

Water Mains: Cleaning & Lining FAQ

Why do water mains need to be cleaned and lined?

Minneapolis has 1,000 miles of water mains. About 750 miles were installed before the 1960s, when pipes were made of unlined cast iron.

As unlined pipes corrode and age, mineral deposits collect inside the pipes. The deposits can decrease water volume, which in turn can hinder firefighting. Mineral deposits do not pose a health risk; however, if deposits become suspended the water may become discolored.

Crews rehabilitate pipes by cleaning them and lining them with cement mortar or a structural compound. This process, which is described in more detail below, results in smooth interior surfaces that increase flow capacity, protect against corrosion, and extend service life by 50 years or more.

The City of Minneapolis rehabilitates approximately 7 miles of water mains each year. Pipes installed since the mid-1960s are made of ductile iron with factory-installed cement linings.

What does the cleaning and lining process involve?

Cleaning and lining projects generally take 1-3 months. Here is an overview of a typical project:

1. Temporary bypass piping is installed to allow water customers to enjoy uninterrupted service during the project.
2. The water main is isolated and drained. Access holes are excavated every 600-750 feet. This approach prevents unnecessary digging. At each access hole, crews cut out a section of the water main. A trench shield is installed around each access hole.
3. The cleaning and lining contractor scrapes off corrosion debris and thoroughly cleans and dries the pipe. Next, crews line the pipe with either cement mortar or a structural compound:
 - **Cement Mortar Liner:** The installation process involves spraying a thin cement layer on the inside of the pipe. This restores water flow and water quality in water mains that are structurally sound, but that suffer from corrosion and tuberculation as shown in the picture on the right.
 - **Structural Compound Liner:** This type of liner is used when the water main is not structurally sound. The installation process involves inserting a resin-saturated liner into the original pipe. The liner is cured with heat to create a new pipe within the old pipe that is completely free-standing and able to bear the pressure of the soil and traffic. Service taps are robotically drilled.
4. Once the lining is dry (after about 24 hours), the water main is flushed and disinfected. The water is tested to ensure it meets all federal water quality requirements.
5. The water main is placed back in service. Crews close the access holes, repair pavement, and remove the temporary bypass piping.



A water main before and after lining

My water main is scheduled for cleaning and lining. What do I need to know?

TEMPORARY WATER SUPPLY

When your water main is taken out of service, it is drained and isolated from the rest of the distribution system.

Temporary bypass piping is installed aboveground to allow water customers to enjoy uninterrupted service during the project.

These pipes are installed along the curb and are connected to each building's outdoor faucet by potable water hoses. City of Minneapolis plumbers evaluate each commercial property for the temporary water connection.



Temporary bypass piping set up in Minneapolis

You can still attach a garden house to the connector installed on your outdoor faucet. Please refer to the temporary water supply diagram on page 3 of this document.

BILLING

Water from the temporary line will not run through your water meter. The City of Minneapolis will bill your property for estimated water usage based on your previous year's usage. The costs associated with lining projects are not assessed to your property.

YOUR WATER METER & BUILDING ACCESS

Your building's water meter may need to be temporarily removed to prevent backflow of domestic water into the water main during the project. If a Minneapolis Public Works employee needs to access your building for this reason or for any other project-related reason, you will be contacted to schedule an appointment. **Please note that all City employees carry a City of Minneapolis identification badge.**

SAFETY & TRAFFIC

Many safety hazards are present in construction work areas. Please remind children not to play in or around the construction site or any piles of dirt in the street. Please drive slowly and cautiously in the affected areas.

Because most water main access holes are located at intersections, parking and driving lanes may be restricted. The City will do everything it can to keep traffic moving.

Where can I find more information?

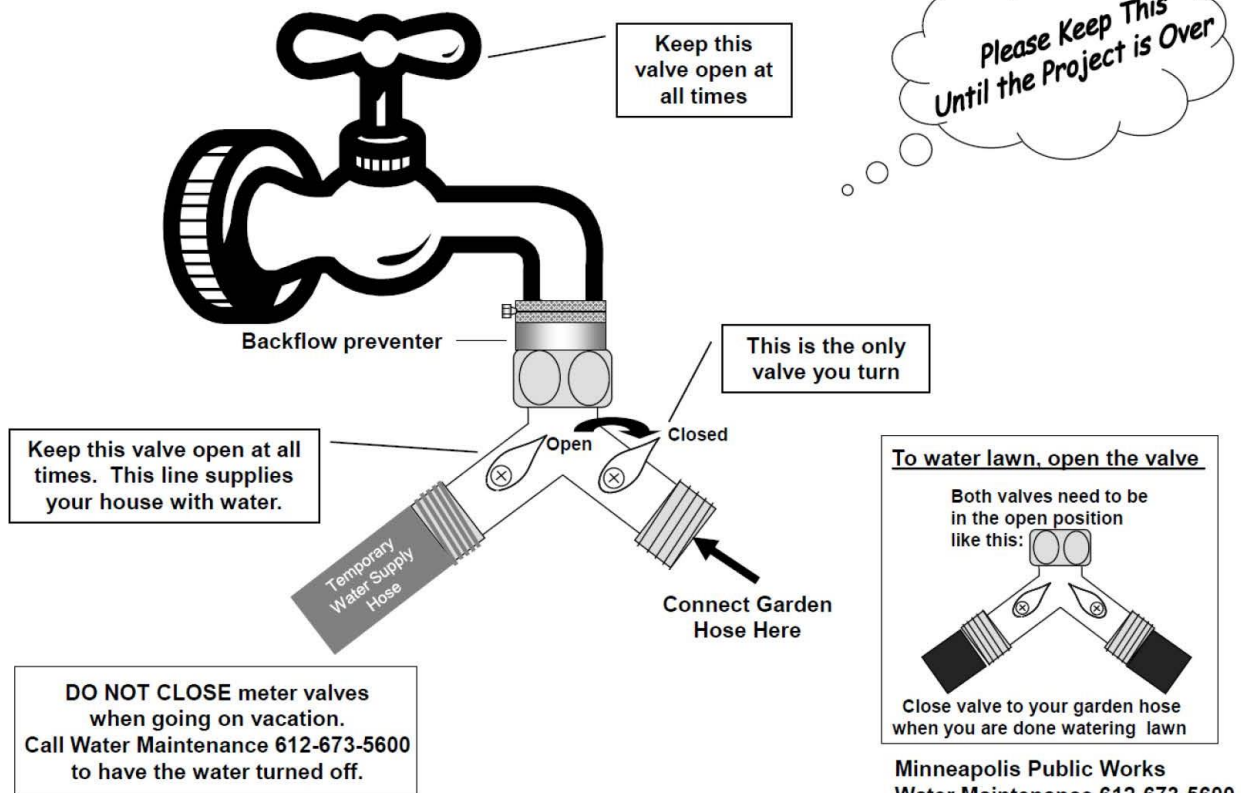
Contact us! If you have any questions about an upcoming cleaning and lining project, please call 612-673-5600.



Last updated on March 2, 2018

Temporary Water Supply Diagram

How to hook up a garden hose when a house is connected to temporary water supply



If you have any questions or need further assistance please contact the Water Maintenance at 612-673-5600.

For reasonable accommodations or alternative formats please contact Karen Moselle at 612-673-5600 or email Karen.Moselle@Minneapolismn.gov.

People who are deaf or hard of hearing can use a relay service to call 311 at 612-673-3000.

TTY users call 612-673-2157 or 612-673-2626.

Para asistencia 612-673-2700 - Rau kev pab 612-673-2800 - Hadio aad Caawimaad u baahantahay 612-673-3500.

