CUSTOMER NEWSLETTER

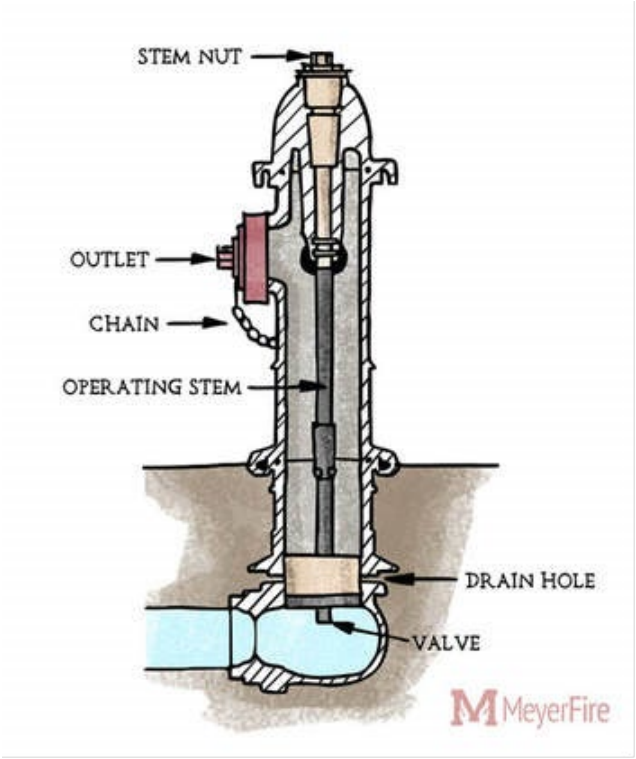
NOVEMBER 2024

Rainbow Water District
A History of Reliable Water and Responsive Service!

75 YEARS OF SERVICE

Since Rainbow turned 75 years old in August, we are reflecting on our history and celebrating some great accomplishments. Let's face it, though, growing old is not always fun. With life experience we gain wisdom, but we also see the physical impact of wear and tear on our bodies. Our water system is like that. Technology gives us better data and improves some aspects of our operations, but we also see parts of our system that are breaking down and showing their age. Ongoing maintenance is needed to replace worn out parts and keep equipment functioning.

Fire hydrants are one of the more visible parts of a water system, a part where routine maintenance can sometimes make the system better than it was before. This can happen when we replace an old hydrant with a new, higher capacity hydrant, or when we install a new hydrant to better serve a neighborhood where fire hydrants are further apart than called for under modern standards. This newsletter will share more about how our system of fire hydrants work, and how we are taking care of them so they can serve us for another 75 years.



HOW DOES A FIRE HYDRANT WORK?

In the days of wooden water mains, people would dig down to a buried pipe, drill a hole in the pipe, and use the escaping water to form a bucket brigade and put out the fire. Afterwards, the hole was plugged and the locations of these "fire plugs" were recorded to improve response time during the next fire in that area. In 1801, an engineer in Philadelphia designed the first fire hydrant, making a permanent piping connection to bring the water to the surface then topping it off with a faucet. A cannon maker was commissioned to make the first cast-iron hydrants in 1802. While hydrants have evolved and manufacturers have competed to improve various components, some of the concepts from those early designs are still in use today.

Rainbow's system of wells pump water directly into our piping network, with surplus water going into our hilltop storage tanks where it is saved for use during high demand periods. Due to the elevation difference between the hilltops and the valley floor, gravity acts on the water to create residual pressure throughout the piping system, typically around 90 pounds per square inch (psi). Your home may have a pressure reducing valve (PRV) near your water meter which lowers the pressure to about 70 psi to reduce the stress on your home plumbing.

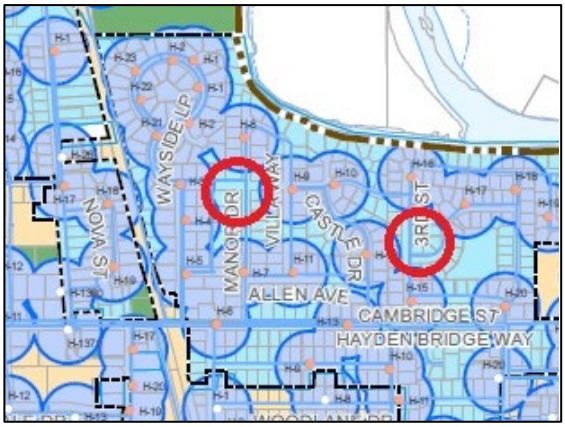
Fire hydrants are connected directly to the piping network, so the water at a hydrant is always under pressure, ready for responding firefighters to open the valve. The amount of water that can pass through a hydrant, the fire flow, depends on things like the water pressure and the diameter of the pipe. In Oregon, the minimum fire flow required to protect a typical residence is 1,000 gallons per minute for 1 hour at 20 psi pressure. Larger buildings can require much more than that and will typically have a fire sprinkler system to provide some of the fire suppression requirements.

The spacing and location of fire hydrants can affect the response time of the fire department. Factors may include:

- *Is the hydrant surrounded by vegetation and difficult to get to?*
- *Does the hose have to cross the road?*
- *Can the hose reach around a building to the back side?*
- *Are there multiple hydrants in the area to allow hoses to come from multiple directions for a large building?*

As a public water provider, we partner with the fire department to help improve their response. We prune shrubbery and paint the valves blue to make the fire hydrants easier to find. We perform annual maintenance and make sure the valves work and will operate when needed. (Bonus: This maintenance also helps improve our community's ISO rating, lowering the cost of your fire insurance!)

We also examine the spacing of our hydrants and the size of the pipe the hydrant is connected to, looking for ways to improve efficiency and increase the flow rate. This fall we identified several locations where existing piping could support a new hydrant and fill in some gaps in our spacing to meet current codes. The sketch below shows the location of two of our newest hydrants.



What does installation of a hydrant require?

After reviewing records to determine potential hydrant locations, we look for conflicts with other utilities like telephone or gas lines. We consult with property owners to determine locations that would work with landscaping and provide good access. We order parts. Finally, we schedule a water outage to excavate and expose the piping, cut out a section, install connecting sleeves and any new shut-off valves. After filling in the excavation and restoring the landscaping, most of our work is now buried, hidden below ground.

Fire hydrants sticking up out of the ground are often the only visual clue to the hidden water system beneath your feet. When you see one, remember your Rainbow team is always at work to serve you!