# Homeowner Mitigation Measures Guide

**The following items should be connected to the storm sewer:**
1. Foundation drain – Perforated pipe along the foundation designed to keep water out of the basement
2. Sump Pump – The foundation drain of some homes is connected to the sump pump, which pumps water from the foundation to the higher elevation of the storm connection to provide drainage for the basement.
3. Downspout Leader – A shallow pipe that is plumbed around the exterior of the house, in which all the downspouts are connected to as well as the sump
pump.
4. Storm Connection – The pipe that is plumbed from the house to the storm main or French drain that collects the downspout leader and miscellaneous yard drains.

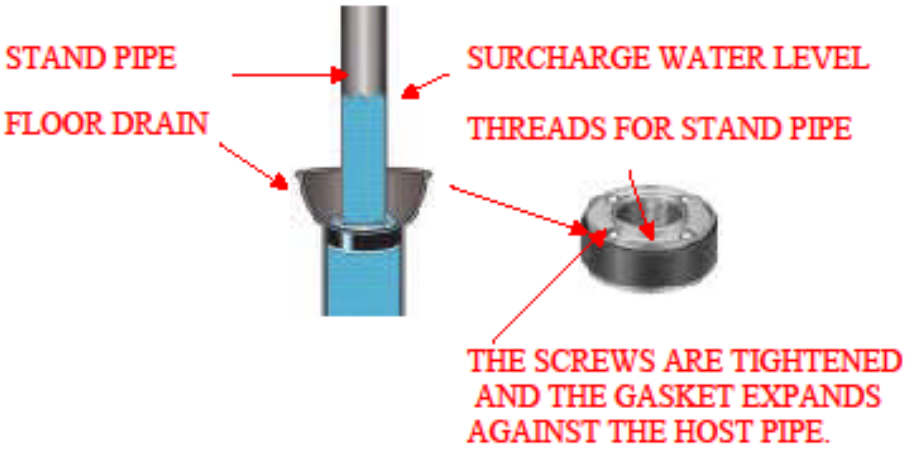
**The following items should be connected to the sanitary sewer:**
1. Sinks
2. Washing Machine
3. Showers
4. Toilets
5. Grinder Pumps – Waste water facilities in the basement that are pumped up to the sanitary sewer lead.

Houses without sump pumps on gravity connections are similar but have a deeper storm lateral which can drain the foundation by gravity. Please note that the downspouts should be connected to the storm connection and not splash blocked.

**Protecting a House from Sanitary Sewer Back-up**
There are two techniques used in protecting the home. The first approach is to allow the water to back-up through the connection and contain the water as it seeks the surcharge elevation without covering the entire basement floor. A standpipe accomplishes this task. The key to this protection is elevation not volume. So it is not necessary to have the volume of water flooded in the basement equal the contained volume. It is NOT a good idea to plug the floor drain when the sewer surcharges. If the drain is plugged, pressure in the piping under the floor may build up sufficiently to break the pipe and heave the basement floor. Also since the floor drain is blocked, any water in the basement from a pipe break will not drain out. The modification to the drain will need to be temporarily removed to drain this nuisance water.

The second approach is to block the path of water at the sanitary connection with a backwater valve installed in the front yard or at the basement wall.

**Standpipe** – Standpipes are lengths of pipe open at the top and screwed into an expandable rubber gasketed escutcheon within the floor drain. The height of the standpipe should be higher than the deepest flooding elevation experienced within the basement. It will hold the sanitary surcharge until it recedes. Standpipes are generally inexpensive, easy to install and help relieve pressure caused by backups. However, using standpipes very tall or capping a standpipe may rupture sewer pipe joints under the basement floor. Also, the protruding pipes may be a trip hazard and basement floor drains cannot be used until standpipes are removed. Special fittings may need to be used to connect a condensate drain to a standpipe. If floor cracks are prevalent, water may seep through the floor where a sump pump may be required.

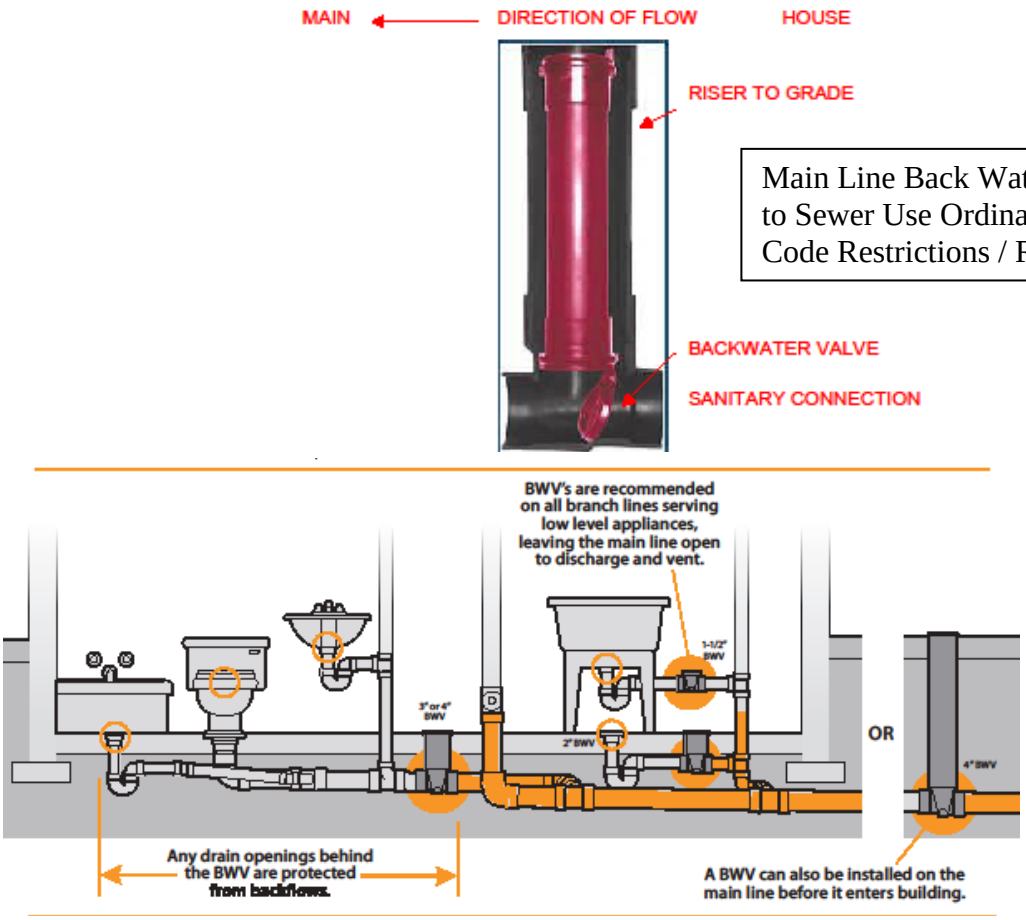



**Back Water Valve** – A backwater valve is a device that prevents sewage from backing up into your basement. A valve will automatically prevent water from the sanitary sewer from coming back into your home's plumbing system, but need occasional maintenance. A properly installed backwater valve must be placed so that sewage backup will be stopped and not come out through plumbing fixtures or the floor drain in your basement. A licensed professional or plumber can look at your system and recommend the appropriate installation. If you are going to install a backwater valve, a licensed professional or plumbing contractor must install it properly and a plumbing permit will likely be required. These valves also require periodic inspection and maintenance to remove debris and reduce the risk of failure. Valves installed in sewer lines sometimes become clogged with debris and fail to close completely. When this happens, the valve will slow down the flow of sewage but will not stop it completely. Ask a licensed professional or plumbing contractor how to properly inspect and maintain the backwater valve that is installed for your home.

It is important to note that a backwater valve is designed to be closed during sewer surcharge conditions to keep water from the sanitary sewer system from flowing into your home. When the backwater valve closes, water from the inside of your home also drains out. **When there is a risk of sewer surcharge, such as during a heavy rain storm, you should avoid using the toilet, sink, shower, washer, dishwasher or any other appliance that releases water to the sanitary sewer system**. The water will not be able to get past your backflow prevention device(s) and will have nowhere to go except back into your home. This is referred to as "self-flooding" as the basement will be flooded with wastewater that originated within your home.

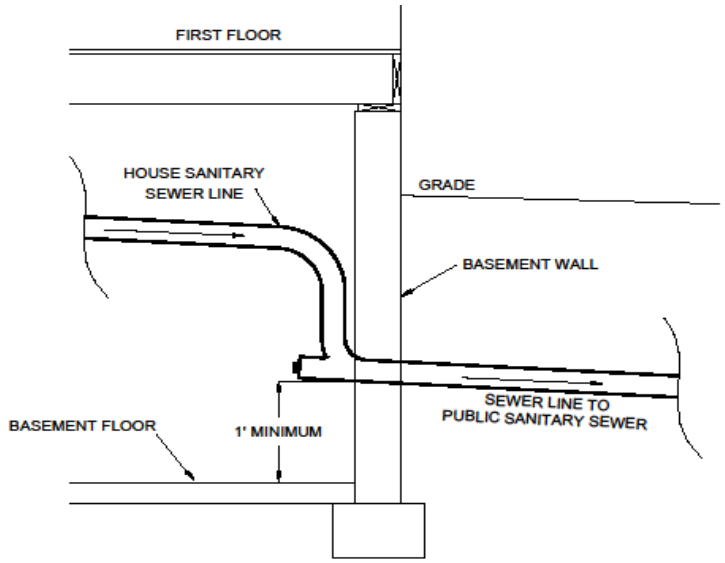
Regardless of whether or not you install a backwater valve, if ground or rain water from your property still enters the sanitary sewer system you are increasing the risk that your property and the properties around you may flood. If you redirect drainage from your property to the storm sewer system, you will reduce the risk of flooding for yourself and for your neighbors.

Back Water Valve for Fixtures – Subject to Sewer Use Ordinance & Plumbing Code Restrictions / Requirements




Main Line Back Water Valve – Subject to Sewer Use Ordinance & Plumbing Code Restrictions / Requirements

A **permanent approach** is to retrofit the existing plumbing to meet the current Sewer Use Ordinance which does not allow gravity sewer service from the basements. This task is done by physically terminating the sanitary sewer pipe (below the basement floor) at the interior basement wall before it leaves your home. Then connecting all sanitary sewer plumbing from the floors above via a new sanitary sewer pipe through the basement wall at least 1 foot above the basement floor. Lastly, route and connect the new sewer pipe to the existing sanitary sewer lead on the outside of the home. This will stop sewer surcharges from entering the home, but will also stop gravity sewer service from the basement.




SEWER USE ORDINANCE 570-98
NO BASEMENT GRAVITY SEWER SERVICE