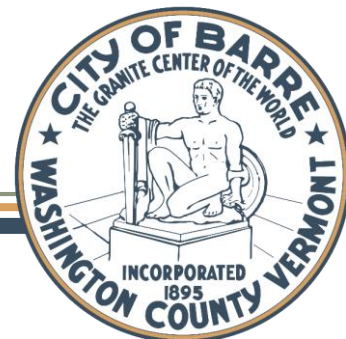


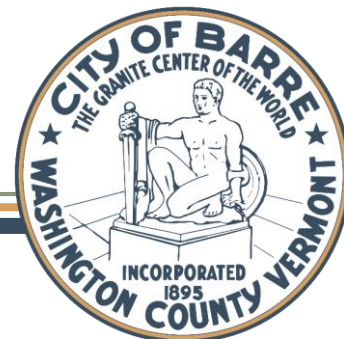
WATER SYSTEM UPDATE

NICOLAS STORELLICASTRO
CITY MANAGER
SEPTEMBER 19, 2023

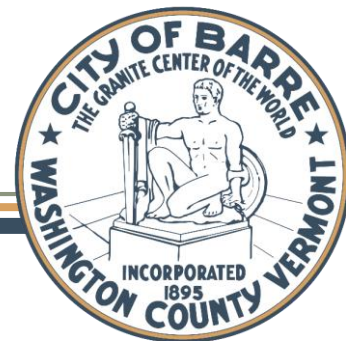
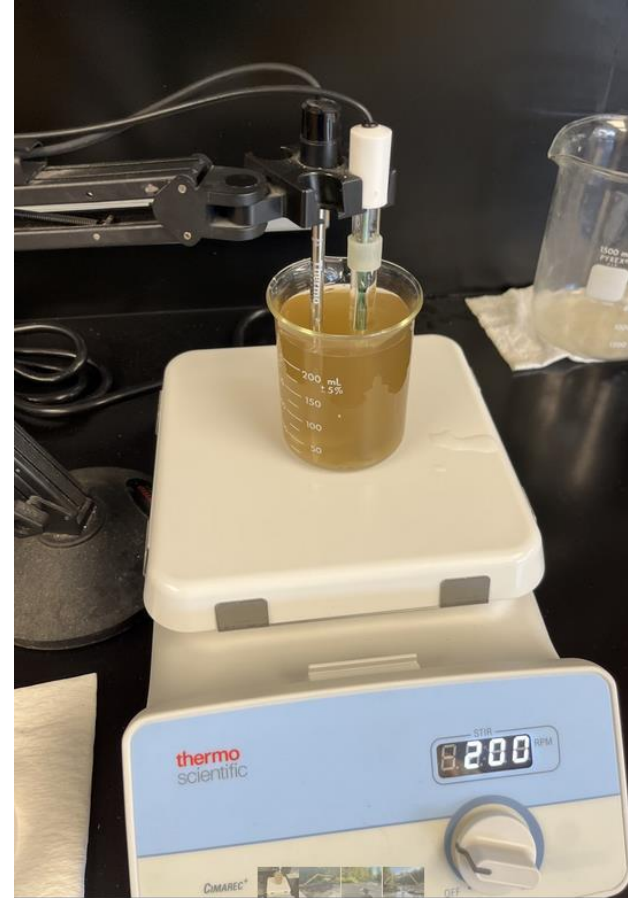


EXTENSIVE WATER SYSTEM DISRUPTION

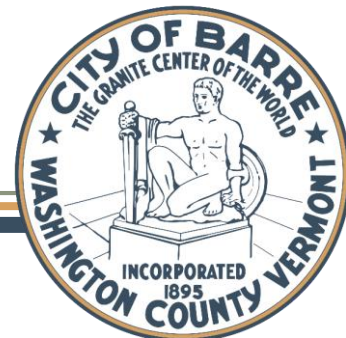
- DPW crews were resolving a water main break in East Barre prior to the peak of the flood
- Extensive disruption occurred during the flood.
 - Turbidity at the Water Treatment Plant caused disruption of sediment that occurs naturally in the water system.
- As a result of the flood, the water system was under a boil water advisory from July 10 to July 18.



DISRUPTION IN PICTURES

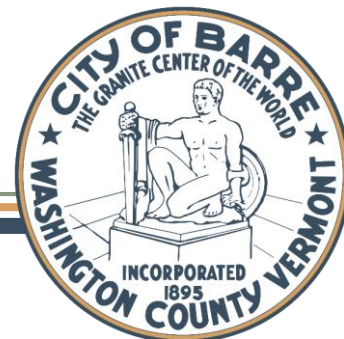


DISRUPTION IN PICTURES



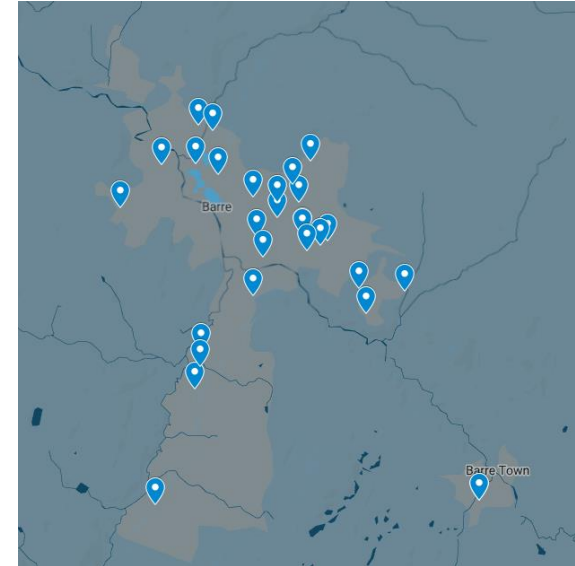
EFFORTS TO MITIGATE CONTINUING IMPACTS ON THE WATER SYSTEM

- System-wide flushing began August 7 and concluded August 25
 - This is much longer than normal flushing operations – initial timeframe was 3 days, but flushing extended for 18 days as hydrants were taking much longer than usual to clear
 - For many residents, water cleared after flushing was complete
- Pierce Road tank was drained on September 4th and refilled by September 5th
- Water Treatment Plant staff have been conducting targeted flushing and testing at sites that continue to show discoloration

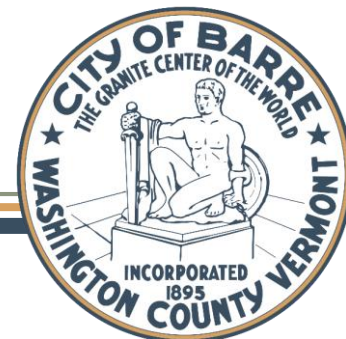


EXTENSIVE SAMPLING AND TESTING INDICATE WATER IS SAFE

- We have tested the water system for Iron, Manganese, pH, color (ptco), Phosphorus (p04), Free and Total Chlorine, Total Coliform and *E. Coli*, and Heterotrophic Plate Counts.
 - Samples taken at 21 different sites from September 8th to September 15th
 - 8 tests x 21 sites = 168 total tests
 - Approximately 70 Total Coliform and *E. Coli* samples since the flood to date and all coming back absent and safe from biological activity.

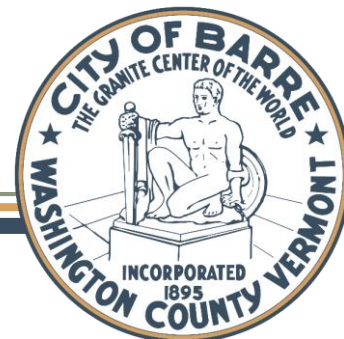


Results of testing are published online by the State:
<https://anrweb.vt.gov/DEC/DWGWP/SearchWS.aspx>



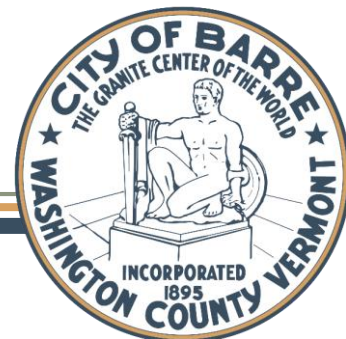
WHAT IS CAUSING THE DISCOLORATION?

- City and State officials agree that the primary cause of the discoloration is disruption from the flood sending sediment into various pockets of the system.
- Areas with higher Color (ptco) tested for slightly elevated levels of Manganese.
 - Manganese is a natural mineral that can build up over time and it can re-distribute in a system with massive disruption causing aesthetic issues.
 - Manganese is also often found in well or spring water. It is an essential nutrient for the human body and is found in many foods (nuts, tea, leafy greens and whole grains).
- While slightly elevated, Manganese levels remain well below safe consumption levels.



WHAT ARE WE DOING ABOUT THE DISCOLORATION?

- Targeted flushing of the water system where discoloration persists.
- The Water Treatment Plant uses sodium permanganate to oxidize dissolved Iron and Manganese and turn it into particles that can be filtered out in the clarifiers and filters in the treatment facility.
 - Since early September, the Water Treatment Plant has increased our sodium permanganate to lower the Manganese leaving the water from the Plant.
- Staff are conducting tests directly in impacted homes. Water in many homes is clearing up, and those with ongoing issues are testing safe.



WATER AND SEWER RATE INCREASES ARE NECESSARY TO INVEST IN OUR CITY

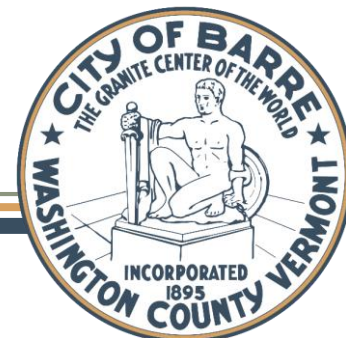
- On August 8, the City adopted revised water and sewer rates for FY24.
- A 2019 analysis found that our wastewater fund was under-funded.
- Rates have to keep up with costs and capital needs so that our water/sewer infrastructure can become more reliable.

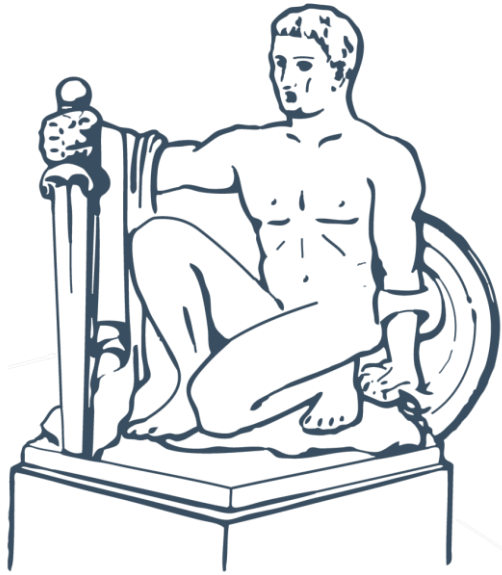
Our Capital Improvement Plan shows an accumulated infrastructure need in water/wastewater of \$24.78M between FY23 and FY30.



MEASURED RATE INCREASES HELP THE CITY KEEP PACE WITH NEEDS

Service	Change	Impact
Water Base Rate (\$71.57/quarter)	3%	\$2.08/quarter
Water Use Rate (\$5.46/100 CU FT)	3%	Typical Average User increases \$3.26/quarter
Sewer Base Rate (\$54.39/quarter)	3%	\$2.59/quarter
Sewer Use Rate (\$6.77/100 CU FT)	21%	Typical Average User increases \$23.52/quarter





THANK YOU

QUESTIONS/DISCUSSION?

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