

# *Borough of Bellmawr*

## **Sewer Department**

21 East Browning Road  
PO Box 368  
Bellmawr, NJ 08099-1111

## **About us**

The Bellmawr Sewer Department is the branch of your public works which manages the storm water and wastewater collection systems throughout our community. Our mission is to provide the residents of Bellmawr a clean and efficient sewer system designed to protect the public health, prevent disease, and control water pollution to surface and ground water. Covering three and one-half square miles and managing over 80 miles of continuous underground pipe connected to six pumping stations, we combine the latest technology with proven techniques to keep your sewers flowing, all while maintaining the highest of safety standards.

Our first and foremost responsibilities lay in the sewer mains under the street, but the Sewer Department is also proud to provide homeowners a courtesy sewer cleaning service at no additional cost. In emergency situations, we can provide immediate relief under most conditions. Our qualified crews are trained and certified by the New Jersey Department of Environmental Protection and its affiliated programs to bring the community the highest quality service and care it deserves.

The Bellmawr Sewer Department employs six full time employees:  
Superintendent with 30 years experience, NJDEP C-2 Collection System License  
Foreman with 39 years experience  
Operator I with 19 years of experience, C-2 Collection System License  
Sewer Helper I with 7 years experience, C-2 Collection System License  
Sewer Helper II with 7 years experience, C-1 Collection System License  
Sewer Helper III with 8 years experience.

All of our employees are proud members of the [New Jersey Water Environment Association](#), [Water Environment Federation](#), [American Water Works Association](#), [American Public Works Association](#) and the [New Jersey Department of Environmental Protection](#). These outstanding associations provide training and resources for all water professionals. Through networking and cooperation between industry leaders and government agencies, they help provide the training contact hours needed for license holders to maintain their standing to operate New Jersey's water and waste water systems.

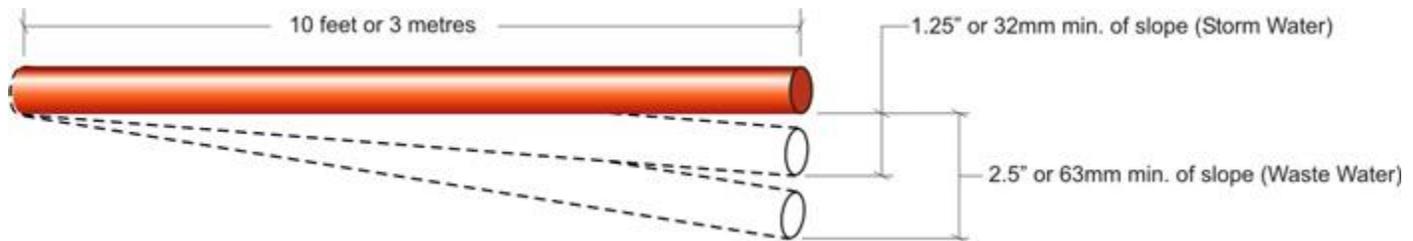
## **How your sewer works**

There are several main components related to a home's plumbing system. In addition, homes have changed throughout the years with improvements made as a means to better collect drainage and wastewater. A home built in 1940 will have a different plumbing configuration than a modern house; however, there will be some basic similarities. Understanding how your home's plumbing system works will help identify potential problems and allow you to discuss piping remedies with a private plumber or drainage contractor. Please keep in mind that sewer laterals or drainage piping on private property is the homeowner's responsibility and subjected to obtaining necessary permits from the construction office.

To start, sewers work on the basic principle of gravity. Adequate flow-rate for sewer and drainage is based on the formula of rise over run or slope over distance. A 2% grade or .25" of fall over a distance of one foot is the minimum standard for laying wastewater piping. A 1% grade or .125" over the distance of one foot is the minimum standard for laying storm-water pipes.

Here are some examples:

- Wastewater piping: 10 feet of pipe will require a minimum of 2.5" of fall.
- Storm-water piping: 10 feet of pipe will require a minimum of 1.25" of fall.



Some homes have pump systems which are used when basements are located below the collection main and wastewater or drainage needs to be pumped to a chamber or sump where it can flow by gravity to the main at a minimum grade. It is important to maintain pumps regularly to ensure they operate without problems.

## What are the main sewer and drainage components associated with my home?

There are three standard piping systems to familiarize yourself with related to conveying storm and wastewaters. The first component is the **downspouts, roof drains or rainwater leaders**. The second system is the drain-tile or footing drains, and the third component is the **main sewer-line** which carries drainage and waste from the home and is then collected in the sewer-main.

### Downspouts or roof drains

Downspouts or roof drains collect rainwater trapped by the perimeter of the home's roof. Rainwater flows from the eave troughs and exits down a downspout located against the siding of the home. There can be four or more downspouts on a given home. The downspouts are attached to 3" to 4" diameter piping typically buried two to three feet below the ground. The water flows through these pipes to a sump or concrete collection chamber located either inside or outside of the home.

Some older homes do not have piping to intercept water flowing from the roof. This means the downspouts may connect directly into the drain-tile or percolate directly into the ground itself. In some cases, flow of storm-water is directed to a drainage or rock pit.

### Drain-tile or footing drains

The second system to be knowledgeable about is the drain-tile. Drain-tile, footing drains, or weeping tile all refer to the short pieces of clay pipe that is placed around the home's perimeter at the footings of the foundation. The depth of the drain-tile correlates to the depth of the basement floor. In other words, if the

basement is four feet below the ground level, then the drain-tile would quite likely be 12" to 18" or 30 to 45 cm below the basement floor depth.

Drain-tile is designed to collect groundwater that seeps through the earth during rainfall or when your garden beds located near the home are being sprinkled. The groundwater trickles to the drain-tile entering the clay tile at the joint. Newer homes do not utilize clay tiles any longer, and plastic polyvinyl chloride (PVC) perforated pipe or perforated PVC drainage tubing is now typically installed at the footings.

From time to time, especially after many years of use, drain-tile can crack or become plugged with debris. Downspouts connected directly to the drain-tile will sometimes carry sediment and rotting leaves which have landed on the roof. Soil can also build up in the drain-tile. The consequence of non functioning drain-tiles might be water leaching or seeping through the porous concrete foundation or leaving a damp mark on the basement floor or foundation wall. Often a repair to the section of tiles or a flushing will alleviate the problem. Replacement of the old clay drain-tile can be considered but not necessarily required.

## **The sump**

Flow from drain-tiles and downspouts link up at a concrete square or cylindrical chamber referred to as a sump. Some homes have sumps located inside the basement or outside under the front steps, porches, or some place in the yard. Sometimes sumps are covered over with flooring and cannot be easily located inside the home. As previously noted, the sump primarily collects storm-water from the drain-tile and from the roof drains. The flow drains into the sump via one or two inlets and then exits from an outlet pipe after the water level in the sump reaches a certain elevation. The outlet pipe has a 90 degree bend referred to as a goose neck. On the downstream side of the goose neck, is a check valve designed to stop sanitary flow from backing up into the sump.

Even in dry weather, there should be water in the sump at a level of just above the "goose neck". The water acts as a lock or barrier for sewer gases which sometimes vent from the sewer-main back to the home. If you ever smell a rotten egg like sewer smell in your basement, possibly the result of hydrogen sulfide, check the level of water in your sump to see if there is an air gap between the surface of water and the goose neck. Fill the sump with water from a hose and replenish the level until it begins draining out the sump outlet. Backwater valves should be checked annually to see whether they are functioning properly. Disconnect the coupler on the pump side of the check valve to insure the flapper is correctly seated and can shut in cases of backflow from the main sewer-line (make sure you unplug the pump before disconnecting). Summertime is a good time to inspect your sump.

## **The main sewer-line**

The sewer-line carries all grey and black water from the home to the sewer-main. Grey water is discharged from sinks, tubs, floor drains, dishwashers and washing machines. Black water refers strictly to sewage.

The grey and black water piping system is a maze of small diameter pipes connecting together inside the home and routing to a vertical 4" pipe recognized as a stack, which also acts as a vent for air trapped in the pipes, the wastewater exits to the lateral sewer-line which is typically located underneath the basement floor slab.

The portion of sewer line situated underneath the concrete slab is composed of cast iron, as a means to handle the weight of the home. Older homes the pipe material changes from cast iron to vitrified clay short length pipe once the lateral pipe exits from under the home and is no longer burdened by the weight of the house. Newer homes have pipe material composed of PVC or ABS.

## Why did I experience a sewer back-up?

A sewer back up can be a traumatic event. Homes suffer damage, personal property is destroyed, claims are filed, capital is lost and inconveniences are experienced. There are a variety of reasons why a sewer system can back up, ranging from objects being accidentally placed into the private plumbing system to complete collapse of the sewer pipe.

Quite often, persistent tree roots extend through the joints of old vitrified clay sewer pipes while searching for nutrients and moisture during the dry summer months. The Bellmawr Sewer Department spends considerable time and resources clearing sewer mains and house connections free from tree roots, grease, debris etc.

## Why should I replace my sewer?

Most sewer pipes, whether house laterals or sewer mains in the collection system, are constructed of vitrified clay pipe. The most common failure attributed to older vitrified clay pipe is tree roots penetrating the joints of the pipe. In past years, joints were placed together and stopped up with a twine-like substance referred to as "oakum". Over an extended period of time, the oakum disintegrates allowing in some cases for roots to grow into the sewer pipe as they search for moisture.

Most of the older homes in Bellmawr have original sewer pipes still in use. Much like the roof of your home, a sewer connection has a "life span". Unlike a roof, however, it is difficult to determine the condition of a buried pipe. Often sewer replacement isn't considered until repeated blockages and back-ups occur.

Prior to 1980's, connections were installed using vitrified clay pipe, cast iron or other assessable material. Altogether, vitrified clay pipe is relatively durable and can last over a hundred years in the ground. On average, it is anticipated that vitrified clay pipe maintains a 60 to 80 year life expectancy.

## How is a sewer repaired or replaced?

When sewer pipes fail, the conventional means of repair is to excavate the ground, find the pipe and perform the repair or replacement. Roads, sidewalks, yards, driveways, and landscaping may be disturbed when locating and repairing sewer pipes. Sewer connections can sometimes run directly underneath other utilities and large trees with extensive and sensitive root systems. In these situations, repairs can be difficult and expensive because they require hand digging around the utilities or roots.

## How would I qualify to have my sewer-line replaced?

For the Borough to consider replacing or repairing options, there firstly must be a documented history of sewer-line blockages from the curb line to the sewer-main or sewer-main back to an unpaved surface, Secondly, there needs to be an indication that the Bellmawr Sewer Department's courtesy sewer-line maintenance program is no longer effective or has become exhaustive.

Homeowners are expected to take the necessary steps to rectify blockage problems by having the private portion of the sewer-line better, primarily by installing approved plastic root resistant pipe. If you have fully replaced the private portion of the sewer-line and the Borough portion is in poor condition, then please give us a call at 856-931-1111 and we can visit the home and consider Borough replacement options.

1. Bellmawr Sewer crews will first check the sewer main for any obvious trouble. If no problems are encountered, the crew will locate the clean-out and assess the situation. Keep in mind, Bellmawr Sewer crews are not licensed plumbers and are not equipped to fix problems or clear blockages within the home's internal plumbing system. Bellmawr Sewer crews are primarily equipped with tools to clear and clean the main sewer pipe leading from the home to the Borough sewer main.
2. Bellmawr Sewer crew will attempt to remedy the sewer back-up by using a variety of equipment - primarily a mechanical rodding machine, augers or flushing equipment.
3. When the crew has found the trouble and either cleared it or recommended further work by a private plumber, and completed their report, you will be asked to sign the agreement authorizing Borough work, noting the time the crew completed the job. (Writing the crew report is considered part of the work involved when attending a blockage.)
4. A copy of the stoppage report will be given to the homeowner and returned to the Assistant Superintendent of Maintenance at the end of the crew's shift.
5. Bellmawr Sewer crews do not determine responsibility for the problem as their work mainly involves clearing the blockages. Their report summarizes their actions and findings. The crew will provide a contact name and number for follow-up on request.
6. The Bellmawr Sewer Department offers this service as a courtesy and you will not be issued any invoice.
7. The Bellmawr Sewer Department's operation is 24/7, 365 days a year. Normal hours are Monday - Friday from 7:30am to 3:30 pm @ 856-931-1111. Emergency after hours, weekends and holidays call the Bellmawr Police at 856-931-2120 or 911 and follow instructions.



## Help... I'm having a flood!

Not sure what kind of water emergency you're having? Are you hesitant to call a plumber and pay a fee? Call us first! If you are currently experiencing sewer related flooding, you can request a Borough service crew 24 hours a day at 856-931-1111. We will be glad to assist you and diagnose the severity of your problem. For emergencies after hours, call the Bellmawr Police at 856-931-2120 or 911.

If water is bubbling up from the ground and it is not coming from a manhole, contact the Water Department at 856-931-5721.

Prior to calling the Borough, try and determine where the flooding or leak is coming from and what type of flooding you are experiencing. You should call a Borough when you are experiencing a plugged toilet or sink that is located on the second floor of your home as most Borough related sewer blockages back-up from a fixture such as a drain, toilet, tub or shower stall in the basement.

If a blockage is found in the Borough section of a pipe, it doesn't necessarily mean the Borough is responsible for the back-up. For example, a large item flushed accidentally down the drain may get stuck in the Borough section of the connection and could be considered the homeowner's responsibility as it created the problem. Call the above numbers if you require more information.

### Is the flooding a result of:

- An overflowing toilet, floor or shower drain, tub or sink?
- An overflowing storm water sump?
- Is the sump's backwater valve functioning properly or is it stuck shut?
- Is water seeping in through the basement walls or foundation?
- Heavy rains?
- A plugged street drain or catch-basin.
- Is the back-up sewage, rainwater, or both?

Most commonly, flooding is a result of something obstructing the piping system. Heavy rains can also heighten the chances of a flood as well as leaks from waterlines and even water-mains. Before calling the Borough or a private plumber to attend to a problem try to determine where the water is coming from and whether the flooding is a result of a water-line leak or a sewer or drainage back-up.

## How do I prevent flooding?

Taking action is your best strategy for preventing a flood. Based on the homes past history, many homeowners know when and under what circumstances their homes will be susceptible to flooding and have already taken the necessary precautions. If you are a new homeowner or do not know the history of your home and your home is thirty years or older, here are some considerations.

- When buying a home, ask the sellers to disclose any information related to flooding or sewer back-ups.
- Include as part of your house inspection, a video pipe inspection of the sewer service to find out what shape the sewer service is in.
- Are you buying a home in an area of the Borough where the ground is soft and poor?
- Is there poor drainage for ground water to leach through the soil?
- Do the drain-tiles require replacement?
- Does the basement smell musty?
- Is the home located on a hill or in a valley?
- Where is the connection located?
- Does it flow to the lane or the street?
- Are there large trees on or near your property?

These are all things to consider. To access Borough records about your home, you can call the **Sewer Department at 856-931-1111**. You can ask the following:

- How old is my house / sewer connection?

- Where does my sewer line connect to the City?
- Do you have any records of previous sewer blockages?
- Is my sewer connection combined or twinned?
- Do I live in an area surrounded by peat?
- Can you tell me whether there are underground streams near my property?

To avert flooding, here are some basic preventive measures.

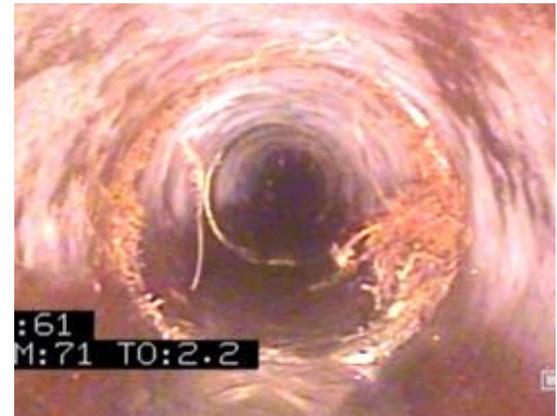
- Do not put grease or objects (diapers, plastic bags, panty hose, paper towels, hygiene products, cat litter) down your drains or toilets.
- If you have an older home with old vitrified clay pipe, you may want to consider replacing your sewer system with thermoplastic pipe, such as PVC (polyvinyl chloride) or ABS (acrylonitrile butadiene styrene) pipe.
- Have your sewer cleaned on a timely basis for debris or roots. Hire a drainage contractor to video inspect your sewer-line.
- Keep storm drains (catch-basins) clear of leaves and debris. In the fall, sweep up leaves for bagging or composting to prevent overland flooding from plugged drains.
- Ensure the backwater valve of your storm sump is functioning properly. Consider installing a pump if you are the lowest property situated along a street. This approved method of reducing flooding risks is designed to continually pump wastewater from a property under any storm condition. For further details on standards and installation.

## Why does flooding occur?

Sewers run under the ground and as a result are considered out of sight and out of mind. Often it is a mystery trying to determine why a home or building's plumbing system is backing up, especially if the problem can't be seen. The most common problems associated with faulty plumbing and sewer systems:

- tree roots
- large objects (solids) being placed in the toilet
- grease
- debris
- structural defects
- ground conditions
- faulty workmanship





We live in a Borough over 3.5 sq. miles, with many of mature trees situated on boulevards adjacent to our homes. This figure doesn't take into account the number of trees, hedges and plantings which thrive on or near private property and which the Borough doesn't maintain.

Tree roots can penetrate through leaking pipe joints often linked to vitrified clay pipe. Roots are especially aggressive during hot summer months when moisture and precipitation are minimal. Fine, hair-like roots will seek out wet or seeping joints and begin growing into the pipe, nourishing themselves off storm and waste-waters. In addition, since the majority of Borough homes are thirty years of age or older, short length vitrified clay pipe is prevalent and pre-dates polyvinyl chloride or "PVC" piping which typically has a better method of connecting or coupling pipes together.

Flooding can occur when a sewer connection becomes blocked by infiltrating tree roots, grease, debris, household objects, or poor workmanship. Occasionally, mainline sewers can also become stopped from tree roots or from debris. When extremely heavy rainfalls occur, excessive runoff drainage may exceed the capacity of the storm-water drainage system, resulting in flooding.

*For more information on preventing flooding, sewage backups, and tips for maximizing the efficiency of your own sewer system, please visit [Be Sewer Smart!](#) A wonderful resource providing safe and sound advice for any homeowner, no matter where you live!*



## Requesting a Borough of Bellmawr Sewer Dept. Maintenance Crew

The Borough of Bellmawr Sewer Department considers the cause and not the location of the blockage when determining responsibility for a sewer stoppage. If a blockage is found in the Borough section of a pipe, it doesn't necessarily mean the Borough is responsible for the back-up. For example, a large item flushed accidentally down the drain may get stuck in the Borough section of the connection and could be considered the homeowner's responsibility as they created the problem.

If you are unsure whether to call a plumbing service or the Sewer Department, call us first! It's our business to diagnose and clear common blockages in your sewer lateral under most conditions. Let us show you a return on your tax dollar!

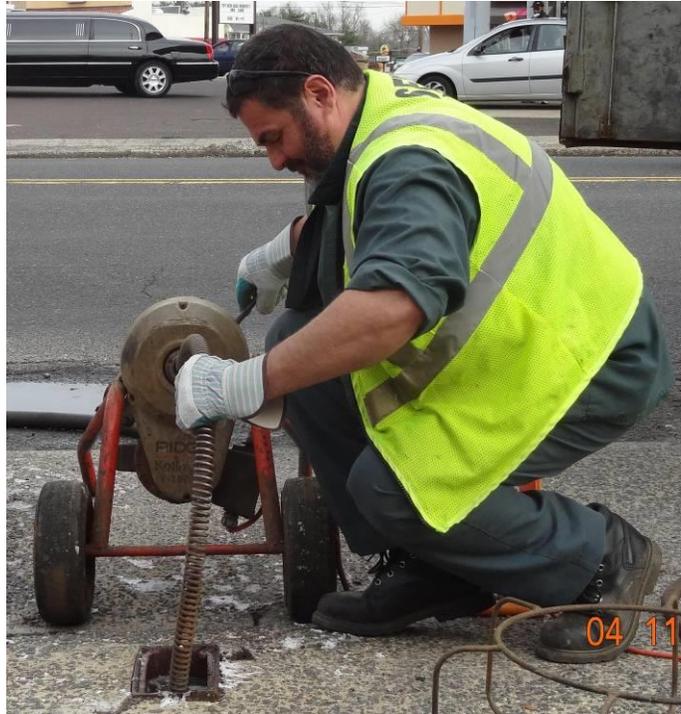
### Step-by-step guide for requesting a maintenance crew from Sewer Department - 856-931-1111

1. Dispatcher will ask for standard information in relation to your address and confirm whether or not you are the homeowner. We do require the homeowner's consent prior to a crew being dispatched. Someone 18 years of age or older must be home.
  - 1a. After the hours of 7:30am and 3:30pm and it is an emergency, call the Bellmawr Police Dept. at 856-931-2120 or 911. Follow the officer's or dispatcher's instructions to leave a message in our mailbox with the Camden County Department of Public Safety. Once your

message is recorded, on call maintenance personnel will be notified and dispatched to your residence.

## Once the crew arrives

1. Maintenance crews will first check the sewer main for any obvious trouble. If no problems are encountered, the crew will locate the clean-out and assess the situation. Keep in mind, Borough crews are not licensed plumbers and are not equipped to fix problems or clear blockages within the home's internal plumbing system. Maintenance crews are primarily equipped with tools to clear and clean the main sewer pipe leading from the home to the Borough sewer main.
2. Crews will attempt to remedy the sewer back-up by using a variety of equipment - primarily mechanical rodding machine, augers or flushing equipment.
3. When the crew has found the problem and either cleared it or not, they will complete a work order. You will be asked to sign the agreement authorizing Borough work, noting the time the crew completed the job. (Writing the crew report is considered part of the work involved when attending a call.)
4. The work order will be returned to the Assistant Superintendent of Maintenance at the end of the crew's shift.
5. Maintenance crews do not determine responsibility for the problem as their work mainly involves clearing the blockage. Their report summarizes their findings and actions. The crew will provide a contact name and number for follow-up on request.



## Working from inside the home

Crews can work from an inside sump, main stack or stub. In most cases, we ask homeowners to remove toilets prior to our arrival if that is the only access within the home. If there is a clean out on the inside of the house, there must be clear and safe access to it. The cleanout must not be higher than 36" from the floor, and no opening smaller than 3" can be used for our drain cleaning equipment.



## Sewer-line cleaning equipment

Borough crews have different types of sewer-line cleaning equipment available to them. Choosing the best tool for the job is primarily dependent on how and where the crew is able to access the sewer-line. An outside clean-out access is by far the best location for a crew to work from for several reasons.

- Workmen and their equipment do not need to come inside the home.
- Crews have plenty of room to set-up and utilize their equipment outside.
- From outside the home, the piping system has fewer bends and so more rigid types of cleaning cutters can be used.
- Crews are typically more efficient when working from outside.

## Auguring machines (roto-rooters)

An auguring machine is a quick answer to clearing a blocked sewer-line. It has limitations, though which is often a result of the size and kind of cutter being used and whether the operator can sense the problem areas of the pipe and spend the appropriate amount of time to clean it. Our crews will use the largest cutters available to them to properly clean the sewer-line.

- Can be operated from inside and outside the home.
- Used by crews when access is poor (i.e. toilet stub) or when there are many pipe bends.
- Have flexible 15' sections of steel coils.
- Are reasonably good at punching a hole through a blockage.
- Can use a variety of cutting heads that attach to the coils.
- Are designed more for clearing a stoppage than cleaning and maintaining a sewer-line.

## CCTV equipment (closed circuit TV equipment)

Camera equipment is a relatively new technology that has increased our technician's ability to locate and diagnose pipe-line problems. The cameras are equipped with radio wave technology that locates where and

at what depth the sewer-line travels underneath the ground. Having this information on hand saves time for our crews when they are exposing a problem section of piping.

## **The blockage was not my responsibility - what will the Borough do to ensure this won't recur?**

Once the crew has finished their shift, they hand in all their reports for the day to the assistant superintendent of maintenance. The superintendent may also determine whether the connection needs repair or to be added to a maintenance program.

If the Department attends a stoppage, the superintendent will consider the following options:

- If the blockage is a result of tree roots, the crew will clear the line with a mechanical device or possibly add a chemical to rid the line of roots.
- If the problem is a result of a collapsed section of pipe on Borough property, we will repair or replace the pipe depending on the most cost effective means. A repair crew will be dispatched as quickly as possible depending on the severity of the problem and priority of call.

## **Preventive Maintenance Program**

### **What is the Preventive Maintenance Program?**

As a means to alleviate homeowners from the continual nuisance of sewer blockages, primarily as a result of tree roots, grease, etc the Sewer Department has embarked on a program of scheduled pipe cleanings throughout the Borough.

After our crews visit a home, that has suffered a sewer back-up; the home will be placed on the preventive maintenance program as a means of minimizing the potential for a recurrence. Pre-maintenance scheduled for sewer main cleaning within 3-6 months depending on the severity of the blockage and whether the home has had a previous history of flooding.

### **Sewer Mains & Station Well Cleaning**

Common to municipalities around the world is the need to maintain a clean and sanitary environment suitable for humans to live and work. The best way to keep a sewer or storm system working properly is to perform routine inspection and cleaning. The objective of a Sewer Cleaning and Maintenance Program is to operate and maintain the wastewater collection system so it will function as well as:

- Minimize the number of stoppages per mile of sewer pipe
- Minimize the number of odor complaints
- Minimize the number of lift station failures
- Maintain intended flow in the system
- Protect fresh water resources.



The sewer Jet/Vac is a specialized vehicle that uses highly pressurized water to flush and clean sewer mains and collects debris by a high velocity vacuum system. If while a maintenance crew is performing main line cleaning in your neighborhood and you experience disrupted sewer service, strange noises coming from your pipes, or water splashing from your toilet, please do not hesitate to contact the Sewer Department at 856-931-1111 so that we can rectify any disruption.