Water Outage Incident

January 10, 2023

THE CITY OF ASHEVILLE



Presentation Overview

- Key Takeaways
- Water System Overview
- Incident and Communications Timeline
- After Incident Action
  - Immediate After Action
  - Post Committee Review Next Steps
- Independent Review Committee
- Key Takeaways

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Key Takeaways

- A series of events associated with sub-freezing temperatures in December 2022 led to water outages in the southern and western portions of Asheville's water system for an extended period of time disrupting the lives of our residential, institutional, and business customers.
- Numerous factors associated with the complexities of Asheville's water system contributed to the outage, we regret this happened and are taking immediate and long-term steps to prevent and minimize impacts from occurring again during future events.
- Throughout the response to the service outages, the primary basis for decision making was ensuring the provision of safe drinking water to our customers.
- The City Council is creating an independent review committee to review and provide a comprehensive account of the water outage, an assessment of the operational and emergency response and communication efforts, and needed infrastructure and procedural enhancements.
- The $72.8 million five-year Water Capital Improvement Plan (CIP) includes planned investments to enhance existing infrastructure.
- Water Department operations and the Water CIP will be reevaluated based on the analysis of the independent review committee.

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Water System Overview

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Water System Treatment

- Three water treatment plants:
  - North Fork (in Black Mountain)
  - William DeBruhl (in Swannanoa)
  - Mills River (in Henderson County)
- Produce a combined average of 21.5 million gallons per day
- 156,000 water customers served
- 183 square mile service area

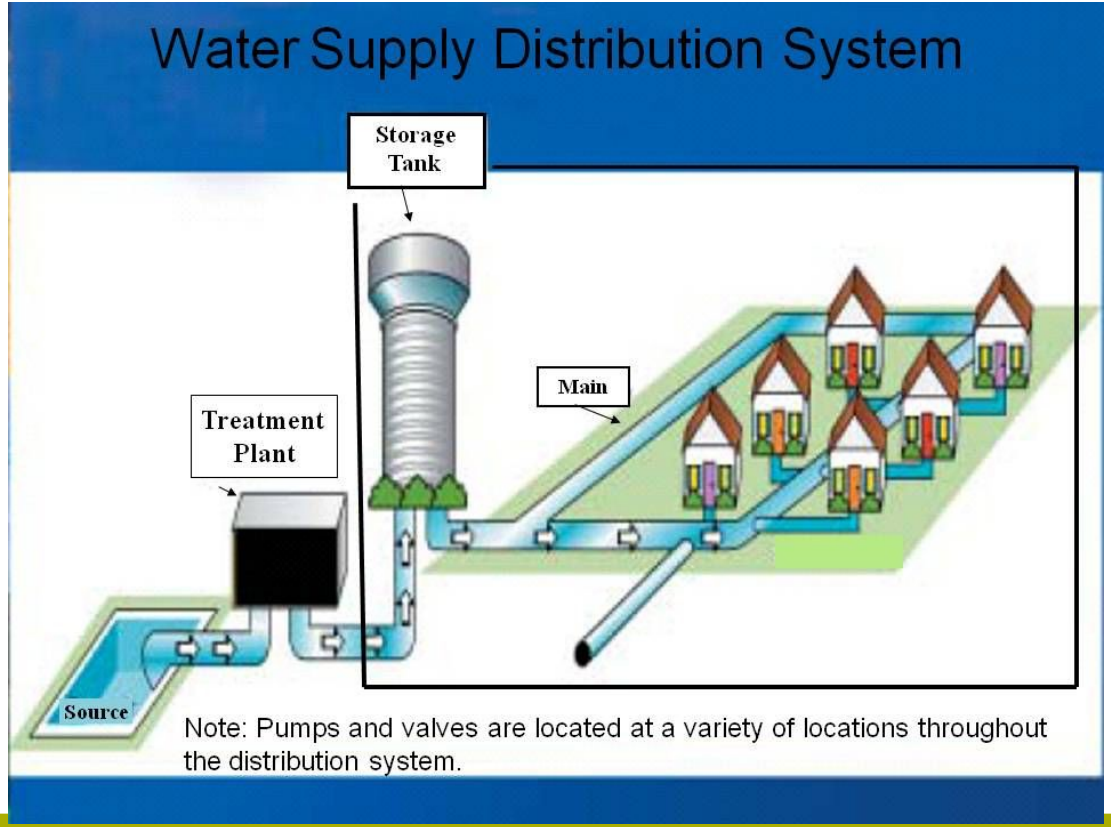
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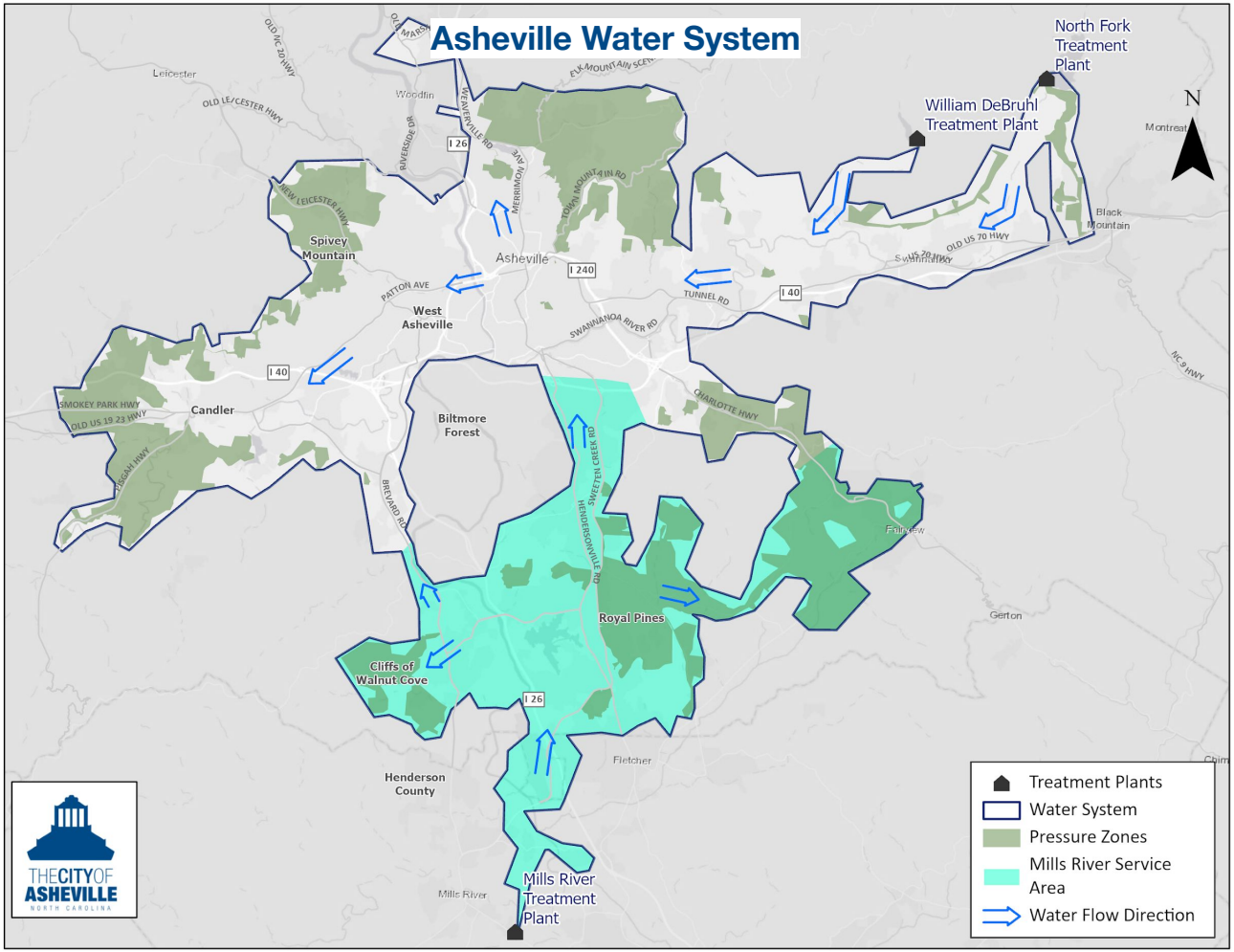
Water System Distribution

- 1,700 miles of six-inch or larger lines
- 36 storage tanks providing 21 million gallons of capacity
- 60,000+ meters, 18,000+ valves, 41 pump stations
- Combination of gravity fed and pumping zones
  - 54 different pressure zones
  - System pressures can exceed 400 psi and average 170 psi

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Sample Water Supply Distribution System




Asheville Water System
North Fork Treatment Plant
William DeBruhl Treatment Plant
N
Leicester
Woodfin
Montreat
Black Mountain
Spivey Mountain
Asheville
West Asheville
Candler
Biltmore Forest
Royal Pines
Cliffs of Walnut Cove
Fairview
Gerton
Fletcher
Henderson County
Mills River
Mills River Treatment Plant
I 26
I 240
I 40
OLD US 70 HWY
PATTON AVE
TUNNEL RD
SWANNANOA RIVER RD
CHARLOTTE HWY
SMOKEY PARK HWY
OLD US 19 23 HWY
BREVARD RD
HENDERSONVILLE RD
SWEETEN CREEK RD
RIVERSIDE DR
MERRIMON AVE
OLD LEICESTER HWY
NEW LEICESTER HWY
TOWN MOUNTAIN RD
BLEGAM HWY
NC 9 HWY
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NORTH CAROLINA
Treatment Plants
Water System
Pressure Zones
Mills River Service Area
Water Flow Direction

Incident Timeline

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Incident Timeline

Identify and repair 27 large water line breaks

DEC 24

- Water line breaks (public and private) begin to occur
- Mills River WTP begins to experience issues
- North Fork WTP increases production

DEC 25

- Mills River WTP goes offline
- Crews sent to look for leaks
- Crews notify private properties to address leaks
- Water Dept. enacts incident command meetings

DEC 26

- Critical water customers contacted
- Portable pump deployed for western area
- Southern distribution system isolated
- BWA issued for southern area

DEC 27

- Crews notify private properties that service will be interrupted for leaks
- Western storage tanks not recovering

DEC 28

- Mills River WTP back online
- Water delivery begins
- BWA issued for western area

DEC 29

- North Fork WTP alone producing enough water for typical use; demand remains high

DEC 30

- Larger capacity booster pump deployed for western area

DEC 31

JAN 01

- Distribution of non-potable water begins
- BWA lifted for most of southern area (remainder on JAN 02)

JAN 03

- Council and County Commission calls for formation of independent review committee

JAN 04

- BWA lifted for western area (entire system)

Communications Timeline

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Communications Timeline

- Communications were sent on multiple platforms, often simultaneously - AVL alerts, social media, website updates, press releases/conferences.
- Communication between **12/25-1/4:**
  - 38 AVL Alerts
  - 118 social media posts across Facebook, Twitter and Instagram
  - 276,572 total web page views; 204,174 unique web page views
  - 12 press releases
  - 6 press conferences
  - Council updated via AVL alerts, on 1/27 with email from the City Manager, and press releases
- Neighborhood Outreach between **12/28-1/4:**
  - Posts to NextDoor
  - Emails sent to more than 90 Neighborhood Contacts
  - Direct contact to community leaders
  - Neighborhood Leaders shared information through their networks

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Communications Timeline

DEC 21-23

7 Social Media

2 Website News

Proactive tips for extreme weather

DEC 25

AVL Alert
1 targeted (first to **South**)

4 Social Media

DEC 26

AVL Alert
2 system-wide,
2 targeted

10 Social Media

2 Website News

DEC 27

AVL Alert
2 system-wide,
1 targeted (first to **West**)

6 Social Media

2 Website News

2 Press Releases

DEC 28

AVL Alert
2 system-wide,
5 targeted

19 Social Media

3 Website News

3 Press Release / Media Alerts

Neighbor-hood Outreach

2 Press conferences streamed

DEC 29

AVL Alert
2 system-wide,
3 targeted

23 Social Media

3 Website News

2 Press Release / Media Alerts

Neighbor-hood Outreach

DEC 30

AVL Alert
2 system-wide,
3 targeted

13 Social Media

2 Website News

3 Press Release / Media Alerts

Neighbor-hood Outreach

2 Press Conferences streamed

DEC 31

AVL Alert
1 system-wide

6 Social Media

2 Website News

2 Press Release / Media Alerts

Neighbor-hood Outreach

1 Press Conference streamed

Replay of Press Conference on City Channel 193

JAN 01

AVL Alert
3 targeted

8 Social Media

3 Website News

2 Press Release / Media Alerts

Neighbor-hood E-News

JAN 02

AVL Alert
1 system-wide,
3 targeted

4 Social Media

2 Website News

2 Press Release / Media Alerts

JAN 03

AVL Alert
3 targeted

4 Social Media

1 Website News

1 Press Release / Media Alerts

Neighbor-hood Outreach

1 Press Conference streamed

Replay of Press Conference on City Channel 193

JAN 04

AVL Alert
2 targeted

1 Social Media

1 Website News

1 Press Release / Media Alerts

Neighbor-hood Outreach

JAN 05

AVL Alert
1 targeted

JAN 06

AVL Alert
1 system-wide

After Incident Action

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Immediate After Action

- Forming independent review committee.
- Finalizing internal assessment of events to provide data to independent review committee.
- Replacing, sealing, or enclosing equipment or components to further maintain heat and prevent moisture intrusion.
- Replacing and relocating chemical lines to create redundancies.
- Providing additional insulation to outside chemical lines and where lines pass through a wall.
- Requesting manufacturer provide site visits to check equipment.

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Post Committee Review Next Steps

- Incorporate analysis from the independent review committee:
  - Consider and prioritize operational changes.
  - Construct and/or install equipment and infrastructure improvements.
- Implement lessons learned from this event into the Continuity of Operations Plan and Emergency Operation Plan and provide training to staff.
- Review and make associated revisions to the Water Capital Improvement Program.

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Independent Review Committee

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Proposed Committee Scope

- Review the recent prolonged water outage to provide a comprehensive account of the event.
- Assess the City's operational and emergency response and communication efforts.
- Review and analyze infrastructure needs, process and policy changes to be implemented to maximize prevention of future events and improve communication, emergency response, and mitigation processes.

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Proposed Committee Composition

- Nine members with multi-disciplinary backgrounds:
  - Two residential water customers
  - One commercial water customer
  - One emergency response professional
  - Two communications professionals
  - Three subject matter experts in public water systems
- Two appointments made by the Buncombe County Commission; remaining made by City Council.

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Proposed Committee Timeline

- **Jan. 3** - Press Conference announcing Committee and update provided to County Commission
- **Jan. 10** - City Council establishes Committee
- **Jan. 24** - City Council appoints Committee members
- **Feb. 7** - County Commission appoints Committee members
- **30 days from establishment (mid to late February)** - Committee to engage an expert, begin an analysis, and share updates to City Council
- **90 days from establishment (mid May)** - Committee to provide a final written report and presentation to City Council

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