



Exterior Water Line Breaks Types - Causes - Response



Types of Exterior Water Line Breaks

Exterior water line breaks are serious plumbing events that fall under our **Emergency Response** category. Typically, exterior line breaks fall under one of two types of water line supply categories:

Domestic Water Supply Lines

This water line supplies the daily use fixtures in your building such as sinks, toilets, drinking fountains, ice makers, equipment cooling etc.

Fire Suppression System Supply Lines

This water line supplies the fire suppression system of the building, typically overhead sprinklers, with water throughout the entire building.

Causes of Exterior Water Line Breaks

Corrosion - Corrosion is caused by the water carried by the pipe or due to external soil conditions which may be acidic and can corrode the pipe.

Pressure – Main water lines are under extreme pressure. Over long periods of time, this pressure can weaken joints.

Freezing – Pipes can be put under pressure by the freezing of the ground, or the freezing of the water inside them, which can cause the pipes to become dislodged, crack or experience joint failure.

Trees – Tree roots can encroach on the water line pushing it closer to failure

Earthquakes, landslips – Sudden jolts in the earth can loosen, weaken and sever the water line

External forces – Pipes that are not deeply buried which are adjacent to roads or heavy equipment traffic are subject to pressure and movement from vehicles.

Responding to An Exterior Water Line Break

A quick response is always important when an exterior water line breaks but even more important is taking the time to evaluate the situation thoroughly in order to create the most effective action plan. ONE-CALL's first response is to get on location as quickly as possible and evaluate the situation before making any "next-step" determinations. Unlike water breaks on the inside of the building that can cause more and more damage the longer the water flows uncontrolled, most exterior leaks tend to drain away from the building, are limited to specific and somewhat controlled areas and typically cause very little damage in and of themselves. In fact, unless the break is so large that it causes the building to have no domestic water service or it hinders the fire system from working correctly, it is best to not uncover the leak until all of the arrangements have been made to do the complete repair from start to finish.



Steps for Addressing Exterior Water Line Repairs

The process outlined below can occur all in the same day, subsequent days or each phase may have scheduled pauses based on each repair location circumstances.

Discovery and Evaluation Phase



Arrive on site quickly and evaluate the location, source and impact of the leak (Domestic/Fire)

- 1) Place the affected area under control in as much as is possible.
 - a. Turn off the water supply if needed.
 - b. Cone and/or barricade the area if needed
 - c. Redirect water flow and earthen materials as needed
 - d. Collect thorough photo documentation
- 2) Submit an initial report from the field to the ONE-CALL office and property management.
- 3) Check in with all tenants located within the line's service range.
 - a. Gather information from the tenant as to how the leak is currently affecting them.
 - b. Provide the tenant with a clear explanation of what has happened, what potential next steps may be and a realistic understanding of how it may impact their water service.
 - c. Gather needed contact information, hours of operation, employee counts and other details from each tenant so that a repair plan can be created while considering the information gathered.
- 4) Determine the repair scope process, and potential timeline based on the information gathered during steps 1-4.
- 5) Provide a second report from the field to the ONE-CALL office and Property Management Company outlining a potential process, timeline and not-to-exceed cost for the repair.

Ramp-Up To Repair Phase



- 1) Once the not-to-exceed scope for repair is approved ONE-CALL will schedule the repair as quickly as is possible based on the following factors.
 - a. Severity and impact of the leak.
 - b. Size and type of line.
 - c. Customer's operation hours, number of employees and any other factor that might dictate the schedule including the need for portable restrooms and nightly fire watch.
 - d. Determination if repairs can be made during the work week or only over a weekend. (the cost for weekend work can be more expensive and the greatest risk is extending the length of the repair period due to the potential difficulty in securing parts and materials)
 - e. Location of the leak as it relates to other utilities in the leak zone. (A locator will be secured to mark and identify all potential utilities in the repair zone prior to excavation)
 - f. Location of the leak and how it might affect vehicular and pedestrian traffic patterns and access.
 - g. Location of the leak and the type of materials that will be removed and replaced (earth, concrete, asphalt etc.)
 - h. Availability of the Plumbing Trade Technicians, equipment and other support trades required. (Materials, fire, waste hauling, back-fill, pavement, concrete, locators, etc.)
- 2) During this phase clear communication will be critical among all parties so that reasonable expectations can be defined and so that all parties affected by the repair remain informed.
- 3) Multiple notifications will be sent to all parties leading up to the date scheduled for repairs.

Repair Phase



- 1) Arrive on site and briefly visit each tenant and review the scope, schedule and potential impact. Answer any questions they may have and confirm contact information.
- 2) Excavate the area of repair during the main part of the day if possible to locate the exact location of the leak and in order to provide time to secure the needed parts (that same day if possible). *Note: there are times that the location where the water is revealed at the surface is not where the actual leak will be found. In these cases further excavation and exploration will be required*

- 3) Once the leak is located and repair parts secured – typically the same day as the excavation - water will be shut off to the building. Every attempt will be made to limit the period of water shut off to less than 2 hours and a target time for water cut off will be announced during the ramp-up phase. However, this time limit can be affected by the severity and location of the leak once visually inspected. If for any reason the shut off time changes all parties will be notified in advance.
- 4) Once the repair is made the water will be turned back on and the repair and all other exposed pipe will be inspected before back-filling the excavation area.
- 5) When possible all back-fill, compaction will be made the same day as the repair
- 6) Typically, repaving, concrete pours, and area cleanup occur on the following day or as close to that repair date as is possible.
- 7) Cones, barrier and other safety measures will remain in place through the entirety of the project and regular communication through the repair phase will be made to all parties up until the time it is completed.