

August 11, 2025

Village of Fredonia
Mayor Michael J. Ferguson and Village Trustees
9 Church Street
Fredonia, NY 14063

Dear Village Mayor and Trustees:

In response to ongoing public questions regarding boil water orders, the Chautauqua County Health Department met with representatives from the Village Board, the Emergency Manager for the Village as well as the County's Director of Emergency Services last week. As a result of that meeting Chautauqua County Health Department has prepared the following information to provide residents and water customers with a clear understanding of why these advisories cannot be prevented by switching to water from the City of Dunkirk or the North Chautauqua County Water District (NCCWD). Please feel free to share this information with your residents and water customers as you feel appropriate.

Why Fredonia Boil Water Orders Cannot Be Avoided Using Interconnections with Dunkirk or NCCWD

1) Boil Water Orders Are Triggered by Unpredictable Events

Boil water advisories are issued when there is a possibility that water in the system has not been properly treated or could be contaminated following treatment. These situations often arise from treatment process failures or unexpected large water main breaks, both of which are difficult, if not impossible, to predict.

2) When Can Emergency Interconnections be Utilized

Emergency connections may only be utilized during an emergency. A boil water order or advisory is ***not considered an emergency*** per New York State Department of Health (NYSDOH) water guidance. Boiling the water makes the water safe to drink, therefore a boil order alone is not considered an emergency. If a boil order occurred at the same time as a utility (power/natural gas) outage such that the water could not be boiled, then a boil water order could be deemed an emergency.

3) System Pressure and Valve Limitations

When Fredonia's water treatment plant or storage tanks are full, the water pressure in Fredonia's distribution system is higher than the pressure in NCCWD's system. The difference in pressure between Fredonia's system and NCCWD's system causes water to flow from Fredonia's system into NCCWD's system when the interconnections are open.

Fredonia's distribution system does not have pressure reducing valves to reduce the pressure in Fredonia's system. The absence of these valves is a long-standing issue which has been noted in multiple NYSDOH inspections, the Village is responsible for maintaining its distribution system.

In order for water to flow into Fredonia's system, the Fredonia distribution system and storage tanks would need to be completely empty. Fredonia's distribution system could be emptied if water was not permitted to leave the water treatment plant. However, the valves that could close off the pipes leaving the water treatment plant were installed in 1883 and have not been operated in decades. Closing those valves now carries a risk that they could be damaged or fail entirely if disturbed. To that end, shutting down the water treatment plant is not a viable option.

Even if the necessary pressure reducing valves were in place and if the water treatment plant and storage tank could be shut off; water from the current NCCWD connections would not reach the Village customers which are at the highest elevations.

4) Interconnections Do Not Eliminate the Need for a Boil Water Order

The water in the NCCWD and Dunkirk distribution system has been treated and tested to determine that it is safe for drinking. However, the water from NCCWD does not regularly run through the Fredonia distribution system and does have different chemistry than the water that originates from the Fredonia water treatment plant. Therefore, if the interconnections were opened and water was able to flow into the Fredonia distribution system the water would have to be tested to ensure that it is safe for drinking.

5) Water Chemistry Differences Pose a Potential Safety Risk

Fredonia adds a phosphate-based chemical to its treated water to prevent lead from leaching into the water from the old pipes in their distribution system. Polyphosphates prevent high lead and copper levels in water by coating the inside of the pipes with a physical barrier between the water and the inside surface of the pipes. Fredonia's use of this chemical additive is an effective method.

The Dunkirk water treatment plant does not use this chemical because extensive testing has shown they do not need the added chemical in their system. If Dunkirk water were to flow through Fredonia's pipes, it could remove the protective coating that has built up inside the Fredonia lines. Therefore, in addition to pathogen concerns there would also be concerns about lead and copper contamination from the different water chemistry. To protect people from this risk, the system may be placed on a "*do not drink*" advisory until testing confirms the water is safe.

If Fredonia were to connect to NCCWD in the future these water chemistry concerns would be addressed in the design phase and booster stations may be required to add chemical to the NCCWD water before it enters the Fredonia distribution system.

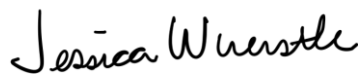
6) Vineyard Drive Interconnection Capacity Is Limited

The Vineyard Drive connection with Dunkirk cannot supply all of the Fredonia water customers for two reasons:

1. It cannot deliver water to the higher elevations of the Village. Fredonia's distribution system relies on gravity to distribute water to all of its customers. The Fredonia distribution system does not have pumping capacity to move water from low elevations to higher elevations within the system.
2. Its maximum pumping capacity is approximately 800 gallons per minute—or 1.15 million gallons per day. The Village typically uses 1.4 to 1.5 million gallons daily. Furthermore, an engineering study conducted by LaBella in May 2025 confirmed that Dunkirk can only provide about 300 gallons per minute (roughly 400,000 gallons per day) on a sustained basis without compromising service to Dunkirk water customers.

The Chautauqua County Health Department continues to support the Village of Fredonia as they work to identify long-term solutions to improve system reliability and reduce the need for boil water advisories.

Regards,



Jessica Wuerstle
Director of Environmental Health Services
Chautauqua County