The **IMPORTANCE OF WATER QUALITY** in School and Childcare Buildings





Middlesex Water Company (MWC) delivers water that meets or exceeds all state and federal standards. However, school and childcare building owners, administrators, and managers share a responsibility to maintain drinking water quality throughout their buildings.

Water stagnation – which occurs if water sits in pipes for long periods of time, like overnight, weekends, or school breaks – can lower water quality and cause it to become unsafe.



How does stagnation make water unsafe?

- When water is not used for a long period of time, the disinfectant will break down and the water temperature can change. This can cause bacteria to grow in water pipes and faucets.
- When water sits in a pipe or fixture for a long time, it can decrease the normal protective barrier on the inside of the plumbing. With the barrier gone, metal from the plumbing, like lead, may dissolve into the water. Lead is not safe to drink or eat.



What can I do about it?

Ensure all of the drinking water in your building is used and/or replaced with fresh water on a regular basis. That happens through regular usage by students and staff, and implementing a routine flushing and maintenance plan. For larger buildings, creating a building profile and water management plan can help ensure water quality efforts are a success.

How to MAINTAIN WATER QUALITY



What is flushing?

"Flushing" is the process of running water through the building until what comes out of the faucet or fountain is "fresh" water pulled straight from the main instead of from water sitting in building plumbing.

How do I create a flushing plan?

Take the following steps and write them (and their location) into a checklist for others to follow in the future.



STEP 1

Find where water is coming into the building.



STEP 2

Run the cold water from the tap closest to where water enters the building for at least ten minutes or until the water runs cold. This is usually in the basement or lowest floor. The water may not be meant for drinking (e.g., a janitorial sink).



STEP 3

Run the tap farthest from where water enters the building for at least ten minutes. If the building has more than one wing, run the farthest tap in each wing. If a building has multiple floors, start at the top floor. Complete this step on all floors starting from the top floor and moving down by floor.



STEP 4

Run each tap that may be used for drinking and or/cooking for at least 30 seconds. This includes each kitchen faucet and classroom faucets.



STEP 5

Run basic water fountains that do not have filters or refrigeration for at least 30 seconds.



STEP 6

Run water at all unfiltered refrigerated water fountains for at least 15 minutes.



STEP 7

Run drinking fountains or filling stations with inline filters for at least 30 seconds. **Do not remove** filter cartridges.



STEP 8

Give the checklist to the person who will be in charge of flushing and ask them to document each time they flush.



How long should I flush?

For small buildings with simple layouts and only a few fixtures, to fully flush all of the taps in your building can take 15-20 minutes. In larger school buildings, complete flushing may take 30 minutes to an hour depending on the number of floors and fixtures, and layout complexity. You can estimate flushing time for larger buildings based on the building profile.

How often should I flush?

It depends on if your facility is in regular use.

- We recommend flushing weekly, on Monday mornings before opening the facility, during periods of the year when the school is occupied
- At a minimum, we recommend you flush after periods of inactivity of three or more days, like long weekends and holiday breaks
- If you have a longer break (like summer break) without use, plumbing, or major construction activities, the routine flushing protocol will not be enough to ensure water quality. In those cases, you will need to look up other types of flushing, like "high velocity" to prepare your water for drinking.
- Do not flush before sampling or alter a routine flushing program in relation to any sampling event.



How do I know if flushing is working?

Once stagnated water is flushed and replaced with fresh water, it will usually be colder. Fixtures should be flushed until cold water is flowing.

A chlorine test kit can measure the residual chlorine levels of the incoming water at certain flushing steps. If you find residual chlorine, that means your water is "fresh" from the main and is safe to drink; the flushing has worked.

How else can I improve water quality?

Take the following steps to keep harmful metals and bacteria out of your water.



Clean aerators (faucet screen) and water fountain strainers at least quarterly, and monthly if feasible. Document each time you clean aerators and strainers in a running log.



Replace filter cartridges per the manufacturer's recommendations and as otherwise required for all bottle-filling stations and drinking fountains with filters. Establish a replacement plan and document all replacements.



Clean drinking water fountains regularly. Consider posting a timecard by the water fountains to record when they are cleaned.

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Where can I learn more?

- <u>3Ts Flushing Best Practices</u> <u>https://tinyurl.com/57t2h2cj</u>
- <u>3Ts Ensuring Drinking</u> <u>Water Quality in Schools</u> <u>During and After Extended</u> <u>Closures | https://tinyurl.</u> <u>com/9fxvf4bk</u>
- <u>Water Management Program</u> <u>Toolkit | https://tinyurl.com/</u> <u>yufyk4f5</u>
- Responding to Water Stagnation in Buildings with Reduced or No Water Use, A Framework for Building Managers | https://tinyurl. com/4bres6xh
- Implementing a School Flushing Program | https:// tinyurl.com/4e7afa4x
- School Drinking Water Program, Flushing School Plumbing (Fresh Tap Method) | https://tinyurl. com/4vwrx2jw
- School Drinking Water Program, Flushing School Plumbing (High Velocity Method) | https://tinyurl. com/yw39eb89

For Larger Facilities: **HOW TO**

What is a water system building profile?

A water system profile is a basic building water system drawing or flow diagram. It shows how the water system is connected, the general direction of water flow, and all fixture locations used for consumption. Larger, more complex buildings may need a profile to ensure a flushing plan is adequate to eliminate all stagnant water.

How do I create a profile?



STEP 1

Outline your building water system using an up-to-date building floor plan. This is your base drawing.



STEP 2

Walk through the building and note every sink, fountain, and fixture used for consumption on the drawing.



STEP 3

Locate and describe every water fixture on your drawing.



STEP 4

Locate where the water comes into your building (the service line entry point) and the following water fixtures on your drawing: Water will generally flow from the identified entry point towards the points farthest away.

- Closest to the entry point.
- Farthest away from the entry point (on the top floor if the building has multiple floors).
- Farthest away from the entry point on each lower floor (if applicable).



NOTE THE FOLLOWING ON YOUR PROFILE:

Plumbing "dead ends," areas of low usage, or fixtures removed from service for an extended time. They may require specific flushing actions or need a qualified professional, such as a licensed plumber, to address their risk. Follow EPA guidance for how to read fixture stamps and labels here: <u>How to Identify Lead Free</u> <u>Certification Marks | https://</u> <u>tinyurl.com/348x3vjd</u>

- If the fixture(s) used for consumption are "lead free" certified.
- Devices like water storage tanks, heaters, or treatment additions like water softeners that may need regular maintenance.

How should I use my building profile?

Once your building profile is complete, you can use it to create an accurate, step-by-step checklist staff can use to successfully flush the building. See the next page for examples of you can include building-specific information in the checklist and document completed flushing.

Template Example Water Flushing Checklist

School Name:	_
School Address:	
Contact Name:	_

• NOTE: Items in italics are for example purposes only

Flushing Order	Fixture Description	Fixture Location	Fixture Type	Duration of Flush	Notes
1	Fixture closest to entry point of building	e.g. Basement	Slop Sink	10 minutes	
2	Fixture farthest from entry point	e.g. 3 rd floor Room 320	Faucet	10 minutes	
3	Fixture farthest from entry, Wing #2	e.g. 3 rd floor Room 380	Faucet	10 minutes	
4	3 rd floor faucet	e.g. 3 rd floor Room 340	Faucet	30 Seconds	
5	3 rd floor faucet	e.g. 3 rd floor Room 360	Faucet	30 Seconds	
6	3 rd floor drinking fountain	e.g. 3 rd floor hall east	Fountain	30 Seconds	
7	3 rd floor drinking fountain	e.g. 3 rd floor hall west	Fountain	30 Seconds	
8	2 nd floor faucet	e.g. 2 nd floor Room 240	Faucet	30 Seconds	
9	2 nd floor faucet	e.g. 2 nd floor Room 260	Faucet	30 Seconds	
10	2 nd floor drinking fountain	e.g. 2 nd floor hall east	Fountain	30 Seconds	
11	2 nd floor drinking fountain	e.g. 2 nd floor hall west	Fountain	30 Seconds	
12	Etc., add fixtures and rows as needed				

Template Example Water Flushing Completion Log

School Name:	
School Address:	
Contact Name:	

NOTE: To be maintained in a central location, available for review

Initials for who performed	Date of Flushing	Time Started	Time Completed	Notes
Example: JLS	4/1/2023	5:53 AM	7:30 AM	Standard weekly protocol, no maintenance issues.

Water Flushing Checklist

School Name: School Address: Contact Name:

Flushing Order	Fixture Description	Fixture Location	Fixture Type	Duration of Flush	Notes

Water Flushing Completion Log

School Name:

School Address: Contact Name:

Initials for who performed	Date of Flushing	Time Started	Time Completed	Notes