



The Hempfield Township Municipal Authority Backwater Valves (aka Backflow Preventers)

The Hempfield Township Municipal Authority would like to respectfully remind all of its customers that property damage resulting from sewage backing up into your home is the responsibility of the homeowner, not the Authority. Most insurance companies offer products to protect homeowners from a sewer backup. Protect yourself from a sewer backup by contacting your insurance agent. Furthermore, there are mechanical devices designed to prevent sewage back-ups available from local plumbers. This presentation deals with those mechanical devices which are known as **BACKWATER VALVES** or **BACKFLOW PREVENTERS**.

We hope you will take the time to consider your risks and select any options you feel best protect your property. If tenants occupy your building, please advise them of this notice.

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Backwater Valves (aka Backflow Preventers)

What is a BACKWATER VALVE?

A **backwater valve** is a one-way valve that is installed on a building's lateral sewer (the privately-owned service sewer line which connects your home to the public sanitary sewage system). A properly installed and maintained backwater valve will prevent the sewer from backing up and flooding a building.

Most properties are connected to public sewers. Many of these properties are situated and connected to the sewers in such a way that an obstruction in the public sewer or a severe rain event will not cause sewage backup into the property.

Other properties, however, may need the protection of a backwater valve.

The property owner is responsible for the installation and maintenance of a backwater valve (see information on installation and maintenance of backwater valves later in the presentation).

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When is a **BACKWATER VALVE** a good idea?

Situations when properties may need the protection of a backwater valve:

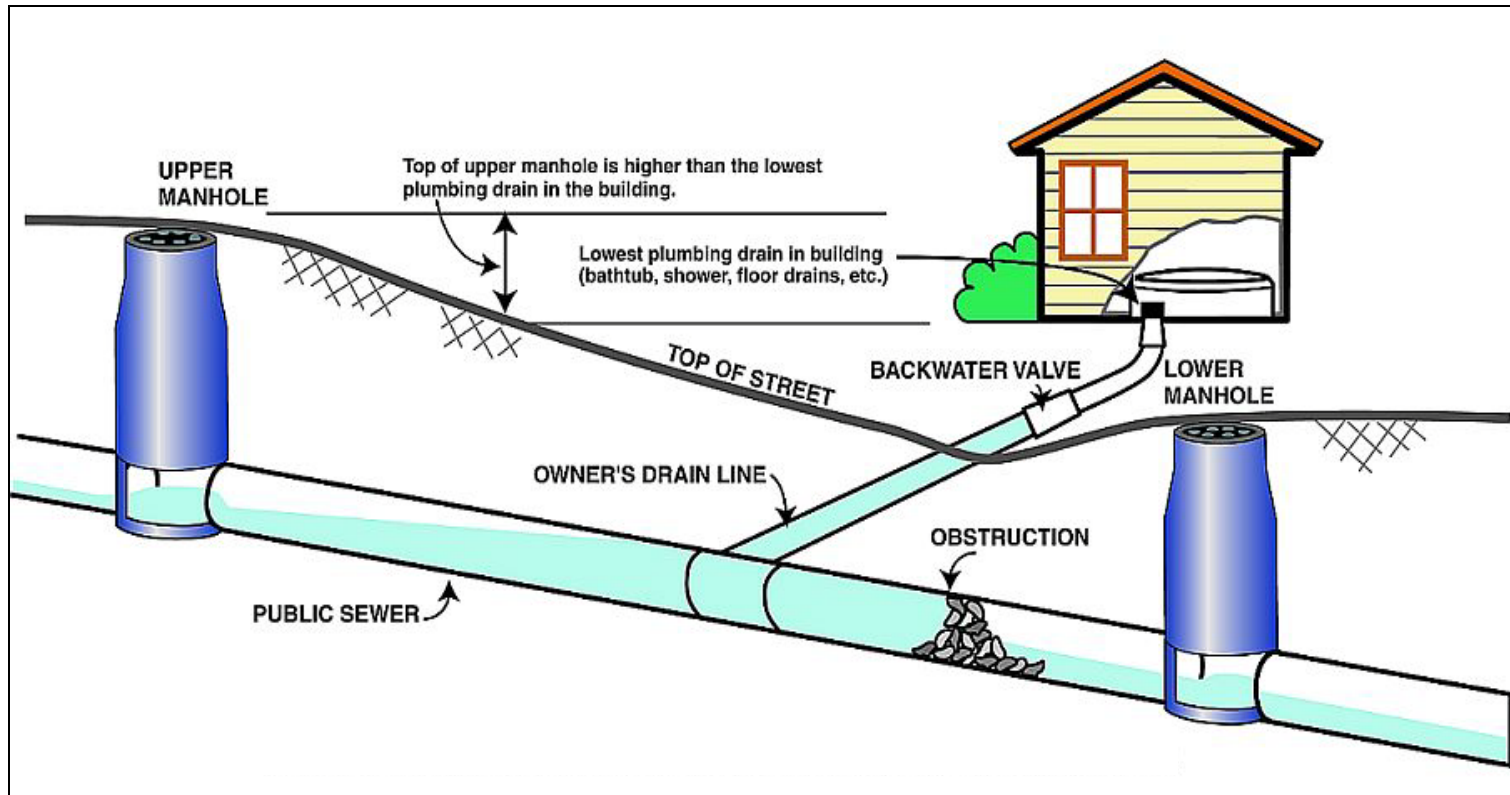
- Properties built with the lowest floor containing plumbing fixtures (bathtub, shower, floor drain, etc.) below the upper manhole (maintenance hole) of the public sewer (see next slide).
- Properties in flood prone areas.
- Properties with a history of backups during heavy rains.

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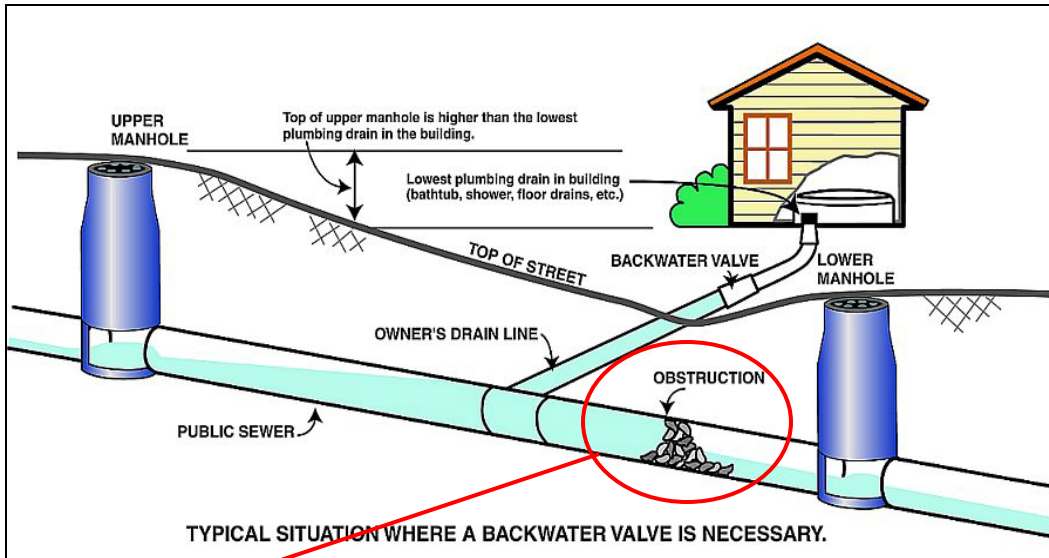


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Please note that a sewer line blockage can happen anytime, anywhere, and in any municipality's sewer system... whether it is an older sewer line or one that was just recently installed. And the fact that you never had a problem before unfortunately does not mean you are immune from the risk.

To see various videos regarding the subject, go to YouTube and type in "sewer backwater valve" or "sewer backflow preventer".

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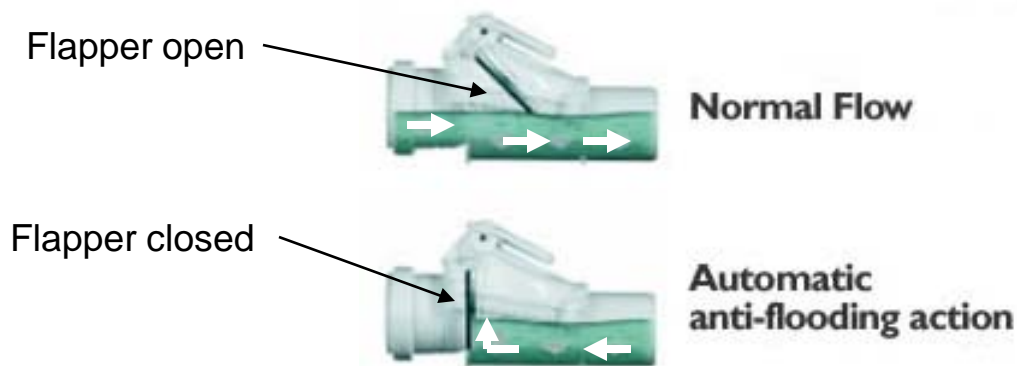




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How does a backwater valve work?

A backwater valve has an internal mechanical disc (flapper) that will close a sewer pipe opening when reverse surcharges from a public/private sewer system attempt to enter a building drainage system, preventing the flooding of a building with raw sewage.



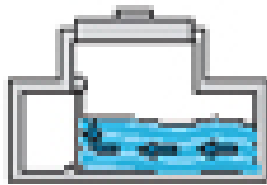
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Backwater valves have a variety of designs...



This type shows the flapper hinged at the top, which closes as the backflow of water hits it.



This type has a hinge at the bottom which closes as it floats up from the backflow of water.

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Backwater valves come in a variety of shapes and sizes...



Relatively simple backwater valves.



A bit more complex.



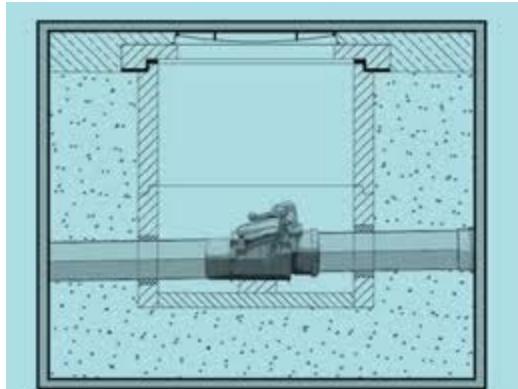
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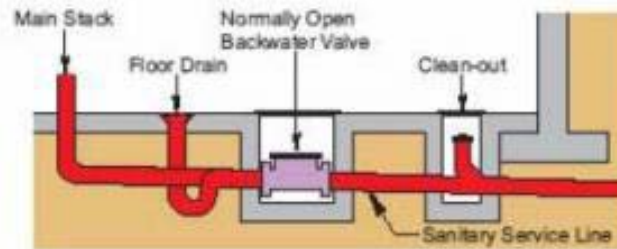
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Installation examples:



The above illustration shows a backwater valve installed in a pit in the yard.

BACKWATER VALVE INSTALLATION



Here the backwater valve is installed under the slab in a basement of a building.

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Installation examples:

The installation examples on the previous page show the devices placed in a chamber to allow access and maintenance...

...new innovations such as the Adapt-A-Valve® or CleanCheck® Backwater Valve allow maintenance without having the extra expense of enclosing the device in a chamber.



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Individual floor drain backwater valves:

If the only fixture in a building that may be subject to backflow is a floor drain, there are easily installed backwater valves designed to protect them called "flood checks". They are installed directly in the vertical pipe of a floor drain by means of a compressed rubber disk. If backflow occurs an upside down rubber cup will be forced up and seal the floor drain.

If you go this route, be careful to check that the level of the next highest drain in the building is higher than the manhole (as shown in the earlier diagram). Or else you may just move the backup higher up into another fixture.



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Installation:

Consult with your plumber to determine the best type of backwater valve for your situation and best location for installation of the device on your property.

As always, the Authority recommends getting at least three price quotes for the purchase and installation of a backwater valve.

Also, as always, please feel free to call the Authority if you have any questions.

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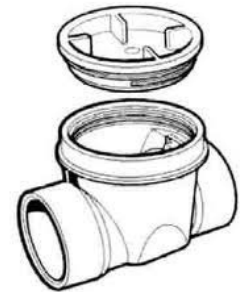


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Maintenance of backwater valves

No matter which type you get or where it is installed, a backwater valve needs to be easily accessible to the property owner for inspection and maintenance. Maintenance of the device is simple but important.

- The devices must be inspected by the property owner on a periodic basis to ensure they will operate properly in a backup situation.
- They should also be checked after all major rainfall events to make sure no debris has become lodged in the flapper mechanism.



This type has a screw-off lid for access to inspect and maintain the device.

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Backwater Valves - Caveats

- As noted on the previous page, a backflow valve needs to be properly maintained over time. Unfortunately, since it is “out of sight” it is also often “out of mind.” Years may pass before the device may need to spring into action due to a downstream sewer blockage. If not maintained over the years, the device may not operate properly when needed the most.
- Since the flapper closes to keep sewage from backing up, it will also keep water used in the building from going down the sewer. Therefore, until the blockage is removed and water is able to move freely again, water usage in the building must be curtailed – the building’s drain line provides only a limited amount of “storage” capacity at such times.

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A couple more things:

If water backs up into a property protected by a backwater valve, it is probably because of one of the following reasons:

- The device is not operating properly due to improper installation or poor maintenance.
- There is no more “storage” capacity in the drain line.
- A storm drain line is tied into your sewer line on the house-side of the device. Since no water can flow out through the device, any water getting into the drain has nowhere to go. This scenario is not only bad because the water will back up into the building, but also because this is considered an illegal connection to the sanitary sewer system and, therefore, must be disconnected.

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In Summary:

- Under certain conditions, a property may be susceptible to sewage backing up into the lowest drain in the building.
- A properly installed and maintained backwater valve can protect your property from a sewer back up.
- It is the property owner's sole responsibility to have a backwater valve installed on their building lateral.
- It is the property owner's responsibility to keep the backwater valve in good working order through periodic inspection and maintenance.

Please contact the Authority for more information or if you have any questions.