

Is it water pressure or water flow?



This handout will help you determine whether your home's plumbing system has inadequate water pressure or inadequate water flow. The problems are not the same, and the solutions are different.

Water pressure, measured in pounds per square inch (PSI), is the force that pushes water through the system. In most cases this is determined by the elevation of your home in relationship to the elevation of the water tower. The Utilities Division cannot change your water pressure. The water system is designed to operate in a certain range of pressures and those values are fixed, by design.

Water flow, measured in gallons per minute (GPM), is what really matters when evaluating whether your home is getting enough water for your household needs. Flow is determined by the water pressure and the volume of the pipe, or pipe size. These two factors together are what you need to get the desired water flow. As an example, if you have old galvanized pipe that is full of scale, one component needed for optimal flow has been removed; the volume of water moving through the pipe has been reduced.

Pressure + Pipe size = Water flow



Actual water pressure measurements can be taken by placing a pressure gauge on your laundry tub or outside faucet while you are not using water elsewhere in the home. If your water pressure drops dramatically during water use, you may have an inadequately-sized water service or undersized water piping inside your home.

Normal system operating pressures

35 PSI	Adequate
50 PSI	Typical well
60 PSI	Optimal
70 PSI	Optimal
80 PSI	Pressure regulating valve needed
90 PSI	High

Tips to improve your water pressure

Do you have a water softener?

Water softeners can plug up and affect the pressures in your house, though they typically are not plumbed to the outside faucets.

What to do? Many water softeners have bypass valves. Open the bypass valve. If your pressure improves, the water softener is the culprit.

Is the problem only at one fixture... a sink for instance?

This is a common problem with older fixtures. The pipe feeding the fixture or some part of the fixture itself could be plugged.

- Screens on faucets and the holes in shower heads can become plugged.
- Dishwasher valves also have screens that plug and gaskets that malfunction.
- Humidifiers can plug up with scale and malfunction.
- The vacuum breaker device on your outside faucet can malfunction.
- Your lawn sprinkler can plug.

What to do? Clean, repair or replace the fixture or device.

Do you have a whole house filter or an under-sink filter?

These are a common problem that can reduce pressure especially if the filter plugs up.

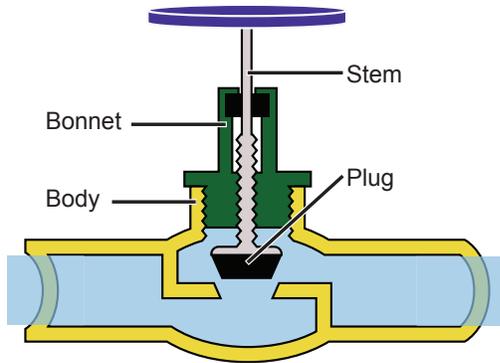
What to do? Make sure you are maintaining the filter element.

Do you have “Globe” type valves on your water service by the meter?

- Check to see if both valves at the meter are fully open. Tip: Loosen the packing nut under the valve handle to help turn the valve – tighten when done to prevent leaks.
- These valves can cause a restriction in the flow of water into your home. Replacing these valves can improve the flow from the water service.

Note: These valves are the responsibility of the homeowner. Utilities will not replace these valves.

Globe valve diagram



What to do? The replacement of the valve on the inlet side of the meter requires that the water be shut off at the “curbstop,” which is in your front yard at the property line. If you wish to do the work yourself, call Utilities to shut off the curbstop. If you have a plumber do the work, have them contact the Utilities Division. The valve on the outlet side of the meter can be replaced without shutting the water off at the curbstop.

Do you have a pressure regulating valve (PRV)?

This device is required by plumbing code if the system pressure exceeds 80 PSI. This valve may have malfunctioned.

What to do? Try adjusting the valve. Otherwise, repair or replace valve.

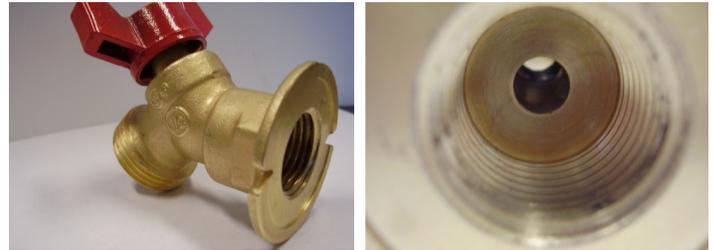
Do you have old galvanized pipe in your home?

Galvanized pipe can encrust with scale over the years.

What to do? Replace the affected piping with an approved alternative pipe.

Did you recently install a new faucet?

New faucets, by design, can provide a lower volume of water. Some faucets may be inadequate for homes with pressure at the lower end of normal operating levels. Here is an example of a new sill cock faucet with a very small orifice:



What to do? Determine if the new faucet is adequate for your pressure. Note that these faucets can reduce your flow by as much as 25 percent. Also, a small piece of debris may have been dislodged while the water was shut off and it ended up plugging your newly installed faucet. You may have to disassemble the new faucet and check for particles in the valve. And some water-saving faucets reduce the water flow which may be exaggerated by water system pressure that is on the lower end of normal operating pressures.

Other things that come into play when evaluating water pressure at your home

- Certain pipes in the home can be undersized, especially if you have water system pressure on the lower end of normal operating pressures.
- The house could be set back unusually far from the street and the size of the water service is inadequate to prevent “friction loss.” Friction loss reduces the amount of flow available.
- If you have an underground irrigation system, there could be too many heads in one zone. Contact your irrigation contractor for more information.

More questions? Call the Bloomington Utilities Division at 952-563-8777 for assistance.