

SECOND DRAFT



SOMERSET, MA

AUGUST 2025

## Fall River Regionalization



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**AUGUST 2025**

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Adam Higgins, PE

Date: \_\_\_\_\_

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# Section 1 Introduction

## 1.1 Introduction

The Town of Somerset (Town) owns and operates a wastewater collection system, 17 pump stations, and a Water Pollution Control Facility (WPCF). In March of 2018, the Town retained Wright-Pierce (WP) to prepare an Integrated Water Resource Management Plan (IWRMP), which evaluated the entire drinking water, wastewater, and stormwater systems in the Town. The IWRMP made recommendations for each part of each system and is used as a planning tool to guide the Town for a 20-year planning period.

As part of the IWRMP, the overall condition of the WPCF was assessed. **Figure 1-1** shows an aerial view of the facility. The WPCF was originally constructed in the late 1960s. The facility underwent a major upgrade in the mid to late 1980s to convert the facility to a more conventional wastewater treatment plant. Over the years, the facility has received minor equipment replacements and upgrades, but most of the existing equipment and structures are from the 1990s. The assessment concluded the overall state of the facility was in fair to poor condition. Much of the existing equipment is past its useful service life. In June 2024, a new National Pollutant Discharge Elimination System (NPDES) Permit was issued for the Somerset WPCF. The permit included a limit on Total Nitrogen in the effluent. To meet the new limits, the WPCF will require major capital improvements.

Due to the significant cost of upgrading the Somerset WPCF, regionalization between the Town of Somerset and City of Fall River (City) is being considered. Regionalization is an agreement between two Town's to share wastewater infrastructure. In this case, the Town of Somerset would collect and transport wastewater flow to the City of Fall River for treatment, eliminating the need for a WPCF in Somerset. This report assesses whether regionalization between Somerset and Fall River is feasible and a more cost-effective way to meet the wastewater treatment needs in Somerset.

## 1.2 Scope and Objectives of Project

The objectives of this project are:

- Determine if Fall River has capacity and interest to receive wastewater flow from Somerset
- Evaluate how to collect and transport Somerset's wastewater to the Fall River Wastewater Treatment Plant
- Determine if Somerset will need to meet new NPDES permit compliance schedule during regionalization process (WPCF TN Upgrade)
- Evaluate how NPDES permit will factor in estimated project costs and overall implementation plan
- Identify Capital Costs for transporting Somerset wastewater to Fall River. Costs will include Somerset WPCF infrastructure to collect and transport wastewater to Fall River collection system and Fall River collection system, pump station, and treatment facility improvements required to receive Somerset flow.
- Identify Operation and Maintenance costs associated with maintaining the existing Somerset collection system and pump stations, and new infrastructure required to transport flow to Fall River.
- Identify the charge system typically used by the City of Fall River for intermunicipal wastewater agreements.
- Identify permitting requirements, both regulatory and environmental, to construct new infrastructure and send wastewater to Fall River
- Consider the overall feasibility of regionalization

### 1.3 Project Background

The Town of Somerset is facing many challenges in relation to their wastewater collection and treatment systems. The largest challenge is the required upgrade at the WPCF. The WPCF upgrades will have the largest financial impact on the Town. A summary of the WPCF project history is as follows:

- 2018 - Town retains WP for Integrated Water Resource Management Plan. A WPCF upgrade, estimated at \$57.5 million in 2018 dollars, is recommended.
- 2021 - WP completed a Value Engineering (VE) Study for the solids handling portion of the proposed WPCF upgrade. Solids handling cost estimate reduced by approximately \$7.5 million.
- 2024 – New NPDES permit received for the WPCF. Permit includes an effluent discharge limit for Total Nitrogen. A 6-year compliance schedule to design and construct facilities to meet new limits included in the permit.
- 2024 – Town retains WP to complete permit-required evaluations included in the first year of the compliance schedule and assess feasibility of regionalization with Fall River to meet future wastewater needs. The first-year evaluations include optimization of the existing WPCF for total nitrogen (TN) reduction, reviewing current WPCF conditions to update IWRMP recommendations, and identifying a TN removal process to meet the new permit limit. The Town also wanted to evaluate other WPCF infrastructure improvements and identify a phased approach to overall WPCF upgrades (two or three phases). Phase 1 was initially conceptualized to include permit-required improvements for TN removal and a comprehensive upgrade to the electrical systems.
- 2024/2025 – Town receives notification their current sludge disposal outlet (Synagro, Woonsocket) is phasing out receiving liquid sludge in the next year. This will likely require solids handling to be part of Phase 1 WPCF improvements.

#### 1.3.1 Somerset Collection System & Pump Stations

The Town of Somerset is approximately 95 percent sewered. The wastewater collection system consists of approximately 110 miles of gravity sewers, 2,345 manholes, and 17 pump stations. The collection system conveys wastewater to the WPCF and consists of gravity pipes ranging in diameter from 6 to 30 inches. The most prevalent sewer pipe material in the system is asbestos cement.

The early collection system primarily consisted of the sewer service area along Riverside Avenue, and a small sewer service area located at the southernmost point of Town serviced by the Angus Street pumping station. As the Town continued to develop through the 1970s and the 1980s, sewer extensions and additional pumping stations were constructed. The Town has replaced some of the original pipes in the collection system and continues to identify and repair sources of Infiltration and Inflow (I/I), but much of the system is aging.

The IWRMP included an assessment of the Town’s pump stations. The IWRMP found many pump stations have not been upgraded within the last 10-30 years. The Town is currently upgrading several pump stations and continues to evaluate needed improvements.

The collection system and pump stations are all managed by the Town’s Water and Sewer Department.

**Figure 1-2** highlights Somerset’s collection system and pump stations.

Figure 1-1 Aerial View of Somerset WPCF

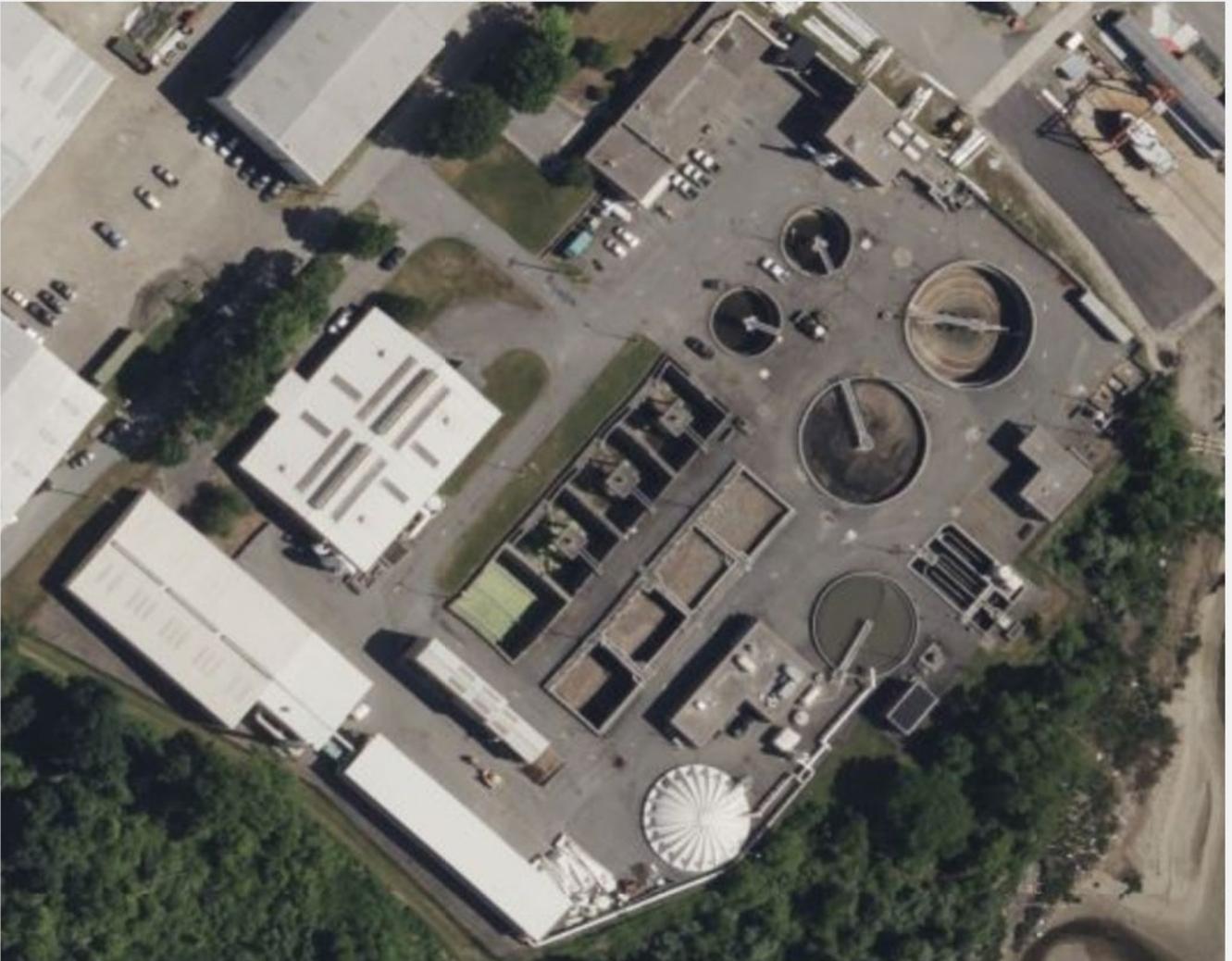
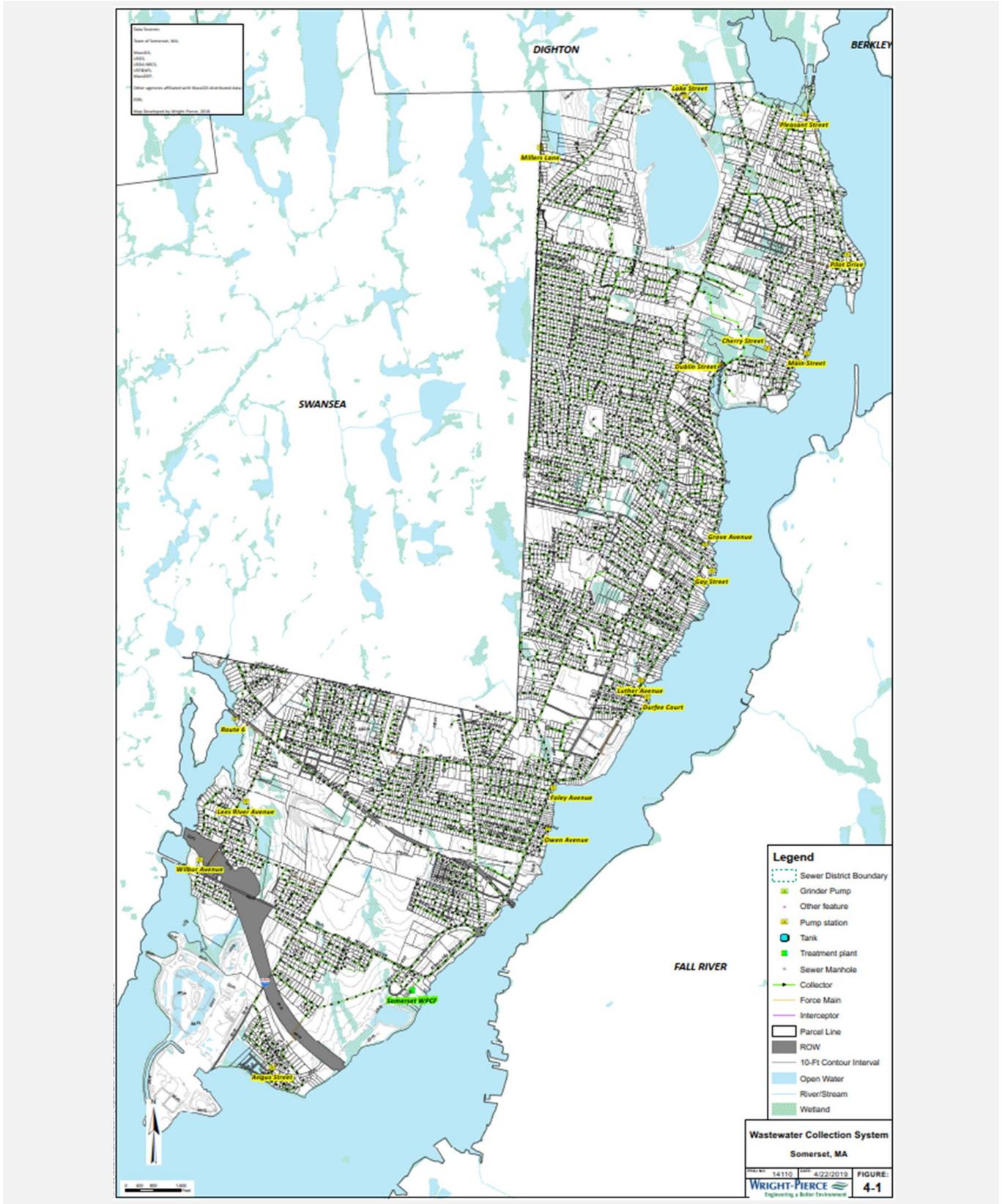


Figure 1-2 Somerset Collection System & Pump Stations



### 1.3.1.1 Somerset Infiltration and Inflow

In 2018 Wright-Pierce evaluated the collection system for potential infiltration/inflow (I/I) impacts to assist in determining the collection system needs. Infiltration refers to groundwater entering the sanitary sewer system through structurally compromised sewers, loose joints, etc., while inflow refers to stormwater entering the system, which is more often impacted directly by wet weather events. Inflow can enter a sanitary sewer system through multiple pathways, including defective manhole structures, cross connections between sanitary and storm sewers, and illicit connection to sewers including downspouts, sump pumps, and area drains. The study evaluated wet-weather impacts on the collection system through assessment of 26 identified sewer basins. Each of the 26 sewer basins were flow-metered to determine the wet-weather impacts to the collection system.

The study determined that roughly 35 percent of the sewer basins within the town were experiencing 4,000 gallons per day per inch-diameter mile (gpd/idm) of I/I in their collection system. Per MassDEP, any meter basin with a net base infiltration (BI) unit rate equal or greater than this amount is considered excessive and requires rehabilitation. Since the study, Somerset has been prioritizing rehabilitation and repair of key areas of the system to potentially reduce I/I in the system. There has been sewer lining completed within Somerset since the 2018 study, but it has yet to be confirmed if there has been any significant improvement. However, any I/I successfully removed from the system will help to reduce wet weather flows and treatment costs at the WPCF and/or for a potential regionalization project.

### 1.3.2 WPCF Design Flows and Loads

A flows and loads analysis was conducted as part of the IWRMP. The analysis reviewed the monitoring period from 2013 to 2018. The analysis can be found in Section 6 of the Comprehensive Wastewater Management Plan (CWMP) portion of the IWRMP.

The flows and loads analysis was updated in late 2024. This was completed as several years had passed since the last evaluation and to establish a basis of design for flows and loads for the facility. A basis of design is required to design the WPCF improvements, including the upgrade needed to meet the TN limit. The flows and loads analysis will also be used to determine capacity requirements and pump station sizing for regionalization with Fall River. **Table 1-1** summarizes the updated design flows. The basis for these values is contained in a memorandum by WP titled “Somerset WPCF Upgrades: Task 4 – Secondary Process - Total Nitrogen Upgrades”, which was issued in June 2025.

As a note, the current facility annual average flow is approximately 3.5 mgd from January 2022 to December 2024. This is about 20 percent less than the future design point. A 20 percent growth factor was applied for population growth, allowances for future developments within Somerset, and for potential future flow from Swansea and Dighton.

**Table 1-1 Somerset Design Year (2045) Flows**

Parameter	Flow	
	mgd	P.F.
Minimum Daily	1.9	0.5
Annual Average	4.2	-
Maximum Month	8.8	2.1
Maximum Day (99th)	10.2	2.4
Maximum Day (100th)	13.3	3.2
Peak Hour	19.4	4.6

### 1.3.3 NPDES Permit

The Somerset WPCF operates under NPDES permit number MA0100676. Prior to the 2024 NPDES permit update, the facility operated under the 2004 NPDES permit. The new permit can be found in **Appendix A**.

The permit limits the average annual flow for the facility to 4.2 mgd. This flow is discharged into the Taunton River. The new permit includes an effluent discharge limit for TN of 175 lbs/day from May 1<sup>st</sup> to October 31<sup>st</sup>. The EPA defines this limit as follows:

- The rolling seasonal average total nitrogen limit is an average mass-based limit (lbs./day), which shall be reported as a rolling 6-month average from May 1<sup>st</sup> through October 31<sup>st</sup>. The value will be calculated as the arithmetic mean of the monthly average total nitrogen for the reporting month and the monthly average total nitrogen for the previous 5 months from May through October. Report both the rolling average and the monthly average each month.

To meet this limit, an upgrade is required for the facility. A compliance schedule, included in Section G of the permit, is summarized below.

- Within **one year** of the effective date of the permit (June 2024), the Permittee shall investigate alternative operational approaches to reduce year-round nitrogen discharges using its existing equipment and implement operational changes as appropriate to optimize nitrogen removal at the existing facility until the facility upgrade is completed. A report describing the optimization investigation and including a schedule for implementing any recommended actions shall be submitted with the first annual report.
- Within **one year** of the effective date of the permit, the Permittee shall evaluate and identify appropriate treatment process upgrades necessary to meet the new total nitrogen permit limit.
- Within **two years** of the effective date of the permit, the Permittee shall complete the design of the facility improvements required to achieve the new total nitrogen permit limit.
- Within **three years** of the effective date of the permit, the Permittee shall initiate construction of the facility improvements required to achieve the new total nitrogen permit limit.

- Within **five years** of the effective date of the permit, the Permittee shall substantially complete the construction of the facility improvements required to achieve the new total nitrogen permit limit.
- Within **six years** of the effective date of the permit, the Permittee shall optimize nitrogen removal of the upgraded facility to achieve the new total nitrogen permit limit.

The original compliance schedule, which was proposed to be 5 years, was contested by the Town. An 8-year schedule was proposed in February 2024, but in the final publishing of the permit in March 2024, EPA granted a 6-year schedule.

If Somerset were to regionalize with Fall River, the Somerset NPDES permit would likely be abandoned. It would be highly unlikely for the permit to be reinstated in the future if needed. New surface water discharge permits are not typically issued by EPA/MassDEP.

## Section 2 Regionalization Options

### 2.1 Fall River

The closest wastewater collection system with capacity to receive the Town of Somerset's wastewater flow is the City of Fall River. The City of Fall River is in Bristol County, Massachusetts. It is located east of Somerset, across the Taunton River and Mount Hope Bay. Fall River (City) was considered as the primary option for regionalization for the Somerset WPCF due to its proximity to Somerset and its large wastewater treatment plant with available capacity for Somerset's wastewater flow. This section describes the overall Fall River wastewater system and identifies potential connection points for the Town of Somerset. The Fall River Integrated Wastewater and Stormwater Master Plan (IWSMP) from 2015, the Wastewater Treatment Facilities Plan (WTFP) from 2019, and further communication with the City are used as references for the Fall River information.

#### 2.1.1 Collection System

Fall River's wastewater collection system is a combined sewer system, collecting both wastewater and stormwater. The system includes more than 200 miles of sewers, collecting wastewater from more than 90,000 residents. Portions of the sewer system date back to the mid-1800s. However, most of the system was constructed between 1915 and 1939. In 1948, the original WWTP and Main Interceptor was constructed. The main interceptor was built to collect direct discharge flows to Taunton River/ Mount Hope Bay and transport them to the WWTP. More interceptors were constructed to collect discharges to the Quequechan River. Over time the sewer and the stormwater collection system has been expanded upon and upgraded. Wet-weather flows were still discharged directly to receiving water through combined sewer overflow structures.

The wastewater collection system can be generally divided into three parts which are the North System, South System, and Central System. Some of their defining characteristics are listed below:

- North System
  - Comprised of sewers north of Interstate 195 with CSOs to the Taunton River
- Central System
  - Comprised of inland sewers with CSOs along the Quequechan River
- South System
  - Comprised of sewers south of Interstate 195 with CSOs to Mount Hope Bay

**Figure 2-1** shows the collection system for Fall River.

#### 2.1.2 Combined Sewer Overflows

Since the early 2000s, the City of Fall River has worked to improve the management of their combined sewer discharges. Over the last 15 plus years, the City has constructed considerable CSO controls to mitigate their CSOs to Mount Hope Bay, the Taunton River, and Quequechan River. Improvements include:

- Wet weather expansion of the WWTP to treat up to 106 mgd
- Construction of a 3-mile, 20-foot diameter CSO storage tunnel
- CSO screening and disinfection facilities were constructed at the Cove Street and President Avenue outfalls to provide disinfection and screening before untreated wastewater/stormwater discharges to the river
- The Quequechan Surface Interceptor was upgraded to increase wet weather capacity to the North Plymouth Avenue drop shaft of the CSO Tunnel

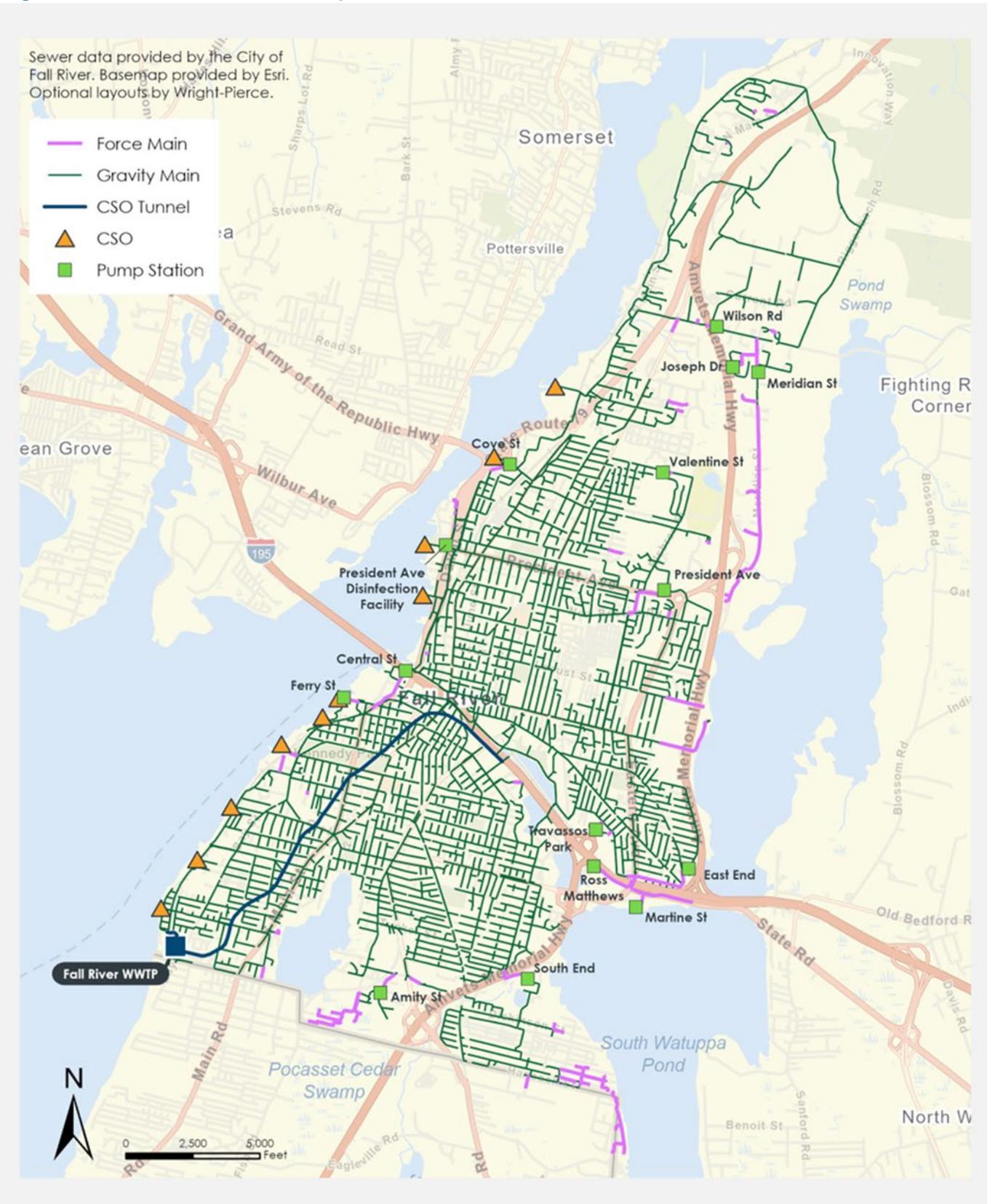
Management of CSO discharges in Fall River has improved, but CSO discharges still occur. Flow that Somerset could convey to the Fall River system would be limited during wet weather, depending on the location of discharge. During wet weather events, wastewater flow would need to be stored in Somerset until the Fall River collection system has capacity available depending on the discharge location.

### 2.1.3 Pump Stations

The City of Fall River has 15 pump stations located throughout the City. The pump stations are also shown in Figure 2-1. The pump stations are listed below:

- North System Pump Stations
  - Joseph Drive
  - Meridian Street
  - Wilson Road
  - Cove Street
- Central Street Pump Stations
  - Central Street
  - Valentine Street
  - President Avenue
  - President Avenue Disinfection Facility (CSO)
  - East End
  - Martine Street
  - Ross Matthews
  - South End
- South System Pump Stations
  - Ferry Street
  - Middle Street
  - Amity Street

Figure 2-1 Fall River Collection System



### 2.1.4 Fall River WWTP

The Fall River WWTP is an activated sludge treatment facility providing secondary treatment. The facility can receive up to 106 mgd of wet weather flow and provides secondary treatment up to 50 mgd. According to their prior NPDES permit (MA0100382), the plant had an average monthly effluent flow limit of 30.9 mgd. As of the 2019 Facilities Plan, which reviewed facility data through 2017, Fall River’s average influent annual flow was 21.5 mgd and their maximum monthly flow was 31.6 mgd. In a recent meeting Fall River stated their current average influent flow is about 24 mgd.

The Fall River WWTP NPDES permit expired in 2005. A draft permit was received in 2024. The 2005 and 2024 permits can be found in **Appendix B**. The EPA has not finalized the 2024 permit, based on comments received during the public comment period. Important updated effluent limitations in the draft permit include a Rolling Seasonal Average Total Nitrogen limit during May 1<sup>st</sup> to October 31<sup>st</sup>. The limit has been set to 1,289 lbs/day (5 mg/L at the design flow).

In 2019 the City completed a Wastewater Facilities Plan. The plan identified the need for a comprehensive plant upgrade to meet the new permit limits and upgrade aging infrastructure. The comprehensive upgrades included a phased capital improvement program totaling more than \$222 million. The ENR index of May 2018 was assumed. Since the completion of the Facilities Plan, Contract 1 and Contract 2 have been constructed.

**Table 2-1** shows the phased approach and associated WWTP upgrade costs from the Fall River Wastewater Facilities Plan, and the costs ENR’d forward to May 2025 dollars (to be consistent with estimates provided in Section 4). It is important to note that the costs developed in the Facilities Plan were developed before the current bidding climate, supply chain issues, and tariffs recently instituted. As such, these costs could be lower than what we would see today.

**Table 2-1 Recommended Upgrades and Estimated Costs**

Contract	Estimated Cost, Facilities Plan (2018)	Estimated Cost (2025)
Contract No. 1 – Incinerator Building Demolitions and Site Electrical Upgrade	\$12 million	complete
Contract No. 2 – Facility Rehabilitation, Phase I	\$51 million	complete
Contract No. 3 – Facility Rehabilitation, Phase II	\$30 million	\$38 million
Contract No. 4 – Facility Rehabilitation, Phase III	\$28 million	\$35 million
<b>Contract No. 5 – Nitrogen Removal Upgrade</b>	<b>\$79 million</b>	<b>\$99 million</b>
Contract No. 6 – Outfall Replacement	\$10 million	\$12.5 million
Other contracts	\$12 million	\$15 million
<b>Total</b>	<b>\$222 million</b>	<b>\$199.5 million</b>

### 2.1.5 Capacity

The Fall River WWTP has a capacity of 106 mgd for wet weather flows and up to 50 mgd can be treated by the secondary processes at the facility. They are permitting for 30.9 mgd average daily flow (ADF). Fall River reported in the Facilities Plan that their ADF was around 22 mgd, based on 2018 data. The current ADF is closer to 24 mgd per Paul Ferland. Therefore, approximately 7 mgd is available on an ADF basis. The Facilities Plan for Fall River contained a future projection (2038) for influent flow of 30.9 mgd, the permitted average limit. Planned growth was estimated at an average of 3.5 mgd. The 3.5 mgd was broken up between in-City growth and neighboring community growth. There would still be room for Somerset to contribute flow to Fall River to reach the permitted flow limit. If the current ADF is 24 mgd, allotting 3.5 mgd for internal growth would total approximately 27.5 mgd. This would only leave about 3.5 mgd for Somerset on an average basis. Somerset’s current ADF is about 3.6 mgd.

In addition to the WWTP, the collection system and pump stations need to be reviewed to determine if they have capacity to receive flow from Somerset. The collection system is a combined system with capacity issues during wet weather. Somerset’s ability to pump their wastewater flow to Fall River during wet weather events may be limited depending on the discharge location.

**Table 2-2** highlights the design influent flows for both Somerset and Fall River.

**Table 2-2 Influent Flows for Fall River (2015-2017 and 2038) vs Somerset (Design Year 2045)**

Scenario	Somerset (2045) (mgd)	Fall River (2018) (mgd)	Fall River (2038) (mgd)
Average Annual	4.2	21.7	30.9
Maximum Month	8.8	31.6	45.0
Maximum Day	13.3	51.5	73.2
Peak Hour	19.4	111	106

The Fall River flows are based on flow data from 2015-2017 found in the Fall River 2019 Facilities Plan. For dry weather flows, it appears that adding Somerset’s future average flows would not exceed Fall River’s current permitted average flow. For this report, it is assumed that Somerset’s maximum monthly condition of 8.8 mgd is the maximum amount of flow that can be sent to Fall River during wet weather. Any flow above 8.8 mgd would need to be stored at the Somerset WPCF site and pumped to Fall River when capacity becomes available. Any flow from Somerset would need to be reviewed against existing plans in Fall River to reduce I/I and CSOs and against their future growth plans.

## 2.2 Somerset to Fall River Connection Point

There is no existing wastewater infrastructure that connects Somerset to Fall River. Fall River is located across the Taunton River. To transport wastewater from Somerset to the Fall River Treatment Plant, a new pump station would need to be constructed in Somerset to pump flow to the Fall River collection system or WWTF. This could be accomplished by constructing new force mains under the Taunton River by horizontal directional drilling (HDD). HDD is a three-step process. First, a pilot hole is drilled along the proposed path. Second, a drill head with back reamer widens the pilot hole bore. The reamer size is selected based on the diameter of the proposed pipe. Third, the new pipe is attached to the reamer and pulled into place. A drilling fluid or slurry is required to aid in pulling the new pipe through the borehole. Two force mains are required for redundancy, meaning only one will be in use at any given

time. Should one force main fail, the other force main would be used. It is important to provide redundancy for critical infrastructure of this nature.

In addition to the WWTP, the collection system and pump stations need to be reviewed for capacity for the proposed route(s) that could be used to convey flow from Somerset to Fall River. The larger pipes and pump stations in the Fall River collection system would be the first choice to review for feasibility. Three options were identified for this evaluation.

The first option was the Central Street Pump Station. This is the closest pump station with a high flow capacity in Fall River. The pump station has capacity for dry weather flows and is part of the collection system network that has larger diameter pipe upstream and downstream of the station.

The second option identified was the CSO Storage Tunnel that runs through the center of the City to the Fall River WWTP. The primary purpose of the tunnel is to relieve the collection system during wet weather. There is minimal use during dry weather, currently. This option has the higher dry weather capacity between alternative 1 and 2 and leads straight to the treatment facility without affecting the primary collection system.

The third option is conveying flow directly to the Fall River WWTP. This option would not use the existing Fall River collection system infrastructure but would require construction of dedicated force mains to the Fall River wastewater plant and small section of gravity sewer.

### 2.2.1 Option 1 – Central Street Pump Station

The Central Street pump station has 4-dry-pit submersible pumps, each with a design flow of 2,200 gpm (3.1 mgd) at 36 feet total dynamic head (TDH) and a fifth pump with the same design flow but a TDH of 35 feet. The pump station receives flow from the 36-inch diameter main interceptor and a 10-inch diameter sewer from the waterfront area. The flow leaves the station via a 20-inch diameter force main, which is then enlarged to a 30-inch diameter force main and discharged into a manhole on the Broadway Extension road in Fall River. From July 2013 to July 2014, the average daily flow from the pump station was 5.53 mgd. During wet-weather operation, the station operates at a capacity of 12.5 mgd.

#### 2.2.1.1 Pipe Route

**Figure 2-2** shows the Central Street Pump Station, located under the Charles M. Braga Jr. Memorial Bridge (I-195). This location would have the least amount of new pipe required of the 3 options reviewed if the existing collection system has capacity to receive the flow from Somerset. The existing collection system tie-in points from the directionally drilled force mains, which would be on the Taunton River shore, is a short distance away.

To reach the pump station, two 24-inch force mains would be directionally drilled under the Taunton River from the shoreline near the Somerset WPCF to the shoreline near the pump station. The force mains are assumed to be fused HDPE pipe with an approximate length of 5,000 feet. To minimize the impact to the existing system and based on the pipe size upstream of the pump station and the high flow from Somerset, it is assumed new sewer would be constructed from the shore to the pump station. New PVC gravity sewer would be installed to convey flow to an existing manhole on Route 79. The length would be approximately 500 feet. From there, it will flow into the Central Street Pump Station. Three sewer manholes are proposed on this route to provide access points for the new sewer. Flow would then proceed through the existing collection system to the WWTP. The proposed size of both the force main and the gravity sewer is 24-inch, which will be able to accommodate all design flow scenarios.

**Figure 2-3** shows the piping route for the Central Street Pump Station option, including the existing Fall River collection system route to reach the WWTP in Fall River.

**Figure 2-2** Central Street Pump Station



Figure 2-3 Proposed Piping Route to Central Street Pump Station



### 2.2.1.2 Capacity Issues

The Central Street Pump Station sees an average daily flow of about 5.3 mgd (2014). The Somerset WPCF has a design annual average flow of 4.2 mgd. The maximum capacity of the pump station is near 12.5 mgd, therefore, during dry weather flow, the pump station would have capacity. However, during wet weather, the station already runs near capacity and would not have capacity for flow from Somerset (up to 8.8 mgd). Similarly, the gravity sewer in the existing collection system has dry weather capacity based on the pipe size but would not have wet weather capacity. The capacity of the station and the collection system need to be increased in size to accommodate the full range of flows from Somerset. Flow would be limited in Somerset and need to be equalized during wet weather. In order to equal the second and third options for flow capacity and reduce equalization needs in Somerset, the entire pump station, force main, and gravity section of sewer between the Central Street pump station and Fall River WWTP would need to be replaced. This option is the least feasible and the most costly of the three options presented.

### 2.2.2 Option 2 – CSO Tunnel, Columbia Street Drop

The second option considered was routing Somerset’s wastewater flow to the Fall River combined sewer overflow tunnel near Columbia Street in Fall River.

#### 2.2.2.1 Pipe Route

The piping will follow a similar path to option one, but instead of connecting to the gravity sewer on Route 79, the new force main piping would be installed under the Charles M. Braga Jr. Memorial Bridge to the drop shaft location on Columbia Street. New force main is required for the entire length because of the elevation difference from the riverbank to the drop location. As with the previous route, this would be two 24-inch force mains. The new force main will intersect the Broadway Extension roadway, which will be difficult due to it being a major arterial road for the City. Once crossing Broadway Extension, the piping will turn onto Milliken Boulevard and then turn onto Columbia Street where it would connect to the drop shaft into the CSO Tunnel. Several air release manholes are expected to be required for intermittent high points in the force main. Portions of the route could be completed by directional drilling, which would likely reduce capital cost compared to open cut excavation. The new force mains would be completely dedicated to Somerset flow, therefore no impact on Fall River’s collection system is anticipated, except for the CSO tunnel. Two force mains would be used under the river and then transition to 1 force main within Fall River proper. The redundancy isn’t as critical once the pipe is within the borders of the City, as the pipe can be accessed more readily than if it was in the river.

**Figure 2-4** shows the proposed route to the drop-shaft on Columbia Street. With a new dedicated force main for Somerset’s flow, the existing Fall River collection system is not of concern and should not need to be upgraded. The CSO tunnel has ample capacity during dry weather and would not need to be modified or upgraded. This would reduce the amount of flow needing to be equalized at the Somerset WPCF.

**Figure 2-4 Proposed Piping Route to CSO Tunnel**



### **2.2.2.2 Construction Issues**

The elevation generally increases from the river to the drop location on Columbia Street. As such, new force main dedicated to Somerset flow would be constructed to bring flow from the river crossing to the CSO tunnel. The proposed sewer is largely in dense, residential neighborhoods and runs parallel with I-195. There are many challenges to constructing a new sewer line in this area. This alternative would carry a high cost due to the construction within Fall River, in densely populated neighborhoods, with congested utilities, and several state highway crossings. This alternative would have a large impact on Fall River residents during construction if open cut excavation were used. This likely pushes the construction towards utilizing directional drilling. However, with a dedicated pipe for Somerset flows, and with available capacity in the CSO tunnel, the full range of flows from Somerset could be accommodated for this option. During design, directional drill for the entire pipe length would be investigated for feasibility, which would reduce the impact on residents.

### **2.2.3 Option 3 - Direct to Fall River WWTP**

The third option considered for regionalization is to route the Somerset flow directly to the Fall River WWTP. This option would eliminate a connection to the existing Fall River sewer system and have the least impact on Fall River residents. This option would be more costly than option 2 and potentially more difficult to permit.

#### **2.2.3.1 Pipe Route**

The force main would be directionally drilled across the river like the other options, but instead of connecting to the existing sewer system, pipe would be drilled along the riverbed from the directional drill pit exit, following the shoreline to the WWTP. The directionally drilled force main would be approximately 5,000 feet, which will then transition into approximately 12,000 feet of HDPE force main installed in the river. Two force mains would be installed for redundancy. Maintaining this long section of piping as pressure sewer will simplify construction compared to trying to install gravity sewer in the river. Once the force main reaches the shore near the WWTP, the pipe could transition to gravity sewer or be maintained as pressure sewer to reach the WWTP. Gravity sewer would be the more costly option due to the excavation depth needed and manhole structures required. As such, the more conservative approach was selected for review. The gravity sewer from the shore to the WWTP is approximately 500 feet and would require three sewer manholes. The force main and the gravity sewer piping will both be 24-inch diameter to accommodate all flow conditions from Somerset. This gravity sewer would be connected to the WWTP Headworks Building where it would be combined with the flows from the Main Interceptor and the Plant Conduit (connects the CSO Tunnel to the preliminary treatment building).

**Figure 2-5** shows the proposed route to the Fall River WWTP.

**Figure 2-5 Proposed Piping Route to Fall River WWTP**



### **2.2.3.2 Capacity Issues**

This option presents the least impact on the existing Fall River collection system and smallest impact to Fall River residents during construction. As the new piping would be independent of Fall River’s collection system, there are no capacity-related issues in the collection system. The full range of Somerset flows can be directed to the Fall River WWTP. The impact from Somerset’s flow would be directly with the Fall River WWTP, which has dry weather capacity for additional flow.

### **2.2.4 Preferred Technical Option**

Each option presented above requires a directional drill under the Taunton River. Based on the force main size and geology of the soils and bedrock in the river, this may not be technically feasible. Further study would be required. However, the options will be presented for further analysis in the remainder of this evaluation report.

Option 1 presents the most impact on the Fall River collection system and the lowest flow range without significantly changing the existing Central Street Pump Station and downstream gravity sewer system. Additional wastewater from Somerset would flow through a very long section of existing gravity sewer and through one pump station in Fall River. In addition, new gravity sewers would be constructed from the directional drill landing area on the Fall River shoreline to the Central Street Pump Station. This would involve crossing the highway. This presents a very difficult construction project and potentially the highest capital cost if new gravity sewer and an increase in pump station capacity is required. This is the least favorable option.

Option 2 presents minimal impact on Fall River’s collection system and no impact on any existing pump stations. However, this option would require a new sewer from the shoreline to the CSO tunnel. Reusing any existing gravity sewer is not possible, as the existing sewer in this area is small diameter and/or flowing in the wrong direction. However, there should be no modifications required to the existing collection system for this option. A new sewer pipe would need to cross the highway. This option is likely the least costly alternative presented but has the highest impact on Fall River residents.

Option 3 presents no impact on the existing Fall River collection system and pump stations. A direct connection from Somerset to Fall River would be the simplest technical option. No highway crossings would be required during construction and no impact would be placed on the residents of Fall River. However, this option presents the most difficult permitting process, as the entire pipeline would be in the river. In addition, this option would impart the largest head requirement for the pump station in Somerset, which would require the largest horsepower pumps. This would lead to higher operational costs for Somerset. This option is also likely the most expensive alternative, as dual force mains would be required the entire length of the river.

Option 2, CSO Tunnel connection, and Option 3, direct connection to the Fall River WWTP, appear to be the most feasible technical solutions and will be used to evaluate regionalization. Costs are presented for both options.

## Section 3 Somerset WPCF Considerations

This section covers the following considerations for the existing Somerset WPCF:

- Maintaining Somerset’s existing collection system and pump stations
- Upgrading the existing WPCF facility to meet the new NPDES effluent limit for Total Nitrogen
- The construction of a pump station within the existing facility site to pump wastewater to Fall River
- Flow equalization modifications
- Overall decommissioning of the Somerset WPCF

### 3.1 Maintain Existing Collection System and Pump Stations

Regionalization with Fall River would eliminate the need for a Somerset WPCF, but the Town’s collection system and pump stations would still need to be maintained. To deliver wastewater to Fall River, it needs to be collected and conveyed to a central location. The location of the Somerset WPCF is optimal, as the Town’s collection system already directs wastewater flow to this location. The WPCF is located along the Taunton River, which allows dual force mains to be drilled under the river to convey flow to Fall River, minimizing the length of pipe required to convey flow. Therefore, even though there will not be a need for a treatment facility in the Town of Somerset after the construction of a pump station to discharge wastewater to Fall River, there will need to be staff working for the Town of Somerset to maintain the existing collection system and pump stations, plus the facilities that would still be required on site at the WPCF, including the new pump station. In addition, a screening facility is recommended in conjunction with the new pump station to protect the pumps. This will be critical infrastructure to maintain, as it would pump the entire Town flow to Fall River. Minimizing downtime and maintenance issues due to ragging and clogging would be critical for the new pump station.

The collection system and pump stations, similar to the WPCF, are aging and in need of upgrades. The Town has been replacing sections of the collection system and identifying and removing sources of infiltration/inflow for several years. In addition, the Town has been upgrading several pump stations in the system over the last several years. However, both systems still require improvements. The costs associated with maintaining and upgrading these systems would continue even if regionalization was implemented. Further, the employees needed to work to operate and maintain the systems would still be required. The Town currently employs one collection system foreman and two laborers. The Town’s annual expenditure on their collection system and pump stations is summarized in **Table 3-1**. These costs are approximately 31 percent of the Town’s annual sewer budget and include debt services, employee salaries, and maintenance.

**Table 3-1 Somerset Collection System Expenditures**

Year	Budget Expended
FY22	\$700,000
FY23	\$700,000
FY24	\$750,000
FY25*	\$1,200,000

\*Fiscal Years 2022-2024 are actual expenditures. FY25 is the budgeted value, as the fiscal year is still ongoing.

## **3.2 Somerset WPCF Needs**

In addition to maintaining the existing collection system and pump stations, there are several needs at the WPCF that will be required while regionalization is being implemented, as well as considerations at the WPCF once regionalization is in place.

### **3.2.1 Upgrade WPCF to Meet TN Permit**

The new Somerset WPCF NPDES permit issued in June 2024 requires an upgrade to the facility to meet the new Total Nitrogen effluent limit. The current facility is not able to meet this limit without significant capital improvements. This was discussed in the IWRMP. There is also a memo that was issued in June 2025 that finalized recommended upgrades required to meet the TN limit.

Because the WPCF has a compliance schedule in their NPDES permit, EPA was contacted to discuss options if regionalization was implemented. EPA confirmed that the facility would still need to comply with the NPDES permit and TN removal compliance schedule. Therefore, a capital upgrade at the facility would still be required, even if the ultimate fate of the WPCF is to be decommissioned. This would be a significant upgrade to the facility, including modifications to the secondary treatment system and equipment and an electrical overhaul to the facility, as the increased electrical loads would be too much for the existing electrical equipment at the facility. Upgrades of this magnitude can range from \$20 million to \$50 million. These assets would be ultimately mothballed once regionalization is implemented. However, it was EPA's stance that regionalization is not a guaranteed process and can take many years to implement and Somerset would be required to meet their current permit in the interim.

#### **3.2.1.1 Aeration System Upgrades**

Per the IWRMP, the aeration tanks are in fair to poor condition and with the current configuration, are not able to meet an effluent TN limit without modifications. The supporting equipment and controls are also inadequate to meet a new TN limit.

To meet the new TN limit, a four-stage Bardenpho process configuration is recommended. This activated sludge process consists of four zones, two anoxic and two aerobic, with internal recycling of nitrified mixed liquor from the first aerobic zone. To modify the existing tanks for this process, new baffle walls are required, and new pumps, mixers, and piping are required.

The current blowers at the WPCF are past their useful life. In addition, the controls for the blowers and aeration system are not adequate for a TN removal process. New energy-efficient blowers will be installed. The new blowers will require upgrades to the electrical systems at the facility. A new control system will be installed that will consist of a new control panel, new instruments at the blowers and at the aeration tanks, and new automatic control valves for the air piping.

#### **3.2.1.2 Electrical/Instrumentation Upgrades**

The current electrical system and backup power system at the WPCF is in poor condition and past its useful life. In addition, the systems in place currently would not reliably support a new TN removal process and the new equipment required. Further, the current location of electrical equipment is problematic due to its proximity and shared space with solids handling facilities. An overhaul is required, which will involve a new service, MCCs, a new location on site which will require a new building, and a new generator.

### 3.2.1.3 Estimated Cost

The estimated cost for the proposed TN and electrical upgrade to the WPCF is approximately \$35 million.

## 3.2.2 WPCF Pump Station

To convey wastewater from the Somerset WPCF to the Fall River collection system or WWTP, a pump station will need to be constructed at the Somerset WPCF site. The existing pump station at the plant is not adequately sized to convey flow to Fall River. A new wet well and dry well pump station will be needed. The old solids composting buildings and equipment location has been identified as a potential location for the pump station. Since these facilities are no longer used, it provides a good location to construct a new pump station. This section will discuss the proposed modifications to the WPCF to construct the pump station.

### 3.2.2.1 Wet Well Size Estimate

The new pump station requires a new wet well be constructed. This wet well would be designed to receive the maximum month flow of 8.8 mgd. Anything over this volume would need to be equalized elsewhere at the WPCF site. To develop a capital cost for the new systems, the size and depth of the wet well were estimated. The properties of the wet well are shown in **Table 3-2**.

The wet well volume was determined using pumping and storage standards. It was sized using the operating volume, which utilizes the design pumping rate of 8.8 mgd and the minimum cycle time for a pump. The minimum cycle time for a pump is the minimum time needed for a pump to turn on and run without causing any damage to the motor. If the wet well does not have enough volume, the pumps could short cycle, leading to frequent repairs or replacements of the pumps and motors. The minimum cycle time can be variable depending on the type of pump that is selected. To ensure optimal performance for the pumps, a minimum cycle time of 10 minutes is used.

**Table 3-2 Proposed Wet Well Characteristics**

Structure	Length	Width	Depth	Volume	Volume
Wet Well	15 feet	15 feet	10 feet	2,250 cubic feet	15,300 gallons

### 3.2.2.2 New Piping to Pump Station

To get flow from the existing influent manhole to a proposed new wet well, a new 30-inch diameter gravity pipe will need to be constructed. The pipe would cross through a significant portion of the existing WPCF site, which would cross many utilities and existing piping. Maintaining treatment and ensuring existing piping isn't disturbed during this construction would be difficult and costly.

### 3.2.2.3 Pump Sizing/Selection

To develop capital and operational costs for the new pump station, an estimated pump size was developed. These pumps were sized to meet the flow range from average day to maximum month flow conditions. The average day conditions required that there be at least one pump operating at 2,600 gpm and the maximum month flow is approximately 6,100 gpm, which is required to be pumped with one pump out of service. Based on these conditions, four 2,600 gpm pumps are assumed to be needed (one standby).

To estimate horsepower to develop operational costs, the force main route alternative selected to convey wastewater to the CSO Tunnel (Option 2), and the Fall River WWTP directly (Option 3) were chosen.

For Option 2, the high static head which is the approximate elevation difference between the suction head of the proposed pump station and the rough elevation of the invert of the CSO tunnel, highly influences the required horsepower for the pumps. With an approximate static head of about 135 feet, a motor horsepower of 210 was estimated. For Option 3, based on the pipe length and size discussed in Section 2 for this option, and with an approximate static head of 20 feet, a motor horsepower of 200 was estimated.

**3.2.2.4 Other Considerations**

With preliminary treatment being abandoned during construction, there is potential for issues with ragging and clogging of the new pumps. As these pumps would convey the entire Town of Somerset’s flow, minimal downtime and minimizing pump clogging are important. A headworks building with mechanical bar screens is recommended to protect the pumps. There would be two bar screens, with one in constant operation. The screens would be installed preceding the wet well and during peak operations, both screens together would be able to handle 8.8 mgd, or the pump station’s maximum capacity. The bar screen would have a bar spacing of 3/8-inch. These bar screens would be installed with screenings washer/compactors. Screenings would be disposed of into a cart where it can be emptied out manually into a dumpster for disposal. This equipment and building would add significant cost to the upgrade.

**3.2.3 Flow Equalization Modifications**

Since sending wet weather flow to Fall River is not an option for Somerset, the WPCF/Pump Station will need to find tank capacity at the plant to hold wastewater until the Fall River collection system and WWTP is relieved of high wet-weather flows. The maximum month flow of 8.8 mgd was chosen as the highest flow that Somerset could pump to Fall River, as this would avoid overloading their collection system. The maximum day flow is 13.26 mgd, leaving 4.46 million gallons (mg) to be stored within a day.

The WPCF would mostly be abandoned after the pump station is constructed and operational, thus the existing tankage could be used for storage. This makes use of the existing infrastructure and reduces the volume of the additional tanks that will need to be constructed.

**Table 3-3** shows the existing amount of volume that can be used for equalization.

**Table 3-3 Existing Volume for Flow Equalization**

Structure	Gallons
Flow Equalization Clarifier	188,000
Flow Equalization Tanks	1,300,000
Primary Clarifiers	423,000
Secondary Clarifiers	859,200
Aeration Tanks	1,090,600
Chlorination Tanks	20,100
<b>Total</b>	<b>3,880,900</b>

Accounting for all the existing structures that can be used for flow equalization, there is about 3.9 million gallons in storage. However, this is not enough storage for the peak day scenario. Due to the lack of capacity, a new flow equalization tank of approximately 700,000 gallons is required. **Table 3-4** shows the proposed dimensions of the tank based off the required storage volume.

**Table 3-4 Proposed Tank Dimensions**

Length	Width	Depth	Volume	Volume
80 feet	60 feet	20 feet	96,000 cubic feet	720,000 gallons

Just like the new pump station, the new flow equalization tank is assumed to be constructed by the composting building area. There is sufficient space at this location, and it would allow the new tank to be adjacent to the new pump station and would reduce any additional piping that would need to be connected to the new wet well. This tank can also be constructed without interrupting any of the current conditions at the facility. It can be constructed in place and when completed, all the necessary connections can be made, and the tank can be brought online. A proposed layout is shown in **Figure 3-1**.

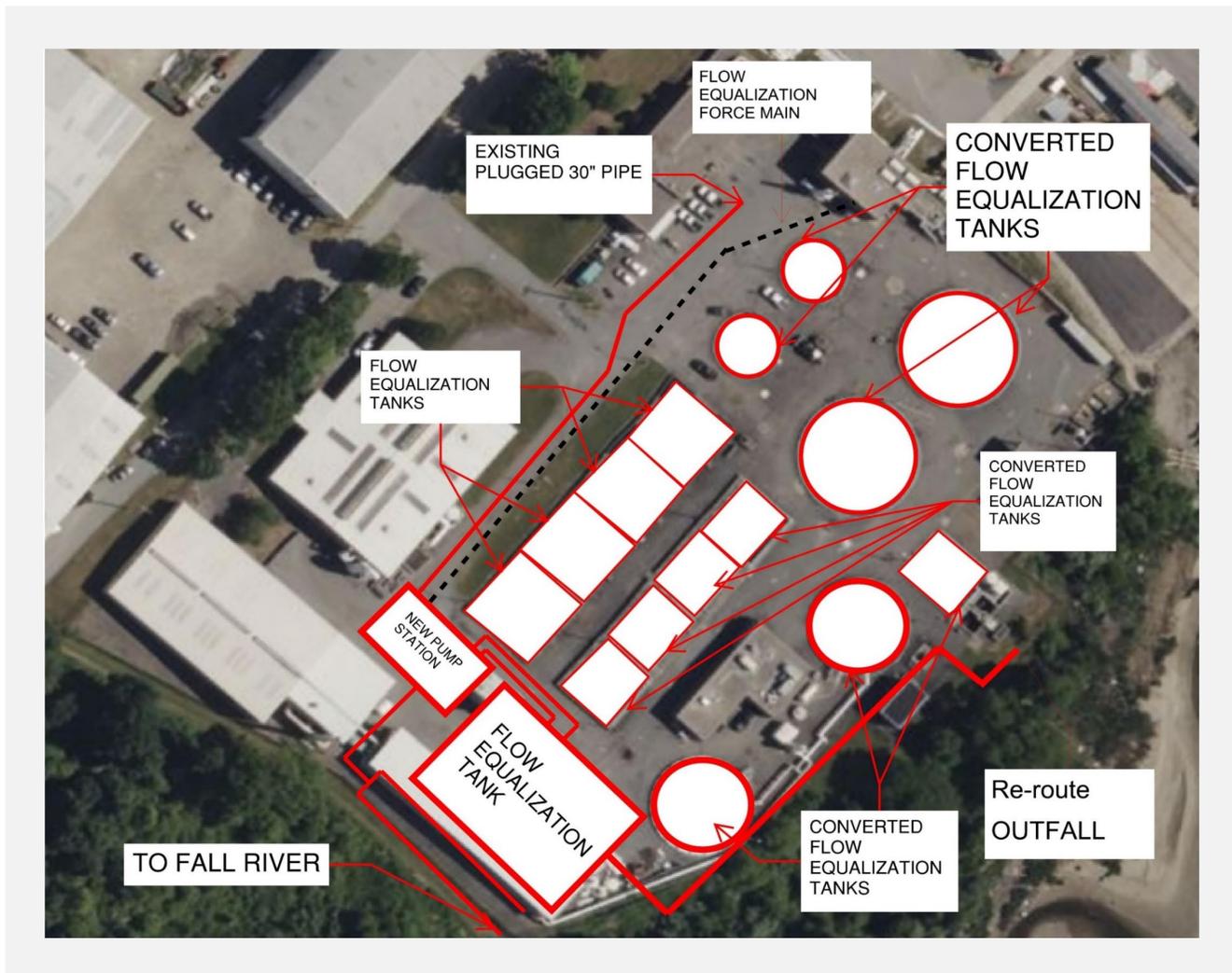
### 3.2.3.1 Flow Equalization Pumps

Once the new gravity sewer is extended from the Influent Manhole to the new pump station wet well, wastewater would not be able to be diverted by gravity to the existing WPCF tankage. The current facility has screw pumps and a standby pump station to discharge wastewater up to the Headworks, which then allows wastewater to flow by gravity to the rest of the structures on site.

Since there is an existing standby pump station that is used for flow equalization pumping currently, the existing infrastructure can be re-used. During flow events over 8.8 mgd, a diversion structure could be utilized to direct flow to the standby pump station wet well. The wastewater would then be pumped to the grit channel, which bypasses the screw pump wet well. This would eliminate the need for the influent screw pumps and would allow for the wastewater to flow by gravity to the existing tankage in the facility. As with normal operations, wastewater would be sent to the existing grit chamber where it would flow by gravity to all existing infrastructure and to the chlorination tanks. The effluent from the chlorination tanks would then flow into the existing outfall where a new pipe would be cut into the outfall to allow the wastewater to flow by gravity to the new flow equalization tank. The tanks would be able to drain by gravity to a certain extent, and the remaining wastewater would need to be drained by manual pumping.

Due to hydraulic differences between the new wet well and new flow equalization tank, it is likely that the flow equalization tank would need to be pumped to the new wet well once the wet weather event subsides. This would be a complicated process to operate and maintain.

Figure 3-1 New Pump Station and Flow Equalization Basin Layout



### 3.2.4 Decommissioning of WPCF

Once all modifications are completed and construction has been finished, the WPCF can be decommissioned. Some of the equipment could be salvaged, especially the new electrical and process equipment required for the TN removal upgrade. Some of the tankage would remain for flow equalization, but any internal equipment could be demolished. Many of the buildings and solids handling equipment could be completely removed. The Administration Building would likely be retained for office space, record storage, and a maintenance shop.

### 3.3 Summary

Overall, for the WPCF there are many considerations that need to be addressed as it is converted into a pump station with screening and flow equalization also provided. These considerations include:

- Maintaining the current collection system and pump stations
- Upgrading the secondary treatment process of the facility to allow the Town to meet the required NPDES TN limit within 6 years of permit issuance. Schedule is discussed in Section 6.
- Constructing a new pump station by the composting area with all new equipment, piping, and instrumentation and control systems
- Constructing a new headworks building with bar screens to protect pumps against rags and other debris
- A new flow equalization tank adjacent to the new pump station
- Once finished with construction of the new equipment/tankage, decommissioning all existing equipment to route flow to the new pump station
  - Salvage any electrical and process equipment needed for TN removal

## Section 4 Estimated Costs

This section reviews the estimated costs required for regionalization and compares the cost of maintaining and upgrading the existing Somerset WPCF. This includes estimated capital costs for upgrades for new piping and equipment that would be necessary, and the operation and maintenance (O&M) costs that come with new upgrades. The estimated costs are then compared against the existing Sewer budget and the IWRMP cost estimate for the WPCF complete upgrade in today's dollars.

Planning-level project costs (Study Level – 10 percent Design) have been prepared for the various capital upgrades. These planning-level costs were developed using cost estimating procedures consistent with industry standards, conceptual layouts, unit cost information, and planning-level cost curves, as necessary. The estimated upgrade projects include recommendations provided as part of the evaluations contained herein. The costs are in current dollars and are based on ENR Construction Cost Index (CCI) 20-city average of 13839 (May 2025). Any costs presented in older reports have been carried forward to today's dollars using the index.

The presented project cost estimates have been developed as an Association for the Advancement of Cost Engineering (AACE) Class 4 estimate, which are typically utilized to form the basis for funding planning. Total project capital costs include allowances to account for construction contingency, project contingency, technical services, financing, administrative, and legal expenses. Many factors arise during preliminary and final design phases of a project (e.g., owner selected features and amenities, existing conditions, code issues, etc.) that cannot be definitively identified and estimated at this time. It must also be noted that there is, and will potentially continue to be, uncertainty in the construction bidding market given the passing of recent federal infrastructure bills. These factors are typically covered by the allowances described above; however, these allowances may not be adequate for all circumstances.

It is important to note that a high design contingency (30 percent) is being carried at this time. The current construction cost market is volatile due to the labor shortage, the significant volume of work available for the limited number of contractors that perform this type of work in your area, and uncertainty of the cost implications from Build America, Buy American Act (BABA) compliant material/products and the tariffs recently imposed. Many equipment vendors have included a 5 percent flat increase in preparation for tariff impacts. Until the effects of the tariffs and BABA compliant material/products are understood by contractors, projects may be viewed as too risky to bid by some contractors. We recommend carrying a higher than typical contingency at this time. In addition, a 3 percent inflation rate is carried to calculate the midpoint to construction cost of the project. All percentage estimates are consistent through the new costs and old costs are carried forward using the ENR index. This allows for an apples-to-apples comparison of costs. It should be noted that costs prior to 2020 can be significantly underestimated given the new construction climate.

## 4.1 Capital Costs

All construction, upgrades, and other one-time expenses made on a project are referred to as capital costs. For this project, it would include items such as the construction of the pump station, directional drilling, and other upgrades to the WPCF to meet the NPDES permit. This section reviews the estimated costs between regionalization and an overall comprehensive upgrade to the Somerset WPCF.

The following estimates have been applied to the cost estimates developed for this evaluation:

- 10 percent General Contractor overhead and profit
- 7.5 percent General Contractor markup on Subcontractor work
- 2 percent allowance for unit price items
- 12 percent allowance for General Contractor General Conditions
- 30 percent design contingency
- 3 percent annual inflation rate
- 5 percent construction contingency
- 25 percent allowance for technical services (engineering)
- 2 percent allowance for legal/administrative services
- 1 percent allowance for financing (such as interim interest)

These factors have been developed based on extensive experience bidding municipal construction projects in this area.

### 4.1.1 Upgrade Existing WPCF Costs

The recommended overall improvements for the WPCF from the IWRMP were used as the basis for the estimated costs of upgrades to the WPCF. The recommendations are summarized below:

- General Site
  - Paving/Piping improvements for the site
- Preliminary Treatment
  - Demolish and replace process equipment
  - General structural and architectural improvements to preliminary treatment building
- Flow Equalization
  - Demolish existing equipment and clean and repair concrete in tanks
  - Conversion of circular EQ tanks to gravity thickeners (original purpose of the tanks)
- Primary Treatment
  - Demolish and replace process equipment
- Secondary Treatment
  - Upgrades to existing aeration tanks to 4-stage Bardenpho/MLE process to improve Total Nitrogen removal
  - Demolish and replace secondary clarifier mechanisms, return activated sludge pumps, waste activated sludge pumps, piping, and valves
  - Install new blowers
- Solids Processing
  - Demolish and replace process equipment

- Composting and Administrative Area
  - Demolish current composting building
  - Construct new administration or solids handling building where existing composting building is located
- Odor Control
  - Demolish or abandon existing process equipment
  - Replace equipment and media associated with wet scrubber for preliminary treatment building
  - New high-capacity carbon units for preliminary building and sludge building
- Electrical service and equipment overhaul and replacement
- General Instrumentation and SCADA improvements

The cost of these improvements was estimated to be \$57.6 million in 2020 dollars from the IWRMP. These costs were inflated to \$68.6 million dollars in December 2024 based on escalation and the bidding environment at the time. In today's dollars, a single-phase upgrade project is estimated to cost approximately \$75 million.

Due to the high costs of the project, the Town is currently pursuing a phased approach, addressing TN removal and electrical improvements first, to reduce the high, single-phase project construction costs and spread costs over a longer period. The Phase 1 TN upgrade is estimated to be about \$35 million and is required for either project due to the TN effluent limit proposed by the NPDES permit. The full phasing plan has not been developed, but the phased project would cost more than the single project cost of \$75 million. This is due to multiple contractor mobilizations and the time that passes between projects (inflation). However, \$75 million will be used for this analysis as the plan is not finalized.

#### **4.1.2 Regionalization Capital Costs**

This section discusses the upgrades required to the existing systems within Somerset and Fall River to implement regionalization, as well as new infrastructure required. Regionalization Option 2 and Option 3 are both reviewed, as the capital costs for the two options are significantly different.

The bulk of the upgrades will be located in Somerset, at the WPCF. During the evaluation, permitting, and design of a regionalization project, the WPCF would need to be upgraded to meet the effluent Total Nitrogen (TN) NPDES permit limit and compliance schedule. In addition to the TN upgrade, a new pump station needs to be constructed to pump wastewater from Somerset to Fall River. The pump station will include a building, screening equipment, a wet well, pumps, piping, and valves. Flow equalization will be required at the Somerset WPCF, as well as modifications to onsite piping systems to properly convey flow around the WPCF site. Finally, a collection system (force mains, gravity pipe, etc.) must be constructed between the Somerset WPCF and the connection point in Fall River. Construction of these upgrades are assumed to begin in mid-2031 and be completed by mid-2034. This is due to the time it will take to negotiate an IMA, design the project, permit the project, and get the project approved and bid prior to construction starting. The scope of each portion of the project are summarized below:

- TN and Electrical Upgrade (outlined in IWRMP and updated in TN memo issued by WP in June 2025)
  - Upgrade existing aeration tanks to incorporate 4-stage Bardenpho/MLE process
  - Demolish and replace all existing related process equipment
  - Install new equipment (blowers, mixers, pumps) to support Bardenpho process
  - General instrumentation and electrical upgrades

- New Pump Station and Flow Equalization
  - New pump station with corresponding pumps, equipment, valves, structure, and piping
  - New flow equalization tank constructed at the current composting building location
  - New flow equalization pumps to send water from tank to pump station wet well
  - Two mechanical bar screens and building
  - New piping connections around the site
- Collection System Construction
  - Option 2
    - 24-inch Dual Force mains (roughly 8,550 linear feet, total) directionally drilled from the Somerset WPCF pump station to the shoreline
    - 24-inch Force main (single pipe) installed from the shoreline to the CSO Tunnel drop on Columbia Street (approximately 4,100 linear feet)
    - Approximately 5 air release manholes at intermediate high points in the force main
  - Option 3
    - 24-inch Dual Force mains (35,500 linear feet, total) installed from the Somerset WPCF pump station to the Fall River WWTP
    - 24-inch Gravity sewer installed at the existing WPCF and short section (500 feet and 3 manholes) from the shoreline to the Fall River WWTP

#### 4.1.2.1 New Pump Station and Flow Equalization

To convey wastewater from the Somerset WPCF to the Fall River collection system, a new pump station must be constructed. The selected location for the pump station was the current location of the WPCF as it is where all wastewater flow from Somerset converges.

The pump station will include all pumps, piping, bar screens, valves, and all other process equipment that are necessary for a pump station.

The following list summarizes the estimated quantities for this evaluation:

- 3 Flow Equalization Pumps
- 4 Submersible Pumps to Convey Flow to Fall River
- 2 Bar Screens and Washer-Compactors
- 15-foot x 15-foot x 10-foot Wet Well
- 80-foot x 60-foot x 20-foot Flow Equalization Tank
- 51-foot x 20-foot Building (1,000 sf)
- Approximately 565 Linear Feet of Gravity Piping
- Approximately 750 Linear Feet of Force Main Piping

We have estimated the following unit prices for this evaluation:

- Concrete - \$2,000 / cubic yard
- WPCF Site Gravity Piping - \$125 / linear foot
- WPCF Site Force Main Piping - \$115 / linear foot

- Pumps
  - Flow Equalization - \$50,000 / each
  - Submersible - \$75,000 / each
- Screens and Compactors - \$250,000 / each
- Building
  - Foundation – Utilizes concrete costs
  - Site Work, Building Finishes, HVAC, Electrical - \$750 / square foot

Lump sum estimates were used to estimate civil site work required, instrumentation and electrical work to support the new equipment. Total project costs were developed using the cost factors listed above. Altogether, the new pump station and flow equalization upgrades for the WPCF are about \$16 million.

#### **4.1.2.2 New Collection System**

To convey flow from Somerset to Fall River, new gravity sewer and force mains are required. Dual force mains are also necessary to provide redundancy for the system and were included in the analysis. The two options that were considered for cost analysis were directly connecting to the Fall River WWTP and connecting into the existing CSO Tunnel via the drop shaft in Columbia Street. The new gravity sewer and force mains at the WPCF were included in both alternatives.

We have estimated the following unit prices for this evaluation:

- 24-inch HDPE force mains, directionally drilled - \$800 per linear foot
- 24-inch PVC gravity sewer, open cut - \$700 per linear foot
- Manholes - \$7,500 each
- Air Release Manholes - \$10,000 each

#### **Option 2**

For option 2, dual force mains would be directionally drilled under the river and come out on the shore of Fall River near the Central Street pump station. The pipe would then transition to a single force main and be routed from the shore to Columbia Street. Refer to **Figure 2-4**. The estimated quantities for this option are:

- 8,550 feet of 24-inch Directionally Drilled HDPE Dual Force Main
- 4,100 feet of 24-inch HDPE force main
- 5 air release manholes

Altogether, the estimated cost of the collection system for Option 2 is estimated to be \$21.6 million.

#### **Option 3**

Like Option 2, dual force mains will be directionally drilled under the Taunton River. However, instead of discharging into the Fall River collection system, the force mains will be installed along the coastline to the Fall River WWTP. Once the force mains are close enough to the WWTP, the force mains will transition to gravity sewer where it will be connected to the headworks building. Refer to **Figure 2-5**. In this route the following collection system items proposed are:

- 10,250 feet of 24-inch Directionally Drilled HDPE Force Main
- 25,250 feet of 24-inch HDPE Force Main Installed Along Coast
- 430 feet of 24-inch gravity sewer
- 5 manholes

Altogether, the estimated cost of the collection system for Option 3 is estimated to be \$61 million.

Based on the two cost estimates, **Option 2** presents a less costly construction project. As such, this cost was used in the cost analysis below.

#### **4.1.2.3 One-Time Connection Fee**

According to the Intermunicipal Agreement (IMA) between Freetown and Fall River, all new connections shall pay a one-time fee to the City of \$1 per gallon per day of the projected flow. Using the design annual average flow of 4.2 mgd referenced in Section 1, this would equate to an additional cost of approximately \$4.2 million if this method were employed for Somerset. This fee may be negotiated but is unknown at this time. The fee has been removed from the analysis.

#### **4.1.2.4 Fall River WWTP Upgrades**

An IMA will also typically have provisions for a charge system to address upgrades to the WWTP based on the percentage of capacity the community is allocated. The City of Fall River is likely facing a significant upgrade to their WWTP over the next decade, similar to what the Somerset WPCF is facing, including a potential upgrade to meet a TN limit in their NPDES permit. Using the costs for the upgrades to the WWTP and the annual flow from Somerset and Fall River referenced in Section 2, it can be assumed that Somerset would make up 15 percent of the flow to the Fall River WWTP. Therefore, of the \$199 million dollar upgrade presented in the Facilities Plan, Somerset would be responsible for \$30 million. However, the other IMAs in place in Fall River do not have this language included. As such, it was removed from the analysis. It should be noted that user rates are expected to increase in Fall River to offset any upgrades completed, which would be passed on to Somerset.

#### **4.1.2.5 Capital Cost Summary**

The capital costs were developed using previous projects and equipment that have been used in similar designs. This includes all proposed process equipment and infrastructure. In this estimate, unit price assumptions, engineering fees, and design contingencies are added. These are used to capture all costs of a project that are not explicitly designed for. Inflation was also added on to the cost of the project as it can be assumed that construction for this project would not occur until the mid-2030s.

A summary of the cost estimate is in **Table 4-1**.

**Table 4-1 Regionalization Capital Costs**

Item	Option 2	Option 3
Somerset WPCF TN and Electrical Upgrade	\$35,000,000	\$35,000,000
Somerset Pump Station and Flow Equalization	\$16,000,000	\$16,000,000
New Collection System	\$21,600,000	\$61,000,000
<b>Total</b>	<b>\$72,600,000</b>	<b>\$112,000,000</b>

## 4.2 Operations & Maintenance Costs

Operation and maintenance (O&M) costs are costs that are referred to as necessary and reasonable for maintaining and operating a system. These costs can include items such as employee salaries, expenses related to management and repair of equipment, energy usage, and many other items that can be expected to be paid within a certain time period. This section reviews the current O&M costs and the O&M costs that would be incurred for regionalization and a comprehensive upgrade to the Somerset WPCF.

For this evaluation, the Town’s Annual Budgets for the Sewer Department (which includes the collection system, pump stations, and WPCF), over the last 4 years were analyzed. Costs were split up between each portion of the system to delineate costs that would remain after regionalization and costs that would no longer be applicable. The largest portion of the collection system costs are for labor and debt service for upgrade projects within the collection system. The largest portion of the pump station costs are electricity usage for pumping, labor, and debt service for upgrade projects. The largest portion of the WPCF costs are labor, sludge disposal, debt service, and electricity usage.

**Table 4-2** summarizes the existing detailed annual budget expenditures for both the WPCF and the collection system and pump stations for fiscal years 2022-2025. Typically, the collection system and pump station costs make up 30 percent of the total budget.

**Table 4-2 Existing Somerset WPCF and Collection System O&M Costs**

Year	WPCF Costs	Collection and Pump Station Costs
FY22	\$1,500,000	\$680,000
FY23	\$1,600,000	\$700,000
FY24	\$1,640,000	\$740,000
F25*	\$2,700,000	\$1,200,000

\*Fiscal Years 2022-2024 are actual expenditures. FY25 is the budgeted O&M costs for 2025.

For comparison, the Fall River budget for FY24 was \$25.4 million, FY25 budget was \$31.1 million and FY26 proposed budget is \$32 million as cited in the FY26 City of Fall River Proposed Budget Book.

### 4.2.1 Existing Somerset O&M Costs

The O&M costs for the Town’s collection system and pump stations are costs that will be maintained even after a regionalization project is implemented. The collection system requires cleaning of pipelines, removing blockages and breaks in the piping system, and periodic upgrades to the piping (such as lining and replacement to address I/I). The pump stations require electricity to operate the pumps, equipment replacement parts, and upgrades for equipment in the station. Based on review of the Annual Budget and with input from Town and Sewer Department staff, it is estimated that the collection system and pump station costs are approximately 30 percent of the total budget on average, annually. For this analysis, the latest fiscal year budget (\$1,200,000) will be used, as the annual costs are expected to increase each year. It is important to note that this budget is based on current operations and current flows. The design year 2045 flows are about 20 percent higher than the current ADF. As such, the budget will be increased by 20 percent to account for the flow difference at the design year. This equates to approximately \$1,400,000.

#### 4.2.1.1 Future Somerset O&M Costs

Due to upgrades to both electrical and solids handling at the Somerset WPCF, overall O&M costs are expected to increase. This is estimated to be an increase of approximately 5 percent of the current budget. Additionally, the current O&M costs to run the facility will need to be increased to account for higher influent flows and users. This increase was calculated by combining the current O&M budget with the expected increase for the TN and electrical upgrades and applying an overall 20 percent increase to account for flow. This estimate is conservative but should account for all contingencies and other budget increases that will be incurred. In total, the future O&M costs for the Somerset WPCF are expected to be \$4.9 million, annually.

#### 4.2.1.2 Debt Service

For the capital costs that will be incurred for the comprehensive upgrade to the WPCF, debt service payments are required on a yearly basis. Debt services usually refer to the total cash required by an individual or company to pay back all debt obligations which include both the interest and principal amounts. This will be based upon the \$75 million capital cost investment for the upgrade to the WPCF. As is standard for most SRF projects, the interest rate on repayments is 2 percent. This will be about \$4.6 million per year for the Town. It should be noted that the TN upgrade will likely qualify for and receive 0 percent interest, but this has not been included in the analysis at this time.

### 4.2.2 Regionalization O&M Costs

O&M costs for the regionalization project would consist of the existing Somerset collection system and pump station costs, the costs to operate and maintain the new pump station and screening facility at the WPCF site to pump flow to Fall River, flow equalization systems, collection system costs for the added pipelines to convey flow to Fall River, and the rate Fall River will charge Somerset to treat their wastewater (user charge system).

For the new pump station, screening facility, and equalization process at the Somerset WPCF, costs include electricity usage for the motorized equipment, labor to operate and maintain the equipment, and parts for the equipment. The projected 20 percent increase in flows have also been included in this analysis. In addition, the pipelines between Somerset and Fall River will need to be maintained. Finally, Fall River would charge a rate for Somerset to dispose of wastewater in their system. The rate is typically based on one hundred cubic feet of volume, recorded through a flow meter. One item that has not been estimated but will be a cost incurred by the Town of Somerset is the additional insurance that will be required for the pipeline under the Taunton River. This is likely to be costly due to the criticality of the pipeline and impact on the environment a pipe failure would have. While the insurance would likely lessen for

the WPCF, there would still need to be a policy in place for the WPCF site because the site would still be used for flow equalization and a pump and screening facility.

#### 4.2.2.1 Fall River User Charge System

Fall River utilizes two separate rate structures currently. They have an in-City resident rate and an out-of-City rate for their regional partners established through an IMA. The current (2025) Fall River user charge system was obtained from their website and existing IMAs. The current resident rate is \$8.11 per 100 cubic feet (\$10.84 per 1,000 gallons). The out-of-City rate Fall River charges their IMA regional partners is 1.55 times the resident rate, or currently a rate of \$12.57 per 100 cubic feet (\$16.80 per 1,000 gallons). The 55 percent upcharge is consistent across all three existing IMAs in place at this time. Above a certain flow, the rate drops to a 5 percent increase. IMA partners receive an updated pass-through rate whenever a new rate is established for residents of Fall River.

It is important to note that Fall River sewer rates increased 24 percent in FY2025. It is expected that rates will continue to increase 5 percent per year for the next 5 years, according to Mr. Ferland, Administrator of Community Utilities for Fall River, in an interview in 2024. At the time, this was attributed to playing catch up from previous policies that ran a deficit for the sewer budget and accounting for increased costs across the board for labor, equipment, products, etc. Rates did not increase for FY2026, however. Also of significance is the future projects Fall River will need to complete in their collection system, pump station upgrades, WWTP upgrades, and CSO control/mitigation upgrades. These projects will be costly (\$393 million [2018 dollars] by FY2035 according to the Facilities Plan) and will directly impact rates as they are completed. While Fall River's user base (approximately 22,500) is large in comparison to Somerset (approximately 6,800), these rates will pass on to IMA partners. Fall River O&M costs were projected to rise from \$13.3 million in FY2019 to over \$30.9 million in FY2039 in the Facilities Plan. Much of the costs presented in the FP are likely outdated given the current construction climate (including inflation over the last 5 years).

For comparison, Somerset users currently pay approximately \$7.10 per 1,000 gallons (FY26 increase). There is also a 31.5 percent infrastructure fee that is placed on this, which equates to a total rate of \$9.34 per 1,000 gallons. The base fee is used for operations and maintenance, and the infrastructure fee is used to fund system improvements.

In the May 2025 public meeting for the draft regionalization evaluation and in follow-up comments received, Mr. Ferland suggested the Somerset rate could be part of negotiations in the IMA process. However, it is unlikely that Fall River would charge Somerset a lower rate than their own residents. As such, this analysis uses the \$10.84 per 1,000-gallon rate, which is \$1.50 (14 percent) higher than the Somerset rate.

To calculate the volume of wastewater that will be sent to Fall River on an annual basis, the future annual average flow rate of 4.2 mgd was multiplied by 365 days, which results in approximately 1.5 billion gallons per year. To develop the annual cost for this, the annual rate of \$10.84 per 1,000 gallons is used. This results in an annual cost of approximately \$16.6 million. If the current IMA rate were used, the cost would be approximately \$25 million per year. For comparison, at Somerset's current rate, the annual cost would be \$14 million, about \$2.6 million less.

#### 4.2.2.2 New Pump Station O&M Costs

O&M costs for the new Somerset pump station and flow equalization process were estimated. An approximate pump size, including motor horsepower, was estimated based on the required flow rate and total dynamic head to pump wastewater from Somerset WPCF site to the Fall River WWTP. These costs would replace the existing WPCF costs, as much of the WPCF would be decommissioned. In addition to the power costs, the labor and parts for repairs were

also estimated. A unit cost of \$0.14 per kilowatt-hour (kW-hr) was used to estimate power costs. **Table 4-3** summarizes these estimates. The difference in O&M costs between Option 2 and 3 are negligible.

**Table 4-3 Estimated Annual O&M Costs for the New Pump Station**

Item	Cost
Labor	\$100,000
Power	\$250,000
Parts	\$10,000
<b>Total</b>	<b>\$360,000</b>

#### 4.2.2.3 Debt Service

As with the comprehensive upgrade to the WPCF, there is a debt service cost that is associated with the capital costs of regionalizing. For both options, this will be based upon a 2 percent interest rate over 20 years. The debt service annual costs for Options 2 and 3 are \$4.4 million and \$6.8 million, respectively. Option 2 is presented in the summary table and life cycle analysis below.

#### 4.2.2.4 O&M Cost Summary

The overall O&M costs for maintaining the existing WPCF and regionalizing with Fall River are summarized below in **Table 4-4**. These costs are based on 2025 dollars at the future flows projected for design year 2045.

**Table 4-4 Summary of O&M Costs**

Item	Cost
<b>Not Regionalizing</b>	
Existing Total Sewer Annual Costs (FY25)	\$3,900,000
Expected Annual Increase for TN Upgrade	\$180,000
20 Percent Increase for Increased Flow (2045)	\$820,000
Annual Debt Service, WPCF Upgrade	\$4,600,000
<b>Total Non-Regional Annual Cost</b>	<b>\$9,500,000</b>
<b>Regionalizing</b>	
Existing Collection System and Pump Station Annual Costs Plus 20 Percent Increase	\$1,400,000
New Pump Station Annual Costs	\$400,000
Fall River User Charge at FR Resident Rate	\$16,600,000
Annual Debt Service, Regionalization Upgrade Option 2	\$4,400,000
<b>Total Regional Annual Cost</b>	<b>\$22,800,000</b>

#### 4.2.2.5 Cost Per Gallon Comparison

A cost per gallon analysis was completed for both Somerset and Fall River. The cost per gallon is calculated using the allotted sewer budget for both municipalities and dividing it by their permitted average daily flow. As of FY2026, Fall River has a budget of \$31.9 million and a permitted daily average flow of 30.9 mgd. Somerset has a budget of \$4.2 million and is permitted for 4.2 mgd. This results in Fall River having a daily operational cost of \$0.97 per gallon while Somerset is slightly higher at \$1.00 per gallon.

### 4.3 Life Cycle Costs

Life cycle costs refer to the total costs of owning and using an item throughout its lifespan. Typically, a 20-year life cycle is used for these analyses as this is the typical service life for most equipment. Alternatively, a 30-year term could be reviewed, as this can be the range for a typical loan life for a project of this size. For this analysis, a 20-year cycle is assumed. The analysis reviews the capital costs in today's dollars and calculates a future cost based on a 2 percent interest rate (typical interest rate for a state/federally assisted project) and 3 percent inflation rate over 20 years, and the annual O&M costs in today's dollars escalated over 20 years, assuming a 3 percent inflation rate. It should be noted that the TN upgrade will likely qualify for 0 percent interest through the SRF program, but that has not been included in the analysis at this time. **Table 4-5** summarizes the life cycle costs for upgrading the existing Somerset WPCF and implementing regionalization with Fall River based on the chosen alternatives and user charge rates.

**Table 4-5 Life Cycle Cost Analysis**

Cost	No Regionalization	Regionalization Option 2	Regionalization Option 3
<b>Capital</b>			
Somerset WPCF Upgrade	\$75,000,000	N/A	N/A
Somerset WPCF TN Upgrade	N/A	\$35,000,000	\$35,000,000
New Pump Station and Flow EQ	N/A	\$16,000,000	\$16,000,000
New Collection System	N/A	\$21,600,000	\$61,000,000
<b>Total, Today's Dollars</b>	<b>\$75,000,000</b>	<b>\$72,600,000</b>	<b>\$112,000,000</b>
<b>Total, Future Dollars (2 percent Interest)</b>	<b>\$111,400,000</b>	<b>\$107,900,000</b>	<b>\$166,400,000</b>
<b>O&amp;M</b>			
Existing Somerset Annual Sewer Budget	\$3,900,000	N/A	N/A
Somerset Collection and Pumping Annual Costs	N/A	\$1,400,000	\$1,400,000
Expected Change in TN Electrical and Solids Disposal in Cost	\$180,000	N/A	N/A
New Pump Station and Flow EQ Annual Costs	N/A	\$400,000	\$400,000
Fall River User Charge <sup>1</sup>	N/A	\$16,600,000	\$16,600,000
20 Percent Increase to Account for Higher Flows	\$820,000	N/A	N/A
Debt Service 2 Percent Interest over 20 Years	\$4,600,000	\$4,400,000	\$6,800,000
<b>Annual Total, Today's Dollars</b>	<b>\$9,500,000</b>	<b>\$22,800,000</b>	<b>\$25,200,000</b>
<b>Total, 20-year Total with 3 percent Inflation</b>	<b>\$255,300,000</b>	<b>\$614,200,000</b>	<b>\$678,900,000</b>
<b>Total 20-Year Life Cycle Cost</b>	<b>\$366,700,000</b>	<b>\$722,100,000</b>	<b>\$845,300,000</b>

1. Based on Fall River's current residential rate with no markup

### 4.3.1 Present Worth

Another method for comparing the costs between these alternatives is by using a present worth analysis. A present worth analysis is an estimate of the current value of a future sum of money. It is often used to compare projects with similar costs or those with higher capital costs with lower annual costs. For this analysis, the O&M costs for each alternative were multiplied by a tabulated factor which presents their current value. The tabulated factor is based on compound interest tables. For a 20-year term at a 3 percent inflation rate, the future total value (F/A) is calculated using a factor of 26.87. Then, a factor is used to calculate the present value (P/F) with a factor of 0.5537. For all three alternatives a 3 percent interest rate was assumed over a 20-year period. The results of the present worth analysis are summarized below in **Table 4-6**.

**Table 4-6 Present Worth Analysis**

Item	Capital	O&M	Total PW
No Regionalization - WPCF Upgrade	\$75,000,000	\$141,400,000	\$216,400,000
Regionalization Alternative 2 - WPCF to Columbia St CSO	\$72,600,000	\$340,100,000	\$412,700,000
Regionalization Alternative 3 - WPCF to FR WWTP	\$112,000,000	\$375,900,000	\$487,900,000

## 4.4 Cost Summary

From the life-cycle and present worth cost analyses, regionalization presents as the more costly project over a 20-year term. This is due to the significant cost that Somerset would incur on an annual basis to dispose of wastewater in Fall River based on Fall River's user charge rate. In addition, the capital costs to implement regionalization are greater or similar to the costs to upgrade the existing Somerset WPCF when considering that Somerset would still need to upgrade their WPCF for TN. Based on the significant amount and cost of work required in the Fall River system, it is likely that the annual costs will only be higher than they currently are. There is no significant benefit for Somerset to regionalize with Fall River based on cost analysis. Other factors, such as environmental benefits, are discussed in the following sections.

## Section 5 Regionalization Permitting

When considering this regionalization evaluation, many different agencies would be involved in design and construction. This project would take place in Somerset at the WPCF, drill under the Taunton River, and involve construction in Fall River. Agencies involved in the process include those at the local level for each Town/City, the state level, and the federal level. Permits will have to be completed before any construction work can occur. The following sections discuss the agencies and specific permits that will most likely need to be coordinated for regionalization. This does not comprise a full list but discusses the main permits that would be involved in the project. Permitting can add a significant amount of time to any project and must be considered.

### 5.1 Local Permitting

#### 5.1.1 Fall River Intermunicipal Agreement

One of the first steps to regionalization would include an intermunicipal agreement (IMA) between Somerset and Fall River. Many communities in Massachusetts have IMAs for both water and wastewater service. There is already an IMA between Somerset and Swansea for wastewater disposal. In addition, there is an IMA between Somerset and Fall River for drinking water. IMAs include a cooperative approach to solving water/and or sewer problems between one or two neighboring communities. It is used by planners, engineers, legal and financial advisors to begin communication between the two municipalities. According to the Commonwealth of Massachusetts, there are three main types of IMAs: a joint service agreement, a service exchange agreement, and a formal written contract. The agreement between Somerset and Fall River is assumed to be a formal written contract. A formal written contract will need to be created between the two municipalities that defines the expectations, responsibilities, implementation, and payment process.

The Commonwealth has created a framework of best practices for implementing an IMA. These frameworks are shown below:

1. Inter Municipal Cooperation Assessment
2. IMA Framework
3. IMA District Representation
4. Agreement Negotiations - Facilities Capacity Considerations
5. Agreement Negotiations - Capital Cost Considerations
6. Agreement Negotiations - Operating and Maintenance
7. Negotiating Other Items

The existing wastewater IMAs between Fall River and their member communities can be found in **Appendix C**. Negotiating an IMA between the two municipalities would require a significant amount of time, including successful votes within each municipality to accept the project. This process typically takes a minimum of 1 year and can last several.

##### 5.1.1.1 District

An alternative to an IMA would be to form a district. Forming a district allows each member community to have a seat at the table so there is equal representation when, for example, coming up with new user rates. This would benefit Somerset. However, forming a district requires legislation be passed at the state level. A similar timeline is expected for this process.

### 5.1.2 Fall River and Somerset Conservation Commissions

The Conservation Commission for each municipality is responsible for the administration and enforcement of the Massachusetts Wetland Protection Act and its regulations within the respective municipality boundaries. They provide procedures and definitions via 310 CMR and have the “force of the law”. This process is also subject to public review and a decision-making process for all activities that will contribute to potential pollution. Any work that will be completed within the boundaries of Somerset and Fall River in the shoreland area of the Taunton River and within a wetland or wetland buffer zone will need to file an application with the individual Conservation Commissions and the Department of Environmental Protection (DEP) prior to the start of any work.

Coordination with these agencies will be important for all phases of regionalization and all additional information can be found on their websites. This includes the members for their board, telephone, mailing address, and all applications, forms, and fees for the commission. The commission also requires that anyone filing with them conduct a hearing on a Notice of Intent (NOI) within twenty-one days after the filing is complete. A NOI is defined as a written notification that serves as a warning or statement of intent related to various legal or business matters.

### 5.1.3 Fall River Port Authority

The Fall River Port Authority is responsible for the compliance of both regulatory and environmental issues within their waterways. In general, port authorities manage and oversee the planning framework, establish fees, ensure safety and enforce national and port-related rules and regulations. The directional drilling under the Taunton River will lead to the coast of Fall River in all proposed alternatives, so it will be necessary to coordinate with the agency. The agency does not appear to oversee specific permits but will need to be coordinated with during construction.

## 5.2 State Level

### 5.2.1 MEPA

The Massachusetts Environmental Policy Act (MEPA) requires state agencies review the potential environmental impacts for projects including permitting and financial assistance. The MEPA office is run through the Secretary of Energy and Environmental Affairs (EEA) and is responsible for day-to-day administration of the MEPA review process. The EEA would solicit comments from the public and general agencies, represent the Secretary at public consultation sessions, coordinate project reviews with proponents, consultants and interested agencies and citizens, and make recommendations to the Secretary regarding the adequacy of environmental documentation that is submitted for a project. They determine how the scope of the project could impact the environment and provide recommendations as to what should and should not be changed.

There are several thresholds that trigger a MEPA review and potential report filing. The thresholds that are expected to be triggered for this project include:

- **Wetlands, Waterways and Tidelands**
  - Environmental Notification Form (ENF) and Other MEPA Review if the Secretary So Requires
    - Dredging 10,000 or more cy of material.
    - Disposal of 10,000 or more cy of dredged material, unless at a designated in-water disposal site.
- Construction, reconstruction or Expansion of an existing solid fill structure of 1,000 or more sf base area or of a pile-supported or bottom-anchored structure of 2,000 or more sf base area, except a seasonal, pile-held or bottom-anchored float, provided the structure occupies flowed tidelands or other waterways.

- **Wastewater**

- ENF and Mandatory Environmental Impact Report (EIR)
  - New inter-basin transfer of wastewater of 1,000,000 or more gpd or any amount determined significant by the Water Resource Commission.
  - Provided that the Project is undertaken by an Agency, New sewer service to a municipality or sewer district across a municipal boundary through New or existing pipelines, unless an emergency is declared in accordance with applicable statutes and regulations.

Based on these thresholds being crossed, it is expected that an Environmental Impact Report (EIR) would need to be filed prior to the project being approved.

The application process is thorough and will need to go through several review phases. This will be important to complete as no work can begin without following these guidelines. It can delay the project for more than a year and should be coordinated early on in any initial permitting processes.

### 5.2.2 Coastal Zone Management

Coastal Zone Management (CZM) is the leading agency that assists with planning, policy, and technical assistance with all coastal and marine issues within the Commonwealth. They serve as a liaison between the federal and state programs and municipal authorities on key initiatives within coastal zones. Both Fall River and Somerset fall within the south coastal regions. The CZM is a part of the Federal Consistency Review Program, which is required for most projects that are expected to use part of the Massachusetts coastal zone, require federal licenses or permits, receive certain federal funds, are a direct action of a federal agency, and other coastal items. The river coast is included, not just ocean coastal areas. Additional information can be found on their website, which includes an overview of the agency and contacts to reach out to initiate the process.

The review will include several different agencies and several permits/applications. This includes having a pre-application consultation with the project review coordinator. Per their website, the required steps in this process includes preparing and participating in a pre-application consultation meeting, undergoing reviews from MEPA, after which the applicant can begin to complete all other state and federal permitting. This process adds a significant amount of time to a project.

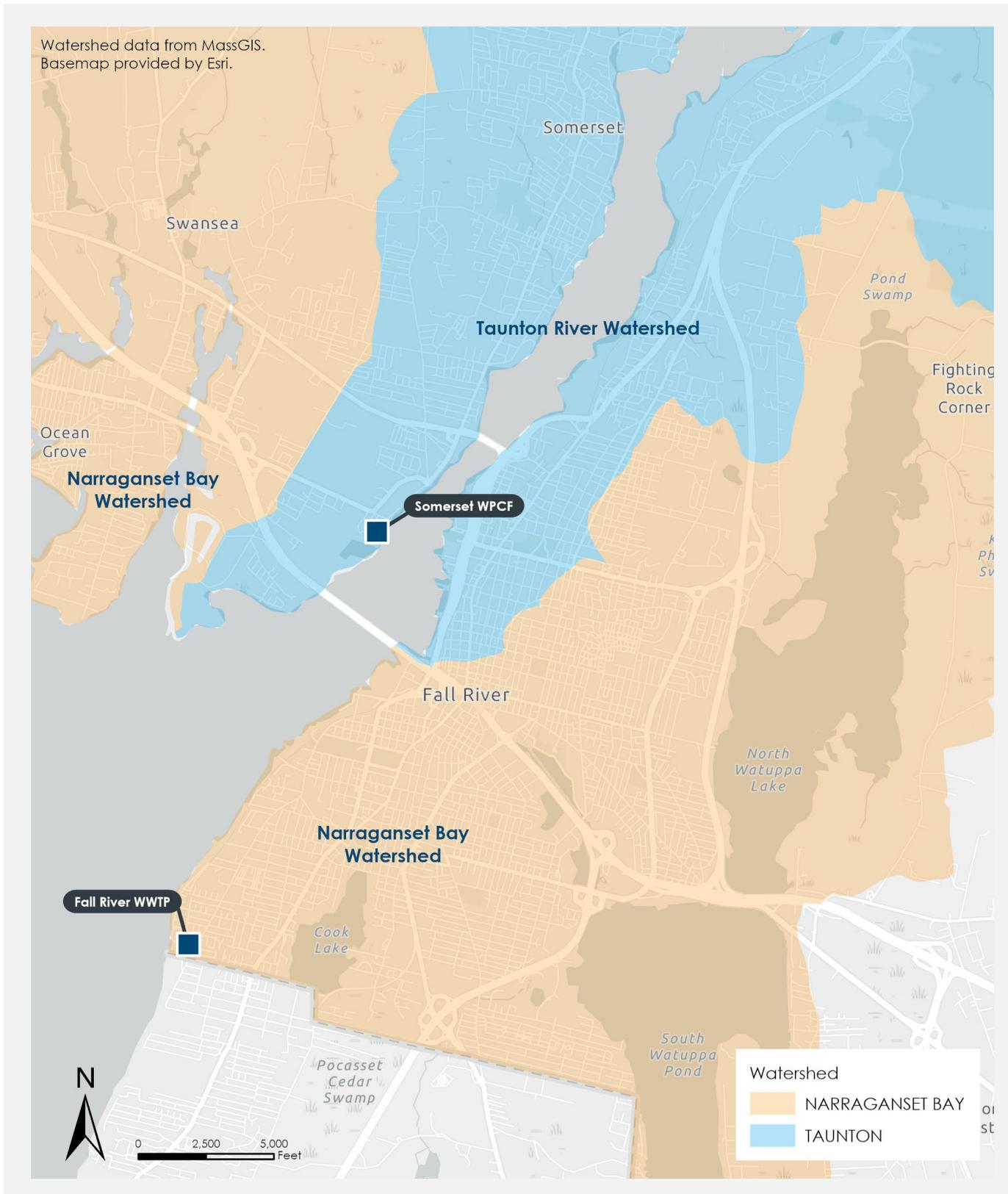
### 5.2.3 Inter-basin Transfer Act

In 1984 the Inter-basin Transfer Act became effective, which gave the Massachusetts Water Resource Commission (WRC) the authority to approve or deny transfers of water or wastewater outside of the river basin of origin. It requires the protection of the donor basin and sound water supply management practices by the applicant prior to a transfer of water resources between river basins. The Department of Conservation and Recreation (DCR) helps to provide any technical and administrative work on the Act for the commission.

Due to the transfer of wastewater from Somerset to Fall River, this act will be triggered. The Somerset WPCF discharges into the Taunton River water basin while the Fall River WWTP discharges into the Narragansett Bay water basin. **Figure 5-1** below highlights the river basins for water resource planning.

This process requires many reviews from different agencies and will include public hearings where comments will be solicited and incorporated into the review process. As such, it can be expected that this will slow down the project timeline significantly.

**Figure 5-1 River Basins for Water Resources Planning and Inter-basin Transfer Determination**



### 5.2.4 MassDOT

The Massachusetts Department of Transportation (MassDOT) is responsible for the transportation on all State roads and bridges in Massachusetts. Throughout regionalization, there will be disturbances to state roads, specifically Interstate 195 which connects Somerset to Fall River, under MassDOT's jurisdiction. Other important state roads such as Route 138/79, Route 103, and Route 6 in Fall River will also be impacted during construction. Therefore, it will be necessary to coordinate with MassDOT for state highway access permits to grant permission for any right of way work that may occur. This includes any directional drilling under MassDOT-controlled roadways.

## 5.3 Federal Level

### 5.3.1 Fall River NPDES

Fall River's WWTP currently operates under NPDES permit Number MA0100382. However, as of 2025, a draft permit was received, which included new limits on a rolling TN average. Fall River is currently contesting the draft permit.

For Somerset, the Town of Somerset would need to be added to the Fall River permit as a co-permittee, which will require a permit modification. In addition, the Somerset WPCF permit would be abandoned after regionalization is implemented. This permit is highly unlikely to ever be reissued, as surface water discharge permits have become increasingly difficult to get approved by EPA.

### 5.3.2 Army Corps of Engineers

The Army Corps of Engineers (ACOE) is a federal agency that provides engineering services to local and international customers. They are responsible for maintaining infrastructure and improving quality of life for communities. Corps permits are required for any work that happens within the Nation's navigable waters defined by the Rivers and Harbors Act of 1899, which would include Mount Hope Bay and the Taunton River. An application is needed to obtain any ACOE permit in which they will consider the views of other Federal, State, and local agencies. ACOE will then review all components of the project and then give the applicant permission to work via their permit. Once they review the work and give Somerset and Fall River their permit, work could officially begin.

Permits can be found through the regulatory request system (RRS) on their website. The list below are the permits they present on their website.

- Individual, standard permit
- General Permit
  - Nationwide Permit
  - Regional General Permit
  - Programmatic general permit

The standard permit is issued when the impacts of a project are more than minimal. This is evaluated based on more comprehensive environmental criteria and will involve a more comprehensive public interest review. The general permits are used when impacts from the projects are minimal, and they are good for five years. They are used to streamline the permitting process for these kinds of projects. This project may incur a more standard individual permit as, combined with directional drilling into the Taunton River, there is also the extra loading going to the Fall River treatment facility. This process adds a significant amount of time to a project.

## 5.4 Permitting Summary

This section summarizes the major permitting agencies that would need to be coordinated with for regionalization. The summarized list of agencies can be found below:

- Local Level
  - Fall River Intermunicipal Agreement
  - Fall River and Somerset Conservation Commissions
  - Fall River Port Authority
- State Level
  - MEPA
  - Coastal Zone Management
  - Inter-basin Transfer
  - MassDOT
- Federal Level
  - EPA (NPDES)
  - Army Corps of Engineers

These agencies, however, may not include all of the permitting actions/agencies that there would be for regionalization. Permitting would be a lengthy process and would add to the project cost significantly.

### 5.4.1 Similar Projects

Within the last 10 years, Liberty Utilities (LU) and CHA Consulting (CHA) completed a project that included a directional drill under the Taunton River. LU and CHA were able to directionally drill a gas line under the Taunton River from Fall River to Somerset. WP reached out to both companies to inquire about information about the project and any issues that may have occurred. LU did not provide any information, as they claimed there was no one currently with the company at this time that worked on the project. CHA provided some information, including a presentation that was completed on the project, but did not divulge all project details due to legal reasons.

The key takeaways and a comparison to this project are summarized below. This project should not be considered equal to wastewater regionalization between Somerset and Fall River.

#### 5.4.1.1 Project Timeline

The timeline for the project is as follows:

- Contract awarded – March 2015
- Permitting work begins – June 2015
- Final design is completed and bidding begins – February 2016
- Permitting work is completed – May 2016
- Substantial completion of project – End of 2016

Overall, the project was completed in about two years.

#### **5.4.1.2 Permitting**

The following permits/permitting agencies required for this project are as follows:

- USACE Section 404/10
- USACE Section 408
- MassDEP Chapter 91
- MassDEP Chapter 401
- Mass Environmental Notification Form (ENF)
- MassDOT State Highway Access
- Somerset Conservation Commission
- Fall River Conservation Commission
- Somerset Street Opening
- USFW/SHPO/SW Underwater Arch/Tribes/NPS/Fisheries

#### **5.4.1.3 Construction and Issues**

The general contractor for this project was RH White, a local contracting company located out of Auburn, MA. They provide their services all throughout the northeast and specialize in energy and utilities, water and wastewater, industrial, commercial, and institutional projects. The sub-contractor hired for this project was Oz Directional Drilling, an international horizontal directional drilling company based out of Carefree, Arizona.

According to CHA, this project was difficult and complex. It included the directional drilling of a gas line for about 1,900 feet under the river. There was an existing gas line in place on top of the riverbed. CHA noted that there were issues while completing the drilling across the river, mostly due to the elevation of bedrock. An intersection bore was necessary. An intersecting bore is the unintentional intersection of a utility underground, with the newer utility being installed through an existing pipeline. This kind of bore usually compromises the integrity of either or both utility or underground structure. CHA was able to complete the bore by moving the drill to the other side of the river (within Somerset) and finishing the drill from there.

#### **5.4.1.4 Project Comparison**

These two projects are vastly dissimilar in scope and permitting requirements. The gas line route is significantly shorter than the route required to get from the Somerset WPCF to the shoreline in Fall River. The gas pipeline was also significantly smaller in diameter than the proposed wastewater pipes. The complexity of completing a directional drill for a 24-inch pipeline (twice for dual force main piping) is significantly higher than that for a 12-inch diameter pipeline. In addition, wastewater permitting is vastly different than gas permitting. Primarily, the permits required for the gas project had to do with constructing the pipeline. The regionalization project would include these permits in addition to permits required for EPA, MassDEP, MEPA, and the WRC. The permitting timelines are not the same.

## Section 6 Feasibility

This section reviews the feasibility of regionalizing Somerset and Fall River for wastewater treatment and disposal.

### 6.1 Permitting

There are many different agencies and permitting requirements that are necessary for regionalization. Within these permitting requirements there are many applications that would need to be submitted and reviewed by these agencies that would end up extending the regionalization process by years. Specifically, an Environmental Impact Report (EIR) required by MEPA can add one-to-two years to a project as the report gets developed, comments received, updated, and finally approved. WP has experience developing EIRs for communities in Massachusetts looking to add new water or sewer service to their community or receiving service from another community. Construction cannot be started before the EIR is approved. Most recently, this process was conducted for the Town of North Reading for water and sewer.

In addition, the NPDES permit for the Somerset WPCF would still be in effect during this process, including the requirement to meet the TN limit compliance schedule, which will require an upgrade to the WPCF during the regionalization planning, permitting, design, and construction.

Many permits required for this process can be applied for concurrently, but a minimum of 2 years should be assumed. During this time, specifically during EIR approval, design could be conducted concurrently but it would be done “at risk”. This is due to the need for approval to be in place before the project could be constructed.

### 6.2 Directional Drilling of Piping Across the Taunton River

The preferred technical method to convey wastewater from the Somerset WPCF to the Fall River WWTP is directional drilling. Although this method would appear to be the most straightforward, there are unknown/potential problems that can occur during design and construction. The feasibility of this drilling relies heavily on an in-depth geotechnical analysis of the channels for the Taunton River. Based on the river being created by the retreat of glaciers, it is likely that depth to bedrock varies widely in the river. In addition, the river being used as a navigable channel presents an issue due to the depth of water in the center of the channel compared to the banks (around 30 feet). This would create a low point in the force mains that would have to be managed (settling of solids in the piping).

Wright-Pierce recently evaluated an underwater crossing for Nahant, MA. Horizontal direction drilling (HDD) across Lynn Harbor was considered as an alternative to construction in the Lynnway. HDD below Lynn Harbor was not technically feasible nor cost-effective due to the subsurface geologic conditions. The potential for a frac out requires a deep crossing which was deemed cost prohibitive.

The current geotechnical conditions of the Taunton River are unknown. If the channels consist mainly of bedrock and a consistent depth, this will produce the optimal conditions for this drill. The drill would be able to use the same equipment throughout its run without needing to adjust for changes in depth and soil characteristics. However, the depth required for 24-inch diameter force mains would be very deep.

However, if this is not the case and it is found that the channels consist mainly of overburden soil, the drill would need to be very deep to prevent slurry from fracking out. Slurry displacement refers to a method used to form a drill hole by displacing the soil instead of extracting it. As the soil is being displaced, drilling fluid (slurry) fills the hole as to prevent the hole from caving in or collapsing.

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### 6.3 Legal

Legal review is needed throughout the regionalization planning, design, and construction process. During planning, when many of the discussions occur between Fall River and Somerset, each community will require legal representation and review, specifically when the IMA (or district formation) is drafted and discussed between the communities. During design, legal review will be required for many of the permits that need to be filed. During construction, legal review may be needed if land purchase or easements are required to install new infrastructure. This process can add a significant amount of time to a project or even shut the project down. In addition, these reviews will add cost to the project.

### 6.4 Public Review and Acceptance

In addition to legal and permitting considerations, this project would need to be accepted by the public from both communities. Without acceptance, the project would not proceed. Specific considerations for each community are discussed below.

#### 6.4.1 Somerset

The Town of Somerset is governed by a board of selectmen that includes three members and a town manager. In addition, there is also a board of Commissioners for the water and sewer department. Each entity will need to accept this project before it is presented for public vote. An article would be drafted for Annual Town Meeting vote, typically in May of each year. If the article doesn't pass, the project would not proceed. As the project has high implications for Somerset residents' sewer bills (higher rates), this would be a difficult process.

#### 6.4.2 Fall River

The City of Fall River is governed by a mayor and a city council, which has nine members. The council and the mayor would need to approve of this project for it to proceed. There is a potential for a new sewer to pass through a small section of a residential neighborhood between the river and the Fall River WWTP. The residents and businesses in this area would likely need to approve the project before it could proceed. It is likely that setting a user rate for Somerset lower than the existing Fall River residential rate, as suggested possible by several entities involved in the review of this evaluation, would not pass through city council.

### 6.5 Estimated Costs

The estimated costs for regionalization were categorized by two factors, capital costs and operations and maintenance (O&M) costs. The capital costs include all one-time expenses that are used for the initial construction of the pump station and flow equalization at the Somerset WPCF, WPCF upgrade to meet the NPDES TN limit, directional drilling and force main installation, and collection system construction. O&M costs include items that are necessary to maintain and operate the current collection systems, existing pump stations, operations for a new Somerset pump station and force mains, debt service payments, and the Fall River user charge.

Considering both costs, the overall cost of this project is prohibitive and is a key factor as to why regionalization is not feasible. Due to the NPDES permit TN limit and compliance schedule, the Somerset WPCF would need to be upgraded during the regionalization process. These costs are in the tens of millions of dollars for the comprehensive upgrade. These would be sunk costs as the plan would be to convert the existing infrastructure into flow equalization tanks after the pump station is constructed. In addition, the construction of a new pump station, force mains, screening and flow equalization tanks at the WPCF site are significant costs that will be incurred by Somerset rate payers.

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Somerset user rates would increase significantly after regionalization is complete compared to their current rates. The current Fall River charge rate alone is over 15 percent higher than Somerset's. This would increase even more when considering the rate increases needed to cover the capital expenditures on this project and the increasing charge rates needed to catch up and for future capital projects needed in Fall River, as stated by Mr. Ferland. This includes the upgrades necessary to the Fall River WWTP, including a highly likely TN upgrade and collection system improvements to address combined sewers within the City. The upgrades required within Fall River over the next 20 years are significantly more than the improvements needed in Somerset.

## 6.6 Environmental Benefits/Concerns

In addition to monetary considerations for regionalization, non-monetary criteria should also be evaluated. The largest criteria for consideration would be related to environmental benefits. The main environmental benefit for this evaluation is the removal of a wastewater discharge into the Taunton River. Removing the WPCF in Somerset removes a wastewater outfall that is currently in the river. However, is this truly an environmental benefit? To determine the benefit to the river, the level of treatment needs to be reviewed, not just the removal of an outfall.

Somerset currently treats or stores (equalizes) and treats all wastewater flow that comes into their facility with preliminary treatment (screening and grit removal), primary treatment, secondary treatment, and disinfection. In the near future, total nitrogen will be reduced from the wastewater discharge into the river due to the new NPDES permit limit. In addition, the facility currently has the same BOD, TSS, and disinfection requirements as Fall River's WWTP NPDES permit. In comparison, Fall River is a CSO community with the largest CSO volume discharged in Massachusetts. At their WWTP, only flows up to 50 mgd are treated through secondary treatment, while the remaining 56 mgd during wet weather is treated through primary treatment and disinfection, only. Sending wastewater to the Fall River collection system would only exacerbate the CSO volumes being discharged during wet weather. If wastewater is conveyed to the CSO Tunnel or directly to the WWTP, CSO volumes won't be impacted but the level of treatment during wet weather is far less than the level of treatment of the Somerset WPCF. This would be an environmental detriment, not benefit. Fall River has also noted that they intend to contest any TN limit imposed on their WWTP through their NPDES permit. This would result in even less treatment than received in Somerset. Like Somerset, it is expected that Fall River will lose their appeal to the EPA and they will need treat their wastewater to meet the NPDES permit effluent limit. Thus, regionalization does not result in an environmental benefit for the Taunton River or citizens of Somerset.

## 6.7 Schedule

This project can be expected to require a significant amount of time to implement. An estimate of the schedule for the project is listed below:

- IMA (or district) negotiations – Likely a 2-year process – would need to be in place before any other process started
- Permitting and legal review – Minimum of 2 years
- Design of new flow equalization and pump station with screening facility at Somerset WPCF and new collection system to convey flow to Fall River WWTP – approximately 2 years – this can occur concurrently with some permitting needs – EIR needs to be completed first, which is approximately 1 year
- Construction - approximately 3 years

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A minimum of 8 years is the shortest duration this project can be assumed to take. However, it is likely that the project could take longer if, for example, IMA negotiations take longer as has been the case historically, or design and approval take longer than is presented above. It is more likely that this project would take 10 years to complete. If this process were to begin in 2026, the earliest that it could be completed is 2034. The TN upgrade in the compliance schedule for the NDPDES permit requires construction to be completed by 2030.

Comparisons have been drawn to the Liberty Utilities gas project that has been completed under the Taunton River. However, when reviewing the gas project, the only similarity the projects share are drilling under the river. The timeline for completion of the gas project should not be used for this evaluation. They are an apples-to-oranges comparison.

## 6.8 Summary and Conclusions

Regionalization between the Town of Somerset and the City of Fall River for Somerset wastewater treatment and disposal is not cost-effective, practical, or environmentally beneficial. This project would result in higher sewer rates for the Somerset rate payers. The list below summarizes the reasons why regionalization is not a feasible option for Somerset:

- Lengthy and costly permitting process, including several large reports (i.e. Environmental Impact Report)
- Difficult and lengthy Legal and Public Review and Acceptance
- Similar capital costs between upgrading Somerset WPCF and Option 2 for Regionalization
- O&M costs are significantly higher for regionalization
- Little to no control over future rates once IMA is in place
- Significant capital upgrades needed in Fall River over the next 10 years, which will pass on to Somerset rates
- Project is estimated take a minimum of 8 years, which will require upgrades at the WPCF in the interim for TN removal
- No subsurface information for the river. HDD may not be feasible.

# Appendix A

## Somerset NPDES Permit

**AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended, 33 U.S.C. §§ 1251 et seq. (the “CWA”),

**Town of Somerset, Massachusetts**

is authorized to discharge from the facility located at

**Town of Somerset  
Water Pollution Control Facility  
116 Walker Street  
Somerset, MA 02725**

to receiving water named

**Taunton River**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on the first day of the calendar month immediately following 60 days after signature. <sup>1</sup>

This permit expires at midnight, five years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on May 14, 2004.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Marine Acute Toxicity Test Procedure and Protocol, July 2012), **Attachment B** (Marine Chronic Toxicity Test Procedure and Protocol, November 2013), **Attachment C** (PFAS Analyte List) and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this        day of

 Digitally signed by  
KENNETH MORAFF  
Date: 2024.03.26  
15:36:21 -0400

Ken Moraff, Director  
Water Division  
Environmental Protection Agency  
Region 1  
Boston, MA

<sup>1</sup> Procedures for appealing EPA’s Final Permit decision may be found at 40 CFR § 124.19.

**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent through Outfall Serial Number 001 to the Taunton River. The discharge shall be limited and monitored as specified below; the receiving water and the influent shall be monitored as specified below.

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Rolling Average Effluent Flow <sup>5</sup>	4.2 MGD <sup>5</sup>	---	---	Continuous	Recorder
Effluent Flow <sup>5</sup>	Report MGD	---	Report MGD	Continuous	Recorder
BOD <sub>5</sub>	30 mg/L 1,051 lb/day	45 mg/L 1,576 lb/day	Report mg/L	1/Week	Composite
BOD <sub>5</sub> Removal	≥ 85 %	---	---	1/Month	Calculation
TSS	30 mg/L 1,051 lb/day	45 mg/L 1,576 lb/day	Report mg/L	1/Week	Composite
TSS Removal	≥ 85 %	---	---	1/Month	Calculation
pH Range <sup>6</sup>	6.5 - 8.5 S.U.			1/Day	Grab
Total Residual Chlorine <sup>7,8</sup>	0.12 mg/L	---	0.21 mg/L	3/Day	Grab
Fecal coliform <sup>7,8</sup>	88 MPN/100 mL	---	260 MPN/100 mL	1/Week	Grab
<i>Enterococci</i> <sup>7,8</sup>	35 cfu/100 mL	---	104 cfu/100 mL	1/Week	Grab
Total Kjeldahl Nitrogen <sup>9</sup> (May 1 – October 31) (November 1 – April 30)	Report mg/L Report mg/L	---	Report mg/L Report mg/L	1/Week 1/Month	Composite Composite
Nitrate + Nitrite <sup>9</sup> (May 1 – October 31) (November 1 – April 30)	Report mg/L Report mg/L	---	Report mg/L Report mg/L	1/Week 1/Month	Composite Composite
Total Nitrogen <sup>9</sup> (May 1 – October 31) (November 1 – April 30)	Report mg/L Report mg/L	---	Report mg/L Report mg/L	1/Month 1/Month	Calculation Calculation

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Rolling Seasonal Average Total Nitrogen <sup>9,10</sup> (May 1 – October 31)	175 lb/day	---	---	1/Month	Calculation
PFAS Analytes <sup>11</sup>	---	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine <sup>12</sup>	---	---	Report ng/L	1/Quarter	Grab
<b>Whole Effluent Toxicity (WET) Testing<sup>13,14</sup></b>					
LC <sub>50</sub>	---	---	≥ 100 %	1/Quarter	Composite
C-NOEC	---	---	≥ 6 %	1/Quarter	Composite
Salinity	---	---	Report ppt	1/Quarter	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/Quarter	Composite
Total Cadmium	---	---	Report mg/L	1/Quarter	Composite
Total Copper	---	---	Report mg/L	1/Quarter	Composite
Total Nickel	---	---	Report mg/L	1/Quarter	Composite
Total Lead	---	---	Report mg/L	1/Quarter	Composite
Total Zinc	---	---	Report mg/L	1/Quarter	Composite
Total Organic Carbon	---	---	Report mg/L	1/Quarter	Composite

Ambient Characteristic <sup>15</sup>	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Salinity	---	---	Report ppt	1/Quarter	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/Quarter	Grab
Total Cadmium	---	---	Report mg/L	1/Quarter	Grab
Total Copper	---	---	Report mg/L	1/Quarter	Grab
Total Nickel	---	---	Report mg/L	1/Quarter	Grab
Total Lead	---	---	Report mg/L	1/Quarter	Grab
Total Zinc	---	---	Report mg/L	1/Quarter	Grab
Total Organic Carbon	---	---	Report mg/L	1/Quarter	Grab
pH <sup>16</sup>	---	---	Report S.U.	1/Quarter	Grab

Temperature <sup>16</sup>	---	---	Report °C	1/Quarter	Grab
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Influent Characteristic	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
BOD <sub>5</sub>	Report mg/L	---	---	2/Month	Composite
TSS	Report mg/L	---	---	2/Month	Composite
PFAS Analytes <sup>11</sup>	---	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine <sup>12</sup>	---	---	Report ng/L	1/Quarter	Grab

Sludge Characteristic	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
PFAS Analytes <sup>11</sup>	---	---	Report ng/g	1/Quarter	Grab <sup>17</sup>

## Footnotes:

1. All samples shall be collected in a manner to yield representative data. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented as an electronic attachment to the applicable discharge monitoring report. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and MassDEP (“the State”) of any additional testing above that required herein, if testing is in accordance with 40 CFR Part 136.
2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is “sufficiently sensitive” when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term “minimum level” refers either to the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in the following ways: they may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.
3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of “0” to all non-detects for that reporting period and report the average of all the results.
4. A “grab” sample is an individual sample collected in a period of less than 15 minutes.  
  
A “composite” sample is a composite of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.
5. The limit is a rolling annual average, reported in million gallons per day (MGD), which will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months. Also report monthly average and maximum daily flow in MGD.

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). For NH: See Part I.G.1 below for a provision to modify the pH range.
7. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. If chlorine is not utilized during a particular monitoring period, TRC monitoring is not necessary and the Permittee may enter "NODI" code 9 (i.e., conditional monitoring) in the relevant discharge monitoring report.

Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine or dechlorination chemicals occurred.

8. The monthly average limits for fecal coliform and enterococci are expressed as a geometric mean. Monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required.

For samples tested using the Most Probable Number (MPN) method, the units may be expressed as MPN. The units may be expressed as colony forming units (cfu) when using the Membrane Filtration method.

9. Total Kjeldahl nitrogen and nitrate + nitrite samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen, as follows.

$$\text{Total Nitrogen (mg/L)} = \text{Total Kjeldahl Nitrogen (mg/L)} + \text{Nitrate} + \text{Nitrite (mg/L)}$$
$$\text{Total Nitrogen (lb/day)} = [(\text{average monthly Total Nitrogen (mg/L)} * \text{total monthly effluent flow (Millions of Gallons (MG))} / \# \text{ of days in the month}] * 8.34$$

10. The rolling seasonal total nitrogen limit is an average mass-based limit (lb/day), which shall be reported as a rolling 6-month average from May 1 through October 31. The value will be calculated as the arithmetic mean of the monthly average total nitrogen for the reporting month and the monthly average total nitrogen for the previous 5 months from May through October. Report both the rolling average and the monthly average each month.

See Part I.G for compliance schedule and optimization conditions related to nitrogen.

11. Report in nanograms per liter (ng/L) for effluent and influent samples; report nanograms per gram (ng/g) for sludge samples. Until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Method 1633. Report in NetDMR the results of all PFAS analytes required to be tested in Method 1633, as shown in Attachment C. This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following six months after the effective date of the permit.
12. Report in nanograms per liter (ng/L) for effluent and influent samples. Until there is an analytical method approved in 40 CFR Part 136 for Adsorbable Organic Fluorine, monitoring shall be conducted using Method 1621. This reporting requirement takes effect the first full calendar quarter following six months after the effective date of the permit.
13. The Permittee shall conduct acute toxicity tests (LC50) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in Attachment A and B of this permit. LC50 and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the Inland Silverside, *Menidia beryllina*. Toxicity test samples shall be collected during the same weeks each time of calendar quarters ending March 31<sup>st</sup>, June 30th, September 30th, and December 31st. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.
14. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A and B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
15. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately outside of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A and B**. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
16. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

17. Sludge sampling shall be as representative as possible based on guidance found at <https://www.epa.gov/sites/production/files/2018-11/documents/potw-sludge-sampling-guidance-document.pdf>.

**Part I.A., continued.**

2. The discharge shall not cause a violation of the water quality standards of the receiving water.
3. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
4. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.
5. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life, or wildlife.
6. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.
7. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.
8. The Permittee must provide adequate notice to EPA-Region 1 and the State of the following:
  - a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Part 301 or Part 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 CFR Part 122 Appendix A as amended) discharging process water; and
  - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
  - c. For purposes of this paragraph, adequate notice shall include information on:
    - (1) The quantity and quality of effluent introduced into the POTW; and
    - (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
9. Pollutants introduced into the POTW by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
10. In accordance with 40 CFR § 122.44(j)(1) the Permittee must identify, in terms of character and volume, any Significant Industrial Users (SIUs) discharging into the POTW subject to

Pretreatment Standards under section 307(b) of CWA and 40 CFR Part 403. SIUs information shall be updated at a minimum of once per year or at that frequency necessary to ensure that all SIUs are properly permitted and/or controlled. The records shall be maintained and updated as necessary.

## **B. UNAUTHORIZED DISCHARGES**

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit. The Permittee must provide verbal notification to EPA within 24 hours of becoming aware of any unauthorized discharge and a report within 5 days, in accordance with Part II.D.1.e (24-hour reporting). Providing that it contains the information required in Part II.D.1.e, submission of the MassDEP SSO Reporting Form (described in Part I.B.3 below) may satisfy the requirement for a written report. See Part I.H below for reporting requirements.
2. The Permittee must provide notification to the public on a publicly available website within 24 hours of becoming aware of any of the following unauthorized discharges: (a) any discharge of partially treated wastewater, including blended wastewater; (b) any Sanitary Sewer Overflow that discharges through a wastewater outfall, either directly or indirectly, to a surface water of the Commonwealth; (c) any SSO that flows into a surface water of the Commonwealth and is the result of the sanitary sewer system surcharging under high flow conditions when peak flows cannot be conveyed to a POTW due to capacity constraints; and (d) any SSO that flows into a surface water of the Commonwealth and is the result of a failure of a wastewater pump station or associated force main designed to convey peak flows of one million gallons per day or greater. Such notification shall include the location and description of the discharge; the approximate dates and times the discharge or overflow began, and its duration; and the estimated volume. Fulfilling these requirements does not relieve the Permittee of the responsibility of complying with 314 CMR 16.00.
3. Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at <https://www.mass.gov/how-to/sanitary-sewer-overflowbypassbackup-notification>.

## **C. OPERATION AND MAINTENANCE OF THE TREATMENT AND CONTROL FACILITIES**

1. Adaptation Planning
  - a. *Adaptation Plan.* Within the timeframes described below, the Permittee shall develop an Adaptation Plan for the Wastewater Treatment System (WWTS)<sup>2</sup> and/or sewer

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<sup>2</sup> “Wastewater Treatment System” or “WWTS” means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It does not include sewers, pipes and other conveyances to the wastewater treatment facility.

system<sup>3</sup> that they own and operate. Additional information on the procedures and resources to aid permittees in development of the Adaptation Plan is provided on EPA's Region 1 NPDES website at <https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england>. The Adaptation Plan shall contain sufficient detail for EPA to evaluate the analyses.

*Component 1: Identification of Vulnerable Critical Assets.* Within 24 months of the effective date of the permit, the Permittee shall develop and sign, consistent with the signatory requirements in Part II.D.2 of this Permit, an identification of critical assets<sup>4</sup> and related operations<sup>5</sup> within the WWTS and/or sewer system that they own and operate, as applicable, that are most vulnerable due to major storm and flood events<sup>6</sup> under baseline conditions<sup>7</sup> and under future conditions.<sup>8</sup> This information shall be provided to EPA upon request. For these critical assets and related operations, the Permittee shall assess the ability of each to function properly in the event of impacts<sup>9</sup> from major storm and flood events in terms of effluent flow (e.g., bypass, upset, or failure), sewer flow (e.g., overflow, inflow and infiltration), and discharges of pollutants (e.g., effluent limit exceedance).

*Component 2: Adaptive Measures Assessment.*<sup>10</sup> Within 36 months of the

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3 "Sewer System" refers to the sewers, pump stations, manholes and other infrastructure use to convey sewage to the wastewater treatment facility from homes or other sources.

4 A "critical asset" is an asset necessary to ensure the safe and continued operation of the WWTS or the sewer system and ensure the forward flow and treatment of wastewater in accordance with the limits set forth in this permit.

5 "Asset related operations" are elements of an asset that enable that asset to function. For example, pumps and a power supply enable the operation of a pump station.

6 "Major storm and flood events" refer to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding, including flooding caused by sea level change. "Extreme/heavy precipitation" refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal according to location and season.

7 "Baseline conditions" refers to the 100-year flood based on historical records.

8 "Future conditions" refers to projected flood elevations using one of two approaches: a) Climate Informed Science Approach (CISA): The elevation and flood hazard area that result from using the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate science. These shall include both short term (10-25 years forward-looking) and long term (25-70 years forward-looking) relative to the baseline conditions and must include projections of flooding due to major storm and flood events using federal, state and local data, where available; b) Freeboard Value and 500-year floodplain Approach: The flood elevations that result from adding an additional 2 feet to the 100-year flood elevation for non-critical actions and by adding an additional 3 feet to the 100-year flood elevation for critical actions compared to the flood elevations that result from 500-year flood (the 0.2% -annual-chance flood) and selecting the higher of the two flood elevations.

9 "Impacts" refers to a strong effect on an asset and/or asset-related operation that may include destruction, damage, or ineffective operation of the asset and/or asset operation. Impacts may be economic, environmental, or public health related.

10 The Permittee may complete this component using EPA's Climate Resilience Evaluation and Awareness Tool (CREAT) Risk Assessment Application for Water Utilities, found on EPA's website Creating Resilient Water Utilities (CRWU) (<https://www.epa.gov/crwu>), or methodology that provides comparable analysis.

effective date of the permit, the Permittee shall develop and sign, consistent with the signatory requirements in Part II.D.2 of this Permit, an assessment of adaptive measures,<sup>11</sup> and/or, if appropriate, the combinations of adaptive measures that minimize the impact of future conditions on the critical assets and related operations of the WWTS and/or sewer system(s). This information shall be provided to EPA upon request. The Permittee shall identify the critical assets and related operations at the highest risk of not functioning properly under such conditions and, for those, select the most effective adaptation measures that will ensure proper operation of the highest risk critical assets and the system as a whole.

*Component 3: Implementation and Maintenance Schedule.* Within 48 months of the effective date of the permit, the Permittee shall submit to EPA a proposed schedule for implementation and maintenance of adaptive measures. The Implementation and Maintenance Schedule shall summarize the general types of significant risks<sup>12</sup> identified in Component 1, including the methodology and data used to derive future conditions<sup>13</sup> used in the analysis and describe the adaptive measures taken (or planned) to minimize those risks from the impact of major storm and flood events for each of the critical assets and related operations of the WWTS and the sewer system and how those adaptive measures will be maintained, including the rationale for either implementing or not implementing each adaptive measure that was assessed and an evaluation of how each adaptive measure taken (or planned) will be funded.

- b. *Credit for Prior Assessment(s) Completed by Permittee.* If the Permittee has undertaken assessment(s) that were completed within 5 years of the effective date of this permit, or is [are] currently undertaking an assessment that address some or all of the Adaptation Plan components, such prior assessment(s) undertaken by the Permittee may be used (as long as the reporting time frames (set forth in Part I.C.1.a) and the signatory requirements (set forth in Part II.D.2 of this permit) are met) in satisfaction of some or all of these components, as long as the Permittee explains how its prior assessments specifically meet the requirements set forth in this permit and how the Permittee will address any permit requirements that have not been addressed in its prior or ongoing assessment(s).

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11 “Adaptive Measures” refers to physical infrastructure or actions and strategies that a utility can use to protect their assets and mitigate the impacts of threats. They may include but are not limited to: building or modifying infrastructure, utilization of models (including but not limited to: flood, sea-level rise and storm surge, sewer/collection system, system performance), monitoring and inspecting (including but not limited to: flood control, infrastructure, treatment) and repair/retrofit.

12 In light of security concerns posed by the public release of information regarding vulnerabilities to wastewater infrastructure, the Permittee shall provide information only at a level of generality that indicates the overall nature of the vulnerability but omitting specific information regarding such vulnerability that could pose a security risk.

13 See footnote 8.

- c. *Adaptation Plan Progress Report.* The Permittee shall submit an Adaptation Plan Progress Report on the Adaptation Plan for the prior calendar year that documents progress made toward completing the Adaptation Plan and, following its completion, any progress made toward implementation of adaptive measures, and any changes to the WWTF or other assets that may impact the current risk assessment. The first Adaptation Progress Report is due the first March 31 following completion of the Identification of Critical Vulnerable Assets (*Component 1*) and shall be included with the annual report required in Part I.C.3 below each year thereafter. The Adaptation Plan shall be revised if on- or off-site structures are added, removed, or otherwise significantly changed in any way that will impact the vulnerability of the WWTS or sewer system.

## 2. Sewer System

Operation and maintenance (O&M) of the sewer system shall be in compliance with 40 CFR § 122.41 (d) and (e) and the terms and conditions of the Part II Standard Conditions, B. Operation and Maintenance of Pollution Controls, which is attached to this Permit. The Permittee shall complete the following activities for the collection system which it owns:

- a. Maintenance Staff

The Permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. Provisions to meet this requirement shall be described in the Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

- b. Preventive Maintenance Program

The Permittee shall maintain an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. Plans and programs to meet this requirement shall be described in the Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

- c. Infiltration/Inflow

The Permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

- d. Sewer System Mapping

Within 30 months of the effective date of this permit, the Permittee shall prepare a map of the sewer collection system it owns. The map shall be on a street basemap of the community, with sufficient detail and at a scale to allow easy interpretation. The sewer system information shown on the map shall be based on current conditions and shall be kept up-to-date. If any items listed below, such as the location of all outfalls, are not fully documented, the Permittee must clearly identify each component of the dataset that is incomplete, as well as the date of the last update of the mapping product. Such map(s) shall include, but not be limited to the following:

- (1) All sanitary sewer lines and related manholes;
- (2) All combined sewer lines, related manholes, and catch basins;
- (3) All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);
- (4) All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;
- (5) All pump stations and force mains;
- (6) The wastewater treatment facility(ies);
- (7) All surface waters (labeled);
- (8) Other major appurtenances such as inverted siphons and air release valves;
- (9) A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- (10) The scale and a north arrow; and
- (11) To the extent feasible, the pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

e. Sewer System Operation and Maintenance Plan

The Permittee shall develop and implement a *Sewer System Operation and Maintenance Plan* for the portion of the system it owns.

- (1) Within six (6) months of the effective date of the permit, the Permittee shall submit to EPA and the State:

- i. A description of the collection system management goals, staffing, information management, and legal authorities;
- ii. A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
- iii. A schedule for the development and implementation of the full *Sewer System Operation and Maintenance Plan* consistent with the schedule and elements in Parts I.C.2.e.(2)(i) through (2)(viii), below.

(2) The full Sewer System O&M Plan shall be completed, implemented and submitted to EPA and the State within twenty-four (24) months from the effective date of this permit. The Plan shall include:

- i. The required submittal from Part I.C.2.e.(1) above, updated to reflect current information;
- ii. A preventive maintenance and monitoring program for the collection system;
- iii. Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
- iv. Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
- v. Identification of known and suspected overflows and back-up locations, including manholes, in table and map formats. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;
- vi. A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts;

- vii. An educational public outreach program for all aspects of I/I control, particularly private inflow; and
- viii. An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

### 3. Annual Reporting Requirement

The Permittee shall submit a summary report of activities related to the implementation of its O&M Plans during the previous calendar year. The report shall be submitted to EPA and the State annually by March 31. The first annual report is due the first March 31 following submittal of the Sewer System O&M Plan required by Part I.C.2.e.(2) of this permit. The summary report shall, at a minimum, include:

- a. A description of the staffing levels maintained during the year;
- b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;
- c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
- d. A map with areas identified for investigation/action in the coming year;
- e. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit;
- f. If the average annual flow in the previous calendar year exceeded 80 percent of the facility's 4.2 MGD design flow (3.36 MGD), or there have been capacity related overflows, the report shall include:
  - (1) Plans for further potential flow increases describing how the Permittee will maintain compliance with the flow limit and all other effluent limitations and conditions; and
  - (2) A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.
- g. The Adaptation Plan Progress Report described in Part I.C.1.c above.

**D. ALTERNATE POWER SOURCE**

In order to maintain compliance with the terms and conditions of this permit, the Permittee shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works it owns and operates, as defined in Part II.E.1 of this permit.

**E. INDUSTRIAL USERS**

1. The Permittee shall submit to EPA and the State the name of any Industrial User (IU) subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR chapter I, subchapter N (Parts 405-415, 417-430, 432, 447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended) who commences discharge to the facility after the effective date of this permit.

This reporting requirement also applies to any other IU who is classified as a Significant Industrial User that discharges an average of 25,000 gallons per day or more of process wastewater into the facility (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastewater that makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the facility; or is designated as such by the Control Authority as defined in 40 CFR § 403.3(f) on the basis that the industrial user has a reasonable potential to adversely affect the wastewater treatment facility's operation, or for violating any pretreatment standard or requirement (in accordance with 40 CFR § 403.8(f)(6)).

2. In the event that the Permittee receives originals of reports (baseline monitoring reports, 90-day compliance reports, periodic reports on continued compliance, etc.) from industrial users subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR chapter I, subchapter N (Parts 405-415, 417-430, 432-447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended), or from a Significant Industrial User, the Permittee shall forward the originals of these reports within ninety (90) days of their receipt to EPA, and copy the State.
3. In accordance with 40 CFR § 122.44(j)(1) the Permittee must identify, in terms of character and volume, any SIUs discharging into the POTW or facility subject to Pretreatment Standards under section 307(b) of CWA and 40 CFR Part 403. SIUs information shall be updated at a minimum of once per year or at that frequency necessary to ensure that all SIUs are properly permitted and/or controlled. The records shall be maintained and updated as necessary.
4. Beginning the first full calendar year after the effective date of the permit, the Permittee shall commence annual sampling of the following types of industrial discharges into the POTW:
  - Commercial Car Washes
  - Platers/Metal Finishers
  - Paper and Packaging Manufacturers
  - Tanneries and Leather/Fabric/Carpet Treaters
  - Manufacturers of Parts with Polytetrafluoroethylene (PTFE) or teflon type coatings (i.e. bearings)

- Landfill Leachate
- Centralized Waste Treaters
- Known or Suspected PFAS Contaminated Sites
- Fire Fighting Training Facilities
- Airports
- Any Other Known or Expected Sources of PFAS

Sampling shall be conducted using Method 1633 for the PFAS analytes listed in Attachment C. The industrial discharges sampled and the sampling results shall be summarized and submitted to EPA and copy the state as an electronic attachment to the March discharge monitoring report due April 15 of the calendar year following the testing.

#### **F. SLUDGE CONDITIONS**

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 CFR § 503, which prescribe “Standards for the Use or Disposal of Sewage Sludge” pursuant to § 405(d) of the CWA, 33 U.S.C. § 1345(d).
2. If both state and federal requirements apply to the Permittee’s sludge use and/or disposal practices, the Permittee shall comply with the more stringent of the applicable requirements.
3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge use or disposal practices:
  - a. Land application - the use of sewage sludge to condition or fertilize the soil
  - b. Surface disposal - the placement of sewage sludge in a sludge only landfill
  - c. Sewage sludge incineration in a sludge only incinerator
4. The requirements of 40 CFR Part 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 CFR § 503.4. These requirements also do not apply to facilities which do not use or dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g., lagoons, reed beds), or are otherwise excluded under 40 CFR § 503.6.
5. The 40 CFR Part 503 requirements include the following elements:
  - a. General requirements
  - b. Pollutant limitations
  - c. Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
  - d. Management practices

- e. Record keeping
- f. Monitoring
- g. Reporting

Which of the 40 CFR Part 503 requirements apply to the Permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 guidance document, “EPA Region 1 - NPDES Permit Sludge Compliance Guidance” (November 4, 1999), may be used by the Permittee to assist it in determining the applicable requirements.

6. The sludge shall be monitored for pollutant concentrations (all Part 503 methods) and pathogen reduction and vector attraction reduction (land application and surface disposal) at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year, as follows:

less than 290	1/ year
290 to less than 1,500	1 /quarter
1,500 to less than 15,000	6 /year
15,000 +	1 /month

Sampling of the sewage sludge shall use the procedures detailed in 40 CFR § 503.8.

7. Under 40 CFR § 503.9(r), the Permittee is a “person who prepares sewage sludge” because it “is ... the person who generates sewage sludge during the treatment of domestic sewage in a treatment works ....” If the Permittee contracts with another “person who prepares sewage sludge” under 40 CFR § 503.9(r) – i.e., with “a person who derives a material from sewage sludge” – for use or disposal of the sludge, then compliance with Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the Permittee does not engage a “person who prepares sewage sludge,” as defined in 40 CFR § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR § 503.7. If the ultimate use or disposal method is land application, the Permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 CFR § 503 Subpart B.
8. The Permittee shall submit an annual report containing the information specified in the 40 CFR Part 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by February 19 (see also “EPA Region 1 - NPDES Permit Sludge Compliance Guidance”). Reports shall be submitted electronically using EPA’s Electronic Reporting tool (“NeT”) (see “Reporting Requirements” section below).

**G. SPECIAL CONDITIONS**

1. The rolling seasonal average nitrogen limit of 175 lb/day will be subject to the following compliance schedule.

- a. Within one year of the effective date of the permit, the Permittee shall investigate alternative operational approaches to reduce year-round nitrogen discharges using its existing equipment and implement operational changes as appropriate to optimize nitrogen removal at the existing facility until the facility upgrade is completed. A report describing the optimization investigation and including a schedule for implementing any recommended actions shall be submitted with the first annual report.
- b. Within one year of the effective date of the permit, the Permittee shall evaluate and identify appropriate treatment process upgrades necessary to meet the new total nitrogen permit limit.
- c. Within two years of the effective date of the permit, the Permittee shall complete design of the facility improvements required to achieve the new total nitrogen permit limit.
- d. Within three years of the effective date of the permit, the Permittee shall initiate construction of the facility improvements required to achieve the new total nitrogen permit limit.
- e. Within five years of the effective date of the permit, the Permittee shall substantially complete construction of the facility improvements required to achieve the new total nitrogen permit limit.
- f. Within six years of the effective date of the permit, the Permittee shall optimize nitrogen removal of the upgraded facility to achieve the new total nitrogen permit limit. The new permit limit for total nitrogen shall go into effect five years from the effective date of the permit.

The Permittee shall provide an annual report to EPA and MassDEP regarding the status of the facility upgrade and compliance with this schedule, to be submitted as an electronic attachment to the DMR at each deadline described above.

2. The Permittee shall optimize the facility to remove nitrogen as specified below.

- a. Concurrently with Part I.G.1.f above, the Permittee shall complete an evaluation of alternative methods of operating the wastewater treatment facility to optimize the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen. The methods to be evaluated include, but are not limited to, operational changes designed to enhance nitrification (seasonal and year-round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management.

During the months of November to April, all available treatment equipment in place at the facility shall be operated (unless equal or better performance can be achieved in

a reduced operational mode) but the addition of a carbon source (that may be necessary in order to meet the total nitrogen limit during the months of May to October) is not required.

Within six years of the effective date of the permit, the Permittee shall submit a report to EPA and the State documenting this evaluation and presenting a description of recommended operational changes and shall begin to implement these recommended operational changes in order to minimize the year-round discharge loading of nitrogen.

- b. The Permittee shall submit an annual report to EPA and the State, by February 1<sup>st</sup> of each year, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous calendar year and the previous five (5) calendar years. If, in any year, the treatment facility discharges of TN on an average annual basis have increased, the annual report shall include a detailed explanation of the reasons why TN discharges have increased, including any changes in influent flows/loads and any operational changes. The report shall include all supporting data.

## H. REPORTING REQUIREMENTS

Unless otherwise specified in this permit, the Permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

### 1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State electronically using NetDMR no later than the 15th day of the month. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

### 2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. See Part I.H.6. for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

### 3. Submittal of Biosolids/Sewage Sludge Reports

By February 19 of each year, the Permittee must electronically report their annual Biosolids/Sewage Sludge Report for the previous calendar year using EPA's NPDES Electronic Reporting Tool ("NeTBIO") which is accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

4. Submittal of Requests and Reports to EPA Water Division (WD)

a. The following requests, reports, and information described in this permit shall be submitted to the NPDES Applications Coordinator in EPA Water Division (WD):

- (1) Transfer of permit notice;
- (2) Request for changes in sampling location;
- (3) Request for reduction in testing frequency;
- (4) Report on unacceptable dilution water / request for alternative dilution water for WET testing;
- (5) Report of new industrial user commencing discharge; and
- (6) Report received from existing industrial user.

b. These reports, information, and requests shall be submitted to EPA WD electronically at [R1NPDESReporting@epa.gov](mailto:R1NPDESReporting@epa.gov).

5. Submittal of Sewer Overflow and Bypass Reports and Notifications

The Permittee shall submit required reports and notifications under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows (SSOs) electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), which will be accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

6. State Reporting

Duplicate signed copies of all WET test reports shall be submitted to the Massachusetts Department of Environmental Protection, Division of Watershed Management, at the following address:

**Massachusetts Department of Environmental Protection  
Bureau of Water Resources  
Division of Watershed Management  
8 New Bond Street  
Worcester, Massachusetts 01606**

7. Verbal Reports and Verbal Notifications

- a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part II.B.4.c.(2), Part II.B.5.c.(3), and Part II.D.1.e).
- b. Verbal reports and verbal notifications shall be made to:

**EPA ECAD at 617-918-1510  
and  
MassDEP Emergency Response at 888-304-1133**

## I. STATE 401 CERTIFICATION CONDITIONS

1. Pursuant to M.G.L. c. 21, §§ 26-53, and 314 CMR 3.00 and 4.00, including 314 CMR 3.11 (2)(a)6., and in order to ensure the maintenance of surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, in accordance with 314 CMR 4.05(5)(e), MassDEP has determined that it is necessary that beginning six (6) months after the effective date of the 2024 NPDES permit, the Permittee shall commence annual monitoring of all Significant Industrial Users<sup>14,15</sup> discharging into the POTW using Draft Method 1633. Notwithstanding any other provision of the 2024 NPDES permit to the contrary, PFAS monitoring results for the 2024 NPDES permit and for the 2024 Massachusetts Surface Water Discharge (“SWD”) Permit shall be reported to MassDEP’s electronic database (eDEP) in accordance with the information available at the following website: the <https://www.mass.gov/how-to/submit-wastewater-residuals-pfas-data-via-edep>., or as otherwise specified, within 30 days after the Permittee receives the sampling results.
2. On or before January 31, 2025, the permittee shall submit to MassDEP at [massdep.npdes@mass.gov](mailto:massdep.npdes@mass.gov) a listing of all industrial dischargers with their addresses to be sampled in accordance with both the 2024 NPDES permit and the 2024 SWD and shall include:
  - i. All industries included in the categories listed in the 2024 NPDES permit Section I.E, Industrial Users, Paragraph 4; and
  - ii. All Significant Industrial Users as required by Paragraph 5 of the 2024 SWD.

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14 Significant Industrial User (SIU) is defined at 40 CFR part 403: All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR chapter I, subpart N; **and** any other industrial user that: discharges an average of 25,000 GPD or more of process wastewater to the POTW, contributes a process wastestream that makes up 5% or more of the average dry weather hydraulic or organic capacity of the POTW, or designated as such by the POTW on the basis that the industrial users has a reasonable potential for adversely affecting the POTW’s operation or for violating any Pretreatment Standards or requirement.

15 This requirement applies to all Significant Industrial Users and not just those within the sectors identified by EPA in the NPDES permit.

The listing shall be maintained by the Permittee and updated with any changes. Whenever necessary, a copy of the updated listing reflecting changes shall be forwarded to MassDEP at [massdep.npdes@mass.gov](mailto:massdep.npdes@mass.gov) on or before the next January 31.

# MARINE ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

## I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **2007.0 - Mysid Shrimp (Americamysis bahia) definitive 48 hour test.**
- **2006.0 - Inland Silverside (Menidia beryllina) definitive 48 hour test.**

Acute toxicity data shall be reported as outlined in Section VIII.

## II. METHODS

The permittee shall use the most recent 40 CFR Part 136 methods. Whole Effluent Toxicity (WET) Test Methods and guidance may be found at:

<https://www.epa.gov/cwa-methods/whole-effluent-toxicity-methods>

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

## III. SAMPLE COLLECTION

A discharge and receiving water sample shall be collected. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any holding time extension. Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine<sup>1</sup> (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate

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<sup>1</sup> For this protocol, total residual chlorine is synonymous with total residual oxidants.

prior to sample use for toxicity testing. If performed on site the results should be included on the chain of custody (COC) presented to WET laboratory.

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1 mg/L chlorine. If dechlorination is necessary, a thiosulfate control consisting of the maximum concentration of thiosulfate used to dechlorinate the sample in the toxicity test control water must also be run in the WET test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6° C.

#### **IV. DILUTION WATER**

Samples of receiving water must be collected from a reasonably accessible location in the receiving water body immediately upstream of the permitted discharge's zone of influence. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2, Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water is found to be, or suspected to be toxic or unreliable, ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is

species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first case is when repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use by the permittee and toxicity testing laboratory. The second is when two of the most recent documented incidents of unacceptable site dilution water toxicity require ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use **and** written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW with supporting documentation must be sent electronically to the NPDES Applications Coordinator in EPA Water Division (WD) at the following email address:

[R1NPDESReporting@epa.gov](mailto:R1NPDESReporting@epa.gov)

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

*See the EPA Region 1 website at: [www.epa.gov/aboutepa/epa-region-1-new-england](http://www.epa.gov/aboutepa/epa-region-1-new-england) (click on NPDES, EPA Permit Attachments, Self-Implementing Alternate Dilution Water Guidance) for important details on alternate dilution water substitution requests.*

## **V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA**

EPA Region 1 requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Americamysis and Menidia toxicity test conditions and test acceptability criteria:

**EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE MYSID, AMERICAMYSIS BAHIA 48 HOUR TEST<sup>1</sup>**

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1. Test type	48hr Static, non-renewal
2. Salinity	25ppt $\pm$ 10 percent for all dilutions by adding dry ocean salts
3. Temperature ( $^{\circ}$ C)	20 $^{\circ}$ C $\pm$ 1 $^{\circ}$ C or 25 $^{\circ}$ C $\pm$ 1 $^{\circ}$ C, temperature must not deviate by more than 3 $^{\circ}$ C during test
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml (minimum)
7. Test solution volume	200 ml/replicate (minimum)
8. Age of test organisms	1-5 days, <u><math>\leq</math> 24 hours age range</u>
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> naupli while holding prior to initiating the test
13. Aeration <sup>2</sup>	None
14. Dilution water	5-30 ppt, +/- 10%; Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	$\geq$ 0.5
16. Number of dilutions <sup>3</sup>	5 plus a control. An additional dilution at the permitted effluent concentration (%)

effluent) is required if it is not included in the dilution series.

17. Effect measured	Mortality - no movement of body appendages on gentle prodding
18. Test acceptability	90% or greater survival of test organisms in control solution
19. Sampling requirements	For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters

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Footnotes:

- <sup>1</sup> Adapted from EPA 821-R-02-012.
- <sup>2</sup> If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.
- <sup>3</sup> When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

**EPA NEW ENGLAND TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST<sup>1</sup>**

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1. Test Type	48 hr Static, non-renewal
2. Salinity	25 ppt $\pm$ 10 % by adding dry ocean salts
3. Temperature	20°C $\pm$ 1°C or 25°C $\pm$ 1°C, temperature must not deviate by more than 3°C during test
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. Total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> nauplii while holding prior to initiating the test
13. Aeration <sup>2</sup>	None
14. Dilution water	5-32 ppt, +/- 10% ; Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	$\geq$ 0.5
16. Number of dilutions <sup>3</sup>	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

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Footnotes:

- <sup>1</sup> Adapted from EPA 821-R-02-012.
- <sup>2</sup> If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.
- <sup>3</sup> When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

V.1. Test Acceptability Criteria

If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

V.2. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

In general, if reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary as prescribed below.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

### V.2.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e.  $\geq 3$  standard deviations for IC25s and LC50 values and  $\geq$  two concentration intervals for NOECs or NOAECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

## **VI. CHEMICAL ANALYSIS**

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

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<u>Parameter</u>	<u>Effluent</u>	<u>Diluent</u>	<u>Minimum Level for effluent<sup>*1</sup> (mg/L)</u>
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine <sup>*2</sup>	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
<u>Total Metals</u>			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005

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### Superscript:

<sup>\*1</sup> These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

<sup>\*2</sup> Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

- Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
- Method 4500-CL G DPD Photometric Method.

## **VII. TOXICITY TEST DATA ANALYSIS**

### LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See flow chart in Figure 6 on page 73 of EPA 821-R-02-012 for appropriate method to use on a given data set.

### No Observed Acute Effect Level (NOAEL)

See flow chart in Figure 13 on page 87 of EPA 821-R-02-012.

## **VIII. TOXICITY TEST REPORTING**

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) which includes:
  - Facility name
  - NPDES permit number
  - Outfall number
  - Sample type
  - Sampling method
  - Effluent TRC concentration
  - Dilution water used
  - Receiving water name and sampling location
  - Test type and species
  - Test start date
  - Effluent concentrations tested (%) and permit limit concentration
  - Applicable reference toxicity test date and whether acceptable or not
  - Age, age range and source of test organisms used for testing
  - Results of TAC review for all applicable controls
  - Permit limit and toxicity test results
  - Summary of any test sensitivity and concentration response evaluation that was conducted

Please note: The NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) are available on EPA's website at: [www.epa.gov/compliance/discharge-monitoring-reports-avoiding-common-mistakes](http://www.epa.gov/compliance/discharge-monitoring-reports-avoiding-common-mistakes)

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures;
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s);
- Reference toxicity test control charts;
- All sample chemical/physical data generated, including minimum levels (MLs) and analytical methods used;
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis;
- A discussion of any deviations from test conditions; and
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint.

# **MARINE CHRONIC TOXICITY TEST PROCEDURE AND PROTOCOL**

## **I. GENERAL REQUIREMENTS**

The permittee shall be responsible for the conduct of acceptable silverside chronic and sea urchin chronic toxicity tests in accordance with the appropriate test protocols described below:

- Inland Silverside (*Menidia beryllina*) Larval Growth and Survival Test
- Sea Urchin (*Arbacia punctulata*) 1 Hour Fertilization Test

Chronic toxicity data shall be reported as outlined in Section VIII.

## **II. METHODS**

The permittee shall use 40 CFR Part 136 methods. Methods and guidance may be found at:

<https://www.epa.gov/cwa-methods/whole-effluent-toxicity-methods>

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. Where there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

## **III. SAMPLE COLLECTION AND USE**

A total of three fresh samples of effluent and receiving water are required for initiation and subsequent renewals of a marine, chronic, toxicity test. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. Fresh samples are recommended for use on test days 1, 3, and 5. However, provided a total of three samples are used for testing over the test period, an alternate sampling schedule is acceptable. The acceptable holding times until initial use of a fresh sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any hold time extension. All fresh test samples collected may be used for 24, 48 and 72 hour renewals after initial use. All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6° C.

If any of the renewal samples are of sufficient potency to cause lethality to 50 percent or more of the test organisms in any of the test treatments for either species or, if the test fails to meet its permit limits, then chemical analysis for total metals (originally required for the initial sample only in Section VI) will be required on the renewal sample(s) as well.

Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. For TRC analysis performed on site the results must be included on the chain of custody (COC) presented to WET laboratory. For the purpose of sample preparation, i.e. eliminating chlorine prior to toxicity testing, if called for by the permit, TRC analysis may also be performed by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate prior to sample use for toxicity testing. According to Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992) dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1 mg/L chlorine.

If dechlorination of a sample by the toxicity testing laboratory is necessary a “sodium thiosulfate” control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual oxidants (as per 40 CFR Part 122.21).

#### **IV. DILUTION WATER**

Samples of receiving water must be collected from a location in the receiving water body immediately upstream of the permitted discharge’s zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2, Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable test acceptability criteria (TAC). When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternatedilution water (ADW) of known quality with hardness similar to that of the receiving water may be substituted. Substitution is species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species.

Substitution to an ADW is authorized in two cases. The first is the case where repeating a test due to toxicity in the site dilution water requires an immediate decision for ADW use be made by the permittee and toxicity testing laboratory. The second is in the case where two of the most recent documented incidents of unacceptable site dilution water toxicity requires ADW use in future WET testing. For the second case, written notification from the permittee requesting ADW use and written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW with supporting documentation must be sent electronically to the NPDES Applications Coordinator in EPA Water Division (WD) at the following email address:

[RINPDESReporting@epa.gov](mailto:RINPDESReporting@epa.gov)

**Note:** USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

*See the EPA Region 1 website at <https://www.epa.gov/aboutepa/epa-region-1-new-england> (click on NPDES, EPA Permit Attachments, Self-Implementing Alternate Dilution Water Guidance) for important details on alternate dilution water substitution requests.*

If the use of an alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

## **V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA**

EPA New England requires that if a reference toxicant test was being performed concurrently with an effluent or receiving water test and fails, both tests must be repeated.

The following tables summarize the accepted Menidia and Arbacia toxicity test conditions and test acceptability criteria:

## EPA NEW ENGLAND RECOMMENDED TEST CONDITIONS FOR THE SEA URCHIN, ARBACIA PUNCTULATA, FERTILIZATION TEST<sup>1</sup>

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1. Test type	Static, non-renewal
2. Salinity	30 o/oo $\pm$ 2 o/oo by adding dry ocean salts
3. Temperature	20 $\pm$ 1°C temperature must not deviate by more than 3°C during test
4. Light quality	Ambient laboratory illumination
5. Light intensity	10-20 uE/m <sup>2</sup> /s, or 50-100 ft-c (Ambient Laboratory Levels)
6. Test vessel size	Disposal (glass) liquid scintillation vials (20 ml capacity), presoaked in control water
7. Test solution volume	5 ml
8. Number of sea urchins	Pooled sperm from four males and pooled eggs from four females are used per test
9. Number of egg and sperm cells	About 2000 eggs per chamber and 5,000,000 sperm cells per vial
10. Number of replicate chambers	4 per treatment
11. Dilution water	Uncontaminated source of natural seawater or deionized water mixed with artificial sea salts
12. Dilution factor	Approximately 0.5, must bracket the permitted RWC
13. Test duration	1 hour and 20 minutes
14. Effects measured	Fertilization of sea urchin eggs
15. Number of treatments per test <sup>2</sup>	5 and a control. (receiving water and laboratory water control) An additional dilution at the permitted effluent concentration (% effluent) is required.

16. Acceptability of test	70% - 90% egg fertilization in all controls. Minimum of 70% fertilization in dilution water control. Effluent concentrations exhibiting greater than 70% fertilization, flagged as statistically significantly different from the controls, will not be considered statistically different from the controls for NOEC reporting.
17. Sampling requirements	For on-site tests, samples are to be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
18. Sample volume required	Minimum 1 liter

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Footnotes:

<sup>1</sup> Adapted from EPA 821-R-02-014

## EPA NEW ENGLAND RECOMMENDED TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA, GROWTH AND SURVIVAL TEST<sup>1</sup>

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1. Test type	Static, renewal
2. Salinity	5 o/oo to 32 o/oo +/- 2 o/oo of the selected salinity by adding artificial sea salts
3. Temperature	25 ± 1°C, temperature must not deviate by more than 3°C during test
4. Light quality	Ambient laboratory light
5. Light intensity	10-20 uE/m <sup>2</sup> /s, or 50-100 ft-C (Ambient Laboratory Levels)
6. Photoperiod	16 hr light, 8 hr darkness
7. Test vessel size	600 - 1000 mL beakers or equivalent (glass test chambers should be used)
8. Test solution volume	500-750 mL/replicate loading and DO restrictions must be met)
9. Renewal of test solutions	Daily using most recently collected sample
10. Age of test organisms	Seven to eleven days post hatch; 24 hr range in age
11. Larvae/test chamber	15 (minimum of 10)
12. Number of replicate chambers	4 per treatment
13. Source of food	Newly hatched and rinsed <u>Artemia</u> nauplii less than 24 hr old
14. Feeding regime	Feed once a day 0.10 g wet wt <u>Artemia</u> nauplii per replicate on days 0 – 2 feed 0.15 g wet wt <u>Artemia</u> nauplii per replicate on days 3-6
15. Cleaning	Siphon daily, immediately before test solution renewal and feeding
16. Aeration <sup>2</sup>	None
17. Dilution water	Uncontaminated source of natural seawater; or deionized water mixed with artificial sea salts

18. Effluent concentrations	5 and a control (receiving water and laboratory water control) An additional dilution at the permitted effluent concentration (% effluent) is required
19. Dilution factor	≥ 0.5, must bracket the permitted RWC
20. Test duration	7 days
21. Effects measured	Survival and growth (weight)
22. Acceptability of test	The average survival of dilution water control larvae is a minimum of 80%, and the average dry wt of unpreserved control larvae is a minimum of 0.5 mg, or the average dry wt of preserved control larvae is a minimum of 0.43 mg if preserved not more than 7 days in 4% formalin or 70% ethanol
23. Sampling requirements	For on-site tests, samples are collected daily and used within 24 hours of the time they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
24. Sample Volume Required	Minimum of 6 liters/day.

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Footnotes:

<sup>1</sup> Adapted from EPA 821-R-02-014

<sup>2</sup> If dissolved oxygen (D.O.) falls below 4.0 mg/L, aerate all chambers at a rate of less than 100 bubbles/min. Routine D.O. checks are recommended.

## V.1. Test Acceptability Criteria

If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

## V.2. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

In general, if reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary as prescribed below.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

### V.2.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established upper control limits i.e.  $\geq 3$  standard deviations for IC25s values and  $\geq$  two concentration intervals for NOECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

## VI. CHEMICAL ANALYSIS

The toxicity test requires measurement of pH, salinity, and temperature at the beginning and end of each 24 hour period in each dilution and controls for both daily test renewal and waste. The following chemical analyses shall be performed for each initial sample as well as any renewal samples, if necessary pursuant to the requirement of Part III above.

---

<u>Parameter</u>	<u>Effluent</u>	<u>Diluent</u>	<u>Minimum Level for effluent<sup>*1</sup> (mg/L)</u>
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine <sup>*2</sup>	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
<u>Total Metals</u>			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005

---

### Superscript:

\*1 These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

\*2 Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

- Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
- Method 4500-CL G DPD Photometric Method.

## VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

### A. Test Review

---

#### 1. Concentration / Response Relationship

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported.

The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-014. Guidance for this review can be found at:

<https://www.epa.gov/cwa-methods/whole-effluent-toxicity-methods>

In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

#### 2. Test Variability (Test Sensitivity)

This review step is separate from the determination of whether a test meets or does not meet TAC. Within test variability is to be examined for the purpose of evaluating test sensitivity. This evaluation is to be performed for the sub-lethal hypothesis testing endpoint growth for *Menidia beryllina* as required by the permit. The test report is to include documentation of this evaluation to support that the endpoint values reported resulted from a toxicity test of adequate sensitivity. This evaluation must be performed as required in Section 10.2.8 of EPA-821-R-02-014.

To determine the adequacy of test sensitivity, USEPA requires the calculation of test percent minimum significant difference (PMSD) values. In cases where NOEC determinations are made based on a non-parametric technique, calculation of a test PMSD value, for the sole purpose of assessing test sensitivity, shall be calculated using a comparable parametric statistical analysis technique. The calculated test PMSD is then compared to the upper and lower PMSD bounds shown for marine tests in Section 10.2.8.3, p. 54, Table 6 of EPA-821-R-02-014. The comparison will yield one of the following determinations.

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.
- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-

R-003, June 2000, Section 6.4.2. This document can be located under Guidance Documents at the following USEPA website location:

<https://www.epa.gov/aboutepa/epa-region-1-new-england>  
(click on NPDES, EPA Permit Attachments)

If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater than the PMSD lower bound, then the treatment is considered statistically significant.

- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

---

## B. Statistical Analysis

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### 1. General - Recommended Statistical Analysis Method

Refer to general data analysis flowchart, EPA 821-R-02-014, page 45

For discussion on Hypothesis Testing, refer to EPA 821-R-02-014, Section 9.6

For discussion on Point Estimation Techniques, refer to EPA 821-R-02-014, Section 9.7

### 2. *Menidia beryllina*

Refer to survival hypothesis testing analysis flowchart, EPA 821-R-02-014, page 181

Refer to survival point estimate techniques flowchart, EPA 821-R-02-013, page 182

Refer to growth data statistical analysis flowchart, EPA 821-R-02-014, page 193

### 3. *Arbacia punctulata*

Refer to fertilization data testing flowchart, EPA 821-R-02-014, page 312

## VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) which includes:
  - Facility name
  - NPDES permit number
  - Outfall number
  - Sample type
  - Sampling method
  - Effluent TRC concentration
  - Dilution water used
  - Receiving water name and sampling location
  - Test type and species
  - Test start date
  - Effluent concentrations tested (%) and permit limit concentration
  - Applicable reference toxicity test date and whether acceptable or not
  - Age, age range and source of test organisms used for testing
  - Results of TAC review for all applicable controls
  - Test sensitivity evaluation results (test PMSD for growth )
  - Permit limit and toxicity test results
  - Summary of test sensitivity and concentration response evaluation

Please note: The NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) are available on EPA's website at:

[www.epa.gov/compliance/discharge-monitoring-reports-avoiding-common-mistakes](http://www.epa.gov/compliance/discharge-monitoring-reports-avoiding-common-mistakes)

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures;
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s);
- Reference toxicity test control charts;
- All sample chemical/physical data generated, including minimum limits (MLs) and analytical methods used;
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis;
- A discussion of any deviations from test conditions; and
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review.

## Attachment C: PFAS Analyte List

Target Analyte Name	Abbreviation	CAS Number
<b>Perfluoroalkyl carboxylic acids</b>		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
<b>Perfluoroalkyl sulfonic acids</b>		
<b>Acid Form</b>		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorododecanesulfonic acid	PFDoS	79780-39-5
<b>Fluorotelomer sulfonic acids</b>		
1 <i>H</i> ,1 <i>H</i> , 2 <i>H</i> , 2 <i>H</i> -Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1 <i>H</i> ,1 <i>H</i> , 2 <i>H</i> , 2 <i>H</i> -Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1 <i>H</i> ,1 <i>H</i> , 2 <i>H</i> , 2 <i>H</i> -Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
<b>Perfluorooctane sulfonamides</b>		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
<b>Perfluorooctane sulfonamidoacetic acids</b>		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
<b>Perfluorooctane sulfonamide ethanols</b>		
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
<b>Per- and Polyfluoroether carboxylic acids</b>		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3 <i>H</i> -perfluorononanoic acid	ADONA	919005-14-4
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6

Target Analyte Name	Abbreviation	CAS Number
<b>Ether sulfonic acids</b>		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
<b>Fluorotelomer carboxylic acids</b>		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2 <i>H</i> ,2 <i>H</i> ,3 <i>H</i> ,3 <i>H</i> -Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

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<sup>1</sup>Updated July 17, 2018 to fix typographical errors.

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A. GENERAL REQUIREMENTS

1. Duty to Comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA or Act) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

- a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
- b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L. 114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

- (a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than \$2,500 nor more than \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation or by imprisonment of not more than 2 years, or both.
- (b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both.
- (c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than \$250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing

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endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

- (d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- (2) *Civil Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
- (3) *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:
- (a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
- (b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

### 2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit

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condition.

3. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from responsibilities, liabilities or penalties to which the Permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

5. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

6. Confidentiality of Information

a. In accordance with 40 C.F.R. Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 C.F.R. Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

- (1) The name and address of any permit applicant or Permittee;
- (2) Permit applications, permits, and effluent data.

c. Information required by NPDES application forms provided by the Director under 40 C.F.R. § 122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

7. Duty to Reapply

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit. The Permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity

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covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

### 9. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

## B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

### 1. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

### 2. Need to Halt or Reduce Not a Defense

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

### 3. Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

### 4. Bypass

#### a. Definitions

- (1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.
- (2) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

- b. *Bypass not exceeding limitations.* The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c) and (d) of this Section.

#### c. Notice

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- (1) *Anticipated bypass.* If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass. As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.
- (2) *Unanticipated bypass.* The Permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (24-hour notice). As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or required to do so by law.

### d. *Prohibition of bypass.*

- (1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:
  - (a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
  - (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
  - (c) The Permittee submitted notices as required under paragraph 4.c of this Section.
- (2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 4.d of this Section.

### 5. Upset

- a. *Definition.* *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or

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improper operation.

- b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this Section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- c. *Conditions necessary for a demonstration of upset.* A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - (1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
  - (2) The permitted facility was at the time being properly operated; and
  - (3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
  - (4) The Permittee complied with any remedial measures required under B.3. above.
- d. *Burden of proof.* In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

### C. MONITORING REQUIREMENTS

#### 1. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
- c. Records of monitoring information shall include:
  - (1) The date, exact place, and time of sampling or measurements;
  - (2) The individual(s) who performed the sampling or measurements;
  - (3) The date(s) analyses were performed;
  - (4) The individual(s) who performed the analyses;
  - (5) The analytical techniques or methods used; and
  - (6) The results of such analyses.
- d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.
- e. The Clean Water Act provides that any person who falsifies, tampers with, or

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knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The Permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

- a. *Planned Changes*. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
  - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or
  - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).
  - (3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. *Anticipated noncompliance*. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

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- c. *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.
- d. *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.
  - (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.
  - (2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
  - (3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
- e. *Twenty-four hour reporting.*
  - (1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

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reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section.

- (2) The following shall be included as information which must be reported within 24 hours under this paragraph.
    - (a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
    - (b) Any upset which exceeds any effluent limitation in the permit.
    - (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).
  - (3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.
- f. *Compliance Schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.
- h. *Other information.* Where the Permittee becomes aware that it failed to submit any

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relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

- i. *Identification of the initial recipient for NPDES electronic reporting data.* The owner, operator, or the duly authorized representative of an NPDES-regulated entity is required to electronically submit the required NPDES information (as specified in Appendix A to 40 C.F.R. Part 127) to the appropriate initial recipient, as determined by EPA, and as defined in 40 C.F.R. § 127.2(b). EPA will identify and publish the list of initial recipients on its Web site and in the FEDERAL REGISTER, by state and by NPDES data group (see 40 C.F.R. § 127.2(c) of this Chapter). EPA will update and maintain this listing.

### 2. Signatory Requirement

- a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §122.22.
- b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

### 3. Availability of Reports.

Except for data determined to be confidential under paragraph A.6. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Director. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

## E. DEFINITIONS AND ABBREVIATIONS

### 1. General Definitions

For more definitions related to sludge use and disposal requirements, see EPA Region 1's NPDES Permit Sludge Compliance Guidance document (4 November 1999, modified to add regulatory definitions, April 2018).

*Administrator* means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

*Applicable standards and limitations* means all, State, interstate, and federal standards and limitations to which a "discharge," a "sewage sludge use or disposal practice," or a related activity is subject under the CWA, including "effluent limitations," water quality standards, standards of performance, toxic effluent standards or prohibitions, "best management practices," pretreatment standards, and "standards for sewage sludge use or disposal" under Sections 301, 302, 303, 304, 306, 307, 308, 403 and 405 of the CWA.

*Application* means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in

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“approved States,” including any approved modifications or revisions.

*Approved program* or *approved State* means a State or interstate program which has been approved or authorized by EPA under Part 123.

*Average monthly discharge limitation* means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.

*Average weekly discharge limitation* means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.

*Best Management Practices (“BMPs”)* means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

*Bypass* see B.4.a.1 above.

*C-NOEC* or “*Chronic (Long-term Exposure Test) – No Observed Effect Concentration*” means the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.

*Class I sludge management facility* is any publicly owned treatment works (POTW), as defined in 40 C.F.R. § 501.2, required to have an approved pretreatment program under 40 C.F.R. § 403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 C.F.R. § 403.10 (e)) and any treatment works treating domestic sewage, as defined in 40 C.F.R. § 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.

*Contiguous zone* means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

*Continuous discharge* means a “discharge” which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or similar activities.

*CWA* means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483 and Public Law 97-117, 33 U.S.C. 1251 *et seq.*

*CWA and regulations* means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. In the case of an approved State program, it includes State program requirements.

*Daily Discharge* means the “discharge of a pollutant” measured during a calendar day or any

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other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

*Direct Discharge* means the “discharge of a pollutant.”

*Director* means the Regional Administrator or an authorized representative. In the case of a permit also issued under Massachusetts’ authority, it also refers to the Director of the Division of Watershed Management, Department of Environmental Protection, Commonwealth of Massachusetts.

*Discharge*

- (a) When used without qualification, *discharge* means the “discharge of a pollutant.”
- (b) As used in the definitions for “interference” and “pass through,” *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

*Discharge Monitoring Report (“DMR”)* means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by Permittees. DMRs must be used by “approved States” as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA’s.

*Discharge of a pollutant* means:

- (a) Any addition of any “pollutant” or combination of pollutants to “waters of the United States” from any “point source,” or
- (b) Any addition of any pollutant or combination of pollutants to the waters of the “contiguous zone” or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any “indirect discharger.”

*Effluent limitation* means any restriction imposed by the Director on quantities, discharge rates, and concentrations of “pollutants” which are “discharged” from “point sources” into “waters of the United States,” the waters of the “contiguous zone,” or the ocean.

*Effluent limitation guidelines* means a regulation published by the Administrator under section 304(b) of CWA to adopt or revise “effluent limitations.”

*Environmental Protection Agency (“EPA”)* means the United States Environmental Protection

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Agency.

*Grab Sample* means an individual sample collected in a period of less than 15 minutes.

*Hazardous substance* means any substance designated under 40 C.F.R. Part 116 pursuant to Section 311 of CWA.

*Incineration* is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

*Indirect discharger* means a nondomestic discharger introducing “pollutants” to a “publicly owned treatment works.”

*Interference* means a discharge (see definition above) which, alone or in conjunction with a discharge or discharges from other sources, both:

- (a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- (b) Therefore is a cause of a violation of any requirement of the POTW’s NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

*Landfill* means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile.

*Land application* is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

*Land application unit* means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for agricultural purposes or for treatment and disposal.

*LC<sub>50</sub>* means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC<sub>50</sub> = 100% is defined as a sample of undiluted effluent.

*Maximum daily discharge limitation* means the highest allowable “daily discharge.”

*Municipal solid waste landfill (MSWLF) unit* means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be

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publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

### *Municipality*

- (a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.
- (b) As related to sludge use and disposal, *municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

*National Pollutant Discharge Elimination System* means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an “approved program.”

*New Discharger* means any building, structure, facility, or installation:

- (a) From which there is or may be a “discharge of pollutants;”
- (b) That did not commence the “discharge of pollutants” at a particular “site” prior to August 13, 1979;
- (c) Which is not a “new source;” and
- (d) Which has never received a finally effective NPDES permit for discharges at that “site.”

This definition includes an “indirect discharger” which commences discharging into “waters of the United States” after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a “site” for which it does not have a permit; and any offshore or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a “site” under EPA’s permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Director in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Director shall consider the factors specified in 40 C.F.R. §§ 125.122 (a) (1) through (10).

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An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a “new discharger” only for the duration of its discharge in an area of biological concern.

*New source* means any building, structure, facility, or installation from which there is or may be a “discharge of pollutants,” the construction of which commenced:

- (a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or
- (b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

*NPDES* means “National Pollutant Discharge Elimination System.”

*Owner or operator* means the owner or operator of any “facility or activity” subject to regulation under the NPDES programs.

*Pass through* means a Discharge (see definition above) which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW’s NPDES permit (including an increase in the magnitude or duration of a violation).

*Pathogenic organisms* are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

*Permit* means an authorization, license, or equivalent control document issued by EPA or an “approved State” to implement the requirements of Parts 122, 123, and 124. “Permit” includes an NPDES “general permit” (40 C.F.R § 122.28). “Permit” does not include any permit which has not yet been the subject of final agency action, such as a “draft permit” or “proposed permit.”

*Person* means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

*Person who prepares sewage sludge* is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

*pH* means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

*Point Source* means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 C.F.R. § 122.3).

*Pollutant* means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials

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(except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

- (a) Sewage from vessels; or
- (b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by the authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

*Primary industry category* means any industry category listed in the NRDC settlement agreement (*Natural Resources Defense Council et al. v. Train*, 8 E.R.C. 2120 (D.D.C. 1976), *modified* 12 E.R.C. 1833 (D.D.C. 1979)); also listed in Appendix A of 40 C.F.R. Part 122.

*Privately owned treatment works* means any device or system which is (a) used to treat wastes from any facility whose operator is not the operator of the treatment works and (b) not a “POTW.”

*Process wastewater* means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

*Publicly owned treatment works (POTW)* means a treatment works as defined by Section 212 of the Act, which is owned by a State or municipality (as defined by Section 504(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

*Regional Administrator* means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

*Secondary industry category* means any industry which is not a “primary industry category.”

*Septage* means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

*Sewage Sludge* means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

*Sewage sludge incinerator* is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

*Sewage sludge unit* is land on which only sewage sludge is placed for final disposal. This does

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not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 C.F.R. § 122.2.

*Sewage sludge use or disposal practice* means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

*Significant materials* includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substance designated under Section 101(14) of CERCLA; any chemical the facility is required to report pursuant to Section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

*Significant spills* includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 C.F.R. §§ 110.10 and 117.21) or Section 102 of CERCLA (see 40 C.F.R. § 302.4).

*Sludge-only facility* means any “treatment works treating domestic sewage” whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to section 405(d) of the CWA, and is required to obtain a permit under 40 C.F.R. § 122.1(b)(2).

*State* means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an Indian Tribe as defined in the regulations which meets the requirements of 40 C.F.R. § 123.31.

*Store or storage of sewage sludge* is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

*Storm water* means storm water runoff, snow melt runoff, and surface runoff and drainage.

*Storm water discharge associated with industrial activity* means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

*Surface disposal site* is an area of land that contains one or more active sewage sludge units.

*Toxic pollutant* means any pollutant listed as toxic under Section 307(a)(1) or, in the case of “sludge use or disposal practices,” any pollutant identified in regulations implementing Section 405(d) of the CWA.

*Treatment works treating domestic sewage* means a POTW or any other sewage sludge or waste water treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, “domestic sewage” includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Director may designate any person subject to the standards for sewage sludge use and

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disposal in 40 C.F.R. Part 503 as a “treatment works treating domestic sewage,” where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

*Upset* see B.5.a. above.

*Vector attraction* is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

*Waste pile or pile* means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

*Waters of the United States or waters of the U.S.* means:

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (b) All interstate waters, including interstate “wetlands;”
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
  - (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;
  - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland.

NPDES PART II STANDARD CONDITIONS  
(April 26, 2018)

Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

*Wetlands* means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

*Whole Effluent Toxicity (WET)* means the aggregate toxic effect of an effluent measured directly by a toxicity test.

*Zone of Initial Dilution (ZID)* means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards.

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl <sub>2</sub>	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M <sup>3</sup> /day	Cubic meters per day
DO	Dissolved oxygen

NPDES PART II STANDARD CONDITIONS  
(April 26, 2018)

kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH <sub>3</sub> -N	Ammonia nitrogen as nitrogen
NO <sub>3</sub> -N	Nitrate as nitrogen
NO <sub>2</sub> -N	Nitrite as nitrogen
NO <sub>3</sub> -NO <sub>2</sub>	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	“Whole effluent toxicity”
ZID	Zone of Initial Dilution

**RESPONSE TO COMMENTS**  
**NPDES PERMIT NO. MA0100676**  
**SOMERSET WATER POLLUTION CONTROL FACILITY**  
**SOMERSET, MASSACHUSETTS**

The U.S. Environmental Protection Agency's New England Region (EPA) is issuing a Final National Pollutant Discharge Elimination System (NPDES) Permit for the Somerset Water Pollution Control Facility (WPCF) located in Somerset, Massachusetts. This permit is being issued under the Federal Clean Water Act (CWA), 33 U.S.C., §§ 1251 *et seq.*

In accordance with the provisions of 40 Code of Federal Regulations (CFR) §124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit # MA0100676 ("Draft Permit"). The Response to Comments explains and supports EPA's determinations that form the basis of the Final Permit. From December 22, 2023 through February 5, 2024, EPA solicited public comments on the Draft Permit.

EPA received comments from:

- KP Law, P.C. (legal counsel to the Town of Somerset), dated February 2, 2024
- Joseph Callahan, President, Taunton River Watershed Alliance, dated January 30, 2024
- Michael Jarbeau, Narragansett Baykeeper, Save the Bay, dated February 1, 2024

Although EPA's knowledge of the facility has benefited from the various comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit that warranted a reopening of the public comment period. EPA does, however, make certain clarifications and changes in response to comments. These are explained in this document and reflected in the Final Permit. Below EPA provides a summary of the changes made in the Final Permit. The analyses underlying these changes are contained in the responses to individual comments that follow.

A copy of the Final Permit and this response to comments document will be posted on the EPA Region 1 web site: at [https://www.epa.gov/npdes-permits/massachusetts-final-individual-  
npdes-permits](https://www.epa.gov/npdes-permits/massachusetts-final-individual-npdes-permits).

A copy of the Final Permit may be also obtained by writing or calling Michael Cobb, USEPA, 5 Post Office Square, Suite 100 (Mail Code: 06-4), Boston, MA 02109-3912; Telephone: (617) 918-1369; Email [cobb.michael@epa.gov](mailto:cobb.michael@epa.gov).

## **I. Summary of Changes to the Final Permit**

1. Part I.C.2.d.(11) of the Final Permit has been changed to include the words “to the extent feasible.” See Response 4.
2. The nitrogen compliance schedule has been adjusted from 5 years to 6 years. See Response 5.
3. EPA clarified Part I.H.3 to indicate that the Biosolids/Sewage Sludge annual reports should be submitted through EPA’s NPDES Electronic Reporting Tool called “NetBIO” which is accessible through EPA’s Central Data Exchange at <https://cdx.epa.gov/>.

## **II. Responses to Comments**

Comments are reproduced below as received; they have not been edited.

### **A. Comments from KP Law, P.C. (legal counsel to the Town of Somerset):**

#### **Comment 1**

KP Law, P.C. is legal counsel to the Town of Somerset, Massachusetts (the “Town”), permittee under the above-referenced draft NPDES Permit (the “Permit”). The purpose of this letter is to transmit, on the Town’s behalf, to each the United States Environmental Protection Agency (“EPA”) and Massachusetts Department of Environmental Protection (“DEP”) comments with respect to the Permit. These comments are outlined in the enclosed memorandum prepared by the Town’s engineering consultant, Wright-Pierce, in consultation with the Town, including its Board of Selectmen and Board of Water and Sewer Commissioners, and our office.

Of the comments provided herein, the Town wishes to highlight its particular concern associated with the five (5) year Total Nitrogen Compliance Schedule set forth at Section G, Item 1 of the Permit. While the Town does not take issue with the Permit’s new standards for nitrogen removal at the Facility, doing so within the 5-year period will prove to be exceedingly difficult and cost prohibitive, especially as the Town must also make many other necessary Facility capital upgrades, which are estimated to cost at least \$70 million. As such, the Town respectfully requests that EPA consider an extension of the Nitrogen Compliance Schedule by at least an additional three (3) years, for a total of at least eight (8) years, which will enable the Town to satisfy these new discharge requirements while also permitting the Town to undertake other necessary legacy capital Facility upgrades, as detailed in the enclosed comments.

Among other things, the Town will need this additional time in order to secure the necessary permit modifications, continue with infiltration and inflow investigations and reductions, complete the design of the Facility upgrade components and associated specifications, structure the appropriate financing and operation plans, secure the funding necessary to undertake the project, and select a contractor in accordance with applicable procurement requirements which may relatedly require the need for special legislation in Massachusetts to provide for alternative project delivery methods. It is worth noting that the Town is in the process of securing additional funding necessary for the design associated with these

capital upgrades and is working to engage a consultant to undertake a rate analysis as part of developing the overall financing plan.

After careful consideration of the options that may be available in order to obtain an extension of the Nitrogen Compliance Schedule to account for these matters, the Town wishes to respectfully request that EPA enter into an administrative consent order with the Town whereby the compliance schedule would be modified to extend the 5-year timeframe without the need for a modification to the Permit itself. If agreeable, the Town wishes to commence negotiations with EPA without delay.

The Town looks forward to continuing its partnership with EPA and DEP as it implements the Permit. We very much appreciate your consideration of these comments and stand ready to negotiate an acceptable consent order that would ensure that the Facility fully achieves the Permit's new total nitrogen limitations.

### **Response 1**

EPA acknowledges this comment and has responded to the specific comments below. Regarding the nitrogen compliance schedule, see Response 5.

### **Comment 2**

Part 1, Section A, Effluent Limitations and Monitoring Requirements. The WPCF does not have an effluent flow meter. The flow is metered via an influent flow meter. Accordingly, in the table (on Page 2 of 23) under the Effluent Characteristic column, we recommend the first and second rows be changed to reflect this flow measurement reality. The first row would be changed to "Rolling Average Flow" and the second row would be changed to "Flow" and clarification added to footnote 5 to note how the flow is measured (influent, not effluent) at the WPCF.

### **Response 2**

Although the facility is equipped with an influent flow meter, EPA considers that the flow monitoring and flow limit should be maintained as referencing "effluent" flow in the permit because this clearly represents the volume being discharged to the receiving water. All other limitations in the permit are based on the pollutants in the effluent and EPA does not consider it appropriate to base the flow limit on the influent flow rate. However, EPA notes that the Permittee may continue to use its influent flow meter so long as it is also representative of the effluent flow rate. If the influent flow is not representative of the effluent flow during a given monitoring period, the Permittee must measure and/or estimate the effluent flow to the extent practicable. This comment does not result in any change to the Final Permit.

### **Comment 3**

Part 1, Section C, Item 1 – Adaptation Planning. The Town is currently faced with a major WPCF upgrade to meet total nitrogen compliance and to replace aging equipment. In addition, the Town is proactively addressing collection system issues, including I/I removal and pipe and manhole rehabilitation. Further, pump station upgrades are also occurring and will continue to occur. With all of these projects, all of which include engineering assistance and construction, there is a significant financial burden on the Town that will occur over the next 10 years. In

addition, the infrastructure within the collection system, pump stations, and WPCF will be significantly changing in that time period. The Adaptation Plan requirements will require further engineering assistance and further burden the Town. The financial burden of this requirement will delay rehabilitation and construction of critical assets this plan seeks to evaluate. As such, the Town requests this Plan be removed from the permit.

### **Response 3**

Regarding the cost of developing the Adaptation Plan, there are costs and other resources that Permittees must allocate to comply with all permit requirements. EPA considers proper operation and maintenance of the wastewater treatment system (WWTS) as well as the collection system to include addressing major storm and flood events that would impair operation of the system. EPA acknowledges that the Permittee will incur costs and other potential resource expenditures to develop a plan related to these events but considers these expenditures to be necessary in order to prevent impacts during such events (*e.g.*, bypass, upset or failure of the WWTS, overflow, or increased inflow and infiltration in the sewer system, and discharges of pollutants that exceed effluent limits), which would adversely affect human health or the environment.

In order to minimize costs, EPA has developed a companion document, *Recommended Procedures and Resources for the Development of Adaptation Plans for Wastewater Treatment Systems and/or Sewer Systems*, (“Recommended Procedures”)<sup>1</sup>, which a Permittee could elect to use to guide it through development of the Adaptation Plan. The document instructs Permittees on the use of EPA’s CREAT tool, which is free to use by Permittees and will help Permittees navigate through much of the analysis needed to develop an Adaptation Plan.

Additionally, EPA has many on-line training tools,<sup>2</sup> some of which have been utilized by New England WWTSs<sup>3</sup> and EPA plans to offer: a New England-based virtual workshop training series for WWTS operators and others on the use of the CREAT tool.<sup>4</sup> The training will take place in March 2024 (this training will be recorded to maximize its utility for those who may want to access the information at a later date). In recommending Permittees use these tools and by providing procedures for using CREAT, EPA hopes to both enable Permittees to develop robust Adaptation Plans themselves, but also to reduce the costs, including the costs associated with outside contractors. It is EPA’s intention that a Permittee could use these tools to develop an Adaptation Plan in

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<sup>1</sup> <https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england>

<sup>2</sup> <https://www.epa.gov/crwu/training-and-engagement-center>; see also, the Resources Section in the Recommended Procedures for additional resources that Permittees might find useful.

<sup>3</sup> See [https://toolkit.climate.gov/sites/default/files/Manchester-by-the-Sea\\_March\\_2016.pdf](https://toolkit.climate.gov/sites/default/files/Manchester-by-the-Sea_March_2016.pdf); ] see also, the Resources Section of the Recommended Procedures document for more New England case studies and other useful resources.

<sup>4</sup> Register for the training at: <https://gdit.zoomgov.com/meeting/register/vJltf--uqDgpHF4LPOJe9MXbawlcFvxzxlw#/registration>

an effort to reduce costs and possibly to eliminate or reduce the need to hire external contractors.

EPA acknowledges that the adaptation planning requirements of the permit coincide with other upgrades planned at the WPCF and sewer system, as described in the comment. However, EPA considers that adaptation planning of the current system will highlight areas that may be particularly vulnerable to major storm and flood events. This information will be useful as the Town proceeds with upgrades to ensure that the work addresses these vulnerabilities adequately. In any case, the cost to assess vulnerabilities and develop an adaptation plan is relatively small compared to the cost to implement upgrades to address these vulnerabilities or to address the impacts of system failure due to major storm and flood events, so EPA considers that conducting an assessment at this time is appropriate and may prevent additional effort and expenditure in the future if these vulnerabilities are not addressed as part of the current upgrade process.

This comment does not result in any change to the Final Permit.

#### **Comment 4**

Part 1, Section C, Item 2, Sewer System, part d, Sewer System Mapping. Under Item (11), it notes that the map shall many items, including “.....date of installation and type of material....”. These are not typical components of a municipal Sewer System map, and it would be extremely difficult, time consuming and costly to try and update the Town’s existing Sewer System Mapping to include these items. The Town requests that these specific requirements be removed as Sewer System Mapping requirements in the permit.

#### **Response 4**

Regarding the items in Part I.C.2.d.(11), EPA agrees that some information may be infeasible to obtain. Therefore, this subpoint of the Final Permit has been updated to include the words “to the extent feasible.” If certain information is determined to be infeasible to obtain, a justification must be included along with the map.

#### **Comment 5**

Section G, Item 1 – Nitrogen Compliance Schedule. Based on the significant upgrades required at the WPCF, specifically the improvements needed to meet the total nitrogen (TN) limits (which includes equipment with historically long lead times, over 1.5 to 2 years) the compliance schedule in the draft permit (5 years) is not enough time for the Town to complete the significant upgrades required. As discussed with EPA and DEP, it is requested that the compliance schedule be adjusted to allow an appropriate amount of time to complete WPCF upgrades to comply with the new TN permit limit (adjust from 5 to 8 years). The Town also requests that the compliance schedule be removed from the permit and issued via Administrative Order. Below is the recommended 8-year implementation schedule to meet the TN permit compliance requirements:

- a. Final Planning and Optimization – 1 year
- b. Design, Permitting and Funding of WPCF Upgrades – 3 years
- c. Bidding and Construction – 3 years
- d. TN Optimization/Compliance – 1 year

#### **Response 5**

EPA acknowledges that the permit will require significant upgrades at the WPCF. The proposed compliance schedule in Part I.G.1 of the Draft Permit allowed for a total of 5 years with only 1 year allotted for construction. Based on this comment, EPA acknowledges that the construction phase (including equipment procurement, etc.) of this project is likely to require additional time. Therefore, EPA has determined to allow one additional year for construction. EPA notes that the comment does not provide any specific information that would justify an increase in the other phases of the schedule (*i.e.*, planning, design and bidding). Therefore, EPA has modified the schedule in the Final Permit to allow two years for construction, resulting in a total schedule of 6 years.

Regarding the request to remove the schedule from the permit and include it in an administrative order, EPA notes that another commenter (the Taunton River Watershed Alliance, see Comment 7 below) expressed support for the proposed schedule in the Draft Permit. Based on this support, EPA considers it more appropriate to implement a change in the schedule through the Final Permit allowing this commenter an opportunity to review the final permit decision.

#### **Comment 6**

##### **Comments to MassDEP**

The permit recipient is incorrect as listed. Please change to be “Town of Somerset, Massachusetts” with the WPCF being located at 116 Walker Street, Somerset, MA 02725 as listed on the EPA NPDES permit. Currently the address listed is that of the Water Treatment plant (3249 County Street).

#### **Response 6**

Given that this comment is regarding the permit issued by MassDEP (and not this EPA-issued NPDES permit), EPA defers to MassDEP to respond separately as part of their concurrent public notice process.

#### **B. Comments from Taunton River Watershed Alliance:**

##### **Comment 7**

The Taunton River Watershed Alliance (TRWA) supports the issuance of the draft Somerset Permit (NPDES Permit No. MA0100676). We note that the last time this permit was reissued was May 14, 2004 making this action long overdue. After careful review we believe that the

permit limitations and conditions as well as the Fact Sheet description of the technical and legal justification for the permit terms and conditions are well reasoned and consistent with the Clean Water Act (CWA).

We hope that at the conclusion of the public comment period on February 5, 2024 EPA Region 1 promptly responds to all comments and reissues this important permit. It is important to note that TRWA supports this draft permit as proposed and does not believe that its conditions may be made less stringent and still comply with the CWA.

We support the total nitrogen effluent limitation of 175 lbs/day based on a concentration of 5 mg/l. [TRWA monthly monitoring](#) of upstream waters in the watershed indicates a need to reduce nitrogen loads to the Taunton River estuary and Mount Hope Bay. As described in the permit Fact Sheet on pages 29 and 30, MassDEP continuous monitoring buoys in Mount Hope Bay and the mouth of the Cole River demonstrate low dissolved oxygen, high chlorophyll-a and show that at least 10% of the nitrogen samples demonstrate levels in Mount Hope Bay above the impairment listing target of total nitrogen (TN) 0.5 mg/L.

TRWA supports the adaptive management approach to nitrogen effluent limitations described on page 37 of the Fact Sheet. “EPA highlights that adaptive management is beneficial because it allows for expeditious application of nitrogen reductions in the short-term (in this case, down to 5 mg/L) and the potential for further reductions in the long-term (down to 3 mg/L) as necessary based on observed water quality impacts.” *Underline added.* We want to note that any facility Somerset constructs should be designed so that it can be operated to achieve lower TN levels if further monitoring in Mount Hope Bay indicates that this is necessary (such as by adding a carbon source). We want to highlight the language on page 38 of the Fact Sheet, “Finally, EPA anticipates another significant load reduction from the Fall River WWTF when its permit is renewed in the near future.” *Underline added.* TRWA strongly agrees that it is important to renew the Fall River permit with a nitrogen effluent limitation in the near future.

In light of the more intense storms and flooding we are seeing in the watershed as a result of climate change, we support the Adaptation Planning requirements in Special Condition C.1 of the permit.

We support the schedule for providing facilities to meet the total nitrogen effluent limitations in Special Condition G.1 and 2. In particular G.1.e., “Within four years of the effective date of the permit, the Permittee shall substantially complete construction of the facility improvements required to achieve the new total nitrogen permit limit.”

In light of the pervasive PFAS levels in water supplies and ground water in the watershed we support the monitoring for PFAS Analytes and Adsorbable Organic Fluorine. Part 1.A.1. and Appendix C.

Since 1988, TRWA has been a voice for the 562 square mile Taunton River watershed, an advocate for environmental protection, sustainable development, and responsible stewardship

of our precious water resources. We are an Alliance of concerned residents, businesses, and organizations united to restore and properly manage water and related natural resources within the Taunton River Watershed.

### **Response 7**

EPA acknowledges receipt of these comments and the support for various provisions of the permit. Regarding the Fall River permit, EPA notes that the Draft Permit is available for public review and comment from February 1, 2024 through April 1, 2024.

Regarding the total nitrogen compliance schedule, see Response 5.

## **C. Comments from Michael Jarbeau, Narragansett Baykeeper, Save the Bay:**

### **Comment 8**

Save The Bay appreciates the opportunity to review the draft permit for the Somerset Water Pollution Control Facility (WPCF). The reissuance of this permit is long overdue and serves as an important step in achieving water quality goals in Mount Hope Bay, the Wild & Scenic Taunton River, and greater Narragansett Bay. Save The Bay supports the draft permit limits and conditions as the minimum necessary to make progress towards achieving Clean Water Act Standards. We look forward to timely issuance of the permit and subsequent implementation of the permit limits.

As you know, improvements to wastewater treatment facilities, including major combined sewer overflow investments in Mount Hope Bay and upper Narragansett Bay, have resulted in notable water quality benefits. In recent years, approximately 2,500 acres of permanently closed shellfishing grounds have reopened in response to reduced bacteria counts. Other areas have seen conditional closures shift to open areas. Lower nitrogen limits at treatment facilities reduce eutrophication, improving dissolved oxygen levels and restoring healthy marine ecosystems.

**Total Nitrogen:** Data provided in the draft Somerset permit clearly indicate that the nearby waters of Mount Hope Bay and the Taunton River remain impaired. The effluent limitations and conditions proposed for the Somerset WPCF are necessary and appropriate steps, and we share the EPA's emphasis that further effluent reductions are likely to be required in the future, especially given recent population and development trends in the watershed. Save The Bay supports the draft permit's total nitrogen limit of 175 lbs/day. This limit, coupled with a similar load reduction in Fall River, will bring these important facilities in line with limits around Mount Hope and Narragansett Bay and help these waterways with listed impairments for dissolved oxygen and total nitrogen.

**Bacteria:** Save The Bay supports the revised fecal coliform and enterococci limits. As noted in the draft permit, ongoing shellfishing restrictions and recreational use impairments in nearby waters demonstrate that more stringent bacteria limits are necessary.

**PFAS Monitoring:** PFAS monitoring is critical as the EPA and states look to understand and manage these dangerous synthetic compounds. Save The Bay is hopeful that these monitoring and reporting requirements will help regulators identify PFAS sources and develop measures and technologies to prevent their discharge into surface waters.

**Adaptation Planning:** With locations in the most vulnerable parts of watersheds, wastewater treatment facilities are among the most threatened by the intense storm and flooding events that are becoming more common in the region. Save The Bay strongly supports the requirement for adaptation planning as a way to identify critical weaknesses and help federal, state, and municipal leaders make future funding and infrastructure decisions.

**Response 8**

EPA acknowledges receipt of these comments and the support for various provisions of the permit. Regarding the Fall River permit, EPA notes that the Draft Permit is available for public review and comment from February 1, 2024 through April 1, 2024.

**Appendix B**  
**Fall River Draft Permit (2024) & Fall River NPDES**  
**Permit (2000)**

**AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended, 33 U.S.C. §§ 1251 et seq. (the "CWA"),

**City of Fall River Sewer Commission, Massachusetts**

is authorized to discharge from the facility located at

**Fall River Wastewater Treatment Plant**

**1979 Bay Street**

**Fall River, MA 02724**

**and 18 Combined Sewer Overflow (CSO) Outfalls**

to receiving waters named

**Mount Hope Bay Segment 61-06, Class SB – CSO (Wastewater Treatment Plant Outfall 001 and CSO Outfalls # 002, 003, 004, 005, 006, 007 and 008); Taunton River Segment 62-04, Class SB - CSO (CSO Outfalls # 010, 011, 013 and 014); and Quequechan River Segment 61-05, Class B Warm Water Fishery and CSO (CSO Outfalls # 009, 015, 016, 017, 018, 019 and 020)**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein. This 2025 Revised Draft Permit includes the same conditions set forth in the original 2024 Draft Permit (public noticed on February 1, 2024) except as revised with new language in **red bold font** below. **In this second public notice, EPA is soliciting public comments only on these proposed revisions.**

The Towns of Freetown and Westport, Massachusetts and Tiverton, Rhode Island are Co-permittees for: Part I.B, Unauthorized Discharges; Part I.C, Operation and Maintenance of the Treatment and Control Facilities (which include conditions regarding the operation and maintenance of the collection systems owned and operated by the Towns); and Part I.D, Alternate Power Source. The permit number assigned to the Towns for purposes of reporting (using NetDMR through EPA's Central Data Exchange, as specified in Part I.H below) in accordance with the requirements in Parts I.B, I.C, and I.D of this permit are as follows: Freetown, Massachusetts: **MAC010382**; Westport, Massachusetts: **MAC020382**; and Tiverton, Rhode Island, **MAC030382**.

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the terms and conditions of Parts I.B, I.C, and I.D of this permit. The Permittee and Co-permittees are severally liable under Parts I.B, I.C, and I.D for their own activities and required reporting under Part I.H with respect to the portions of the collection system that they own or operate. They are not liable for violations of Parts I.B, I.C, and I.D committed by others relative to the portions of the collection system owned and operated by others. Nor are they responsible for any reporting under Part I.H that is required of other Permittees under Parts I.B, I.C, and I.D. The responsible departments for the Co-permittees are:

Town of Freetown Water and Sewer Commission Freetown Town Hall 3 North Main Street P.O. Box 438 Assonet, MA 02702	Town of Westport Westport Town Hall 816 Main Road Westport, MA 02790	Tiverton Wastewater District 400 Fish Road Tiverton, RI 02878
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This permit shall become effective on the first day of the calendar month immediately following 60 days after signature.<sup>1</sup>

This permit expires at midnight, five years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on December 7, 2000.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Marine Acute Toxicity Test Procedure and Protocol, July 2012), **Attachment B** (Marine Chronic Toxicity Test Procedure and Protocol, November 2013), **Attachment C** (Reassessment of Technically Based Industrial Discharge Limits), **Attachment D** (NPDES Permit Requirement for Industrial Pretreatment Annual Report); **Attachment E** (PFAS Analyte List); **Attachment F** (Combined Sewer Overflow Outfalls); **Attachment G (List for Pollutant Scans)** and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this        day of

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Ken Moraff, Director  
 Water Division  
 Environmental Protection Agency  
 Region 1  
 Boston, MA

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<sup>1</sup> Procedures for appealing EPA’s Final Permit decision may be found at 40 CFR § 124.19.

**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent through Outfall Serial Number 001 to the Mount Hope Bay. The discharge shall be limited and monitored as specified below; the receiving water and the influent shall be monitored as specified below.

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Rolling Average Effluent Flow <sup>5</sup>	30.9 MGD <sup>5</sup>	---	---	Continuous	Recorder
Effluent Flow <sup>5</sup>	Report MGD	---	Report MGD	Continuous	Recorder
BOD <sub>5</sub>	30 mg/L 7,730 lb/day	45 mg/L 11,600 lb/day	Report mg/L	5/Week	Composite
BOD <sub>5</sub> Removal <sup>6</sup>	≥ 85 %	---	---	1/Month	Calculation
TSS	30 mg/L 7,730 lb/day	45 mg/L 11,600 lb/day	Report mg/L	5/Week	Composite
TSS Removal <sup>6</sup>	≥ 85 %	---	---	1/Month	Calculation
pH Range <sup>7</sup>	6.5 - 8.5 S.U.			1/Day	Grab
Total Residual Chlorine <sup>8,9</sup>	42.5 µg/L	---	73.7 µg/L	3/Day	Grab
<i>Fecal coliform</i> <sup>8,9</sup>	88 MPN/100 mL	---	260 MPN/ 100 mL	3/Week	Grab
<i>Enterococci</i> <sup>8,9</sup>	35 cfu/100 mL	---	104 cfu/100 mL	1/Week	Grab
Total Recoverable Copper	22 µg/l	---	33 µg/l	2/Month	Composite
Total Recoverable Lead	48.3 µg/l	---	Report µg/l	2/Month	Composite
Ammonia Nitrogen <sup>10</sup> (April 1 – October 31)	17.4 mg/L	---	Report mg/L	1/Month	Composite
Total Kjeldahl Nitrogen <sup>11</sup> (May 1 – October 31) (November 1 – April 30)	Report mg/L Report mg/L	---	Report mg/L Report mg/L	1/Week 1/Month	Composite Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Nitrate + Nitrite <sup>11</sup> (May 1 – October 31) (November 1 – April 30)	Report mg/L Report mg/L	---	Report mg/L Report mg/L	1/Week 1/Month	Composite Composite
Total Nitrogen <sup>11</sup>	Report mg/L	---	Report mg/L	1/Month	Calculation
Rolling Seasonal Average Total Nitrogen <sup>12</sup> (May 1 – October 31)	1,289 lb/day	---	---	1/Month	Calculation
PFAS Analytes <sup>13</sup>	---	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine <sup>14</sup>	---	---	Report ng/L	1/Quarter	Grab
<b>Whole Effluent Toxicity (WET) Testing<sup>15,16</sup></b>					
LC <sub>50</sub>	---	---	≥ 100 %	1/Quarter	Composite
C-NOEC	---	---	≥ 18 %	1/Quarter	Composite
Salinity	---	---	Report ppt	1/Quarter	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/Quarter	Composite
Total Cadmium	---	---	Report mg/L	1/Quarter	Composite
Total Copper	---	---	Report mg/L	1/Quarter	Composite
Total Nickel	---	---	Report mg/L	1/Quarter	Composite
Total Lead	---	---	Report mg/L	1/Quarter	Composite
Total Zinc	---	---	Report mg/L	1/Quarter	Composite
Total Organic Carbon	---	---	Report mg/L	1/Quarter	Composite

Ambient Characteristic <sup>17</sup>	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Salinity	---	---	Report ppt	1/Quarter	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/Quarter	Grab
Total Cadmium	---	---	Report mg/L	1/Quarter	Grab
Total Copper	---	---	Report mg/L	1/Quarter	Grab
Total Nickel	---	---	Report mg/L	1/Quarter	Grab
Total Lead	---	---	Report mg/L	1/Quarter	Grab
Total Zinc	---	---	Report mg/L	1/Quarter	Grab
Total Organic Carbon	---	---	Report mg/L	1/Quarter	Grab
pH <sup>18</sup>	---	---	Report S.U.	1/Quarter	Grab
Temperature <sup>18</sup>	---	---	Report °C	1/Quarter	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
BOD <sub>5</sub>	Report mg/L	---	---	2/Month	Composite
TSS	Report mg/L	---	---	2/Month	Composite
PFAS Analytes <sup>13</sup>	---	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine <sup>14</sup>	---	---	Report ng/L	1/Quarter	Grab

Sludge Characteristic	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
PFAS Analytes <sup>13</sup>	---	---	Report ng/g	1/Quarter	Grab <sup>19</sup>

## Footnotes:

1. All samples shall be collected in a manner to yield representative data. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented as an electronic attachment to the applicable discharge monitoring report. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and MassDEP ("the State") of any additional testing above that required herein, if testing is in accordance with 40 CFR Part 136.
2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers either to the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in the following ways: they may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.
3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of "0" to all non-detects for that reporting period and report the average of all the results.
4. A "grab" sample is an individual sample collected in a period of less than 15 minutes.  
  
A "composite" sample is a composite of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.
5. The limit is a rolling annual average, reported in million gallons per day (MGD), which will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months. Also report monthly average and maximum daily flow in MGD.

A bypass of secondary treatment is subject to the requirements of Part II.B.4. and Part II.D.1.e. of this permit. The following information shall be reported as an electronic attachment to each March DMR summarizing each day there was a bypass of secondary treatment for the previous calendar year: date and time of initiation of bypass flow, influent flow at time of initiation (MGD), date and time of termination of bypass flow, influent flow at time of termination (MGD), duration of bypass (hrs), and total volume of bypass flow (MG).

6. The BOD<sub>5</sub> and TSS percent removal requirement does not apply during periods of wet weather. Wet weather is defined, for purposes of this requirement, as any period in which there is greater than 0.1 inches of rain and/or snowmelt.
7. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).

An optional pH study may be conducted by the Permittee at any time before the expiration date of the permit to support a request to expand the pH range to 6.0 S.U. The study must consist of at least 12 months of data collection and be designed based on guidance from MassDEP to verify that the discharge at 6.0 S.U. would not cause or contribute to an excursion of state water quality standards. For guidance on the study, the Permittee may contact MassDEP at [massdep.npdes@mass.gov](mailto:massdep.npdes@mass.gov).

Upon completion of the pH study, the Permittee must submit the results to MassDEP at [massdep.npdes@mass.gov](mailto:massdep.npdes@mass.gov) for review and approval. If approved, MassDEP will notify EPA that the pH adjustment is allowable, and the pH limit will change to 6.0 S.U. at that time.

8. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. If chlorine is not utilized during a particular monitoring period, TRC monitoring is not necessary and the Permittee may enter "NODI" code 9 (i.e., conditional monitoring) in the relevant discharge monitoring report.

Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine or dechlorination chemicals occurred.

9. The monthly average limits for fecal coliform and enterococci are expressed as a geometric mean. Monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required.

For samples tested using the Most Probable Number (MPN) method, the units may be expressed as MPN. The units may be expressed as colony forming units (cfu) when using the Membrane Filtration method.

10. See Part I.G.3 for compliance schedule related to ammonia nitrogen.
11. Total Kjeldahl nitrogen and nitrate + nitrite samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen, as follows.

Total Nitrogen (mg/L) = Total Kjeldahl Nitrogen (mg/L) + Nitrate + Nitrite (mg/L)

Total Nitrogen (lb/day) = [(average monthly Total Nitrogen (mg/L) \* total monthly effluent flow (Millions of Gallons (MG)) / # of days in the month] \* 8.34

12. The rolling seasonal total nitrogen limit is an average mass-based limit (lb/day), which shall be reported as a rolling 6-month average from May 1 through October 31. The value will be calculated as the arithmetic mean of the monthly average total nitrogen for the reporting month and the monthly average total nitrogen for the previous 5 months from May through October. Report both the rolling annual average and the monthly average each month.

See Parts I.G.1 and I.G.2 for compliance schedule and optimization conditions related to nitrogen.

13. Report in nanograms per liter (ng/L) for effluent and influent samples; report nanograms per gram (ng/g) for sludge samples. Until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Method 1633. Report in NetDMR the results of all PFAS analytes required to be tested in Method 1633, as shown in Attachment E. This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following six months after the effective date of the permit.
14. Report in nanograms per liter (ng/L) for effluent and influent samples. Until there is an analytical method approved in 40 CFR Part 136 for Adsorbable Organic Fluorine, monitoring shall be conducted using Method 1621. This reporting requirement takes effect the first full calendar quarter following six months after the effective date of the permit.

15. The Permittee shall conduct acute toxicity tests (LC50) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in Attachment A and B of this permit. LC50 and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the Inland Silverside (*Menidia beryllina*) and the Sea Urchin (*Arbacia punctulata*). Toxicity test samples shall be collected during the same weeks each time of calendar quarters ending March 31<sup>st</sup>, June 30<sup>th</sup>, September 30<sup>th</sup>, and December 31<sup>st</sup>. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.
16. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A and B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
17. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately outside of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A and B**. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
18. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.
19. Sludge sampling shall be as representative as possible based on guidance found at <https://www.epa.gov/sites/production/files/2018-11/documents/potw-sludge-sampling-guidance-document.pdf>.

## Part I.A., continued.

- ~~2. The discharge shall not cause a violation of the water quality standards of the receiving water.~~
  - ~~3. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.~~
  - ~~4. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.~~
  - ~~5. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.~~
  - ~~6. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.~~
  - ~~7. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.~~
2. The Permittee must provide adequate notice to EPA-Region 1 and the State of the following:
    - a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Part 301 or Part 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 CFR Part 122 Appendix A as amended) discharging process water; and
    - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
    - c. For purposes of this paragraph, adequate notice shall include information on:
      - (1) The quantity and quality of effluent introduced into the POTW; and
      - (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

3. Pollutants introduced into the POTW by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
4. In accordance with 40 CFR § 122.44(j)(1) the Permittee must identify, in terms of character and volume, any Significant Industrial Users (SIUs) discharging into the POTW subject to Pretreatment Standards under section 307(b) of CWA and 40 CFR Part 403. SIUs information shall be updated at a minimum of once per year or at that frequency necessary to ensure that all SIUs are properly permitted and/or controlled. The records shall be maintained and updated as necessary.

## **B. UNAUTHORIZED DISCHARGES**

1. This permit authorizes discharges only from Outfall 001 (as listed in Part I.A.1) and eighteen (18) combined sewer overflow (CSO) outfalls (as listed in Attachment F) in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit. The Permittee must provide verbal notification to EPA within 24 hours of becoming aware of any unauthorized discharge and a report within 5 days, in accordance with Part II.D.1.e (24-hour reporting). Providing that it contains the information required in Part II.D.1.e, submission of the MassDEP SSO Reporting Form (described in Part I.B.3 below) may satisfy the requirement for a written report. See Part I.I below for reporting requirements.
2. The Permittee must provide notification to the public on a publicly available website within 24 hours of becoming aware of any of the following unauthorized discharges: (a) any discharge of partially treated wastewater, including blended wastewater; (b) any Sanitary Sewer Overflow that discharges through a wastewater outfall, either directly or indirectly, to a surface water of the Commonwealth; (c) any SSO that flows into a surface water of the Commonwealth and is the result of the sanitary sewer system surcharging under high flow conditions when peak flows cannot be conveyed to a POTW due to capacity constraints; and (d) any SSO that flows into a surface water of the Commonwealth and is the result of a failure of a wastewater pump station or associated force main designed to convey peak flows of one million gallons per day or greater. Such notification shall include the location and description of the discharge; the approximate dates and times the discharge or overflow began, and its duration; and the estimated volume. Fulfilling these requirements does not relieve the Permittee of the responsibility of complying with 314 CMR 16.00.
3. Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at <https://www.mass.gov/how-to/sanitary-sewer-overflowbypassbackup-notification>.

## **C. OPERATION AND MAINTENANCE OF THE TREATMENT AND CONTROL FACILITIES**

1. Adaptation Planning

- a. *Adaptation Plan.* Within the timeframes described below, the Permittee and Co-permittee(s) shall develop an Adaptation Plan for the Wastewater Treatment System (WWTS)<sup>2</sup> and/or sewer system<sup>3</sup> that they own and operate. Additional information on the procedures and resources to aid permittees in development of the Adaptation Plan is provided on EPA's Region 1 NPDES website at <https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england>. The Adaptation Plan shall contain sufficient detail for EPA to evaluate the analyses.

*Component 1: Identification of Vulnerable Critical Assets.* Within 24 months of the effective date of the permit, the Permittee and Co-permittee(s) shall develop and sign, consistent with the signatory requirements in Part II.D.2 of this Permit, an identification of critical assets<sup>4</sup> and related operations<sup>5</sup> within the WWTS and/or sewer system which they own and operate, as applicable, that are most vulnerable due to major storm and flood events<sup>6</sup> under baseline conditions<sup>7</sup> and under future conditions.<sup>8</sup> This information shall be provided to EPA upon request. For these critical assets and related operations, the Permittee and Co-permittee(s) shall assess the ability of each to function properly in the event of

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2 "Wastewater Treatment System" or "WWTS" means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It does not include sewers, pipes and other conveyances to the wastewater treatment facility.

3 "Sewer System" refers to the sewers, pump stations, manholes and other infrastructure use to convey sewage to the wastewater treatment facility from homes or other sources.

4 A "critical asset" is an asset necessary to ensure the safe and continued operation of the WWTS or the sewer system and ensure the forward flow and treatment of wastewater in accordance with the limits set forth in this permit.

5 "Asset related operations" are elements of an asset that enable that asset to function. For example, pumps and power supply enable the operation of a pump station.

6 "Major storm and flood events" refer to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding, including flooding caused by sea level change. "Extreme/heavy precipitation" refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal according to location and season.

7 "Baseline conditions" refers to the 100-year flood based on historical records.

8 "Future conditions" refers to projected flood elevations using one of two approaches: a) Climate Informed Science Approach (CISA): The elevation and flood hazard area that result from using the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate science. These shall include both short term (10-25 years forward-looking) and long term (25-70 years forward-looking) relative to the baseline conditions and must include projections of flooding due to major storm and flood events using federal, state and local data, where available; b) Freeboard Value and 500-year floodplain Approach: The flood elevations that result from adding an additional 2 feet to the 100-year flood elevation for non-critical actions and by adding an additional 3 feet to the 100-year flood elevation for critical actions compared to the flood elevations that result from 500-year flood (the 0.2% -annual-chance flood) and selecting the higher of the two flood elevations.

impacts<sup>9</sup> from major storm and flood events in terms of effluent flow (e.g., bypass, upset or failure), sewer flow (e.g., overflow, inflow and infiltration), and discharges of pollutants (e.g., effluent limit exceedance).

*Component 2: Adaptative Measures Assessment.*<sup>10</sup> Within 36 months of the effective date of the permit, the Permittee and Co-permittee(s) shall develop and sign, consistent with the signatory requirements in Part II.D.2 of this Permit, an assessment of adaptive measures,<sup>11</sup> and/or, if appropriate, the combinations of adaptative measures that minimize the impact of future conditions on the critical assets and related operations of the WWTS and/or sewer system(s). This information shall be provided to EPA upon request. The Permittee and Co-permittee(s) shall identify the critical assets and related operations at the highest risk of not functioning properly under such conditions and, for those, select the most effective adaptation measures that will ensure proper operation of the highest risk critical assets and the system as a whole.

*Component 3: Implementation and Maintenance Schedule.* Within 48 months of the effective date of the permit, the Permittee and Co-permittee(s) shall submit to EPA a proposed schedule for implementation and maintenance of adaptive measures. The Implementation and Maintenance Schedule shall summarize the general types of significant risks<sup>12</sup> identified in Component 1, including the methodology and data used to derive future conditions<sup>13</sup> used in the analysis and describe the adaptive measures taken (or planned) to minimize those risks from the impact of major storm and flood events for each of the critical assets and related operations of the WWTS and the sewer system and how those adaptive measures will be maintained, including the rationale for either implementing or not implementing each adaptive measure that was assessed and an evaluation of how each adaptive measure taken (or planned) will be

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9 "Impacts" refers to a strong effect on an asset and/or asset-related operation that may include destruction, damage or ineffective operation of the asset and/or asset operation. Impacts may be economic, environmental, or public health related.

10 The Permittee and Co-permittee(s) may complete this component using EPA's Climate Resilience Evaluation and Awareness Tool (CREAT) Risk Assessment Application for Water Utilities, found on EPA's website Creating Resilient Water Utilities (CRWU) (<https://www.epa.gov/crwu>), or methodology that provides comparable analysis.

11 "Adaptive Measures" refers to physical infrastructure or actions and strategies that a utility can use to protect their assets and mitigate the impacts of threats. They may include but are not limited to: building or modifying infrastructure, utilization of models (including but not limited to: flood, sea-level rise and storm surge, sewer/collection system, system performance), monitoring and inspecting (including but not limited to: flood control, infrastructure, treatment) and repair/retrofit.

12 In light of security concerns posed by the public release of information regarding vulnerabilities to wastewater infrastructure, the Permittee shall provide information only at a level of generality that indicates the overall nature of the vulnerability but omitting specific information regarding such vulnerability that could pose a security risk.

13 See footnote 8.

funded.

- b. *Credit for Prior Assessment(s) Completed by Permittee and/or Co-permittee(s)*. If the Permittee and/or Co-permittee(s) have undertaken assessment(s) that were completed within 5 years of the effective date of this permit, or is [are] currently undertaking an assessment that address some or all of the Adaptation Plan components, such prior assessment(s) undertaken by the Permittee and/or Co-permittee(s) may be used (as long as the reporting time frames (set forth in Part I.C.1.a) and the signatory requirements (set forth in Part II.D.2 of this permit) are met) in satisfaction of some or all of these components, as long as the Permittee and/or Co-permittee(s) explains how its prior assessments specifically meet the requirements set forth in this permit and how the Permittee and/or Co-permittee(s) will address any permit requirements that have not been addressed in its prior or ongoing assessment(s).
- c. *Adaptation Plan Progress Report*. The Permittee and Co-permittee(s) shall submit an Adaptation Plan Progress Report on the Adaptation Plan for the prior calendar year that documents progress made toward completing the Adaptation Plan and, following its completion, any progress made toward implementation of adaptive measures, and any changes to the WWTF or other assets that may impact the current risk assessment. The first Adaptation Progress Report is due the first March 31 following completion of the Identification of Critical Vulnerable Assets (*Component 1*) and shall be included with the annual report required in Part I.C.3 below each year thereafter. The Adaptation Plan shall be revised if on- or off-site structures are added, removed, or otherwise significantly changed in any way that will impact the vulnerability of the WWTS or sewer system.

## 2. Sewer System

Operation and maintenance (O&M) of the sewer system shall be in compliance with 40 CFR § 122.41 (d) and (e) and the terms and conditions of the Part II Standard Conditions, B. Operation and Maintenance of Pollution Controls which is attached to this Permit. The Permittee and Co-permittee(s) shall complete the following activities for the collection system which it owns:

### a. Maintenance Staff

The Permittee and Co-permittee(s) shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. Provisions to meet this requirement shall be described in the Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

b. Preventive Maintenance Program

The Permittee and Co-permittee(s) shall maintain an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. Plans and programs to meet this requirement shall be described in the Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

c. Infiltration/Inflow

The Permittee and Co-permittee(s) shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

d. Sewer System Mapping

The Permittee shall maintain a map of the sewer collection system it owns. Within 30 months of the effective date of the permit, the Co-permittee(s) shall prepare a map of the sewer collection system it owns. The map shall be on a street basemap of the community, with sufficient detail and at a scale to allow easy interpretation. The sewer system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by federal, state, or local agencies. If any items listed below, such as the location of all outfalls, are not fully documented, the Permittee and Co-permittee(s) must clearly identify each component of the dataset that is incomplete, as well as the date of the last update of the mapping product. Such map(s) shall include, but not be limited to the following:

- (1) All sanitary sewer lines and related manholes;
- (2) All combined sewer lines, related manholes, and catch basins;
- (3) All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);
- (4) All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;

- (5) All pump stations and force mains;
- (6) The wastewater treatment facility(ies);
- (7) All surface waters (labeled);
- (8) Other major appurtenances such as inverted siphons and air release valves;
- (9) A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- (10) Interconnections with collection systems owned by other entities;
- (11) The scale and a north arrow; and
- (12) The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

e. Sewer System Operation and Maintenance Plan

The Permittee shall continue to implement a *Sewer System Operation and Maintenance Plan* for the portion of the system it owns. Within 24 months, the Co-permittee(s) shall prepare and submit a *Sewer System Operation and Maintenance Plan* for the portion of the system it owns. The Plan shall be available for review by federal, state and local agencies as requested. The Plan shall include:

- (1) A description of the collection system management goals, staffing, information management, and legal authorities;
- (2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
- (3) A preventive maintenance and monitoring program for the collection system;
- (4) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
- (5) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
- (6) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-

ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;

- (7) A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts;
- (8) An educational public outreach program for all aspects of I/I control, particularly private inflow; and
- (9) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

### 3. Annual Reporting Requirement

The Permittee and Co-permittee(s) shall submit a summary report of activities related to the implementation of its O&M Plans during the previous calendar year. The report shall be submitted to EPA and the State annually by March 31 (for the Co-permittee(s), the annual report shall begin the first March 31 following 24 months from the effective date of the permit). The summary report shall, at a minimum, include:

- a. A description of the staffing levels maintained during the year;
- b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;
- c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
- d. A map with areas identified for investigation/action in the coming year;
- e. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit;
- f. If the average annual flow in the previous calendar year exceeded 80 percent of the facility's 30.9 MGD design flow (24.7 MGD), or there have been capacity related overflows, the report shall include:

- (1) Plans for further potential flow increases describing how the Permittee will

maintain compliance with the flow limit and all other effluent limitations and conditions; and

- (2) A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.
- g. The Adaptation Plan Progress Report described in Part I.C.1.c above (beginning the first March 31 following 24 months from the effective date of the permit).

#### **D. ALTERNATE POWER SOURCE**

In order to maintain compliance with the terms and conditions of this permit, the Permittee and Co-permittee(s) shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works it owns and operates, as defined in Part II.E.1 of this permit.

#### **E. INDUSTRIAL USERS AND PRETREATMENT PROGRAM**

##### **1. Legal Authority**

The Permittee has been delegated primary responsibility for enforcing against discharges prohibited by 40 CFR 403.5 and applying and enforcing any national Pretreatment Standards established by the United States Environmental Protection Agency in accordance with Section 307 (b) and (c) of The Clean Water Act (Act), as amended by The Water Quality Act (WQA), of 1987.

The Permittee shall operate an industrial pretreatment program in accordance with the General Pretreatment Regulations found in 40 CFR Part 403 and the approved pretreatment program submitted by the Permittee. The pretreatment program was approved on September 28, 1983, and has subsequently incorporated substantial modifications as approved by EPA. The approved pretreatment program, and any approved modifications thereto, is hereby incorporated by reference and shall be implemented in a manner consistent with the following procedures, as required by 40 CFR Part 403.

The Permittee must have or develop a legally enforceable municipal code or rules and regulations to authorize or enable the POTW to apply and enforce the requirements of Sections 307(b) and (c) and 402(b)(8) and (9) of the Act and comply with the requirements of § 403.8(f)(1). At a minimum, this legal authority shall enable the POTW to:

- a. Deny or condition new or increased contributions of pollutants, or changes in the nature of pollutants, to the POTW by Industrial Users where such contributions do not meet applicable Pretreatment Standards and Requirements or where such contributions would cause the POTW to violate its NPDES permit;
- b. Require compliance with applicable Pretreatment Standards and Requirements

by Industrial Users;

- c. Control through Permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirements. In the case of Industrial Users this control shall be achieved through permits or equivalent control mechanism identified as significant under § 403.3(v), as required by § 403.8(f)(1)(iii);
- d. Require (a) the development of a compliance schedule by each Industrial User for the installation of technology required to meet applicable Pretreatment Standards and Requirements and (b) the submission of all notices and self-monitoring reports from Industrial Users as are necessary to assess and assure compliance by Industrial Users with Pretreatment Standards and Requirements, including but not limited to the reports required in § 403.12;
- e. Carry out all inspection, surveillance and monitoring procedures necessary to determine, independent of information supplied by Industrial Users, compliance or noncompliance with applicable Pretreatment Standards and Requirements by Industrial Users. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP, but in no case less than once per year, and with adequate maintenance of records, Representatives of the POTW shall be authorized to enter any premises of any Industrial User in which a Discharge source or treatment system is located or in which records are required to be kept under § 403.12(o) to assure compliance with Pretreatment Standards. Such authority shall be at least as extensive as the authority provided under section 308 of the Act;
- f. Obtain remedies for noncompliance by any Industrial User with any Pretreatment Standard and Requirement. All POTW's shall be able to seek injunctive relief for noncompliance by Industrial Users with Pretreatment Standards and Requirements. All POTWs shall also have authority to seek or assess civil or criminal penalties in at least the amount of \$1,000 a day for each violation by Industrial Users of Pretreatment Standards and Requirements in accordance with § 403.8(f)(1)(vii)(A); and
- g. Comply with the confidentiality requirements set forth in § 403.14.

## 2. Implementation Requirements

The Permittee shall operate a pretreatment program in accordance with the General Pretreatment Regulations found in 40 CFR Part 403 and with the legal authorities, policies, procedures, and financial provisions of the approved Pretreatment program submitted by the Permittee. The approved Pretreatment program, and any approved modifications

thereto, is hereby incorporated by reference and shall be implemented in a manner consistent with the following procedures, as required by 40 CFR Part 403:

- a. In accordance with 40 CFR § 122.44(j)(1), Identify, in terms of character and volume of pollutants contributed from Industrial Users discharging into the POTW subject to Pretreatment Standards under section 307(b) of CWA and 40 CFR Part 403.
- b. The Permittee must notify these identified Industrial Users of applicable Pretreatment Standards and any applicable requirements in accordance with 40 CFR § 403.8(f)(2)(iii). Pursuant to 40 CFR § 403.8(f)(6), prepare and maintain a list of significant industrial users and identify the criteria in 40 CFR § 403.3(v)(1) applicable to each industrial user.
- c. The Permittee must carry out inspection procedures and randomly sample and analyze the effluent from Industrial Users and conduct surveillance activities in accordance with 40 CFR § 403.8(f)(2)(v), which will determine independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.
- d. The Permittee shall receive and analyze self-monitoring reports and other notices submitted by Industrial Users in accordance with the self-monitoring requirements in 40 CFR § 403.12; This must include timely and appropriate reviews of industrial user reports and notifications to identify all violations of the user's permit, the local ordinance, and federal pretreatment standards and requirements.
- e. The Permittee shall evaluate whether each SIU needs a plan to control Slug Discharges in accordance with 40 CFR § 403.8(f)(2)(vi). SIUs must be evaluated within 1 year of being designated an SIU. If required, the Permittee shall require the SIU to prepare or update, and implement a slug prevention plan that contains at least the minimum required elements in 40 CFR § 403.8(f)(2)(vi)(A-D) and incorporate the slug control requirements into the SIU's control mechanism;
- f. Pursuant to 40 CFR § 403.8(f)(2)(vii), the Permittee shall investigate instances of non-compliance with Pretreatment Standards and requirements indicated in required reports and notices or indicated by analysis, inspection, and surveillance activities.

- g. The Permittee shall publish, at least annually, in a newspaper or newspapers of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW, a list of all non-domestic users which, at any time in the previous 12 months, were in significant noncompliance as defined in 40 CFR § 403.8 (f)(2)(viii).
- h. The Permittee shall provide sufficient resources and qualified personnel to implement its Pretreatment program in accordance with 40 CFR § 403.8(f)(3);
- i. The Permittee shall enforce all applicable Pretreatment Standards and requirements and obtain remedies for noncompliance by any industrial user. The Permittee shall develop, implement, and maintain an enforcement response plan in accordance with 40 CFR § 403.8(f)(5); and
- j. Pursuant to 40 CFR § 403.8(g), the Permittee that chooses to receive electronic documents must satisfy the requirements of 40 CFR Part 3 – (Electronic reporting).

### 3. Local Limit Development

- a. The Permittee shall develop, continually maintain, and enforce, as necessary, local limits to implement the general and specific prohibitions in 40 CFR § 403.5(c)(1) which prohibit the introduction of any pollutant(s) which cause pass through or interference and the introduction of specific pollutants to the waste treatment system from any source of non-domestic discharge.
- b. The Permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 90 days of the effective date of the permit, the Permittee shall prepare and submit a written technical evaluation to EPA analyzing the need to revise local limits. As part of this evaluation, the Permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the Permittee shall complete and submit the attached form (see Attachment C – Reassessment of Technically Based Industrial Discharge Limits) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the

evaluation reveal the need to revise local limits, the Permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development Guidance (July 2004).

#### 4. Notification Requirements

- a. The Permittee must notify EPA of any new introductions or any substantial change in pollutants from any Industrial User within sixty (60) days following the introduction or change, as required in 40 CFR 122.42(b)(1-3). Such notice must identify:
  - (1) Any new introduction of pollutants from an Industrial User which would be subject to Sections 301, 306, and 307 of the Act if it were directly discharging those pollutants; or
  - (2) Any substantial change in the volume or character of pollutants being discharged by any Industrial User;
  - (3) For the purposes of this section, adequate notice shall include information on:
    - i. The identity of the Industrial User;
    - ii. The nature and concentration of pollutants in the discharge and the average and maximum flow of the discharge; and
    - iii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from or biosolids produced at such POTW.
- b. The Permittee must notify EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required when:
  - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source pursuant to 40 CFR § 122.29 (b);
  - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged; or
  - (3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices.
- c. The Permittee must notify EPA if the POTW modifies or intends to modify its Pretreatment Program.

- d. The Permittee must notify EPA of any instance of pass through or interference, known or suspected to be related to a discharge from an Industrial User. The notification shall be attached to the DMR submitted EPA and shall describe the incident, including the date, time, length, cause, and the steps taken by the Permittee and Industrial User to address the incident.
- e. The Permittee shall notify all Industrial Users of the users' obligations to comply with applicable requirements under Subtitles C and D of the Resource Conservation and Recovery Act (RCRA) and that Industrial Users shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical as well as their obligation to notify the EPA Regional Waste Management Division Director, in writing of any discharge into the POTW of a substance, which, if otherwise disposed of, would be a hazardous waste under 40 CFR Part 261. Such notification must include:
  - (1) the name of the hazardous waste as set forth in 40 CFR Part 261;
  - (2) the EPA hazardous waste number; and
  - (3) the type of discharge (continuous, batch, or other).

#### 5. Annual Report Requirements

The Permittee shall provide EPA with a hard copy annual report that briefly describes the POTW's program activities, including activities of all participating agencies, if more than one jurisdiction is involved in the local program. The report required by this section shall be submitted no later than one year after approval of the POTW's Pretreatment Program, and at least annually thereafter. The report must include, at a minimum, the applicable required data in Appendix A to 40 CFR Part 127, a summary of changes to the POTW's pretreatment program that have not been previously reported to EPA, and any other relevant information requested by EPA. Beginning on December 21, 2025 all annual reports submitted in compliance with this section must be submitted electronically by the POTW Pretreatment Program to EPA or initial recipient, as defined in 40 CFR § 127.2(b). Electronic submittals shall be in compliance with this section and 40 CFR Part 3 (including, in all cases, subpart D to Part 3), 40 CFR § 122.22(e), and 40 CFR Part 127 (Part 127 is not intended to undo existing requirements for electronic reporting). Prior to this date, and independent of 40 CFR Part 127, EPA may also require POTW Pretreatment Programs to electronically submit annual reports under this section if specified by a particular permit or if required to do so by state law.

The Permittee shall provide EPA with an annual report describing the Permittee's pretreatment program activities for the twelve (12) month period ending 60 days prior to

the due date in accordance with 40 CFR § 403.12(i). The annual report shall be consistent with the format described in Attachment D (NPDES Permit Requirement for Industrial Pretreatment Annual Report) of this permit and shall be submitted by **October 31** of each year.

6. Beginning the first full calendar year after the effective date of the permit, the Permittee shall commence annual sampling of the following types of industrial discharges into the POTW:

- Commercial Car Washes
- Platers/Metal Finishers
- Paper and Packaging Manufacturers
- Tanneries and Leather/Fabric/Carpet Treaters
- Manufacturers of Parts with Polytetrafluoroethylene (PTFE) or teflon type coatings (*e.g.*, bearings)
- Landfill Leachate
- Centralized Waste Treaters
- Known or Suspected PFAS Contaminated Sites
- Fire Fighting Training Facilities
- Airports
- Any Other Known or Expected Sources of PFAS

Sampling shall be conducted using Method 1633 for the PFAS analytes listed in Attachment E. The industrial discharges sampled, and the sampling results shall be summarized and included in the annual report (see Part I.E.5).

#### **F. SLUDGE CONDITIONS**

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 CFR § 503, which prescribe “Standards for the Use or Disposal of Sewage Sludge” pursuant to § 405(d) of the CWA, 33 U.S.C. § 1345(d).
2. If both state and federal requirements apply to the Permittee’s sludge use and/or disposal practices, the Permittee shall comply with the more stringent of the applicable requirements.
3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge use or disposal practices:
  - a. Land application - the use of sewage sludge to condition or fertilize the soil
  - b. Surface disposal - the placement of sewage sludge in a sludge only landfill

- c. Sewage sludge incineration in a sludge only incinerator
4. The requirements of 40 CFR Part 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 CFR § 503.4. These requirements also do not apply to facilities which do not use or dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g., lagoons, reed beds), or are otherwise excluded under 40 CFR § 503.6.
  5. The 40 CFR Part 503 requirements include the following elements:
    - a. General requirements
    - b. Pollutant limitations
    - c. Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
    - d. Management practices
    - e. Record keeping
    - f. Monitoring
    - g. Reporting

Which of the 40 CFR Part 503 requirements apply to the Permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 guidance document, “EPA Region 1 - NPDES Permit Sludge Compliance Guidance” (November 4, 1999), may be used by the Permittee to assist it in determining the applicable requirements.

6. The sludge shall be monitored for pollutant concentrations (all Part 503 methods) and pathogen reduction and vector attraction reduction (land application and surface disposal) at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year, as follows:

less than 290	1/ year
290 to less than 1,500	1 /quarter
1,500 to less than 15,000	6 /year
15,000 +	1 /month

Sampling of the sewage sludge shall use the procedures detailed in 40 CFR § 503.8.

7. Under 40 CFR § 503.9(r), the Permittee is a “person who prepares sewage sludge” because it “is ... the person who generates sewage sludge during the treatment of domestic sewage

in a treatment works ....” If the Permittee contracts with another “person who prepares sewage sludge” under 40 CFR § 503.9(r) – i.e., with “a person who derives a material from sewage sludge” – for use or disposal of the sludge, then compliance with Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the Permittee does not engage a “person who prepares sewage sludge,” as defined in 40 CFR § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR § 503.7. If the ultimate use or disposal method is land application, the Permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 CFR § 503 Subpart B.

8. The Permittee shall submit an annual report containing the information specified in the 40 CFR Part 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by February 19 (see also “EPA Region 1 - NPDES Permit Sludge Compliance Guidance”). Reports shall be submitted electronically using EPA’s Electronic Reporting tool (“NeT”) (see “Reporting Requirements” section below).

#### **G. SPECIAL CONDITIONS**

1. The rolling seasonal average nitrogen limit of 1,289 lb/day will be subject to the following compliance schedule.
  - a. Within one year of the effective date of the permit, the Permittee shall investigate alternative operational approaches to reduce year-round nitrogen discharges using its existing equipment and implement operational changes as appropriate to optimize nitrogen removal at the existing facility until the facility upgrade is completed. A report describing the optimization investigation and including a schedule for implementing any recommended actions shall be submitted with the first annual report.
  - b. Within one year of the effective date of the permit, the Permittee shall evaluate and identify appropriate treatment process upgrades necessary to meet the new total nitrogen permit limit.
  - c. Within two years of the effective date of the permit, the Permittee shall complete design of the facility improvements required to achieve the new total nitrogen permit limit.
  - d. Within three years of the effective date of the permit, the Permittee shall initiate construction of the facility improvements required to achieve the new total nitrogen permit limit.
  - e. Within four years of the effective date of the permit, the Permittee shall substantially complete construction of the facility improvements required to achieve

the new total nitrogen permit limit.

- f. Within five years of the effective date of the permit, the Permittee shall optimize nitrogen removal of the upgraded facility to achieve the new rolling seasonal average total nitrogen permit limit (in accordance with Part I.G.2.a below). The new rolling seasonal average total nitrogen permit limit shall go into effect five years from the effective date of the permit.

The Permittee shall provide an annual report to EPA and MassDEP regarding the status of the facility upgrade and compliance with this schedule, to be submitted as an electronic attachment to the DMR at each deadline described above.

2. The Permittee shall optimize the facility to remove nitrogen as specified below.

- a. Concurrently with Part I.G.1.f above, the Permittee shall complete an evaluation of alternative methods of operating the wastewater treatment facility to optimize the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen. The methods to be evaluated include, but are not limited to, operational changes designed to enhance nitrification (seasonal and year-round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management.

During the months of November to April, all available treatment equipment in place at the facility shall be operated (unless equal or better performance can be achieved in a reduced operational mode) but the addition of a carbon source (that may be necessary in order to meet the total nitrogen limit during the months of May to October) is not required.

Within five years of the effective date of the permit, the Permittee shall submit a report to EPA and the State documenting this evaluation and presenting a description of recommended operational changes and shall begin to implement these recommended operational changes in order to minimize the year-round discharge loading of nitrogen.

- b. The Permittee shall submit an annual report to EPA and the State, by February 1<sup>st</sup> of each year, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous calendar year and the previous five (5) calendar years. If, in any year, the treatment facility discharges of TN on an average annual basis have increased, the annual report shall include a detailed explanation of the reasons why TN discharges have increased, including any changes in influent flows/loads and any operational changes. The report shall include all supporting

data.

### 3. Ammonia Nitrogen Compliance Schedule

The ammonia nitrogen limit will be subject to the same compliance schedule specified in Part I.G.1 described above. During the compliance schedule, the Permittee shall monitor and report the concentration of ammonia nitrogen in the effluent as specified in Part I.A.1 above.

## H. COMBINED SEWER OVERFLOWS

1. During wet weather (including snowmelt), the Permittee is authorized to discharge storm water/wastewater from the following CSO outfalls: 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 013, 014, 015, 016, 017, 018, 019 and 020 (See Attachment B of this Permit).
2. The effluent discharged from these CSOs is subject to the following limitations:
  - a. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available (“BPT”), Best Conventional Pollutant Control Technology (“BCT”) to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgment (“BPJ”) determination that BPT, BCT, and BAT for combined sewer overflow (“CSO”) control includes the implementation of Nine Minimum Controls (“NMC”) specified below. These Nine Minimum Controls and the Nine Minimum Controls Minimum Implementation Levels which are detailed further in Part I.H.3. are requirements of this permit.
    - (1) Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows;
    - (2) Maximum use of the collection system for storage;
    - (3) Review and modification of the pretreatment program to assure CSO impacts are minimized;
    - (4) Maximization of flow to the POTW for treatment;
    - (5) Prohibition of dry weather overflows from CSOs;
    - (6) Control of solid and floatable materials in CSOs;
    - (7) Pollution prevention programs that focus on contaminant reduction activities;

(8) Public notification to ensure that the public receives adequate notification of CSO occurrences and impacts;

(9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

- b. ~~The discharges shall not cause or contribute to violations of federal or state Water Quality Standards.~~

**The discharge shall not cause a change in color or odor or result in visible floating materials, grease, oil, scum, or foam in the receiving waters in the vicinity of the outfall.**

- c. **The discharge shall be free from oil, grease, or petrochemicals that produce a visible film on the surface of the water in the vicinity of the outfall or coat the banks of the water course in the vicinity of the outfall.**

### 3. Nine Minimum Controls Minimum Implementation Levels

- a. The Permittee must implement the nine minimum controls in accordance with the documentation provided to EPA and MassDEP or as subsequently modified to enhance the effectiveness of the controls. This implementation must include the controls identified in Part I.H.3.b-g of this permit plus other controls the Permittee can reasonably undertake as set forth in the documentation.
- b. Each CSO structure/regulator, pumping station and/or tidegate shall be routinely inspected, at a minimum of once per month, to ensure that they are in good working condition and adjusted to minimize combined sewer discharges (NMC # 1, 2 and 4). The following inspection results shall be recorded: the date and time of inspection, the general condition of the facility, and whether the facility is operating satisfactorily. If maintenance is necessary, the Permittee shall record: the description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The Permittee shall maintain all records of inspections for at least three years.
- c. **Annually, no later than March 31<sup>st</sup>**, the Permittee shall submit a certification to MassDEP and EPA which states that the previous calendar year's monthly inspections were conducted, results recorded, and records maintained. MassDEP and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the Permittee. Discharges to the combined system of septage, holding tank wastes, or other material which may cause a visible oil sheen or containing floatable material are prohibited during wet weather when CSO discharges may be active (NMC # 3, 6, and 7).
- d. Dry weather overflows ("DWOs") are prohibited (NMC # 5). All dry weather sanitary

and/or industrial discharges from CSOs must be reported to EPA and MassDEP orally within 24 hours of the time the Permittee becomes aware of the circumstances and a written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. See also Paragraph D.1.e. of Part II of this permit.

- e. The Permittee shall quantify and record all discharges from combined sewer outfalls (NMC # 9). Quantification shall be through direct measurement. The following information must be recorded for each combined sewer outfall for each discharge event, as set forth in Part I.H.5.:
- Duration (hours) of discharge;
  - Volume (gallons) of discharge;
  - National Weather Service precipitation data from the nearest gage where precipitation data is available. Cumulative precipitation per discharge event shall be calculated.

The Permittee shall retain records of CSO discharges for a period of at least 3 years from the date of the sample, measurement, report or application.

- f. The Permittee shall install and maintain identification signs for all combined sewer outfall structures (NMC # 8). The signs must be located at or near the combined sewer outfall structures and easily readable by the public from the land and water. These signs shall be a minimum of 12 x 18 inches in size, with white lettering against a green background, and shall contain the following information:

CITY OF FALL RIVER  
WET WEATHER  
SEWAGE DISCHARGE  
OUTFALL (discharge serial number)

The Permittee shall place signs in English and include a universal wet weather sewage discharge symbol.

Where there are easements over property not owned by the Permittee that must be obtained to meet this requirement, the Permittee shall identify the appropriate landowners and obtain the necessary easements, to the extent practicable.

- g. Public Notification Plan

(1) Within 180 days of the effective date of the permit, the Permittee shall submit to EPA and MassDEP a Public Notification Plan describing the measures that will be taken to meet NMC#8 in Part I.H.2 of this permit (NMC #8). The public notification plan shall include the means for disseminating information to the public, including

communicating the initial and supplemental notifications required in Part I.H.3.g.(2) and (3) of this permit, as well as procedures for communicating with public health departments, including downstream communities, whose waters may be affected by discharges from the Permittee's CSOs.

(2) Initial notification of a probable CSO activation shall be provided to the public as soon as practicable, but no later than, two (2) hours after becoming aware by monitoring, modeling or other means that a probable CSO discharge has occurred. In addition to posting this notification to a website, this information may also be communicated using other electronic means. The initial notification shall include the following information:

- Date and time of probable CSO discharge
- CSO number and location

(3) Supplemental notification shall be provided to the public as soon as practicable, but no later than, twenty-four (24) hours after becoming aware of the termination of any CSO discharge(s). In addition to posting this notification to a website, this information may also be communicated using other electronic means. The supplemental notification shall include the following information:

- CSO number and location
- Confirmation of CSO discharge
- Date, start time and stop time of the CSO discharge

(4) Annual notification - **Annually, by March 31<sup>st</sup>**, the Permittee shall post the annual report for the previous calendar year (described in Part I.H.4 below) on a publicly available website, and it shall remain on the website for a minimum of 24 months.

(5) The Public Notification Plan shall be implemented no later than 12 months following the effective date of the Permit.

#### 4. Nine Minimum Controls Reporting Requirement

**Annually, no later than March 31<sup>st</sup>**, the Permittee shall submit a report summarizing activities during the previous calendar year relating to compliance with the nine minimum controls. The annual report shall include information on the locations of CSOs, a summary of CSO outfall monitoring data required by Part I.H.5 of this permit, and the status and progress of CSO abatement work.

5. Combined Sewer Overflow Outfall Monitoring

For each combined sewer overflow outfall listed in Part I.H.1 of this permit, ~~the Permittee must monitor~~ the following **effluent limitations and monitoring requirements apply:**

Parameters	Effluent Limits	Reporting Requirements	Monitoring Requirements	
	Maximum Daily	Total Monthly	Measurement Frequency	Sample Type
Total Flow	---	Report MG/Month	Daily, when discharging	Continuous
Treated Flow (Outfalls 011 and 013 only)	---	Report MG/Month	Daily, when discharging	Continuous
Total Flow Duration (Duration of flow through CSO)	---	Report Hours	Daily, when discharging	Continuous
Number of CSO Discharge Events	---	Report Monthly Count	Daily, when discharging	Occurrences
Rainfall	---	Total precipitation (inches)	Daily, when discharging	Calculation
<b><i>Fecal coliform</i></b>	<b>260 cfu/100 mL</b>	---	<b>1/year</b>	<b>Grab</b>
<b><i>Enterococci</i></b>	<b>104 cfu/100 mL</b>	---	<b>1/year</b>	<b>Grab</b>
<b><i>E. coli</i></b>	<b>410 organisms/100 mL</b>	---	<b>1/year</b>	<b>Grab</b>
<b>Pollutant Scan</b>	---	<b>Report mg/L</b>	<b>1/year</b>	<b>Grab</b>

- a. For Total Flow, measure the total flow discharged from each CSO outfall during the month. For Total Flow Duration, report the total duration (hours) of discharges for each CSO outfall during the month. For Number of CSO Discharge Events, a single discharge event spanning more than one calendar day shall be reported as one discharge event.
- b. For those months when a CSO discharge does not occur, the Permittee must indicate “no discharge” for the outfall for which data was not collected.
- c. ***Fecal Coliform* and *Enterococci* requirements apply only to CSO outfalls 002, 003, 004, 005, 006, 007, 008, 010 and 014. *E. coli* requirements apply only to CSO outfalls 009, 015, 016, 017, 018, 019 and 020. Hourly grab sampling shall be performed within the first two (2) hours of the start of the discharge, and every hour thereafter for a duration of four (4) hours. The highest result of any single grab sample shall be reported as the “Maximum Daily” value.**
- d. **The “Pollutant Scan” shall be an effluent sample from CSO outfalls 004, 008, 010, and 014 taken annually within the first two (2) hours of the start of a discharge and shall be measured for all the pollutants listed in Attachment G.**
- e. This information shall be submitted with the annual report required by Part I.H.4. of this

permit.

- f. National Weather Service precipitation data from the nearest gage where precipitation data is available. Cumulative precipitation per discharge event shall be calculated.

6. Combined Sewer Overflow Outfall Limitations and Monitoring Requirements for the Presidents Avenue CSO Treatment Facility (Outfall 011) and the Cove Street CSO Treatment Facility (Outfall 013)

In addition to the requirements for all CSOs listed above, during the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent from the **Presidents Avenue CSO Treatment Facility** and **Cove Street CSO Treatment Facility** through Outfalls 011 and 013, respectively, to the Taunton River and the discharge shall be limited and monitored as specified below.

Effluent Characteristic	Effluent Limitation		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency <sup>1</sup>	Sample Type
<i>Fecal coliform</i> <sup>2,3</sup>	88 cfu/100 mL	260 cfu/100 mL	<del>1/month</del> <del>2/year</del>	Grab
<i>Enterococci</i> <sup>2,3</sup>	35 cfu/100 mL	104 cfu/100 mL	<del>1/month</del> <del>2/year</del>	Grab
Total Residual Chlorine <sup>3</sup>	0.075 mg/L	0.13 mg/L	<del>1/month</del> <del>2/year</del>	Grab
pH <sup>4</sup>	Report Max and Min S.U.		2/year	Grab
BOD <sub>5</sub>	Report mg/L and lb/day	---	2/year	Composite <sup>5</sup>
TSS	Report mg/L and lb/day	---	2/year	Composite <sup>5</sup>
Total Nitrogen	Report mg/L Report lb/day	---	2/year	Composite <sup>5</sup>
<b>Whole Effluent Toxicity (“WET”) Testing<sup>6</sup></b>				
LC <sub>50</sub>	---	Report %	2/year	Composite <sup>5</sup>
Salinity	---	Report ppt	2/year	Composite <sup>5</sup>
Ammonia Nitrogen	---	Report mg/L	2/year	Composite <sup>5</sup>
Total Cadmium	---	Report mg/L	2/year	Composite <sup>5</sup>
Total Copper	---	Report mg/L	2/year	Composite <sup>5</sup>
Total Nickel	---	Report mg/L	2/year	Composite <sup>5</sup>
Total Lead	---	Report mg/L	2/year	Composite <sup>5</sup>
Total Zinc	---	Report mg/L	2/year	Composite <sup>5</sup>

## Footnotes:

1. The Permittee shall conduct sampling twice per year, once in the second calendar quarter (April 1 – June 30) and once in the third calendar quarter (July 1 – September 30).
2. The Fecal coliform and *Enterococci* effluent limits apply for flows up to the maximum treatment capacity of 36 MGD for the Presidents Avenue CSO Treatment Facility (Outfall 011) or 54 MGD for the Cove Street CSO Treatment Facility (Outfall 013) and samples should be taken of the treated flow before being comingled with any untreated CSO flow after treatment. During a CSO overflow event at each outfall, the Permittee shall maximize flow through the CSO Treatment Facility to the extent practicable.
3. The fecal coliform and *Enterococci* monitoring shall be conducted concurrently with total residual chlorine monitoring. Hourly grab sampling shall be performed within the first two (2) hours of the start of the discharge, and every hour thereafter for a duration of four (4) hours. The average of all grab samples shall be reported as the “Average Monthly” value. The highest result of any single grab sample shall be reported as the “Maximum Daily” value.

The total residual chlorine limits for the Cove Street CSO Treatment Facility (Outfall 013) will become effective after 24-months from the effective date of the permit. The Permittee shall monitor and report total residual chlorine during the initial 24 months.

4. Hourly pH grab sampling shall be performed within the first two hours of the start of the discharge, and every hour thereafter for a duration of four (4) hours. The minimum and maximum pH result of all grab samples shall be reported.
5. Composite sampling for each discharge event must represent an event duration of at least four (4) hours. Hourly grab sampling shall be performed within the first two hours of the start of the discharge and every hour thereafter for a duration of at least four hours, and all grab samples shall be combined into a single composite sample. If the event lasts longer than four hours, no further sampling is required. An event composite is considered to represent an event duration of at least four hours where (i) the composite represents at least four consecutive hours of flow through the facility; or (ii) the composite represents at least four hours of flow during a 24-hour period starting at approximately 8:00 am each day (+/- 2 hours) coinciding with the permittee’s composite sampling schedule, if flow through the facility is discontinuous. If there are no CSO overflows of at least four hours within a given

reporting period (*i.e.*, second or third calendar quarter), the Permittee may report an appropriate “No Discharge” (NODI) code in the DMR for that reporting period.

6. The Permittee shall test the Inland Silverside (*Menidia beryllina*) and Mysid Shrimp (*Mysidopsis beryllina*) in accordance with test procedures and protocols specified in **Attachment A** of this permit.

#### 7. Model or Dye Studies for CSO Treatment Facilities Discharge Locations

The Permittee shall conduct a model or dye study at each of the CSO Treatment Facility discharge locations once during the permit term to determine the dilution at the point of discharge during the applicable hydraulic condition in the WQS at 314 CMR 4.03(3). The Permittee should consult with MassDEP as to the applicable hydraulic condition for each discharge location. The completed model or dye studies must be submitted by the Permittee six months before the end of the permit term (concurrent with NPDES reapplication).

### I. REPORTING REQUIREMENTS

Unless otherwise specified in this permit, the Permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

#### 1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State electronically using NetDMR no later than the 15th day of the month. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA’s Central Data Exchange at <https://cdx.epa.gov/>.

#### 2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee and Co-permittee(s) shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. See Part I.I.7. for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

#### 3. Submittal of Industrial User and Pretreatment Related Reports

- a. Prior to 21 December 2025, all reports and information required of the Permittee in the Industrial Users and Pretreatment Program section of this permit shall be

submitted to the Pretreatment Coordinator in EPA Region 1 Water Division (WD). Starting on 21 December 2025, these submittals must be done electronically as NetDMR attachments and/or using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>. These requests, reports and notices include:

- (1) Annual Pretreatment Reports,
  - (2) Pretreatment Reports Reassessment of Technically Based Industrial Discharge Limits Form,
  - (3) Revisions to Industrial Discharge Limits,
  - (4) Report describing Pretreatment Program activities, and
  - (5) Proposed changes to a Pretreatment Program
- b. This information shall be submitted to EPA WD as a hard copy at the following address:

**U.S. Environmental Protection Agency  
Water Division  
Regional Pretreatment Coordinator  
5 Post Office Square - Suite 100 (06-03)  
Boston, MA 02109-3912**

4. Submittal of Biosolids/Sewage Sludge Reports

By February 19 of each year, the Permittee must electronically report their annual Biosolids/Sewage Sludge Report for the previous calendar year using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which is accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

5. Submittal of Requests and Reports to EPA Water Division (WD)

- a. The following requests, reports, and information described in this permit shall be submitted to the NPDES Applications Coordinator in EPA Water Division (WD):
- (1) Transfer of permit notice;
  - (2) Request for changes in sampling location;
  - (3) Request for reduction in testing frequency;
  - (4) Report on unacceptable dilution water / request for alternative dilution water

for WET testing;

- b. These reports, information, and requests shall be submitted to EPA WD electronically at [R1NPDESReporting@epa.gov](mailto:R1NPDESReporting@epa.gov).

#### 6. Submittal of Sewer Overflow and Bypass Reports and Notifications

The Permittee and Co-permittee(s) shall submit required reports and notifications under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows (SSOs) electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), which will be accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

#### 7. State Reporting

Duplicate signed copies of all WET test reports shall be submitted to the Massachusetts Department of Environmental Protection, Division of Watershed Management, at the following address:

**Massachusetts Department of Environmental Protection  
Bureau of Water Resources  
Division of Watershed Management  
8 New Bond Street  
Worcester, Massachusetts 01606**

#### 8. Verbal Reports and Verbal Notifications

- a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part II.B.4.c.(2), Part II.B.5.c.(3), and Part II.D.1.e).
- b. Verbal reports and verbal notifications shall be made to:

**EPA ECAD at 617-918-1510  
and  
MassDEP Emergency Response at 888-304-1133**

#### J. STATE 401 CERTIFICATION CONDITIONS

~~1. This Permit is in the process of receiving state water quality certification issued by the State under § 401(a) of the CWA and 40 CFR § 124.53. EPA will incorporate appropriate State water quality certification requirements (if any) into the Final Permit.~~

**This permit is in the process of receiving State water quality certification issued by the State under § 401(a) of the CWA and 40 CFR § 124.53. EPA will incorporate all State water quality certification requirements (if any) into the Final Permit.**

**[NOTE: See Section 2 and 3 of the 2025 Statement of Basis for more details regarding the state certification requirements.]**

# MARINE ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

## I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **2007.0 - Mysid Shrimp (Americamysis bahia) definitive 48 hour test.**
- **2006.0 - Inland Silverside (Menidia beryllina) definitive 48 hour test.**

Acute toxicity data shall be reported as outlined in Section VIII.

## II. METHODS

The permittee shall use the most recent 40 CFR Part 136 methods. Whole Effluent Toxicity (WET) Test Methods and guidance may be found at:

<https://www.epa.gov/cwa-methods/whole-effluent-toxicity-methods>

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

## III. SAMPLE COLLECTION

A discharge and receiving water sample shall be collected. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any holding time extension. Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine<sup>1</sup> (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate

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<sup>1</sup> For this protocol, total residual chlorine is synonymous with total residual oxidants.

prior to sample use for toxicity testing. If performed on site the results should be included on the chain of custody (COC) presented to WET laboratory.

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1 mg/L chlorine. If dechlorination is necessary, a thiosulfate control consisting of the maximum concentration of thiosulfate used to dechlorinate the sample in the toxicity test control water must also be run in the WET test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6° C.

#### **IV. DILUTION WATER**

Samples of receiving water must be collected from a reasonably accessible location in the receiving water body immediately upstream of the permitted discharge's zone of influence. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2, Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water is found to be, or suspected to be toxic or unreliable, ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is

species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first case is when repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use by the permittee and toxicity testing laboratory. The second is when two of the most recent documented incidents of unacceptable site dilution water toxicity require ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use **and** written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW with supporting documentation must be sent electronically to the NPDES Applications Coordinator in EPA Water Division (WD) at the following email address:

[R1NPDESReporting@epa.gov](mailto:R1NPDESReporting@epa.gov)

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

*See the EPA Region 1 website at: [www.epa.gov/aboutepa/epa-region-1-new-england](http://www.epa.gov/aboutepa/epa-region-1-new-england) (click on NPDES, EPA Permit Attachments, Self-Implementing Alternate Dilution Water Guidance) for important details on alternate dilution water substitution requests.*

## **V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA**

EPA Region 1 requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Americamysis and Menidia toxicity test conditions and test acceptability criteria:

**EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE MYSID, AMERICAMYSIS BAHIA 48 HOUR TEST<sup>1</sup>**

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1. Test type	48hr Static, non-renewal
2. Salinity	25ppt $\pm$ 10 percent for all dilutions by adding dry ocean salts
3. Temperature ( $^{\circ}$ C)	20 $^{\circ}$ C $\pm$ 1 $^{\circ}$ C or 25 $^{\circ}$ C $\pm$ 1 $^{\circ}$ C, temperature must not deviate by more than 3 $^{\circ}$ C during test
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml (minimum)
7. Test solution volume	200 ml/replicate (minimum)
8. Age of test organisms	1-5 days, <u><math>\leq</math> 24 hours age range</u>
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> naupli while holding prior to initiating the test
13. Aeration <sup>2</sup>	None
14. Dilution water	5-30 ppt, +/- 10%; Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	$\geq$ 0.5
16. Number of dilutions <sup>3</sup>	5 plus a control. An additional dilution at the permitted effluent concentration (%)

effluent) is required if it is not included in the dilution series.

17. Effect measured	Mortality - no movement of body appendages on gentle prodding
18. Test acceptability	90% or greater survival of test organisms in control solution
19. Sampling requirements	For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters

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Footnotes:

- <sup>1</sup> Adapted from EPA 821-R-02-012.
- <sup>2</sup> If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.
- <sup>3</sup> When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

**EPA NEW ENGLAND TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST<sup>1</sup>**

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1. Test Type	48 hr Static, non-renewal
2. Salinity	25 ppt $\pm$ 10 % by adding dry ocean salts
3. Temperature	20°C $\pm$ 1°C or 25°C $\pm$ 1°C, temperature must not deviate by more than 3°C during test
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. Total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> nauplii while holding prior to initiating the test
13. Aeration <sup>2</sup>	None
14. Dilution water	5-32 ppt, +/- 10% ; Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	$\geq$ 0.5
16. Number of dilutions <sup>3</sup>	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

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Footnotes:

- <sup>1</sup> Adapted from EPA 821-R-02-012.
- <sup>2</sup> If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.
- <sup>3</sup> When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

V.1. Test Acceptability Criteria

If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

V.2. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

In general, if reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary as prescribed below.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

### V.2.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e.  $\geq 3$  standard deviations for IC25s and LC50 values and  $\geq$  two concentration intervals for NOECs or NOAECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

## **VI. CHEMICAL ANALYSIS**

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

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<u>Parameter</u>	<u>Effluent</u>	<u>Diluent</u>	<u>Minimum Level for effluent<sup>*1</sup> (mg/L)</u>
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine <sup>*2</sup>	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
<u>Total Metals</u>			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005

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### Superscript:

<sup>\*1</sup> These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

<sup>\*2</sup> Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

- Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
- Method 4500-CL G DPD Photometric Method.

## **VII. TOXICITY TEST DATA ANALYSIS**

### LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

- Probit Method
- Spearman-Kärber
- Trimmed Spearman-Kärber
- Graphical

See flow chart in Figure 6 on page 73 of EPA 821-R-02-012 for appropriate method to use on a given data set.

### No Observed Acute Effect Level (NOAEL)

See flow chart in Figure 13 on page 87 of EPA 821-R-02-012.

## **VIII. TOXICITY TEST REPORTING**

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) which includes:
  - Facility name
  - NPDES permit number
  - Outfall number
  - Sample type
  - Sampling method
  - Effluent TRC concentration
  - Dilution water used
  - Receiving water name and sampling location
  - Test type and species
  - Test start date
  - Effluent concentrations tested (%) and permit limit concentration
  - Applicable reference toxicity test date and whether acceptable or not
  - Age, age range and source of test organisms used for testing
  - Results of TAC review for all applicable controls
  - Permit limit and toxicity test results
  - Summary of any test sensitivity and concentration response evaluation that was conducted

Please note: The NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) are available on EPA's website at: [www.epa.gov/compliance/discharge-monitoring-reports-avoiding-common-mistakes](http://www.epa.gov/compliance/discharge-monitoring-reports-avoiding-common-mistakes)

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures;
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s);
- Reference toxicity test control charts;
- All sample chemical/physical data generated, including minimum levels (MLs) and analytical methods used;
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis;
- A discussion of any deviations from test conditions; and
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint.

# **MARINE CHRONIC TOXICITY TEST PROCEDURE AND PROTOCOL**

## **I. GENERAL REQUIREMENTS**

The permittee shall be responsible for the conduct of acceptable silverside chronic and sea urchin chronic toxicity tests in accordance with the appropriate test protocols described below:

- Inland Silverside (*Menidia beryllina*) Larval Growth and Survival Test
- Sea Urchin (*Arbacia punctulata*) 1 Hour Fertilization Test

Chronic toxicity data shall be reported as outlined in Section VIII.

## **II. METHODS**

The permittee shall use 40 CFR Part 136 methods. Methods and guidance may be found at:

<https://www.epa.gov/cwa-methods/whole-effluent-toxicity-methods>

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. Where there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

## **III. SAMPLE COLLECTION AND USE**

A total of three fresh samples of effluent and receiving water are required for initiation and subsequent renewals of a marine, chronic, toxicity test. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. Fresh samples are recommended for use on test days 1, 3, and 5. However, provided a total of three samples are used for testing over the test period, an alternate sampling schedule is acceptable. The acceptable holding times until initial use of a fresh sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any hold time extension. All fresh test samples collected may be used for 24, 48 and 72 hour renewals after initial use. All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6° C.

If any of the renewal samples are of sufficient potency to cause lethality to 50 percent or more of the test organisms in any of the test treatments for either species or, if the test fails to meet its permit limits, then chemical analysis for total metals (originally required for the initial sample only in Section VI) will be required on the renewal sample(s) as well.

Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. For TRC analysis performed on site the results must be included on the chain of custody (COC) presented to WET laboratory. For the purpose of sample preparation, i.e. eliminating chlorine prior to toxicity testing, if called for by the permit, TRC analysis may also be performed by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate prior to sample use for toxicity testing. According to Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992) dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1 mg/L chlorine.

If dechlorination of a sample by the toxicity testing laboratory is necessary a “sodium thiosulfate” control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual oxidants (as per 40 CFR Part 122.21).

#### **IV. DILUTION WATER**

Samples of receiving water must be collected from a location in the receiving water body immediately upstream of the permitted discharge’s zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2, Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable test acceptability criteria (TAC). When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternatedilution water (ADW) of known quality with hardness similar to that of the receiving water may be substituted. Substitution is species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species.

Substitution to an ADW is authorized in two cases. The first is the case where repeating a test due to toxicity in the site dilution water requires an immediate decision for ADW use be made by the permittee and toxicity testing laboratory. The second is in the case where two of the most recent documented incidents of unacceptable site dilution water toxicity requires ADW use in future WET testing. For the second case, written notification from the permittee requesting ADW use and written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW with supporting documentation must be sent electronically to the NPDES Applications Coordinator in EPA Water Division (WD) at the following email address:

[RINPDESReporting@epa.gov](mailto:RINPDESReporting@epa.gov)

**Note:** USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

*See the EPA Region 1 website at <https://www.epa.gov/aboutepa/epa-region-1-new-england> (click on NPDES, EPA Permit Attachments, Self-Implementing Alternate Dilution Water Guidance) for important details on alternate dilution water substitution requests.*

If the use of an alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

## **V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA**

EPA New England requires that if a reference toxicant test was being performed concurrently with an effluent or receiving water test and fails, both tests must be repeated.

The following tables summarize the accepted Menidia and Arbacia toxicity test conditions and test acceptability criteria:

## EPA NEW ENGLAND RECOMMENDED TEST CONDITIONS FOR THE SEA URCHIN, ARBACIA PUNCTULATA, FERTILIZATION TEST<sup>1</sup>

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1. Test type	Static, non-renewal
2. Salinity	30 o/oo $\pm$ 2 o/oo by adding dry ocean salts
3. Temperature	20 $\pm$ 1°C temperature must not deviate by more than 3°C during test
4. Light quality	Ambient laboratory illumination
5. Light intensity	10-20 uE/m <sup>2</sup> /s, or 50-100 ft-c (Ambient Laboratory Levels)
6. Test vessel size	Disposal (glass) liquid scintillation vials (20 ml capacity), presoaked in control water
7. Test solution volume	5 ml
8. Number of sea urchins	Pooled sperm from four males and pooled eggs from four females are used per test
9. Number of egg and sperm cells	About 2000 eggs per chamber and 5,000,000 sperm cells per vial
10. Number of replicate chambers	4 per treatment
11. Dilution water	Uncontaminated source of natural seawater or deionized water mixed with artificial sea salts
12. Dilution factor	Approximately 0.5, must bracket the permitted RWC
13. Test duration	1 hour and 20 minutes
14. Effects measured	Fertilization of sea urchin eggs
15. Number of treatments per test <sup>2</sup>	5 and a control. (receiving water and laboratory water control) An additional dilution at the permitted effluent concentration (% effluent) is required.

16. Acceptability of test	70% - 90% egg fertilization in all controls. Minimum of 70% fertilization in dilution water control. Effluent concentrations exhibiting greater than 70% fertilization, flagged as statistically significantly different from the controls, will not be considered statistically different from the controls for NOEC reporting.
17. Sampling requirements	For on-site tests, samples are to be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
18. Sample volume required	Minimum 1 liter

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Footnotes:

<sup>1</sup> Adapted from EPA 821-R-02-014

## EPA NEW ENGLAND RECOMMENDED TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA, GROWTH AND SURVIVAL TEST<sup>1</sup>

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1. Test type	Static, renewal
2. Salinity	5 o/oo to 32 o/oo +/- 2 o/oo of the selected salinity by adding artificial sea salts
3. Temperature	25 ± 1°C, temperature must not deviate by more than 3°C during test
4. Light quality	Ambient laboratory light
5. Light intensity	10-20 uE/m <sup>2</sup> /s, or 50-100 ft-C (Ambient Laboratory Levels)
6. Photoperiod	16 hr light, 8 hr darkness
7. Test vessel size	600 - 1000 mL beakers or equivalent (glass test chambers should be used)
8. Test solution volume	500-750 mL/replicate loading and DO restrictions must be met)
9. Renewal of test solutions	Daily using most recently collected sample
10. Age of test organisms	Seven to eleven days post hatch; 24 hr range in age
11. Larvae/test chamber	15 (minimum of 10)
12. Number of replicate chambers	4 per treatment
13. Source of food	Newly hatched and rinsed <u>Artemia</u> nauplii less than 24 hr old
14. Feeding regime	Feed once a day 0.10 g wet wt <u>Artemia</u> nauplii per replicate on days 0 – 2 feed 0.15 g wet wt <u>Artemia</u> nauplii per replicate on days 3-6
15. Cleaning	Siphon daily, immediately before test solution renewal and feeding
16. Aeration <sup>2</sup>	None
17. Dilution water	Uncontaminated source of natural seawater; or deionized water mixed with artificial sea salts

18. Effluent concentrations	5 and a control (receiving water and laboratory water control) An additional dilution at the permitted effluent concentration (% effluent) is required
19. Dilution factor	≥ 0.5, must bracket the permitted RWC
20. Test duration	7 days
21. Effects measured	Survival and growth (weight)
22. Acceptability of test	The average survival of dilution water control larvae is a minimum of 80%, and the average dry wt of unpreserved control larvae is a minimum of 0.5 mg, or the average dry wt of preserved control larvae is a minimum of 0.43 mg if preserved not more than 7 days in 4% formalin or 70% ethanol
23. Sampling requirements	For on-site tests, samples are collected daily and used within 24 hours of the time they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
24. Sample Volume Required	Minimum of 6 liters/day.

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Footnotes:

<sup>1</sup> Adapted from EPA 821-R-02-014

<sup>2</sup> If dissolved oxygen (D.O.) falls below 4.0 mg/L, aerate all chambers at a rate of less than 100 bubbles/min. Routine D.O. checks are recommended.

## V.1. Test Acceptability Criteria

If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

## V.2. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

In general, if reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary as prescribed below.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

### V.2.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established upper control limits i.e.  $\geq 3$  standard deviations for IC25s values and  $\geq$  two concentration intervals for NOECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

## VI. CHEMICAL ANALYSIS

The toxicity test requires measurement of pH, salinity, and temperature at the beginning and end of each 24 hour period in each dilution and controls for both daily test renewal and waste. The following chemical analyses shall be performed for each initial sample as well as any renewal samples, if necessary pursuant to the requirement of Part III above.

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<u>Parameter</u>	<u>Effluent</u>	<u>Diluent</u>	<u>Minimum Level for effluent<sup>*1</sup> (mg/L)</u>
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine <sup>*2</sup>	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
<u>Total Metals</u>			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005

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### Superscript:

<sup>\*1</sup> These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

<sup>\*2</sup> Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

- Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
- Method 4500-CL G DPD Photometric Method.

## VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

### A. Test Review

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#### 1. Concentration / Response Relationship

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported.

The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-014. Guidance for this review can be found at:

<https://www.epa.gov/cwa-methods/whole-effluent-toxicity-methods>

In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

#### 2. Test Variability (Test Sensitivity)

This review step is separate from the determination of whether a test meets or does not meet TAC. Within test variability is to be examined for the purpose of evaluating test sensitivity. This evaluation is to be performed for the sub-lethal hypothesis testing endpoint growth for *Menidia beryllina* as required by the permit. The test report is to include documentation of this evaluation to support that the endpoint values reported resulted from a toxicity test of adequate sensitivity. This evaluation must be performed as required in Section 10.2.8 of EPA-821-R-02-014.

To determine the adequacy of test sensitivity, USEPA requires the calculation of test percent minimum significant difference (PMSD) values. In cases where NOEC determinations are made based on a non-parametric technique, calculation of a test PMSD value, for the sole purpose of assessing test sensitivity, shall be calculated using a comparable parametric statistical analysis technique. The calculated test PMSD is then compared to the upper and lower PMSD bounds shown for marine tests in Section 10.2.8.3, p. 54, Table 6 of EPA-821-R-02-014. The comparison will yield one of the following determinations.

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.
- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-

R-003, June 2000, Section 6.4.2. This document can be located under Guidance Documents at the following USEPA website location:

<https://www.epa.gov/aboutepa/epa-region-1-new-england>  
(click on NPDES, EPA Permit Attachments)

If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater than the PMSD lower bound, then the treatment is considered statistically significant.

- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

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## B. Statistical Analysis

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### 1. General - Recommended Statistical Analysis Method

Refer to general data analysis flowchart, EPA 821-R-02-014, page 45

For discussion on Hypothesis Testing, refer to EPA 821-R-02-014, Section 9.6

For discussion on Point Estimation Techniques, refer to EPA 821-R-02-014, Section 9.7

### 2. *Menidia beryllina*

Refer to survival hypothesis testing analysis flowchart, EPA 821-R-02-014, page 181

Refer to survival point estimate techniques flowchart, EPA 821-R-02-013, page 182

Refer to growth data statistical analysis flowchart, EPA 821-R-02-014, page 193

### 3. *Arbacia punctulata*

Refer to fertilization data testing flowchart, EPA 821-R-02-014, page 312

## VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) which includes:
  - Facility name
  - NPDES permit number
  - Outfall number
  - Sample type
  - Sampling method
  - Effluent TRC concentration
  - Dilution water used
  - Receiving water name and sampling location
  - Test type and species
  - Test start date
  - Effluent concentrations tested (%) and permit limit concentration
  - Applicable reference toxicity test date and whether acceptable or not
  - Age, age range and source of test organisms used for testing
  - Results of TAC review for all applicable controls
  - Test sensitivity evaluation results (test PMSD for growth )
  - Permit limit and toxicity test results
  - Summary of test sensitivity and concentration response evaluation

Please note: The NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) are available on EPA's website at:

[www.epa.gov/compliance/discharge-monitoring-reports-avoiding-common-mistakes](http://www.epa.gov/compliance/discharge-monitoring-reports-avoiding-common-mistakes)

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures;
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s);
- Reference toxicity test control charts;
- All sample chemical/physical data generated, including minimum limits (MLs) and analytical methods used;
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis;
- A discussion of any deviations from test conditions; and
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review.

## ATTACHMENT C

### EPA - New England

#### Reassessment of Technically Based Industrial Discharge Limits

Under 40 CFR §122.21(j)(4), all Publicly Owned Treatment Works (POTWs) with approved Industrial Pretreatment Programs (IPPs) shall provide the following information to the Director: a written evaluation of the need to revise local industrial discharge limits under 40 CFR §403.5(c)(1).

Below is a form designed by the U.S. Environmental Protection Agency (EPA - New England) to assist POTWs with approved IPPs in evaluating whether their existing Technically Based Local Limits (TBLLs) need to be recalculated. The form allows the permittee and EPA to evaluate and compare pertinent information used in previous TBLLs calculations against present conditions at the POTW.

**Please read direction below before filling out form.**

#### ITEM I.

- \* In Column (1), list what your POTW's influent flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present influent flow rate. Your current flow rate should be calculated using the POTW's average daily flow rate from the previous 12 months.
- \* In Column (1) list what your POTW's SIU flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present SIU flow rate.
- \* In Column (1), list what dilution ratio and/or 7Q10 value was used in your old/expired NPDES permit. In Column (2), list what dilution ratio and/or 7Q10 value is presently being used in your new/reissued NPDES permit.  
  
The 7Q10 value is the lowest seven day average flow rate, in the river, over a ten year period. The 7Q10 value and/or dilution ratio used by EPA in your new NPDES permit can be found in your NPDES permit "Fact Sheet."
- \* In Column (1), list the safety factor, if any, that was used when your existing TBLLs were calculated.
- \* In Column (1), note how your bio-solids were managed when your existing TBLLs were calculated. In Column (2), note how your POTW is presently disposing of its biosolids and how your POTW will be disposing of its biosolids in the future.

## ITEM II.

- \* List what your existing TBLLs are - as they appear in your current Sewer Use Ordinance (SUO).

## ITEM III.

- \* Identify how your existing TBLLs are allocated out to your industrial community. Some pollutants may be allocated differently than others, if so please explain.

## ITEM IV.

- \* Since your existing TBLLs were calculated, identify the following in detail:
  - (1) if your POTW has experienced any upsets, inhibition, interference or pass-through as a result of an industrial discharge.
  - (2) if your POTW is presently violating any of its current NPDES permit limitations - include toxicity.

## ITEM V.

- \* Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in pounds per day) received in the POTW's influent. Current sampling data is defined as data obtained over the last 24 month period.

All influent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

- \* Based on your existing TBLLs, as presented in Item II., list in Column (2), for each pollutant the Maximum Allowable Headwork Loading (MAHL) values derived from an applicable environmental criteria or standard, e.g. water quality, sludge, NPDES, inhibition, etc. For more information, please see EPA's Local Limit Guidance Document (July 2004).

## Item VI.

- \* Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in micrograms per liter) present your POTW's effluent. Current sampling data is defined as data obtained during the last 24 month period.

**(Item VI. continued)**

All effluent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

- \* List in Column (2A) what the Water Quality Standards (WQS) were (in micrograms per liter) when your TBLLs were calculated, please note what hardness value was used at that time. Hardness should be expressed in milligram per liter of Calcium Carbonate.

List in Column (2B) the current WQSs or "Chronic Gold Book" values for each pollutant multiplied by the dilution ratio used in your new/reissued NPDES permit. For example, with a dilution ratio of 25:1 at a hardness of 25 mg/l - Calcium Carbonate (copper's chronic WQS equals 6.54 ug/l) the chronic NPDES permit limit for copper would equal 156.25 ug/l.

**ITEM VII.**

- \* In Column (1), list all pollutants (in micrograms per liter) limited in your new/reissued NPDES permit. In Column (2), list all pollutants limited in your old/expired NPDES permit.

**ITEM VIII.**

- \* Using current sampling data, list in Column (1) the average and maximum amount of pollutants in your POTW's biosolids. Current data is defined as data obtained during the last 24 month period. Results are to be expressed as total dry weight.

All biosolids data collected and analyzed must be in accordance with 40 CFR §136.

In Column (2A), list current State and/or Federal sludge standards that your facility's biosolids must comply with. Also note how your POTW currently manages the disposal of its biosolids. If your POTW is planning on managing its biosolids differently, list in Column (2B) what your new biosolids criteria will be and method of disposal.

In general, please be sure the units reported are correct and all pertinent information is included in your evaluation. If you have any questions, please contact your pretreatment representative at EPA - New England.



**ITEM II.**

EXISTING TBLs			
POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)	POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)

**ITEM III.**

Note how your existing TBLs, listed in Item II., are allocated to your Significant Industrial Users (SIUs), i.e. uniform concentration, contributory flow, mass proportioning, other. Please specify by circling.

**ITEM IV.**

Has your POTW experienced any upsets, inhibition, interference or pass-through from industrial sources since your existing TBLs were calculated?  
If yes, explain.

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Has your POTW violated any of its NPDES permit limits and/or toxicity test requirements?

If  yes,  no, explain.

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**ITEM V.**

Using current POTW influent sampling data fill in Column (1). In Column (2), list your Maximum Allowable Headwork Loading (MAHL) values used to derive your TBLLs listed in Item II. In addition, please note the Environmental Criteria for which each MAHL value was established, i.e. water quality, sludge, NPDES etc.

Pollutant	Column (1) Influent Data Analyses		Column (2) MAHL Values (lb/day)	Criteria
	Maximum (lb/day)	Average (lb/day)		
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Other (List)				

**ITEM VI.**

Using current POTW effluent sampling data, fill in Column (1). In Column (2A) list what the Water Quality Standards (Gold Book Criteria) were at the time your existing TBLLs were developed. List in Column (2B) current Gold Book values multiplied by the dilution ratio used in your new/reissued NPDES permit.

Pollutant	Column (1)		Columns (2A) (2B)	
	Effluent Data Analyses		Water Quality Criteria (Gold Book)	
	Maximum (ug/l)	Average (ug/l)	From TBLLs Today (ug/l)	(ug/l)
Arsenic				
*Cadmium				
*Chromium				
*Copper				
Cyanide				
*Lead				
Mercury				
*Nickel				
Silver				
*Zinc				
Other (List)				

\*Hardness Dependent (mg/l - CaCO3)



**ITEM VIII.**

Using current POTW biosolids data, fill in Column (1). In Column (2A), list the biosolids criteria that was used at the time your existing TBLLs were calculated. If your POTW is planing on managing its biosolids differently, list in Column (2B) what your new biosolids criteria would be and method of disposal.

Pollutant	Column (1) Data Analyses  Average (mg/kg)	Biosolids	Columns (2A) (2B) Biosolids Criteria From TBLLs New (mg/kg) (mg/kg)
Arsenic			
Cadmium			
Chromium			
Copper			
Cyanide			
Lead			
Mercury			
Nickel			
Silver			
Zinc			
Molybdenum			
Selenium			
Other (List)			

## ATTACHMENT D

### NPDES PERMIT REQUIREMENT FOR INDUSTRIAL PRETREATMENT ANNUAL REPORT

The information described below shall be included in the pretreatment program annual reports:

1. An updated list of all industrial users by category, as set forth in 40 C.F.R. 403.8(f)(2)(i), indicating compliance or noncompliance with the following:
  - baseline monitoring reporting requirements for newly promulgated industries
  - compliance status reporting requirements for newly promulgated industries
  - periodic (semi-annual) monitoring reporting requirements,
  - categorical standards, and
  - local limits;
2. A summary of compliance and enforcement activities during the preceding year, including the number of:
  - significant industrial users inspected by POTW (include inspection dates for each industrial user),
  - significant industrial users sampled by POTW (include sampling dates for each industrial user),
  - compliance schedules issued (include list of subject users),
  - written notices of violations issued (include list of subject users),
  - administrative orders issued (include list of subject users),
  - criminal or civil suits filed (include list of subject users) and,
  - penalties obtained (include list of subject users and penalty amounts);
3. A list of significantly violating industries required to be published in a local newspaper in accordance with 40 C.F.R. 403.8(f)(2)(vii);
4. A narrative description of program effectiveness including present and proposed changes to the program, such as funding, staffing, ordinances, regulations, rules and/or statutory authority;
5. A summary of all pollutant analytical results for influent, effluent, sludge and any toxicity or bioassay data from the wastewater treatment facility. The summary shall include a comparison of influent sampling results versus threshold inhibitory concentrations for the Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraph below or any similar sampling program described in this Permit.

At a minimum, annual sampling and analysis of the influent and effluent of the Wastewater Treatment Plant shall be conducted for the following pollutants:

- |                    |                   |
|--------------------|-------------------|
| a.) Total Cadmium  | f.) Total Nickel  |
| b.) Total Chromium | g.) Total Silver  |
| c.) Total Copper   | h.) Total Zinc    |
| d.) Total Lead     | i.) Total Cyanide |
| e.) Total Mercury  | j.) Total Arsenic |

The sampling program shall consist of one 24-hour flow-proportioned composite and at least one grab sample that is representative of the flows received by the POTW. The composite shall consist of hourly flow-proportioned grab samples taken over a 24-hour period if the sample is collected manually or shall consist of a minimum of 48 samples collected at 30 minute intervals if an automated sampler is used. Cyanide shall be taken as a grab sample during the same period as the composite sample. Sampling and preservation shall be consistent with 40 CFR Part 136.

6. A detailed description of all interference and pass-through that occurred during the past year;
7. A thorough description of all investigations into interference and pass-through during the past year;
8. A description of monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying parameters and frequencies;
9. A description of actions being taken to reduce the incidence of significant violations by significant industrial users; and,
10. The date of the latest adoption of local limits and an indication as to whether or not the permittee is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.

## Attachment E: PFAS Analyte List

Target Analyte Name	Abbreviation	CAS Number
<b>Perfluoroalkyl carboxylic acids</b>		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
<b>Perfluoroalkyl sulfonic acids</b>		
<b>Acid Form</b>		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorododecanesulfonic acid	PFDoS	79780-39-5
<b>Fluorotelomer sulfonic acids</b>		
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
<b>Perfluorooctane sulfonamides</b>		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
<b>Perfluorooctane sulfonamidoacetic acids</b>		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
<b>Perfluorooctane sulfonamide ethanols</b>		
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
<b>Per- and Polyfluoroether carboxylic acids</b>		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6

Target Analyte Name	Abbreviation	CAS Number
<b>Ether sulfonic acids</b>		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
<b>Fluorotelomer carboxylic acids</b>		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2 <i>H</i> ,2 <i>H</i> ,3 <i>H</i> ,3 <i>H</i> -Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

## Combined Sewer Overflow Outfalls

Outfall	Latitude	Longitude	Location	Receiving Water
002	41° 40' 48" N	71° 11' 41" W	Mount Hope Avenue	Mount Hope Bay
003	41° 41' 06" N	71° 11' 24" W	Charles Street	Mount Hope Bay
004	41° 41' 11" N	71° 11' 17" W	Birch Street	Mount Hope Bay
005	41° 41' 25" N	71° 11' 07" W	Riverview Street	Mount Hope Bay
006	41° 41' 48" N	71° 10' 42" W	Middle Street	Mount Hope Bay
007	41° 41' 58" N	71° 10' 22" W	William Street	Mount Hope Bay
008	41° 42' 05" N	71° 10' 14" W	Ferry Street	Mount Hope Bay
009	41° 42' 14" N	71° 09' 36" W	Central Street	Quequechan River
010	41° 42' 43" N	71° 09' 21" W	City Pier	Taunton River
011	41° 43' 02" N	71° 09' 31" W	President Avenue	Taunton River
013	41° 43' 35" N	71° 08' 56" W	Cove Street	Taunton River
014	41° 43' 60" N	71° 08' 26" W	Alton Street	Taunton River
015	41° 41' 49" N	71° 08' 59" W	Plymouth Ave. – North	Quequechan River
016	41° 41' 47" N	71° 08' 56" W	Lowell Street	Quequechan River
017	41° 41' 19" N	71° 08' 22" W	Quequechan Street	Quequechan River
018	41° 42' 15" N	71° 09' 37" W	Heritage Park	Quequechan River
019	41° 42' 06" N	71° 09' 46" W	Canal Street	Quequechan R./Crab Pond
020	41° 42' 01" N	71° 09' 15" W	Third Street	Quequechan River

## **ATTACHMENT G: LIST FOR POLLUTANT SCANS**

	NPDES Permit Number	Facility Name	Outfall Number
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EFFLUENT PARAMETERS FOR POTWS							
Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method <sup>1</sup>	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Ammonia (as N)							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chlorine (total residual, TRC) <sup>2</sup>							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Dissolved oxygen							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Nitrate/nitrite							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Kjeldahl nitrogen							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Oil and grease							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Phosphorus							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Total dissolved solids							<input type="checkbox"/> ML <input type="checkbox"/> MDL

<sup>1</sup> Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR Chapter I, Subchapter N or O. See 40 CFR 122.21(e)(3).

<sup>2</sup> Facilities that do not use chlorine for disinfection, do not use chlorine elsewhere in the treatment process, and have no reasonable potential to discharge chlorine in their effluent are not required to report data for chlorine.

	NPDES Permit Number	Facility Name	Outfall Number
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**EFFLUENT PARAMETERS FOR POTWS**

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method <sup>1</sup>	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		

**Metals, Cyanide, and Total Phenols**

Hardness (as CaCO <sub>3</sub> )							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Antimony, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Arsenic, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Beryllium, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Cadmium, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chromium, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Copper, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Lead, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Mercury, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Nickel, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Selenium, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Silver, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Thallium, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Zinc, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Cyanide							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Total phenolic compounds							<input type="checkbox"/> ML <input type="checkbox"/> MDL

**Volatile Organic Compounds**

Acrolein							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Acrylonitrile							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Benzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Bromoform							<input type="checkbox"/> ML <input type="checkbox"/> MDL

	NPDES Permit Number	Facility Name	Outfall Number
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**EFFLUENT PARAMETERS FOR POTWS**

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method <sup>1</sup>	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Carbon tetrachloride							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chlorobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chlorodibromomethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2-chloroethylvinyl ether							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chloroform							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Dichlorobromomethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,1-dichloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,2-dichloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
trans-1,2-dichloroethylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,1-dichloroethylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,2-dichloropropane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,3-dichloropropylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Ethylbenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Methyl bromide							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Methyl chloride							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Methylene chloride							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,1,2,2-tetrachloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Tetrachloroethylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Toluene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,1,1-trichloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,1,2-trichloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL

	NPDES Permit Number	Facility Name	Outfall Number
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**EFFLUENT PARAMETERS FOR POTWS**

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method <sup>1</sup>	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Trichloroethylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Vinyl chloride							<input type="checkbox"/> ML <input type="checkbox"/> MDL
<b>Acid-Extractable Compounds</b>							
p-chloro-m-cresol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2-chlorophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2,4-dichlorophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2,4-dimethylphenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
4,6-dinitro-o-cresol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2,4-dinitrophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2-nitrophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
4-nitrophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Pentachlorophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Phenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2,4,6-trichlorophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
<b>Base-Neutral Compounds</b>							
Acenaphthene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Acenaphthylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Anthracene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Benzidine							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Benzo(a)anthracene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Benzo(a)pyrene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
3,4-benzofluoranthene							<input type="checkbox"/> ML <input type="checkbox"/> MDL

	NPDES Permit Number	Facility Name	Outfall Number
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**EFFLUENT PARAMETERS FOR POTWS**

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method <sup>1</sup>	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Benzo(ghi)perylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Benzo(k)fluoranthene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Bis (2-chloroethoxy) methane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Bis (2-chloroethyl) ether							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Bis (2-chloroisopropyl) ether							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Bis (2-ethylhexyl) phthalate							<input type="checkbox"/> ML <input type="checkbox"/> MDL
4-bromophenyl phenyl ether							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Butyl benzyl phthalate							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2-chloronaphthalene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
4-chlorophenyl phenyl ether							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chrysene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
di-n-butyl phthalate							<input type="checkbox"/> ML <input type="checkbox"/> MDL
di-n-octyl phthalate							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Dibenzo(a,h)anthracene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,2-dichlorobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,3-dichlorobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,4-dichlorobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
3,3-dichlorobenzidine							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Diethyl phthalate							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Dimethyl phthalate							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2,4-dinitrotoluene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2,6-dinitrotoluene							<input type="checkbox"/> ML <input type="checkbox"/> MDL

	NPDES Permit Number	Facility Name	Outfall Number
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**EFFLUENT PARAMETERS FOR POTWS**

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method <sup>1</sup>	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
1,2-diphenylhydrazine							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Fluoranthene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Fluorene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Hexachlorobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Hexachlorobutadiene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Hexachlorocyclo-pentadiene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Hexachloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Indeno(1,2,3-cd)pyrene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Isophorone							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Naphthalene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Nitrobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
N-nitrosodi-n-propylamine							<input type="checkbox"/> ML <input type="checkbox"/> MDL
N-nitrosodimethylamine							<input type="checkbox"/> ML <input type="checkbox"/> MDL
N-nitrosodiphenylamine							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Phenanthrene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Pyrene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,2,4-trichlorobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL

<sup>1</sup> Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR Chapter I, Subchapter N or O. See 40 CFR 122.21(e)(3).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND - REGION 1  
5 POST OFFICE SQUARE, SUITE 100  
BOSTON, MASSACHUSETTS 02109-3912

STATEMENT OF BASIS

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REVISED DRAFT  
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES  
PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: MA0100382

PUBLIC NOTICE START AND END DATES: January 16, 2025 to February 18, 2025

NAME AND MAILING ADDRESS OF APPLICANT:

City of Fall River Sewer Commission  
One Government Center  
Fall River, MA 02722

The Massachusetts municipalities of Freetown and Westport and the Rhode Island municipality of Tiverton are Co-permittees for specific activities required by the permit. See Sections 5.4 and 5.5 of the 2024 Fact Sheet and Sections I.B., I.C., I.D. of the Revised Draft Permit. The responsible Town departments are:

Town of Freetown Water and Sewer Commission Freetown Town Hall 3 North Main Street P.O. Box 438 Assonet, MA 02702	Town of Westport Westport Town Hall 816 Main Road Westport, MA 02790	Tiverton Wastewater District 400 Fish Road Tiverton, RI 02878
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NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Fall River Wastewater Treatment Plant  
1979 Bay Street  
Fall River, MA 02724 and 18 combined sewer overflow (CSO) outfalls

RECEIVING WATERS AND CLASSIFICATION:

Mount Hope Bay (MA61-06); Class SB - CSO [Outfall 001 and 7 CSOs]  
Taunton River (MA62-04); Class SB - CSO [4 CSOs]  
Quequechan River (MA61-05); Class B – Warm Water Fishery and CSO [7 CSOs]

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### 1.0 PROPOSED ACTION

On February 1, 2024, the Region 1 Office of the United States Environmental Protection Agency (“EPA” or the “Agency”) published for public notice an NPDES permit (the “2024 Draft Permit”) to the City of Fall River (“City” or “Permittee”) for discharges from the Fall River Wastewater Treatment Plant to Mount Hope Bay via Outfall 001 as well as 18 combined sewer overflow (CSO) outfalls. Based partly on certain comments received on the 2024 Draft Permit, EPA has partially revised the 2024 Draft Permit with respect to certain requirements and EPA has prepared a revised draft permit (“2025 Revised Draft Permit”) for public comment which proposes alternate provisions to those in the 2024 Draft Permit. The legal and technical basis for these changes is described in this Statement of Basis below.

EPA also notes that the initial public notice period included comments on many other portions of the 2024 Draft Permit. EPA has reviewed those comments and may make several changes to the Final Permit based on those comments beyond the changes presented in this 2025 Revised Draft Permit. However, EPA is not soliciting comments on any aspect of the draft permit other than the proposed changes from the 2024 Draft Permit to this 2025 Revised Draft Permit described below and highlighted in **red bold font** in the 2025 Revised Draft Permit. Any comments submitted during this public notice period pertaining to any other provisions of the draft permit beyond the scope of these proposed revisions will not be considered.

### 2.0 BASIS OF THE REVISED DRAFT PERMIT

Comments received from the City of Fall River during the initial public notice challenged the narrative provision that discharges “shall not cause or contribute to violations of federal or state water quality standards.” EPA has removed this narrative provision and other similar narrative provisions from Part I.A.2-7 and Part I.H.2.b of the 2024 Draft Permit.

In the development of the 2025 Revised Draft Permit, the Region considered a variety of alternative permit conditions and monitoring requirements in lieu of these narrative requirements, as described in greater detail below. However, to ensure compliance with these applicable state narrative water quality standards, the State has indicated that it will include the narrative requirements in its draft water quality certification. See Part I.J of the 2025 Revised Draft Permit. Specifically, the State has notified EPA that it will propose the following

narrative water quality-based requirements as state certification conditions in accordance with § 401(a) of the CWA and 40 CFR § 124.53:

- The discharge shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
- The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms.
- The discharge shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to the receiving water, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.
- The discharge shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to the receiving water.
- The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the receiving water, impart an oily taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.
- The discharge shall be free from taste and odor in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to the receiving water, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.
- The discharge shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

Based on the State's intent to include these requirements in the state certification, EPA does not find it necessary to include the alternative permit conditions and monitoring requirements in the 2025 Revised Draft Permit with respect to the WWTF outfall (001). However, EPA has proposed alternative permit conditions applicable to each CSO outfall.

With respect to the WWTF outfall (001), EPA will include the applicable alternative permit conditions and monitoring requirements in the Final Permit only if some or all of the proposed narrative conditions in the proposed state certification are not included in the final state certification. To account for this possibility, EPA has described these alternative permit conditions and monitoring requirements in detail in Section 2.2.1 below and is soliciting public comments on the inclusion of these in the Final Permit only if the state certification does not include the applicable narrative conditions permit and pursuant to any changes based on public comments.

With respect to the CSO outfalls, EPA is proposing alternative permit conditions and monitoring requirements deemed to be necessary to properly regulate CSO discharges in lieu of the challenged narrative provision that discharges “shall not cause or contribute to violations of federal or state water quality standards.” The technical basis and rationale for each of these CSO-related provisions is described in Section 2.1.2 below.

### **2.1.1 Potential Alternative Permit Conditions (Outfall 001)**

With respect to the WWTF outfall (001), the potential alternative permit conditions and monitoring requirements described below relate to (1) reasonable potential analyses, (2) WET testing, (3) annual chemical monitoring, (4) visual inspections of the receiving water, and (5) a benthic survey. Each of these are related to compliance with specific narrative state water quality standards. It should also be noted that if any of these alternative requirements and monitoring requirements were to be included in this permit reissuance, EPA may remove or reduce these in the future and/or implement an alternative permitting approach if EPA finds that these are no longer necessary to protect designated uses in accordance with state water quality standards.

To be clear, EPA will include the items below in the Final Permit only if the state certification does not include the applicable narrative conditions permit and pursuant to any changes based on public comments.

#### **Reasonable Potential Analyses**

Given that EPA guidance<sup>1</sup> directs that reasonable potential analyses should be based on critical conditions, EPA uses the pollutant concentrations based on all available information provided to EPA during the development of the permit. As discussed in more detail in the pollutant-specific sections above, this information includes data from the Permittee’s most recent application, DMR data during the review period, and any other available information included in the administrative record.

If the permitting authority, in this case EPA, determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQs, the permit must contain WQBELs for that pollutant. See 40 CFR § 122.44(d)(1)(i).

If the permitting authority determines that the discharge of a pollutant will not cause, have the reasonable potential to cause, or contribute to an excursion above WQs, the permit does not need to contain WQBELs for that pollutant. However, the permitting authority must ensure that the discharge of that pollutant does not increase during the permit term to the point that would violate water quality standards. Therefore, Part I.B.1 (Unauthorized Discharges) of the permit may include the following provision to ensure that EPA’s reasonable potential analyses

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<sup>1</sup> See 2010 NPDES Permit Writer’s Manual, chapter 6 available at: [https://www.epa.gov/sites/default/files/2015-09/documents/pwm\\_chapt\\_06.pdf](https://www.epa.gov/sites/default/files/2015-09/documents/pwm_chapt_06.pdf)

(for all pollutants) remain protective throughout the life of the permit, and which would also clearly articulate the scope of the protections afforded to the Permittee pursuant to CWA section 402(k):

“For any pollutant without an effluent limitation in this permit, any pollutant loading greater than the proposed discharge (the “proposed discharge” is based on the chemical-specific data and the facility’s design flow as described in the permit application, or any other information provided to EPA during the permitting process) is not authorized by this permit.”

EPA notes that such increases may be allowable, but the Permittee must first submit a request to EPA to authorize such an increase. This request will allow EPA to conduct an updated reasonable potential analysis to reassess whether a WQBEL is needed for the newly proposed discharge. Permit modification or reissuance may be required before the proposed discharge would be authorized.

### Toxicity

Under CWA §§ 301, 303 and 402, EPA and the States may establish toxicity-based limitations to implement the narrative water quality criteria calling for “no toxics in toxic amounts”. *See also* 40 CFR § 122.44(d)(1). The Massachusetts WQSs at 314 CMR 4.05(5)(e) state, “All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.” To ensure the receiving water is free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife, throughout the permit term, EPA may incorporate additional Whole Effluent Toxicity (WET) requirements described below.

Under the following circumstances, the Permittee shall conduct at least two accelerated re-tests at 14-day intervals, which must be started within 14 days and 28 days of receiving the following results:

- If any WET test results are in violation of any WET limit and the test acceptability criteria were met (only re-test for the species that failed); or
- If the Permittee identifies or is provided notice of a sudden and significant death of large numbers of fish and/or shellfish in the vicinity of the discharge (test for all species identified in permit).

If the receiving water was used as the dilution water and is suspected to be toxic (*e.g.*, based on results from the initial test), the Permittee would be required to conduct the accelerated WET tests using laboratory water as the dilution water with a similar pH and hardness as the receiving water. If the WET tests using laboratory water do not violate any WET limits, the Permittee would return to a normal monitoring frequency but may request continued use laboratory water as the dilution water based on these results. If either accelerated WET test

violates any WET limits (and the test acceptability criteria were met), the discharge would be considered to have persistent toxicity and the Permittee would be required to immediately initiate a Toxicity Identification Evaluation and Toxicity Reduction Evaluation (TIE/TRE) as described below to resolve any toxic impacts on the receiving water.

The specific proposed TIW/TRE requirements are presented below and were developed based on guidance available in EPA's *2024 NPDES WET Permit Writers' Manual*<sup>2</sup>. EPA notes that the results of the TIE/TRE might also lead to additional, future NPDES permit controls, such as additional WET permit limits, chemical-specific permit limits, or a compliance requirement to reduce or eliminate toxicity.

- (1) If the WET re-test described above results in a violation of the WET limits, the Permittee must immediately initiate a TIE/TRE designed to identify and reduce toxicity in the discharge. Notice of TIE/TRE study implementation is to be submitted to EPA (via email: [R1NPDESReporting@epa.gov](mailto:R1NPDESReporting@epa.gov)) and the State within 10 days of receiving notification of WET re-test failure.
- (2) A TIE/TRE schedule and action plan must be submitted to EPA and the State as an electronic attachment to the DMR within 60 days of receipt of WET re-test failure.

The TIE/TRE schedule (from the initiation date to the termination date) should be as short as possible, and no longer than 24 months as follows: The "TIE/TRE initiation date" is the date of the receipt of results for the toxicity test that confirms persistent toxicity and the "TIE/TRE termination date" is the date corrective actions to resolve toxicity are identified and a schedule for completing these corrective actions is proposed.

The objective of the action plan is to identify the source(s) of toxicity by analyzing toxicity testing samples for any toxicant identified as being a potential source of toxicity and ascertaining whether the same level of toxicity occurs when any suspected toxicant level varies. This information might lead to finding one or more toxicants or confirming or eliminating suspected toxicants and possibly their source(s).

- (3) Quarterly "TIE/TRE Progress Reports" shall be submitted to EPA and the State as an electronic attachment to the DMR at the end of each quarter after the TIE/TRE initiation date. The progress report must list all activities and findings related to resolving toxicity, including all WET and chemical test data. The data summaries of the TIE/TRE must also be provided in a tabulated format with explanations of the procedures used and the recorded findings from the study.

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<sup>2</sup> Available at: <https://www.epa.gov/system/files/documents/2024-06/npdes-wet-permit-writers-manual.pdf>

- (4) A “Final TIE/TRE Report” shall be submitted to EPA and the State within 45 days of the TIE/TRE termination date (as an electronic attachment to the DMR) and should summarize the TIE/TRE activities and findings, propose the corrective action(s) to be taken, and propose a schedule to complete any identified corrective action(s).
- (5) After submission of the “Final TIE/TRE Report,” the Permittee shall continue to submit quarterly “Toxicity Reduction Progress Reports” (as an electronic attachment to the DMR) documenting progress on the corrective actions being taken to reduce toxicity in accordance with the proposed schedule.
- (6) Upon completion of all corrective actions identified in the “Final TIE/TRE Report,” the Permittee shall submit a “Toxicity Reduction Completion Report” (as an electronic attachment to the DMR) summarizing the corrective actions taken based on the TIE/TRE and shall include all information necessary to demonstrate that the discharge is no longer toxic and consistently complies with all WET limits.

#### Annual Chemical Monitoring

Massachusetts water quality standards at 314 CMR 4.05(5)(e) states, “All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.”

Given that there are other sources of toxic effects (including to human health) that may not be captured by WET testing, EPA would include additional chemical monitoring in the permit. To ensure that the Permittee and EPA are aware of any changes in the chemical characteristics of the discharge that might merit a review of the water quality-based effluent limits, as authorized by Section 402(a)(2) of the CWA and 40 CFR § 122.48, the permit would require additional monitoring requirements for a broad range of contaminants. Specifically, the permit would include requirements for annual monitoring of both the effluent and the receiving water immediately upstream of the discharge (taken on the same day during the third calendar quarter to capture relatively low flow conditions) for all the pollutants in Attachment G of the 2025 Draft Permit (which is based on the current NPDES Application Form 2A Tables B and C). All effluent and ambient results would be reported in NetDMR for the quarterly DMR report due by October 15 of each year.

These data would provide assurance that the pollutant loading from the WWTF outfall characterized in the most recent permit application, and the ambient conditions upon which the analyses in this permit reissuance were based, have not changed to a degree that would merit new or more stringent water quality-based effluent limits (WQBELs) during the permit term based on numeric or narrative WQS effective at that time.

In addition, the range of pollutants in this monitoring requirement includes many common toxic pollutants. This monitoring would ensure that the sublethal effects of pollutants that are present in the effluent can be considered by the Permittee and by EPA in future permitting decisions or, as necessary to support a TIE/TRE.

Visual Inspection of the Receiving Water

Massachusetts Surface Water Quality Standards include several narrative requirements related to aesthetics, solids and oil & grease, as follows:

(314 CMR 4.05(5)(a)) **Aesthetics**. All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

(314 CMR 4.05(3)(a)5.; (3)(b)5.; (3)(c)5.; (4)(a)5.; (4)(b)5.; and (4)(c)5.) **Solids**. These waters shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

(314 CMR 4.05(3)(b)7. and (4)(b)7.) **Oil and Grease**. These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

To ensure compliance with these narrative water quality standards, Table A.1 of the permit would include a reporting requirement for “Aesthetics,” and a footnote which more specifically requires the following monitoring requirements:

Once per month, the Permittee shall conduct a visual inspection of the receiving water in the vicinity of the outfall and report any changes that may be caused by the discharge as follows:

- 1) any observable change in odor,
- 2) any visible change in color,
- 3) any visible change in turbidity,
- 4) the presence or absence of any visible floating materials, scum or foam,
- 5) the presence or absence of any visible settleable solids, or
- 6) the presence or absence of any visible film or sheen on the surface of the water or coating the banks of the water course.

The Permittee shall report to EPA and MassDEP any complaints it receives from the public regarding taste and/or odor and document what remedial actions, if any, it took to address such complaints.

The results do not need to be submitted each month. Rather, a summary of the 12 monthly visual inspections as well as any complaints received from the public regarding the taste of the receiving water shall be submitted as an electronic attachment to the December DMR, which is due each January 15<sup>th</sup> for the previous calendar year.

If an oily sheen is observed on the surface of the water in the vicinity of the outfall during the monthly visual inspection, the Permittee shall follow the procedures described above related to accelerated WET testing and potentially (if the accelerated tests demonstrate toxicity) conduct a TIE/TRE.

The Massachusetts “aesthetics” narrative water quality standard also seeks to protect against any discharge that, “produce[s] undesirable or nuisance species of aquatic life.” Because the production of undesirable or nuisance species of aquatic life is most commonly caused by the discharge of excess nutrients, this portion of the standard is addressed through compliance with the requirements described in the nitrogen section of the 2024 Fact Sheet and the corresponding nitrogen limit in the permit.

The “solids” narrative water quality standard also requires that waters shall be “free from floating, suspended and settleable solids...that would impair the benthic biota or degrade the chemical composition of the bottom.” A Benthic Survey requirement, as discussed below, would address this portion of the standard particularly with respect to settleable solids. In addition, total suspended solids (TSS) requirements in the permit are proposed based on secondary treatment standards as described in the TSS section of the 2024 Fact Sheet.

The “oil & grease” narrative water quality standard also prohibits the receiving water from being deleterious or toxic to aquatic life. This portion of the standard is addressed in the Whole Effluent Toxicity section of the 2024 Fact Sheet.

### Benthic Survey

Massachusetts Surface Water Quality Standards address bottom pollutants at 314 CMR 4.05(5)(b), which requires that “[a]ll surface waters shall be free from pollutants in concentrations or combinations or from alterations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms.”

To ensure compliance with these standards, the permit would require that the Permittee conduct a benthic survey to assess impacts from the discharge to aquatic life in the benthic environment. The permit would include a requirement of one such survey this permit term during the third calendar quarter (*i.e.*, July through September) that begins at least 12 months

from the effective date of the permit. The third calendar quarter represents the season of relatively low flow when the discharge has less dilution and is, therefore, more likely to impact the benthic population. The initial 12 months of the permit term allows the Permittee sufficient time to plan for this survey after permit issuance while ensuring results are available relatively soon in case further action is needed to protect the benthic population. The results of the benthic survey will assist EPA in the development of any future permit conditions needed to ensure compliance with 314 CMR 4.05(5)(b).

The specific proposed requirements would include:

Benthic grab samples shall be taken at three locations sited along each of two transects (one immediately upstream/upgradient of the discharge at a location considered to be unimpacted by the discharge, and one downstream/downgradient of the discharge immediately outside of the estimated zone of initial dilution). Along each transect, duplicate samples shall be taken in the thalweg along with sites near each shoreline, for a total of six samples along each transect and 12 samples total. Organisms shall be sorted and identified to the lowest possible taxonomic level. Counts shall be standardized to densities per square meter of bottom. To characterize the bottom, grain size samples shall be collected at each grab site.

Taxonomy must be performed by a professional freshwater macroinvertebrate taxonomist who, at a minimum, holds and maintains for the duration of the contract a certification from the Society of Freshwater Science for eastern genera in group 1 (Crustacea and Arthropods other than EPT and Chironomidae), group 2 (Ephemeroptera, Plecoptera, and Trichoptera nymphs and larvae only) and group 3 (Chironomidae larvae only).

A report summarizing the results and comparing the upstream and downstream benthic populations shall be submitted by the following January 15 as an electronic attachment to the DMR.

### **2.1.2 CSO-Related Alternative Permit Conditions**

With respect to the CSO outfalls, EPA is proposing alternative permit conditions and monitoring requirements deemed to be necessary to properly regulate CSO discharges in lieu of the challenged narrative provision that discharges “shall not cause or contribute to violations of federal or state water quality standards.” Unlike the narrative provisions addressed above regarding the POTW outfall (*i.e.*, those removed from Part I.A.3-7 and similar provisions included in Part I.J as state certification conditions), EPA understands that Massachusetts does not intend to include this narrative provision in its 401 certification. Without this narrative provision, the permit would lack any controlling effluent requirements for (1) aesthetics, (2) bacteria, and (3) toxicity of the CSO discharges. Therefore, EPA is including permit conditions related to (1) aesthetics, (2) bacteria, and (3) toxicity for the CSO discharges, as discussed in more detail below.

### Aesthetics

To ensure that the CSO outfalls also comply with the Massachusetts narrative water quality standards presented in Section 2.1.1 above (under the heading *Visual Inspection of the Receiving Water*), the 2025 Revised Draft Permit includes two requirements below that apply to each CSO outfall.

1. The discharge shall not cause a change in color or odor or result in visible floating materials, grease, oil, scum, or foam in the receiving water in the vicinity of the outfall.
2. The discharge shall be free from oil, grease, or petrochemicals that produce a visible film on the surface of the receiving water in the vicinity of the discharge or coat the banks of the water course in the vicinity of the outfall.

Compliance with these requirements can be easily ascertained by direct observation of each outfall during or immediately after a discharge event.

### Bacteria

For CSO outfalls to Class SB waters (*i.e.*, Mount Hope Bay and Taunton River), the current applicable MA SWQS at 314 CMR 4.05(4)(b)4.a states “[w]aters designated for shellfishing shall not exceed a fecal coliform median or geometric mean MPN of 88 organisms per 100 ml, nor shall more than 10% of the samples exceed an MPN of 260 per 100 ml...” To ensure that the CSO outfalls discharging to SB waters do not violate this standard, the 2025 Revised Draft Permit contains a maximum daily *fecal coliform* limit of 260 organisms per 100 ml for each CSO outfall. Given that CSO discharges are intermittent, a monthly average limit is not applied. The monitoring frequency shall be once per year during the first two (2) hours of the start of the discharge, and every hour thereafter for a duration of four (4) hours.

Additionally, each CSO outfall to Class SB waters includes a maximum daily limit for *Enterococci* of 104 cfu/100 ml consistent with the MA SWQS at 4.05(4)(b)4.b and the *Final Pathogen TMDL for the Narragansett/Mt. Hope Bay Watershed* (July 2010)<sup>3</sup> for the protection of recreational uses in Class SB waters. The monitoring frequency shall be once per year during the first two (2) hours of the start of the discharge, and every hour thereafter for a duration of four (4) hours.

For CSO outfalls to Class B waters (*i.e.*, Quequechan River), the 2025 Revised Draft Permit includes a maximum daily limit of 410 colonies/100 ml consistent with MA SWQS at 314 CMR 4.05(5)(f)1 for the protection of recreational uses in Class B waters. The monitoring frequency shall be once per year during the first two (2) hours of the start of the discharge, and every hour thereafter for a duration of four (4) hours.

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<sup>3</sup> See Table ES-2 of the TMDL at: [https://attains.epa.gov/attains-public/api/documents/actions/MA\\_DEP/38904/107197](https://attains.epa.gov/attains-public/api/documents/actions/MA_DEP/38904/107197).

Additionally, EPA notes that the two CSO Treatment Facilities (Outfalls 011 and 013) have bacteria and total residual chlorine (TRC) limits described in Part I.H.6 of the permit. Pursuant to the 2021 Administrative Order on Consent, the City currently is required to follow a Monitoring Protocol which includes sampling for TRC three times per storm and sample for fecal coliform bacteria four times per year at the two CSO Treatment Facilities. To ensure consistent compliance throughout the year with the bacteria and TRC limits established in this permit, the monitoring frequency has been increased from 2/year to 1/month. EPA finds this increased frequency to be necessary to fully characterize the discharge due to potential seasonal variability associated with CSO discharges and to verify the treatment capacity of these facilities to handle variable seasonal flows and loads.

### Toxicity

EPA notes that CSO discharges not only have the potential to violate water quality standards related to bacteria but also contain a wide variety of toxic pollutants. To characterize the CSO outfalls with respect to toxic pollutants, the 2025 Revised Draft Permit includes a requirement that CSO outfalls 004, 008, 010 and 014 conduct annual sampling for the pollutants listed in Attachment G (List for Pollutant Scans) of the 2025 Revised Draft Permit. These four CSO outfalls were chosen because they represent approximately 95% of the total CSO volume (based on Table 8 of the February 2024 Fact Sheet). Therefore, EPA considers that characterizing these four outfalls is sufficient to understand the pollutants in all of the CSO discharges from the City. EPA notes that these data may be used in a future permitting action to develop and establish additional water quality-based effluent limits for other toxic pollutants, as necessary to ensure that the permit is protective of water quality standards.

### **3.0 STATE CERTIFICATION**

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the 2025 Revised Draft Permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQs or it is deemed that the state has waived its right to certify. Regulations governing state certification are set forth in 40 CFR §§ 124.53 and 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the 2025 Revised Draft Permit will be certified.

If the State believes that any conditions more stringent than those contained in the 2025 Revised Draft Permit are necessary to meet the requirements of either the CWA §§ 208(e), 301, 302, 303, 306 and 307, and with appropriate requirements of State law, the State should include such conditions in the certification. The only exception to this is that the sludge conditions/requirements implementing Section 405(d) of the CWA are not subject to the Section 401 State Certification requirements. Reviews and appeals of limitations and conditions attributable to State Certification shall be made through the applicable procedures of the State and may not be made through the applicable procedures of 40 CFR § 124.

In addition, the State may provide a statement of the extent to which any condition of the 2025 Revised Draft Permit can be made less stringent without violating the requirements of State law, including water quality standards.

It should be noted that under CWA § 401, EPA's duty to defer to considerations of state law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by state law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." See 40 CFR § 124.55(b). EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR § 122.4(d) and 40 CFR § 122.44(d).

See Section 2.0 of this Statement of Basis above for a detailed discussion of the expected state certification conditions (presented in Part I.J of the 2025 Revised Draft Permit) and the potential impact to the permit. Note that the draft state certification will also be made available for public comment<sup>4</sup> by the State separately from this Draft Permit as part of the permit reissuance process. EPA does not have authority to make changes to the state certification conditions. Any comments regarding the draft state certification conditions should be made directly to MassDEP as part of that separate public notice.

#### **4.0 PUBLIC COMMENTS, HEARING REQUESTS AND PERMIT APPEALS**

All persons, including applicants, who believe any condition of the 2025 Revised Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the permit writer, Michael Cobb, at the following email address: [Cobb.Michael@epa.gov](mailto:Cobb.Michael@epa.gov).

Prior to the close of the public comment period, any person may submit a written request to EPA for a public hearing to consider the 2025 Revised Draft Permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the criteria stated in 40 CFR § 124.12 are satisfied. In reaching a final decision on the 2025 Revised Draft Permit, EPA will respond to all significant comments in a Response to Comments document attached to the Final Permit and make these responses available to the public on EPA's website.

Following the close of the comment period, and after any public hearings, if such hearings are held, EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who submitted written comments or requested notice. Within 30 days after EPA serves notice of the issuance

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<sup>4</sup> Once the public notice period for the MassDEP's draft 401 certification begins, it will be posted here: <https://www.mass.gov/info-details/massdep-permits-approvals-for-comment>. Following MassDEP's public notice period, the draft certification will be moved to here: <https://www.mass.gov/info-details/massachusetts-draft-individual-surface-water-discharge-permits-and-associated-documents>.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION 1 (EPA)  
WATER DIVISION  
5 POST OFFICE SQUARE  
BOSTON, MASSACHUSETTS 02109

EPA PUBLIC NOTICE OF A REVISED DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE UNITED STATES UNDER SECTION 402 OF THE CLEAN WATER ACT (CWA), AS AMENDED.

PUBLIC NOTICE PERIOD: **January 16, 2025 to February 18, 2025**

PERMIT NUMBER: MA0100382

NAME AND MAILING ADDRESS OF APPLICANT:

City of Fall River Sewer Commission  
One Government Center  
Fall River, MA 02722

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Fall River Wastewater Treatment Plant (WWTP)  
1979 Bay Street  
Fall River, MA 02724 and 18 combined sewer overflow (CSO) outfalls

RECEIVING WATER AND CLASSIFICATION:

Mount Hope Bay (MA61-06); Class SB - CSO [Outfall 001 and 7 CSOs]  
Taunton River (MA62-04); Class SB - CSO [4 CSOs]  
Quequechan River (MA61-05); Class B – Warm Water Fishery and CSO [7 CSOs]

PREPARATION OF THE REVISED DRAFT PERMIT:

EPA is issuing for public notice and comment the Revised Draft NPDES Permit for the Fall River WWTP, which discharges treated domestic and industrial wastewater. Sludge from this facility is transported to Cranston, RI for incineration. The effluent limits and permit conditions have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at 314 CMR 4.00. MassDEP cooperated with EPA in the development of the Revised Draft NPDES Permit. MassDEP retains independent authority under State law to publish for public notice their CWA § 401 certification and a separate state Surface Water Discharge Permit for the discharge, not the subject of this notice, under the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53.

## INFORMATION ABOUT THE REVISED DRAFT PERMIT:

The Revised Draft Permit and explanatory Statement of Basis may be obtained at no cost at <https://www.epa.gov/npdes-permits/massachusetts-draft-individual-npdes-permits> or by contacting:

Michael Cobb  
Telephone: (617) 918-1369  
Email: [Cobb.Michael@epa.gov](mailto:Cobb.Michael@epa.gov)

Any electronically available documents that are part of the administrative record can be requested from the EPA contact above.

## PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARINGS:

All persons, including applicants, who believe any revised condition of this Revised Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by **February 18, 2025**, which is the close of the public comment period. Comments should be submitted to the EPA contact at the email listed above. If you prefer to submit comments by mail, please call or email the EPA contact above to make arrangements for that. Upon the close of the public comment period, EPA will make all comments available to MassDEP. All commenters who want MassDEP to consider their comments in the state decision-making processes (*i.e.*, the separate state permit and the CWA § 401 certification) must submit such comments to MassDEP during the state comment period for the state Draft Permit and CWA § 401 certification. For information on submitting such comments to MassDEP, please follow the instructions found in the state public notice at: <https://www.mass.gov/service-details/massdep-public-hearings-comment-opportunities>.

Any person, prior to the close of the EPA public comment period, may submit a request in writing to EPA for a public hearing on the Revised Draft Permit under 40 CFR § 124.10. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the Regional Administrator finds that response to this notice indicates significant public interest.

In reaching a final decision on this Revised Draft Permit, the Regional Administrator will respond to all significant comments and make the responses available to the public.

## FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and notify the applicant and each person who has submitted written comments or requested notice.

KEN MORAFF, DIRECTOR  
WATER DIVISION  
U.S. EPA – REGION 1

**AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

**City of Fall River Sewer Commission  
One Government Center  
Fall River, MA 02722**

is authorized to discharge from a facility located at

**Fall River Wastewater Treatment Plant  
1979 Bay Street  
Fall River, MA 02724  
Discharge serial number 001 (See Attachment A); and,  
19 combined sewer overflow (CSO) discharge locations (See Attachment B)**

to the receiving waters named Mount Hope Bay (outfall 001 and 7 CSOs), Taunton River (4 CSOs), and Quequechan River (8 CSOs) in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective 60 days after the date of signature.

This permit and the authorization to discharge expire at midnight, five years from the effective date.

This permit supersedes the permit issued on February 8, 1995.

This permit consists of 17 pages in Part I including effluent limitations, monitoring requirements, etc., and 35 pages in Part II including General Conditions and Definitions, and Attachment A, Discharge 001; Attachment B, CSO discharge listing; Attachment C, Industrial Pre-Treatment Annual Report Guidance; Attachment D, Marine Chronic Toxicity Test Procedures and Protocol; and Attachment E, CTDEP Nitrogen Removal Program for Long Island Sound.

Signed this 7<sup>th</sup> day of December, 2000

/SIGNATURE ON FILE/

Linda M. Murphy, Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Boston, MA

Glenn Hass, Acting Assistant Commissioner  
Bureau of Resource Protection  
MA Department of Environmental Protection  
Boston, MA

**PART I****A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1.a. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number 001. Such discharge shall be limited and monitored by the permittee as specified below.

<u>Effluent Characteristic</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u>	
	<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow, MGD	30.9 <sup>*1</sup>	----	Report	Continuous <sup>*1</sup>	See Footnote *1
BOD <sub>5</sub> , mg/l	30	45	Report	5/Week <sup>*2</sup>	24-Hour Composite <sup>*3</sup>
lbs/day	7730	11600	Report	5/Week <sup>*2</sup>	24-Hour Composite <sup>*3</sup>
TSS, mg/l	30	45	Report	5/Week <sup>*2</sup>	24-Hour Composite <sup>*3</sup>
lbs/day	7730	11600	Report	5/Week <sup>*2</sup>	24-Hour Composite <sup>*3</sup>
pH	(See Condition I.A.1.d. on Page 5)			1/Day	Grab
Fecal Coliform Bacteria, <sup>*4</sup> organisms/100 ml	200	----	400	3/Week	Grab
Total Residual Chlorine, <sup>*5</sup> ug/l	42.5	----	73.7	3/Day	Grab
Ammonia-Nitrogen, mg/l	Report	----	----	See footnote *6	24-Hour Composite <sup>*3</sup>
Total Kjeldahl Nitrogen, mg/l	Report	----	----	See footnote *6	24-Hour Composite <sup>*3</sup>
Total Nitrate, mg/l	Report	----	----	See footnote *6	24-Hour Composite <sup>*3</sup>
Total Nitrite, mg/l	Report	----	----	See footnote *6	24-Hour Composite <sup>*3</sup>
Copper, Total Recoverable, <sup>*7</sup> ug/l	22	—	33	2/Month	24-Hour

<u>Effluent Characteristic</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u>	
	<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Lead, Total Recoverable, <sup>*8</sup> ug/l	48.3	----	Report	1/Month	24-Hour Composite <sup>*3</sup>
LC <sub>50</sub> <sup>*9,*12,*13</sup>	----	----	100%	4/Year <sup>*11</sup>	24-Hour Composite <sup>*3</sup>
Chronic NOEC <sup>*12,*13</sup>	----	----	≥ 18% <sup>*10</sup>	4/Year <sup>*11</sup>	24-Hour Composite <sup>*3</sup>

Footnotes:

- \*1. For flow, report maximum and minimum daily rates and total flow for each operating date. The flow limit is an annual average. The annual average flow shall be reported each month and shall be calculated using the monthly average flow from the reporting month and the monthly average flows from the preceding 11 months.
- \*2. Sampling is required for influent and effluent.
- \*3. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one working day.
- \*4. Fecal coliform monitoring will be conducted year round. This is a state certification requirement. The monthly average limit is expressed as a geometric mean.
- \*5. The minimum detection level (ML) for total residual chlorine (TRC) is defined as 50 ug/l. This value is the minimum detection level for chlorine using EPA approved methods found in Standard Methods for the Examination of Water and Wastes, 20th Edition, Method 4500 CL-E and G, or USEPA Manual of Methods of Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 50 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 50 ug/l or less shall be reported as zero on the discharge monitoring report.
- \*6. The sampling frequency shall be 1/week during the period from April 1 through October 31, and 1/month from November 1 through March 31. Sampling is required for influent and effluent.

- \*7. The minimum detection level (ML) for copper is defined as 5.0 ug/l. This value is the minimum detection level for copper using the Furnace Atomic Absorption analytical method. Sample results of 5 ug/l or less shall be reported as zero on the discharge monitoring report.
- \*8. See Part I.B., Schedule of Compliance. Monitoring results for lead will be report-only for the first year of the permit; the limitations will be effective one year from the effective date of the permit. The minimum detection level (ML) for lead is defined as 1.0 ug/l. This value is the minimum detection level for lead using the Furnace Atomic Absorption analytical method. Sample results of 1 ug/l or less shall be reported as zero on the discharge monitoring report.
- \*9. The  $LC_{50}$  is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
- \*10. The "18% or greater" limit is defined as a sample which is composed of 18% (or greater) effluent, the remainder being dilution water. This is a maximum daily limit derived as a percentage of the inverse of the dilution factor of 5.67.
- \*11. The permittee shall conduct 7-day Chronic (and Modified Acute) toxicity tests using the Inland Silverside (Menidia beryllina) and the Sea Urchin (Arbacia punctulata) four times per year. Toxicity test samples shall be collected during the second week of March, June, September, and December. Results are to be submitted by the 30th day of the second month after the sample (i.e., May, August, November, and February). The tests must be performed in accordance with test procedures and protocols specified in **Attachment D** of this permit.
- \*12. These requirements may be modified at the written request of the permittee if there is sufficient data to indicate a minimal impact on the receiving water.
- \*13. Required by State Water Quality Certification.

Part I.A.1. (continued)

- b. In addition to the effluent and monitoring requirements listed in Part I.A.1.a. of this permit, the discharge shall not cause or contribute to an exceedance of the current state water quality standards.
- c. Samples taken in compliance with the monitoring requirements stated above shall be taken at a point prior to mixing with other streams and shall be representative of the discharge.
- d. The pH of the discharge shall not be less than 6.5 nor greater than 8.5 at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.

- e. The effluent shall be free from floating, suspended and settleable solids in concentrations or combinations that would: (1) impair any use assigned to class SB waters, (2) cause aesthetically objectionable conditions, (3) impair the benthic biota, or (4) degrade the chemical composition of the bottom.
- f. The effluent shall not cause or contribute to an exceedance of the water quality standard which requires that the receiving water shall be free from oil and grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.
- g. When the effluent has discharged for a period of 90 consecutive days and exceeds 80 percent of the designed flow, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.
- h. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
- i. Within 270 days of the effective date of this permit, the permittee shall submit a report to EPA and the MADEP that evaluates options for optimizing the removal of nitrogen from the wastewater treatment plant. The report shall include: (1) a summary of treatment plant upgrades and operational modifications, including costs, that could be implemented to enhance the removal of nitrogen. Particular emphasis shall be placed on the feasibility of biological nutrient removal retrofits, such as have been implemented successfully at many Connecticut wastewater treatment plants. (See **Attachment E**). Upgrades and operational modifications which are evaluated shall be based on conditions following the implementation of the City's CSO abatement plan; (2) schedules estimating the time which would be required to implement each of the upgrades and operational modifications; and (3) identify the sources of nitrogen discharged to its wastewater treatment facility, identify opportunities to reduce and/or equalize nitrogen discharges, and to submit a report of these activities.

The permittee shall implement the operational control recommendations made pursuant to (1) above and the recommendations made pursuant to item (3) above upon approval by EPA and MADEP. This permit does not require that treatment plant upgrades evaluated pursuant to item (1) be implemented. Requirements to complete treatment plant upgrades will be incorporated into the permit through permit modification procedures or permit reissuance.

2. All POTWs must provide adequate notice to the Director of the following:
  - a. Any new introduction of pollutants into that POTW from an indirect discharger which would be subject to Section 301 or 306 of the CWA if it were directly discharging those pollutants; and
  - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
  - c. For purposes of this paragraph, adequate notice shall include information on:
    - (1) the quantity and quality of effluent introduced into the POTW; and
    - (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
3. Prohibitions Concerning Interference and Pass-Through:
  - a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
  - b. If, within 30 days after notice of an interference or pass through violation has been sent by EPA to the POTW, and to persons or groups who have requested such notice, the POTW fails to commence appropriate enforcement action to correct the violation, EPA may take appropriate enforcement action.
4. Toxics Control
  - a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
  - b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.
5. Numerical Effluent Limitations for Toxicants

EPA or the MADEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

**B. SCHEDULE OF COMPLIANCE**

Since the average monthly lead limit is new for this permit, and since the previous lead effluent data demonstrates exceedances of this limit, this permit allows a compliance schedule of one year from the effective date of this permit. Specifically, the permittee shall report the lead concentrations during the first year of this permit, while working towards meeting the limitation.

**C. SLUDGE CONDITIONS**

1. Standard Conditions

- a. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and the Clean Water Act section 405(d) technical standards.
- b. The permittee shall comply with the more stringent of either the state or federal requirements.
- c. No person shall fire sewage sludge in a sewage sludge incinerator except in compliance with the requirements of 40 CFR Part 503 Subpart E.

2. Pollutant Limitations

- a. Firing of sewage sludge shall not violate the requirements of the national Emission Standard for beryllium in 40 CFR Part 61, Subpart C - 10 grams per 24 hour period.
- b. Firing of sewage sludge shall not violate the requirements in the National Emission Standard for mercury in 40 CFR Part 61, Subpart E - 3200 grams per 24 hour period.
- c. The daily concentration of the metals in the sewage sludge fed to the incinerator shall not exceed the limits specified below (dry weight basis):

	<u>Maximum Daily</u>
Arsenic.....	2,804 mg/kg
Cadmium.....	.884 mg/kg
Chromium.....	10,923 mg/kg
Lead.....	16,002 mg/kg
Nickel.....	2.4 x 10 <sup>5</sup> mg/kg

3. Operational Standards

- a. The monthly average concentration for Total Hydrocarbons (THC), corrected to zero percent moisture and to seven percent oxygen, in the exit gas from the

sewage sludge incinerator shall not exceed 100 ppm on a volumetric basis.

- b. The measured THC concentration shall be corrected to zero percent moisture using the correction factor below:

$$\text{Correction factor} = \frac{1}{(1-X)}$$

Where: X = decimal fraction of the percent moisture in the sewage sludge incinerator exit gas in hundredths.

- c. The measured THC concentration shall be corrected to seven percent oxygen using the correction factor below:

$$\text{Correction factor} = \frac{14}{(21-Y)}$$

Where: Y = percent oxygen concentration in the sewage sludge incinerator stack exit gas (dry volume/dry volume).

- d. The measured THC value shall be multiplied by the correction factors in items 3b and 3c. The corrected THC value shall be used to determine compliance with paragraph 3a.

#### 4. Carbon Monoxide Operation Standard

The management practices in Paragraphs 5a and 5b, and the frequency of monitoring requirements for total hydrocarbon concentration in paragraph 6f, do not apply if the following conditions are met:

- a. The exit gas from the sewage sludge incinerator stack is monitored continuously for carbon monoxide.
- b. The monthly average concentration of carbon monoxide in the exit gas from the sewage sludge incinerator stack, corrected for zero percent moisture and to seven percent oxygen, does not exceed 100 ppm on a volumetric basis.

#### 5. Management Practices

- a. An instrument that continuously measures and records the THC concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated and maintained for the incinerator.
- b. The total hydrocarbons instrument shall employ a flame ionization detector; shall have a heated sampling line maintained at a temperature of 150 degrees Celsius or higher at all times; and shall be calibrated at least once every 24-

hour operating period using propane.

- c. An instrument that continuously measures and records the oxygen concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated and maintained for the incinerator.
- d. An instrument that continuously measures and records combustion temperatures shall be installed, calibrated operated and maintained for the incinerator.
- e. Operation of the incinerator shall not cause the operating combustion temperature for the incinerator to exceed the performance test combustion temperature by more than 20 percent.
- f. Any air pollution control devices used shall be appropriate for the type of incinerator, and the operating parameters for the air pollution control device shall be adequate to indicate proper performance of the air pollution control device. For incinerators subject to the requirements of 40 CFR subpart O, operation of the air pollution control device shall not violate the air pollution control device requirements of that part.
- g. Sewage sludge shall not be fired in an incinerator if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.
- h. The permittee shall notify the EPA and the MADEP if any continuous emission monitoring equipment is shut down or broken down for more than 72 hours while the incinerator continues to operate.
- i. Notification shall include the following:
  - i. The reason for the shut down or break down;
  - ii. Steps taken to restore the system;
  - iii. Expected length of the down time; and
  - iv. The expected length of the incinerator operation during the down time of the monitoring system.
- j. Break downs or shut downs of less than 72 hours shall be recorded in the operations log along with an explanation of the event.
- k. Copies of all manufacturer's instructions shall be kept on file and shall be available during inspections.

## 6. Monitoring Frequency

- a. The frequency of monitoring beryllium shall be as required in 40 CFR Part 61, Subpart C.
- b. The frequency of monitoring for mercury shall be as required in 40 CFR Part 61, Subpart E.
- c. The pollutants in paragraph 2c shall be monitored at the following frequency - 6/year.
- d. After the sewage sludge has been monitored for the pollutants in paragraph 5c for two years at the frequency specified above, the permittee may request a reduction in the monitoring frequency.
- e. The operating parameters for the air pollution control devices shall be monitored at the following frequency - 1/day.
- f. The THC concentration in the exit gas; the oxygen concentration in the exit gas; information from the instrument used to determine moisture content; and combustion temperatures shall be monitored at the following frequency - continuously.

## 7. Sampling and Analysis

- a. The sewage shall be sampled at a location which is prior to entering the incinerator and provides a representative sample of the sewage sludge being incinerated.
- b. The metals in the sewage sludge shall be analyzed using “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods”, EPA publication SW-846, Second Edition (1982) with Updates I (April 1984) and II (April 1985) and Third Edition (November 1986) with Revision I (December 1987).
- c. If emission testing is done for demonstration of NESHAPS, testing shall be in accordance with Method 101A in 40 CFR part 60, Appendix B, “Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators”.
- d. Sewage sludge samples for mercury shall be sampled and analyzed using Method 105 in 40 CFR part 61, Appendix B, “Determination of Mercury in Wastewater Treatment Plant Sewage Sludge”.

## 8. Record Keeping Requirements

- a. The concentrations of the pollutants in paragraph 2c. Report the maximum value of each pollutant.
- b. The THC/CO concentration in the exit gas from the incinerator stack. Report the average monthly concentration.
- c. Information that demonstrates compliance with the national Emission standard for beryllium.
- d. Information that demonstrates compliance with the National Emission standard for mercury. If sludge sampling is used, include calculations for a compliance demonstration.
- e. The operating combustion temperature for the sewage sludge incinerator.
- f. Values for the air pollution control devices operating parameters. Report average monthly values.
- g. The oxygen concentration and the information used to measure moisture content in the exit gas from the sewage sludge incinerator. Report the oxygen concentration and percent moisture results which were used to determine the THC/CO values reported in paragraph 8b.
- h. The sewage sludge feed rate to the incinerator. Record the average daily and average monthly feed rate.
- i. The stack height of the incinerator.
- j. The dispersion factor for the site where the incinerator is located.
- k. The control efficiency for arsenic, lead, chromium, cadmium and nickel.
- l. A calibration and maintenance log for the instruments used to measure the THC/CO concentration and the oxygen concentration in the exit gas; the information need to determine moisture content in the exit gas; and the combustion temperatures.

## 9. Reporting

The permittee shall report the information in paragraphs 8 a.- h. annually by February 19.

**D. DEVELOPMENT OF LIMITATIONS FOR INDUSTRIAL USERS:**

1. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
2. The permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and have had an opportunity to respond.

**E. INDUSTRIAL PRETREATMENT PROGRAM**

1. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR 403. At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):
  - a. Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.
  - b. Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
  - c. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.
  - d. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
2. The permittee shall provide the EPA (and the MADEP) with an annual report describing the permittee's pretreatment program activities for the twelve month period ending 60 days prior to the due date in accordance with 403.12(i). The annual report shall be consistent with the format described in **Attachment C** of this permit and shall be submitted no later than October 31 of each year.
3. The permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR § 403.18(c).

4. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR § 405 et. seq.
5. The permittee must modify its pretreatment program to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The permittee must provide EPA, in writing, within 180 days of this permit's effective date proposed changes to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the permittee must address in its written submission the following areas: (1) Enforcement response plan, (2) revised sewer use ordinances, and (3) slug control evaluations. The permittee will implement these proposed changes pending EPA New England's approval under 40 CFR § 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.A.3.b.

#### **F. COMBINED SEWER OVERFLOWS (CSO)**

1. During wet weather, the permittee is authorized to discharge storm water/wastewater from combined sewer outfalls listed in **Attachment B** of this permit, subject to the following effluent limitations:
  - a. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT) to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgement (BPJ) determination that BPT, BCT, and BAT for combined sewer overflows (CSOs) include the implementation of Nine Minimum Controls (NMC) specified below.
    - (1) Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows.
    - (2) Maximum use of the collection system for storage.
    - (3) Review and modification of the pretreatment program to assure CSO impacts are minimized.
    - (4) Maximization of flow to the POTW for treatment.
    - (5) Prohibition of dry weather overflows from CSOs.
    - (6) Control of solid and floatable materials in CSOs.
    - (7) Pollution prevention programs that focus on contaminant reduction activities.
    - (8) Public notification to ensure that the public receives adequate

notification of CSO occurrences and CSO impacts.

- (9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.
  - b. This permit may be reopened to add additional technology-based requirements based on information assembled during Fall River's development of a long-term CSO control plan.
2. The permittee may consolidate CSO reports which are on similar reporting schedules.
  3. The Permittee shall implement paragraphs a. through j. listed below, by the effective date of this permit:
    - a. Each CSO structure/regulator, pumping station and/or tidegate shall be routinely inspected to insure that they are in good working condition and adjusted to minimize combined sewer discharges and tidal surcharging. Such inspections shall occur monthly unless EPA approves a site specific inspection program which has been determined by EPA to provide an equal level of effectiveness.(NMC #1, 2, and 4).
    - b. The following inspection results shall be recorded: the date and time of the inspection, the general condition of the facility, and whether the facility is operating satisfactorily. If maintenance is necessary, the permittee shall record: the description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The permittee shall maintain all records of inspections for at least three (3) years.
    - c. Annually, no later than January 15th, the permittee shall submit a certification to the State and EPA which states that the previous calendar year's monthly inspections were conducted, results recorded, and records maintained.
    - d. The State and EPA have the right to inspect any CSO related structure or outfall, without prior notification to the permittee.
    - e. Discharges to the combined system of septage, holding tank wastes or other material which may cause a visible oil sheen or containing floatable material are prohibited during wet weather when CSO discharges may be active. (NMC# 3, 6, and 7).
    - f. Dry weather overflows (DWOs) are prohibited (NMC# 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and the State within twenty four (24) hours in accordance with the reporting requirements for plant bypass (Paragraph D.1.e. of Part II of this permit).

- g. The permittee shall quantify and record all Fall River discharges from combined sewer outfalls (NMC# 9). Quantification may be through direct measurement or estimation. When estimating, the permittee shall make reasonable efforts (i.e., gaging, measurements) to verify the validity of the estimation technique. The following information must be recorded for each combined sewer outfall for each discharge event:
- (1) Estimated duration (hours) of discharge;
  - (2) Estimated volume (gallons) of discharge; and
  - (3) National Weather Service precipitation data from the nearest gage where precipitation is available at daily (twenty four (24) hour) intervals and the nearest gage where precipitation is available at one-hour intervals.
- h. Cumulative precipitation per discharge event shall be calculated.
- i. The permittee shall maintain all records of discharges for at least six (6) years after the effective date of this permit, as it is collected, on an ongoing basis.
- j. Within 12 months of the effective date of this permit, the permittee shall install and maintain identification signs for all combined sewer outfall structures. The signs must be located at or near the combined sewer outfall structures and easily readable by the public. These signs shall be a minimum of twelve by eighteen (12 x 18) inches in size, with white lettering against a green background, and shall contain the following information:

WARNING:  
WET WEATHER  
SEWAGE DISCHARGE  
FALL RIVER OUTFALL (discharge serial number)

## G. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from outfalls authorized by this permit. (See **Attachments A and B** of this permit). Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) are not authorized by this permit and shall be reported in accordance with Section D.1.e. (1) of the General Requirements of this permit (Twenty-four hour reporting).

## H. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

### 1. Maintenance Staff

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and

conditions of this permit.

## 2. Infiltration/Inflow

The permittee shall eliminate excessive infiltration/inflow to the sewer system. A summary report of all actions taken to minimize infiltration/inflow during the previous calendar year shall be submitted to EPA and the MA DEP by February 28<sup>th</sup> of each year. This report shall also include a graph of flows to the treatment plant during the year and an analysis of I/I trends (i.e., is I/I being reduced). If there have been any unauthorized discharges from the collection system during the previous calendar year which were caused by inadequate sewer system capacity, the permittee shall also include in this report an evaluation of actions necessary to restore adequate capacity.

## 3. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR §122.2).

## 4. Chlorination System Report

Within 3 months of the effective date of the permit, the permittee will submit a report documenting the effectiveness of the chlorination and dechlorination systems. The report will specifically address how flow variability and chlorine demand variability affect compliance with the TRC and fecal coliform limits at all times. Sampling data shall be provided to support conclusions on how hourly and daily flow and chlorine demand variability affects permit compliance. The report will include a description of the chlorination and dechlorination systems and the methods for dosage control. The report will identify all changes necessary to ensure compliance with the TRC and fecal coliform limits at all times, including equipment modifications and upgrades, operational procedures (including calibration procedures and alarm/response procedures), and sampling protocols. The report will include a schedule for implementing all of the necessary changes. An annual report shall be submitted on November 30 of each year summarizing all exceedances of the TRC and fecal coliform effluent limits during the previous year, the estimated or measured fecal coliform and chlorine discharge levels during the exceedance, and measures taken to fix the problem and to prevent future occurrences.

# I. MONITORING AND REPORTING

## 1. Reporting

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the month following the effective date of the permit. Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency  
Water Technical Unit (SEW)  
P.O. Box 8127  
Boston, Massachusetts 02114

The State Agency is:

Massachusetts Department of Environmental Protection  
Southeast Regional Office - Bureau of Resource Protection  
20 Riverside Drive  
Lakeville, MA 02347

Signed and dated Discharge Monitoring Report Forms and toxicity test reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection  
Division of Watershed Management  
Surface Water Discharge Permit Program  
627 Main Street, 2nd Floor  
Worcester, Massachusetts 01608

## **J. STATE PERMIT CONDITIONS**

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MADEP) under federal and state law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MADEP pursuant to MGL Chap.21,§43. Each Agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared, invalid, illegal or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.

**Appendix C**  
**Intermunicipal Agreement Fall River & Freetown,  
Tiverton, and Westport**

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**AGREEMENT FOR WASTEWATER TREATMENT  
BETWEEN  
CITY OF FALL RIVER, MASSACHUSETTS  
AND THE TIVERTON WASTEWATER DISTRICT**

THIS AGREEMENT, made and entered into this 31 day of March 2015, by and between the City of Fall River, a Municipal Corporation within the Commonwealth of Massachusetts, in the County of Bristol, acting through its Sewer Commission, hereinafter called the "City", party of the first part, and the Tiverton Wastewater District, created by a Special Act of the Legislature of the State of Rhode Island and Providence Plantations, hereinafter called the "District", party of the second part, and

WHEREAS, THE City owns and operates a wastewater treatment works in order to treat wastewater originating in the District and the City, and

WHEREAS, the District intends to discharge into the City wastewater collection and/or treatment works, sanitary and/or industrial wastewaters for treatment at the City's wastewater treatment works, and

NOW THEREFORE, in consideration of these premises and mutual benefits to be derived by the parties hereto, an Agreement is prepared in the following form:

**SECTION 1. DEFINITIONS**

Section 1.1 – For the purpose of this Agreement, the following terms are defined:

1.1.1 "Average Daily Flow" shall mean the total annual flow as measured at the metering station and/or agreed points of discharge, divided by the number of days in the year.

1.1.2 "Biochemical Oxygen Demand" (BOD) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at 20 degrees Centigrade (68 degrees Fahrenheit) expressed in milligrams per liter by weight (or pounds per day).

1.1.3 "Industrial Wastes" are the liquid wastes, other than sanitary sewage, resulting from manufacturing and/or industrial operations or processes or drains.

1.1.4 "Maximum Daily Flow" shall mean the maximum flow recorded at the metering station and/or agreed points of discharge during a 24-hour period during any calendar year.

1.1.5 "Metering Station" shall mean a suitable facility for measuring, recording, and totalizing the flow of wastewater from the District to the Fall River Sewer System.

1.1.6 "Sanitary Sewage" shall mean sewage discharging from the sanitary conveniences such as toilets, washrooms, urinals, sinks, showers, drinking fountains and from kitchens, restaurants, cafeterias and floor drains from industrial, manufacturing or process areas essentially free of industrial wastes or toxic materials.

1.1.7 "Shall" is mandatory; "may" is permissive.

1.1.8 "Total Suspended Solids" (abbreviated TSS) shall mean solids that either float on the surface of, or are in suspension in water, or sewage, or wastewater, or other liquids and which are removable by laboratory filtering, expressed in milligrams per liter by weight (or pounds per day).

1.1.9 "User Charges" shall mean a charge levied on users of the wastewater facilities for the cost of operation and maintenance.

1.1.10 "Wastewater" shall mean the spent water of the participating municipalities and may be a combination of the liquid and water carried wastes from residences, commercial buildings, industrial plants and institutions, together with any infiltration/inflow that may be present.

1.1.11 "Wastewater Treatment Facilities" shall mean all facilities for collection, conveying, pumping, treating and disposing of wastewater.

1.1.12 "District Flow" means the amount of average daily flow of wastewater flowing into the City from the District.

## **SECTION 2. RESPONSIBILITIES OF CITY**

### Section 2.1

The City shall operate and maintain the City's wastewater treatment facility.

### Section 2.2

The City shall receive and dispose of the District's sanitary and industrial wastewater provided the District agrees to adopt such rules, regulations and/or by-laws as are necessary to secure compliance by system users with the standards provided for within this agreement or as otherwise may be amended or in accordance with any applicable local, State or Federal regulations.

### Section 2.3

The City shall receive the District's wastewater at a location or locations mutually agreeable to both parties, all physical connections being subject to the approval of the City.

## **SECTION 3. RESPONSIBILITIES OF THE DISTRICT**

### Section 3.1

The District shall maintain the existing wastewater collection facilities, including any Flow Metering Stations or Flow Meter Facilities. If the District expands sewer services to other areas not currently serviced by the District, the District shall be responsible for financing, planning, constructing and maintaining such wastewater collection facilities. Expansion of sewer services to other areas of the District would require approval by the City if District flow exceeds the District's allotted flow.

### Section 3.2

Characteristics of wastewater delivered to the City's wastewater treatment works by the District and/or any users within the District shall conform to the requirements of wastewater permitted by the City, under its sewer use ordinance as issued and amended from time to time and all applicable local, State and Federal regulations.

### Section 3.3

The District agrees to adopt such rules, regulations and/or by-laws as are necessary to secure compliance by District users with the standards provided for within this Agreement, or as otherwise may be amended and to ensure conformity with the requirements of any agency of the City, the Commonwealth of Massachusetts, or any other governmental agency which may have jurisdiction covering the system. The District agrees to enforce such rules, regulations and/or by-laws. The City shall have the right to require the District to take appropriate legal action against any user connected to the District's sewer collection system to enforce compliance with the terms of this Agreement and user fees owed to the City.

### Section 3.4

As the City has implemented a federally approved Industrial Pretreatment Program and retains the responsibility to protect the Treatment Facility and receiving waters from industrial interference, the District shall convey the right to the City to take appropriate legal action against any system user to enforce compliance with the District's Sewer Use Ordinance. This includes, but is not limited to requiring industrial users to self monitor their discharge and report the results of Self Monitoring activities to the City as prescribed in the industrial user's Discharge Permit; install the proper pretreatment systems if necessary; to submit to inspections for the purpose of documenting compliance; to allow the City to issue industrial discharge permits; and to levy fines or terminate discharge rights for continued non-compliance. All significant industrial users shall obtain and maintain an industrial discharge permit with the city and any other applicable permits.

Section 3.5

The District agrees that the discharge of sanitary and/or industrial wastes containing heavy metals, cyanide and/or toxicity will not be allowed. All wastes to be discharged must be in accordance with the City's Industrial Pretreatment Guidelines presently in effect or any other which may take effect in the future.

Section 3.6

The District hereby agrees that at no time will they intentionally allow the discharge of wastewaters which are economically and/or technically more burdensome to treat than those described in this Section.

Section 3.7

The District hereby agrees that stormwater will not be allowed to enter the sewer system, and inflow and infiltration will be reasonably controlled and minimized.

**SECTION 4. TERM**

The term of this Agreement shall continue for 20 years from the date of execution. At the end of the 20 year term; the Agreement shall continue from year to year thereafter until a new Agreement is executed. Given the infrastructure investment, the critical public health and environmental protection issues related to this agreement; it is the intent of both parties to work to keep this agreement and future amendments continuous for the protections noted herein.

**SECTION 5. IMPLEMENTATION**

Section 5.1

The City agrees to provide wastewater treatment facilities with a portion of the capacity allocated to treat wastewater from the District. The capacity allocated to the District is 2.0 Million Gallons of average daily flow in any month and a peak flow not to exceed 6.0 Million Gallons in any day. This capacity limit may be adjusted by mutual agreement and addenda to the agreement.

Section 5.2

The District shall be allocated 4,170 pounds per day of BOD and 4,170 pounds per day of TSS.

## **SECTION 6. IMPACT FEE TO NEW USERS**

### Section 6.1

All new connections (newly constructed residential, commercial and industrial buildings) to the collection system shall pay a onetime fee to the City of \$1.00 per gallon of the projected flow. Appendix A identifies standard flow projections for various types of residential, commercial and industrial establishments. Non standard facility flow projections not outlined in Appendix A shall be subject to reasonable engineering practices and estimates. The City retains the right for final approval of flow projections. A summary of said payments shall be included in the summary of wastewater flows submitted quarterly by the District.

Existing residential and commercial property shall be exempt from this section except for significant expansion of commercial or industrial property. Municipal buildings shall be exempt from this section. For large new industrial or commercial customers projected to exceed a flow of 25,000 gallons per day, the maximum onetime impact fee shall be limited to \$25,000.

## **SECTION 7. PAYMENTS: OPERATION MAINTENANCE**

### Section 7.1

7.1.1 The District shall make payments towards the costs of operation and maintenance of the wastewater treatment facilities on the following basis: The District shall pay for the total sewer flow discharged on a per gallon basis at a rate as follows:

- a.) The District guarantees that 30,000,000 gallons per fiscal year (40,107 ccf/year) shall be purchased and paid for regardless of use at the current rate of \$6.49/ccf. For fiscal years 2016 and 2017 the minimum shall be 29,000,000 gallons per fiscal year. The fiscal year shall be July 1 to June 30. This rate is 55% above the standard rate charged to Fall River customers ( $\$4.19/\text{ccf} \times 1.55 = \$6.49/\text{ccf}$ ). If user charges identified in Section 74 of Appendix A of the Fall River Revised Ordinances are increased or decreased, the District rate shall be increased or decreased by the same proportionate percent.
- b.) For sewer discharge above 30,000,000 gallons per fiscal year, the District shall pay at a rate that is 5% above the rate charged to Fall River customers. The current Fall River rate is \$4.19/ccf, therefore the rate charged to the District would be \$4.39/ccf ( $\$4.19/\text{ccf} \times 1.05 = \$4.39/\text{ccf}$ ). If user charges identified in Section 74 Appendix A of the Fall River Revised Ordinances are increased or decreased, the District rate shall be increased or decreased by the same proportionate percent.
- c.) Said 30,000,000 gallons per fiscal year (40,107 ccf/year) shall be cumulative over the fiscal year and not mandated on a monthly basis. Billing frequency can be monthly or quarterly upon agreement by the City and the District.

- 7.1.2 Any costs associated with the operation and maintenance and/or capital repairs for the District's sewer system shall be borne 100% by the District.
- 7.1.3 The District is responsible for assuring that all sources of sewer use in the District are properly accounted for.
- 7.1.4 Failure of the District to make payments within 30 days due can be cause for application of interest charges at 14% per annum.

## **SECTION 8. MEASUREMENT OF FLOW AND SAMPLING OF WASTEWATER**

### Section 8.1

The volume of flow used in computing the District's payments shall be based upon readings obtained by suitable flow measurements and recording devices (subject to approval by the City) operated and maintained by the District. The preferred method of measuring flow into the city is by mass flow meters located at each point where wastewater is discharged into the City. Currently three (3) points meet this criteria, the 24" Diameter gravity sewer in Foote Street, the Pumping Station at Mill Street and the Pumping Station at Hurst Lane. It is agreed that, currently there is insufficient flow at Foote Street (the bulk of the wastewater flow into the City) to allow the metering station to accurately measure flow. Until such time as the flow increases to a point where wastewater flow can be accurately measured, the City agrees to accept sewer usage payments based upon water consumption measurements of the North Tiverton Fire District, and/or Stone Bridge Fire District. Users who rely on private wells and are not serviced by the Fire Districts or Water Authorities shall install water meters.

8.1.1 It shall be the responsibility of the District to read said water meters and insure that they accurately record the amount of water used by these customers. In the event that a water meter is not available then flow shall be based upon the projected flows as detailed in APPENDIX A or an agreed upon alternate daily flow agreed upon in advance by the City.

8.1.2 The District shall be responsible for inspecting and maintaining the accuracy and reliability of all flow metering and recording equipment. All costs incurred by the District to inspect and maintain flow recording devices and equipment shall be borne by the District. The City shall be advised of the results of any test on the equipment and the methods employed.

### Section 8.2

The City and District hereby agree that the determination of character and concentration of wastewater and the associated sampling technique shall be in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater" published jointly by the Public Health Association (APHA), the American Water Works Association (AWWA)

and the Water Environment Federation (WEF), or any other method mutually agreed upon by the City and District.

8.2.1 The sampling and determination of the character and concentration of District's wastewater shall be performed by the District if needed. The sampling location will be mutually agreed upon by the District and the City. All costs for sampling and analysis shall be the responsibility of the District.

8.2.2 Samples shall be collected by the District in such a manner as to be representative of the actual quality of the wastewater if needed.

8.2.3 The results of the wastewater sampling and analytical program shall be reported to the City upon request and in accordance with the City's Industrial Pretreatment Program.

8.2.4 The City shall be given full and free access to the District's wastewater metering station (s) as required for the purposes of inspection, measurement, sampling and testing.

8.2.5 In the event the metering equipment is temporarily out of order or service for any reason the volume of wastewater and strength will be based on the period representing the highest volume and strength unless otherwise agreed by both parties on the basis of past experience.

8.2.6 The District shall notify the Sewer Commission immediately in the event that the metering equipment is out of order or service.

8.2.7 The District shall be responsible for facilitating repairs of the metering equipment and the costs associated with said repairs.

## **SECTION 9. RESERVED**

## **SECTION 10. CAPITAL IMPROVEMENTS**

In the event that the City must undertake major repairs, replacement, or add to the joint wastewater collection and treatment facilities or is directed or ordered to provide a higher degree of treatment in the future, or to otherwise modify the process from that contemplated at the time of execution of this Agreement, the net capital cost of such replacement or additional facilities shall be included in the user fee.

## **SECTION 11. RECORDS AND ACCESS**

### **Section 11.1**

The City and District shall maintain complete and accurate books and records concerning all matters relative to this Agreement. Such records shall be open for inspection and making

copies or extracts thereof to accountants and other duly authorized representatives of the other party.

The District records shall include, but not be limited to, as built plans of all sewers, schematics of all connections to sewer, building permits for all facilities connected to sewer, and documents regarding proper operation and maintenance of the District's sewers.

Section 11.2

Both the City and the District agree to make available to representatives and agents of the other for purposes of inspection all facilities and equipment related to each other's wastewater systems .

**SECTION 12. SEPARATE AGREEMENTS**

Any separate agreements relating to wastewater collection and treatment between the District and adjacent municipalities which would result in additional discharges to the City's sewer system must be reviewed and approved by the City. In any event, the District shall in the aggregate be restricted to the wastewater strengths and flows authorized in this agreement, and any increase must be formally contracted for between the District and City.

**SECTION 13. NOTIFICATION OF CHANGE**

The District agrees to notify the City in writing as far in advance as possible of anticipated or planned significant increases or decreases in the quantity and/or quality of the wastes to be discharged to the City's wastewater treatment facilities.

**SECTION 14. TERMINATION**

Section 14.1

For any material breach of this Agreement, continued for three months after notice thereof in writing by other party, either party may terminate this Agreement. Upon receipt of said notice, both parties will enter into discussion within thirty (30) days to assure proper termination of the Agreement.

Section 14.2

There shall be no circumstance under which the City will be obligated to return to the District any portion of the District's capital investment.

Section 14.3

The City maintains the right of refusal to accept the District's waste if any section or subsection of this Agreement is materially violated that could endanger the treatment facilities, public health or the environment. The District shall be notified in writing, and the District shall be granted ninety (90) days to respond to a purported violation of this Agreement. If the matter is of immediate danger to the treatment facilities, public health or the environment, the City retains the right of immediate refusal.

**SECTION 15. AMENDMENTS**

Section 15.1

No amendments to this Agreement shall be effective until adopted by the Fall River City Council.

**SECTION 16. DISTRICT BOUNDARIES**

The District agrees to work cooperatively with the City related to any infrastructure (i.e. sewer mains or services) that may cross District boundaries both in land agreements (i.e. easements) and access for maintenance.

The City agrees to allow the District at no additional cost other than normal tie-in fees to connect isolated properties located on the border of the City and the Town where existing City sewers have the capacity to accept wastewater from said property and it would be cost prohibitive to extend redundant District sewer lines to service the property. City permitting and inspection of all work within the City and/or on sewers maintained by the City shall be required.

The District agrees to allow the City to connect and maintain a sewer from the Lake Avenue neighborhood within the City to the sewer line owned by the District within the Watuppa Plantations development at no cost to the city. The City further agrees to accommodate an equitable credit if the wastewater discharge from the Hurst Lane Pumping station is measured by a master meter at some time in the future so that the District is not paying for wastewater generated by the City.

**SECTION 17. AGREEMENT REPLACEMENT**

This Agreement replaces the prior Agreement with the Town of Tiverton dated June 25, 1996.

IN WITNESS WHEREOF, the respective parties hereto have caused this Agreement to be signed by them and have affixed their hands and seals on the day and year referred to above written.

FALL RIVER SEWER COMMISSION

*[Signature]*  
*Ernest Foley*  
*[Signature]*

CITY OF FALL RIVER

*C. Samuel Luffen*  
Mayor

*[Signature]*  
Corporation Counsel Attesting  
to Form and Manner of Execution

TIVERTON WASTEWATER DISTRICT

By: *George E. Kendrick, Jr.* Chair

## APPENDIX A

### Calculation of Flows

Unless a variance is authorized by the Director in writing, applicants applying for a sewer extension or connection permit shall use the following figures in calculating daily sewage flow in completing the application:

#### **SEWAGE FLOW ESTIMATES:**

<u>Type of Establishment</u>	<u>Gallons per Person per day</u>
Boarding Schools, Colleges	65
Nursing Home and Rest Home	100
School, without cafeteria, gymnasium or showers	10
School, with cafeteria, but not gymnasium and showers	15
School, with cafeteria, gymnasium and showers	20
Swimming Pool	10
Camp, resident – washroom and toilets	25
Camp, resident – mess hall	10
Camp, day – washroom and toilets	10
Camp, day – mess hall	3
Camp Ground – showers and toilets – per site	75
Gymnasium – per spectator	3
Gymnasium – per participant	25
Theater, Auditorium	3
Public Park – toilet wastes only	5
Public Park – bathhouse, showers and flush toilets	10
Factory or Industrial Plant, without cafeteria	15
Factory or Industrial Plant, with cafeteria	20
Work or Construction Camp	50

	<u>Gallons per day</u>
Single and multiple dwelling units – per bedroom, motels, hotels, boarding houses	110
Tennis Club – per court	250
Bowling Alley – per alley	100
Country Club – dining room – per seat	10
Country Club – snack bar or lunch room – per seat	10
Country Club – locker and showers – per locker	20
Church – per seat	3
Church – vestry/kitchen – per person at capacity	5
Trailer, dump station – per site or per trailer	50
Mobile Home Park – per site	200

Office Building – per 1,000 sq. ft.	75
Dry Goods Stores – per 100 sq. ft.	5
Drive-in – per stall	5
Non-single family, Automatic clothes washer – per washing machine	400
Hospital – per bed	200
Service Station, excluding thruway – per island	300
Skating Rink – 3,000 gallons per day plus 5 gallons per seat	300
Dog Pounds – Veterinary Clinics – per pen	50

<u>Type of Establishment</u>	<u>Gallons per Seat or Chair per day</u>
Restaurant, food service establishment, lounge, tavern	35
Restaurant, thruway service area	150
Restaurant, kitchen flow	15
Barber Shop/Beauty Salon per chair	100

AGREEMENT FOR WASTEWATER TREATMENT SERVICES  
BETWEEN  
THE CITY OF FALL RIVER, MASSACHUSETTS  
AND  
THE TOWN OF WESTPORT, MASSACHUSETTS

THIS AGREEMENT, made and entered into this 7th day of January 2019, by and between the **City of Fall River**, a Municipal Corporation within the Commonwealth of Massachusetts in the County of Bristol, **acting through its Sewer Commission** hereinafter called the "City", party of the first part, **and the Town of Westport** a Municipal Corporation, in the County of Bristol, State of Massachusetts, acting through its Board of Selectmen ("Town"), party of the second part.

WHEREAS, the City owns and operates a wastewater treatment works in order to treat wastewater originating in the Town and the City, and

WHEREAS, the Town intends to continue and expand their discharge into the City wastewater collection and/or treatment works with sanitary and/or industrial wastewaters for treatment at the City's wastewater treatment works, and

NOW THEREFORE, in consideration of these premises and mutual benefits to be derived by the parties hereto, an Agreement is prepared in the following form:

**SECTION 1. DEFINITIONS**

Section 1.1 – For the purpose of this Agreement, the following terms are defined:

1.1.1 "Average Daily Flow" shall mean the total annual flow as measured at the metering station and/or agreed points of discharge, divided by the number of days in the year.

1.1.2 "Biochemical Oxygen Demand" (BOD) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at 20 degrees Centigrade (68 degrees Fahrenheit) expressed in milligrams per liter by weight (or pounds per day).

1.1.3 "Industrial Wastes" are the liquid wastes, other than sanitary sewage, resulting from manufacturing and/or industrial operations or processes or drains.

1.1.4 "Maximum Daily Flow" shall mean the maximum flow recorded at the metering station and/or agreed points of discharge during a 24-hour period during any calendar year.

1.1.5 "Metering Station" shall mean a suitable facility for measuring, recording, and totalizing the flow of wastewater from the Town to the Fall River Sewer System.

1.1.6 "Sanitary Sewage" shall mean sewage discharging from the sanitary conveniences such as toilets, washrooms, urinals, sinks, showers, drinking fountains and from kitchens, restaurants, cafeterias and floor drains from industrial, manufacturing or process areas essentially free of industrial wastes or toxic materials.

1.1.7 "Shall" is mandatory; "may" is permissive.

1.1.8 "Total Suspended Solids" (abbreviated TSS) shall mean solids that either float on the surface of, or are in suspension in water, or sewage, or wastewater, or other liquids and which are removable by laboratory filtering, expressed in milligrams per liter by weight (or pounds per day).

1.1.9 "User Charges" shall mean a charge levied on users of the wastewater facilities for the cost of operation and maintenance.

1.1.10 "Wastewater" shall mean the spent water of the participating municipalities and may be a combination of the liquid and water carried wastes from residences, commercial buildings, industrial plants and institutions, together with any infiltration/inflow that may be present.

1.1.11 "Wastewater Treatment Facilities" shall mean all facilities for collection, conveying, pumping, treating and disposing of wastewater.

1.1.12 "Town Flow" means the amount of average daily flow of wastewater flowing into the City from the Town.

## **SECTION 2. RESPONSIBILITIES OF CITY**

### **Section 2.1**

The City shall operate and maintain the City's wastewater treatment facility.

### **Section 2.2**

The City shall receive and dispose of the Town's sanitary and industrial wastewater provided the Town agrees to adopt such rules, regulations and/or by-laws as are necessary to secure compliance by system users with the standards provided for within this agreement or as otherwise may be amended or in accordance with any applicable local, State or Federal regulations.

### **Section 2.3**

The City shall receive the Town's wastewater at a location or locations mutually agreeable to both parties, all physical connections being subject to the approval of the City.

## **SECTION 3. RESPONSIBILITIES OF THE TOWN**

### **Section 3.1**

The Town shall maintain the existing wastewater collection facilities, including any Flow Metering Stations or Flow Meter Facilities. If the Town expands sewer services to other areas not currently serviced by the Town, the Town shall be responsible for financing, planning, constructing and maintaining such wastewater collection facilities.

3.1.1. The Town and the City understand that the sewer pumping station at White's Restaurant and the associated force main and gravity sewers are currently under the control of LaFrance Enterprises.

3.1.2. The Town will manage and coordinate any necessary agreements and/or coordination between the Town and LaFrance Enterprises regarding operation, maintenance and management of the existing sewer infrastructure.

3.1.3. The Town must obtain any necessary approvals from LaFrance Enterprises related to approval of this agreement.

3.1.4. Expansion of sewer services to other areas of the Town would require approval by the City if the Town flow exceeds the Town's allotted flow.

### **Section 3.2**

Characteristics of wastewater delivered to the City's wastewater treatment works by the Town and/or any users within the Town shall conform to the requirements of wastewater permitted by the City, under its sewer use ordinance as issued and amended from time to time and all applicable local, State and Federal regulations.

### **Section 3.3**

The Town agrees to adopt such rules, regulations and/or by-laws as are necessary to secure compliance by Town users with the standards provided for within this Agreement, or as otherwise may be amended and to ensure conformity with the requirements of any agency of the City, the Commonwealth of Massachusetts, or any other governmental agency which may have jurisdiction covering the system. The Town agrees to enforce such rules, regulations and/or by-laws. The City shall have the right to require the Town to take appropriate legal action against any user connected to the Town's sewer collection system to enforce compliance with the terms of this Agreement and user fees owed to the City.

### **Section 3.4**

As the City has implemented a federally approved Industrial Pretreatment Program and retains the responsibility to protect the Treatment Facility and receiving waters from industrial

interference, the Town and/or LaFrance shall convey the right to the City to take appropriate legal action against any system user to enforce compliance with the City's and/or the Town's Sewer Use Ordinance. This includes, but is not limited to requiring industrial users to self-monitor their discharge and report the results of Self-Monitoring activities to the City as prescribed in the industrial user's Discharge Permit; install the proper pretreatment systems if necessary; to submit to inspections for the purpose of documenting compliance; to allow the City to issue industrial discharge permits; and to levy fines or terminate discharge rights for continued non-compliance. All significant industrial users shall obtain and maintain an industrial discharge permit with the city and any other applicable permits.

### Section 3.5

The Town agrees that the discharge of sanitary and/or industrial wastes containing heavy metals, cyanide and/or toxicity will not be allowed. All wastes to be discharged must be in accordance with the City's Industrial Pretreatment Guidelines presently in effect or any other which may take effect in the future.

### Section 3.6

The Town hereby agrees that at no time will they intentionally allow the discharge of wastewaters which are economically and/or technically more burdensome to treat than those described in this Section.

### Section 3.7

The Town hereby agrees that stormwater will not be allowed to enter the sewer system, and inflow and infiltration will be reasonably controlled and minimized.

### Section 3.8

The Parties agree to work cooperatively with one another related to any infrastructure (i.e. sewer mains, drains or service connections) that may cross Town boundaries both in land agreements (i.e. easements) and access for maintenance.

## **SECTION 4. TERM**

The term of this Agreement shall continue for 10 years from the date of execution. At the end of the 10 year term; the Agreement shall continue from year to year thereafter until a new Agreement is executed. Provided, however, that either party may terminate the same on December 31 of any year by giving written notice on or before June 30 of such year. Given the infrastructure investment, the critical public health and environmental protection issues related to this agreement; it is the intent of both parties to work to keep this agreement and future amendments continuous for the protections noted herein.

## **SECTION 5. IMPLEMENTATION**

### **Section 5.1**

The City agrees to provide Wastewater Treatment services with a portion of the capacity allocated to the Town. The capacity allocated is 44,000 GPD.

Current flow allocations are as follows:

White's Restaurant	25,000 GPD
Hampton Inn	10,000 GPD
New Hotel	9,000 GPD
Other Town Use	0 GPD

This capacity limit can be modified by mutual agreement and addenda to the agreement.

## **SECTION 6. IMPACT FEE TO NEW USERS**

### **Section 6.1**

All new connections (newly constructed residential, commercial and industrial buildings) to the collection system shall pay a onetime fee to the City of \$1.00 per gallon of the projected flow. Appendix A identifies standard flow projections for various types of residential, commercial and industrial establishments. Nonstandard facility flow projections not outlined in Appendix A shall be subject to reasonable engineering practices and estimates. The City retains the right for final approval of flow projections. A summary of said payments shall be included in the summary of wastewater flows submitted quarterly by the Town.

Existing residential and commercial property shall be exempt from this section except for significant expansion of commercial or industrial property. Municipal buildings shall be exempt from this section. For large new industrial or commercial customers projected to exceed a flow of 25,000 gallons per day, the maximum onetime impact fee shall be limited to \$25,000.

## **SECTION 7. PAYMENTS: OPERATION MAINTENANCE**

### **Section 7.1**

7.1.1 The Town shall make payments towards the costs of operation and maintenance of the wastewater treatment facilities as billed at the current rate of \$8.34/CCF. This rate is 55% above the standard rate charged to Fall River customers (\$5.38/ccf times 1.55 = \$8.34/ccf). If user charges identified in Section 74 of Appendix A of the Fall River

Revised Ordinances are increased or decreased, the Town's rate shall be increased or decreased by the proportionate percent. Rate increases shall be applicable immediately upon approval by the City and applied to the next invoice to the Town.

Billing frequency will be quarterly. Billing frequency can be increased to monthly upon agreement by the City and the Town.

- 7.1.2 Any costs associated with the operation and maintenance and/or capital repairs for the Town's sewer system shall be borne 100% by the Town. This includes the force main to the point where LePage's Restaurant connects. The Town must have an emergency response plan for repairs approved by the City. Said plan must be submitted to the City and approved by the City within 60 days of execution of this agreement.
- 7.1.3 The Town is responsible for assuring that all sources of sewer use in the Town are properly accounted for.
- 7.1.4 Failure of the Town to make payments within 30 days due can be cause for application of interest charges at 14% per annum.

## **SECTION 8. MEASUREMENT OF FLOW AND SAMPLING OF WASTEWATER**

### **Section 8.1**

8.1.1 The volume of flow used in computing the Town's payment shall be based upon readings obtained by suitable flow measurements and recording devices subject to approval by the City. The sewer metering system shall be operated and maintained by the Town. Alternative flow measurement or billing mechanisms can be discussed by the City and the Town however final approval of any method is controlled by the City.

8.1.2 The Town shall be responsible for inspecting and maintaining the accuracy and reliability of all flow metering and recording equipment. All costs incurred by the Town to inspect and maintain flow recording devices and equipment shall be borne by the Town. The City shall be advised of the results of any test on the equipment and the methods employed.

### **Section 8.2**

The City and Town hereby agree that the determination of character and concentration of wastewater and the associated sampling technique shall be in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater" published jointly by the Public Health Association (APHA), the American Water Works Association (AWWA) and the Water Environment Federation (WEF), or any other method mutually agreed upon by the City and Town.

8.2.1 The sampling and determination of the character and concentration of Town's wastewater shall be performed by the Town if needed. The sampling location will be mutually agreed upon by the Town and the City. All costs for sampling and analysis shall be the responsibility of the Town.

8.2.2 Samples shall be collected by the Town in such a manner as to be representative of the actual quality of the wastewater if needed.

8.2.3 The results of the wastewater sampling and analytical program shall be reported to the City upon request and in accordance with the City's Industrial Pretreatment Program.

8.2.4 The City shall be given full and free access to the Town's wastewater metering station(s) as required for the purposes of inspection, measurement, sampling and testing.

8.2.5 In the event the metering equipment is temporarily out of order or service for any reason the volume of wastewater and strength will be based on the period representing the highest volume and strength unless otherwise agreed by both parties on the basis of past experience.

8.2.6 The Town shall notify the Sewer Commission immediately in the event that the metering equipment is out of order or service.

8.2.7 The Town shall be responsible for facilitating repairs of the metering equipment and the costs associated with said repairs.

## **SECTION 9. AGREEMENT REPLACEMENT**

This Agreement replaces the prior Agreement with Lafrance Enterprises, Inc. in conjunction with Lafrance Bros. Inc. dated September 26, 1984. The Town has the capability and legal capacity for approval of this agreement and for future negotiations and/or amendments to this agreement.

## **SECTION 10. CAPITAL IMPROVEMENTS**

In the event that the City must undertake major repairs, replacement, or add to the joint wastewater collection and treatment facilities or is directed or ordered to provide a higher degree of treatment in the future, or to otherwise modify the process from that contemplated at the time of execution of this Agreement, the net capital cost of such replacement or additional facilities shall be included in the user fee.

## **SECTION 11. RECORDS AND ACCESS**

### **Section 11.1**

The City and Town shall maintain complete and accurate books and records concerning all matters relative to this Agreement. Such records shall be open for inspection and making copies or extracts thereof to accountants and other duly authorized representatives of the other party.

The Town records shall include, but not be limited to, as built plans of all sewers, schematics of all connections to sewer, building permits for all facilities connected to sewer, and documents regarding proper operation and maintenance of the Town's sewers.

### **Section 11.2**

Both the City and the Town agree to make available to representatives and agents of the other for purposes of inspection all facilities and equipment related to each other's wastewater systems.

## **SECTION 12. SEPARATE AGREEMENTS**

Any separate agreements relating to wastewater collection and treatment between the Town and adjacent municipalities which would result in additional discharges to the City's sewer system must be reviewed and approved by the City. In any event, the Town shall in the aggregate shall be restricted to the wastewater strengths and flows authorized in this agreement, and any increase must be formally contracted for between the Town and City.

## **SECTION 13. NOTIFICATION OF CHANGE**

The Town agrees to notify the City in writing as far in advance as possible of anticipated or planned significant increases or decreases in the quantity and/or quality of the wastes to be discharged to the City's wastewater treatment facilities.

## **SECTION 14. TERMINATION**

### **Section 14.1**

For any material breach of this Agreement, continued for three months after notice thereof in writing by the other party, either party may terminate this Agreement. Upon receipt of said notice, both parties will enter into discussion within thirty (30) days to assure proper termination of the Agreement. If any time during the term of this Agreement either party determines that the

other party has breached the terms of this Agreement by failing to perform its obligations in accordance with all of the terms and provisions contained in this Agreement, the non-breaching party shall notify the party in breach in writing stating therein the nature of the alleged breach and directing the party in breach to cure such breach within ten (10) days. If the party in breach fails to cure said breach within ten (10) days, the non-breaching party may, at its election at any time after the expiration of said ten (10) days, terminate this Agreement by giving written notice thereof to the party in breach specifying the effective date of the termination, said date to be no less than ninety (90) days from the date of notice of breach. Upon the date specified in the notice of termination, this Agreement shall terminate. Such termination shall not prejudice or waive any rights or action which the non-breaching party may have against the party in breach up to the date of such termination.

#### Section 14.2

There shall be no circumstance under which the City will be obligated to return to the Town any portion of the Town's capital investment.

#### Section 14.3

The City maintains the right of refusal to accept the Town's waste if any section or subsection of this Agreement is materially violated that could endanger the treatment facilities, public health or the environment. The Town shall be notified in writing, and the Town shall be granted ninety (90) days to respond to a purported violation of this Agreement. If the matter is of immediate danger to the treatment facilities, public health or the environment, the City retains the right of immediate refusal.

### **SECTION 15. AMENDMENTS**

#### Section 15.1

No amendments to this Agreement shall be effective until adopted by the Fall River City Council.

### **SECTION 16. TOWN BOUNDARIES**

The Town agrees to work cooperatively with the City related to any infrastructure (i.e. sewer mains, drains or services) that may cross Town boundaries both in land agreements (i.e. easements) and access for maintenance.

The City agrees to allow the Town at no additional cost other than normal tie-in fees to connect isolated properties located on the border of the City and the Town where existing City sewers have the capacity to accept wastewater from said property and it would be cost prohibitive to extend redundant Town sewer lines to service the property. City permitting and inspection of all work within the City and/or on sewers maintained by the City shall be required.

**SECTION 17. MISCELLANEOUS PROVISIONS**

Section 17.1

If any term or condition of this Agreement or any application thereof shall to any extent be held invalid, illegal or unenforceable by the court of competent jurisdiction, the validity, legality, and enforceability of the remaining terms and conditions of this Agreement shall not be deemed affected thereby unless one or both parties would be substantially or materially prejudiced.

Section 17.2

This Agreement shall be governed by, construed and enforced in accordance with the laws of the Commonwealth of Massachusetts and the parties hereto submit to the jurisdiction of any of its appropriate courts for the adjudication of disputes arising out of this Agreement.

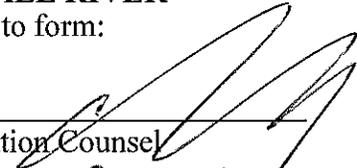
Section 17.3

This Agreement, including all documents incorporated herein by reference, constitutes the entire agreement between the parties with respect to the matters described. This Agreement supersedes all prior Agreements, negotiations, and representations, either written or oral, and it shall not be modified except by a written document executed by the parties hereto.

IN WITNESS WHEREOF, the respective parties hereto have caused this Agreement to be signed by them and have affixed their hands and seals on the day and year referred to above written.

**CITY OF FALL RIVER**

Approved as to form:

BY:   
Corporation Counsel

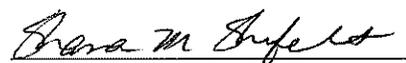
BY:   
Sewer Commission

  
Sewer Commission

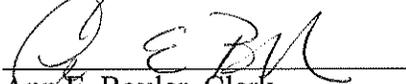
BY:   
Mayor, City of Fall River

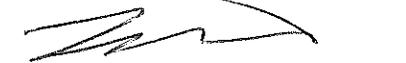
**TOWN OF WESTPORT**

Board of Selectmen

BY:   
Shana M. Shufelt, Chair

  
Steven J. Ouellette, Vice-Chair

  
Ann E. Boxler, Clerk

  
Brian T. Valcourt

  
Richard W. Brewer

## APPENDIX A

### Calculation of Flows

Unless a variance is authorized by the Director in writing, applicants applying for a sewer extension or connection permit shall use the following figures in calculating daily sewer flow in completing the application:

#### SEWAGE FLOW ESTIMATES:

<u>Type of Establishment</u>	<u>Gallons per Person per day</u>
Boarding Schools, Colleges	65
Nursing Home and Rest Home	100
School, without cafeteria, gymnasium or showers	10
School, with cafeteria, but not gymnasium or showers	15
School, with cafeteria, gymnasium and showers	20
Swimming Pool	10
Camp, resident - washroom and toilets	25
Camp, resident - mess hall	10
Camp, day - washroom and toilets	10
Camp, day - mess hall	3
Camp Ground - showers and toilets - per site	75
Gymnasium - per spectator	3
Gymnasium - per participant	25
Theater, Auditorium	3
Public Park - toilet wastes only	5
Public Park - bathhouse, showers and flush toilets	10
Factory or Industrial Plant, without cafeteria	15
Factory or Industrial Plant, with cafeteria	20
Work or Construction Camp	50
	<u>Gallons per Day</u>
Single and multiple dwelling units - per bedroom	
Motels, hotels, boarding houses	110
Tennis Club - per court	250
Bowling Alley - per alley	100
Country Club - dining room - per seat	10
Country Club - snack bar or lunch room - per seat	10
Country Club - locker and showers - per locker	20
Church - per seat	3
Church - vestry/kitchen - per person at capacity	5
Trailer, dump station - per site or per trailer	50
Mobile Home Park - per site	200
Office Building - per 1,000 sq. ft.	75
Dry Goods Stores - per 100 sq. ft.	5

Drive-in - per stall	5
Non-single family, automatic clothes washer per washing machine	400
Hospital - per bed	200
Service station, excluding thruway - per island	300
Skating Rink - 3,000 gallons per day plus 5 gallons per seat	300
Dog Pounds - Veterinary Clinics - per pen	50

<u>Type of Establishment</u>	<u>Gallons per Seat Or Chair per day</u>
Restaurant, food service establishment, lounge, tavern	35
Restaurant, thruway service area	150
Restaurant, kitchen flow	15
Barber Shop/Beauty Salon per chair	100

Appendix D  
Public Meeting and Follow-up Comment  
Response

Date: **8/7/2025**

Project No.: **21944/A.10**

To: **Somerset Water and Sewer Commission**

From: **Wright-Pierce**

Subject: **Task 1 – Fall River Regionalization – Response to Comments, Draft Report**

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This memorandum serves as a response to comments and questions received during the public meeting on May 12, 2025 at 6:30 PM, held at the Somerset Public Library, for the draft Fall River Regionalization Evaluation report. Comments were received from the public after the meeting as well and are included below.

*Responses to questions and comments are provided in italics.*

## **Public Meeting Questions/Comments**

**Todd Costa**

Q1 - What is making the cost to regionalize so expensive?

*A1 - For capital costs, there are significant modifications needed at the Somerset WPCF to modify the existing site and tankage/piping in addition to constructing a new pump station to pump wastewater across the river to Fall River. Further, flow equalization tanks will be required to ensure the Fall River collection system and/or WWTP are not impacted during wet weather events. In addition, according to EPA, in order to comply with the existing permit compliance schedule, a TN Upgrade would still be required at the Somerset WPCF if regionalization were implemented due to the permit compliance schedule and the length of time it is expected to take to implement regionalization.*

*A large increase in annual costs is expected from the higher Fall River user charge rate. While the user charge rate will be potentially negotiated, we cannot assume a value lower than what is in place in Fall River for their residents at this time. We have presented the value in relation to Somerset's existing user rate for comparison.*

Q2 - What was the Town anticipating at the Town Meeting if they did not have this Public Meeting with the Board?

*A2 – The Board wanted to provide information to the Townspeople on the status of the regionalization evaluation before the Town Meeting so when the article was presented to shift \$6 million in funds to allocate to WPCF design, the Townspeople would be better informed. There were no expectations from the Board or Town that the Public Meeting on the evaluation would affect the outcome. The Board wanted the Townspeople to have all the information available at the time, even though the evaluation was in draft form.*

Q3 - Would it be possible to be the “receiver” of wastewater flow to offset costs for any upgrades?

*A3 - Currently, the Town of Swansea and Somerset have an IMA to convey some Swansea wastewater to the Somerset WPCF. It is unlikely that wastewater flow from Dighton would be sent to Somerset, but that could be a future option. There should be consideration from the Town for any potential development at the Brayton Point site and leaving capacity at the WPCF for that. Further, unless I/I reduction is successful, the WPCF is likely going to be flow-capacity limited in the near future on an average daily flow basis in comparison to the permitted limit of 4.2 mgd.*

Q4 - When does the Town anticipate starting upgrades to the WPCF? What is the time frame for this project?

*A4a - It is expected that the design for the upgrades to the WPCF will begin in the Fall of 2025.*

*A4b - The compliance schedule in the permit requires construction to be started on the TN upgrade by June 2027 and complete by 2029. With the significant number of improvements needed at the Somerset WPCF, a second phase/project is expected to reduce the burden on the Town and users. This implementation plan will be outlined in a report to the Town.*

#### **Steven Nassif**

Q5 - Mentions that Wright-Pierce made many assumptions within this report/presentation.

*A5 - Assumptions are required for many aspects of engineering work, as there are many unknowns in any evaluation/project. Some of the assumptions made are based on engineering judgement, prior experience with similar projects, and based on the best available information. Based on feedback received since the meeting, some of the assumptions in the draft report have been revised and the report has been updated.*

Q6 - Noted that Somerset shouldn't have to pay for Fall River's upgrades. Noted Fall River is going to be performing their upgrades anyways so why does the Town need to pay for it?

*A6 - Similar to any improvement/upgrade to the Somerset collection system, pump stations, and WPCF, improvements to the Fall River system would be reflected in their user charge rate. The charge would be passed on to Somerset in this form. Some communities require IMA partners to additionally share direct costs for upgrades but Fall River does not in their existing IMAs. This assumption has been removed from the updated report. It's important to note that any increase in Fall River's rate would pass directly to Somerset and Somerset would not be able to negotiate the rate change once the IMA is in place. The rate might be negotiable based on where Somerset ties in. For example, receiving a full user rate wouldn't make sense if Somerset tied in directly to the Fall River WWTP, as they wouldn't be using any collection system or pump stations.*

Q7 - What is the timeline for permitting based on?

*A7 - The timeline provided in the presentation is based on prior experience with the permitting agencies listed. WP has worked with many of the agencies listed on other types of projects. Due to the significant impact to the river for this project, and because of the large amount of flow being sent from one treatment facility to another, it is expected that a project of this magnitude would be even more difficult to get permitted and approved. For example,*

*WP has worked with the Army Corps of Engineers, MassDOT, MEPA, and Conservation Commissions on other types of projects. WP has worked with several communities to develop and negotiate IMAs. These are all lengthy processes.*

Q8 - What is the design for the WPCF for?

*A8 - The WPCF upgrade is outlined in detail in the CWMP. This document is available from the Somerset Board of Water and Sewer Commissioners and on the Board's website. In addition, updated memos are being prepared for issuance this Summer, in addition to the regionalization evaluation. In general, the WPCF upgrade is intended to replace aging systems across the site, updating treatment processes to current best engineering practice, provide adequate and reliable Total Nitrogen removal in compliance with the new NPDES permit limit, overhaul and replace the electrical systems to support the TN upgrade and replace aged/obsolete equipment, and to provide a robust and reliable solids handling system for the facility that will better position Somerset into the future.*

Q9 - When is the last time that Wright-Pierce has completed a regionalization project?

*A9 - Wright-Pierce is currently working with the Town of Somerset and Swansea on a regionalization project. In addition, Wright-Pierce has worked on similar projects, such as converting a WWTF in one town to a pump station that sends flow to a WWTP in another town (Jay and Livermore Falls, Maine). WP has assisted in the development of IMAs between communities, including Somerset. Additionally, WP has worked on sewer extensions for communities with existing systems and worked on the design of new sewers for communities without existing systems (i.e. North Reading to MWRA/GLSD). WP has worked on projects involving the Army Corps of Engineers, MassDOT, among other entities listed in the permitting section of this report. Much of WP's experience was used to estimate the permitting requirements of this project.*

Q10 - What was the basis used for the different construction and permit lengths selected for regionalization?

*A10 - WP has extensive experience across the entire firm's history and locations. WP has designed and constructed many new sewers, pump stations, and treatment facility upgrades. Much of the experience can be used to estimate construction and permitting efforts and lengths.*

Q11 - What is the amount of flow that Somerset is sending over to Fall River?

*A11 - A flows and loads analysis has been completed as part of this overall evaluation and discussed in a separate report. A summary is included in this report. The flows and loads analysis provides an evaluation of current flows and loads and future projections for a basis of design for the Somerset WPCF upgrades and/or regionalization.*

Q12 - How is the permitted daily average effluent flow from Somerset going to surcharge the CSO Tunnel? How will it disturb Fall River residents?

*A12a - The permitted daily average flow will not surcharge the CSO Tunnel. Most of Fall River's collection system cannot accept additional flow during wet weather events. Even the WWTP is capacity limited during wet weather. The CSO tunnel is not capacity limited during wet weather, to our knowledge. Fall River has not provided any updated information beyond the Facility Plan report on how much available capacity the WWTP has, so the exact*

*flow values are not known at this time. WP was informed the CSO tunnel has plenty of dry weather capacity but did not receive information on current wet weather operations and capacity.*

*A12b - The installation of new sewer within Fall River will cause disturbances for the areas where work will occur.*

Q13 - Is the amount of flow that is going into the CSO Tunnel that is preventing us from routing wastewater flow there known?

*A13 - Fall River has not provided information on the current capacity of the CSO tunnel. It is expected that Somerset's flow could be accepted. The report has been updated.*

Q14 - Why not construct two gravity mains to both the CSO Tunnel and Central Street Pump Station (CSPS)?

*A14 - If the CSO tunnel has sufficient capacity, the CSPS option would not need to be considered. The CSPS option is not technically feasible. That pump station and downstream gravity sewer is too limiting during wet weather. The entire gravity section would need to be replaced to accept additional flow during wet weather. The CSO tunnel option is more feasible and the report has been updated.*

Q15 - Why was Fall River selected as an option for regionalization?

*A15 - The Fall River wastewater treatment plant (WWTP) was selected due to it being the biggest regional treatment plant within reasonably close proximity to Somerset. It was also noted by Paul Ferland that the WWTP had additional capacity that could be used for wastewater for Somerset. There are no other large WWTPs in the area that could accept Somerset's flow.*

Q16 - What did Wright-Pierce use for the cost per linear foot for the pipes that are to be directionally drilled under the Taunton River? Did Wright-Pierce calculate the amount of linear feet of piping for each option?

*A16 - This information has been added to the report.*

Q17 - It would benefit Somerset to reduce the I/I for the Somerset collection system to try and reduce the total flow sent over to Fall River.

*A17 - Somerset has been working to reduce I/I in their system for several years and continue to do so. However, reducing I/I is difficult, costly, and takes time. Reducing I/I will benefit Somerset regardless of maintaining the existing WPCF or regionalizing with Fall River. Transporting and treating clean rainwater doesn't help any wastewater facility.*

Q18 - Why is there no extensions for the NPDES permit compliance? When was this question asked to the EPA?

*A18a - Correspondence with EPA and WP occurred in January 2025 and again in July. EPA cannot modify an existing permit until regionalization actually occurs (as in fully constructed and brought online). There have been too many instances where regionalization is discussed but never implemented. The compliance schedule and TN upgrade would not go away. WP agrees that the money spent on a capital upgrade for this would "go to waste" should regionalization happen. However, it is still required and must be accounted for in this evaluation.*

A18b - The EPA granted an extended compliance schedule during the draft permit phase based on extensive work by WP, the Town, and the Town's legal counsel on February 2<sup>nd</sup>, 2024. In the final publishing of the NPDES permit dated March 24<sup>th</sup>, 2024, 6 years was the maximum extension they would allow; the group tried for 7 years and was denied. A further extension would not be possible based on conversations with EPA.

Q19 - What happens if Somerset doesn't comply with the NPDES permit?

A19 - Per the EPA, if the WPCF is not in compliance with the NPDES permit effluent limits, then the Town will incur repercussions. This can include fines and legal action against Somerset. This would be a violation of the Clean Water Act.

Q20 - Why aren't the O&M costs for not regionalizing and regionalizing the same?

A20 - Operation and maintenance costs include all costs associated with the existing collection system, pump stations, and WPCF for Somerset. That includes labor, chemicals, solids disposal, utility costs, etc. The cost to operate just Somerset's WPCF is vastly different than operating a single pump station to convey flow to Fall River. In addition, the Fall River user charge system would be lumped into O&M (annual) costs. The O&M cost section of the report outlines this information.

Q21 - What are Somerset's and Fall River's sewer charge rates?

A21 - The charge rate for Somerset is base \$7.05/1,000 gallons and \$9.27 with the infrastructure fee added on based on a rate increase reflective in FY2026. Fall River's current out-of-town charge rate is \$16.80/1,000 gallons. The Fall River resident charge rate is \$10.84/1,000 gallons. Fall River has indicated that the charge rate for Somerset could be negotiated in an IMA. We have included a comparison in the updated report based on the current Somerset rate to show the cost difference. It is unlikely that a rate less than Fall River's resident rate, let alone Somerset's existing user charge rate, would be negotiated in the IMA.

Q22 - Why are the numbers so different if the rates between the two municipalities are somewhat similar?

A22 - The report has been updated. Fall River's resident rate is 15 percent higher than Somerset's charge rate with the infrastructure fee included. The out-of-City rate for Fall River (consistent in all 3 existing IMAs) is 50 percent higher. A difference of \$1.50 per 1,000 gallons with 1.5 billion gallons discharged in a year is a \$2 million difference, annually.

Q23 - It is hard to understand how the costs for regionalization were so high if all Wright-Pierce was designing for was to install pipes under the Taunton River.

A23 - As outlined in the report, there is much more to regionalization than just constructing piping under the Taunton River.

Q24 - There is not enough information to make a decision on regionalizing or not.

A24 - Please review the updated report.

Q25 - Emphasis on why sending wastewater flow to the Fall River WWTP was the selected option

A25 - *A revised analysis has been included in the update.*

Q26 - Was there no way to extend the permit length requirements from EPA?

A26a - *In discussions with the EPA, Somerset would not be able to receive an extension or modification to the existing permit (and required TN upgrade) until regionalization was **in place**. As noted in the report, regionalization is a long process and would not likely be in place, by the time the TN upgrade would be required as outlined in the compliance schedule.*

A26b - *The EPA granted an extended compliance schedule during the draft permit phase based on extensive work by WP, the Town, and the Town's legal counsel. 6 years was the maximum they would allow; the group tried for 7 years and was denied. A further extension would not be possible based on recent conversations with EPA.*

### **Elizabeth Pestoski**

Q27 - What is the inter-basin transfer act?

A27 - *The inter-basin transfer act gives the Massachusetts Water Resource Commission (WRC) the authority to approve or deny transfers of water or wastewater outside of the river basin of origin. The act requires protection of the donor basin and sound water supply management practices by the applicant prior to transfer of water resources between river basins. In this case the basin of origin would be the Taunton River watershed and the proposed basin would be the Narragansett Bay watershed.*

Q28 - Why was regionalization not introduced earlier on in the process? Why was it not proposed during the grace period when the NPDES permit was given?

A28 – *Regionalization was reviewed during the CWMP/IWRMP process for communities that could potentially send flow to Somerset. The CWMP did not review regionalization with Fall River at that time. Because Somerset already has a large WPCF, a benefit was not seen to send the Town's flow elsewhere. The CWMP established a 20-year capital plan for wastewater assets within Somerset, including the WPCF. During the development of the plan, it was known that a NPDES permit would be coming, and it would include a Total Nitrogen limit. This was based on other facilities that discharge to the Taunton River receiving a limit. However, the exact limit was not known, nor the timing of the permit. The Taunton WWTP was contesting their NPDES permit at the time of development, and Somerset would not receive their NPDES permit until Taunton had been resolved. There was no indication if Somerset would be receiving their permit in a month, a year, or several years.*

Q29 - Said that Wright-Pierce did not work with the Town – solely worked with the board and the commission.

A29 - *WP and the Somerset Board of Water and Sewer Commission have been working together since 2018 for wastewater solutions for the Town. The IWRMP was a public process, including a public hearing at the completion of the IWRMP. There were no attendants from the Town, despite the hearing being advertised for multiple weeks. This evaluation was conducted with the Town and the Board, with input from the Town during public meetings. The input has led to revisions in the report.*

**Todd Costa**

Q30 - Given that Somerset discharged 1.3 billion gallons of wastewater into the Taunton River, would it be reasonable to assume that this would be a similar amount to how much Somerset would send to Fall River?

*A30 - Any flow that is discharged through the WPCF outfall would be discharged to Fall River.*

Q31 - Would it be possible to break down the operational costs per gallon treated at the WPCF?

*A31 - Yes, this can be added to the revised report. As we do not know Fall River's current flows, an estimate will be included based on the permitted average daily flow and the current annual budgets (FY2026) for both communities.*

Q32 - Will the costs be shared with the board of selectmen?

*A32 - There is additional breakdown of costs in the full report. Some of these have been revised in the updated report. The Board of Water and Sewer Commissioners will provide the updated report to the Board of Selectmen and the Town Manager. Another public meeting will also be held on the revised report.*

**Elizabeth Paskowski**

Q33 - Is there a way to ask the EPA for an extension given that regionalization came about after initial discussions?

*A33 - There are two processes in place to modify an existing NPDES permit. This is through the permit modification or Administrative Order process. The EPA would not issue/allow these until regionalization is in place. They will not extend the TN compliance schedule to further study regionalization based on conversations during this evaluation.*

Q34 - Who was really involved in this process?

*A34 - This process (regionalization evaluation) involved the team at Wright-Pierce, the team in Somerset that operate and maintain the sewer collection system, pump stations, and WPCF, the Water and Sewer Board, EPA representatives, Paul Ferland of Fall River, and the public that attended the public meeting.*

Q35 - An extension can be granted given the circumstances and the fact that regionalization could be the better option.

*A35 - This is not an accurate statement.*

**Todd Costa**

Q36 - Is there not a way to get that TN effluent limit extension?

*A36 - The EPA granted an extended compliance schedule during the draft permit phase based on extensive work by WP, the Town, and the Town's legal counsel. 6 years was the maximum they would allow; the group tried for 7 years and was denied. A further extension would not be possible based on recent conversations with EPA.*

Q37 - Increased grants for regionalization? Would there be a way to get more money because the Town is regionalizing?

*A37a - There are grants and funding available for the proposed WPCF upgrade, including a potential for a 0 percent interest loan through the State Revolving Fund for the nutrient aspect of the TN upgrade. WP and the Town are also working with the Commonwealth to receive additional funds through congressional earmarks.*

*A37b - Typically, regionalization projects receive high priority and can receive investment from the public and private sectors. It is unclear how this would compare to the funds for the WPCF upgrade.*

### **Elizabeth Paskowski**

Q38 - She spoke with Paul Ferland and that one of the pros to regionalizing is that it could be better for the environment. Instead of disposing of wastewater in two locations they could release wastewater in one location.

*A38 - Although one effluent discharge may be preferred, there are several key environmental considerations that should be noted if Somerset were to send flow to Fall River. First, Somerset currently has a NPDES permit that is in effect which contains more stringent limits than Fall River. Fall River has commented that they will plan to contest their draft permit if the limits aren't modified in the final version; i.e. less treatment than Somerset's discharge. Second, Fall River is a CSO community. Any additional flow Somerset adds to the Fall River collection system will negatively impact (i.e. create more) CSOs. Third, the Fall River WWTP only provides secondary treatment up to 50 mgd and only provides primary treatment and disinfection above that value. If Somerset adds flow on a wet weather day, this will receive less treatment than if it were treated onsite in Somerset. Adding flow to their system would exacerbate this issue, potentially leading to additional untreated or partially treated wastewater flow to the river. Somerset's system is designed to fully treat or equalize and then treat the full range of flows the facility receives. Further, when comparing the two permits, the treatment standards for each discharge is equal when comparing pollutant concentrations. Therefore, better treatment is not the reality if Somerset sent flow to Fall River.*

### **Paul Ferland**

Q39 - Wright-Pierce is a very good engineering firm that Fall River has worked with in the past on multiple projects. Happy to see that they were a part of this project.

Q40 - Fall River could supply Wright-Pierce with a timeline of a directional drill project for a gas line between Fall River and Somerset.

*A40 - This project, Liberty Utilities and CHA Consultants, was reviewed during the initial development of the report. The project was significantly shorter in length than the proposed wastewater pipe. The diameter of the pipe is significantly smaller than the proposed pipe. For the gas project, there was already a pipeline in the location of drilling. Wastewater permitting has significantly more review and approval required in comparison to gas main work. This is not a fair comparison for permitting, design, and construction timelines.*

Q41 - Fall River would really want Somerset to regionalize.

*A41 - Acknowledged.*

Q42 - Says that the City can review the regionalization report and send comments back to the board and Wright-Pierce.

A42 - *See Fall River comments received below.*

Q43 - Believes that Wright-Pierce's "funding" numbers were very "interesting" from his point of view. The capacity upgrade charges are inaccurate as they do not have these charges within their other intermunicipal agreements. Fall River completed a rough draft of a financial analysis in 2021 of how regionalization would affect Somerset and Fall River's rate.

A43 - *The report has been revised. The 2021 financial analysis didn't show regionalization as a favorable option for Somerset. Further, the analysis used a significantly higher percentage of grants than is realistic and even then, still did not show regionalization as being favorable for Somerset.*

Q44 - Wants to be a part of discussions moving forward regarding regionalization.

A44 - *The Board intends to meet with Paul and any other Fall River designated representatives before the report is finalized. An invitation to meet in late July or early August was sent to Mr. Ferland via email on July 14. A Meeting was held on July 30<sup>th</sup>.*

#### **Elizabeth Paskowski**

Q45 - Can Wright-Pierce/Somerset provide a dollar amount for the increase they expect Somerset's residents to pay to their sewer rates?

A45 - *Somerset's rates will increase whether they regionalize or upgrade their own WPCF. Even if an IMA between Somerset and Fall River included a rate equal to or lower than the existing Somerset rate, the Fall River WWTP needs to be upgraded as outlined in their facility plan, including a TN upgrade if the limit is included in their final NPDES permit. This upgrade will be significantly more costly than Somerset's upgrade, but the rate will be applied over more users. An exact dollar amount is not known at this time, but rates would increase for Somerset users whether regionalization is selected or not. Review the new cost section for additional information.*

#### **Todd Costa**

Q46 - Confused as to what the current capital costs are right now and what they are going to pay in the future.

A46 - *This analysis is detailed in the report.*

Q47 - Wants the board and Wright-Pierce to be more transparent with their cost breakdowns.

A47 - *This information is detailed in the report.*

**Steve Derosiers**

Q48 - There is no real reason for Somerset to send their wastewater over to Fall River considering that it will go through similar treatment.

*A48 - Acknowledged.*

**Steve Cadorette**

Q49 - Reiterated that this is a Town project and will be for the Town. They want to do this right and with the residents in mind.

**Steve Derosiers**

Q50 - Reiterates that the location where the wastewater discharges does not matter so that should not be a factor for the project.

*A50 - Acknowledged.*

**Follow-Up Questions/Comments**

**Elizabeth Paskowski**

Q51 - Why did Andrew (*Adam*) make a big deal about the Interbasin Transfer Act? I hadn't heard of it before and it got me nervous, but after looking it up, I do not understand why he thought that would be a problem.

*A51 - The transfer of wastewater from Somerset's discharge into the Taunton River (Taunton River watershed) to Fall River's discharge into Mount Hope Bay (Narragansett Bay watershed) triggers the act. Without approval from the WRC, this project cannot be initiated or completed.*

Q52 - Why doesn't Somerset correct its I&I problems WHILE getting the permits to tie in with Fall River so there wouldn't be a great need of having extra storage when we start sending the sewage to Fall River.

*A52 - Somerset will continue to address I/I issues in their system. However, this work takes time and money. In addition, I/I removal projects are typically not 100 percent effective at removing all of the I/I in the system. It is likely that any I/I removed would be offset with additional new flow within the Town through new development or from additional flow from Swansea.*

Q53 - Is it Fall River's collection system pipes or the pumping stations (in the presentation) that couldn't handle anymore wastewater during rainy days? Do the pipes get too full?

*A53 - Fall River's collection system, which includes both their sewer pipes and pump stations, becomes stressed during wet weather events. In particular, the section along the river that was identified for Option 1 has several CSO outfalls. When the flow during wet weather events becomes excessive and the pipes do not have enough capacity (become too full), the wastewater and stormwater are conveyed to the CSO outfalls to provide relief for the system.*

*This untreated wastewater dumps directly into the river. Any additional flow in this section of the collection system would exacerbate this issue.*

Q54 - If Somerset corrected its I&I problems, couldn't Somerset store wastewater on rainy days until the pumping stations that are across the river could accept it.

*A54 - The evaluation already includes provisions to store wastewater at the WPCF during wet weather events (via flow equalization). As noted above, Somerset continues to address I/I issues in their system.*

Q55 - Couldn't Somerset send its sewage to two pumping stations? Steven Nasiff asked that question during the presentation.

*A55 - This is possible. However, this would include additional cost to get flow to another pump station. Further, the other pump station would need to convey wastewater to another part of the collection system and not end up tributary to the Central Street Pump Station. This would involve a significant amount more construction than sending flow to the CSO tunnel (Option 2). The report has been revised to include additional information on Option 2.*

Q56 - Somerset would most definitely ask the EPA for an extension because it was decided that it was better for the customers and better for the environment to stop having its own treatment plant. It would be better for all of the communities in the area to have one wastewater treatment plant.

*A56 - An extension would not be granted unless regionalization was already in place. As discussed in the report, the length of time required to regionalize exceeds the permit compliance schedule for a TN upgrade.*

Q57 - This all depends on what Paul Ferland has to say but the Town refused to let him talk to the residents, so I don't know what Fall River would charge Somerset. I could have found that out in April 2024.

*A57 - Fall River has provided comments on the draft report and continues to be involved in the discussion.*

Q58 - I am curious about the Comprehensive Wastewater Management Plan.

*A58 - The CWMP is available to the public. [townofsomerset.org/DocumentCenter/View/1689/Integrated-Water-Resources-Management-Plan-January-2020](http://townofsomerset.org/DocumentCenter/View/1689/Integrated-Water-Resources-Management-Plan-January-2020)*

Q59 - I am also curious about the Value Engineering Study, Solids Handling.

*A59 - The Value Engineering (VE) assessment and report could be made available. However, much of the information is outdated and has been revised in a report being issued in the near term. The revised report will be available to the public.*

Q60 - Did you present them?

*A60 - The IWRMP required a public meeting and posting of the draft and final report on the Town's website and in hard copy at the Water and Sewer department office. The VE report was not presented to the public. See response 9a above.*

**Paul Ferland, City of Fall River (letter dated June 13, 2025, attached)**

Q61 - Benefits of Regionalization, #3

*A61 - While we agree on most of the points raised in the benefits of regionalization section, it is important to note that Fall River's infrastructure is also aging and requires substantial investment, which will pass on to Somerset residents in the form of a user charge increase. In addition, regionalization would not eliminate the need for a TN upgrade in Somerset in the interim, according to the EPA.*

Q62 - Benefits of Regionalization, #4

*A62 - It is true that regional projects can be competitive for funding via standard SRF loans and federal earmark grants through additional scoring on the PEF application. However, aside from these standard funding sources, there are few additional funding sources that would be significant enough to support regionalization and make it more cost competitive. Additionally, it is expected that the upgrades in Somerset will score very highly for the IUP, especially for a TN upgrade, at 0 percent interest.*

### Section 1

Q63 - Table 1-1 title indicates design flows but lists specific years and P.F. Recommend clarifying these if these are actual historical flows or design flows.

*A63 - Table title has been revised.*

Q64 - Table 1-1 Flows and Loads do not identify what type of loading and the columns refer to.

*A64 - Table has been revised.*

Section 2

Q65 - Wet weather flow limitations are not fully explained with any specific details. Limitations differ throughout various portions of the Fall River system. Somerset wet weather flows can also be reduced by I/I removal which is not discussed. In addition, wet weather capacity of the plant is controlled by the CSO Tunnel, and its capacity needs to be considered.

*A65a - In order to provide a more detailed analysis, the capacity of the tunnel and the current wet weather flows are required. This information has not been provided. For the CSPA and downstream stretch of gravity sewer, an exact analysis is not required, as the system has CSOs that activate during wet weather, which means the pipes are already at capacity.*

*A65b - Somerset continues to identify and reduce I/I within their system, but 100 percent of I/I cannot be removed. In addition, this effort takes time and money. We cannot estimate, plan or design around the potential for I/I removal. Further, Somerset is accepting additional flow from Swansea and should have capacity for future Somerset expansion, especially at the Brayton Point site. Therefore, flows offset through I/I removal would likely be replaced with flow from other sources to reduce the cost per gallon to treat at the Somerset WPCF, similar to what Fall River is trying to accomplish through regionalization.*

Q66 - The Fall River NPDES permit is under review and has not been finalized. Significant comments were submitted for EPA review. The terms of the nutrient removal requirement are not yet determined.

*A66 - It is unlikely that the TN limit will be removed altogether. Every WWTP that discharges into the Taunton River watershed has received a TN limit over the last 10 years. This includes Brockton and Taunton (3 mg/L limit) and Middleboro, Bridgewater and Somerset (5 mg/L). If any limit is placed on the Fall River WWTP, it will require an extensive and expensive upgrade, which will pass on to Somerset users in the form of a user charge increase. Further, per the Fall River WWTP Facilities Plan, other upgrades are required at the facility for aging infrastructure. In addition, Fall River requires significant upgrades to their collection system and CSO control, which would pass on to Somerset users.*

Q67 - Table 2-1 Recommended Upgrades and Estimated Costs Table: Contracts Nos. 1 and 2 have been completed.

*A67 - This has been noted and updated in the report.*

Q68 - Table 2-2 Influent Flows for Fall River vs Somerset: this table includes influent WWTP flows but does not consider that the wet weather flow is controlled by the CSO Tunnel gates. The wet weather capacity of the CSO Tunnel needs to be considered.

*A68 - More information is needed from the City regarding wet weather capacity of the CSO Tunnel to make any assessment. An updated influent flow analysis to the WWTP would also be welcome to identify remaining capacity.*

Q69 - Option 1 connection point should be further considered as well as potential connection to the larger 30-in diameter section of the force main than the 24-inch diameter section.

*A69 - The downstream gravity section of this part of the collection system is capacity limited, as evidenced by the CSOs. This option will not be considered further.*

Q70 - Option 2 needs to be more seriously considered. This option could have a shoreline connection point with a directional drill into the CSO tunnel drop shaft. I think that this would be one of the cheaper options and the best as the tunnel was designed for wet weather flows with storage and all flow equalization tankage on Somerset's side could be minimized or deleted.

*A70 - Additional assessment of this option has been updated within the report.*

Q71 - Option 3 is developed using the force main in the river to convey wastewater almost the entire way to the WWTF's headworks once the shoreline pipeline reaches the plant. This is the longest run; with the toughest permitting options and should be left as a last resort.

*A71 - Acknowledged.*

Q72 - An option not considered is to connect directly across the river which would be the shortest force main from Somerset. A tie in the vicinity of President Avenue and City Pier should also be considered.

*A72 - This connection point would require significantly more gravity sewer construction and doesn't appear to be viable. In addition, this section of the Fall River collection system is also capacity limited and has small diameter pipe. This option will not be evaluated. Option 2 presents a better alternative and was discussed further in the report.*

Section 3

Q73 - Table 3-1 Somerset Collection System Expenditures: Table compares actual historical expenditures to future budget which are not comparable.

*A73 - The future budget takes into account higher solids disposal needs, employee wage increases, etc. This is the best information to use for the analysis.*

Q74 - It is typical practice that a negotiated compliance schedule can be implemented through an AOC with EPA. It would not make sense to user rate payer money to build upgrades for nitrogen removal and then abandon the assets. If all entities agreed to move forward with regionalization, a revised permit would be anticipated. This realization would provide a cost credit towards regionalization.

*A74 - When the draft permit was received for the Somerset WPCF, a shorter compliance schedule for the TN upgrade was in place. The Somerset W&SC, Somerset's legal counsel, and WP worked diligently to include a longer compliance schedule to reflect the large-scale upgrade required to meet the limit and the current construction climate and lead time on electrical equipment. 7 years was asked for and 6 years was received. During those discussions, EPA indicated they would not place the compliance schedule in an AO.*

*Further, during this evaluation, in talks with the EPA, a permit modification would not be issued prior to regionalization being implemented. This is because many projects never come to fruition. As such, and because regionalization would not be complete before the compliance schedule requirements, the Town would still need to comply with the permit that is in place. While WP and the W&SC agree that the assets and investment would be "wasted" if regionalization was implemented, we cannot plan for an alternative based on the discussions with EPA.*

Q75 - Flow Equalization does not account for any I/I removal and Fall River wet weather capacity.

*A75 - See responses above on similar comments.*

Q76 - The report was developed, with a mere phone call consultation with EPA, anticipating that the Somerset plant would have to be upgraded to meet its new TN limit, only to be abandoned a few years later. This would essentially waste \$35 million. Surely if regionalization was put forward as the preferred option (with agreement by Fall River), this could be renegotiated with EPA.

*A76 – Email and phone communications were held and the project thoroughly discussed between the two parties. The options were outlined and alternatives discussed, including whether the TN upgrade would still be required if the*

*two communities moved forward with regionalization plans. EPA's stance was that the upgrade is still required and that is included in the evaluation. We cannot assume otherwise and set false expectations.*

Q77 - Connection with modified option 2 would mean that the pump horsepower would be significantly lower than considered, wet well and equalization could utilize existing tankage on site. All of this significantly reduces the capital and operational costs.

*A77a - Option 2 would reduce the pump horsepower based on the head on the system. However, the O&M costs do not change significantly as pumping is not the largest portion of the annual costs. Additional analysis has been included for Option 2 in the revised report.*

*A77b - Flow equalization estimates did include onsite Somerset WPCF tankage in the calculations. This would save money on new tankage but would require significant modifications to onsite piping systems.*

#### Section 4

Q78 - Section 4.1.1 indicates a capital cost of a single-phase upgrade to cost approximately \$70 million (and as expressed in the meeting at "\$75 million or could be more than that") then indicates the town would pursue a phased approach. It is not clear what the phased approach cost is and what value is used in the analysis.

*A78 - Revised.*

Q79 - Section 4.1.2 includes the capital costs of upgrading the Somerset WPCF in addition to costs of Regionalization. Negotiation with EPA on a revised compliance scope and schedule is warranted and could be revised if a plan to regionalize is preferred.

*A79 - See comments above on this topic.*

Q80 - Section 4.1.2.1 includes a one-time connection fee which has a cap of \$25,000. The \$1 per gallon is specific to new building tie-ins and may not be applicable to the entire flow that would be received from Somerset to Fall River.

*A80 - The report has been revised. This was not a significant cost factor in the analysis.*

Q81 - Section 4.1.2.2 includes charges for upgrades to the Fall River WWTF in addition to the CCF user charge which is incorrect. To date, all upgrades to the Fall River assets are included in the user charges.

*A81 - This has been removed from the analysis. However, with significant upgrades required within the Fall River collection system, CSO control, and WWTP, it can be expected that user rates will continue to increase significantly to offset the costs of these projects. These increases would also apply to the rate Somerset pays. While the increase is applied over more users, the costs of these projects is extensive.*

Table 4-1 Regionalization Capital Costs

Q82 - Somerset WPCF TN and Electrical Upgrade: The \$35 million should not be included in this comparison.

*A82a - WP does not agree with this statement. This cost includes the necessary upgrades that are needed to meet the compliance schedule of the NPDES permit. EPA has indicated the upgrade would still be required. We cannot assume otherwise and set false expectations.*

Q83 - Somerset Pump Station and Flow Equalization: Somerset could reduce the Flow Equalization Tank volume by addressing I/I. This would reduce the capital and O&M costs of operating these Somerset facilities and reduce the user charges as the volume of flow to Fall River would be reduced.

*A83 - As noted above, any I/I reductions would likely be offset by increased flow from other sources. We cannot assume buildout flow would be significantly less than the average flow permit limit in place. This is also true for the design of upgrades to the Somerset WPCF.*

Q84 - In addition, further evaluation of the wet weather capacity that can be received by Fall River is needed and could also reduce the volume of equalization tankage required.

*A84 - See comments above regarding this topic.*

Q85 - New Collection System: This cost only evaluates Option 3 and most likely is the most expensive capital cost of all the options. Option 1 and 2 should also be evaluated to provide a full picture of the costs of all options.

*A85 - Option 1 is not technically feasible and will not be evaluated further. The report has been revised to include additional analysis for Option 2.*

Q86 - One Time Fall River Connection Fee: The maximum of this fee is \$25,000 and could be negotiated with the city given the larger volume of flow.

*A86 - This cost did not significantly change the analysis. However, the report has been updated to remove the value.*

Q87 - Fall River WWTP Upgrade: Capital Improvements to the Fall River WWTF are included in the user charge and not in addition to the \$34 million for upgrades should be removed from the capital costs.

*A87 - These costs have been removed from the report based on the IMAs in place between Fall River and their partner communities.*

Q88 - All costs should be presented in the same ENR index/year. At most the total capital costs, assuming option 3, and wet weather facilities as detailed would be \$80.7 million.

*A88 - The report has been revised. The costs are presented for the ENR index for May 2025.*

Q89 - Given the cost sources, the costs were done by different techniques and level of detail.

*A89 - This is an accurate statement but does not change the analysis. The best information available was utilized for costs presented in older reports and best engineering practice was used to develop current costs. Additional language is included in the revised report for cost estimating procedures.*

Q90 - Safety factors and assumptions (levels of conservatism) are different. Thus, cost comparison is likely not valid. Call it “apples and oranges”.

*A90 - Additional language has been added to the revised report. Comparison between costs is valid.*

Q91 - Section 4.2.1 assumes the existing Somerset O&M costs which does not provide an accurate comparison with the Regionalization option. These costs should provide a breakdown and also include any subsidies provided from other funding sources. This would be to include the general fund or water. The O&M cost of the upgraded WPCF with TN removal should be used and will be higher than existing costs. In addition, there is no mention of the O&M costs removal which will be significantly impacted in the futures years compared to existing conditions.

*A91 - Some of this information was in the full report. However, the revised report provides additional information. Somerset Water and Sewer is an Enterprise Fund and does not receive funding from the General Fund. The Water*

*and Sewer budgets are separate from each other. Water revenue is not used to supplement the Sewer budget. However, retained earnings which are generated by both Water and Sewer revenues are used for both Water and Sewer projects.*

Q92 - Section 4.2.2.1 includes additional costs for contribution to Fall River O&M, which is not accurate. The O&M costs are included in the user charge and are not a separate cost.

*A92 - These costs have been removed from the analysis.*

Q93 - Section 4.2.2.1 assumes that the operating costs due to treatment at Fall River that would be assigned to Somerset would be “somewhat similar” to their existing O&M costs. Economy of scale would suggest that Fall River should have a lower cost/gallon O&M cost when combined with Somerset, than Somerset has on its own.

*A93 – Additional analysis is included in the updated report.*

#### Section 4.2.2.2

Q94 - Uses \$8.11/ccf for all flow the current rate to Fall River residential rate. The draft financial model provided in 2021 shows a decrease across the board of this rate.

*A94 – See response A43 above on this comment.*

Q95 - In this report it converts the Fall River charge to \$0.0072/gallon. The actual conversion is \$0.0108/gallon.

*A95 - Analysis has been revised in the report.*

Q96 - The Freetown IMA is based on a multiplier of 1.55 times the Fall River customer rate, specific for an initial volume of flow. When that volume is exceeded, the multiplier for the rate drops significantly to 1.05 times the Fall River rate. The Freetown IMA is not applicable to Somerset. The volume of flow from Somerset is significantly more than the existing IMA’s and a different rate structure could be developed.

*A96a - The discussion about a different charge rate has been included in the report. It is important to note that the Tiverton IMA does not have the same structure as the Freetown IMA.*

A96b - *It is unlikely that Fall River would charge Somerset a lower rate than their own residents. Additional analysis has been included in the revised report for this topic. It is also important to note that once the IMA is in place, further rate negotiations would not be possible. Somerset would be “stuck” with the rate structure and would have no say in future rate increases that Fall River imposes, unless a district is formed.*

A96c - *WP requests information on Fall River rate increases based on the first two large-scale upgrades completed at the WWTP and the CSO Disinfection Facilities constructed. It is understood that the FY25 rates for Fall River increased by 24 percent and Fall River expects rates to continue to increase by 5 percent per year over the next 5 years. This 5 percent per year increase is needed regardless of any future construction projects, which will increase the rates even more.*

Q97 - *If discharge is directly to the wastewater treatment plant or CSO Tunnel and the Fall River conveyance system is not used that would need to be taken into consideration as well.*

A97 - *The purpose of this statement is unclear. This information is considered in the report.*

Q98 - *Wet weather flow needs to be taken into consideration and discussed during the development of the IMA.*

A98 - *It is unclear what this comment is driving at. WP would agree that wet weather flow would need to be part of an IMA between the two communities, and it would likely require Somerset to equalize flow or incur a surcharged rate because of the impact to Fall River’s systems.*

#### Table 4-4 Summary of O&M Costs

Q99 - *No Regionalizing, Existing Total Sewer Annual Costs – \$3.9 million is stated as the existing operation cost which is not applicable here. This will not be the operational cost of the upgraded WPCF and solids disposal costs.*

A99 - *Although the upgraded Somerset WPCF will have new equipment, much of the equipment will be placed on Variable Frequency Drives (VFDs) and have better automated control, resulting in lower energy consumption for the aeration system. One cost that is expected to increase due to increased quantity is solids removal, which has been added to the report. While solids disposal costs are expected to increase over time as New England faces significant solids disposal challenges, Fall River is not exempt from this and their disposal costs are expected to increase at a similar rate to Somerset’s future costs.*

Q100 - In addition, the report states that the Somerset user charge to the customers is \$0.0066 per gallon which would equate user charges of \$10 million yet the budget is stated as \$4 million. It is not clear if debt service to pay for capital improvements is included in the capital or O&M costs.

*A100 - These costs have been reviewed and are updated within the report.*

Q101 - Regionalizing, Portion of Fall River WWTP Annual Costs – This \$2.7 million should be received as these costs are included in the user charge.

*A101 - This has been removed from the report.*

Q102 - Table 4-5 Life Cycle Cost Analysis. The life cycle costs are not accurate due to the comments noted. The Capital and O&M costs of the upgrades to the Somerset WPCF appear to be low. The Capital and O&M costs of the Regionalization appear to be high.

*A102 - These costs have been updated based upon the comments above. A present worth analysis has also been added.*

Q103 - Section 5.2.3 describes the Inter-Basin Transfer Act requirements. We would anticipate that given the proximity of the two discharge locations, and their effluent ends up in the same location, this would not be an impediment. The aqueous discharges of the wastewater plants are in the same basin. If the discharges were above MHW they would be in different basins.

*A103a - While this could be applicable, the process would still need to be taken to the WRC and they would need to agree. The project may not be outright rejected, but the process would take time.*

*A103b - For a project more than a 1 million gallon per day transfer of wastewater into another basin is considered "significant". This will automatically trigger an Environmental Impact Report (EIR) and a MEPA review. These reviews can take upward of 1 year.*



**COMMUNITY UTILITIES -  
WATER - SEWER**  
**CITY OF FALL RIVER**



June 13, 2025

Steven Cadorette, P.E.,  
Town of Somerset  
Chairman Water and Sewer Commission

RE: Somerset and Fall River Wastewater Regionalization

Dear Members of the Town of Somerset Water and Sewer Commission

In 2020, after reviewing the comprehensive wastewater system plan completed by the Town of Somerset. That is when the discussion began on the possibility of Somerset connecting into Fall River. This could have great environmental and long-term financial stability for Somerset. This would entail that Somerset forego constructing a new wastewater treatment facility and instead send its wastewater to Fall River for treatment at our existing plant.

Following this idea, I met with then-superintendent Bob Bozikowski to discuss the concept, which was acknowledged and taken under consideration.

In July 2021, a subsequent meeting was held with Superintendent Paul Sylvia and the then-town administrator. During this meeting, a financial model was presented and discussed to evaluate the feasibility of regionalizing wastewater services between our two communities. At that time, significant state and federal funding was available to support, if not fully fund a regionalization project of this nature.

Somerset then chose to proceed with a formal study to explore this option further.

While this concept may have seemed ambitious at the time, it is now increasingly clear that regionalizing the wastewater systems of Fall River and Somerset offers compelling long-term advantages. Through collaboration, our communities can realize benefits across cost, compliance, infrastructure, and sustainability.

It's important to recognize that the demand for wastewater services is not static it is growing, and will continue to grow. As we plan for the future, we must consider that this is not a 10- or 20-year decision. It is potentially a 50- to 100-year investment in our shared infrastructure and environment. While we cannot predict the future, we can and must plan for it responsibly.

The draft report conducted by Wright-Pierce provides a solid foundation for these discussions. Below is a summary of the key benefits of regionalization as seen by the city:

## **Benefits of Regionalization**

### **1. Cost Efficiency**

- Shared infrastructure reduces costs for maintenance, upgrades, and operations.
- Avoids duplicating expensive facilities and specialized equipment.
- Potential to lower utility rates and reduce municipal tax burdens.

### **2. Environmental Compliance**

- A regional system is better positioned to meet EPA and DEP regulatory standards.
- Offers improved control over pollution and nutrient discharges into the Taunton River and Mount Hope Bay.

### **3. Infrastructure Improvements**

- Somerset's aging infrastructure will likely require substantial investment.
- Fall River operates a large, modern plant capable of accepting additional flow.
- Regionalization could eliminate the need for Somerset to construct a costly new treatment facility.

### **4. Access to Funding**

- Regional projects are more competitive for state and federal funding, including the State Revolving Fund (SRF).
- Increases opportunities for grants, low-interest loans, and technical assistance.

### **5. Long-Term Sustainability**

- Climate change and sea-level rise pose growing threats to coastal infrastructure.
- A regional model encourages resilience and long-range planning.
- Supports shared responsibility and smarter asset management.

### **6. Economic Development**

- Improved wastewater infrastructure can support expanded housing and commercial development in both municipalities.
- Demonstrates regional cooperation, which is attractive to both public and private investors.

The direction of this report was clear, as the evaluations conducted and compared were not “apples to apples.” In addition to the two meetings previously mentioned, there was also a meeting on October 2, 2024, with Wright-Perce after they began their study. During this meeting, preliminary discussions took place regarding connection points, current rates, and other high-level information. The city offered to have its engineers evaluate any aspects necessary to assess viability from our end, if requested. Following the meeting, documentation was provided to Wright-Perce. There was one follow-up phone call approximately two weeks before their presentation of the draft report. Many of the assumptions made in the report—as well as the incorrect information included—did not originate from the city.

The Draft Report that was provided for review does address some of these points but also is not looking at this opportunity and comparing the two options with even weight. Below is a list of specific deficiencies that should be reviewed prior to this report being finalized or considered for evaluation.

#### Section 1

- Table 1-1 title indicates design flows but lists specific years and P.F. Recommend clarifying if these are actual historical flows or design flows.
- Table 1-1 Flows and Loads do not identify what type of loading the columns refer to.

#### Section 2

- Wet weather flow limitations are not fully explained with any specific details. Limitations differ throughout various portions of the Fall River system. Somerset wet weather flows can also be reduced by I/I removal which is not discussed. In addition, wet weather capacity of the plant is controlled by the CSO Tunnel, and its capacity needs to be considered.
- The Fall River draft NDPES Permit is under review and has not been finalized. Significant comments were submitted for EPA review. The terms of the nutrient removal requirement are not yet determined.
- Table 2-1 Recommended Upgrades and Estimated Costs Table: Contract Nos. 1 and 2 have been completed.
- Table 2-2 Influent Flows for Fall River vs Somerset: This table includes influent WWTP flows but does not consider that the wet weather flow is controlled by CSO Tunnel gates. The wet weather capacity of the CSO Tunnel needs to be considered.
- Option 1 connection point should be further considered as well as potential connection to the larger 30-in diameter section of the force main rather than the 24-inch diameter section.

- Option 2 Needs to be more seriously considered. This option could have a shoreline connection point with a directional drill into the CSO tunnel drop shaft. I think that this would one of the cheaper options and the best as the tunnel was designed for wet weather flows with storage and all flow equalization tankage on Somersets side could be minimized or deleted.
- Option 3 is developed using force main in the river to convey wastewater almost the entire way to the WWTF's headworks once the shoreline pipeline reaches the plant. This is the longest run tough with the toughest permitting options and should be left as a last resort.
- An option not considered is to connect directly across the river which would be the shortest force main from Somerset. A tie in the vicinity of President Avenue and City Pier is also an option that should be considered.

### Section 3

- Table 3-1 Somerset Collection System Expenditures: Table compares actual historical expenditures to future budget which are not comparable.
- It is typical practice that a negotiated compliance schedule can be implemented through an AOC with EPA. It would not make sense to use rate payer money to build upgrades for nitrogen removal to then abandon the assets. If all entities agreed to move forward with regionalization, a revised permit would be anticipated. This realization would provide a cost credit towards regionalization. Flow equalization does not account for any I/I removal and Fall River wet weather capacity.
- The report was developed, with a mere phone call consultation with EPA, anticipating that the Somerset plant would have to be upgraded to meet its new TN limit, only to be abandoned a few years later. This would essentially waste a reported \$35 million. Surely if the regionalization idea was put forward as the preferred option (with agreement by Fall River), this could be renegotiated with EPA.
- Connection with modified option 2 would mean that pump horsepower would be significantly lower than considered, wet well and flow equalization could utilize existing tankage on site. All of this significantly reduces the capital and operational cost.

### Section 4

- Section 4.1.1 indicates a capital cost of a single-phase upgrade to cost approximately \$70 million (and as expressed in the meeting at “\$75 mil or could be more than that”) then indicates the town would pursue a phased approach. It is not clear what the phased approach cost is and what value is used in the analysis.
- Section 4.1.2 includes the capital costs of upgrading the Somerset WCF in addition to costs of Regionalization. Negotiation with EPA on a revised compliance scope and schedule is warranted and could be revised if a plan to regionalized is preferred.
- Section 4.1.2.1 includes a one-time connection fee which has a cap of \$25,000. The \$1 per gallon is specific to new building tie-ins and may not be applicable to the entire flow volume that would be received from Somerset to Fall River.

- Section 4.1.2.2 includes charges for upgrades to the Fall River WWTF in addition to the CCF user charge which is incorrect. To date all upgrades to the Fall River assets are included in the user charge.
- Table 4-1 Regionalization Capital Costs
  - o Somerset WPC TN and Electrical Upgrade: The \$35 million should not be included in this comparison.
  - o Somerset Pump Station and Flow Equalization: Somerset could reduce the Flow Equalization Tank volume by addressing I/I. This would reduce the capital and O&M cost of operating these Somerset facilities and reduce the user charges as the volume of flow to Fall River would be reduced. In addition, further evaluation of the wet weather capacity that can be received by Fall River is needed and could also reduce the volume of equalization tankage required.
  - o New Collection System: This cost only evaluates Option 3 and most likely is the most expensive capital cost of all the options. Option 1 and 2 should also be evaluated to provide a full picture of the costs of all options.
  - o One Time Fall River Connection Fee: The maximum of this fee is \$25,000 and could be negotiated with the city given the larger volume of flow.
  - o Fall River WWTP Upgrade: Capital improvements to the Fall River WWTF are included in the user charge and not in addition to the \$34 million for upgrades should be removed from the capital costs.
  - o All costs should be presented in the same ENR index/year. At most the total capital costs, assuming option 3, and wet weather facilities as detailed would be \$80.7 million.
  - o Given the cost sources, the costs were done by different techniques and levels of detail.
  - o Safety factors and assumptions (levels of conservatism) are different. Thus, cost comparison is likely not valid. Call it "apples and oranges"
- Section 4.2.1 assumes the existing Somerset O&M costs which does not provide an accurate comparison with the Regionalization option. These cost should provide a break down and also include any subsidies provided from other funding sources. This would be to include the general fund or water. The O&M costs of the upgraded WPCF with TN removal should be used and will be higher than existing costs. In addition, there is no mention of the O&M costs of solids removal which will be significantly impacted in the future years compared to existing conditions.
- Section 4.2.2.1 includes additional costs for contribution to Fall River O&M which is not accurate. The O&M costs are included in the user charge and are not a separate cost.
- Section 4.2.2.1 assumes that the operating costs due to treatment at Fall River that would be assigned to Somerset would be "somewhat similar" to their existing O&M costs. Economy of scale would suggest that Fall River should have a lower cost/gallon O&M cost when combined with Somerset, than Somerset has on its own.
- Section 4.2.2.2

- Uses \$8.11/ccf for all flow the current rate to Fall River residential rate. The draft financial model provided in 2021 shows a decrease across the board of this rate.
- In the report it converts the fall River user charge to \$0.0072/gallon. The actual conversion is \$0.0108/gallon
- The Freetown IMA is based on a multiplier of 1.55 times the Fall River customer rate, specific for an initial volume of flow. When that volume is exceeded, the multiplier for the rate drops significantly to 1.05 times the Fall River rate. The Freetown IMA is not applicable to Somerset. The volume of flow from Somerset is significantly more than the existing IMA's and a different rate structure could be developed.
- If discharge is directly to the wastewater plant or CSO tunnel and the Fall River conveyance system is not used that would need to be taken into consideration as well.
- Wet weather flow needs to be taken into consideration and discussed during the development if the IMA.
- Table 4-4 Summary of O&M Costs
  - No Regionalizing, Existing Total Sewer Annual Cost - \$3.9M is stated as the existing operation cost which is not applicable here. This will not be the operating cost of the upgraded WPCF and solids disposal costs. In addition, the report states that the Somerset user charge to the customers is \$0.0066 per gallon which would equate user charge of \$10 million yet the budget is stated as \$4M. It is also not clear if debt service to pay for the capital improvements is included in the capital or O&M costs.
  - Regionalizing, Portion of Fall River WWTP Annual Costs - This \$2.7 million should be removed as these costs are included in the user charge.
- Table 4-5 Life Cycle Cost Analysis. The life cycle costs are not accurate due to the comments noted. The Capital and O&M costs of the upgrades to Somerset WPCF appear to be low. The Capital and O&M costs of the Regionalization appear to be high.
- Section 5.2.3 describes the Inter-basin Transfer Act requirements. We would anticipate that given the proximity of the two discharge locations, and their effluent ends up in the same location, this would not be an impediment. The sub-aqueous discharges of the wastewater plants are in the same basin. If the discharges were above MHW they would be in different basins.

The above is a summary of some of the issues the city sees with the draft report. We would request that these be evaluated and can be discussed with the city. We would also recommend that discussion be started in relation to a draft Intermunicipal Agreement (IMA) and the terms of that agreement. That will be a major determining factor in this evaluation.

We all deal with the changing industry variable. By that I mean we all deal with the uncertainty or finding a location for our sludge, the ever-changing permitting requirements and the staffing shortages. On these points as well there was not any

financial consideration in this evaluation for these questions. These are some of the things that need to be taken into consideration while evaluating these options. With regionalization there is strength in numbers. So rather than divide and conquer we would be able to stand together on issues that come down the pipe.

By working together, Fall River and Somerset have an opportunity to lead by example demonstrating how regional collaboration can deliver lasting economic, environmental, and social benefits. Will a full comprehensive correct regionalization evaluation show that interconnection is the best option, I do not know. But I do not think anyone should hastily pass on the option for lower cost and to improve the environment for the future. The city is willing to put in the work with the town to properly evaluate the options. The need for these services will only increase, and through careful planning, we can ensure both communities are well-positioned to meet the challenges and opportunities of the decades ahead.

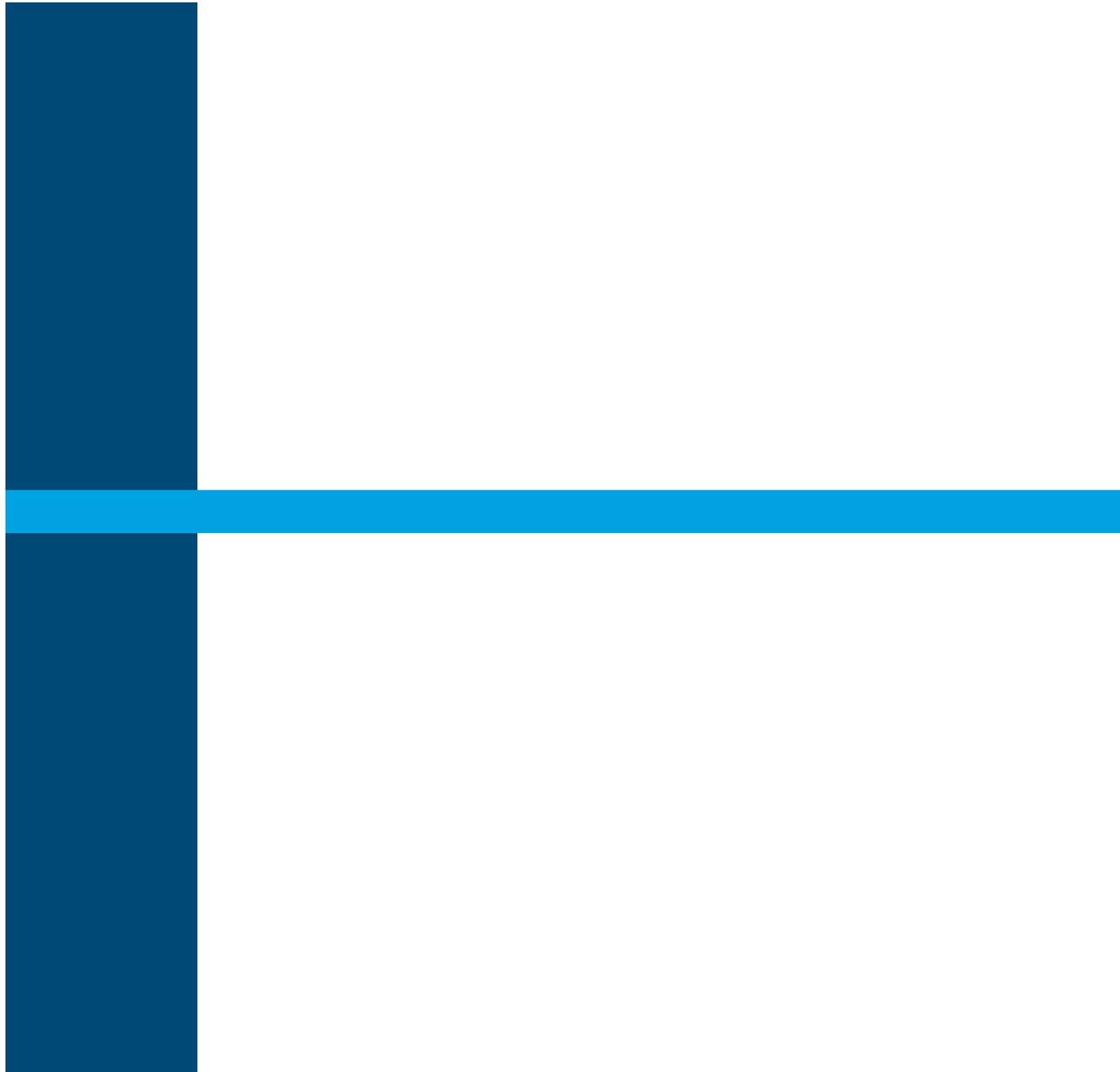
Sincerely

A handwritten signature in black ink, appearing to read 'Paul J Ferland', written in a cursive style.

Paul J Ferland EIT  
City of Fall River  
Community Utilities

CC:

Somerset, Town Selectmen  
Somerset, Town Administrator  
Mayor, City of Fall River  
Fall River City Council  
Fall River Sewer Commission



78 Blanchard Road, Suite 404  
Burlington, MA 01803  
978.416.8000 | [wright-pierce.com](http://wright-pierce.com)