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Fact Sheet

Water and the COVID-19 Pandemic

Reopening Buildings After Shutdowns: Reducing Water-Related Health Risks

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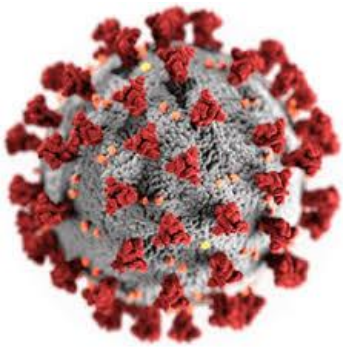

As society begins to slowly reemerge from quarantines, stay-at-home orders, and business shutdowns during the coronavirus pandemic, attention must be paid to unexpected, unknown, and often ignored risks. One of these is the potential for health risks associated with stagnant water inside building plumbing. Under normal conditions, the regular flow of community tap water into and through building water systems minimizes the amount of bacteria and metals that may build up in the water. After a long period of shutdown, however, stagnant water can pose risks to health if not carefully managed, and even short shutdowns can cause problems. There are no official national or industry guidelines for reopening buildings after extended shutdowns, but extensive "guidance" on how to do this is available from water professionals, the US Environmental Protection Agency (US EPA), the Centers for Disease Control and Prevention (CDC), water utilities, and some individual states. The purpose of this fact sheet is to raise awareness of these risks, increase understanding of the need for building owners and managers to address them, and point to official up-to-date resources, information, and guidance for action.

THE RISKS

Many building owners are unaware of the risks and the actions they should take. Several potential hazards must be considered before reopening buildings or facility water systems that have been inactive for weeks or months. Problems may include unpleasant tastes and odors, bacteria including *Legionella* (the cause of Legionnaires' disease), leaching of lead and other metals from pipes and plumbing, and the presence of potentially harmful disinfection by-products. More routine risks, such as contaminated kitchen and bathroom surfaces and drinking water fountains, are also present, but typically they can be managed by well-understood cleaning and disinfection. The actual risks in any building will vary depending on a wide range of factors, including the length of shutdown and the specifics of local water chemistry and treatment. Building-specific variables include each building's plumbing systems and how water is used, the presence of

supplemental treatment devices, mechanical systems such as cooling towers, and adherence to a building water management plan by maintenance staff.

RECOMMENDATIONS

*Some minimum general actions relevant for all water users are listed here, but detailed recommendations can be found under **Key Resources for More Detailed Guidance** below.*

If possible, during a shutdown, facilities should maintain a minimum flow of water through the system.

Water agencies should proactively reach out to their commercial and industrial customers with information about safe reopening procedures.

Water utilities should make special efforts to reach out with information to groups with limited access to technical expertise and financial resources. This includes small rural water systems, disadvantaged communities, Native American communities, and other groups with special water supply and quality challenges.

Water agencies should prepare immediately to answer questions about water-quality management from concerned commercial building owners, property managers, and large institutions (colleges, schools, business parks, etc.). In North America, the American Water Works Association (AWWA), Canadian Water and Wastewater Association, CDC, U.S. EPA, and other public and private groups offer recommendations for both specific actions and community outreach, as noted below in the **Key Resources for More Detailed Guidance** section.

Building operators and managers should take immediate proactive steps to protect public health by addressing building water quality prior to reopening. Actions taken should be shared with building occupants.

Facilities with their own water systems must also consider protective actions. Groups that maintain their own water supply, including some schools, restaurants, churches, and recreational facilities, should contact their primacy agencies with specific questions.

Key actions for building managers include:

- Contact your water utility to see if specific information is available for your system.
- Review how water moves through your building, from the street to each point of use.
- To prevent bacterial growth, particularly *Legionella*, heat hot water to at least 140 degrees F (60 degrees C), and make sure it stays hot, greater than 131 degrees F (55 degrees C) to points of use.
- In buildings where water was stagnant for an extended period, flush both the cold and hot water piping and water storage. First flush the cold water and then the hot water at all points of use (faucets, showers, toilets, etc.) and in all water-using devices (dishwashers, washing machine, ice makers, etc.), with special attention to water outlets where exposure to contaminants is likely

(showerheads, spas, etc.). Be careful to bypass point-of-use treatment devices during flushing and maintain those devices per manufacturer instructions.

- Maintain devices that use water as per manufacturer's specifications (cooling systems, decorative fountains, pools, etc.).

KEY RESOURCES FOR MORE DETAILED GUIDANCE

- American Water Works Association. 2020. "Coronavirus: Resource Tools." (May 2020) https://www.awwa.org/Resources-Tools/Resource-Topics/Coronavirus#Communicatingtocommercialcustomers

- Canadian Water and Wastewater Association. 2020. "Safely Re-Opening Buildings. General Guidance and Fact Sheet." (May 2020). https://cwwa.ca/covid-19-and-the-re-opening-of-buildings/

- Centers for Disease Control and Prevention. 2020. "Guidance for Reopening Buildings After Prolonged Shutdown or Reduced Operation." (May 7, 2020 version). https://www.cdc.gov/coronavirus/2019-ncov/php/building-water-system.html

- Purdue University Center for Plumbing Safety. 2020. "Restoring Water to Medical, Residential, and Commercial Buildings Shutdowns, Unsafe Water." https://engineering.purdue.edu/PlumbingSafety/covid19?_ga=2.38195875.1498822991.1590444390-1830117519.1589305097

- United States Environmental Protection Agency. 2020. "Maintaining or Restoring Water Quality in Buildings with Low or No Use. May 2020," Version 2. Washington DC. https://www.epa.gov/sites/production/files/2020-05/documents/final_maintaining_building_water_quality_5.6.20-v2.pdf

- United States Environmental Protection Agency. 2020. "Checklist: Restoring Water Quality in Buildings for Reopening." May 2020. https://www.epa.gov/sites/production/files/2020-05/documents/final_checklist_for_maintaining_building_water_quality_5-6-2020.pdf

- Washington State Department of Health. 2020. "COVID-19 Guidance for Legionella and Building Water System Closures." Version 3. May 12, 2020. https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/LegionellaandBuildingWaterSystemClosuresCOVID-19.pdf