

KISS 108 Year – Old Interceptor Goodbye

Rerouting the Town of Franklin's Oldest and Most
Critical Asset, the Beaver Street Interceptor, out
of the Mine Brook

January 25, 2023

Agenda

1 **Introductions & Project Overview**

2 **Background & History**

3 **Beaver Street Interceptor – Planning Phase**

4 **Design Approach**

5 **Permitting**

6 **Funding & Costs**

7 **Schedule & Next Steps**

8 **Lessons Learned**

Introductions



Doug Martin, P.E.

Town of Franklin – Water & Sewer Superintendent



Amy Anderson George

Arcadis – Project Manager

Town of Franklin

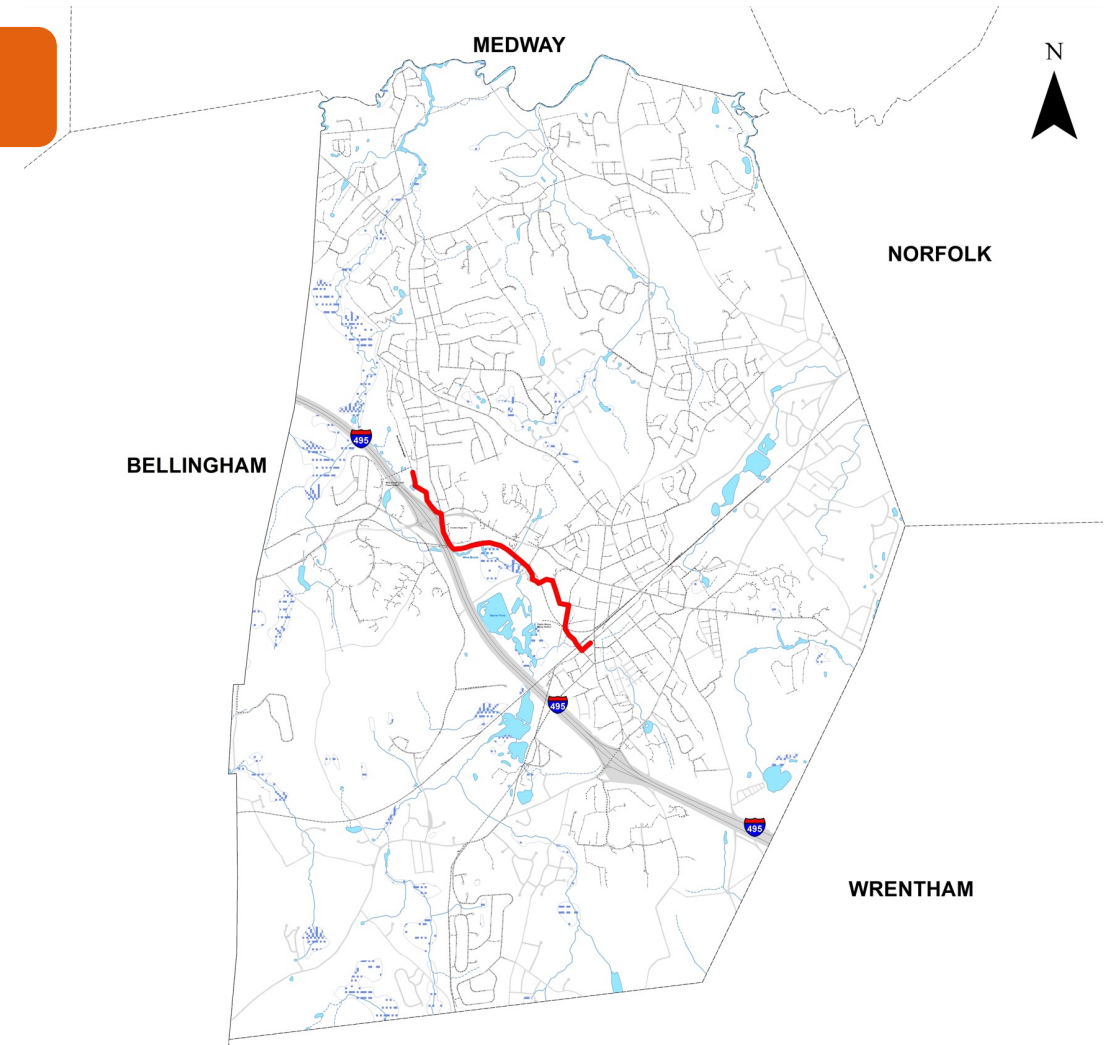
- *Robert Cantoreggi, Director of Public Works*
- *Jamie Hellen, Town Administrator*
- *Franklin Town Council*
- *Jake Standley, Assistant Water & Sewer Superintendent*

- **Arcadis**
- *Scott Haynes, Project Director*
- *Sean Mitchell, Project Engineer*

Where are we?

Town of Franklin, Massachusetts

- Population of 34,000, growing suburban community
- 27 square miles
- 144 miles of sanitary sewer pipelines and 23 pump stations
- Sanitary sewer flow is transported to the Charles River Pollution Control District (CRPCD) via three main interceptors: Beaver Street Interceptor, Mine Brook Interceptor, & Shepard's Brook Interceptor.



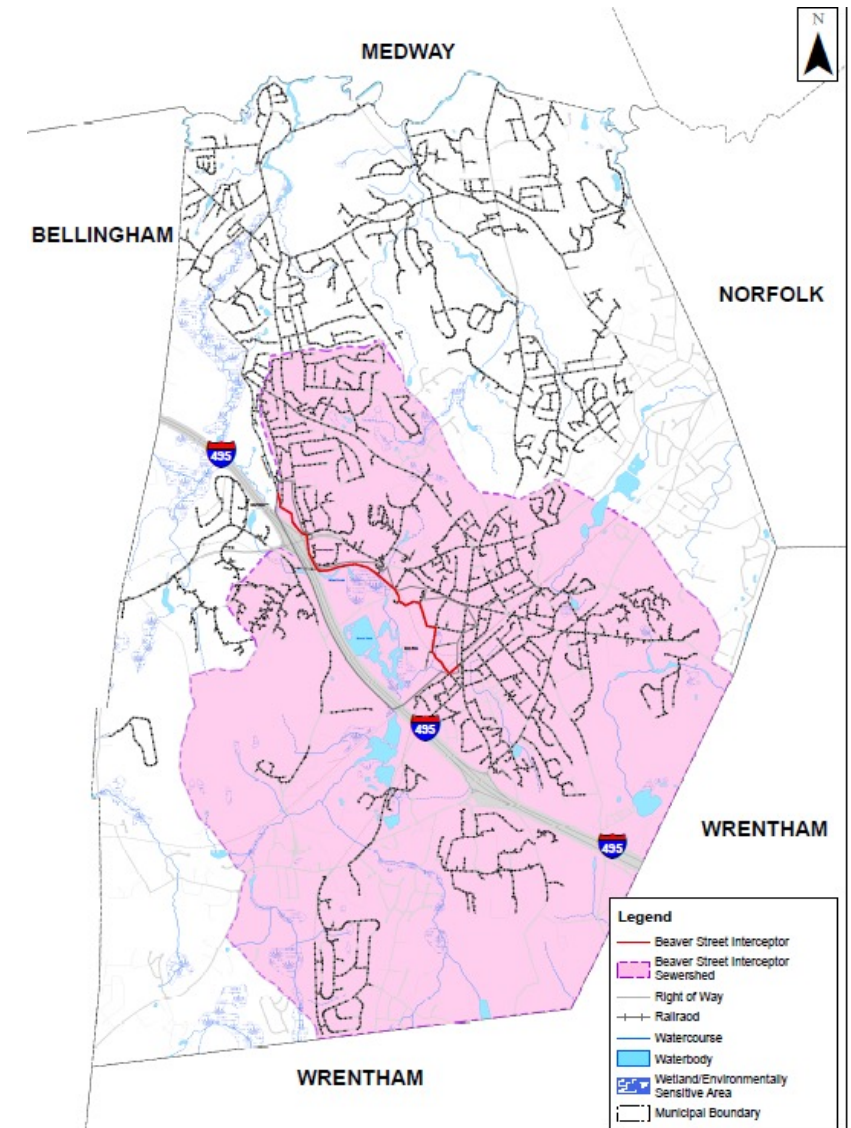
Beaver Street Interceptor

Constructed in 1914, originally discharged to the former Franklin Wastewater Treatment Plan (“sewer beds”)

Transports 70% of the Town’s wastewater flow

Cleaned and televised every 5 years since 2005, no construction or rehabilitation performed

Experienced historic SSOs during extreme rain events



Beaver Street Interceptor

Adjacent to the Mine Brook, through wetlands, O&M challenges

16" to 24" cast iron, RCP, VCP

Approximately 11,932 LF (2.3 miles)

59 sewer manholes

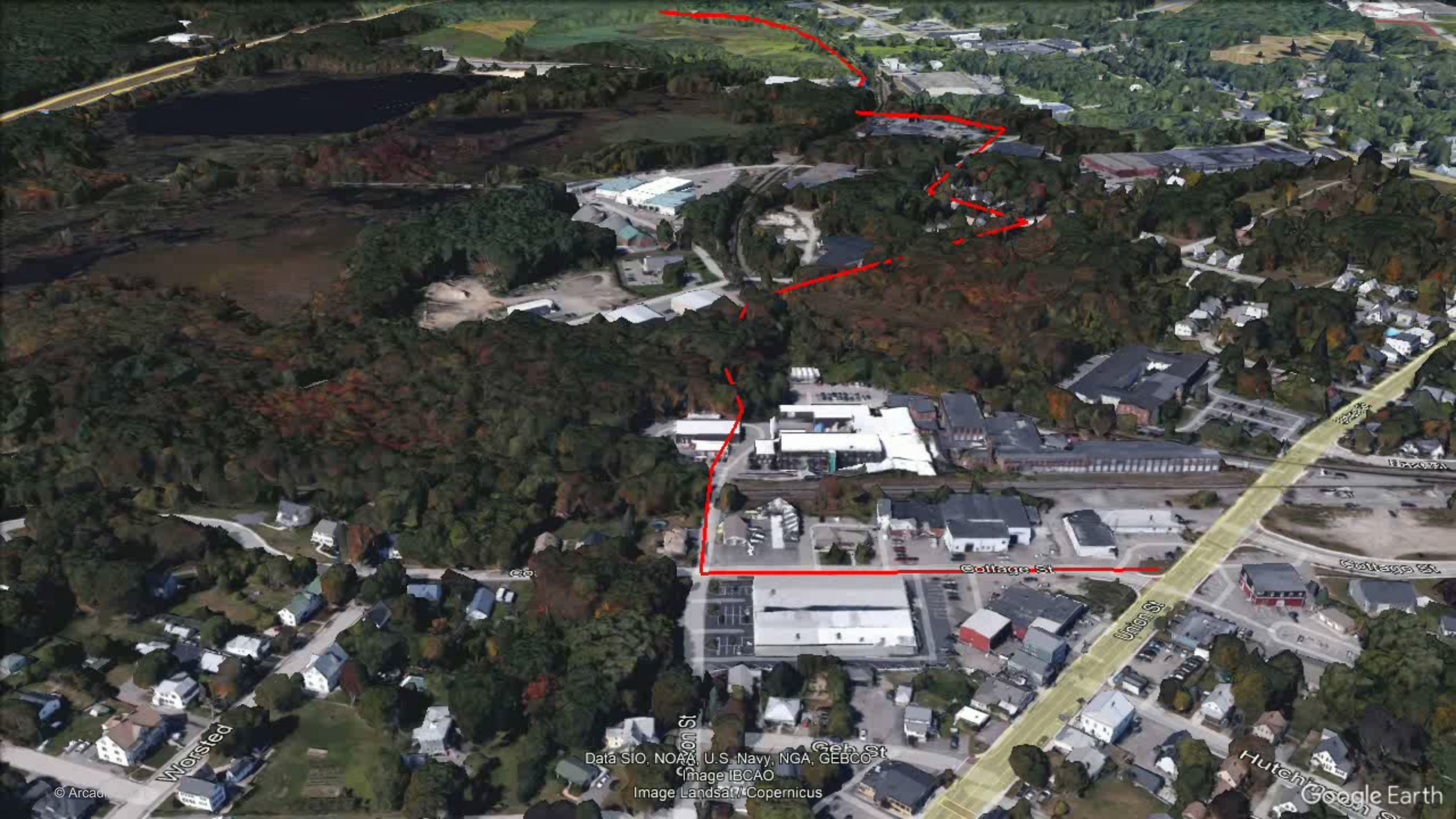


BSI Construction, 1914

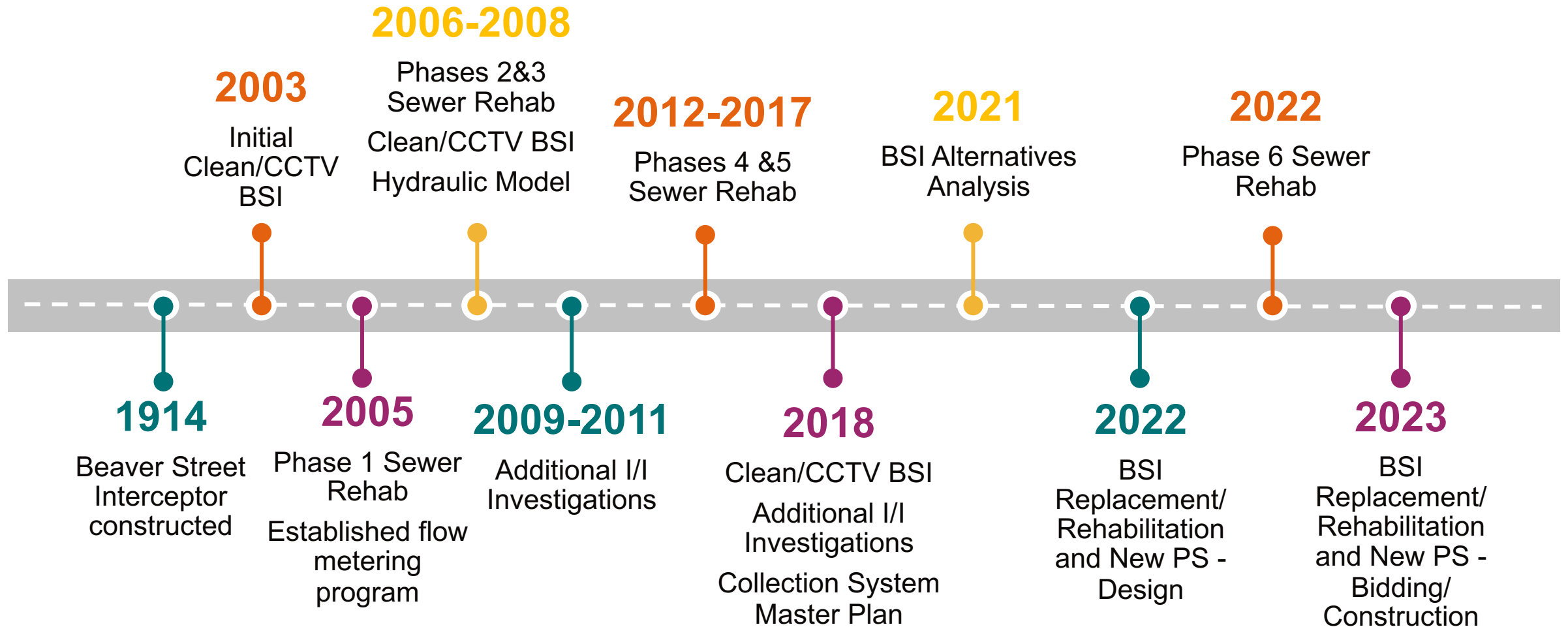
Due to its age, the risk and consequence of failure, and the percentage of the Town's flow conveyed by the interceptor, the BSI is considered Franklin's most critical sewer asset.



Town of Franklin Water & Sewer Truck, early 1900s



How did we get to where we are today?

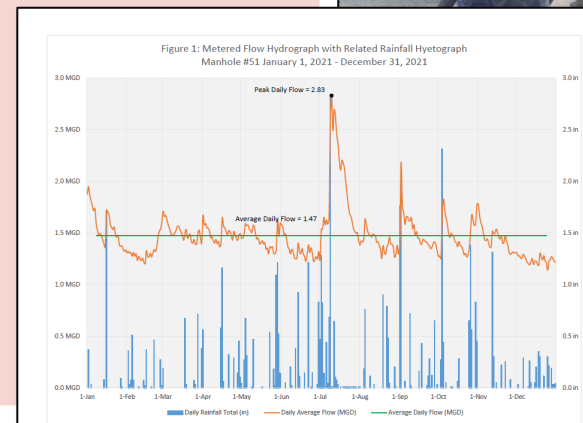


Town's goal was to eliminate SSOs, reduce I/I and preserve the BSI

I/I Investigations & Sewer Rehabilitation

Proactive, not reactive approach

- Investigations
 - Flow Metering 2005 – 2023
 - 160,000 LF of Cleaning and CCTV
 - 1,400 manhole inspections
- Completed Rehabilitation
 - 54,000 LF of CIPPL
 - 603 manholes



Beaver Street Interceptor Alternatives Analysis

- Build-out analysis – future growth
- Hydraulic Model
- Evaluated three alternatives for rehabilitation/replacement
 - Alternative 1 - Full replacement
 - Alternative 2 - Full rehabilitation
 - *Alternative 3 - Rerouting BSI out of existing location – rehabilitation of portions of the BSI, eliminating sewer under 495, rerouting BSI to Route 140 through new pump station*



Alternatives Analysis

Parameter	Relative Weight or Level of Importance	Alternative 1	Alternative 2	Alternative 3
Construction Cost	20%	5	3	2
Reliability of Design/Operation	10%	3	2	5
Risk of Overflows	20%	2	3	5
Environmental Concerns/Risk	15%	2	1	5
Maintenance	10%	3	3	2
Accessibility/Easements	15%	1	1	4
Impacts to Residents/Businesses	5%	4	4	3
Permitting Requirements	5%	2	1	3
	100%			
Weighted Average		2.8	2.3	3.8
1 - Highly Disadvantageous , 2 – Disadvantageous, 3 – Neutral, 4 – Advantageous, 5 - Highly Advantageous				



BSI Rehabilitation/ Replacement and New Pump Station

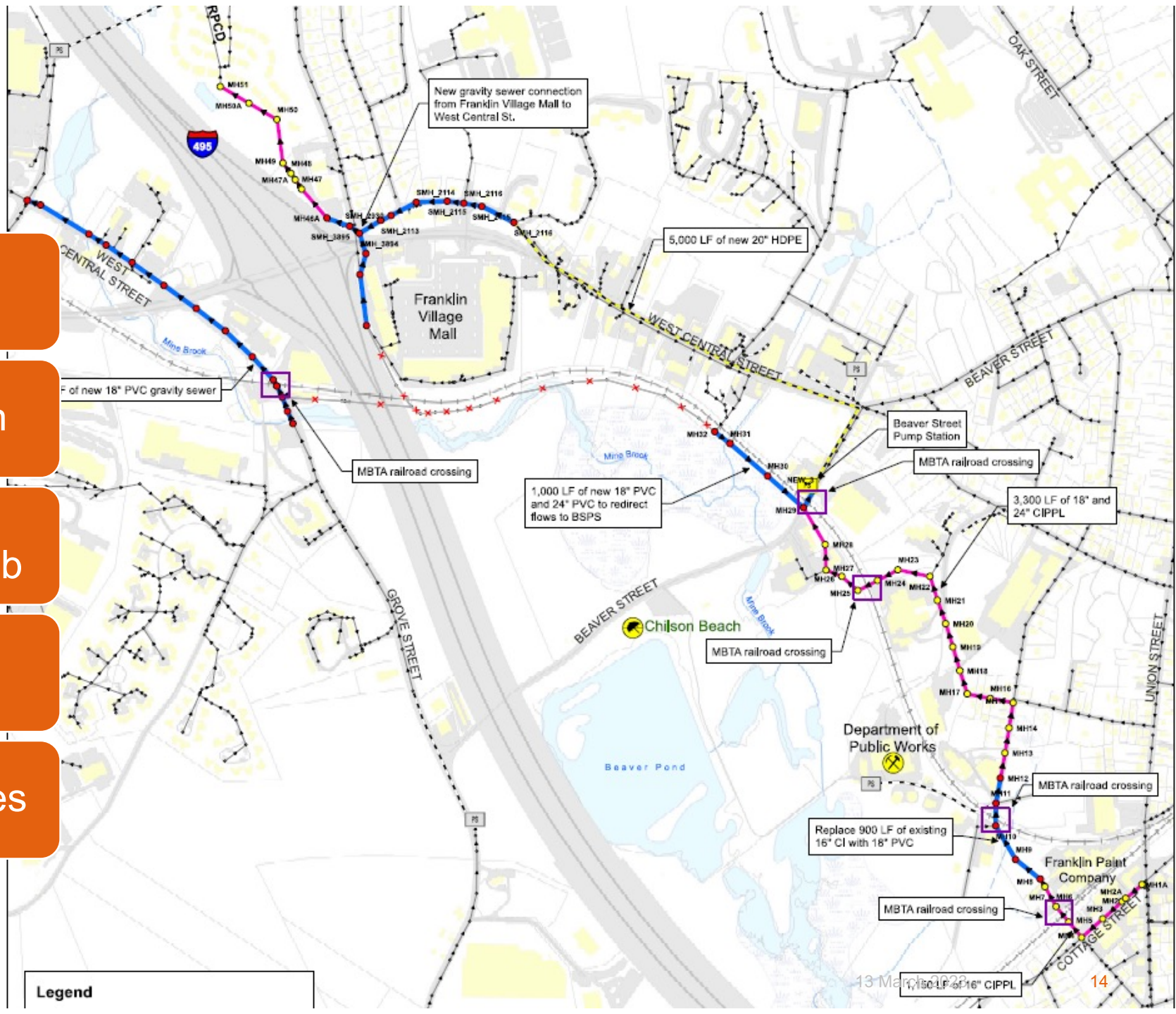
New 6 MGD Pump Station

4,100 LF of 18" PVC force main

CIPPL 6,100 LF (16" to 24") of existing BSI, including MH rehab

7,300 LF new gravity sewer

44 new sanitary sewer manholes



Legend

BSI Rehabilitation/ Replacement and New Pump Station



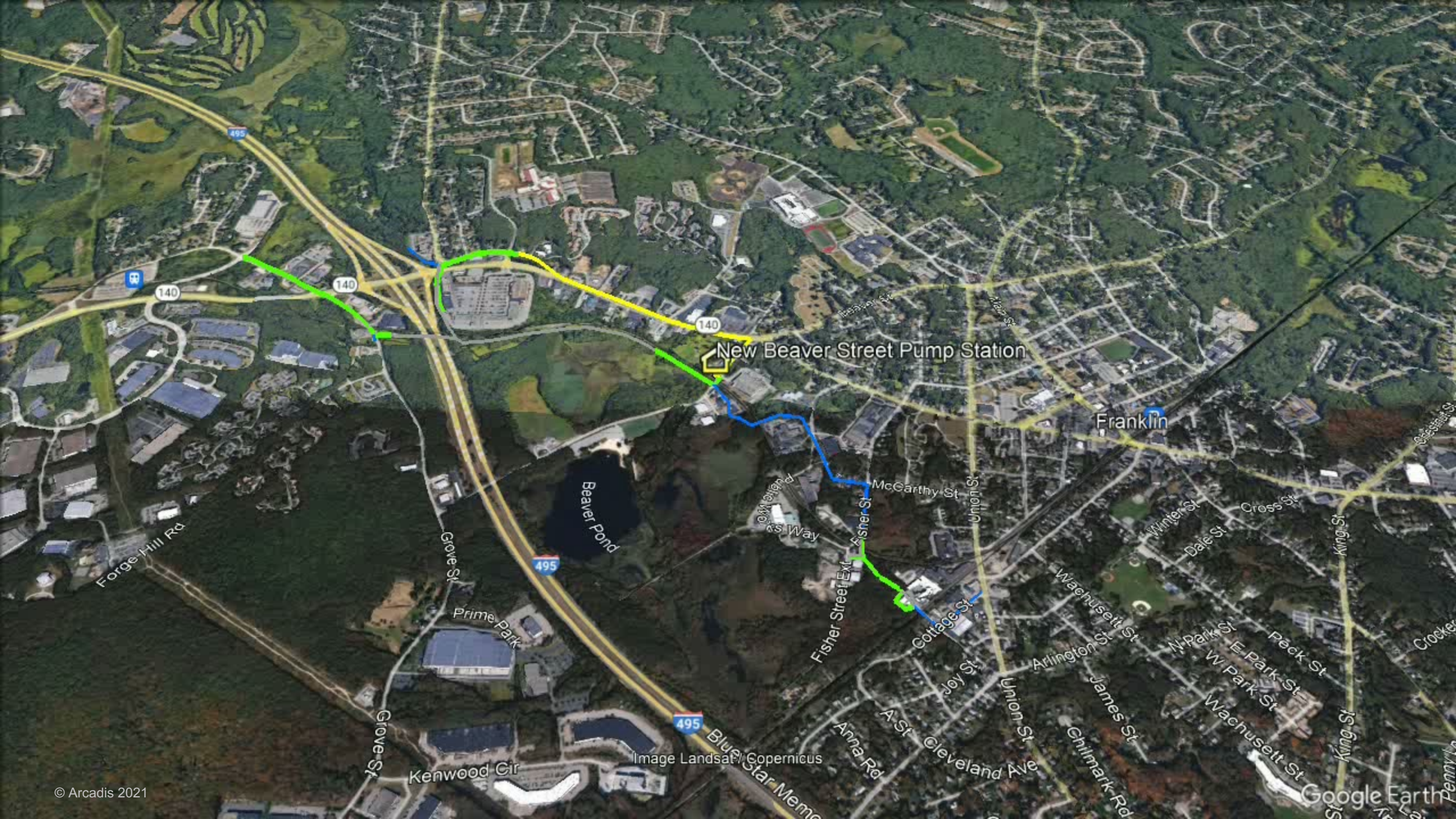
Abandonment of 4,300 LF of 6" to 24" gravity sewer

900 LF of new water main

Reconstruction of two siphon chambers

Installation of new 18" above grade gravity sewer



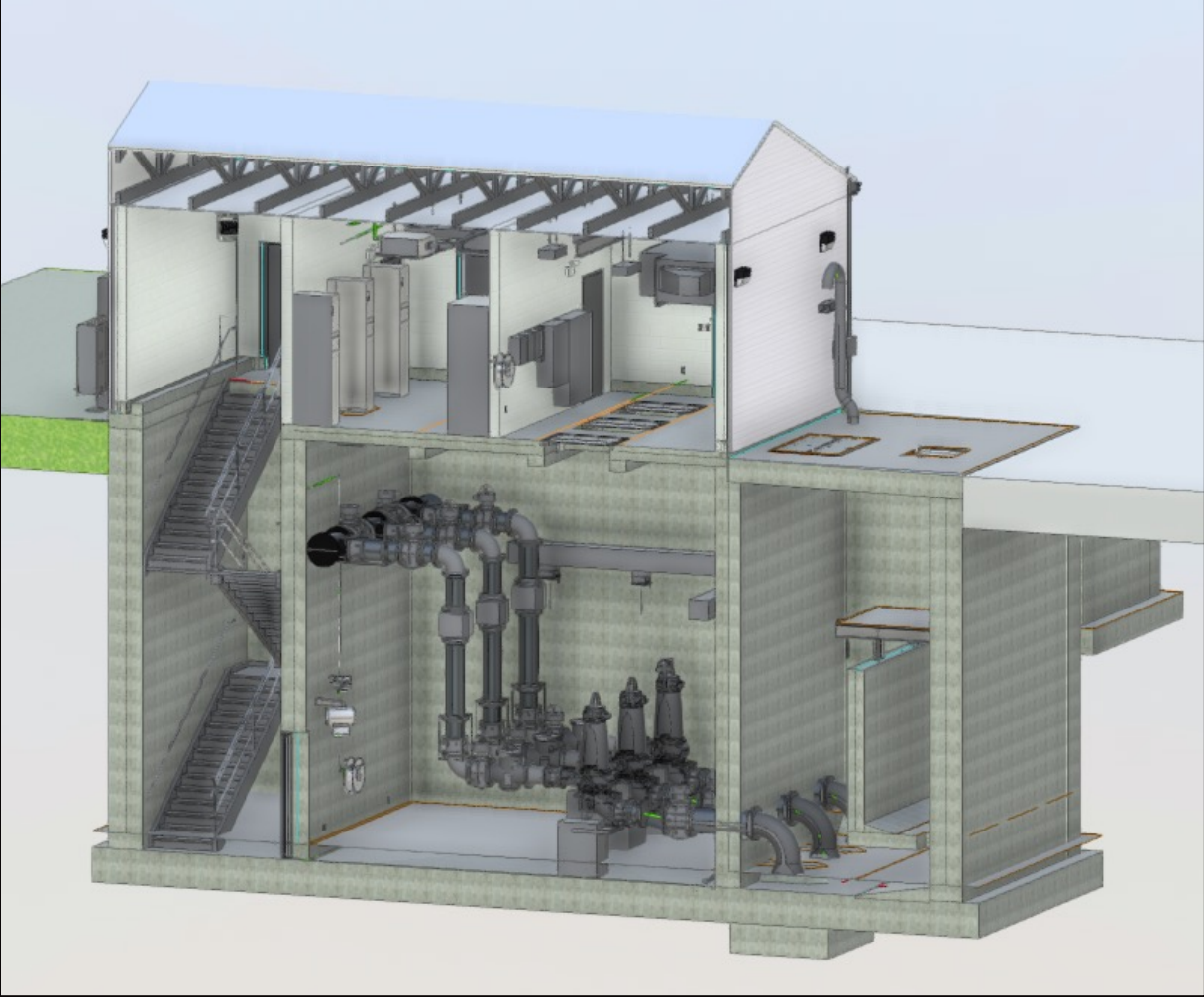


New Beaver Street Pump Station

Franklin

Beaver Pond

Beaver Street Pump Station



Design Constraints

Cross MBTA/Keolis/CSX in five locations

Four jack and bore locations

BSI runs parallel to Mine Brook - wetlands

Open cut excavation new force main down Route 140
(state highway)

Deep sewers (45+ feet in several locations)

Extensive bypass requirements

Exposed pipe on West Central Street – requiring helical
piles

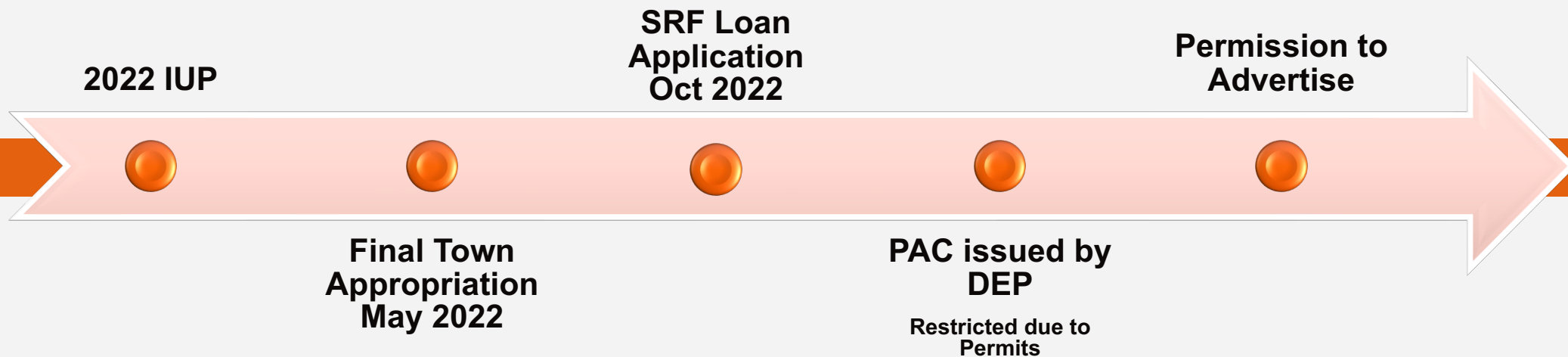


Permitting



Funding and Costs

- Clean Water State Revolving Fund (CWSRF)
- Estimated Construction Cost - \$25 million



Schedule & Next Steps

Scheduled Activity	Date
Advertise for Bids	December 21, 2022
Bid Opening (earliest)	February 2023
Contract Award	June 2023
Contractor Submittals and Materials Pre-Order (6 months)	June 2023 – Dec. 2023
Notice to Proceed (Active Construction/Start of Contract Times)	Dec. 2023 or March 2024
Construction Completion (est. 36 months construction duration)	Dec. 2026 or March 2027



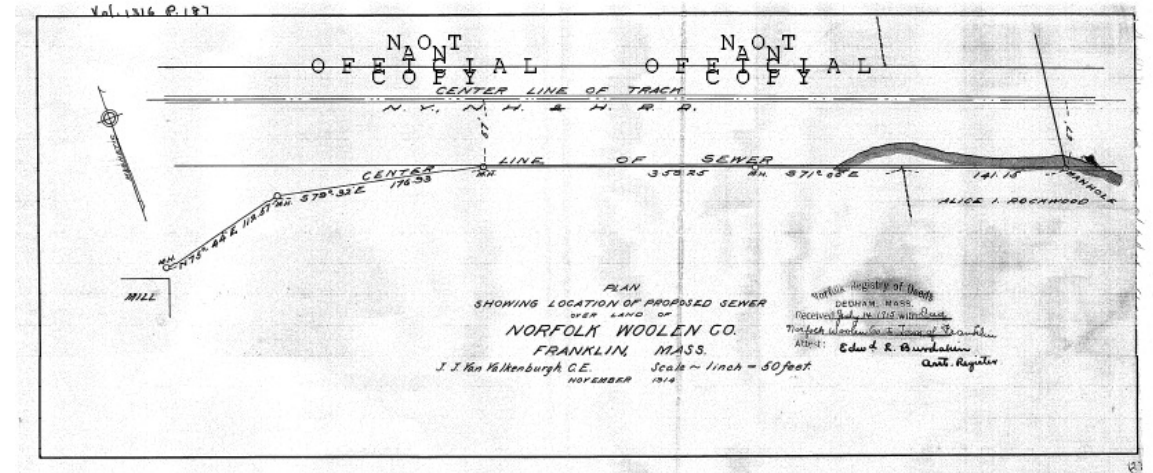
Lessons Learned

Don't underestimate permitting

- MassDOT, MBTA/Keolis, Conservation Commission, ACOE
- SRF Funding requirements

Easements? Do they exist?

Meet with MBTA/Keolis early and maintain regular communication



Questions?






Contact Us



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Arcadis. Improving quality of life.