

## WHY REMOVE I/I?

The City of Melrose gets our drinking water from the Massachusetts Water Resources Authority (MWRA) and sends wastewater collected from homes and businesses connected to the City's sewer system to the MWRA's Deer Island Wastewater Treatment Facility.

**In Melrose, the wastewater (sewer) system and the stormwater drainage system are two completely separate systems.** However, a approximately 60 percent of the wastewater that we pay to send to the MWRA sewer system is actually clean groundwater and rainwater that does not belong in the sewer. Keeping groundwater and rainwater out of the sewer system is important because:

- ▶ Additional flows take up valuable sewer system capacity, which is then unavailable for actual wastewater.
- ▶ High sewer flows can cause raw sewage overflows out of sewer manholes, pump stations, or into basements, resulting in both environmental and public health concerns. Any overflow caused by rainwater or groundwater is one that could be prevented.
- ▶ This water should be infiltrating back into the ground and recharging local groundwater, streams, and ponds.
- ▶ It costs us all money to pay for these unnecessary flows! The City pays MWRA for each gallon sent to their system, whether it is wastewater or not.

## WHAT CAN I DO?

- 1) **Replace or line old clay sewer service pipes from your house to the street.** Groundwater leaking into old service lines can contribute significantly to I/I.
- 2) **If you have basement and/or foundation drainage systems (e.g., sump pumps), make sure they are not connected to your sewer service connection or set to pump into plumbing fixtures such as washing machine drains, basement sinks, etc., which lead to the sewer.** This can dramatically increase unnecessary flows in the sewer system.
- 3) **Check your gutters to make sure that your house is not improperly tied into your sewer service pipe.** If you notice any of your rainwater drainage going into your sewer connection, you must disconnect those pipes and reroute the water elsewhere on your property.
- 4) **Do not plant trees or shrubs on or near sewer lines.** Roots can penetrate cracks or holes in pipes and make matters worse, especially in old clay pipes. Not only do roots let groundwater into your sewer pipe, they can also cause blockages, with sewage then backing up into your home.
- 5) **If you're not sure where your rainwater and property drainage goes,** you can have a plumber check your connections or you can schedule a voluntary appointment with the Melrose Engineering Division. If you know you have an improper connection, the City can assist you with recommendations how to disconnect this piping.

**IF YOU WOULD LIKE ASSISTANCE,  
PLEASE CALL: 781-979-4172**



## WHAT IS THE CITY DOING TO REDUCE I/I?

Many of Melrose's sewer system components are over 100 years old. The same is true of many private sewer services connecting homes and businesses to the sewer mains in the street. This infrastructure is beyond its lifespan and is particularly susceptible to I/I.

The City has an aggressive program to reduce I/I in City-owned infrastructure - specifically the sewer mains and manholes located in the streets

Based on the results of flow metering throughout the sewer system, the City identifies areas requiring inspection using a camera that travels inside the sewer mains. Pipes with leaks are either lined using a "trenchless" technology that does not require digging up the streets, or replaced by direct excavation when those less disruptive methods aren't possible. Leaking manholes, usually made of brick, are lined with cement to stop the infiltration of groundwater.

Locating and fixing I/I is a long and costly process, but the City is maximizing available grant and loan funding to reduce I/I.

## KEEP MELROSE'S SEWERS FLOWING

A Guide to Preventing Private Property Infiltration and Inflow (I/I) and Sewer Backups



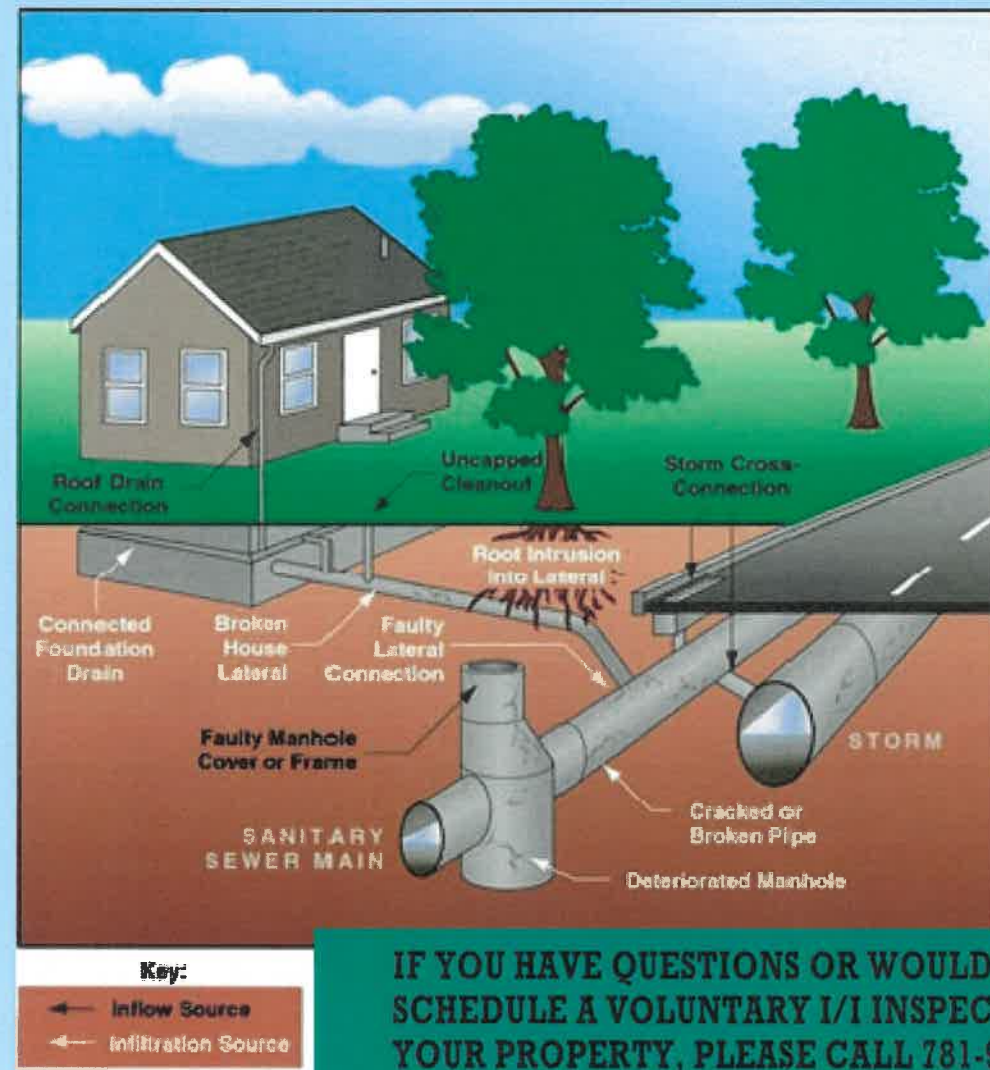
City of Melrose  
Department of Public Works

[www.cityofmelrose.org](http://www.cityofmelrose.org)  
781-979-4172



## WHAT IS I/I?

I/I stands for infiltration and inflow, the process by which clear rainwater and groundwater enter the sanitary sewer system from a variety of sources. Infiltration is groundwater that enters sewer pipes wherever possible, often through cracks and holes in pipes and faulty joint connections between pipe segments. Inflow is rainwater and snowmelt that enter the sewer system at points of direct connection to the system, such as roof drains (downspouts), basement and foundation drains, and sump pumps. None of these sources can be legally connected to a sanitary sewer pipe, based on Massachusetts Plumbing Code and Melrose's local ordinances. Inflow can also come from rainwater entering the sewer system directly through manhole covers or improper connections to drainage collection systems in streets and parking lots. The sketch below illustrates some common I/I sources.



**IF YOU HAVE QUESTIONS OR WOULD LIKE TO SCHEDULE A VOLUNTARY I/I INSPECTION OF YOUR PROPERTY, PLEASE CALL 781-979-4172.**

## SEWER BACKUPS Controlling Grease

An increasingly common cause of sewer overflows is pipes blocked by grease. Grease gets into the sewer system from household drains as well as from poorly maintained grease traps in restaurants and other businesses.

### Where does grease come from?

A byproduct of cooking, grease comes from meat fats, lard, cooking oil, shortening, butter or margarine, food scraps, sauces, and dairy products.

Too often grease is washed into the plumbing system, usually through the kitchen sink.

**Running hot water afterward will NOT prevent problems.** It just pushes them downstream. Grease sticks to the inside of sewer pipes, both on your property and in the streets. Over time, it can build up and block the entire pipe.

Home garbage disposals do not keep grease out of the plumbing system. Commercial detergent products that claim to dissolve grease may pass grease down the line and cause problems in other areas.



## WHAT CAN I DO TO HELP?

The easiest way to solve the grease problem and help prevent overflows of raw sewage is to keep this material out of the sewer system in the first place.

- ▶ Never pour grease down sink drains or into toilets.
- ▶ Never put grease down garbage disposals.
- ▶ Put baskets/strainers in sink drains to catch food scraps and other solids, and empty them into the trash or compost.
- ▶ Correctly dispose of grease, oil, or fat:
  - 1) Let it cool.
  - 2) Pour it into a non-recyclable, sealed container like a wax-coated paper juice, milk, or soup container.
  - 3) Wipe cooled grease from pans and utensils and place in your trash.
  - 4) Dispose of cooled, solidified grease, oil, or fat into your trash.
- ▶ Speak with your friends and neighbors about the problem of grease in the sewer system and how to keep it out.

### Other items to keep out of your pipes:

Place all disposable diapers, sanitary napkins or tampons, paper towels, sanitary wipes, and dental floss in the trash - never flush them down the toilet. They can clog your drains and may cause damage to your plumbing system.

**Flushable wipes are NOT FLUSHABLE!**