# Wastewater Regionalization Evaluation Update

## Somerset, MA

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# Presentation Overview

Initial Draft Evaluation Summary
Public Comment Summary
Evaluation Update Summary
Conclusions

# Scope and Objectives


- Determine if Fall River has capacity/interest to receive wastewater flow from Somerset
- Evaluate how to collect and transport Somerset's wastewater to the Fall River WWTP
- Identify existing infrastructure for Somerset and what must remain after regionalization
- Evaluate permitting requirements, both regulatory and environmental
- Identify capital and operation and maintenance costs for project
- Consider the overall feasibility of regionalization

# Initial Draft Evaluation Summary

## Where Could Somerset Regionalize?

- Fall River (best option)
  - No existing wastewater connection
  - Wet weather capacity issues
  - Taunton River adds complexity for construction and permitting

## Existing Somerset Infrastructure

- Collection system and pump stations don't go away
- WPCF TN upgrade needed in interim regardless of regionalization efforts

# Initial Draft Evaluation Summary

## New Infrastructure Needed for Regionalization

- Somerset WPCF
  - Convert WPCF to pump station
  - Modify site structures and piping to flow equalization and new pump station
  - Screening facility needed to protect pumps

- Three options explored to convey flow to Fall River
  - Option 1 – Central Street Pump Station (not viable)
  - Option 2 – CSO Tunnel (viable, not reviewed further)
  - Option 3 – Direct to WWTP (viable, further analyzed)

# Connection Option 1 – Central Street Pump Station


Pros:

- Closest and largest pump station to the Somerset WPCF
- Capacity for dry weather flows

Cons:

- No capacity during wet weather flows
- Upstream sewer piping undersized for wet weather flows
- Downstream sewer capacity-limited
- Full replacement required to convey all flow

Option not selected for further evaluation

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# Connection Option 2 – CSO Tunnel – Columbia Street


Pros:

- Adequate capacity for dry-weather flow
- Minimal interference with Fall River collection system

Cons:

- Needs a new dedicated force main for flow to reach tunnel
- Dedicated force main would cross several state routes, including I-195
- Disrupts residents and businesses

Option not selected for further evaluation

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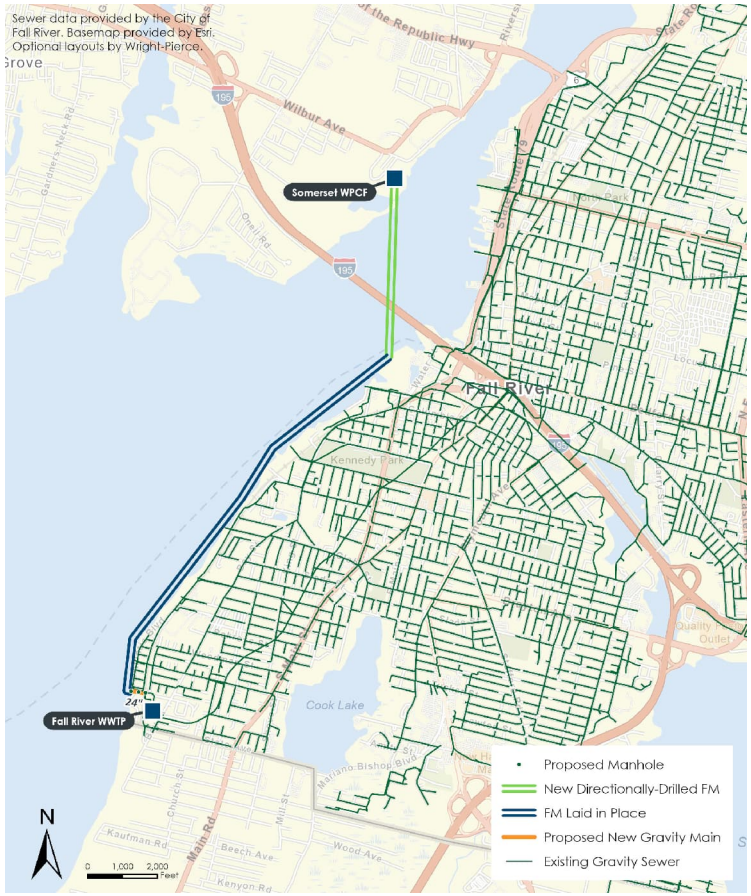
# Connection Option 3 – Fall River WWTP




Pros:

- Would not affect Fall River collection system
- Accommodates full range of flows
- Least disruptive to Fall River residents

Cons:

- Located completely within river
  - Difficult installation/constructability
  - Difficult to permit
  - Highest cost

Option selected for further evaluation

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# Initial Draft Evaluation Summary – Continued

## Permitting

- Lengthy process (10 years)
- MEPA and Inter-Basin Transfer are significant hurdles

## Costs

- Capital costs higher for regionalization
- Annual costs increase significantly
- Life cycle analysis indicates regionalization not cost effective
- Higher sewer fees for Somerset residents

# Public Comment Summary


- Some assumptions in report should be reconsidered/revised
- More information on costs needed including quantities, unit costs, and making sure comparison is apples-to-apples
- Option 3 is most expensive, need to review others as well
- Address I/I removal and wet weather flow/capacity for both communities

# Public Comment Summary


- NPDES permit compliance and extension request and need for interim TN upgrade during regionalization
- Fall River NPDES permit
- Elaborate on permitting and construction timeline basis
- More involvement needed with the public

# Evaluation Update – Assumptions

## Capital Costs

- Removed assumption for one-time connection fee and portion of Fall River WWTP upgrade
- Interim TN upgrade is required – maintained
- Flow EQ needed – maintained

## O&M Costs

- Removed portion of FR annual costs

## Permitting/Schedule

- Changed assumption of all scheduling components occurring non-concurrently

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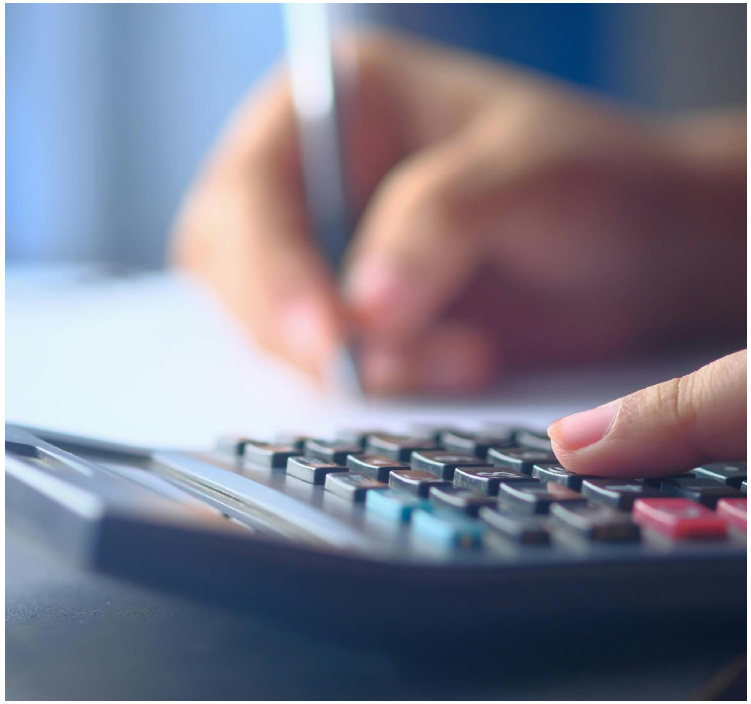
# Evaluation Update – Costs



## Capital Costs

- Revised costs throughout to be presented in the same ENR index
- Removed assumption for one-time connection fee and portion of FR WWTP upgrade
- Added capital cost analysis for Option 2
- Added further information on basis, quantities, unit costs, etc.

# Evaluation Update – Costs

## O&M Costs

- Added future Somerset WPCF TN costs
- Added increase for Somerset annual costs based on flow increase
- Removed portion of FR annual costs
- Revised FR user charge rate analysis
- Added debt service analysis

## Evaluation Update – Costs Continued

### Life-Cycle

- No change in method

### Present Worth Analysis Added

- Analysis that estimates the current value of a future sum of money
- Capital costs plus the present worth future O&M costs

# Capital Costs – Assumptions and Estimates

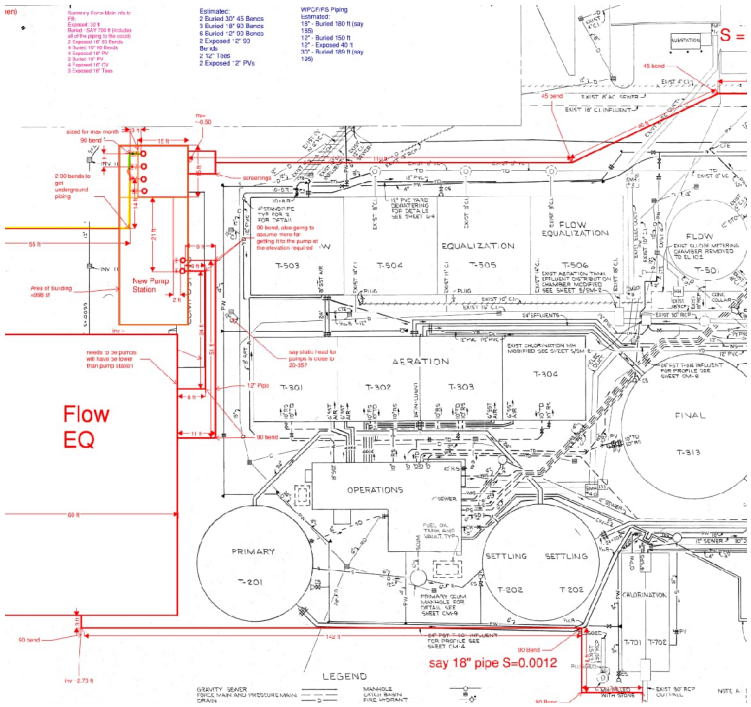
- Based on extensive experience bidding municipal construction projects in this area, the following estimates were applied:
  - 10% General Contractor overhead and profit
  - 7.5% General Contractor markup on Subcontractor work
  - 2% allowance for unit price items
  - 12% allowance for General Contractor General Conditions
  - 30% design contingency
  - 3% annual inflation rate
  - 5% construction contingency
  - 25% allowance for technical services (engineering)
  - 2% allowance for legal/administrative services
  - 1% allowance for financing (such as interim interest)
  - ENR Index 13839, May 2025

# Capital Costs – New Pump Station Key Unit Costs

## Unit Costs

- Concrete – $2,000/cubic yard
- Site Gravity Piping – $125/linear foot
- 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
  - Building – $750/square foot

# Capital Costs – New Somerset Pump Station Quantities




## Quantities

- 3 flow equalization pumps
- 4 submersible pumps
- 2 bar screens and washer-compactors
- 15-foot x 15-foot concrete 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

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# Capital Costs – New Collection System Key Unit Costs

## Unit Costs

- 24-inch HDPE (high-density polyethylene), directionally drilled – $800 per linear foot
- 24-inch PVC (polyvinyl chloride) sewer, open cut – $700 per linear foot
- Manholes – $7,500 each
- Air Release Manholes – $10,000 each

# Capital Costs – New Collection System Quantities

## Option 2

- 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

## Option 3

- 10,250 feet of 24-inch directionally drilled HDPE dual force main
- 25,250 feet of 24-inch HDPE dual force main laid along coast
- 430 feet of 24-inch sewer
- 5 manholes

# Costs – O&M

## Regionalization

- Existing Somerset pump stations and collection system – increased 20% based on projected future flow increase
- New pump station
  - Labor, parts, power
- Fall River user charge
  - Used current FR Residential rate of $10.84/1,000 gallons
  - Total volume of wastewater conveyed – 1.5 billion gallons per year (4.2 mgd ADF)
- Annual Debt Services

# Costs – O&M

## No Regionalization

- Somerset WPCF upgrade
- Somerset collection system and pump stations
- Increases in costs for both solids handling and TN upgrades
- Annual debt service
- 20% overall increase to account for increase in flow
  - Increase from current 3.52 mgd to permitted 4.2 mgd

# Capital Costs – Summary

| Item | No Regionalization | Regionalization Option 2 | Regionalization Option 3 |
|---|---|---|---|
| Somerset WPCF Upgrade | $75,000,000 | N/A | N/A |
| Somerset WPCF TN Interim Upgrade | N/A | $35,000,000 | $35,000,000 |
| Somerset New Pump Station and Flow Equalization | N/A | $16,000,000 | $16,000,000 |
| New Collection System | N/A | $21,600,000 | $61,000,000 |
| Total | $75,000,000 | $72,600,000 | $112,000,000 |

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# O&M Costs

| Item | No Regionalization | Regionalization Option 2 | Regionalization Option 3 |
|---|---|---|---|
| Future Collection System and Pump Station Annual Costs | $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 Costs and Flow | $1,000,000 | N/A | N/A |
| New Pump Station and Flow EQ Annual Costs | N/A | $400,000 | $400,000 |
| Fall River User Charge FY26 Residential Rate | N/A | $16,600,000 | $16,600,000 |
| Debt Service (2 % over 20 years) | $4,600,000 | $4,400,000 | $6,800,000 |
| Total | $9,500,000 | $22,800,000 | $25,200,000 |

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# Costs – Life Cycle

| | No Regionalization | Regionalization Option 2 | Regionalization Option 3 |
|---|---|---|---|
| Current Capital Cost | $75,000,000 | $72,600,000 | $111,100,000 |
| Current O&M Costs | $9,500,000 | $22,800,000 | $25,200,000 |
| Life Cycle | | | |
| 20-Year Capital Costs (2% interest over 20 years) | $111,400,000 | $107,900,000 | $166,400,000 |
| 20-Year O&M Costs (3% inflation over 20 years) | $255,300,000 | $614,200,000 | $678,900,000 |
| Total | $366,700,000 | $722,100,000 | $845,300,000 |

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# Costs – Present Worth

| Item | No Regionalization | Regionalization Option 2 | Regionalization Option 3 |
|---|---|---|---|
| Capital | $75,000,000 | $72,600,000 | $112,000,000 |
| O&M | $141,400,000 | $340,100,000 | $375,900,000 |
| Total Present Worth | $216,400,000 | $412,700,000 | $487,900,000 |

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# Costs – Fall River Cost Considerations

- Current Somerset User Rate – $7.10 per 1,000 gallons
  - With 31.5% infrastructure rate fee – $9.34 per 1,000 gallons
- Current Fall River Residential User Rate – $10.84 per 1,000 gallons
  - Out-of-city rate per other IMAs – 1.55 times residential rate (equates to $16.80 per 1,000 gallons)
  - Fall River unlikely to charge Somerset less than FR residents
  - Once IMA is negotiated, no further power in rate setting for Somerset
- Sewer rates increased by 24% in FY2025
  - Expected to keep increasing by 5% per year for the next 5 years
  - City Council voted down increase in FY26

# Costs – Fall River Cost Considerations Continued

- Fall River O&M costs projected to rise from $13.3 million in FY2019 to $30.9 million by FY2039
  - User rates will increase to offset the costs
  - Once IMA in place, user rate increases directly pass through to IMA partners
- Fall River has $200 million in WWTP upgrades and $150 million in CSO/collection system improvements to address by 2040 (old estimates, may be under current costs significantly)
- NPDES permit TN limit is coming

# Fall River WWTP Recommended Upgrades and Estimated Capital Costs

| Contract | Estimated Costs, Facilities Plan (2018) | Estimated Costs (2025) |
|---|---|---|
| Contract No. 1 – Incinerator Building Demolitions and Site Electrical Upgrade | $12,000,000 | Complete |
| Contract No. 2 – Facility Rehabilitation, Phase I | $51,000,000 | Complete |
| Contract No. 3 – Phase II | $30,000,000 | $38,000,000 |
| Contract No. 4 – Phase III | $28,000,000 | $35,000,000 |
| Contract No. 5 – Nitrogen Removal Upgrade | $79,000,000 | $99,000,000 |
| Contract No. 6 – Outfall Replacement | $10,000,000 | $12,500,000 |
| Other Smaller Contracts | $12,000,000 | $15,000,000 |
| Total | $222,000,000 | $199,500,000* |

*could be significantly underestimated based on current construction costs

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# Regionalization Permitting/Schedule

- Permitting
  - IMA – Likely a 2-year process and must precede any other permit negotiations
  - Permitting and legal review – Minimum of two years
- Design
  - Design of flow equalization and pump station with all pertinent equipment to convey flow to Fall River – approximately 2 years (can occur concurrently with some permitting items)
- Construction
  - Approximately 3 years
- Minimum of 8 years to complete project (Expected 2034 if project is initiated in 2026)
  - Compliance for TN removal at Somerset WPCF is required by 2030

# Regionalization Environmental Benefits

- "Remove" a wastewater discharge to Taunton River
- Full secondary treatment through Somerset WPCF, primary/disinfection only through Fall River WWTP for flows over 50 mgd
- Same treatment standards/permit limits between the two facilities for BOD, TSS, Pathogens, but more stringent limit for Total Nitrogen in Somerset
- Could exacerbate CSO issues in Fall River depending on connection point
- Not an overall environmental benefit to the river

# Revised Evaluation Summary


- Updated some analyses, mostly related to costs
- Option 2 added, less costly than Option 3 but more costly than not regionalizing
- Significant improvements are needed in FR through 2040, which will greatly increase its user rates and would pass on to Somerset
  - Magnitude of improvements needed in FR far more than those needed in Somerset
- Regionalization is not favorable for Somerset

# THANK YOU

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