

Date: 1/14/2025 Job No.: 11267
To: Glenn Ferguson
Cc: Shane Gokey
From: Courtney Bothelo, EIT
Dan Walsh, EIT
Subject: July 16th Outfall Screening

OVERVIEW

In order to comply with the MA MS4 permit the Town of Norwell developed and follows an Illicit Discharge Detection and Elimination (IDDE) plan. As part of their ongoing commitment stated in that plan to update town-wide mapping, the Town discovered 6 MS4 outfalls which were not identified during previous screening and sampling efforts. On July 16, 2024, on behalf of The Town of Norwell DPW, BETA set out to screen 6 outfalls that were previously unscreened as of 2023. These outfalls are listed in Table 1.1 below.

Table 1.1: July 16 Outfall Screening

Outfall ID	System Size	Location	Date
N - 283	1 CB	River St	7/16/2024
N - 285	7 CB's	River St	7/16/2024
N - 286	1 CB	River St	7/16/2024
N - 287	12 CB's	River St	7/16/2024
N - 298	1 CB	Fieldstone Way	7/16/2024
N - 306	2 CB's	John Neil Dr	7/16/2024

OUTFALL SCREENING AND SAMPLING

INVESTIGATION

BETA screened these 6 MS4 outfalls during dry weather conditions (<0.01" of precipitation in the previous 24 hours) and only N-285 was found to be flowing. Outfall screening includes observation of the physical characteristics of the outfall and indicators of illicit discharges.

BETA returned to perform testing and sampling on the observed flow from outfall N-285 on January 10, 2025. During this revisit BETA observed moderate flow from the outfall and recorded water quality parameters using a YSI. Ammonia, chlorine, and surfactants concentrations were determined using field tests. Samples were gathered of the observed flow to be laboratory tested for E. Coli and Fecal Coliform. The results of these tests are provided in Table 1.2 below.

Table 1.2 Outfall Testing Data

Outfall ID.	N-285	Temperature	4.1°C	Dissolved Oxygen %	86 %
Ammonia	0 mg/L	Salinity	.20 ppt	Dissolved Oxygen mg/L	11.1 mg/L
Chlorine	0 mg/L	Conductivity	252.5 mS/cm	PH	6.76
Surfactants	0.25 mg/L	E. Coli	1MPN/100mL	Fecal Coliform	8.6MPN/100mL

0.25 mg/L of surfactants is a concentration commonly found in groundwater, and both results from the laboratory tests are well below the allowable thresholds. None of these readings are indicative of any illicit discharge or connection. Based on these readings BETA believed the continued observed flow was likely from an inlet, and upon further investigation this was confirmed with the source being a small stream to the south of the outfall along River Street.

Town-wide system data and mapping was updated as part of this effort. This data is accessible to the town through ArcGIS Online and is included as Attachment 2 to this memo.

In addition to these 6 outfalls, BETA was asked to investigate suspicious discharges from un-named private outfalls on Bay Path Lane. The DPW had observed there were muddy grey discharges with a sulfuric smell coming from these outfalls. Upon arriving at Bay Path Lane BETA observed that none of the three outfalls were flowing. Due to the lack of a sewer system, and no other apparent sources of flow, these polluted discharges were likely an isolated event. No further action is recommended at this time.

RECOMMENDATIONS

Continue to monitor town outfalls and report any new outfalls found to BETA for future screening.

ATTACHMENTS

- Attachment 1: Outfall Status Map
- Attachment 2: Screening Results
- Attachment 3: Outfall Photos

Attachment 1

Outfall Status Map

Town of Norwell, MA

Outfall Status

▲ MS4 Outfall - Catchment Investigation Complete

▲ MS4 Outfall - Catchment Investigation Incomplete

▲ Non-MS4 Outfall

● Non-MS4 Interconnection

● MS4 Interconnection

● Manhole

■ Catch Basin

● Drain Inlet

■ Leaching Catch Basin

● BMP (Town Owned)

● BMP (Private)

— Drain Pipe

Hydrography

— Potential Hydrologic Connection

■ Open Water

■ Wetlands

■ Watersheds

Road Maintained by

— State

— Town

— Private or Other

MassDEP 2018/2020 Integrated List of Waters

Rivers: Category 4A

Lakes, Estuaries: Category 4A

Rivers: Category 4C

Lakes, Estuaries: Category 4C

Rivers: Category 5

Lakes, Estuaries: Category 5

Regulated Areas

■ MA MS4 Urban Area

● Town Well Locations

BETA

ENGINEERING SUCCESS TOGETHER

Issue Date: June 2022

This Map is Intended for Planning Purposes Only

0

0.25

0.5

1 Miles

Document Path: K:\Norwell\MS410 - Maps\GIS\Projects\Outfall Status Map 09.2023.mxd

Attachment 2

Screening Results



Date: 8/20/2024
 To: Glenn Ferguson
 From: BETA Group Inc.
 Subject: July 17th Outfall Inspections

Job Number: 11267

OutfallIDs	N-283	N-285	N-286	N-287	N-298	N-306
StreetName	RIVER STREET	RIVER STREET	RIVER STREET	RIVER STREET	FIELDSTONE WAY	JOHN NEIL DRIVE
Inspector	BETA	BETA	BETA	BETA	BETA	BETA
InspectionDate	7/16/2024	7/16/2024	7/16/2024	7/16/2024	7/16/2024	7/16/2024
Owner	Town	Private	Private	Private	Private	Unknown
PipeSize	12	48	12	18	12	12
PipeShape	Round	Round	Round	Round	Round	Round
PipeMaterial	RCP	RCP	RCP	RCP	RCP	CMP
OutfallType	Reinforced Slope	Headwall	Pipe End	Pipe End	Headwall	Pipe End
OutfallMaterial	loose rock	Stone	Concrete	Concrete	Concrete	N/A
OutfallCondition	Fair	Good	Good	Good	Good	Fair
OutfallIssue	Overgrown Veg	None	None	None	Overgrown Veg	None
Discharging	No	Yes	None	None	None	None
DischargingTo	Ditch	Stream	Culvert	Culvert	Retention Basin	Wetlands
SedimentAccumulation	No	No	No	No	No	No
SubmergedInWater	No	No	No	No	No	No
Scouring	No	No	No	No	No	No
AlgaeGrowth	No	No	No	No	No	No
StressedVegetation	No	No	No	No	No	No
Staining	No	No	No	No	No	No
Floatables	No	No	No	No	No	Trash
OilSheen	No	No	No	No	No	No
Odor	No	No	No	No	No	No
Turbidity	No	No	No	No	No	No
DischargeAmount	None	Trickle	None	None	None	None
DischargeClarity	-	Clear	-	-	-	-
DischargeColor	-	None	-	-	-	-
Notes	-	Debris Screen in Outfall Pipe	inside pipe of culvert 43, southern outfall	inside pipe of culvert 43, northern outfall	To private BMP	Outfall invert below surroundings
MS4	Yes	Yes	Yes	Yes	Yes	Yes

Attachment 3

Outfall Photos

OUTFALL PHOTOS



N-283, Far away



N-283, Close up



N-285, Far away



N-285, Close up



N-286, Far away (Right)



N-286, Close up



N-287, Far away (Left)



N-287, Close up



N-298, Far away



N-298, Close up



N-306, Far away



N-306, Close up