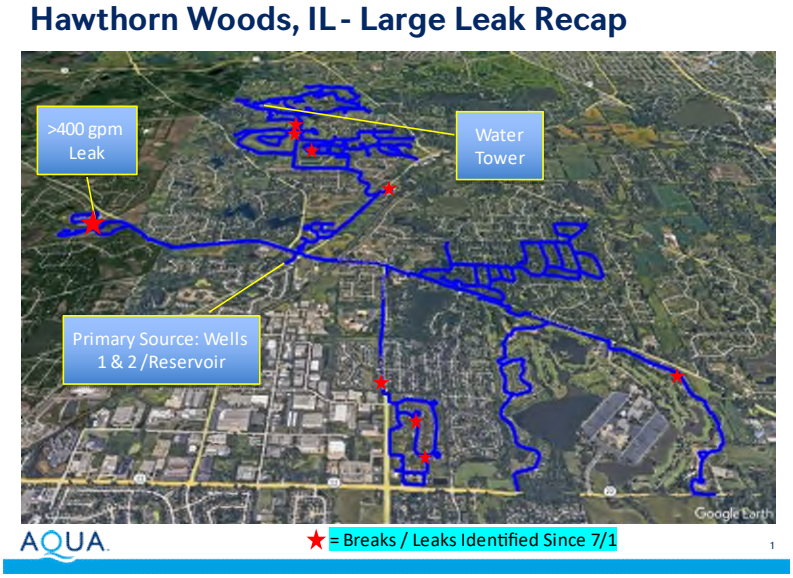
2 Lagoon Drive • Hawthorn Woods, Illinois 60047 • 847.438.5500

Aqua Illinois Meeting
July 31, 2023

System Failure Explanation

How many breaks were there and where were they located?

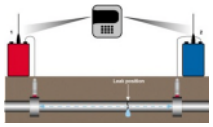
We found one break in the pipes – near the elementary school. We also found smaller leaks elsewhere in the system. The break at the elementary school is the one that disrupted the water system.



What is Aqua's procedure for identifying breaks and how often is the system assessed for breaks?

We do leak detection as part of the normal operation of our system. We've completed four comprehensive assessments in the past five years. The one we just completed after this incident was extremely detailed.

Traditional Locating Equipment – Correlators



Device Overview:
- Correlator technology minimizes human element to help pinpoint leak
- Listening sensor deployed on each side of the leak. Correlator calculates location based on how much time the sound takes to reach each device.

Overnight Loggers

Device Overview:
- Use when correlation during day impacted by ambient noise
- Deploy overnight to listen during periods of less usage (typically 1 to 3 AM)
- Use proactively to scan systems/zones with high losses

Satellite Leak Survey Technology Overview

Hawthorn Woods Satellite Leak Survey Result Map

What type of internal notification system does Aqua use for watermain breaks/system failures, and who received notification and when?

With a system failure, our on-call operator is alerted by our electronic 24-hour monitoring system for a tank's water levels, flows and pressure – called SCADA. The operator then investigates on-site, and if something appears wrong, the operator will notify his or her supervisors for next steps.

We've taken a number of steps since this incident to improve both our 24/7 visibility of the system and the speed with which the system alerts notify us once things start to look abnormal.

Is pneumatic tank still be using? If not, might it be helpful in this situation?

The tank would not have made a difference in this situation – this tank adds pressure, it doesn't add water capacity. The large 500,000-gallon storage tank we installed to replace it is much more reliable.

We understand that there are issues filling the reservoir compared to filling the tower that might cause damage to pumps. Please explain why and provide a solution to this problem.

The large water main break made it difficult to fill the reservoir. But the pumps continued to work, and we didn't get any indicator lights that the pumps were in danger of failure. Because of the increased run time due to the reduced water levels, we're accelerating our preventative maintenance schedule.

Communication

Better communication between Aqua, LCPW and the Village is critical!

Yes, we completely agree. We'd also add Kildeer to that list.

We've already provided names and numbers of our local management to the local leaders we met with after the incident.

Moving forward, everyone will be hearing from us more regularly. We're working with local leaders on exactly how they'd like that to work now.

We'll also be creating a Community Advisory Council made up of customers. If you'd like to get involved in that, let us know at https://www.aquawater.com/iladvisorycouncil.php

List of emergency contacts with contact info

We've provided full contact information to local leaders. Residents with questions or concerns are welcome to call us anytime at 877.987.2782. We track all calls coming in and the data is also used for planning.

Was the water ever unsafe to drink?

No. Results from water tests showed the water was not contaminated.

We are required by our state's EPA to issue a Boil Water Advisory any time water pressure goes below 20psi as a precaution.

Was Boil Order precautionary?

Yes. Please see above.

Aqua's emergency back-up plan — Does this plan need updating?

We're evaluating our incident command plan now, but the issue here was that we didn't put emergency-plan actions into motion soon enough. That's because we didn't immediately realize the severity of the situation.

We have already taken several steps to address this as well – and have more adjustments planned. We've enhanced our 24/7 visibility of system conditions, and we're putting more training in place for our operators.

Study all aspects of system comparing demand to capacity for the following. What is limiting factor?

- Well
- Softeners
- Storage tanks
- Booster pumps
- Elevated storage

We have ample capacity to meet peak summer demand. Moving forward, we'll be collaborating closely with local leaders on decisions for future demand planning.

Can the well at the water tower be used as a back-up well? If it has been abandoned, can it be put back into service and utilized in emergency situations?

Yes, using that well is part of our existing plans to increase the system's capacity and reliability next year. As we've said previously, we're accelerating those plans in light of this incident.

Results of Aqua's assessment of alternate sources of water, including emergency connection to Lake Zurich water system

We have evaluated an emergency connection with Lake Zurich but we don't believe this is feasible based on our conversations to date. We met with Central Lake County Joint Action Water Agency three months ago to discuss getting access to Lake Michigan Water, and those talks are still in process. However, that project will take about 10 years to come to fruition based on current timelines.

Water Quality Reports for 2020 and 2021 (found 2022 on Aqua website)

These are available on our website, and you can view them at any time. Just click on https://www.aquawater.com/about-water/water-quality/water-quality-reports.php.

Send Monthly water quality report

Customers can access additional information on our water quality on the IL EPA's website at: https://water.epa.state.il.us/dww/index.jsp

Supply current water infrastructure assessment (materials of construction, design considerations for current and future needs, emergency provisions, life expectancy, current/future planning for maintenance and upgrades)

Supplying this type of detailed information could create safety risks to the infrastructure and service that is being provided publicly. The U.S. Department of Homeland Security considers water systems critical infrastructure. Therefore, this type of detailed information is not available.

That said, we do conduct regular Condition Assessment Studies and are exploring what information we might be allowed to release. As referenced below, we can provide summaries of our capital improvement plan and summaries of the budget for

Hawthorn Woods. We just need to sensitive to security concerns in types of information that is available publicly.

Provide Capital Improvement Plan

We can share a summary of the capital improvement plan going forward.

Provide 2023 - 2024 Budget

We can provide a summary of the operations budget for Hawthorn Woods going forward.

Please share your GIS map with distribution system including valves, hydrants, wells, tower, pumps, tanks, etc...

Similar to the previous question, supplying this type of detailed information could create safety risks to the infrastructure and service that is being provided publicly. The U.S. Department of Homeland Security considers water systems critical infrastructure. Detailed information is not available to the public. If there are specific questions, we can consider how to answer them individually.

<u>Operations and Maintenance</u>

Please share the maintenance schedule including how often pumps are serviced, valves are turned, tower cleaned, tower washed, softener maintenance, etc.

Maintenance is performed on our equipment according to the manufacturers' specifications. Many of these actions are part of our normal operating procedures and are done at planned frequencies. Below is a list of specific examples:

- Critical valves – exercised annually
- Non critical valves – 3 years
- Hydrants - exercised annually
- Tower cleaning/inspection – 5 years
- Pumps – None, sealed system and bearings
- Filter backwash – every 120,000 gallons
- Filter media changeout - radium and iron removal – based on performance. Last changed two years ago

What preventive maintenance is performed and what corrective maintenance is performed?

We follow all industry-standard practices for both preventative and corrective maintenance. We have an asset management system that keeps records of repairs, preventative maintenance and work orders.

The Village needs Lake County Public Works and Aqua to coordinate their lab testing when there is boil order so that boil orders are lifted at same time as much as possible.

We will continue to coordinate and communicate with Lake County going forward. Illinois state law requires Aqua to lift a Boil Water Advisory before Lake County Public Works can sample their system. This EPA requires it because they consider this situation to be "consecutive systems".

Please provide water modeling including surge analysis if Aqua believes surges are the cause of the multiple leaks.

We do not believe surges caused multiple leaks. We performed hydraulic modeling as recently as June of 2023.

Similar to the previous questions, supplying water modeling information could create safety risks to the infrastructure and service that is being provided publicly. The U.S. Department of Homeland Security considers water systems critical infrastructure. Detailed information is not available to the public. If there are specific questions, we can consider how to answer them individually.

What are the Illinois Commerce Commission (ICC) recommendations for secondary water sources?

Aqua contracted an engineering firm to evaluate options for additional sources in 2022, and we chose to use an irrigation well as an additional source. The following options were considered:

- Purchased water via interconnects with nearby communities
- Additional well
- Irrigation well near tower

We are reviewing any applicable state requirements on secondary water sources.

<u>Future Improvements to System</u>

Watermain by SD95 does not have stone bedding. Why not and what can Aqua do to lessen this area from being a higher risk factor for watermain breaks?

This water main appears to be installed by another entity and existed prior to Aqua operating the Hawthorn Woods system. We are now examining and assessing the condition of pipe in this system and will be able to share more information through our communications with the Consumer Advisory Council going forward.

When will hydrant markers be added to fire hydrants?

We will continue installing hydrant markers this year (2023) in the areas they have been requested. Specific timeframes will depend on availability of materials and contractor schedules, but we plan to have them completed within 12 months.

What is the schedule for painting fire hydrants and when will they be painted in Hawthorn Woods?

We're discussing that with Hawthorn Woods officials now. We expect to begin painting in the summer of 2024.

Please assess where loops in distribution system are needed.

- Roman Lane to Sanctuary Club Drive on Route 22
- Spencer Loomis School to Scarlet Oak or maybe Open Parkway if you connect Peter Lane to Briar Creek
- Peter Lane to Briar Creek at HWCC

We can and will assess these recommendations. Once we have our assessment, we will incorporate these costs into our improvements planning.

24-hour staff on-site or remote SCADA access

We have put enhanced remote 24/7 monitoring in place including coverage from our central operations since the incident and we are increasing training for our operators.

Lake Michigan water secondary opportunity. Any additional costs to residents as part of this potential expansion?

Please see response to question above.

Can you share your planned future improvements and their timeline?

Please see responses above related to summaries of the capital plans.

We can provide estimates for the project to utilize the irrigation well:

- 90% Design work – on/before Sept. 29th
- Permit Submittal Review – on/before Nov 1st
- Final Design (100%) - on/before Dec. 1st
- Construction starting in Q1 2024

Equipment delivery is estimated at 25-30 weeks – this and doing the actual construction are the largest portions of time in this type of project.

Expansion of water/sewer system up Gilmer Road to service Uptown development in progress (timeline is immediate) Where are the project limits? Route 176 and Gilmer? Capacity of proposed improvements?

Here is our current timeline:

- Pre-Final Design (95%) - Fri August 4, 2023
- Permit Submittal Review – Fri August 25, 2023
- Bidding – Sept 2023
- Construction award - Sept/Oct 2023
- Construction starting - Oct/Nov 2023
- Final completion – Sept 2024