Vancouver Coastal Health

Guidance for Restarting Water Systems in Vacant or Low Occupancy Buildings

Version 1
February, 2023

Last Updated February, 2023

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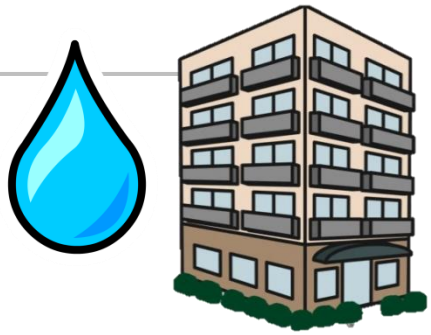

What is the risk?

Reduced or low-occupancy in some commercial buildings may create stagnant-water-related health risks in a building water system ('BWS'). Stagnant water in a BWS can facilitate the growth of disease-causing micro-organisms, for example: *Legionella* bacteria and the regrowth of coliform bacteria. Toxic metals such as lead can also accumulate in stagnant water due to leaching from building plumbing fixtures.

All building users, including patrons, staff, and owners are at risk of stagnant water-related illnesses. Those at greatest risk of illness are the young, the elderly, and the immune-suppressed. The degree of risk to individuals depends on their susceptibility to illness, how they use or are exposed to the water, and the condition of the building water (as affected by the supply quality, level of maintenance it has been receiving, building age, equipment types, and system size).

Property owners and operators are responsible for taking the necessary maintenance steps to ensure the water in their Building Water System does not pose a health risk to their patrons and staff.
Check with WorkSafe BC for details regarding personnel protective equipment (PPE) and other safety requirements.

The following **Drinking Water System Management** guidance is for owners and operators of small to medium-sized buildings with relatively simple potable water distribution systems, not including healthcare facilities. Addressing stagnant water issues in larger buildings with more complex BWSs requires detailed knowledge of the BWS and is best handled by qualified waterworks professionals.

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What should Building Owners and Operators be doing?

During the Low-Occupancy Period:

Continue regular BWS maintenance during the low occupancy period as much as possible. If the BWS has been fully-maintained and flushed during the low-occupancy period, then skip Steps 1 to 3 unless evidence of stagnation (abnormal colour, odor, or taste) is detected.

Before Re-occupying the Building:

To safely re-occupy buildings or units with stagnant water, thoroughly flush the cold and hot water pipes to replace the stagnant water with fresh, disinfected water from municipal water mains. Complete the following steps in sequence before moving on to the next.

FOUR Primary Steps to Re-occupy

STEP 1

Draw fresh cold water from service mains into the unit.

STEP 2

Flush cold water fixtures.

STEP 3

Flush the hot water system (HWS).

STEP 4

Clean and disinfect equipment.

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STEP 1: DRAW FRESH COLD WATER FROM THE SERVICE MAINS INTO THE UNIT

Water filters and tap aerators may need to be removed to allow for a higher rate of flow during flushing. Aerators and filters can be serviced (inspected, cleaned, etc.) at this point. Monitor equipment for leaks.

Flush the **COLD WATER** lines at maximum flow until the temperature drops to a cool and stable level. The larger the BWS is the longer this step will take. The timing of flushing individual units in larger buildings should be coordinated with building management as the main BWS should be flushed first. The larger the BWS the more likely it is that flushing will have to be repeated in the following days.

STEP 2: FLUSH COLD-WATER FIXTURES

Flush all cold-water fixtures (aerators removed, as above), including seldom-used equipment such as eye-wash stations. Flush first until the cool water arrives at the fixture then continue for 5 additional minutes.

STEP 3: FLUSH THE HOT WATER SYSTEM (HWS)

The number of fixtures that can be flushed at one time is limited by the hot water supply capacity in the building/unit. Flush only at a rate that maintains flow of hot water during the flush. If the HWS temperatures HAVE NOT been maintained at greater than 50°C during the low occupancy period, arrange for the building management to raise the hot water to greater than 50°C prior to flushing all hot water fixtures for at least 5 minutes per fixture.

CAUTION - Temperatures greater than 50°C are a scalding-risk for bathing. Scald-prevention controls must be in place at the points-of-use for all bathing facilities

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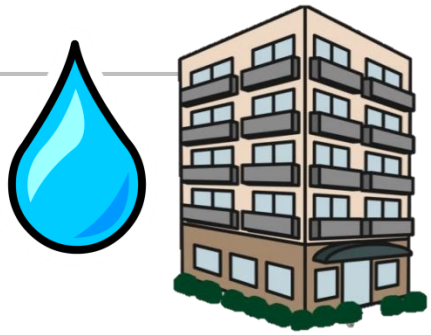

STEP 4: CLEANING & DISINFECTION OF EQUIPMENT

Now that the water has been refreshed, water-use fixtures and other equipment can be cleaned and disinfected prior to use. Always follow the manufacturer's guidance on appropriate cleaning of machines.

a. Ice machines: if not kept dry during the shut-down, waste the ice, defrost, then clean and disinfect the unit in accordance with the manufacturer's instructions.
b. Beverage machines connected to the BWS and not kept dry during the shutdown: flush, clean, disinfect.
c. Dipper wells: clean, sanitize, drain and then run for at least 4 hours before use.
d. Showerheads: flush individual showerheads; cleaning may also be needed if flow is very slow.
e. Humidifier drip pans: drain, clean, and disinfect.
f. Swimming and spa pools: follow start-up procedures and shock disinfection specific to your pool.
g. Cooling towers, evaporative condensers, alternate water systems: follow the manufacturer's guidance and the requirements of local government (see City of Vancouver By-laws).
h. Floor drain traps: may need to be re-filled with water to prevent release of sewer odors.
i. Decorative Water Features (DWFs): Water in DWFs must be continuously disinfected or kept drained and dry to prevent multiplication of Legionella bacteria. If a DWF is found to contain un-disinfected water **AND it's running,** the DWF must be shut-off immediately and the room well-ventilated. Prior to being turned-on again the DWF must be drained, cleaned, and disinfected according to the manufacturer's guidance. Staff should wear a N95 mask and gloves while disinfecting the DWF.

If you do not already have a building Water Management Plan this is a good time to make one

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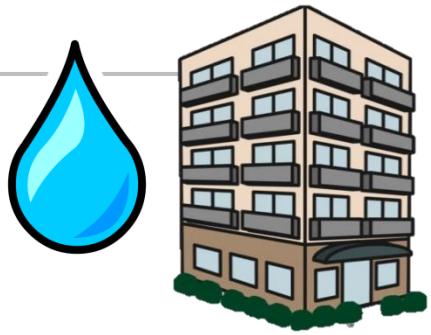

For more information:

VCH Information on Lead in Drinking Water

WorkSafeBC Information on Legionnaire's Disease

Canadian Water and Wastewater Association Information on Re-opening Building Water Systems

BC HealthLink Information on Legionnaire's Disease

United States CDC Guidance for Re-opening buildings

United States CDC Guidance for Hotel Owners and Managers

United States CDC Information on Water Management Plans for Legionella in Buildings

Information on Cooling Towers and Legionella