



American Water Works Association

Dedicated to the World's Most Important Resource®

AWWA WEBINAR  JUNE 10, 2020 | 11:00 A.M. - 12:30 P.M. MT

Free Webinar:
Returning to Service: Addressing Water Quality
in Buildings with Low or No Use

Copyright © 2020 American Water Works Association

1

2020 WEBINAR SPONSORS



LOGISTEC
ENVIRONMENT

The next-generation technology for
AGING WATER INFRASTRUCTURE

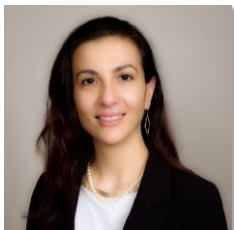


2



2

WEBINAR MODERATOR



Kira Smith
Environmental Engineer
**USEPA Drinking Water
Protection Division**

Kira Smith has over 20 years of experience in the drinking water industry and as a member of AWWA. Ms. Smith currently works for the U.S. Environmental Protection Agency, focusing on effective implementation of National Primary Drinking Water Rules. Previously, she has managed water quality and regulatory compliance for large and small utilities. Ms. Smith also has experience as an engineering consultant, holding professional engineer licenses in Texas and Virginia. She is the current chair of the AWWA Distribution Water Quality Committee and has participated in various other volunteer roles as an association member.

3



3

ENHANCE YOUR WEBINAR EXPERIENCE



- Close
 - ✓ Email Programs
 - ✓ Instant messengers
 - ✓ Other programs not in use

- GoToWebinar Support

<https://support.logmeininc.com/gotowebinar?labelid=4a17cd95>

4



4

WEBINAR SURVEY

- Immediately upon closing the webinar
 - Survey window opens
 - Thank you!



5



5

PRODUCTS OR SERVICES DISCLAIMER

The mention of specific products or services in this webinar does not represent AWWA endorsement, nor do the opinions expressed in it necessarily reflect the views of AWWA

AWWA does not endorse or approve products or services

6



6

PANEL OF EXPERTS



Ken Rotert
Physical Scientist
USEPA, Office of
Ground Water and
Drinking Water



**William Platten,
PhD**
Environmental
Engineer
USEPA, Office of
Water



**Alex
Margevicius**
Commissioner
Cleveland Division
of Water



**Kelley Dearing
Smith**
Vice President,
Communications &
Marketing
Louisville Water
Company



Mandy Cawby
Director of
Customer Relations
WaterOne

7



7

AGENDA

- | | |
|---|----------------------|
| I. Introduction: Water Quality in Buildings | Ken Rotert |
| II. Maintaining and Restoring Water Quality in Buildings During the COVID-19 Response | William Platten |
| III. Using Meter Data to Locate Buildings with Reduced Water Consumption | Alex Margevicius |
| IV. A Targeted Flush | Kelley Dearing Smith |
| V. How to Create a Rapid Response Campaign | Mandy Cawby |

8



8

ASK THE EXPERTS



Ken Rotert
USEPA, Office of
Ground Water and
Drinking Water



**William Platten,
PhD**
USEPA, Office of
Water



**Alex
Margevicius**
Cleveland Division
of Water



**Kelley Dearing
Smith**
Louisville Water
Company



Mandy Cawby
WaterOne

Enter your **question** into the **question pane** at the lower right hand side of the screen.

Please specify to whom you are addressing the question.

9



9

Introduction: Water Quality in Buildings

Ken Rotert
Standards and Risk Management Division
Office of Ground Water and Drinking Water
June 4, 2020

EPA
OFFICE OF GROUND WATER
AND DRINKING WATER

10



Presentation Overview

- Background: Municipal Supply Characteristics
- Some Potential Risks in Building Water Systems
- Building System Risks from Reduced Water Usage
- What can ensure water quality is maintained throughout the building?
- Relevant Drinking Water Guidelines and Standards that Address Building Water Risks

11

11

Background: Municipal Supply Characteristics



- EPA's National Primary Drinking Water Regulations apply to Public Water Systems, which generally cover the water supply to the service connection
- Municipal supplies provide treatment to minimize public health risks
 - Ninety-two percent of public water supplies are in compliance with all health-based drinking water regulations all of the time
- EPA requires surface water systems to maintain a detectable disinfectant residual throughout the distribution system. Some ground water systems must also maintain disinfectant residuals.
 - Systems regularly monitor the levels of disinfectant maintained, as well as the microbial water quality
 - In many cases these residuals remain into building water systems

12

12

Background: Municipal Supply Characteristics



- Conditions in the municipal supply provide protection to building water systems. These include:
 - Residuals are used to inactivate microbes that may contaminate distribution systems, indicate issues with the distribution system, and control biofilm growth.
 - Corrosion control provided by public water supplies also protects the water quality in buildings
- Systems may use a chlorine or a chloramine disinfectant residual
- Information about the water quality provided by municipal supplies can be found in annual consumer confidence reports and by contacting the utility

13

13

Some Potential Risks in Building Water Systems



- Some opportunistic pathogens can grow under favorable conditions, which may be present in some building plumbing systems under certain circumstances.
- These Pathogens:
 - Typically affect people with underlying health conditions or those from other sensitive groups
 - Exposures are typically from inhalation of aerosols (e.g., showering, cooling towers)
- They include:
 - *Legionella* bacteria
 - Cause of legionellosis – Legionnaires’ Disease (severe pneumonia) and Pontiac Fever (milder, flu-like)
 - *Pseudomonas* – pneumonia and dermal infections
 - *Mycobacterium avium* Complex – pneumonia



14

14

Some Potential Risks in Building Water Systems



- Other contaminant concentrations can increase in building water systems under certain circumstances:
 - Disinfection byproducts
 - Concentrations can increase in pipes due to reactions between carbon-based substances and some disinfectants
 - Affected by water age, temperature, pH and other factors
 - Lead
 - Lead can enter drinking water when plumbing materials that contain lead corrode. Lead can affect almost every organ and system in your body. Children are most susceptible to the effects of lead

15

15

Building System Risks from Reduced Water Usage



- Buildings that have been unoccupied for prolonged periods may have had stagnant water sitting in pipes for weeks or months
 - Some buildings may also have been occupied, but with reduced water usage
- This potential high water age can contribute to:
 - Depleted or exhausted residuals
 - Formation of disinfection byproducts
 - Growth of biofilms and disease-causing microbes in pipes, faucets, and appliances
 - Corrosion of lead and/or copper, and leaching of other contaminants
 - Taste and odor concerns

16

16

What can ensure water quality is maintained throughout the building?



- Management of water age
- Maintenance of an adequate disinfectant residual
- Flushing of system to minimize accumulation of biofilms and sediments
- Elimination of cross connections
- Control of water temperature
- Small buildings can often more easily control water quality than large buildings



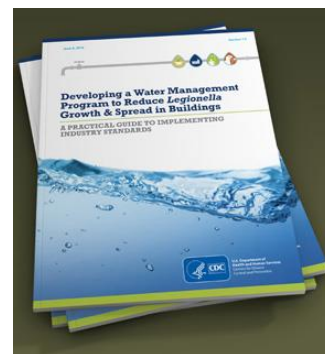
17

17

Relevant Drinking Water Guidelines and Standards that Address Building Water Risks



- Some standards and guidelines that address risks in buildings
 - ASHRAE Standard 188 establishes *Legionella* risk management
 - CDC Water Management Plan Guidance provides procedures for developing a plan to address *Legionella*
 - American Industrial Hygiene Association Guideline for evaluation and control of *Legionella*
 - EPA's WaterSense at Work is an online guide facilities can use to manage water use



18

18



Maintaining and Restoring Water Quality in Buildings During the COVID-19 Response

Bill Platten, Water Security Division, US EPA



19



Overview



20



Low/No Water Use

- Building and business closures for weeks or months reduce water usage, potentially leading to stagnant water inside building plumbing.
- This water can become unsafe to drink or otherwise use for domestic or commercial purposes.
 - *Legionella* and other pathogens
 - Water Chemistry
 - Leaching of metals (lead)
 - Formation of disinfectant by-products



6/4/2020

21

21



EPA's Guidance for Buildings

- Guidance
 - Maintain water quality while closed
 - Steps for reopening buildings/businesses
 - Steps for reopening non-community water systems
- Checklist for reopening

<https://www.epa.gov/coronavirus/information-maintaining-or-restoring-water-quality-buildings-low-or-no-use>

6/4/2020

22

22

MAINTAINING OR RESTORING WATER QUALITY IN BUILDINGS WITH LOW OR NO USE

Building and business closures for weeks or months reduce water usage, potentially leading to stagnant water inside building plumbing. This water can become unsafe to drink or otherwise use for domestic or commercial purposes. EPA recommends that building owners, building managers, and business leaders steps to flush the buildings plumbing before reopening.

EPA recommends that you health by maintaining and water quality prior to re

How can we main

While building businesses, building water quality. Many restoration steps before reo

For building owner

- Review and update Centers for Disease Control Water Management
- Inspect the plumbing
- Contact your water public water system water utility.
- Maintain any water on filters or water
- Maintain the hot wa
- Flush the building
 - Flush cold an
 - Flush hot water
 - Flush the hot wa

RESTORING WATER QUALITY IN BUILDINGS FOR REOPENING

CHECKLIST

Building and business closures for weeks or months reduce water usage, potentially leading to stagnant water inside building plumbing. This water can become unsafe to drink or otherwise use for domestic or commercial purposes. EPA recommends that building owners, building managers, and business leaders steps to flush the buildings plumbing before reopening.

1 BEFORE FLUSHING BUILDINGS

- Contact your water utility about local water quality and to coordinate maintenance activities.
- Check information from your local public health department for any local requirements for reopening.
- Follow appropriate regulations and policies for worker safety and health.

2 STEPS FOR FLUSHING BUILDINGS

- Review how water moves through your building, from the street to each point of use.
- Inspect the plumbing.
- Maintain any water treatment systems (e.g., filters, water softeners) following manufacturer's instructions.
- Ensure the hot water system is operating as specified.
- Flush the service line that runs from the water main to the building.
- Flush the cold water lines.
- Drain and clean water storage facilities and hot water heaters.
- Flush the hot water lines.
- Flush, clean, and maintain devices connected to the plumbing system following manufacturer's instructions.

Consider checking water quality parameters to verify that flush water is being flushed through the entry plumbing system.

3 OTHER ACTIONS TO CONSIDER

- Notify your building occupants of the status of the water system and the flushing system.
- Limit access to or use of the water as an appropriate cautionary phase.
- Determine if passive disinfection/heat treatment is necessary.
- Develop a water management program.

For more information, please visit [EPA.GOV/CORONAVIRUS](https://www.epa.gov/coronavirus)



EPA's Guidance for Buildings

- Audience (owners, managers, occupants)
 - Restaurants/bars
 - Retail shops/malls
 - Office buildings
 - Entertainment venues
 - Athletic and fitness centers/gyms
 - Hospitals/healthcare facilities/dental facilities
 - Manufacturers
 - Large campuses (schools, multibuilding office complexes)



Involves close coordination between owners, managers, and occupants of the building.

6/4/2020

23

23



Restoring Water Quality in Buildings for Reopening



24



Before Flushing

- Contact your water utility
 - Local water quality and usage
 - Type and residual level of disinfectant
 - Coordinate maintenance activities
- Check information from your public health department for reopening requirements
- Follow appropriate regulations and policies for worker safety and health



6/4/2020

25

25



Flushing Buildings

- Review how water moves through your building, from the street to each point of use
 - Plumbing configuration
 - Water usage
- Inspect the plumbing
- Maintain any water treatment systems following manufacturer's instructions
 - Point-of-entry/point-of-use filters, water softeners
- Ensure the hot water system is operating as specified
 - Maintain the temperature at or above 140°F to prevent *Legionella*

6/4/2020

26

26



Flushing Buildings, continued

- Flush the plumbing
 - The service line that runs from the water main into the building
 - Flush the cold water lines
 - Faucets, toilets, showers, drinking fountains
 - Drain and clean water storage facilities/hot water heaters
 - Flush the hot water lines
 - Flush, clean, and maintain devices connected to the water system following manufacturer's instructions
 - Refrigerators, ice makers
 - Consider checking water quality parameters to verify that fresh water is being flushed through the entire plumbing system
 - Temperature, pH, and disinfectant levels

Flushing

Open taps and let the water run to replace the water in the pipes. Flush time will vary by plumbing configuration and outlet type.

6/4/2020

27

27



Flushing Buildings, continued

- Maintain all other building water systems
 - Emergency safety devices (sprinklers, eye-wash, showers)
 - Decorative fountains, spas, hot tubs, pools, and cooling towers.
 - See CDC's Guidance for Reopening Buildings
 - Sanitary and other water drainage/collection systems
 - Fill all drain traps
 - Consider documenting all steps for future reference

6/4/2020

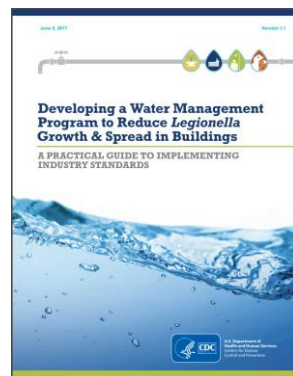
28

28



Other Actions to Consider

- Notify your building occupants of the status of the water systems and the flushing program
- Limit access to or use of the water as an appropriate cautionary phase
- Determine if proactive disinfectant/heat treatment is necessary
- **Develop a water management program**



6/4/2020

29

29



Steps for Non-Community Water Systems

- Contact your state to discuss specific requirements
- Perform a start-up procedure, if necessary
- Follow other recommendations in the guidance

Non-Community Water System

Buildings, campuses, or other entities that treat their own water and are regulated under the Safe Drinking Water Act. Examples include schools, restaurants, gas stations, churches, or recreational facilities.

6/4/2020

30

30



Helpful Links

- EPA Guidance: Disinfecting, Cleaning and Addressing Water Quality
 - <https://www.epa.gov/coronavirus/epa-guidance-disinfecting-cleaning-and-addressing-water-quality-challenges-related>
- CDC's Guidance for Reopening Buildings
 - <https://www.cdc.gov/coronavirus/2019-ncov/php/building-water-system.html>
- CDC's Water Management Program
 - <https://www.cdc.gov/legionella/wmp/>

6/4/2020

31

31



United States
Environmental Protection
Agency

Thank you

32

ASK THE EXPERTS



Ken Rotert
USEPA, Office of
Ground Water and
Drinking Water



**William Platten,
PhD**
USEPA, Office of
Water



**Alex
Margevicius**
Cleveland Division
of Water



**Kelley Dearing
Smith**
Louisville Water
Company



Mandy Cawby
WaterOne

Enter your **question** into the **question pane** at the lower right hand side of the screen.

Please specify to whom you are addressing the question.



USING METER DATA TO LOCATE BUILDINGS WITH REDUCED WATER CONSUMPTION



Alex Margevicius, P.E.
Commissioner
Cleveland Water

AGENDA

- About Cleveland Water
- Water Quality Concerns Increased during Pandemic
- Mining Meter Data
- Robo Call and Direct Mailing to Large Customers
- Recent Trends
- Conclusions

35



35

ABOUT CLEVELAND WATER

- 1.4M PEOPLE SERVED
- 80 COMMUNITIES IN 6 COUNTIES
- ~ 440,000 ACCOUNTS
- 10TH LARGEST SYSTEM IN U.S.
- LAKE ERIE SOURCE



36



36

LEGIONELLA WAS A GROWING CONCERN BEFORE THE PANDEMIC

37

 Set Weather ▾
 




News

Area's second case of Legionnaire's disease, this one in Parma, is under investigation

Updated Sep 25, 2019; Posted Sep 25, 2019

By [Julie Washington, cleveland.com](#)

PARMA, Ohio — A patient at the Broadview Multi-Care Center in Parma has been diagnosed with Legionnaire's disease, the Cuyahoga County Board of Health reported Wednesday.

The specific source of the bacteria, called Legionella, has not been determined. The center's water system has been shut down while health officials investigate.

37



OUR FIRST CONCERN WAS RESIDENTIAL

RECONNECTS BEGAN IN MID MARCH

1,305
RECONNECTS
AS OF JUNE 8

FLUSHING INSTRUCTIONS FOR SINGLE FAMILY HOMES

38



Cleveland Water

WATER SERVICE RESTORATION FLUSHING INSTRUCTIONS

WHEN TO FLUSH

Once water service has been restored, it is important that you perform a full house flush of both the COLD then the HOT water plumbing before you begin using and drinking the water in your home. Please follow these instructions.

WHY FLUSH

Flush, Clean and Consume Cold are the actions all customers should implement to help ensure the highest quality of water is coming out of your tap, especially if there is the possibility of lead in your plumbing system. In some situations, a water system repair/replacement may temporarily increase lead levels in water and/or cause discoloration. As a standard practice the USEPA recommends these actions (flush, clean, consume cold), which are important to take when water has been restored after a disruption of service.



HOW TO FLUSH

1. If possible, remove all aerator screens from every faucet and fixture in your home and leave each aerator screen in a container or bowl by the faucet from which it came.
 - If a tub includes a showerhead, use the tub faucet and not the showerhead, to flush the plumbing.
2. Determine the faucet that is closest to where the service line enters your home. If this is an outdoor spigot, turn the COLD WATER on first as high as it goes. Otherwise, start in the basement or lowest floor of your home. Turn the COLD WATER on as high as it goes.
3. Continue opening all COLD WATER faucets, including tubs, utility sinks and outdoor spigots, until all COLD WATER faucets are open on all floors. Every COLD WATER faucet in your home should be turned on at the same time.
4. After all faucets are open, let the COLD WATER run for at least 30 minutes. During this time, also flush each toilet in your home 2 or 3 times. Running the COLD WATER should remove any old (stagnant) water which may contain higher concentrations of metals including lead, if it exists in your service line or plumbing.

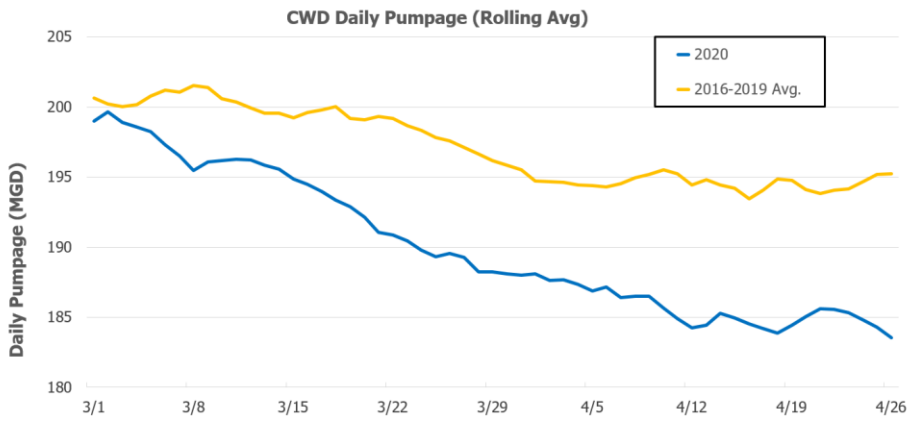
38



OHIO WENT INTO PROGRESSIVE LOCKDOWNS 3/15 TO 3/22

SYSTEM-WIDE WATER PUMPAGE STARTED TO DROP

5% PUMPAGE DROP = ~8% METERED CONSUMPTION DROP



ANECDOTAL STORIES OF WATER QUALITY PROBLEMS IN SOME BUILDINGS;

BECAME CONCERNED



SEMINAL PURDUE WORK CAME OUT IN EARLY APRIL

LOTS OF NATIONAL DISCUSSION SINCE

PURDUE UNIVERSITY News

HOME NEWS TOPICS PURDUE TODAY MEDIA INFO PODCAST STORIES PURDUE IN THE NEWS

April 13, 2020

Water quality could change in buildings closed down during COVID-19 pandemic, engineers say

Purdue research continues through COVID 19 crisis

Watch later Share

Facebook Twitter LinkedIn More

Research News

- Discovery unlocks 'hot' electrons for more efficient energy use
- Technology aims to provide cloud efficiency for databases during data-intensive COVID-19 pandemic
- \$2 million SBIR grant fast-tracks

Study part of national effort to understand how extended shutdowns affect water quality in buildings

CLEVELAND WATER WANTED TO OWN THIS ISSUE LOCALLY

WEBSITE MODIFIED

PRINTABLE FLUSHING INSTRUCTIONS ONLINE

CITY OF CLEVELAND
water
AT YOUR SERVICE

Contact Us

Customer Service Your Water Who We Are

RESPONSIBLE RESTART

Why & How to Flush Plumbing

clevelandwater.com

FLUSHING MESSAGE STARTED IN MAYOR'S DAILY EMAIL BLAST APRIL 28

SOCIAL MEDIA & BLOG POSTS STARTED SAME DAY



Responsible Restart
 FLUSHING PLUMBING

CITY OF CLEVELAND
 Mayor Frank G. Jackson

If a building meets **all** of the following, use the **small** building flushing instructions:

- 1" or less diameter service line
- Plumbing system similar to a residential home
- Single water heater, non-recirculating



Responsible Restart
 FLUSHING PLUMBING

CITY OF CLEVELAND
 Mayor Frank G. Jackson

If a building meets **any** of the following, use the **large** building flushing instructions:

- >1" diameter service line
- Sprawling plumbing system
- Multiple floors, wings or both with multiple places water is available on each floor/wing
- Multiple water heaters
- A recirculating hot water system
- Long sections of dead-end plumbing
- A cooling system that uses water for coolant



COULD WE LEVERAGE AMI TO DO TARGETED MESSAGING ?

AMI 98% INSTALLED

10 MILLION HOURLY READS EACH DAY



**SHORT-LISTED
 TO METERS
 1 1/2" AND
 LARGER =
 10,658 METERS**



**PULLED DAILY
 AMI READS ON
 EITHER SIDE OF
 OHIO SHUT
 DOWNS:**

**2/15 AND 3/15,
 FOR BEFORE
 SHUTDOWN
 USAGE**

**3/23 AND 4/23,
 FOR AFTER
 SHUTDOWN
 USAGE**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2

**"BEFORE" SHUTDOWN
 FLOW RATES**

Feb 15 - March 15

**Ohio Shutdowns
 Phased In**

**"AFTER" SHUTDOWN
 FLOW RATES**

March 23 - April 23

**CALCULATED
BEFORE AND
AFTER FLOW
RATES**

**SOME
SUBSTANTIAL
DECREASES IN
CONSUMPTION**

**20% HAD 75%
OR MORE DROP**

**VARIETY OF
FACILITIES
AFFECTED**

Accounts with Largest Reductions in Usage, by Volume

Before gpm	After gpm	Delta gpm	Pct Chg	Address 1	City	Type of Facility
1495.8	567.2	928.7	-62.08%	████ HURON RD	CLEVELAND	Stadium
312.9	67.3	245.6	-78.50%	████ DAY DR	PARMA	Shopping Ctr
292.6	102.0	190.6	-65.15%	████ E 89TH ST	CLEVELAND	Parking Garage
122.7	0.1	122.7	-99.96%	████ QUIGLEY RD	CLEVELAND	Paper Processing
258.0	146.0	112.1	-43.43%	████ WARNER RD	GARFIELD HEIGHTS	Steel Processor
246.0	138.3	107.7	-43.77%	████ E 18TH ST	CLEVELAND	College Law Library
307.3	213.4	93.9	-30.57%	████ LAKESIDE AVE	CLEVELAND	Central Heating Utility
101.8	12.9	88.8	-87.29%	████ PEARL RD	STRONGSVILLE	Shopping Mall
134.5	61.8	72.6	-54.01%	████ PEARL RD	MIDDLEBURG HEIGHTS	Strip Mall
76.5	7.0	69.5	-90.86%	████ E 90TH ST	CLEVELAND	Medical Facility
145.7	77.6	68.1	-46.76%	████ CLIFTON RD	CLEVELAND	Shopping Ctr
93.7	33.5	60.2	-64.28%	████ EMERALD VALLEY PWAY	GLENWILLOW	Warehouse
73.4	23.4	50.1	-68.17%	████ HARVARD AVE	CUYAHOGA HEIGHTS	Steel Mfg
110.3	65.2	45.2	-40.94%	████ E 49TH ST	CUYAHOGA HEIGHTS	Steel Mfg
44.8	4.4	40.4	-90.16%	████ W 121ST ST	CLEVELAND	Forge & Machining
39.5	0.0	39.5	-99.95%	████ HARVARD AVE	CLEVELAND	High School
39.8	1.5	38.4	-96.29%	████ BASSWOOD CT	NORTH ROYALTON	Pool

47



47

**ANALYZED
RESULTS WITH
PIVOT TABLE.**

**DECIDED TO
FOCUS ON
ACCTS W / :**

- AT LEAST 25% REDUCTION IN CONSUMPTION
- BEFORE FLOW RATE OF AT LEAST 2 GPM

**FINAL LIST:
678 ACCOUNTS**

	Before gpm											Total
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10+	
Percent change	1	2	3	4	5	6	7	8	9	10	11	Total
-100% - -75%	1516	225	77	39	24	8	8	6	5	3	30	1942
-75% - -50%	823	175	73	52	25	24	15	6	12	6	33	1244
-50% - -25%	1028	172	65	39	20	22	14	8	10	7	48	1434
-25% - 0%	1369	297	156	77	60	32	32	23	21	14	143	2224
0% - 25%	1391	449	211	86	56	39	34	20	19	24	130	2460
25% - 50%	454	67	33	10	9	3	4	5	2	2	18	607
50% - 75%	176	21	2	5	1	2	1		1	1	1	211
75% - 100%	89	10	4	2		1		1		1	2	110
100% - 125%	57	9	1		2		1					70
125% - 150%	55	3	4	1								63
150% - 175%	20	3				1					1	25
175% - 200%	41											41
> 200%	214	8	2	1							2	227
Total	7233	1439	628	312	197	132	109	69	70	58	408	10658

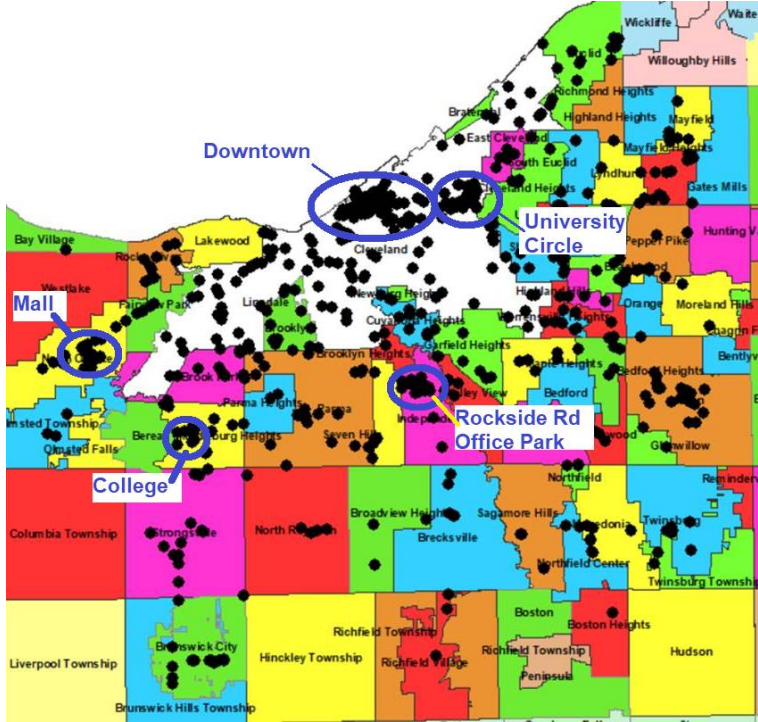
48



48

ACCOUNTS WERE WIDELY DISPERSED, GEOGRAPHICALLY

SOME CLUSTERING



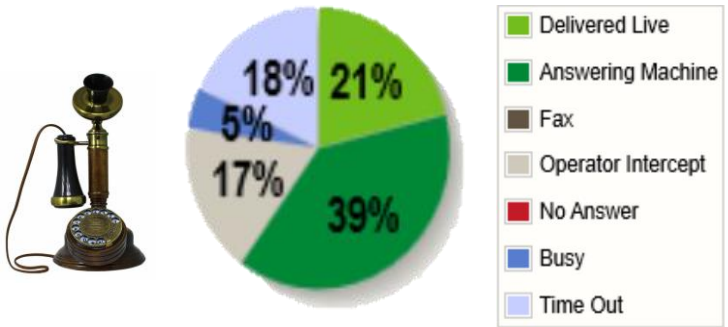
849 UNIQUE PHONE NUMBERS MINED FROM BILLING SYSTEM

CODE RED ROBO-CALL WENT OUT TO ON MAY 1

60% OF CALLS REACHED USERS

PRETTY GOOD FOR A PHONE CAMPAIGN

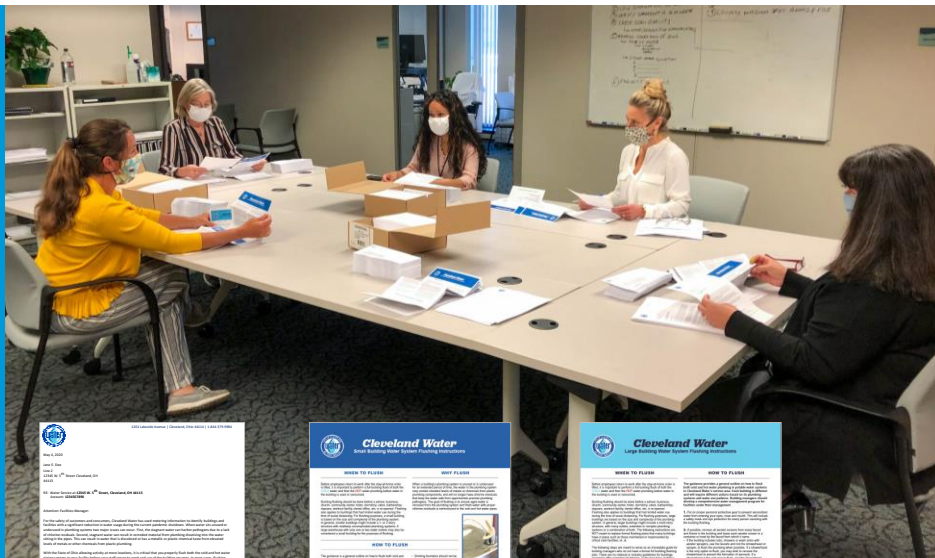
Hi, this is Alex Margevicius, Commissioner of Cleveland Water. We have identified your building or facility as one that may have experienced a significant reduction in water usage during the current pandemic shutdown. Water that has sat stagnant for too long can cause serious health problems. It is critical that you properly flush your building plumbing before your staff return to work. Detailed flushing instructions can be found on our Website at Cleveland Water dot com, or you can call our water quality line at 216-664-2639. Thank you.



**FOLLOWED UP
 WITH DIRECT
 MAILING TO
 1,249
 ADDRESSES**

**COVER LETTER,
 W / HARD COPY
 FLUSHING
 INSTRUCTIONS
 INCLUDED**

**FEEL GOOD
 ABOUT THIS
 EXTRA EFFORT**



51



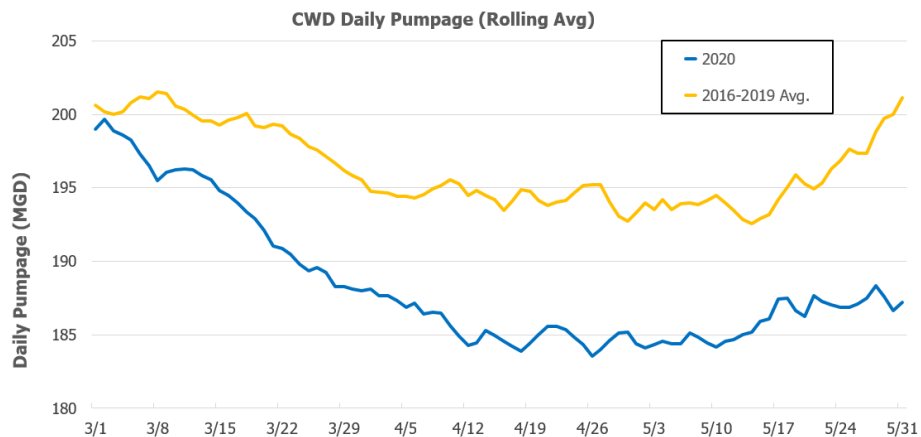
51

**WHAT HAS
 HAPPENED
 SINCE THEN?**

**VERY FEW
 QUESTIONS
 FROM BUILDING
 MANAGERS**

**OHIO STARTED
 REOPENING
 STATE IN EARLY
 MAY**

**PUMPAGE IS
 GOING BACK UP
 MODESTLY**



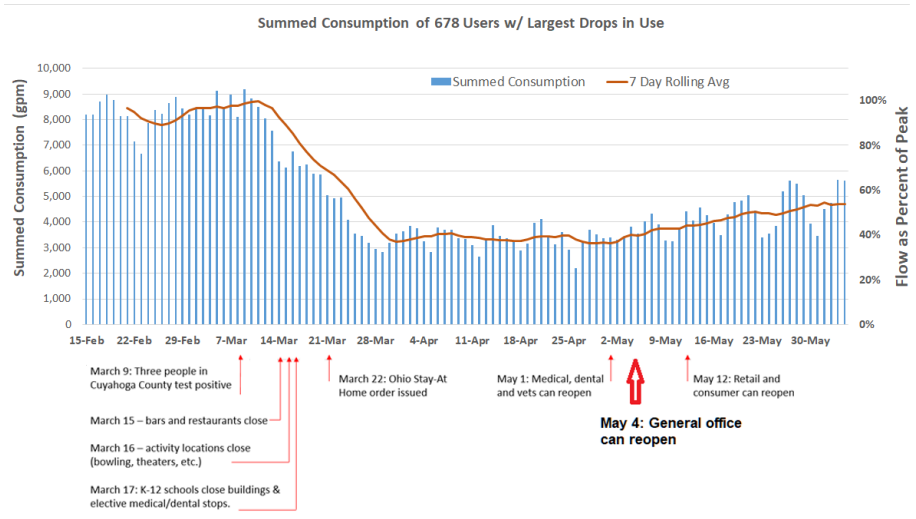
52



52

PLOTTED DAILY USAGE OF 678 ACCOUNTS SINCE FEB. 15

DESPITE MOST RE-OPENINGS ALLOWED ON MAY 4, ONLY MODEST INCREASE IN WATER USE



INTERESTING THOUGHTS:

- CONSUMPTION MAY NEVER RETURN TO 100%
- MAINTENANCE FLUSHING MIGHT BE JUST AS IMPORTANT AS RESTART FLUSHING
- IS MORE OUTREACH APPROPRIATE?



PROVIDED BY DOWNTOWN CLEVELAND ALLIANCE

CONCLUSIONS:

- IT'S GOOD FOR CUSTOMERS TO HEAR FROM LOCAL EXPERTS
- THERE'S STILL TIME FOR BENEFICIAL OUTREACH
- AMI DATA NOT NEEDED TO PERFORM THIS EXERCISE



55



55

ASK THE EXPERTS



Ken Rotert
USEPA, Office of
Ground Water and
Drinking Water



**William Platten,
PhD**
USEPA, Office of
Water



**Alex
Margevicius**
Cleveland Division
of Water



**Kelley Dearing
Smith**
Louisville Water
Company



Mandy Cawby
WaterOne

Enter your **question** into the **question pane** at the lower right hand side of the screen.

Please specify to whom you are addressing the question.

56



56



A TARGETED FLUSH

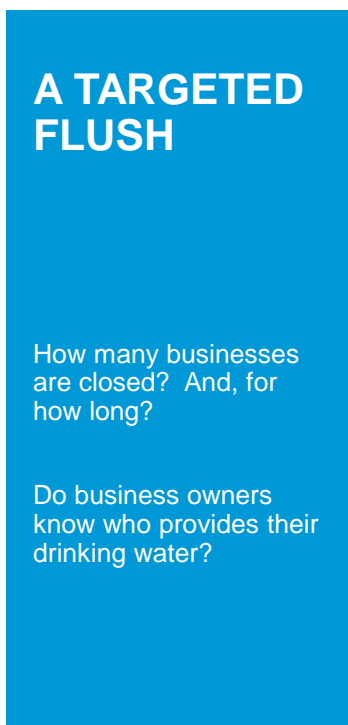
Kelley Dearing Smith
Vice President, Communications
& Marketing

Louisville Water Company

57



57



A TARGETED FLUSH

How many businesses are closed? And, for how long?

Do business owners know who provides their drinking water?

How do you take a technical water quality message and deliver to a diverse audience?



Photo courtesy of Municipal Authority of Westmoreland County

58



58

SHARING A WATER QUALITY STORY

- A flushing program is an opportunity to link water quality to the economic drivers in your community.
- During this pandemic, delivering a targeted message is key.

Has Your Facility Been Closed for Weeks?
Flush the Water Pipes.

Louisville Water delivers drinking water through a network of pipes to your business. After the water flows through a meter, building owners are responsible for maintaining water quality. Flushing the water lines is an easy way to help maintain quality by moving the older water out of the pipes and bringing in fresh, high-quality water.

- 1** Disconnect any point-of-entry device filters and clean faucet aerators.
- 2** Next, locate the cold water faucet closest to where the water enters the building. Then, turn on this faucet and all cold water faucets in kitchens and bathrooms. Let the cold water flow for 20 minutes.
- 3** Flush all appliances that use water. Run an empty load in the dishwasher and let water flow through drinking water fountains and kitchen sink sprayers. Empty the ice from ice maker bin; run and discard two additional batches of ice.
- 4** Flush all toilets, spas and water features like fountains. Follow manufacturer's instructions on filter replacement.
- 5** Increase the temperature on the hot water heater to at least 140 degrees for 30 minutes. Turn on the hot water tap closest to the water heater and in kitchens and bathrooms. Let it flow enough to drain the hot water heater.

Remember to turn off all faucets and reset the water heater.

Learn more at LouisvilleWater.com

59

59



SHARING A WATER QUALITY STORY

A targeted message

- The **Opportunity**: Link water quality and communication.
- The **Challenge**: Make an important public health message easy to understand, relevant and with a call to action
- The **Problem**: How to reach building managers and facility owners?

Consider: Identify the most important audience?

Has Your Building Been Closed for Weeks?
Flush the Water Pipes!

LouisvilleWater.com/Flushing

Louisville Water

60



60

KEY MESSAGES

Think
3

Get rid of the **OLD** water in your building.



Flush the Pipes!

LouisvilleWater.com/Flushing



1. If your business has been closed for months, flush the water lines to maintain good water quality.
2. Flushing the water lines moves out the old water and brings in fresh, high-quality water
3. (Your Utility) has resources to explain how to flush the lines

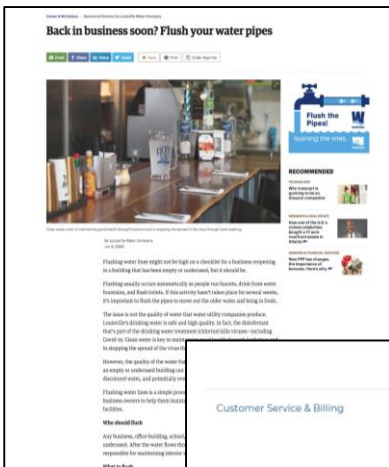


KEY MESSAGES

Message must be on target

COVID-19 is NOT in your drinking water

Don't create a water quality panic



Back in business soon? Flush your water pipes

Flushing water lines might not be high on a checklist for a business reopening in a building that has been empty or unoccupied, but it should be.

Flushing results in more aesthetically pleasing tap water. It also flushes out lead, bacteria, and fresh water. It also reduces lead contamination from old pipes. It's important to flush the pipes to remove the old water and bring in fresh.

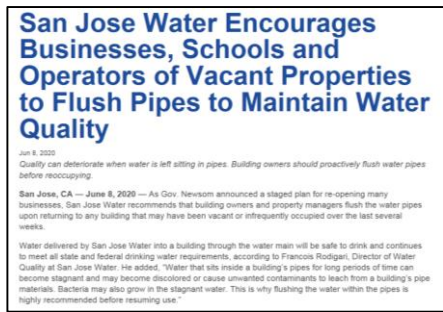
The issue is not the quality of water that water utility companies produce. Lead and bacteria are not in the water. The problem is the old water that has been sitting in the pipes for a long time.

Lead is a concern because it can be harmful to children and pregnant women. Bacteria can cause illness and death.

Flushing water lines in a building can help reduce lead and bacteria levels. It also helps to reduce the risk of Legionnaires' disease.

Who should flush?
 Any business, office building, school, or apartment. After the water has been flushed, it is safe to drink.

When to flush?
 Before you start using the water.

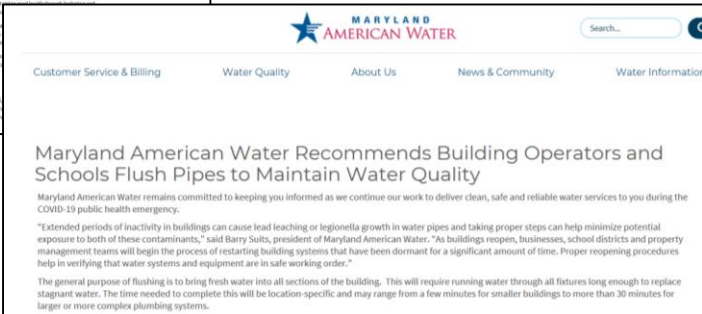


San Jose Water Encourages Businesses, Schools and Operators of Vacant Properties to Flush Pipes to Maintain Water Quality

Jun 8, 2020
 Quality can deteriorate when water is left sitting in pipes. Building owners should proactively flush water pipes before reoccupying.

San Jose, CA — June 8, 2020 — As Gov. Newsom announced a staged plan for re-opening many businesses, San Jose Water recommends that building owners and property managers flush the water pipes upon returning to any building that may have been vacant or infrequently occupied over the last several weeks.

Water delivered by San Jose Water into a building through the water main will be safe to drink and continues to meet all state and federal drinking water requirements, according to Francois Rodigari, Director of Water Quality at San Jose Water. He added, "Water that sits inside a building's pipes for long periods of time can become stagnant and may become discolored or cause unwanted contaminants to leach from a building's pipe materials. Bacteria may also grow in the stagnant water. This is why flushing the water within the pipes is highly recommended before reusing it."



MARYLAND AMERICAN WATER

Customer Service & Billing | Water Quality | About Us | News & Community | Water Information

Maryland American Water Recommends Building Operators and Schools Flush Pipes to Maintain Water Quality

Maryland American Water remains committed to keeping you informed as we continue our work to deliver clean, safe and reliable water services to you during the COVID-19 public health emergency.

"Extended periods of inactivity in buildings can cause lead leaching or legionella growth in water pipes and taking proper steps can help minimize potential exposure to both of these contaminants," said Barry Suits, president of Maryland American Water. "As buildings reopen, businesses, school districts and property management teams will begin the process of restarting building systems that have been dormant for a significant amount of time. Proper reopening procedures help in verifying that water systems and equipment are in safe working order."

The general purpose of flushing is to bring fresh water into all sections of the building. This will require running water through all fixtures long enough to replace stagnant water. The time needed to complete this will be location-specific and may range from a few minutes for smaller buildings to more than 30 minutes for larger or more complex plumbing systems.



TARGETED OUTREACH

- Start with your employees first.
- Can't depend on traditional media
- Put yourself in a business owner's position. Where do they receive information?
- Who can share your message?



Find stakeholder groups for medical, dental, education, food & beverage

Link with business organizations

Provide the content

Digital is your friend

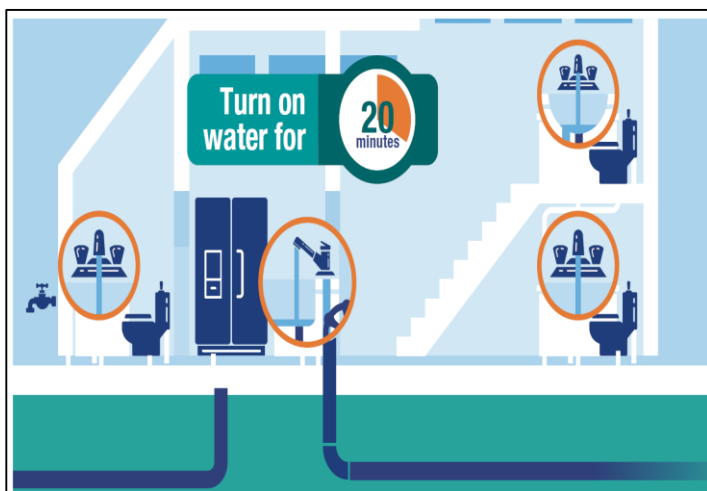
63

63



TARGETED OUTREACH

- Capture your results
- Don't forget about the contacts you've made
- Listen and evaluate
- Develop a proactive plan to keep them informed and engaged



Louisville Water was able to reach more than 200,000 people through 50 stakeholder groups and then another 100,000 through social media and a small advertising campaign in the city's business magazine.

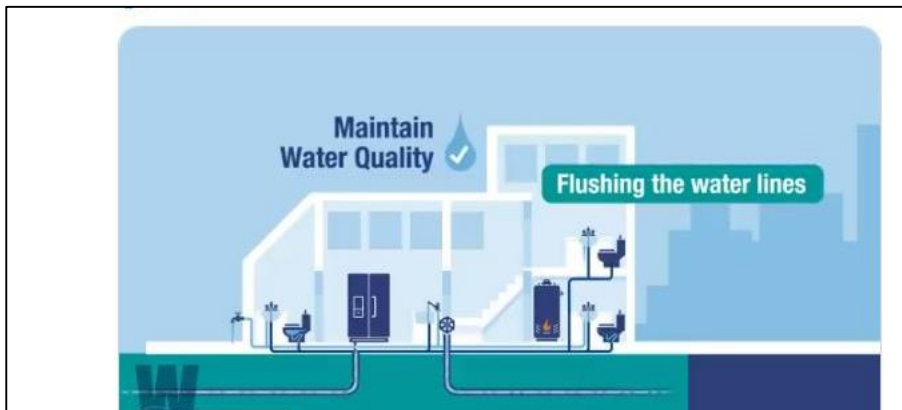
64

64



VISUALS TELL THE STORY

- Video to explain the flushing steps
- Detailed enough for businesses without a defined water quality plan
- Water quality team follows up with large users and sensitive customers



BONUS: Video does not have COVID-19 mentions so it can be used for water main breaks, boil water advisories and overall water quality management

65

65



WaterOne
Water District No. 1 of Johnson County



HOW TO CREATE A RAPID RESPONSE CAMPAIGN

Mandy Cawby
Director of Customer Relations
WaterOne

66

66



USE YOUR WEBSITE AS HOME BASE FOR INFO

WaterOne.org/Refresh



- Should you brand your campaign?
- WaterOne.org/Refresh
 - **Friendly URL:** Web address that is easy to read, includes words that describe the content of the page
 - Easier to market and remember
- Layer your messaging ... "Make them trip over it"
 - Home page banner
 - Home page slider
 - News item thumbnail
 - Other

67



67

CREATE SUPPORT MATERIALS

- Infographic
- Translations
- Postcard
- Rack cards/Hand-outs
- Video (30-90 seconds)



Reopening your business?

Don't forget to refresh your water!

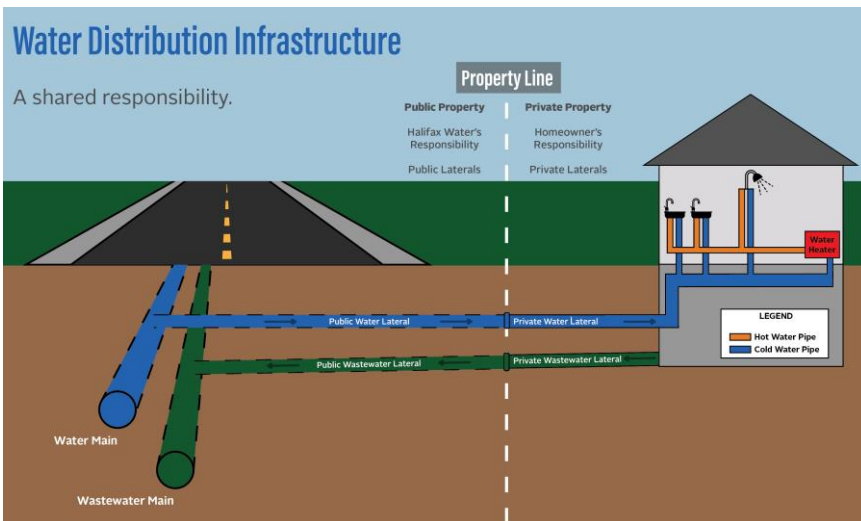
- 1** Remove any aerators or filters from faucets. Then **run all faucets on cold** for 20 minutes or until the temperature feels cold.
- 2** Flush all appliances that use water. Empty ice from all ice makers and discard two additional batches, run water through water fountains, sprayers and sinks and run an empty load through your dishwasher.
- 3** **RACK CARD** Flush all toilets, spas, or any other water features. Follow any manufacturing recommendations for replacing or cleaning filters.
- 4** Flush all faucets with hot water for 30 minutes or until the water is fully hot.

For more information and details for larger buildings go to:
waterone.org/refresh

68

CALL TO ACTION + EDUCATION

- Consider customer education as well as requested actions
 - Utility responsibility
 - Property owner responsibility
 - Water Quality
 - Water Sources



Courtesy of: Halifax Water



COLLABORATE

- Operations team
 - Water age modeling
 - Hydrant flushing
- Talking points/briefing
 - Call center
 - Front line staff
- Pay it forward, contact
 - State regulators
 - Other area utilities



PUSH YOUR MESSAGE OUT

- News Release
- Mass Notification Alert
- Customer emails
- Direct mailers
- Community Partners
 - Chambers
 - Cities
 - Stakeholder groups
- *On-bill message?*
- *Bill Inserts?*
- And ...

71

MEDIA CONTACT
 Mandy Cawby
 913 - 895 - 5546
 mcawby@waterone.org

WaterOne Encourages Businesses to Refresh Their Water Before Reopening
 Post Date: 04/30/2020 5:19 PM

Lenexa, KS – As businesses throughout the region take steps towards reopening, WaterOne is encouraging its customers to make refreshing their water the first thing they do when they get back to their workplace.

"If a building has been mostly vacant for more than a few weeks, the water is likely stale from sitting idle," said Director of Distribution Dan Smith. "Before you reopen, don't forget to 'turn over' your building's water to make sure you have fresh, great-tasting water for your employees and customers."

Due to regional stay-at-home orders, many stores, offices, restaurants, and facilities haven't had anyone on-site in weeks. Without anyone around to run the faucet or flush the toilet, the water in those pipes hasn't moved at all. Over time, water that has been sitting unused in a building can become cloudy or pick up a stale taste or smell. Depending on the building and its plumbing, Legionella, metal leaching, and other hazards can also pose a health risk.

Fortunately, refreshing your building's water is an easy process. To get fresh water from the water main flowing into your workplace's plumbing, simply go through the building and run each tap one-by-one until the water feels cool and fresh. If it's a large building, this could take a few minutes. Flush every toilet as well. When that's done, go back through and run each hot water tap until it gets fully hot – this makes sure fresh water also gets through your hot water lines. Doing this will ensure stale water is flushed out and replaced with clean, fresh water.

Protecting public health is our highest priority. WaterOne is constantly monitoring water quality at its treatment plants, as well as testing at public businesses throughout its service area. Visit [WaterOne.org/Refresh](https://www.waterone.org/Refresh) for more information about refreshing your building's water, and don't hesitate to call WaterOne at (913) 895-1800 with any questions or water quality concerns.

71



SOCIAL MEDIA

- Facebook
- Twitter
- NextDoor



Louisville Water Company
 May 11 at 8:10 AM · 🌐

We're proud to produce the best-tasting, best quality water in the nation 🇺🇸 As your business reopens, we want to make sure you pass along the same water quality to your customers 🏡 Follow these simple steps to flush old water from the pipes in your building: <https://bit.ly/2LFCsoU>

Get rid of the **OLD** water in your building.

Flush the Pipes!
 LouisvilleWater.com/Flushing

BOOST YOUR REACH!

BOOSTED POSTS = GOOD INVESTMENTS FOR URGENT MESSAGES



72

MEASURE WHAT YOU TREASURE

- News coverage:
 - TV
 - Radio
 - Newspaper
- Analytics:
 - Website
 - Social Media
 - Ad Traffic
- Customer Pulse Survey
- Staff Feedback

73

WESTMORELAND

Municipal Authority of Westmoreland County reminds businesses to flush water before reopening

JACOB TIERNEY | Friday, May 8, 2020 11:17 p.m.



Municipal Authority of Westmoreland County

The Municipal Authority of Westmoreland County has warned businesses to make sure their water is safe when they reopen after a long closure.

MAWC treats its water with a disinfectant, but that can dissipate after a long time stagnant. This can lead to biological growths, bad taste and a discoloration, according to the authority.

The authority recommends businesses run cold water through all taps, one at a time for at least 10 minutes each. Then they should drain the hot water tank, flush water

EMAIL NEWSLETTERS

TRIBLIVE's Daily and Weekly newsletters deliver the news you want and information you need, right to your inbox.

USE RESULTS TO DRIVE FUTURE STRATEGIES

73



SUMMARY

- Take off the “utility cap” and put on the “customer hat.” Deliver the important water quality message in a conversational manner.
- A flushing program for reopening facilities is an opportunity to highlight the value of water, the utility’s role in water quality and the facility manager’s responsibility.
- Relationships matter. Identify key stakeholders early and talk with them frequently.
- Repeat, repeat, repeat. Deliver your three key messages in a variety of formats.
- This message is not a “one and done.” Use the interest captured in the pandemic to build relationships and create a plan to repeat the flushing message.
- Use AWWA Resources:
 - Public Affairs Council
 - DrinkTap.Org
 - AWWA website

74

74



CONTINUE THE CONVERSATION

Kelley Dearing Smith - Louisville Water Company

502.569.3695 | ksmith@lwcky.com | @LouisvilleWater | @kelleydsmith

Mandy Cawby – WaterOne

913.895.5546 | mcawby@waterone.org | @MyWaterOne

75



75

ASK THE EXPERTS



Ken Rotert
USEPA, Office of
Ground Water and
Drinking Water



**William Platten,
PhD**
USEPA, Office of
Water



**Alex
Margevicius**
Cleveland Division
of Water



**Kelley Dearing
Smith**
Louisville Water
Company



Mandy Cawby
WaterOne

Enter your **question** into the **question pane** at the lower right hand side of the screen.

Please specify to whom you are addressing the question.

76



76

ADDITIONAL RESOURCES

- Find more COVID-related resources at [awwa.org/coronavirus](https://www.awwa.org/coronavirus)
- View our [COVID-19 Webinar Series](#)
 - [Free Webinar Recording: COVID-19 Implications to Operations, Compliance & Training](#)
 - [Free Webinar Recording: Legal Aspects of COVID-19 for Water Utilities](#)
 - [Free Webinar Recording: Be a Trusted Source: How to Handle Communication Challenges During COVID-19](#)
 - [Free Webinar Recording: Utility Actions to Sustain Operations During COVID-19](#)
 - [Free Webinar Recording: Facing the New Normal for Credit and Collections During COVID-19](#)
 - [Free Webinar Recording: COVID-19's Financial Impact on Water Utilities](#)
 - [Free Webinar Recording: Workforce and COVID-19: Utility Solutions](#)

77

77



UPCOMING WEBINARS

June 11 - FREE Webinar from SL Environmental Law Group: How to Shift Drinking Water Treatment Costs from Ratepayers to Polluters

June 18 - WOTUS and Maui – Parallel Developments Impact the Clean Water Act and Source Water Protection

June 24 - Current and Emerging Technologies for PFAS Treatment and Lessons Learned Webinar

[Register for a 2020 Webinar Bundle](#)

View the full 2020 schedule at [awwa.org/webinars](https://www.awwa.org/webinars)

78

78



THANK YOU FOR JOINING TODAY'S WEBINAR

- As part of your registration, you are entitled to an additional 30-day archive access of today's program.
- Until next time, keep the water safe and secure.

79



79

PRESENTER BIOGRAPHY INFORMATION



Ken is a Physical Scientist with the EPA Office of Ground Water and Drinking Water where he has worked on the development and review of drinking water regulations since 1998. He has focused his regulatory efforts on microbiological regulations, including Legionella, E. coli, viruses, and Cryptosporidium. He has also lead efforts to explore the potential public health impacts of problems associated with drinking water distribution systems, and is a member of the ASHRAE 514 Committee developing a standard on building water systems. He has Bachelor's Degrees in Biology and Chemistry, and a Masters Degree in Environmental Engineering.



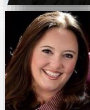
Bill Platten is an Environmental Engineer in EPA's Office of Ground Water and Drinking Water, Water Security Division. He joined EPA in 2015 and helps drinking water systems monitor for and respond to drinking water contamination emergencies. His focus is on response and recovery procedures for contamination in both distribution systems and premise plumbing. He holds a Bachelor of Science in Civil and Environmental Engineering and a Master of Science and Doctor of Philosophy in Environmental Engineering from the University of Cincinnati.



Alex Margevicius started his career at Cleveland Water in 1985 as an entry-level engineer. He held multiple positions in his tenure, including the head of engineering for 16 years. He was named Interim Commissioner in 2011, and was sworn in as the Commissioner of Water in 2016. He holds engineering degrees from Case Western Reserve University, and is on the Executive Board of the Water Research foundation.



Kelley Dearing Smith is vice president for communications and marketing at Louisville Water Company in Louisville, Kentucky. She's worked at Louisville Water for over 20 years and is currently vice-chair of AWWA's Public Affairs Council. Much of Kelley's career focuses on brand-building and communicating the value of water.



As Director of Customer Relations, Mandy oversees Customer Service, Meter Services, and Communication. This includes WaterOne's customer call center, billing, collections, field operations for meter reading and repair, corporate communications, public outreach, community and media relations. Her role is to champion customer service and the customer experience in every aspect of WaterOne's business.

80



80

CE CREDITS (CEUS) AND PROFESSIONAL DEVELOPMENT HOURS (PDHS)



AWWA awards webinar attendees CEUs.

If you viewed this webinar live, you will receive a certificate through the AWWA account associated with the email address you used to register.

If you viewed this webinar through a group registration, contact your proctor to log your participation.

If you viewed this as an archive webinar, follow the directions included in your archive webinar email to log your participation.

Certificates will be available on your AWWA account within 30 days of the webinar

81



81

HOW TO PRINT YOUR CERTIFICATE OF COMPLETION



Within 30 days of the webinar, login to www.awwa.org or register on the website. If you are having problems, please email educationservices@awwa.org

Once logged in, go to:

- My Account (click on your name in the top right corner)
- My Transcripts
 - To print your official transcript, click **Print list**
 - To print individual certificates, click **Download Certificate**

82



82

2020 WEBINAR SPONSORS

