR1010CB | 8/22/2016 | 6MT22AUG03-S | sump | Fresh Water | 2 hrs | 0.31 in | 6.69 | 27.1 | 0.06 | 1.00 | 4.40 | =0.5 | 330000 | 440000 |
| TMR1010CB | 9/1/2016 | 6MT01SEP02-S | sump | Fresh Water | 0 hrs | 0.03 in | 7.35 | 24.7 | 0.15 | 1.00 | 0.00 | >3 | 700 | |

Stormwater Report for: TMR1007PI in the Town of Mattapoisett

end of Brandt Island Rd

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW Rank: (1 sample) Bact (1), Nitrates (1), Tot 2, however remaining DW samples no issues. WW: higher level of concern due to elevated Bact after rain. WW rank: Bact (2) Nitrates (1), Tot 3, Area not sewered, possible septic system problems. Recommend: Determine drainage area of stormdrain pipe, does TMR1001MH connect into TMR2216MH or does TMR1001MH discharge into woods. If MHs connected, monitor both MHs and stream, If not connected, monitor TMR2216MH and stream. Invest for



Rating by Weather (0-5):

Wet :

Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Enteroc. | Fecal C. |
|------------|------------|----------------|------------|-----------------------|-----------|-----------|------|------|----------|------|---------|---------|----------|----------|
| TMR2216MH | 6/20/2016 | 6MT20JUN01-B | pipe | Fresh Water | 206 hrs | 0 in | 6.12 | 21.5 | 0.08 | 0.30 | 4.40 | =0.1 | 10 | 10 |
| TMR2216MH | 6/20/2016 | 6MT20JUN01-A | pipe | Fresh Water | 206 hrs | 0 in | 6.53 | 21.1 | 0.16 | 0.25 | 3.52 | =0.1 | 10 | 10 |
| TMR2216MH | 6/20/2016 | 6MT20JUN01-S | sump | Fresh Water | 206 hrs | 0 in | 6.37 | 21.5 | 0.12 | 0.25 | 4.40 | =0.1 | 10 | 9 |
| TMR1007PI | 6/21/2016 | 6MT21JUN03-A | stream | Fresh Water | 3 hrs | 0.86 in | 6.49 | 22.2 | 0.09 | 0.50 | 1.32 | =0.375 | 114000 | 73000 |
| TMR1007PI | 7/12/2016 | 6MT12JUL07-A | pipe | Fresh Water | 36 hrs | 0 in | 6.56 | 27.2 | 0.25 | 0.10 | 4.40 | =0 | 2200 | 2200 |
| TMR2216MH | 7/18/2016 | 6MT18JUL01-S-D | sump | Fresh Water | 90 hrs | 0 in | 5.87 | 22.8 | 0.71 | 0.30 | 3.52 | =0.1 | 150 | 50 |
| TMR2216MH | 7/18/2016 | 6MT18JUL01-S | sump | Fresh Water | 90 hrs | 0 in | 6.12 | 23.3 | 0.77 | 0.30 | 3.52 | =0.1 | 200 | 90 |
| TMR2216MH | 7/19/2016 | 6MT19JUL01-S | sump | Fresh Water | 113 hrs | 0 in | 5.96 | 22.8 | 1.80 | 0.30 | 4.40 | =0.2 | 90 | 1500 |
| TMR2216MH | 7/29/2016 | 6MT29JUL01-S | sump | Brackish or Sea Water | 0 hrs | 0.03 in | 6.46 | 25.0 | 10.00 | 0.25 | 2.64 | =2 | 900 | 1800 |
| TMR2216MH | 7/29/2016 | 6MT29JUL01-S-D | sump | Brackish or Sea Water | 0 hrs | 0.03 in | 6.48 | 24.8 | 10.00 | 0.25 | 2.64 | =2 | 1000 | 1600 |
| TMR2216MH | 8/9/2016 | 6MT09AUG01-S-D | sump | Brackish or Sea Water | 60 hrs | 0 in | 6.45 | 24.0 | 6.42 | 0.25 | 2.64 | =1 | 20 | 20 |
| TMR2216MH | 8/9/2016 | 6MT09AUG01-S | sump | Brackish or Sea Water | 60 hrs | 0 in | 6.44 | 24.1 | 6.69 | 0.25 | 2.64 | =1 | 10 | 20 |
| TMR2216MH | 8/22/2016 | 6MT22AUG01-S-D | sump | Fresh Water | 2 hrs | 0.31 in | 7.56 | 24.9 | 1.56 | 0.30 | 2.64 | =0.5 | 22000 | 15000 |
| TMR2216MH | 8/22/2016 | 6MT22AUG01-S | sump | Fresh Water | 2 hrs | 0.31 in | 7.75 | 24.7 | 1.94 | 0.30 | 2.64 | =0.5 | 12000 | 10000 |

**Stormwater Report for: TMR1217RC
in the Town of Mattapoissett**

Brandt Island Rd

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

No samples for WW. Recommend:
Monitor WW. Nask B Impair: Bact



Rating by Weather (0-5):
Wet :
Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

**Stormwater Report for: TMR1008PI
in the Town of Mattapoissett**

end of Island View Ave

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW: No flow, no issues. Recommend:
Collect WW samples for evaluation
(none collected). NB Impair: Bact

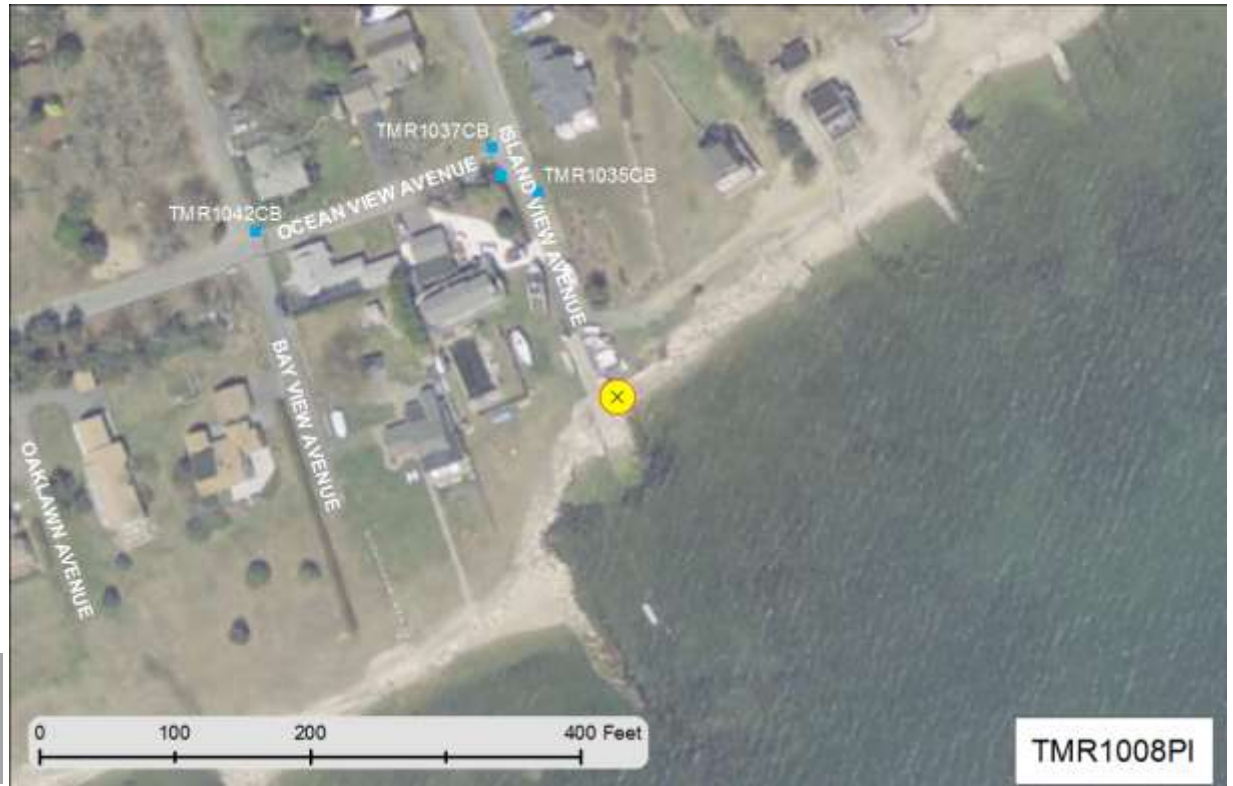


Rating by Weather (0-5):

Wet :

Dry :

'No Sample Visits'



Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019

Stormwater Report for: TMR1014PI in the Town of Mattapoisett

Brant Beach Ave

Water Body: Category:

Urbanized: Sewered:

MS4 Ranking:

Status:

DW: No flow, no issues. WW: One day (2 samples), elevated in all parameters. WW: Rank Bact (2), Amm/Nitrates/Surf (1 ea), Tot 5. Recommend: continue WW samples and begin ID investigation. NB Impair: Bact



Rating by Weather (0-5):
Wet :
Dry :

'No Sample Visits'

Status and Recommendation based on the opinion of the BBNEP.

Report Created on: 5/6/2019



| FacilityID | SampleDate | SampleID | SampleType | Water Classification | Last Rain | 12hr Rain | pH | Temp | Salinity | Ammo | Nitrate | Surfact | Entero. | Fecal C. |
|------------|------------|--------------|------------|----------------------|-----------|-----------|------|------|----------|------|---------|---------|---------|----------|
| TMR1006MH | 6/21/2016 | 6MT21JUN02-S | sump | Fresh Water | 2 hrs | 0.86 in | 7.34 | 22.7 | 0.13 | 0.30 | 2.64 | =0.375 | 69000 | 57000 |
| TMR1006MH | 6/21/2016 | 6MT21JUN02-A | pipe | Fresh Water | 2 hrs | 0.86 in | 7.76 | 22.2 | 0.22 | 1.00 | 3.52 | =2 | 116000 | 64000 |