



Department of Engineering
Town of Dedham
October 2019

Private Infiltration Removal Policy Update



Reducing Infiltration Keeps Rates Under Control

- Since 2008, the Town has followed a sustained, methodical approach to identify and repair leaks in Town-owned sewers. This has been very successful at reducing infiltration.
- As a result, Dedham's share of the MWRA costs has declined, and sewer rates have not changed since 2008 (11 Years!)
- For perspective:
 - In 2008, of the 43 MWRA Communities, Dedham has the 7th highest sewer rates
 - By 2019 Dedham's sewer rates had dropped to 29th highest, as other communities continued to raise their sewer rates.
- The continued analysis of infiltration makes it clear that some leaks on private property are larger than leaks in public lines.
- We need a new policy to help address this, so we have been involving the community with mailings, a public meeting and a survey

Sewer Insert #1

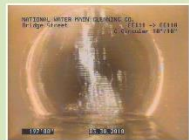
- The first sewer insert was a tri-fold pamphlet approved by the Select Board at their February meeting. It was placed into every sewer customers 1st quarter bill.
- The insert provided our customers with educational information on I/I and the costs associated in treating these sources of clean water.
- The insert also invited all the customers to attend the April 1st Public Meeting which was an opportunity for the to learn more about the Town's sewer system, what I/I is and how it enters our system, how it effects their sewer bills and an introduction to a Private Infiltration Removal Policy.

By the Numbers

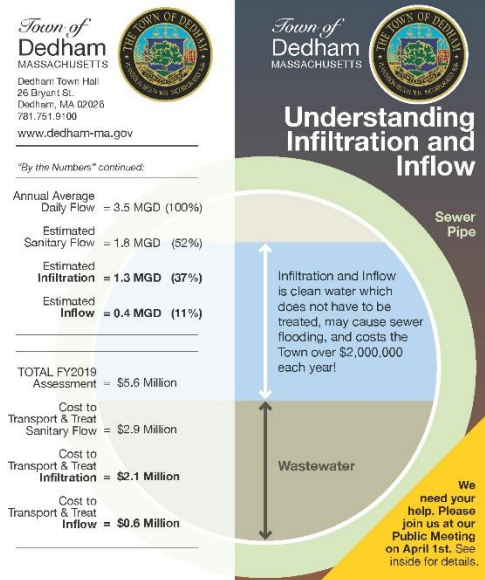
All of Dedham's wastewater, which includes infiltration and inflow (I/I) that does not need to be treated, is transported to and treated at the Massachusetts Water Resources Authority's (MWRA) treatment plant on Deer Island.

This year, Dedham was assessed \$5,597,434 by the MWRA for the transportation and treatment of our wastewater. As you can see from the back panel, 37% of the assessment is from infiltration and 11% is from inflow. These levels are similar or slightly better than comparable MWRA communities. In other words, 49% of what Dedham pays the MWRA is for handling infiltration and inflow from public and private sources.

"By the Numbers" continued on back panel —



Infiltration Gushing through Pipe Joint



Typically, there are two pipes that convey water away —

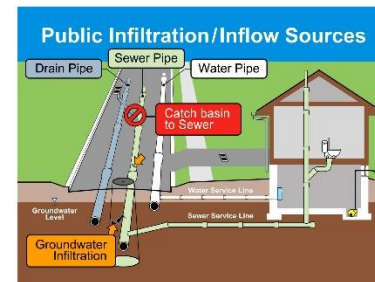
Drain pipes carry rain water to local receiving waters, and sewer pipes carry wastewater from homes and take it to a treatment plant.

Infiltration and inflow are the names given to clean water that enters the sewer pipe instead of the drain pipe. This clean water is needlessly treated and takes up space in the sewer — sometimes causing flooding.

Infiltration is clean water from below the ground (known as groundwater) that enters sewer pipes through cracks.

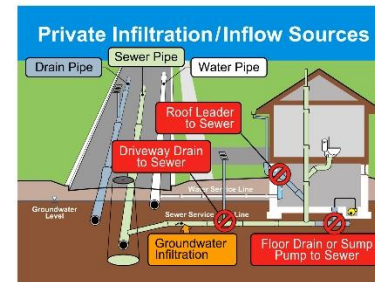
Inflow is rain water that enters sewer pipes through a mistake in the piping or from homes that direct rain water to the sewer pipe instead of the drain pipe.

You are invited to attend a Town-Wide Public Meeting to be held on **April 1, 2019 at 7:00 PM** at the Dedham Middle School Auditorium, 70 Whiting Avenue. The Engineering Dept. will recap it's extensive work since 2007 to remove I/I in Town-owned sewers. It will also describe what is in the works for removal of infiltration from privately-owned sewers.



Infiltration or Inflow that occurs in the street is the Town's responsibility.

DID YOU KNOW?
The Town has about 98 miles of public sewer mains and since 2007 about 34 miles have been rehabilitated to remove infiltration.



Infiltration or Inflow that occurs on your property, including your sewer service line, is the responsibility of the property owner.

DID YOU KNOW?
During the Spring of 2018 the Engineering Dept. conducted 117 inspections of our public mains and in doing so went past about 1,600 private service connections. Approximately 113 (7%) of these private connections showed indications of I/I.

Personalized Invitations To April Public Meeting

- From our 2018 wet weather sewer inspections, we inspected 113 private sewer laterals of which 62 were confirmed to have infiltration.
- Those property owners were mailed with a special invitation letter inviting them to the April 1st Public Meeting.
- The letter informed the property owner that the Town observed infiltration entering our sewer system from their service and invited them to the April 1st meeting to discuss the development of a Private Infiltration Removal Policy.

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DEPARTMENT OF INFRASTRUCTURE ENGINEERING

March 18, 2019

RE: Invitation to a Public Meeting to Discuss Infiltration Removal from Private Property

Dear:

In the Spring of 2018, during the Town's routine TV inspections of its public sewer mains, infiltration was observed to be entering the public sewer system from your private sewer connection. The Town's Sewer Use regulations does not allow infiltration to enter the public sewer system since it is clean water that is being transported and treated by the Massachusetts Water Resources Authority at a cost to all of the Town's sewer customers through their sewer bills.

The Town is in the process of developing a Private Infiltration Removal Policy that will likely have a direct impact to your private sewer service. It is important to the Town to collect input from its customers and residents as the policy is being developed. This feedback could possibly be utilized in the creation of the policy.

The Town will be hosting a meeting on April 1, 2019 from 7:00 PM to 8:30 PM at the Dedham Middle School Auditorium (70 Whiting Avenue) that we hope you will attend. The meeting will serve to educate residents and customers on infiltration, the efforts the Town has been taking over the past 12 years to remove infiltration from the public portion of the sewer system and what goes into the creation of a Private Infiltration Removal Policy. At the conclusion of the meeting we will invite anyone in attendance to provide their contact information that would like to attend a future focus meeting where the important sections of the policy that will directly impact a customer with infiltration can be discussed in greater detail.

We certainly hope to see you at the meeting on April 1st. Included with this letter is a copy of the tri-fold insert that you should have received with your most recent sewer bill. The insert provides information regarding infiltration that you may find useful. If you have any questions feel free to contact me at 781-751-9352 or via email at jmammone@dedham-ma.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jason L. Mammone".

Jason L. Mammone, P.E.
Director of Engineering

April 1st Public Meeting

- This meeting was held at the Dedham Middle School in the auditorium.
- There were over 50 people in attendance.
- The presentation included:
 - Education on what I/I is
 - Efforts undertaken by the Town since FY2007 to remove I/I from the public sewer system
 - Private infiltration data collected during our 2018 wet weather inspections.
 - The need to develop a Private Infiltration Removal Policy
 - What goes into a creating such a policy and who it will affect
 - An interactive segment where those in attendance could provide us initial data
 - Steps to be undertaken by the Town following the Public Meeting

April 1st Public Meeting – Interactive Segment

- David Gamble of Gamble Associates created the interactive segment of our public meeting and was at the public meeting to run that segment.
- David's company was hired by the Town previously to develop the Dedham Square Design Guidelines.
- David and former selectman Mike Butler worked together to develop the questions that were to be presented to those in attendance. Each questions was multiple-choice.
- David provided each audience member with a handheld clicker so when the question was asked, they could anonymously use their clicker to choose the answer of their choice.
- Their answers were tabulated and instantly shown to the audience in real-time.
- Those in attendance really enjoyed that segment stating that it made them feel like a part of the presentation and that their answers were being collected and considered as part of the policy's development.

Wet Weather Inspection Results: 2018 and 2019

	2018	2019	Total
# of Wet Weather Inspections	1600	1900	3500
Results of 2 nd Inspection:			
# of Services flagged for 2 nd inspection	113	120	233
Unable to complete due to obstructions or video issues	13	22	
No flow observed	17	40	
Was actually wastewater flow	16	9	
Possible sump pump connection	5	0	
Confirmed infiltration	62	49	111 (3%)
Est'd. Gals. Per Day of peak infiltration	140,000	65,000	205,000*

* Of the 111 accounts, the top 20 are estimated at 142,000 GPD (69%) of peak infiltration.

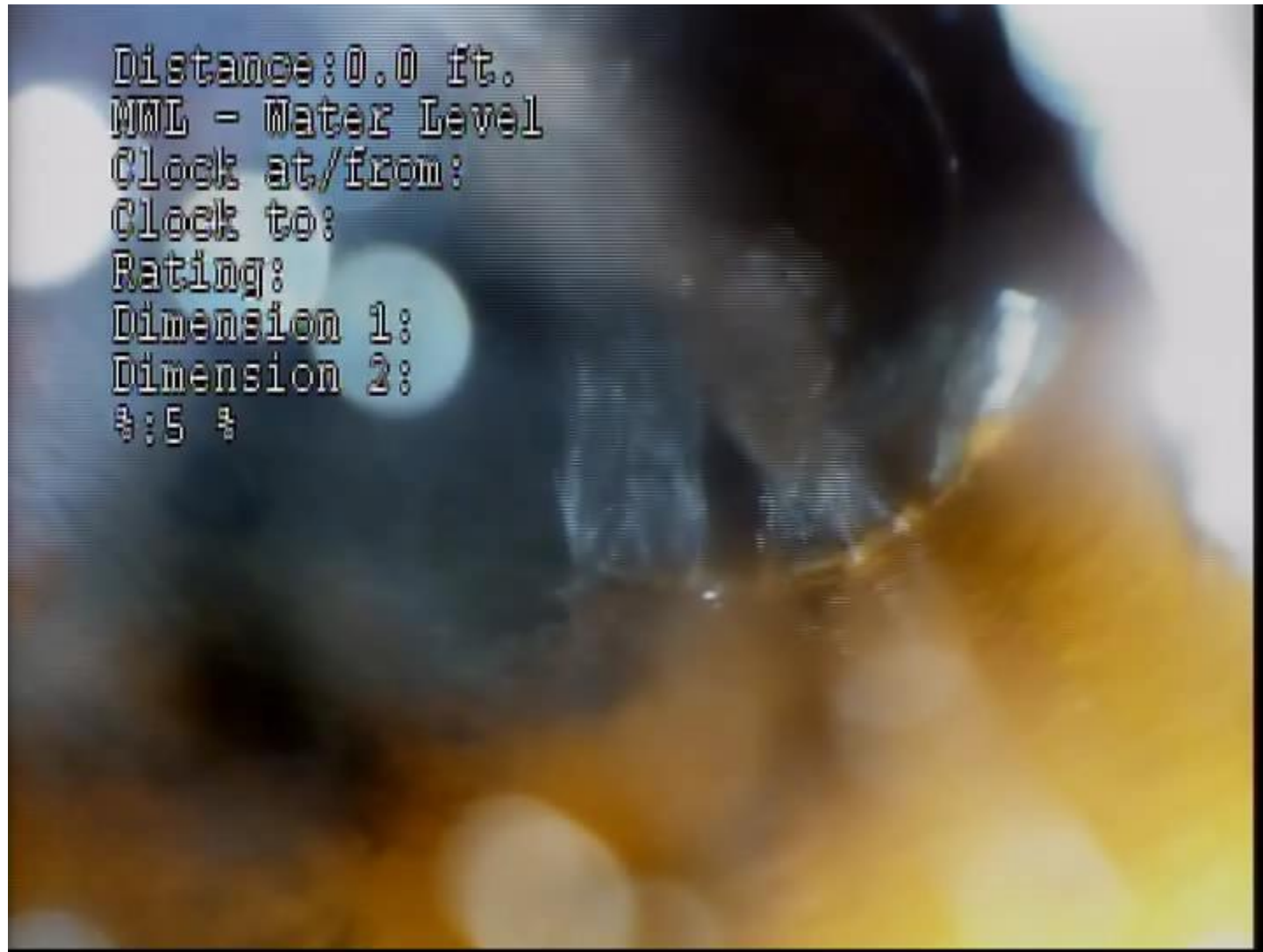
2019 Wet Weather Inspection Results

- Based upon the data supplied by the MWRA, it costs our sewer customers approximately \$0.0044 to transport and treat 1 gallon of infiltration per day which equates the cost to transport and treat 1 gallon of infiltration per day for 1 year to \$1.62.
- The 205,000 GPD of private infiltration from the past 2 years of private sewer connection inspections costs the customers about $\$1.62 \times 205,000 \text{ GPD} = \mathbf{\$332,100}$ in FY 2019 in MWRA assessments. The Town has approximately 8,000 customers, so that is about **\$42** per customer for the year.
- We have inspected approximately 40% of the Town's public sewer system over the past two years. If we were to extrapolate that out for the remaining 60% of the private connections, we could possibly have over 250 private sewer services contributing over 400,000 GPD of private infiltration into the Town's sewer system costing customers about **\$648,000** in FY2019 or about **\$81** per customer per year.

2019 Wet Weather Inspections – Infiltration Example



2019 Wet Weather Inspections – Infiltration Example

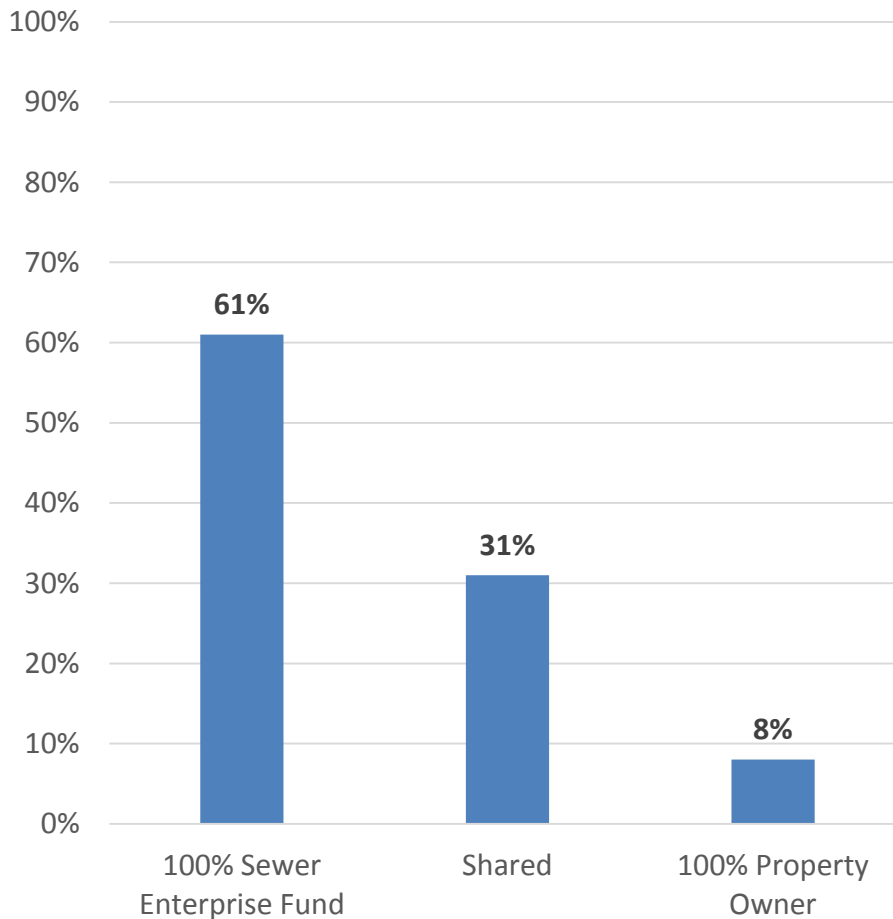


Sewer Insert #2

- Based upon the initial feedback we received at our April 1st meeting, it was decided to send out a sewer survey to all the Town's sewer customers. A policy such as this and its potential effects on our customers it was vital to provide them every opportunity to provide us feedback on how the policy should be drafted.
 - The sewer survey was sent out with the 2nd quarter sewer bills. The Town sends out over 8,000 bills to our customers each quarter.
 - Customers had the option to fill out and mail back the enclosed sewer survey or go to the Town's website and fill out the survey electronically.
 - An email blast went out to all Town website subscribers that there was an electronic sewer survey that they could participate in.
 - We provided copies of the sewer survey at Collector's office for those that come to the Town Hall to pay their sewer bills.
 - Copies of the sewer survey were also sent to the Council on Aging to be distributed to our seniors.
 - The sewer survey was also available at the Main Library
- Resident Jan Civian improved the survey design, set it up on-line, suggested it be mailed with the sewer bills, directed students doing data entry of paper surveys and produced final summary of the results. The Youth Commission recruited the students to help over the summer.

Survey: Who Should Pay?

In your opinion, who should be responsible for the cost of repairs to sewer pipes on private property?



- *The fund should pay for all costs, that's why we have it!*
- *I believe it is the Town's responsibility and should be shared by all through the sewer bill.*
- *How on earth are property owners who are fixed income retirees going to come up with sewer excavation costs? Taxes and Sewer bills have been going up. The senior population in this town is significant. Paying thousands of dollars for sewer excavation will hurt us.*
- *Our taxes are extremely high, and are supposed to cover municipal issues. The sewer line is a municipal issue.*

Assuming the Property Owner is Responsible for 100% of the Cost ...

<i>How long should they be given to complete the repair?</i>	6 months	8%
	1 year	23%
	2 years	69%
<i>If the owner does not begin repairs within the required time frame, should the Town impose a financial penalty?</i>	Yes	38%
	No	62%
<i>Should the Town offer to provide a list of pre-qualified contractors?</i>	Yes	96%
	No	4%
<i>Should the Town offer a low interest loan from the Sewer Enterprise Fund?</i>	Yes	95%
	No	5%

Assuming the Costs are Shared Between the Town and the Property Owner ...

<i>What options should an owner have for paying their share?</i>	Lump sum paid upon completion	4%
	Low interest loan from Sewer Enterprise Fund repaid over time	21%
	Both	75%
<i>How much do you think the Sewer Enterprise Fund should pay?</i>	Less than 50%	5%
	Shared equally (50%/50%)	45%
	More than 50%	43%
	A fixed amount regardless of the costs of the repair (e.g., \$2,500)	7%
<i>How long should property owners be given to complete the repair?</i>	6 months	10%
	1 year	27%
	2 years	63%

DRAFT – Private Infiltration Removal Policy

- Currently working on the draft policy with Town Counsel & Weston & Sampson. Based upon the results of the survey, we propose to utilize the Sewer Enterprise Fund to pay for the removal of private infiltration.
- The removal of private infiltration will be addressed as part of our ongoing Sewer Rehabilitation Contracts. When identified, these private sources will be added to our current backlog of public sources and will be removed based upon a cost-benefit analysis. This is similar to how we handle private roads that get accepted as public ways.
- What are the sections contained within the draft policy:
 - Statement of Authority and Purpose
 - Definitions
 - Private Infiltration Removal Regulations
 - Enforcement
 - Severability

DRAFT – Private Infiltration Removal Policy

- Taking a closer look into the Draft Private Infiltration Removal Regulations:
 - *Step 1 – Identification of Private Infiltration Sources*
 - Describes how the Town will perform inspections on the private services and who gets inspected.
 - Informs the property owner that they will not be assessed a fee in connection with the inspection.
 - Who reviews and determines if a particular private service has infiltration entering the Town's sewer system.
 - Lets property owner request review of the video inspection.

DRAFT – Private Infiltration Removal Policy

– *Step 2 – Notification of Infiltration Source*

- If a private service is determined to have infiltration, the Town will send a notice to the property owner describing the source of infiltration and what method(s) would be required to remove it.
- The notice will contain a Consent Form which will need to be signed and returned to the Town within 60 days. Failure to do so would result in a \$25 late fee being assessed onto their quarterly sewer bill until it is executed and returned.
- Property owners that do not return the Consent Form within the original 60 days will be sent a second notice, providing an additional 30 days to return the Consent Form. Failure to return the Consent Form within 90 days would be required to remove the source of infiltration at their own expense.

DRAFT – Private Infiltration Removal Policy

– *Step 3 – Removal of Infiltration Source*

- Upon receipt of a signed Consent Form, the Town will work with the property owner to schedule a time to remove the private source of infiltration at no cost to the property owner. The removal of these sources shall be accomplished by one or a combination of rehab methods such as, open cut spot repair, complete replacement of the service or lining.
- The Town will provide the property owner a 1-year warranty upon completion of the rehab method. After 1-year, the property owner will resume ownership of the entire service extending from the house up to and including its connection with the Town's public sewer system.

Next Steps

- Place the results of the sewer survey into the 3rd quarter sewer bills (beginning of November) and publish them on the Town's website.
- Conduct a focus group in December to fine tune the portions of the policy that directly affect the property owners (i.e., late fee amounts, time frame to return Consent Form prior to being assessed a late fee, best way to handle the property owner that ignores all attempts to address their source of infiltration, improved way(s) to notify private property owners).
- Take the information collected from the focus group and conduct another review and final revision of the Draft Private Infiltration Removal Policy.
- Present the latest revision of the Draft policy to the Select Board for your support.
- If supported by the Select Board, have you determine if the policy should be approved by the Town Manager acting as the Town's Sewer Commissioner.