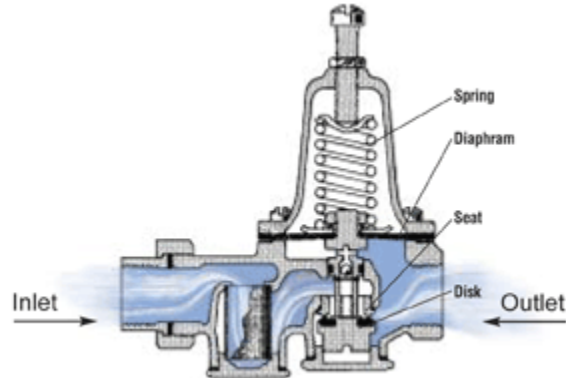


What is a PRV?

A PRV is a Pressure Reducing Valve that is commonly placed on water distribution systems and within individual homes, multi-family homes and businesses. There are two types of water pressure reducing valves, direct acting and pilot operated. Both use globe or angle style bodies. Valves used on smaller piping diameter units are cast from brass; larger piping diameter units are made from ductile iron. Direct acting valves, the more popular type of a water pressure reducing valves, consist of globe-type bodies with a spring-loaded, heat-resistant diaphragm connected to the outlet of the valve that acts upon a spring. This spring holds a pre-set tension on the valve seat installed with a pressure equalizing mechanism for precise water pressure control.



Installed in series and soon after the water meter in homes, commercial buildings, and manufacturing plants, a water pressure reducing valve automatically reduces the pressure from the water supply main to a lower, more sensible pressure.



Water entering the valve from municipal mains is constricted within the valve body and directed through the inner chamber controlled by an adjustable spring loaded diaphragm and disc. Even if the supply water pressure fluctuates, the pressure reducing valve ensures a constant flow of water at a functional pressure, as long as the supply pressure does not drop below the valve's pre-set pressure.

Municipal PRV's

The Municipal water system in Lyons is managed by the Town. In Lyons, as in other communities, the municipal system delivers pressurized water in pipes to homes that are located at various elevations.

Municipal water systems within Cities and Towns are divided into zones. These zones enable the Town to centralize the treatment of water to one location and then distribute water to the homes at various elevations within a range of acceptable pressures. The acceptable range of pressures will generally result in the potential delivery of water at a greater pressure than the normal maximum design pressure for a household plumbing system. This higher range is critical to enable functionality of the water distribution system when considering things such as water quality and ability to deliver water for fire flows. In Lyons, the varied topography and small size of the Town creates unique challenges to establishing pressure zones.

The Town of Lyons has five municipal pressure reducing valves to manage the pressures required through the varied terrain. These PRV's deliver water to sub-sections of the Town based on the location of development and the area served by a particular system of pipes. The Town's municipal water system is already divided into reasonable zones. Addition of more municipal PRV's is not in the best interest of the Town or the citizens. The risk in Lyons with installing additional PRV's becomes the isolation of areas of Town resulting in the likely reduction of water quality delivered to the homes and the elimination of redundancy for fire flows.

Why Individual PRV's?

High pressure causes undue wear on pipes and fixtures in a home. It also wastes water. Most homes built within the last two decades already include PRV's for several reasons. First, the individual PRV provides a level of insurance against variable water pressures in the municipal system, thus creating a level of insurance and protection for internal plumbing. Second, the current Plumbing Codes require PRV's on homes where the municipal systems exceed 80 pounds per square inch of pressure.

Cost and Benefits

Municipal PRV's cost in the order of \$40,000 to \$50,000 per PRV to install and include annual maintenance. Aside from the issues with installing more municipal PRV's in Lyons, there would be up to five or six additional PRV's on the municipal system to bring the delivery system into the range of normal household plumbing expectations. This would also then be a non-standard system in doing so. Additional costs to the system may include supplemental treatment systems to address water quality issues and then also booster pumps for fire flows.

Individual PRV's cost \$60 to \$70 for the PRV plus installation. If installation can occur in a reasonable accessible location, then the normal installation time is one hour. For an individual home, the installations estimated cost is \$180 to \$190. Commercial installations are generally higher with larger service lines and delivery systems.

In Lyons, there are 875 taps to residential units or equivalents and 8 taps of larger size. Many of these units already include PRV's and many of those are likely sufficient and do not need to be replaced. The Plumbing Code has required the installation of PRV's in homes for over 20 years. If we use the 20 year mark (1990) as a starting point to expect PRV's in homes, the number of building permits since then is 448. For estimation purposes, the remaining 427 taps would require new or replacement PRV's. The anticipated minimum cost to complete this program for residential or equivalent units would be \$53,375 to the Town (at \$125/PRV rebate) or approximately the same amount of one municipal PRV.

This program of installing in individual homes is fiscally appropriate and in accordance with industry standards.

Why Have a Program?

The Town of Lyons has a great investment in its water system, and that investment comes at a cost. When the individual users system potentially results in losses to the Town systems, then the cumulative impact extends to all users of the system. In being a **good steward** of the water delivery system, the Town recognizes the benefit to all parties involved of maximizing the efficiency of the system, and those efficiencies occur in the public system and also in the private systems.

In recent years, the operation of the Town's water system has resulted in impacts to some individual users whose buildings were not equipped with PRV's. Claims filed to the Town since 2007 have been paid in the amount of \$17,442 as resulting from the operations of the water system and to cover the associated damages and repairs. These claims do not always reflect the social value of the impact nor the perception of the Town as a utility provider. The operation of the water system occurred within normal and customary manners and was modified based on those experiences, however the system is very dynamic and the modifications will not make certain the absence of these issues coming forward again elsewhere in locations without PRV's. Given the nature of the incidents, had the systems had individual PRV's, they would have likely not occurred.

The Town recognizes not all of the buildings were constructed or retrofit with PRV's and that having these PRV's in individual units that meet the criteria provide a benefit to the Town in as much of a benefit to the building owner. The Town has identified this program as a way to benefit both the individual building owner and the Town, therefore the Town is providing the rebate as an incentive to implement this shared benefit.

Program Information

The Residential Pressure Regulating Valve rebate program is designed to provide incentives for homeowners whose homes have static pressure at 80 pounds per square inch (psi) or higher. The residential application is for single family, duplex, triplex and four-plex properties. Commercial properties are also eligible, subject to determination of the service size and pressure of the system.

Note: Irrigation systems on homes with high pressure typically operate with excessive pressure. Whether to install the PRV before or after the irrigation tap should be discussed with your licensed plumber and/or licensed irrigator.

Program Requirements

1. Maximum rebate is \$125 Per Water Account.
2. An application must be filled out for each unit if each unit has a separate water account. Properties that have 5 or more units must fill out a Multifamily/Commercial application.
3. Residences must not have an existing PRV installed, or the existing PRV must be greater than 20 old.
4. Maximum rebate is \$125 per water account for parts and/or labor. Tax is not included.
5. Limit one per household for the life of the house.

6. Customers must consider carefully any recommendations about changing the water pressure inside the home. The Town of Lyons is not responsible for any problems that might occur with reducing the water pressure. Future replacement or repair of the PRV is the property owner's responsibility.
7. The PRV must be installed by a licensed plumber.

Application Instructions

1. Confirm that your water is connected to the Town of Lyons water distribution system.
2. Get a plumbing permit from the Town. Your plumber should do this for you.
3. After the PRV is installed, submit the application and itemized receipts within 60 days.
4. The plumber's license number and installation date must be on the receipt.
5. The PRV must be approved by the International Association of Plumbing and Mechanical Officials (IAPMO).
6. The PRV must be installed so that is easily accessible for maintenance.
7. The PRV must be set to a maximum of 65 psi and provide no pressures less than 35 psi.
8. A rebate check will be mailed 6-8 weeks after receiving the completed application and all supporting information.