

Water System Startup Procedure for Buildings on Municipal Drinking Water Supplies

As a result of the COVID-19 pandemic response, the buildings you operate may have had low to no occupancy, causing the water to sit in the pipes unused.

This increases the risk for bacterial growth, including total coliforms, *E. coli*, and *Legionella pneumophila*, the organism responsible for Legionnaire's disease. *Legionella* bacteria thrive in warm stagnant water and are a concern for hot water systems that are not maintained at the appropriate temperature (>60°C). More information on *Legionella* is available at: <https://novascotia.ca/dhw/cdpc/cdc/documents/Legionellosis-General-Information.pdf>

In potable water systems, stagnant water conditions can also cause a loss of disinfectant, and increase risks for lead and other chemical contaminants. Please follow these recommendations before your building is even partially occupied, to reduce the risk of people getting sick. Ensure this procedure is done in consultation with the property owner.

1. Inspect the system

- Inspect your building's plumbing and mechanical systems to ensure they are in good repair and free from potential sources of contamination. This includes all piping, mechanical equipment, treatment devices, fixtures, and appliances that provide water from the building's intake to point of use. Look at both hot and cold water systems. Focus on identifying leaks, depressurization, preventing backflow and ensuring hot water supply, return temperatures and other functionality issues.
- Make sure any water treatment system is functioning and treatment chemicals have been replenished. Some treatment methods, such as water softeners and filters with resin beds may require regeneration. Refer to your manufacturer's operation and maintenance manual for specific requirements.

2. Communicate with building occupants

- Share the steps taken to ensure the safety of the building's water supply with building occupants.

3. Flush the water system

- Remove stagnant water from the cold and hot water systems to minimize microbial growth, replenishing it with fresh treated water. Flushing times will depend on the length and diameter of piping, flushing rates, system storage capacity, etc.
- Consider asking your water utility if there are restrictions on water use, or preferred times to flush, to avoid placing large demands on water and wastewater systems.
- Familiarize yourself with the building's plumbing system. Locate the water intake. Identify pressure zones and all fixtures, equipment, tanks, and appliances connected to the water system. Identify points of potential cross-connection. Consider water pressure throughout the system and identify areas where there may be stagnation due to low pressure. If you have a facility with complex heating and cooling systems such as cooling towers or evaporative condensers, consult with your facility engineer or certified plumber before flushing.
- Check here for detailed advice on flushing water systems:
<https://novascotia.ca/coronavirus/docs/Reopening-Buildings-on-Municipal-Water-Supplies-recommendations.pdf>

4. Floor drains

- Fill the trap in your floor drain. Floor drains contain a trap that use water to prevent sewer gases from entering your building. With infrequent use, this water can evaporate, and the trap needs to be filled. One gallon of water is enough to reset a trap.
- Check to see if you have a trap primer. Some larger facilities may have one, which automatically discharges a small squirt of water to maintain the trap. If you have a trap primer, make sure it's turned on and working properly.

5. Precautions for appliances connected to water systems, water features and complex water heating/cooling systems

- Clean and disinfect all appliances connected to the water system such as ice machines, soft drink and slushie machines, refrigerators with water dispensers or ice makers, and produce misters. Before you clean, all product in the machine must be thrown out.
- Clean and disinfect decorative fountains following manufacturer's recommendations. Ensure fountains are free of visible biofilm and the disinfectant residual is restored prior to returning fountains to service.
- Make sure pools, hot tubs, spas, shower heads and other water features are free of visible biofilm before refilling with water. Disinfect them, following guidance from the Model Aquatic Health Code at <https://cmahc.org/COVID-19-resources.php>. Testing for *Legionella* is not required.
- For facilities with cooling towers, ensure the unit is maintained according to the manufacturer guidance and industry best practice. Make sure the unit is free of visible biofilm. Disinfect the unit following manufacturer's recommendations. Guidance on disinfection is available from the Cooling Tower Institute at <http://www.cti.org/downloads/WTP-148.pdf>.

6. Consider developing a building water management plan

- When followed properly, building water management plans help prevent or correct water quality issues. Each plan is unique to a building's water system; however, common components include flushing and proper temperature control.
- You can find information on how develop a building water management plan at: <https://www.cdc.gov/legionella/wmp/toolkit/index.html>