

# Sewer Separation Prioritization

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*Public Utilities & Public Works Committee*

Katjana Ballantyne, Mayor

Richard E. Raiche, PE, PMP, MCPPO

Director of Infrastructure & Asset Management

13 November 2023



# Purpose

- Response to Council Order File # 23-1397
  - That the Director of Infrastructure and Asset Management update this Council on the sewer separation work and any opportunities for prioritizing problematic areas of the city

# Background and Reference Materials

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Sewer system design and Capital Investment Plan prioritization are complex. Prior presentations and posted reports provide critical context.

# Primer on Water & Sewer Infrastructure

2019 Crash course on needs and drivers for funding


# 26 Feb 2019 presentation to Finance Committee of the Whole

- Agenda Item 207429
- <http://somer villecityma.iqm2.com/Citizens/SplitView.aspx?Mode=Video&MeetingID=2873&MinutesItemID=65166&Format=Minutes>
- Video starts at 3:53 mark


Video Outline - City of Somerville, Massachusetts - Microsoft Edge

somer villecityma.iqm2.com/Citizens/SplitView.aspx?Mode=Video&MeetingID=2873&MinutesItemID=65166&Format=Minutes

MediaTraq Webcast



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 **City of Somerville  
Massachusetts**

Placed on File  
Feb 28, 2019 7:00 PM

**Agenda Item  
207429**

**City Engineer requesting to address this Board with a water and sewer infrastructure presentation outlining the needed capital, in anticipation of the upcoming rate recommendations.**

Information

<b>Department:</b>	Engineering	<b>Sponsors:</b>	
<b>Category:</b>	Officer's Communication	<b>Purposes:</b>	Officer's Communication

Official Text

To the Honorable Board:

I hereby request time to deliver a water and sewer infrastructure presentation to the Board of Aldermen outlining our capital needs for water and sewer in anticipation of the upcoming rate recommendations.

Please contact me if I can be of further assistance.

Richard E. Raiche, PE, PMP  
Director of Engineering

Meeting History

<b>Jan 24, 2019 7:00 PM Video</b>	<b>City Council</b>	<b>Regular Meeting</b>
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RESULT: LAID ON THE TABLE

City Council

# Key takeaways for sewer planning

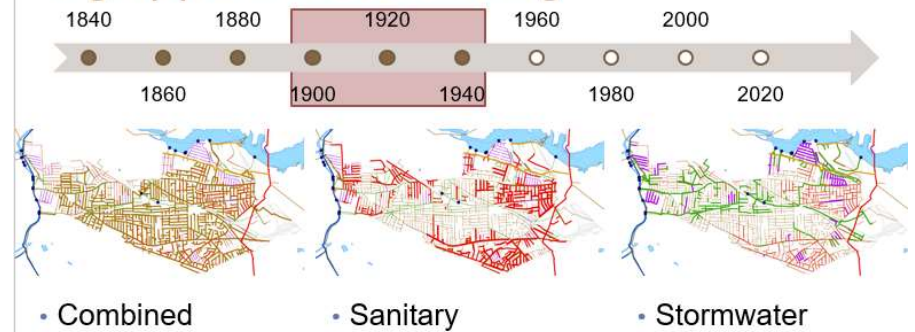
## 5 Modes of failure

- Capacity
- Flow type (I/I)
- Quality (CSO/MS4)
- Condition (buildup)
- Condition (collapse)



- Need to address 5 major issues
- Two issues driven by regulatory requirements of EPA, MassDEP and MWRA

## System expansion, addition of second (and third) larger pipes to address flooding



- Existing system configuration drives how issues can be addressed, typically downstream to upstream

# Capital Investment Plan

Water & Sewer Rates driven by CIP

# 13 June 2022 presentation to Finance Committee

- [Video Outline - City of Somerville, Massachusetts \(iqm2.com\)](https://www.iqm2.com)
- Starts at 6:50 mark

The screenshot displays a MediaTraQ Webcast interface. On the left is a video player titled "Water & Sewer Capital Investment Plan 2022 Update". The video content includes a title slide with the subtitle "In support of Water & Sewer FY23 rates, IAM FY23 budget, and Project 1 & 2 appropriation", a list of speakers (Kajana Ballarthyne, Mayor; Richard E. Raiche, PE, PMP, MCPPQ, Director of Infrastructure & Asset Management), and the date "13 June 2022". Below the video player, the meeting title "Finance Committee Committee Meeting 6/13/2022 6:00 PM" is shown. A "Downloads:" section lists "Agenda" and "Minutes". The agenda items are:

- I. Call to Order
  - 1. Roll Call
- II. Agenda Item
  - 1. 213867 : Director of Water and Sewer submitting the proposed water and sewer volumetric rates for FY23.
    - a. FY23 Rate Memo
  - 2. Review of FY 2023 Budget:
    - DPW Administration
    - Buildings

On the right, the agenda item details page for "City of Somerville Massachusetts" is shown. It features the city seal and a green "Approved. Jun 23, 2022 7:00 PM" stamp. The agenda item is "213867" with the description "Director of Water and Sewer submitting the proposed water and sewer volumetric rates for FY23." The "Information" section includes:

<b>Department:</b>	Water and Sewer	<b>Sponsors:</b>	
<b>Category:</b>	Officer's Communication	<b>Purposes:</b>	Appropriation/Budget

The "Attachments" section lists "FY23 Rate Memo". The "Official Text" section includes a message to the City Council: "Attached, please find a memo summarizing proposed water and sewer volumetric rates for the Fiscal Year 2023 (FY23). Please contact me if I can be of further assistance." The sender is identified as Jason Hayden, Director of Water & Sewer. A "Meeting History" section is also visible at the bottom.





# Somerville's Urban Hydrology

Gravity drives our system. Areas are interconnected. Solutions must reflect remote constraints and/or impacts.

# 27 Apr 2017 presentation to Board of Aldermen

- Agenda Item 203293
- [Video Outline - City of Somerville, Massachusetts \(iqm2.com\)](#)
- Video starts at 0:30 mark

MediaTraq Webcast



36. 203288 : That the Director of Finance provide this Board with the total amount of meals tax received in each of the last five fiscal years and, to the extent possible, those receipts broken out by business district.

UNFINISHED BUSINESS

REPORTS OF COMMITTEES

37. FINANCE COMMITTEE

A. 203289 : Report of the Committee on Finance, meeting on April 25, 2017.

a. Committee Report - Finance - 4-25-17

B. 200413 : Requesting acceptance of the fee interest in Parcel 34B, including portions of Great River Road, Assembly Row, Canal Street, and Foley Street, and all of Artisan Way.

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City of Somerville  
Massachusetts

Approved  
Apr 27, 2017 7:00 PM

Agenda Item  
203289

Report of the Committee on Finance, meeting on April 25, 2017.

Information

<b>Department:</b>	Clerk of Committees	<b>Sponsors:</b>	
<b>Category:</b>	Committee Report	<b>Purposes:</b>	Committee Report

Attachments

Committee Report - Finance - 4-25-17

Official Text

Report of the Committee on Finance, meeting on April 25, 2017.

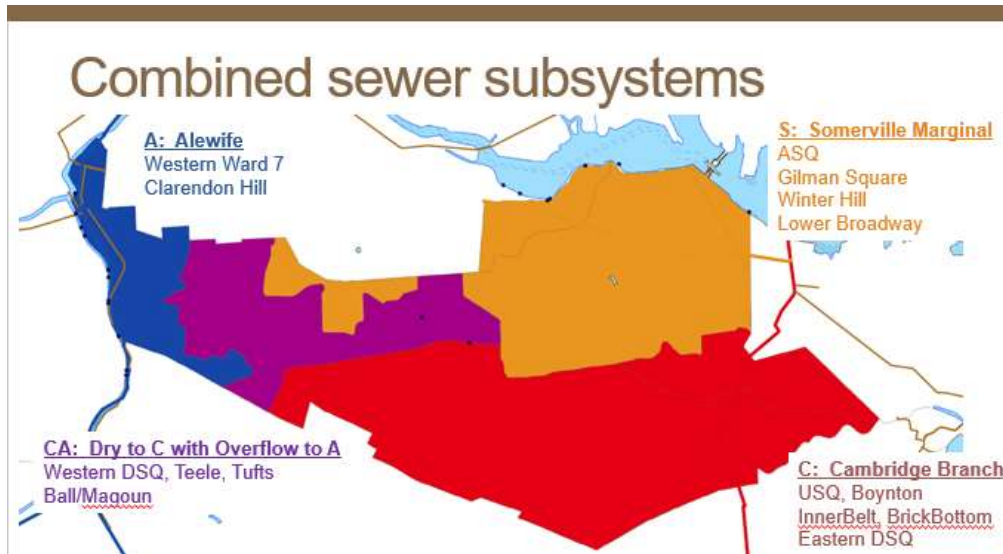
Meeting History

Apr 27, 2017 7:00 PM Video City Council Regular Meeting

Alderman Lafuente reported on the items discussed at the meeting. The major focus of the meeting was the acceptance of certain Assembly Row Streets as public ways, including Grand Union Blvd, portions of Great River Rd., Artisan Way, Canal St. and Foley St. The Committee also approved an appropriation of \$41,000 from the Capital Stabilization Fund to conduct a Police Department Feasibility Study, and reviewed the City's overall debt.

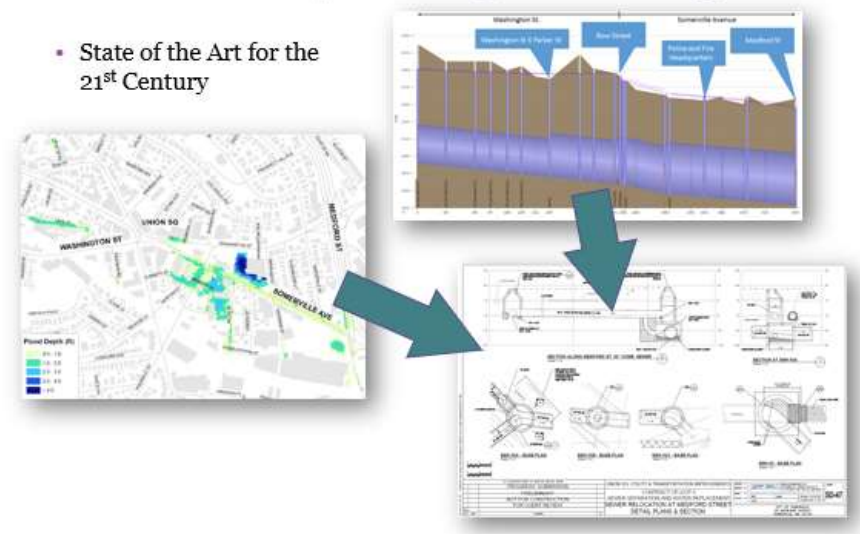
RESULT: APPROVED

# Key takeaways for sewer planning



## Data-driven planning and design

- State of the Art for the 21<sup>st</sup> Century



- Four major subsystems, each with different challenges

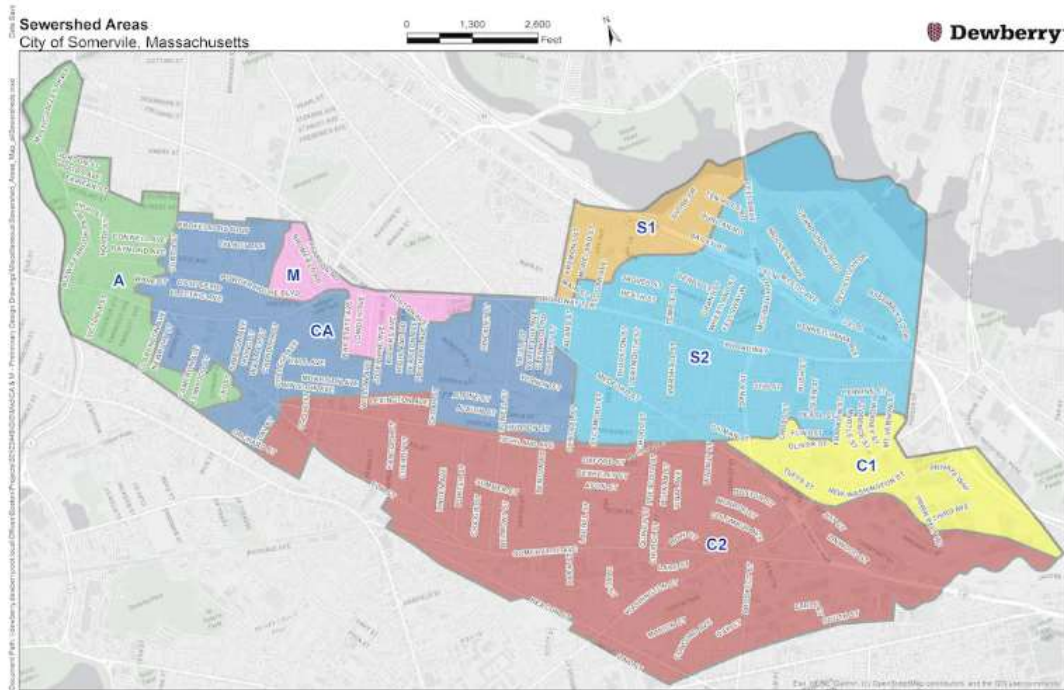
- Designs utilize advanced hydraulic modeling to predict system performance

# Citywide Drainage & Water Quality Master Plan

Deep dive into root causes of and potential solutions to  
flooding

# [Citywide Drainage and Water Quality Master Plan | SomerVoice \(somervillema.gov\)](http://somervillema.gov)

## Citywide Drainage and Water Quality Master Plan



### Who's Listening

**Lucica Hiller**

Stormwater Program Manager  
IAM, Engineering Division



**Phone** 6174483716

**Email** lhiller@somervillema.gov

### Final Report

Somerville Flood Mitigation and Water Quality Master Plan Final Report (24.9 MB) (pdf)

### Projects In Design

Morrison Ave Linear Storage & Greater Davis Square Area Sewer Separation - Project Sheet (615 KB) (pdf)

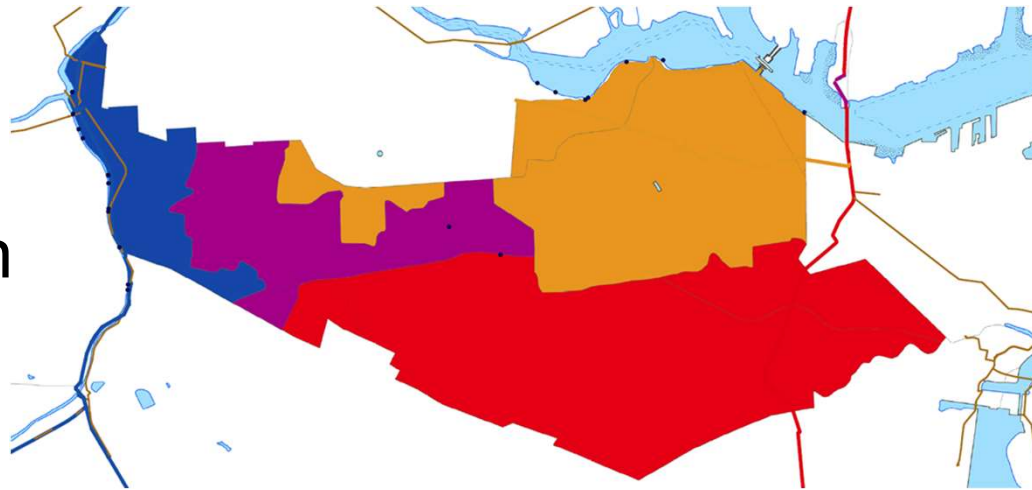
# In-Flight System Improvement Projects

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# Cambridge Branch System

- SAUSI (Complete)
  - Trunk conveyance
- Spring Hill Sewer Separation (Construction)
  - Local improvements
- Poplar Street Pump Station (Construction)
  - Systemwide capacity
- All other local improvements must wait for Poplar to come on-line





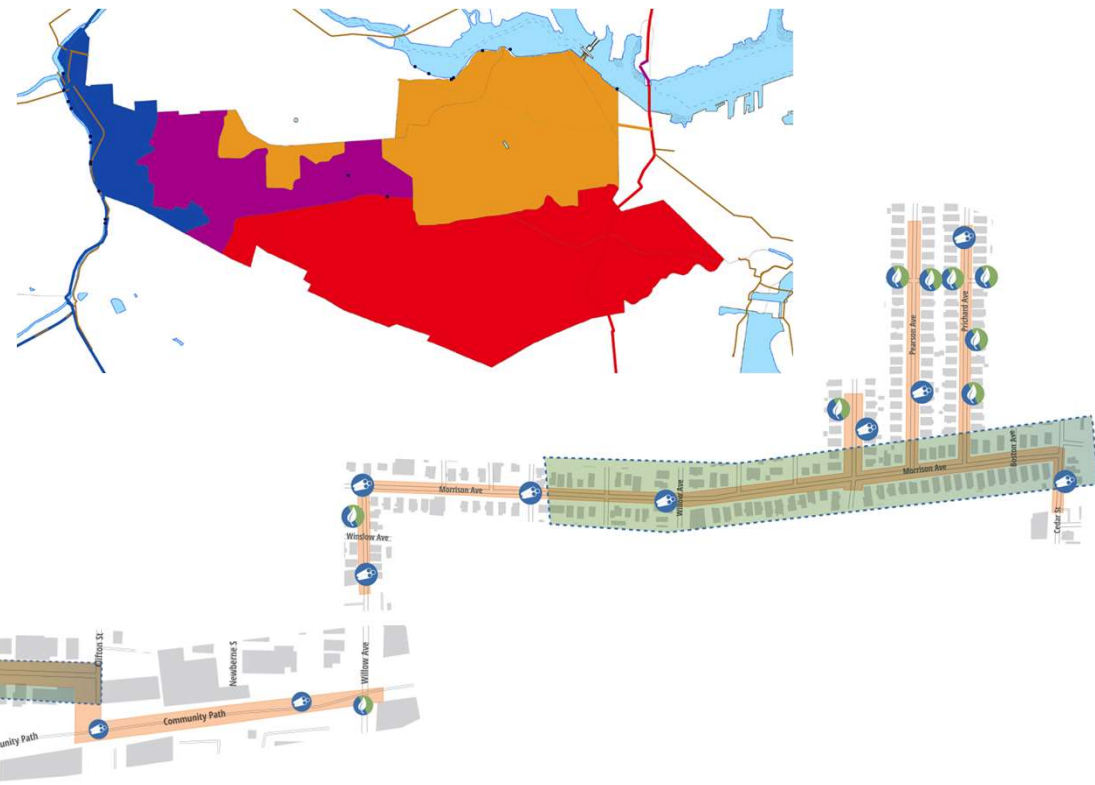
# Somerville Marginal System

- New Mystic River Stormwater Outfall and Foss Park Sewer Separation (Preliminary design & permitting)
  - Systemwide capacity
  - Trunk conveyance
  - Local improvements
- All other local improvements must wait for this project and CSO planning



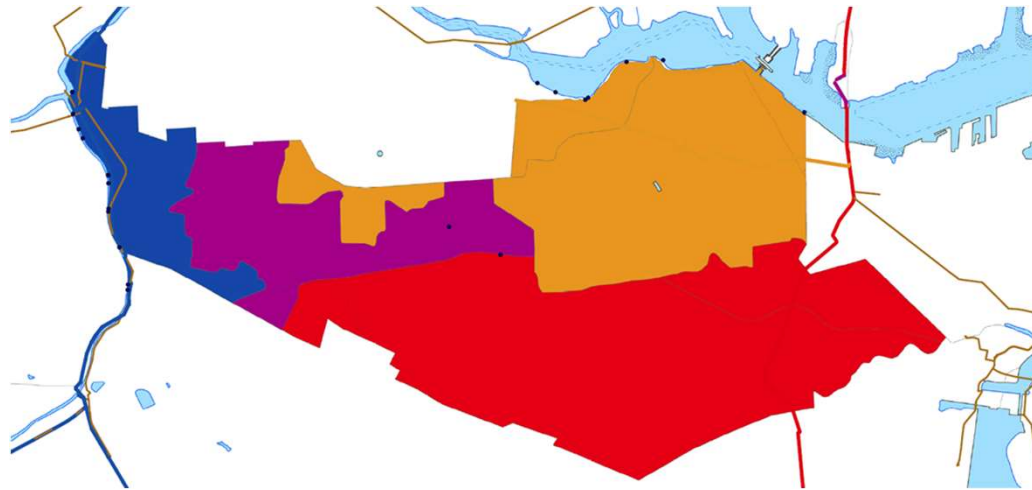
# Cambridge/Alewife System

- Morrison Avenue Linear Storage and Greater Davis Square Area Sewer Separation (Preliminary design)
  - Trunk conveyance
  - Local improvements
- All other local improvements must wait for this project and CSO Planning



# Alewife System

- None
- All improvements must wait for CSO planning



# Combined Sewer Overflow Long Term Control Plan

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Joint effort by Cambridge, Somerville & MWRA  
reviewed and approved by EPA and MassDEP will drive  
our sewer CIP for decades

# [Combined Sewer Overflow Control Planning Program - Joint efforts by Cambridge, MWRA, and Somerville | SomerVoice \(somervillema.gov\)](#)



CITY OF CAMBRIDGE



MASSACHUSETTS WATER RESOURCES AUTHORITY



CITY OF SOMERVILLE

[Home](#) / [Combined Sewer Overflow Control Planning Program - Joint efforts by Cambridge, MWRA, and Somerville](#)

## Combined Sewer Overflow Control Planning Program - Joint efforts by Cambridge, MWRA, and Somerville



About the project

### Key Dates

 Public Meeting #3  
November 15 2023

# Public Meeting #3 – Wednesday, 15 November 2023 6:00 pm

**November 15 2023**

## Public Meeting #3

The City of Somerville, the City of Cambridge, and the Massachusetts Water Resources Authority (MWRA) invite you to a virtual public meeting to discuss improving water quality in our rivers through the development of an updated Combined Sewer Overflow (CSO) Control Plan. Join us for this public meeting to learn about the tools available to control combined sewer overflows, the challenges and opportunities of these CSO control tools, and provide feedback on what tools you would like to see in your communities.

The meeting will take place virtually on Wednesday, November 15, 2023 at 6 p.m.

Register here: <https://tinyurl.com/CSOmeeting3>

- [Webinar Registration - Zoom](#)

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