

**To the Mayor and Members of the City Council****February 1, 2022**

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SUBJECT: WATER UTILITY RESILIENCY UPDATE

The purpose of this report is to update the City Council on progress by the Water Utility to implement recommended changes and improvements necessary to maintain service and communication with our customers during storms, power outages, and other disasters.

On April 6, 2021, the Water Director briefed City Council on the February 2021 winter storm response. This briefing included short and long term recommendations to be implemented in order to minimize customer impacts from future storm events. A copy of that presentation is included as part of this informal report.

On June 8 2021, the Governor signed into law Senate Bill 3, which incorporated requirements for Texas water utilities, including the following:

- By November 1, 2021, a list of all water and sewer facilities approved for critical load status must be filed with the Public Utilities Commission, each retail electric provider, and the office of emergency management of each county where the utility provides service.
- By March 1, 2022, each water utility in Texas must provide to the TCEQ an emergency preparedness plan (EPP). The EPP shall show how the utility will continue to provide service to customers in the event of weather emergencies, power outages, and other disasters. The EPP shall also be required to include an implementation timeline for the recommended improvements.

The Water Utility has complied with the critical load filings and will submit the EPP to TCEQ by March 1 in accordance with the SB3 requirements. Furthermore, the Utility has made significant progress in the implementation of the recommendations from the April 6, 2021 presentation to City Council. Specifically, the following tasks are complete or in progress:

- March - December 2021 – Purchased 19 propane and diesel fueled heaters for use at water/wastewater plants and pump stations to prevent equipment freeze up.
- June 4, 2021 – Enabled reporting of water and wastewater issues through the MyFW app.
- September 21, 2021 – City Council approves FY 22 water utility budget that increases infrastructure rehabilitation and replacement funding by \$11.7 million (17.79% increase over previous FY 21), which includes increased investment in cast iron water pipe replacement.
- October 13, 2021 – 1,200 meals ready to eat (MRE's) delivered to Field Operation warehouse – to be used for emergency operations to sustain field crews.
- January 13, 2022 – Bids received for backup power facility at Westside WTP, with low bid of \$12,297,000
- January 19, 2022 – Completed full build out of utility call center capacity to 250 phone lines

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- January 27, 2022 – Construction bids received to enclose outdoor high service pump stations at Eagle Mountain and Westside Water Plants, with construction estimate of \$5.9M
- February 10, 2022 – Purchasing to receive bids for the delivery of three emergency generators to be installed by city staff. New generators will be installed at the North Beach Pump Station, the Meadow Lakes Lift Station, and to replace the existing generator at the SCADA control center.

Other improvements that are currently in design include the electrical upgrades and backup power system for four critical booster pump stations; backup power, electrical improvements, and fuel supply for the North and South Holly Water Treatment Plants; and coordination with Oncor to design a high voltage transmission line service to the Eagle Mountain Water Treatment Plant.

If you have questions concerning this report, please contact Chris Harder, Water Director, at 817-392-5020.

David Cooke
City Manager

Winter Storm Response

Chris Harder, P.E., Water Director
April 6, 2021



PRESENTATION OUTLINE

FORT WORTH



Storm Impacts
Our Response
Our Take-aways
Our Next Steps

189

Counties

441

*Water
systems*

42

*Wastewater
systems*

2,325

*Boil water orders -
17 million people*

STATEWIDE STORM IMPACTS

- Main breaks
- Lack of natural gas & fuel
- Supply chain failures
- SCADA controls & instrumentation
- Private plumbing
- Bottled water distribution

3



3

*Treatment plants lost power
Plus booster pump stations*

*Boil Water notices
impacting over 300,000*

FW IMPACTS

720



+15,000

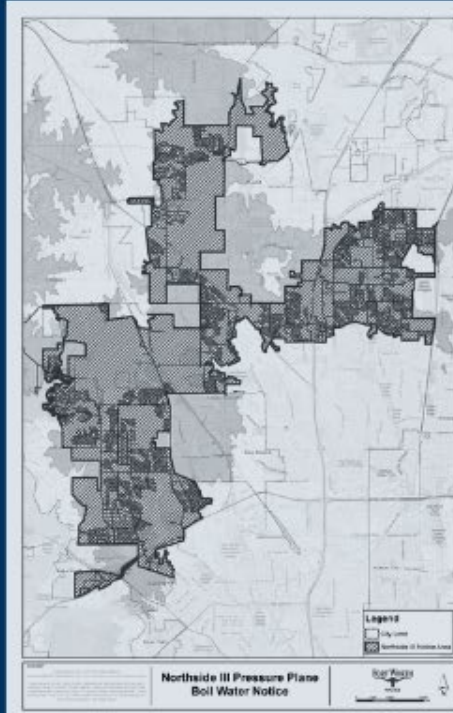
Water main breaks

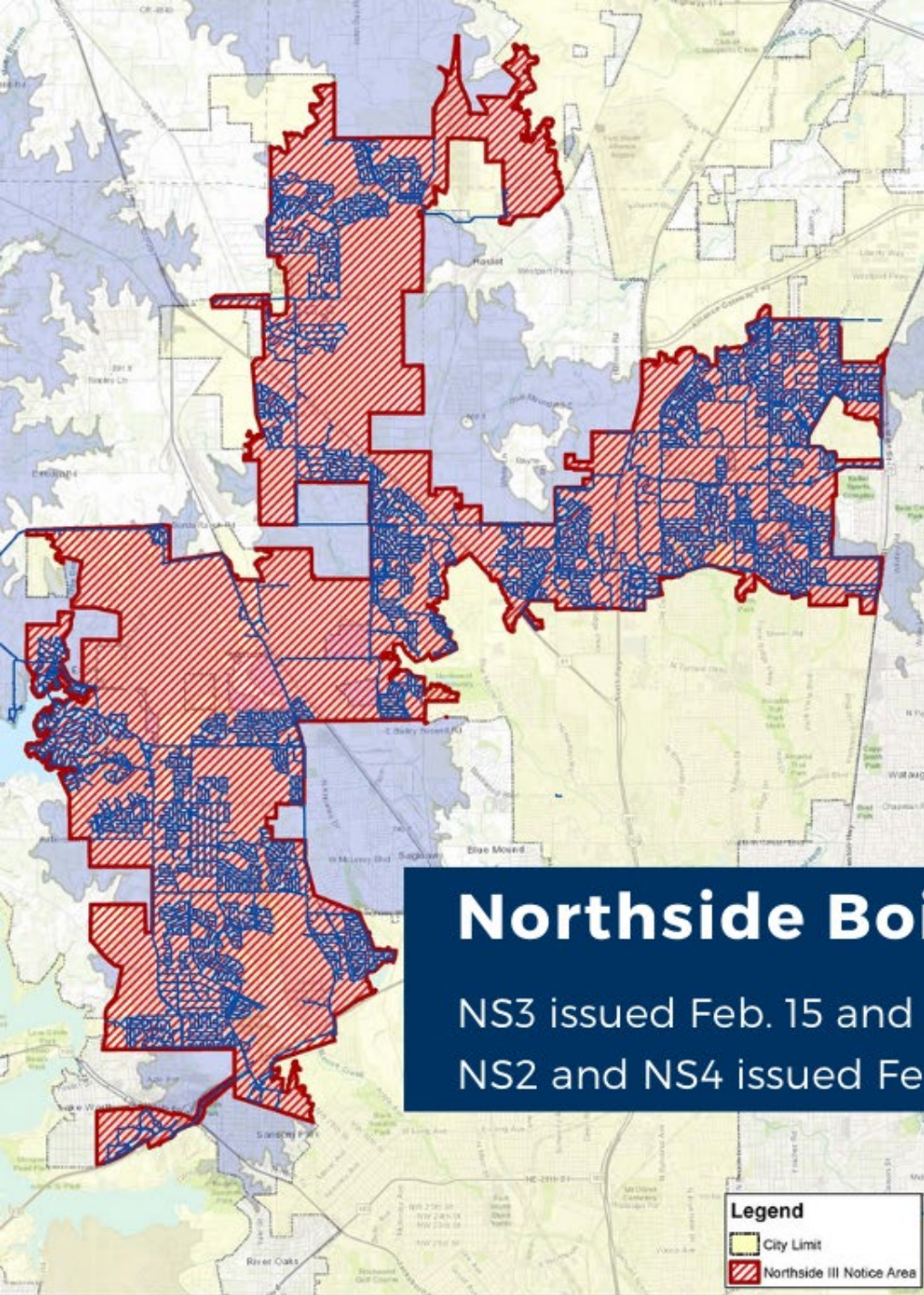
*Emergency contacts via
phone, email, social media*

Power failures led to system failures

Example: Northside
Pump station

- Generator activated but failed transfer load
- Critical back up for Eagle Mountain WTP





Impacted

- 212,000 Fort Worth Customers
- 9 Wholesale Customer Cities

Northside Boil Water Notice

NS3 issued Feb. 15 and lifted Feb. 19

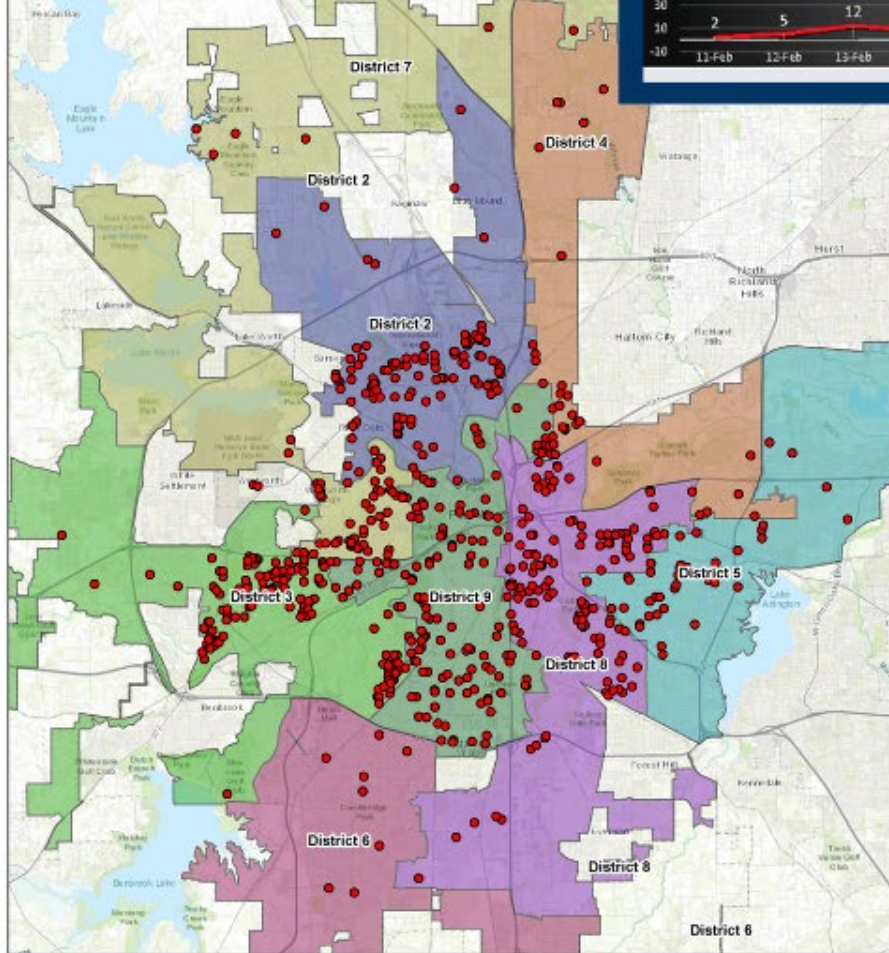
NS2 and NS4 issued Feb. 16 and lifted Feb. 19

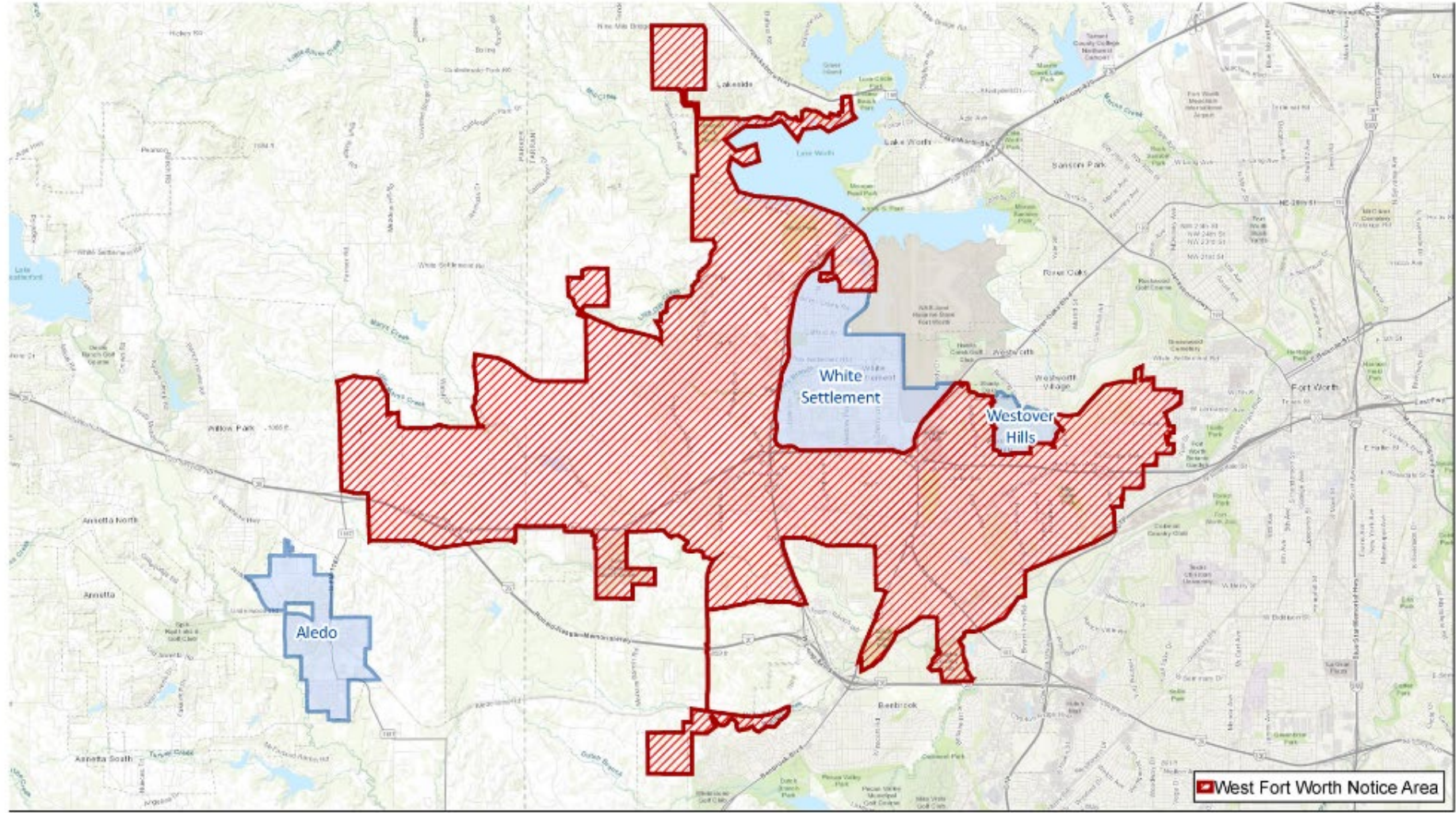
	Num. of Breaks
Council District 2	132
Council District 3	136
Council District 4	28
Council District 5	44
Council District 6	9
Council District 7	66
Council District 8	146
Council District 9	159
Total	720*

*Two breaks were located outside of any Council District.
Both are located within the Normal Air Station Joint Reserve Base.



Main Breaks by Council District





Westside Boil Water Notice

Impacted 100,000 Fort Worth customers
3 Wholesale customer cities affected
Issued Feb. 18 and lifted Feb. 21

Winter Storm Planning

● Pre-Storm planning and preparation

- Activated 24/7 staffing plans with remote capabilities
- Fueled and stocked vehicles; staged major supplies
- Filled tanks and tested generators
- Suspended shut offs and routine work orders
- Developed strategy to minimize use of Lake Worth water

● Storm response

- Leveraged 3rd parties for support and services
- Restarted North Holly to meet demand
- Added hold queues to phones and added email and social media response teams;
- Use of City Call Center and text & social media reporting
- Interactive maps for main breaks & boil water areas

The background of the slide is a close-up photograph of a tree trunk, showing its rough, textured bark. A white rectangular box is positioned in the upper left quadrant, containing the text '100%'.

100%

Storm-related main
breaks repaired by
February 27th

The background of the slide is a close-up photograph of a tree trunk, showing its rough, textured bark. A white rectangular box is positioned in the upper right quadrant, containing the text '60%'.

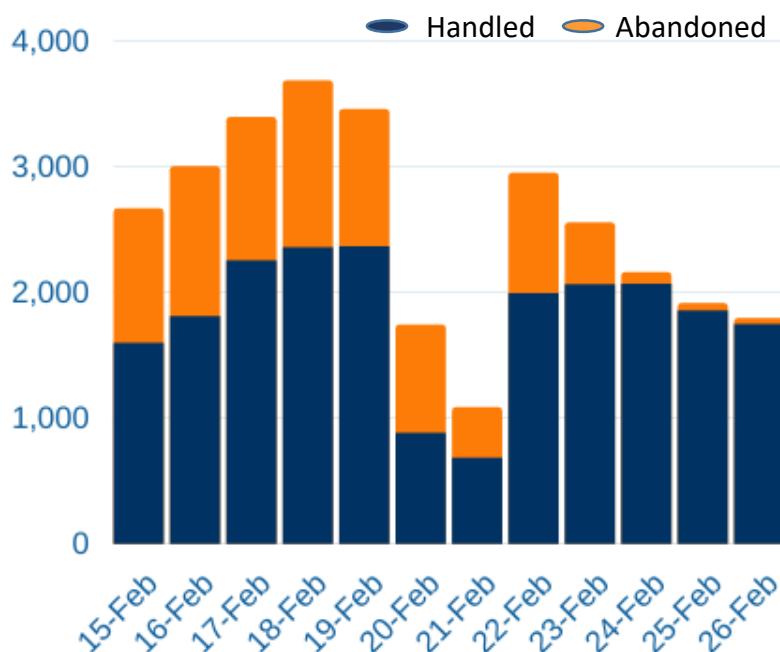
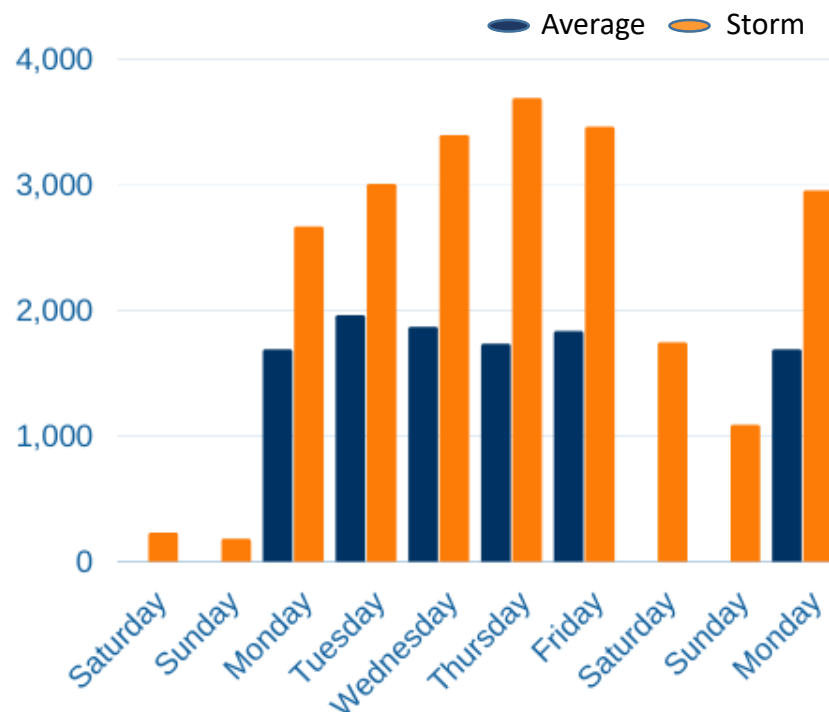
60%

Street repairs
completed by March
30th; Expected 100%
completion April
23rd

Call Handling

Storm Volumes v. Average

- Coverage provided 24/7 instead of 7am-7pm M-F
- Total 30 filled call reps
- Volumes more than doubled



Call Answer v. Abandon

- 30,384 calls received with 8,742 abandoned = 29% rate

KPI - >6%;

3-year average - 3.6%

CALL CENTER STATISTICS - 2/18



12:00 PM

- High volumes as calls related to boil water notices, main breaks, and frozen/burst pipes increase
- Calls exceeded new capacity



3:00 PM

- Volumes climb after robo-call
- Longest wait time of storm period at 103 min
- Average wait at 8 min
- Calls redirected to City Call Center, email and social media



7:00 PM

- Longest wait reduced to 14 min with 25% answered in 60 sec
- Highest rate of abandonment in the residential billing queue

CALL CENTER MONITORING

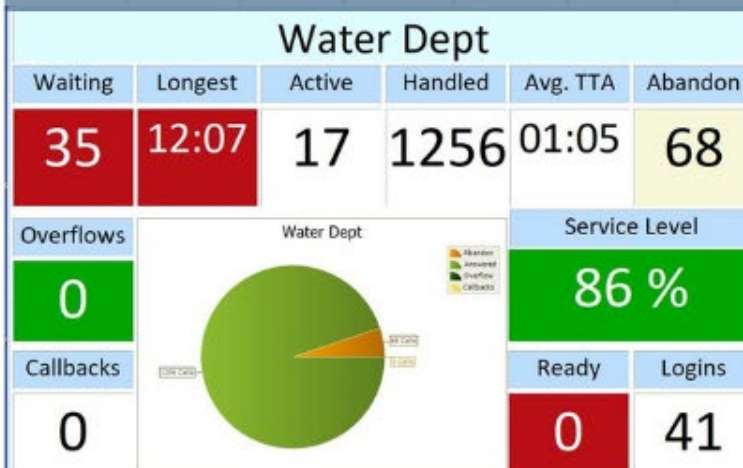
High Call Volume Update



Fort Worth Water customer service representatives have been fielding a huge number of service request calls.

We understand some calls placed on hold have been dropped and that customers are having trouble getting through.

Queued	Longest	Active	Aban...	Handl...	Callb...	~Aba...
36	13:58	13	66	1255	0	02:30
0	0:00	2	8	73	0	00:09
0	0:00	0	0	13	0	00:00
35	13:58	8	47	983	0	02:54
1	0:59	2	4	67	0	03:13
0	0:00	1	6	80	0	02:26
0	0:00	0	0	3	0	00:00
0	0:00	0	1	36	0	00:10
0	0:00	0	0	0	0	00:00



LINE CAPACITY

Pre-storm capacity of 67

Added 25 hold lines 2/17

All 92 lines filled during storm

Additional capacity planned

REAL TIME DATA

Dashboard displays staffing, hold times, abandonment rate, time to answer, time holding before abandon by queue

3:00 PM - 4/1

Statistics from 'normal'

Thursday afternoon show 86% calls answered in 60sec and a 1:05 average time to answer for the day

Challenges

OPERATIONS

- Plant & Pump Station power outages
- EM and WS downtime required heavy use of colder Lake Worth water
- Mobile generator transportation
- Synagro lost ability to process sludge
- Remote call agents lost power
- Key response positions vacant

EXTREME COLD

- Frozen valves, instrumentation & chemical feed lines
- Frozen fuels and fluids
- Difficulty obtaining fuel
- Difficulty locating valves under ice
- Lack of waterproof cold weather gear
- Limited access to food or restrooms

Successes

OPERATIONS

- Met max day level demands
- Quickly mobilized to fix main breaks
- Sufficient chemical supply/storage
- Invested in 5 MG biosolids tank
- Responded to almost 1,000 requests to turn off customer's water
- All hands on deck staff response

CUSTOMER

- Quickly began bottled water distribution
- Provided lab testing to customer cities
- Active social media engagement and website updates with updates and tools that positively impacted call volumes
- Customer education on preventing frozen pipes and boil water protocols



FORT WORTH®

1. Increase investment in cast iron pipe and critical equipment replacement
2. Evaluate areas of dependency on third parties and invest in risk mitigation strategies
3. Improve internal incident command structure, training and communications with JEOC
4. Leverage city capabilities as needed to meet customer expectations

Key Take Aways and Next Steps



TREATMENT & FACILITIES

- Enclose outdoor pump stations
- Purchase propane heaters
- Prep for high voltage service to Eagle Mountain WTP and PS
- Consider automatic switching capability at Holly
- Consider diesel generators at Westside WTP
- Assign dedicated staff to support wholesale customers



FIELD SERVICES

- Evaluate fuel tanker rental/ purchase option
- Increase crew cross-training to leverage existing staff
- Fill vacancies to maintain staffing
- Develop options to provide for emergency food



CUSTOMER SUPPORT

- Complete implementation of MyFW app requests
- Enable self-service options and notifications by preferred method
- Work with vendors to increase phone line capacity and dispatch interoperability
- Leverage other teams to handle routine responses
- Limit calls to emergency only
- Use AMI data to help identify issues
- Provide 'how to' videos



INFRASTRUCTURE

Increase funding for replacement of cast iron water lines:

- 5-year projected budget includes \$187.2M for water line rehabilitation and replacement
- FY2022 proposed budget increases annual funding by 18%



QUESTIONS?

