

# Guidance for Responding to Water Main Breaks or Pressure Loss Events

## FOR COMMUNITY PUBLIC WATER SYSTEMS

**Table 1. Event Categories**

Type 1	Type 2	Type 3	Type 4
Positive pressure maintained during break. Positive pressure maintained during repair.	Positive pressure maintained during break. Localized depressurization has occurred.	Loss of pressure at break site. Localized depressurization has occurred.	Large-scale event. Widespread loss of pressure has occurred.
Maintain pit water below break. Repair under pressure.	Controlled shutdown. Notify/provide instructions to affected customers in advance of repair. Maintain pit water below break.	Isolate affected area. Document contamination intrusion in the excavation Notify/provide instructions to affected customers.	Isolate affected area. Document contamination intrusion in the excavation Monitor for possible cross-connections and backflow.
No signs of contamination intrusion. Disinfect repair parts and exposed pipe. Check chlorine residual in distribution system.	No signs of contamination intrusion. Disinfect repair parts and exposed pipe. Conduct low velocity flush. Check chlorine residual in distribution system.	Disinfect repair parts and exposed pipe. Conduct scour velocity flush (3 to 7 ft/sec). Shock chlorinate or boost chlorine residual in distribution system. Instruct customers to flush plumbing upon return to service.	Disinfect repair parts and exposed pipe. Conduct scour velocity flush (3 to 7 ft/sec). Shock chlorinate or boost chlorine residual in distribution system. Instruct customers to flush plumbing upon return to service.
No BWA or DND required. No bacteriological samples required.	No BWA or DND required. No bacteriological samples required.	Bacteriological sampling required. Based on a thorough field assessment, the affected area may be returned to service and a drinking water advisory may be waived while results are pending. Consider depressurization extent and risk of contamination.	Call Duty Officer Issue DWA: BWA or DND. Bacteriological sampling required.

Risk of contamination and intrusion increase with the type of main break or pressure event. Events range from Type 1 (minimal risk) to Type 4 (highest risk). For systems that continuously chlorinate, they should closely monitor residuals and consider boosting feed rates after higher risk events. For systems that do not normally chlorinate, they may initiate shock or temporary chlorination after consultation with their Minnesota Department of Health (MDH) district engineer.

When a main break is severe and requires installation of new watermain, all work must follow 2015 Revised AWWA C651-14: "Disinfecting Water Mains."

Pressure loss events affecting multi-story buildings are more susceptible to cross-connections, and require a Do Not Drink public notification and 24-hour bacteriological testing of the affected area.

For a planned shutdown of a portion of the distribution system for maintenance or repairs, notify the impacted consumers several days before the event. Instruct consumers to flush service lines and fixtures for five to ten minutes after the event is complete. Collect representative bacteriological samples in the area and have them analyzed at a certified lab. Here is a useful water quality notice for systems to use:

[Important Information about Your Drinking Water \(https://www.health.state.mn.us/communities/environment/water/docs/com/templatepn.docx\)](https://www.health.state.mn.us/communities/environment/water/docs/com/templatepn.docx)

Issuance of a drinking water advisory may be waived if a depressurization event is short term and in an area that has a low risk of contamination. Low risk areas include housing developments, manufactured home parks, or low rise apartment buildings that have no high hazard connections. Instruct consumers to flush fixtures for five to ten minutes.

### **Types of Drinking Water Advisory (DWA)**

**Boil Water Advisory (BWA):** Health Risk, which involves actual or possible bacteriological contamination only. Water is safe for all purposes after being brought to a rolling boil for one full minute.

**Do Not Drink (DND):** Health Risk, which involves actual or possible bacteriological and/or chemical contamination. Water should not be ingested or used for food preparation.

**Do Not Use (DNU):** Unusual Health Risk, which involves actual or possible chemical or biological contamination. Water should not be used for any purpose including ingestion, inhalation, or contact with skin.

**Pressure Loss:** A distribution system pressure of less than twenty (20) pounds per square inch (psi).

**Contamination:** includes wastewater, storm water, chemicals, or other wastes.

Drinking Water Protection Program  
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