

Public Presentation, May 28, 2024

Proposed Door-to-Door Inspection Program

Town of Dedham | Weston & Sampson



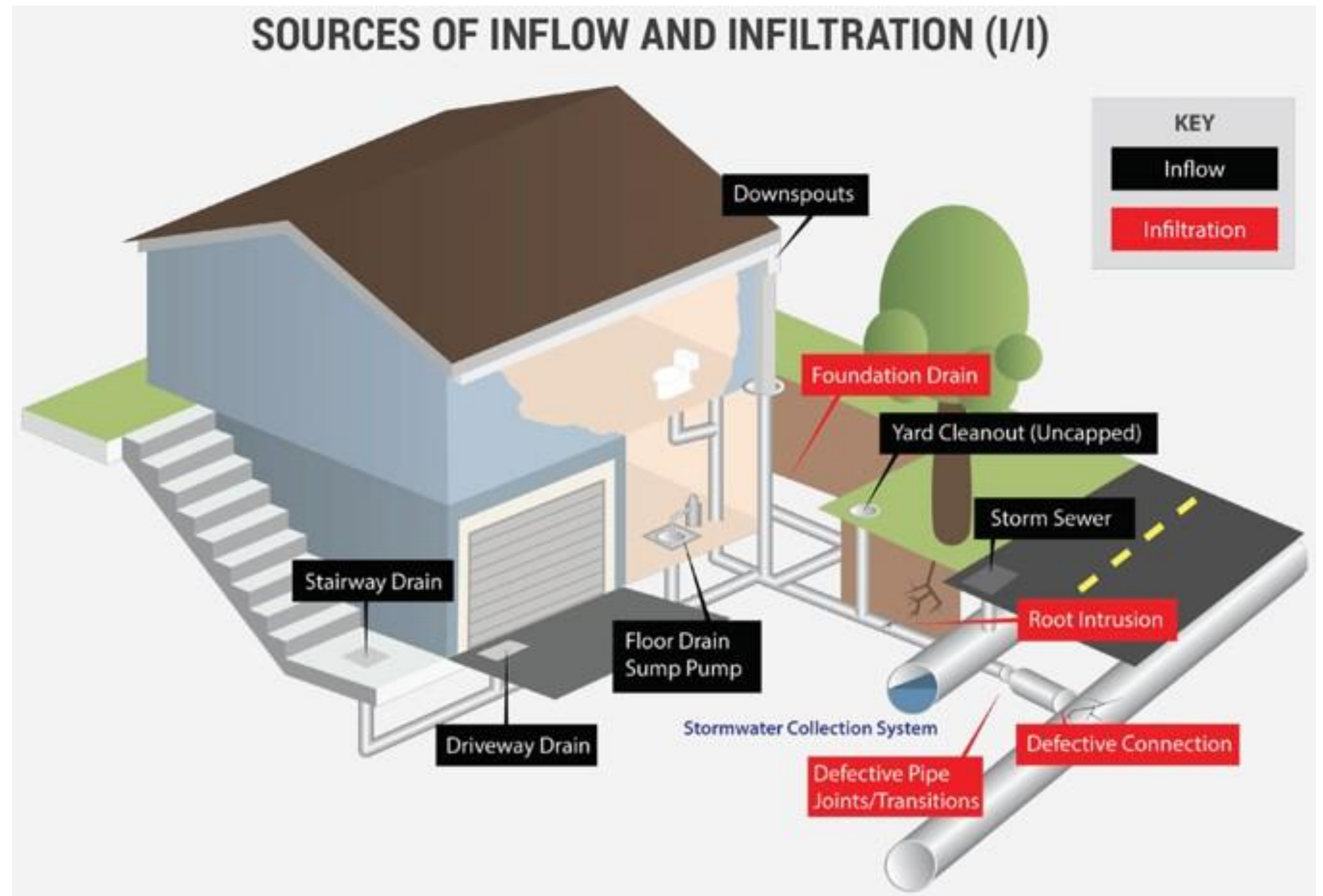
WHAT IS INFLOW & INFILTRATION (I/I)?

Definitions

INFLOW: Stormwater that enters the Town's Sewer System through piping that mistakenly directs stormwater to the sewer system instead of the drainage system.

INFILTRATION: Clean water from below the ground (also known as groundwater) that comes in through broken sewer pipes and manholes.

PROHIBITED CONNECTION: A stormwater connection made to the Town's Sewer System that introduces inflow into the system. These types of connections are prohibited (illegal) under the MA Plumbing Code and Town of Dedham Sewer Regulations.



I/I Source Diagram

SEWER SURCHARGE: Occurs when the sewer system is overloaded with a combination of sewer flow and I/I flow.

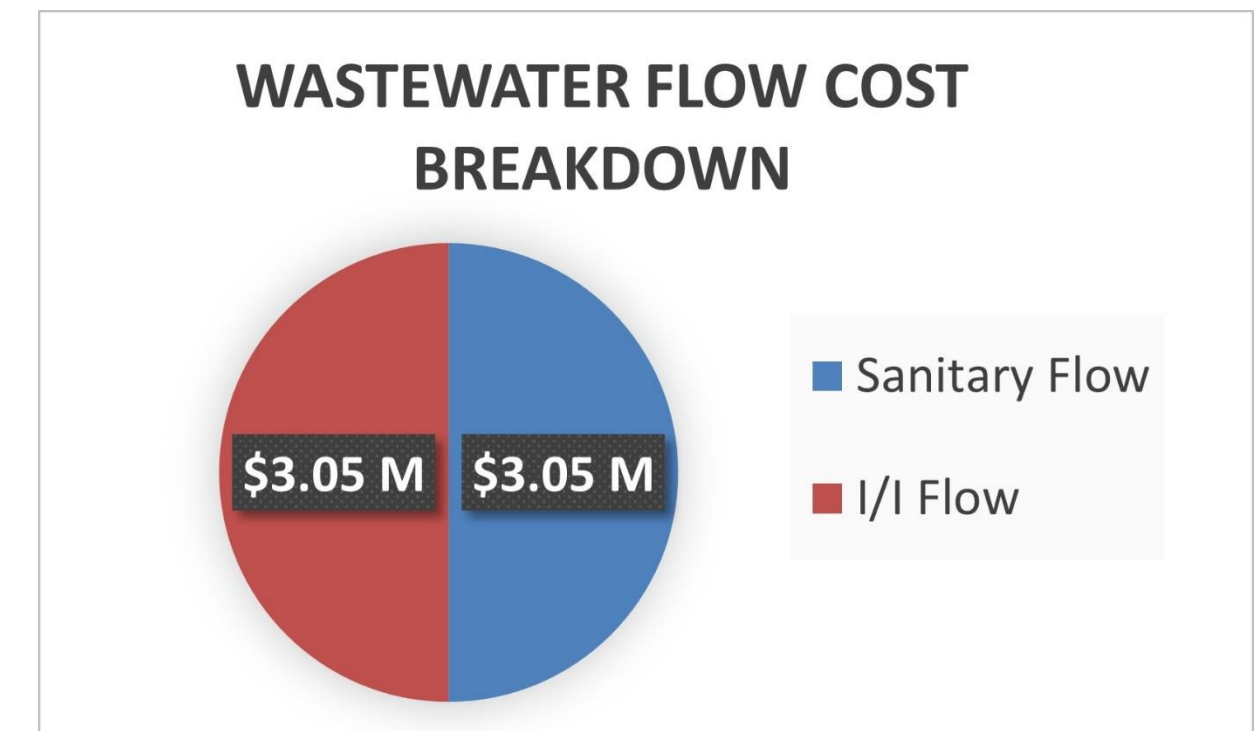
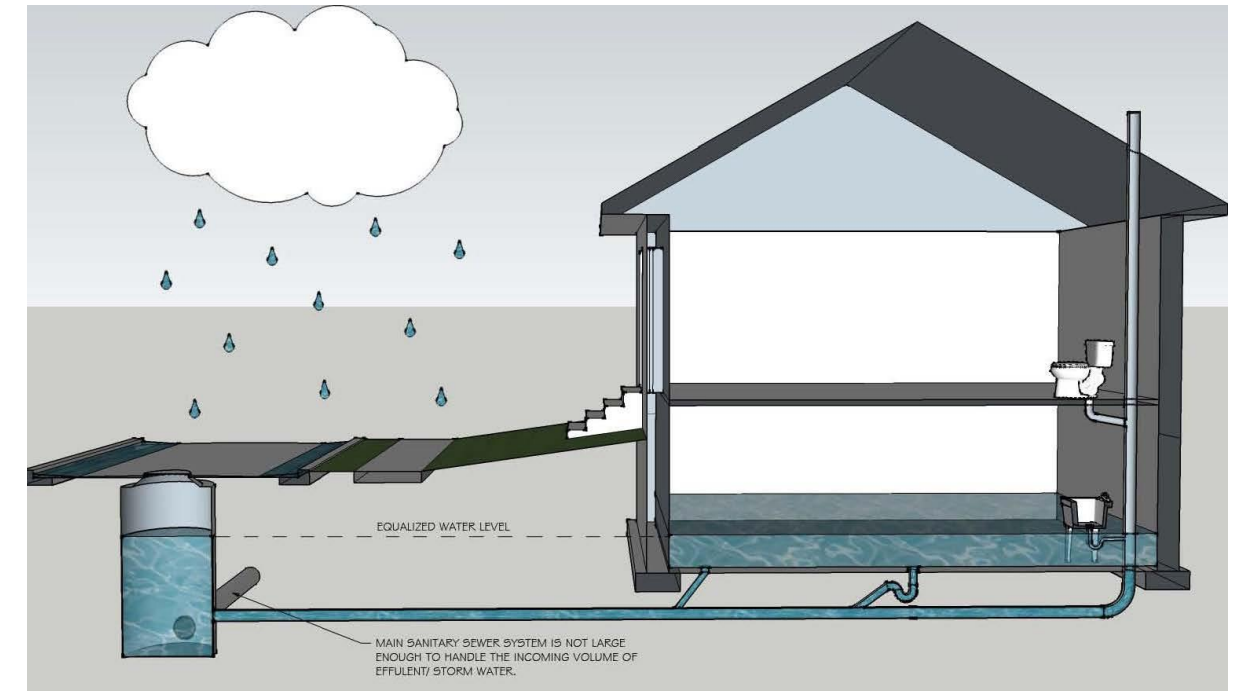
Why Is I/I Important?

- **CAPACITY:**

- Sewer System designed to only transport wastewater consisting of **just sewer flow**.
- When sources of I/I get into the sewer system during storm events, capacity is reduced creating the potential of surcharging. This surcharging can cause private property sewer backups and/or escape out of the sewer system and flow overland.

- **COST TO RATE PAYERS:**

- In FY2022, Dedham transported an approx. average of **3.6 MGD of wastewater** to the MWRA for treatment. This wastewater consists of Sanitary flow and I/I flow. Based upon the data collected by the MWRA the flow breakdown in FY22 was estimated at:
 - Sanitary Flow = 1.8 MGD (50%)
 - **I/I Flow = 1.8 MGD (50%)**
- In FY2022, Dedham's MWRA sewer assessment was approx. **\$6.1 million**. Using the flow breakdown from above, I/I flow accounts for approx. half of the Town's sewer assessment which is paid for by our customers.
 - Sanitary Flow = \$3.05 Million (50%)
 - **I/I Flow = \$3.05 Million (50%)**



MGD: million gallons per day

**WHAT IS THE MAIN
REASON FOR THE
INSPECTION PROGRAM?**

Ongoing Sewer Surcharging



12/18/23 Rain
Event (Bonham Rd)



01/13/24 Rain
Event (Bonham Rd)

- For over a decade, approximately a **dozen to 2 dozen homes** in the Bonham Rd/Greensboro Rd section of Town continue to experience private property backups during significant storm events. There are other isolated homes throughout the sewer subareas that also experience private property backups.
- Along with these private property backups, sometimes surcharging has been significant enough that **wastewater has come out of a few sewer manholes** flowing onto the roadway.
- Despite the ongoing efforts of the Town to remove I/I flow from the public sewer system since 2007, these homes continue to experience backups.
- During the Town's public meetings associated with an MVP Grant awarded by the State to study the flooding issues in the Manor Neighborhood in 2023, many residents from that neighborhood mentioned that they experience sewer backups into their homes during significant rain events
- The most recent rainstorms (12/18/23, 1/09/24 & 1/13/24) were events where many residents called and/or emailed the DPW, Engineering Dept, Town Manager, and Select Board clearly stating that enough is enough. It was expressed that the Town needs to take immediate aggressive actions to prevent these private property backups and roadway surcharging events from happening again.



01/09/24 Rain Event – Video from
Resident (Greensboro Rd)

Sewage Backups: Public and Environmental Health

Human and environmental health may be impacted if a sewage backup occurs:

- Direct contact with sewage or contact with contaminated surfaces can make people (and animals) sick.
- Presence of sewage in the environment can affect water quality, including bodies of water used for recreational activities.



Surcharged Sewer Manhole

Can I get sick from a sewage backup?

- Sewage contains bacteria, viruses, and other germs that can cause disease.
- Illness can occur due to direct contact with sewage or contact with contaminated surfaces.
- The most common illnesses a person may acquire are generally gastrointestinal (GI) distress and/or skin rashes/infections.
- People with weakened immune systems, the elderly, and children may be at higher risk of illness if exposed to sewage.
- If you experience any symptoms (including nausea, diarrhea, vomiting) after exposure to sewage, contact your medical care provider.

Town Protocol Following a Roadway Surcharge Event

Once the surcharge event has ended the Town's DPW performs the following cleanup:

- Spread lime over the roadway surfaces where wastewater flowed out of manholes followed by the street sweeper.
- For locations where the wastewater enters the stormwater system: Vactor clean catch basins and manholes and wash down with bleach.



TOWN'S ROLE IN I/I FLOW REMOVAL

Town-Owned Infrastructure

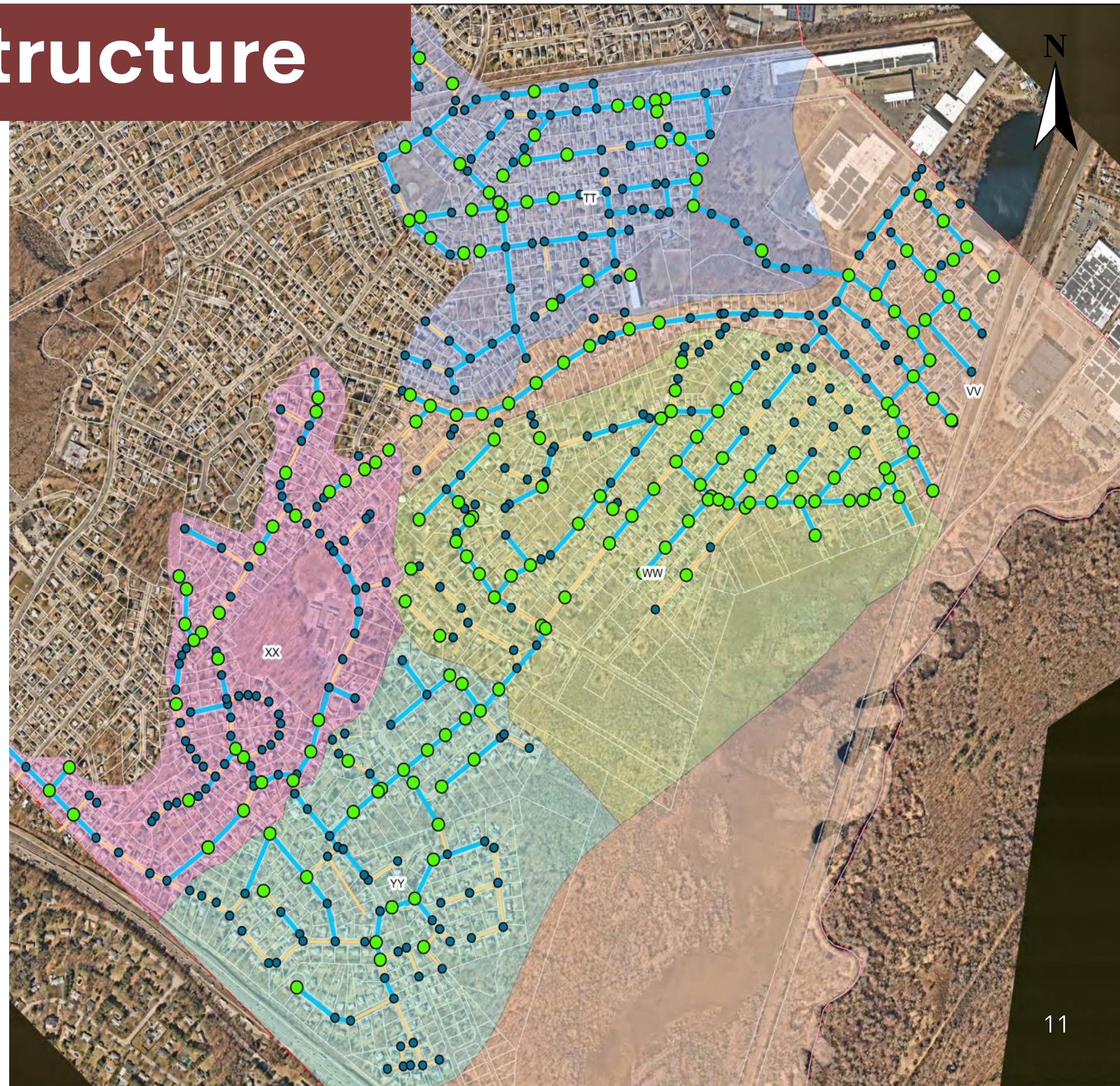
Since 2007

- Approx. **\$2.87 Million** spent on I/I Flow Identification and Removal
- 87,500 LF of Sewer: 59% Cured-in-Place Pipe (CIPP)
- 495 Manholes: 38% Lined
- Cross Connection on Bonham Rd disconnected in 2013.
- Estimated Peak I/I flow Removed: 1.5 Million Gallons Per Day (MGD)
- Clean and Inspect Sewers Every 5 Years

Sewer Subareas:

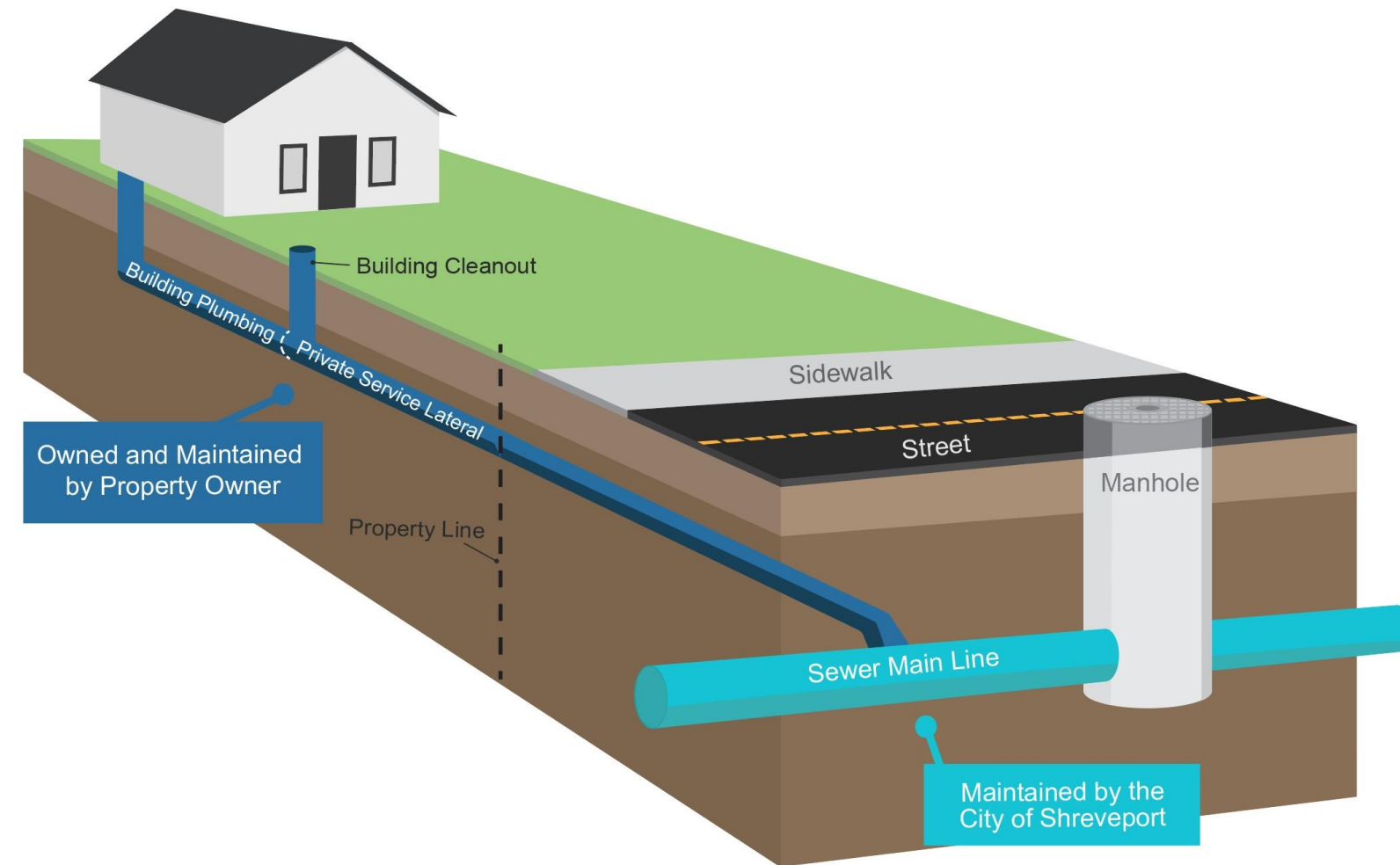
- TT, VV, WW, XX, YY

GIS Map of Project Area



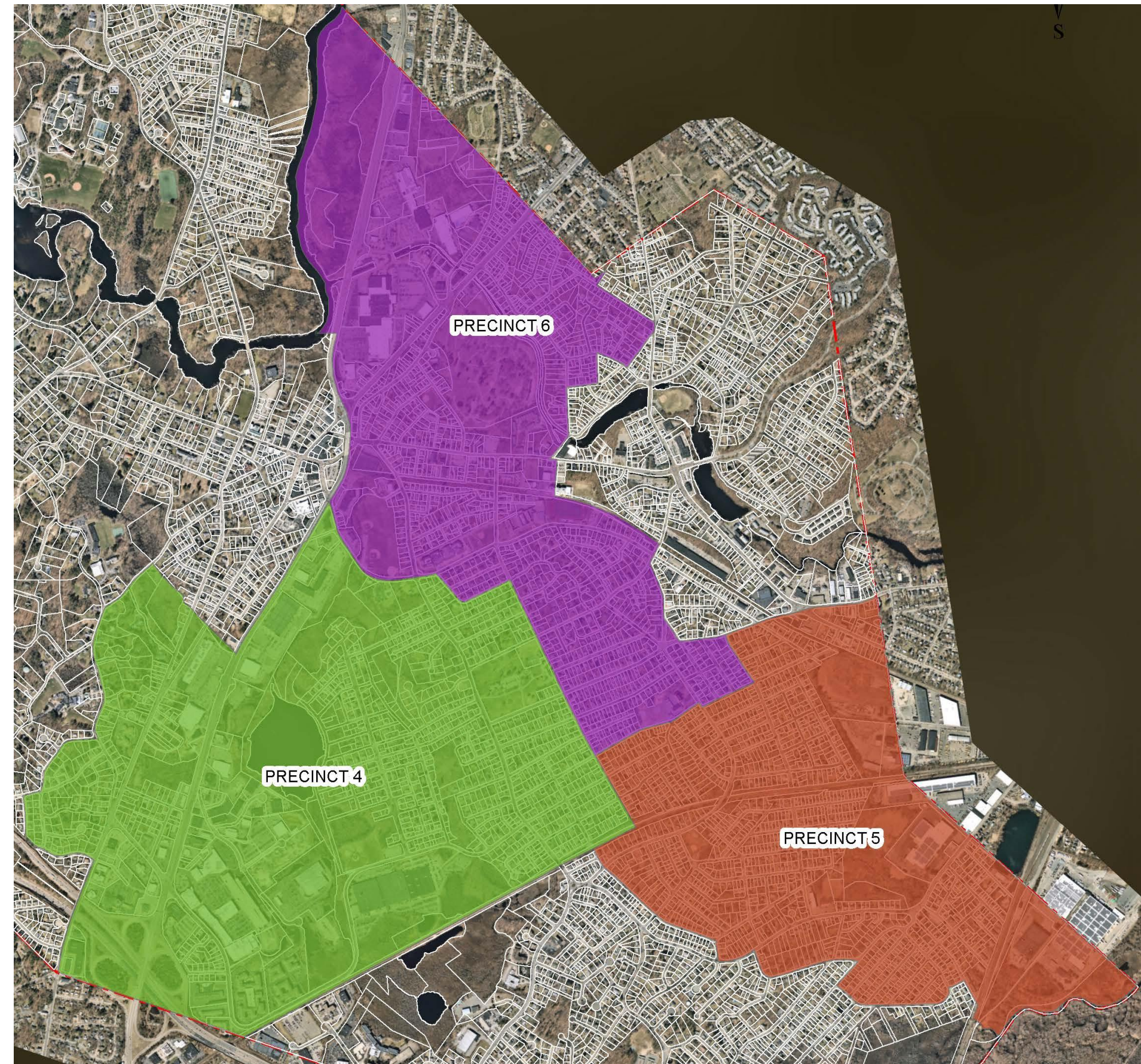
Privately-Owned Infrastructure

- In August of 2022, the Town Manager with support from the Select Board, approved an amendment to the Town's Sewer Regulations allowing the Town to use Sewer Enterprise Funds to remove I/I flow from privately-owned sewer laterals.
- Property Owners where I/I flow has been identified for removal are noticed by the Town. The Town pays for the all work associated with the lining provided the owner signs a Right of Entry.
- To date the Town has lined 15 private laterals (13 are within the proposed inspection program limits) removing approx. 51,000 GPD of Peak I/I flow at a cost of approx. \$500,000.



2014 Voluntary Door-To-Door Inspection Program

- **2014 Voluntary Program Recap:**
 - Project Area: Approx. 3,600 Parcels
 - 42% Participation Rate (1,500 ± Parcels)
 - 58% Non-Participation Rate
 - Approx. Cost: \$250,000



2014 Project Area

**WHY PRIVATE I/I FLOW
IS THE TOWN'S FOCUS
TO MOST
LIKELY ELIMINATE
ONGOING SURCHARGE
EVENTS**

Flow Metering Program

Project Area:

- Average Daily Flow: 1.15 MGD
- Average I/I Flow: 0.69 MGD (60%)
- Average Sanitary Flow: 0.46 MGD (40%)

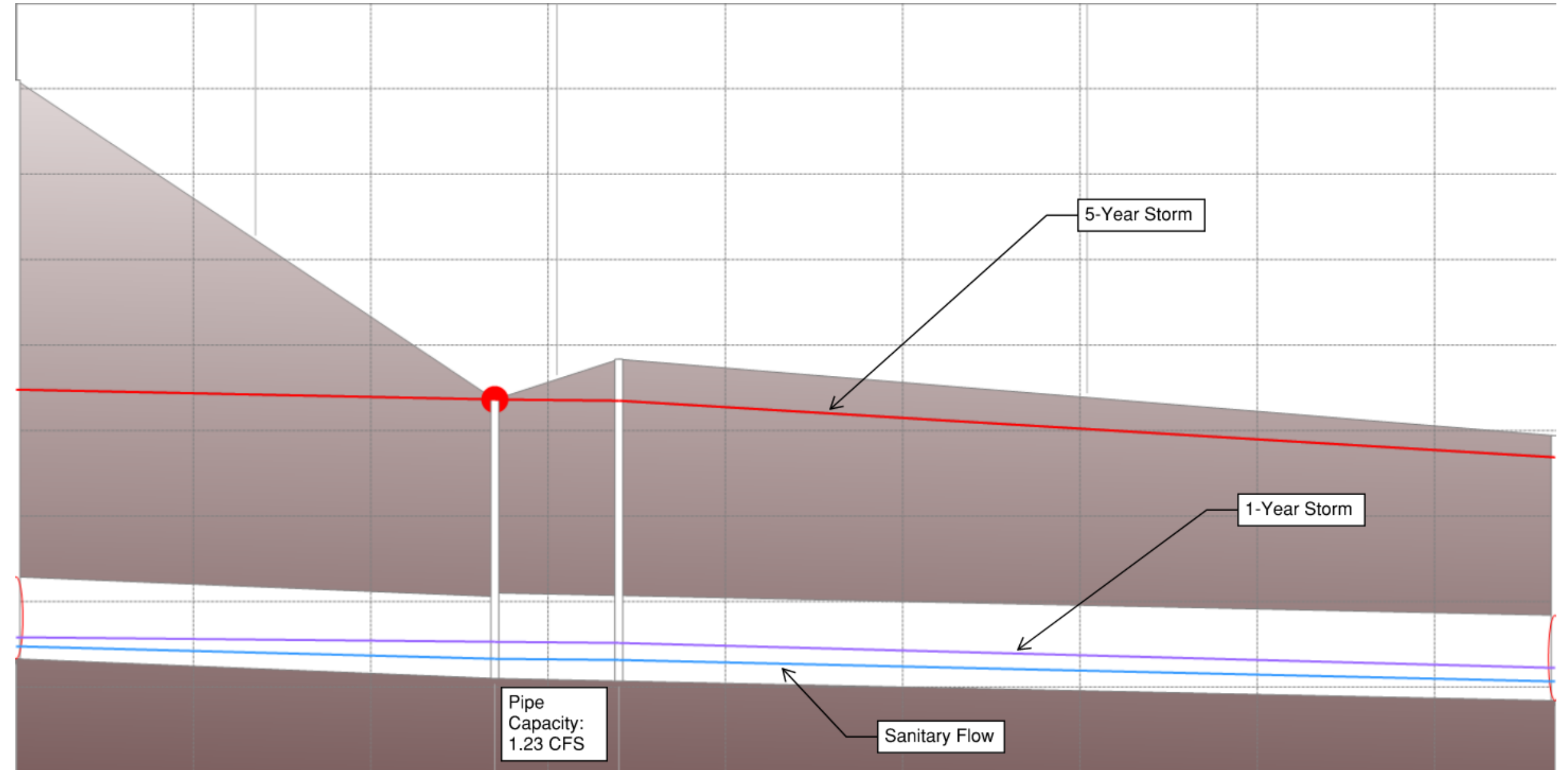
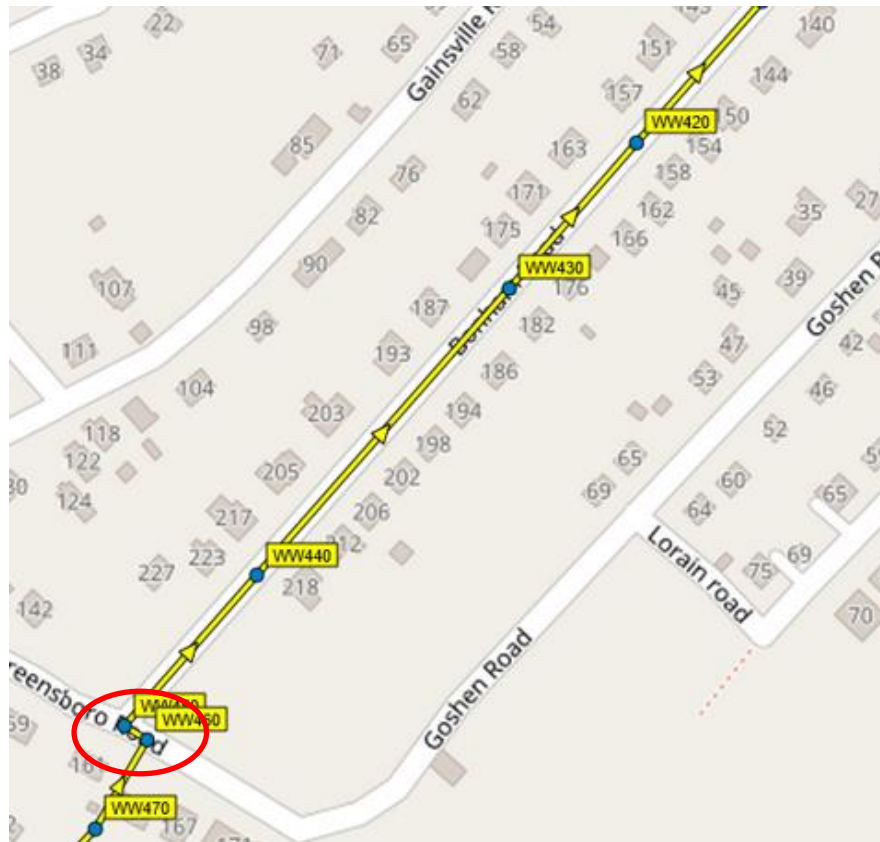


MGD: million gallons per day

Sewer System Hydraulic Model

Pipe Segment WW460 to WW450

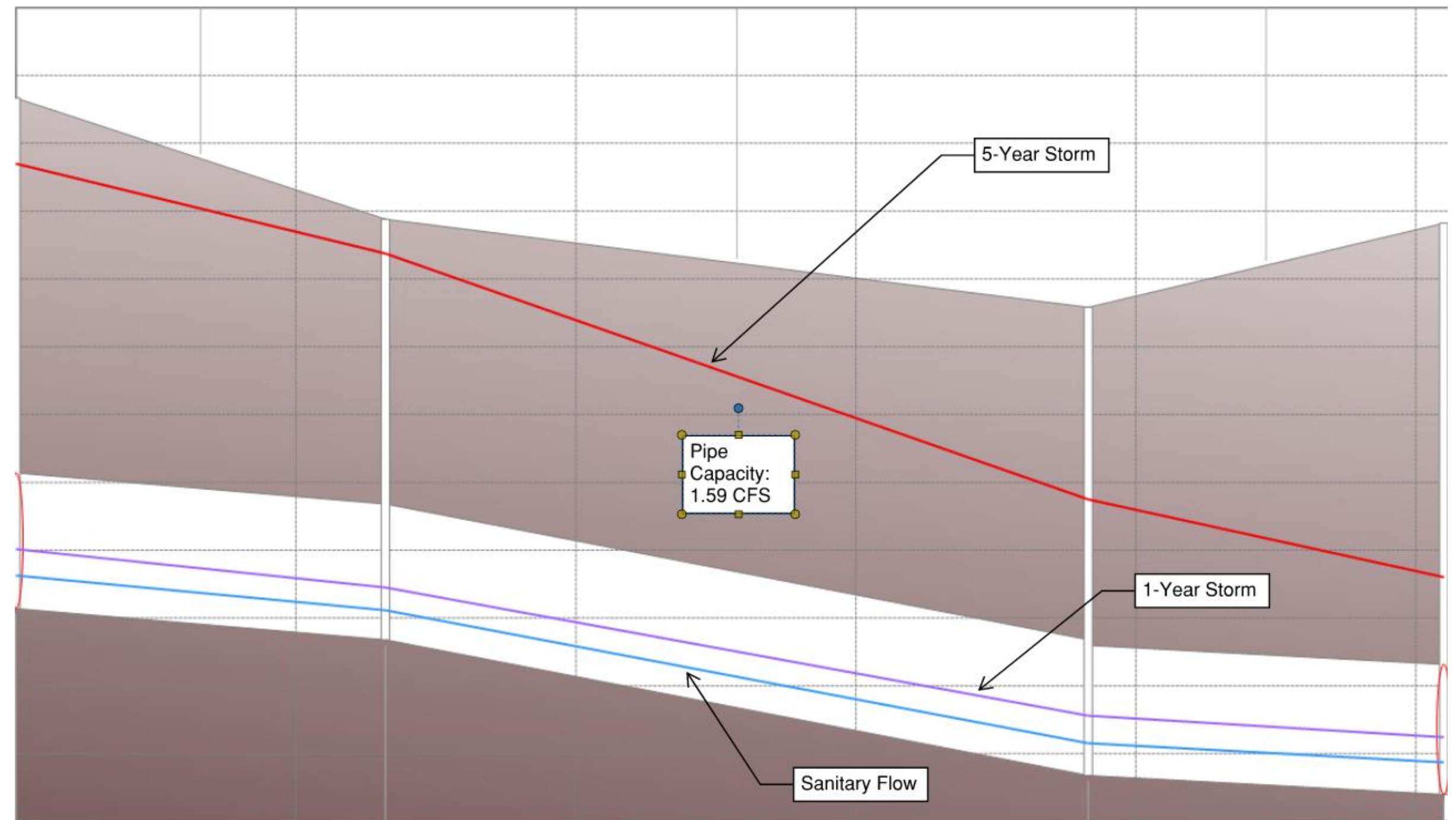
- Pipe Capacity is 1.23 Cubic Feet Per Second (CFS)
- Adequate Capacity during 1-Year Storm – Less than ½ Full
- Pipe Flow During 5-Year Storm Event is 1.30 CFS



Sewer System Hydraulic Model (continued)

Pipe Segment WW440 to WW430

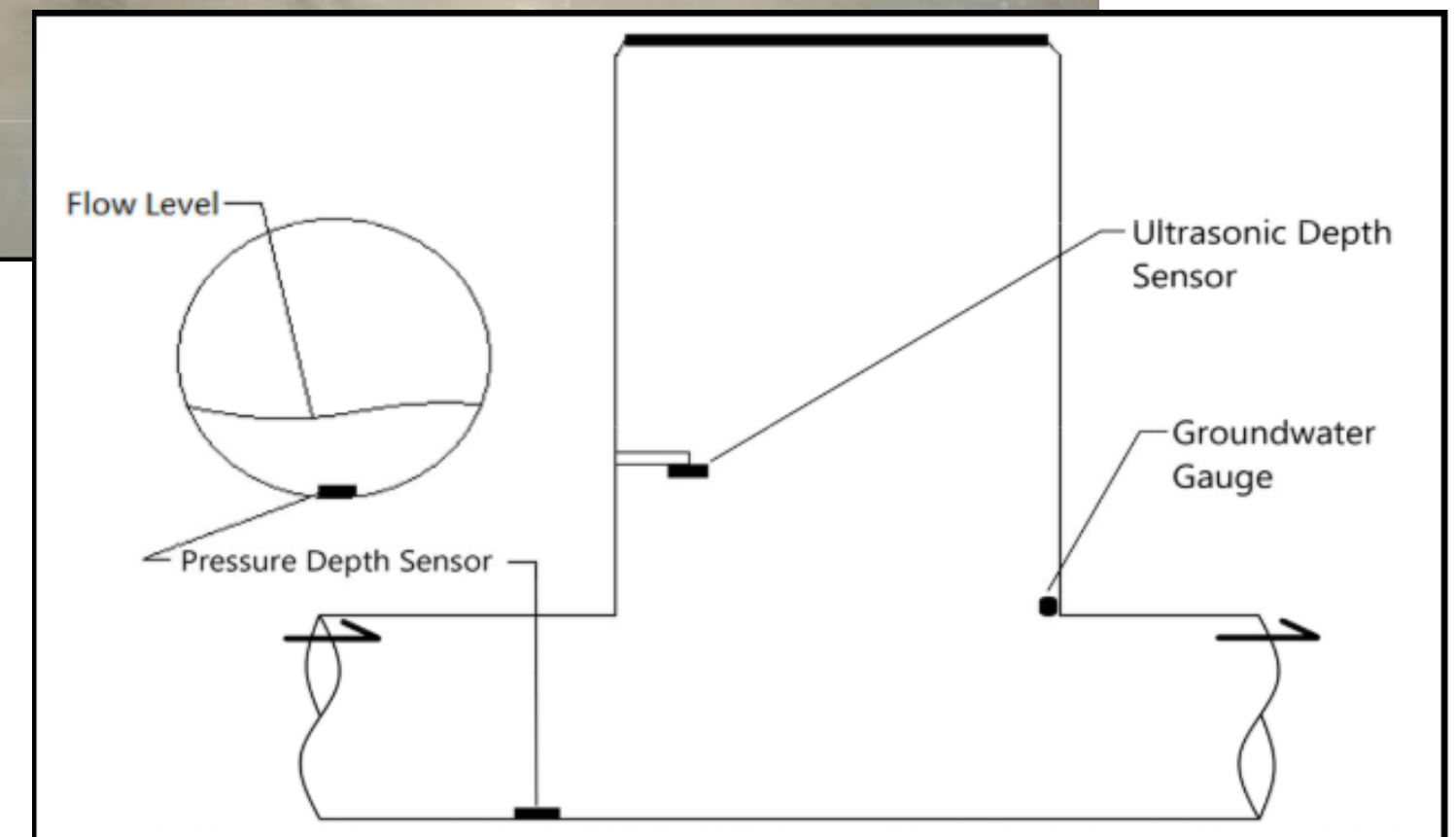
- Pipe Capacity is 1.59 Cubic Feet Per Second (CFS)
- Adequate Capacity during 1-Year Storm – Less than ½ Full
- Pipe Flow During 5-Year Storm Event is 2.144 CFS



Current Flow Metering Summary

Flow Level Monitoring Program:

- One Year Study:
 - Hooper Road
 - Bonham Road
 - Colwell Drive



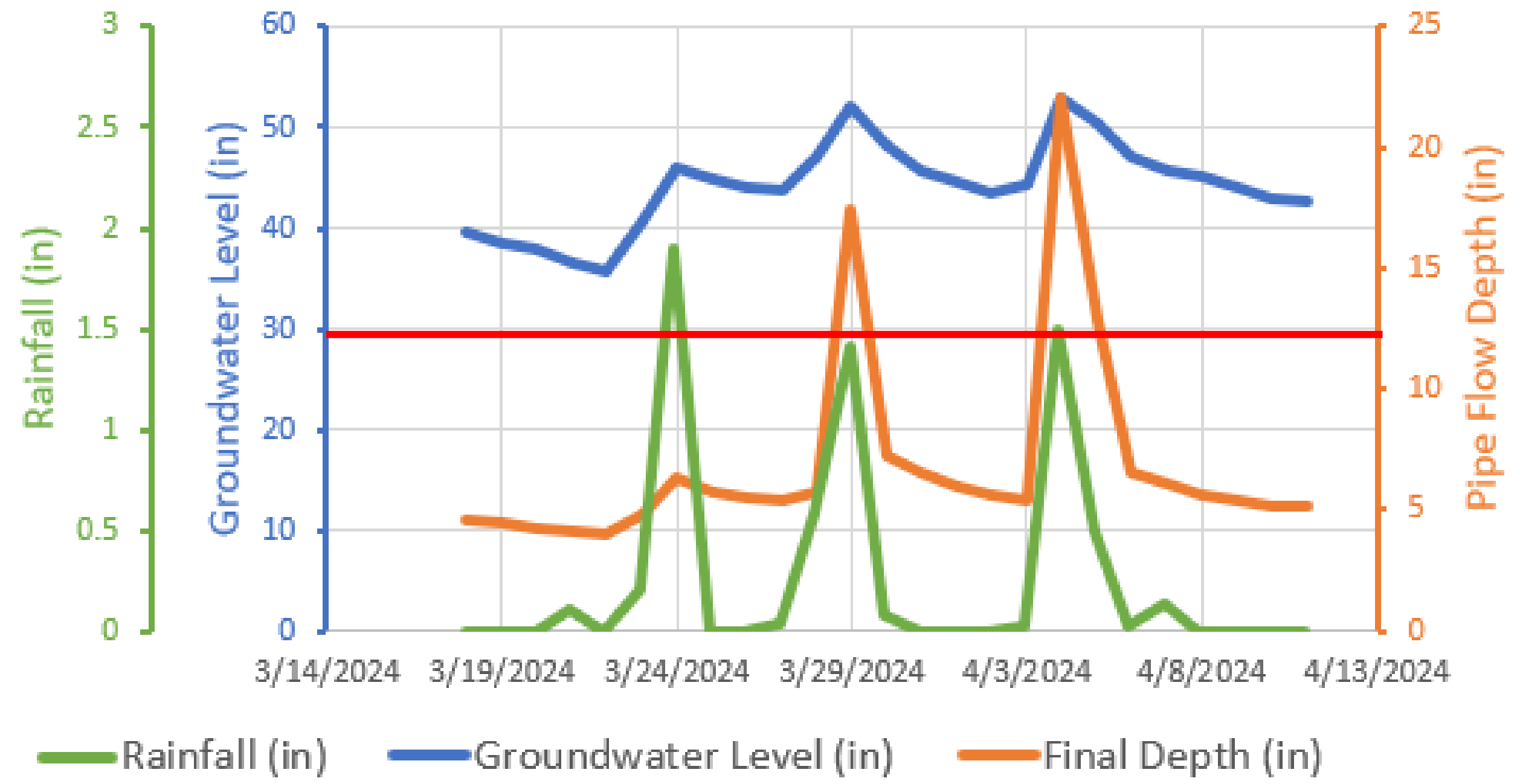
Current Flow Metering Summary

Rainfall and Flow Data Analysis - Station WW - Storm Analysis

March 23rd Storm:
2.09 Inches

March 28th Storm:
2.07 Inches

April 3rd Storm:
1.99 Inches



Current Flow Metering Summary (continued)

Evaluation of three consecutive storm events at the flow meter on Bonham Road:

Storm Event	GW Level Above Cleanout: Before Storm (inches)	Pipe Flow Depth: Before Storm (inches)	Pipe Flow Depth: During Storm (inches)
March 23rd	35.81	3.98	6.27
March 28th	43.67	5.42	17.45
April 3rd	44.35	5.42	22.04

Impact of I/I



- **No Short-Term Fix**
- **Unnecessary Capacity Upgrades**

Identification of Sump Pumps and I/I Sources will allow the town to evaluate available capacity, if removed

- Similar programs in nearby communities

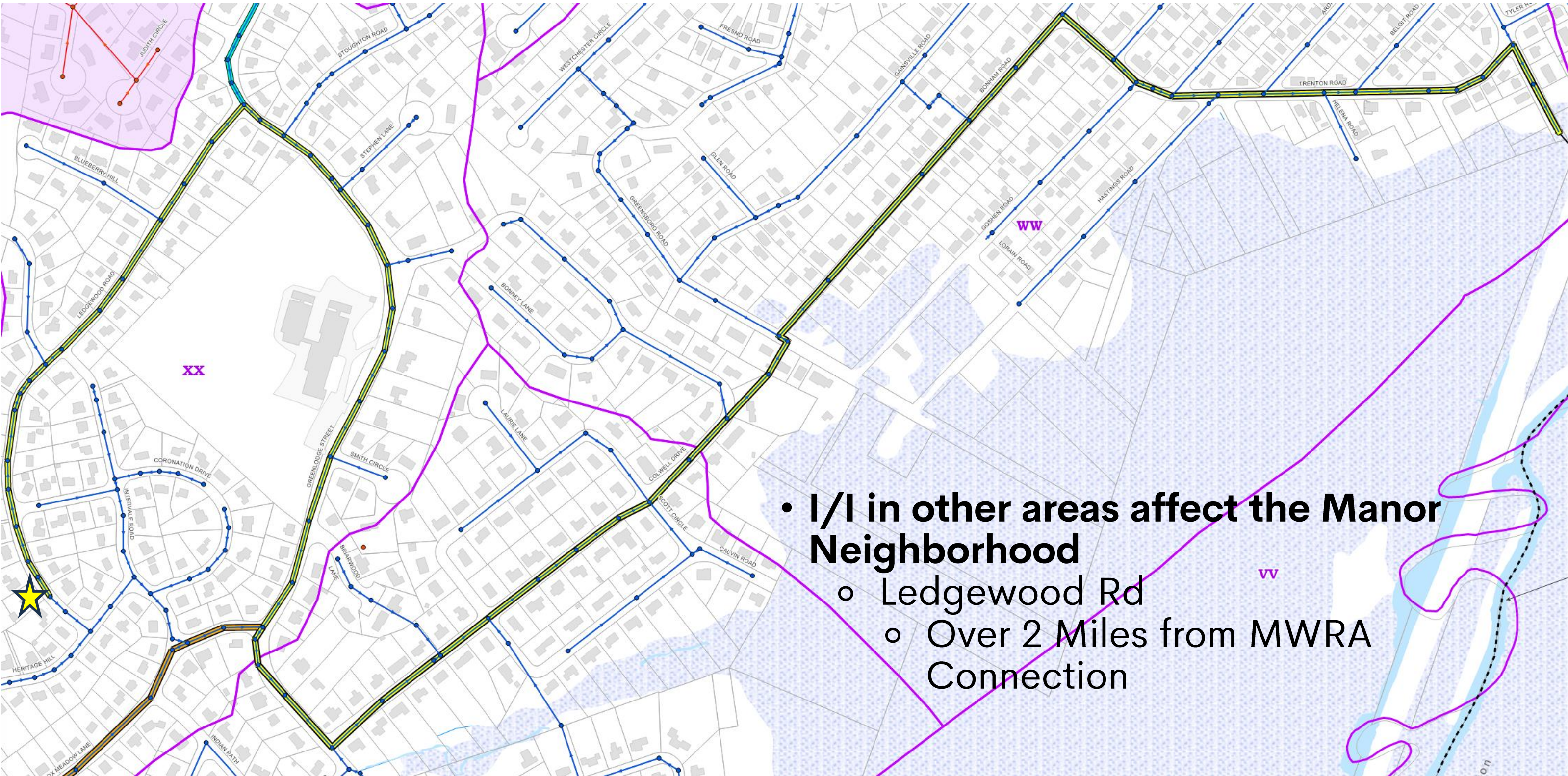
Impact of I/I (continued)



- DEP Guidelines Suggest 4,320 to 8,640 GPD of peak I/I per Sump Pump
- 10'x10' Patio/Driveway Area Drain Contributes Approx. 1,100 GPD During a 1-Year Storm

For reference: A small residential pool holds **10,000 Gallons**

Choosing Project Area



- I/I in other areas affect the Manor Neighborhood
 - Ledgewood Rd
 - Over 2 Miles from MWRA Connection

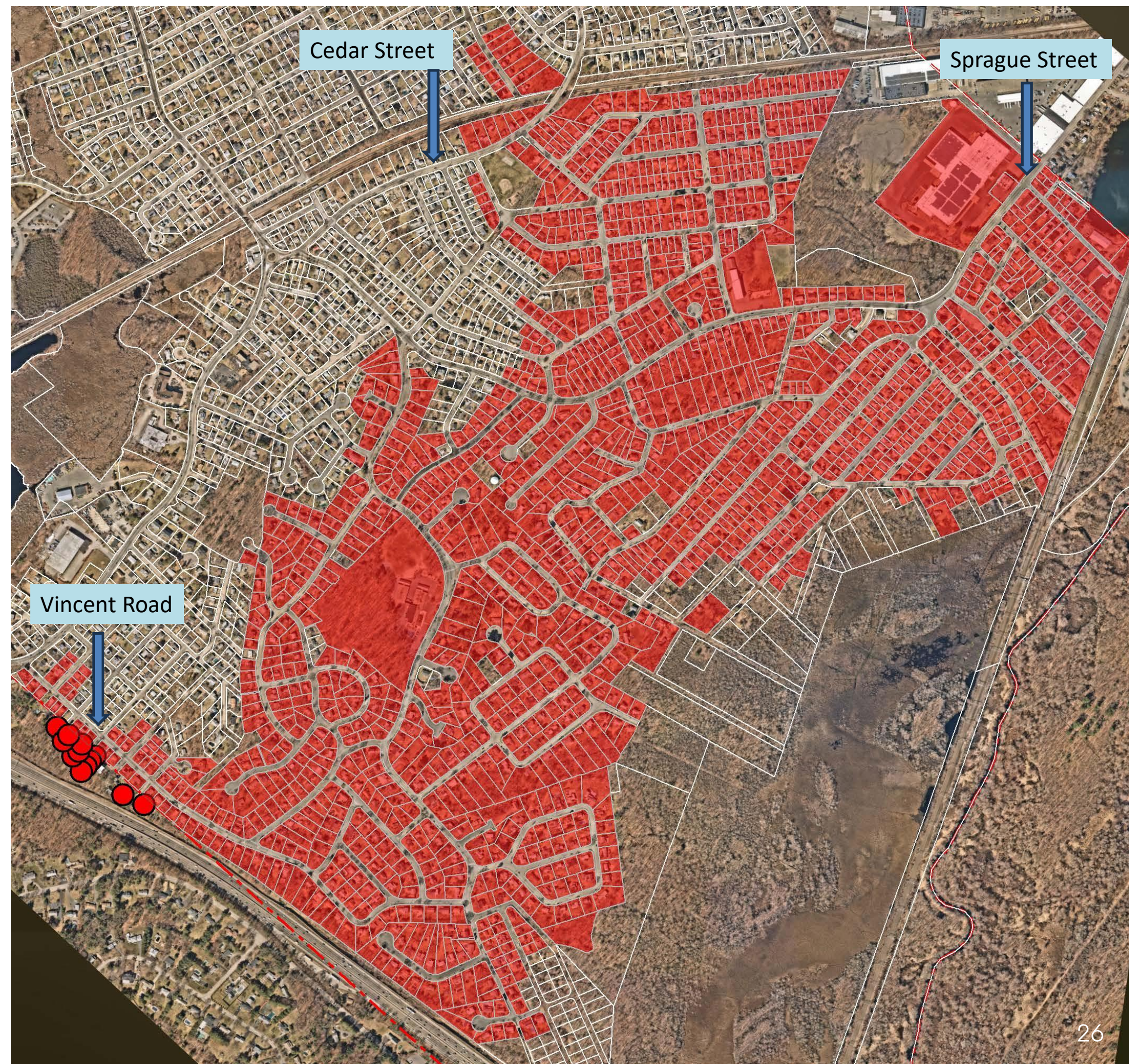
Proposed Door- To-Door Program: An Outline

Proposed Timeline

- **Today:** Proposed program has not been approved as of the time of this meeting.
- **June 2024:** Final documents and description of the proposed program will be presented to the Town Manager and Select Board at an upcoming meeting (final date to be determined.)
- **July 2024:** Program expected to begin IF supported by Select Board and approved by Town Manager.
- **September/October 2024:** Completion of inspections.
- **End of 2024:** Consultants will review the data collected and prepare a report for the Town.

Program Area

- Approx. 1,600 Parcels, including:
 - Two (2) Town-owned Properties
 - Approx. 16 Commercial Properties
 - Approx. 12 Residential Properties in Westwood (shown as red circles)
 - Rest are Residential Properties
- 5 Sewer Subareas



What Can I Expect?

- Consultants will work in **one sewer subarea at a time**
- Town will **mail informational letter to each sewer subarea** approx. 1 week before inspections begin, including:
 - What to expect
 - Summary of Inspection Program
 - Contact Information
 - Where to find additional information
 - Copy of Consent to Entry and Inspection Form
- Inspectors from Weston & Sampson wearing Dedham Police-issued **identification badges** will knock on your door to conduct an inspection.
 - **DO NOT** allow anyone into your home unless they show you this identification. The Police Department will have the consultant's information on file should you wish to contact them with concerns of who is at your door.
- Inspectors will ask the property owner or someone over 18 years of age to sign a **consent form** prior to entering the building.
 - The consent form will allow the property owner the opportunity to allow or deny photos of prohibited connections.

What Can I Expect? (Continued)

- **After Consent Form is Signed:**
 - Inspectors will ask to be taken to the lowest level of your building to look for any suspected prohibited connections.
- **After Interior Inspection:**
 - Inspectors will then exit the building and walk around the exterior perimeter of the building looking for additional suspected prohibited connections.
- **After Exterior Inspection:**
 - Inspectors will vacate the property.
- **After Program is Complete:**
 - Town will send each participant a written report detailing the date of the inspection, areas inspected, and the findings. (Property owners will also receive a copy of the executed consent form and any photographs taken.)
- **Average Time to Complete Inspection:** Approximately 10 – 15 minutes

Note: If photos have been allowed, they will take photos of any suspected prohibited connections only.

What Can I Expect? (Continued)

- **If no one is home:**
 - Inspectors will leave "Sorry We Missed You" notice with phone number and email address to schedule an inspection at your convenience within the next 30 days (Monday through Friday, 8AM to 7PM)
- **Other Options Outside of Program:**
 - Property owners can retain at their cost a licensed plumber in the State of Massachusetts to conduct the inspection of the property and submit their inspection report on their company letterhead to the email address on the "Sorry We Missed You" notice.
 - The property owner will still be responsible to call or email the consultants within 30 days of the notice to confirm that they have hired a plumber to perform the inspection, the date of the inspection, and the date their inspection report will be submitted.

Typical Inspection



Frequently Asked Questions (FAQs)

What is a prohibited connection?

An unauthorized connection (direct or indirect) to the Town's sewer system that introduces inflow into the system that it is not designed to handle. Examples include:

- Inside a building: sump pump or floor drain that is directly connected to the building's sewer service
- Outside a building: yard drain, driveway drain or roof leader that is connected to the building's sewer service.

What is the difference between a stormwater system and the sewer system? Aren't they the same thing?

These are two completely separate systems:

- A stormwater system typically consists of underground pipes, manholes and catch basins that collect rainwater and snow melt and transport it to a water body or resource area.
- A sewer system typically consists of underground pipes and manholes that transport wastewater from homes and businesses to a wastewater treatment plant.

My home is nowhere near Bonham Rd or Greensboro Rd where these sewer backups are occurring, so why does my home need to be inspected?

All 1,600± properties share the same network of pipes. The wastewater from your property, along with the other 1,600± properties, accumulate along its path to the Town's connection to the MWRA's trunk line located behind Sherman Road.

I am not comfortable with consultants entering my home. Will I be penalized for this?

No. If you are not comfortable with consultants entering your home, you have the following options:

- Request Police detail be present outside the home during the duration of the inspection (at no cost to you)
- Hire a licensed plumber in the State of MA to conduct the inspection according to the Town's regulations and then send the report on their company's letterhead to our consultants within 30 days.

Failure to utilize either of these options will result in a \$50 per quarter penalty assessed to your sewer bill until an inspection is completed.

What gives the Town the right to inspect my private property?

According to Section 4.6 of the Town's Sewer Regulations, no property that has a connection to the Town's sewer system shall connect any drains (foundation, driveway, yard, etc.) or sump pumps to the public sewer. The Town reserves the right to inspect any property with a sewer connection to confirm that there are no prohibited connections.

What will happen if I am not home when the inspectors come to my door?

The consultants will leave a "Sorry We Missed You Notice" which will contain a phone number and email address for you to use to schedule your inspection within the next 30 days, Monday through Friday, between the hours of 8AM and 7PM.

What if the consultants find building code violations (plumbing, electrical, etc.) or zoning/bylaw violations while performing their inspection?

The consultants performing the inspections do not have experience in building code and/or Town zoning/bylaws. The consultants are specially trained in looking for and reporting prohibited connections. The consultants will not be looking for or reporting on anything else.

Will I receive a copy of the inspection once it is completed?

Yes, you will receive a copy of the inspection report once the program is complete.

My property was inspected in 2014. Why do I have to have my property inspected again?

The Town appreciates your participation in 2014, but since it has been 10 years since that program was conducted, the Town needs to re-inspect your property to confirm what was observed in 2014. This round of inspections will provide a new, complete data set to determine next steps and proposed plans to address the ongoing issues reported by residents in the project area.

Is the Town planning on doing these inspections every 10 years?

The Town does not have plans to repeat these inspections every 10 years. There were only approx. 316 properties that participated in 2014. These properties are only being re-inspected to determine nothing has changed since our inspection in 2014.

What will happen should the Town Manager and Select Board not approve/support the proposed door-to-door inspection program?

Should this program not be approved/supported, the Town will continue to find opportunities to identify and remove I/I flow from the public sewer system, but this will likely not mitigate and/or prevent future private property backups and roadway surcharge events. A program put in place by State regulatory agencies may require more rapid compliance (shorter timeframe to address) and may come at a higher cost to ratepayers without incentives or amnesties.

If the program goes forward and the prohibited connected are discovered to be the cause of the sewer backups, what are the next steps for the Town?

If prohibited connections are determined to be the cause of the ongoing sewer backups, the Town will develop a plan to have those connections disconnected and redirected to the appropriate source. In a perfect world, all prohibited connections would be redirected to the Town's stormwater system. Without this definitive answer, the following are possible next steps for the Town (all offered as a "for instance" since no final determination has been made):

- Design and install the necessary stormwater infrastructure for streets that do not have stormwater infrastructure so that prohibited connections can be properly redirected.
- Properties located where there is high groundwater will have to connect to the Town stormwater system.
- Properties located where the groundwater is low may need to install a drywell and connect the that.

FAQs

I have a prohibited connection and participated in the program. Will I have to pay to have my connection fixed?

Once the Town has a full understanding of the results of the study, the consultants will prepare a report outlining their recommendations on the best way to redirect the prohibited connections to the appropriate sources. The Town will then develop a program to have the private property prohibited connections redirected. It is unknown how this could potentially impact a property owner financially, but the Town will make every effort to find other funding sources to defray costs away from property owners. If any program is developed that provides a financial incentive to property owners, only owners that participated in the program will be able to take advantage of that incentive program.

I am against the program and refuse to participate. What should I expect?

Failure to participate in the program will result in a penalty of \$50 per quarter applied to your sewer bill until the inspection occurs, and you may be assessed an additional \$250/day and a civil penalty up to \$5,000 if a prohibited connection is eventually discovered. Owners that do not participate will also not be eligible for the one-time, \$25 credit on their sewer bill and will not be eligible for any financial assistance that may be available for the removal of prohibited connections in the future.

Do those properties that participate receive any incentives?

Yes. All owners that participate will receive a one-time, \$25 credit on their sewer bill upon completion of the program (not inspection). All fines with any prohibited connections discovered at the time of the inspection will be waived and although no final decisions have been made, should the Town develop a financial assistance program to cover all or a portion of the cost to properly redirect any prohibited connections, the owners that participate may be eligible for such programs.

COMMENTS & QUESTION

Please visit our new Informational Page on Town Website:

www.dedham-ma.gov/DoorToDoor

This page will include:

- PDF copy of tonight's presentation
- List of frequently asked questions (FAQs)
 - To be updated throughout program
- Recording of event (courtesy of Dedham TV)
- Future program updates and announcements
- Staff contact information
- How to subscribe for email updates