Welcome to the MACRUC 30th Annual Education Conference

The Hon. Jehmal Hudson

Hot Topic Quick Talks

Vintage Technology

Hon. Larry Friedeman, Ohio
Scott Reed, VP Regulatory Affairs, Anesi

Grid Reliability and Policies

Hon. Charlotte Lane, West Virginia
Tony Campbell, CEO, East Kentucky Power Cooperative

Is Your Grid Ready – For Electric Trucks?

Hon. Zenon Christodoulou, New Jersey
Aravind Kailas, Advanced Technology Policy Director, Volvo North America
& PACT Policy Chair

Powering Through the Peril

Hon. Dennis Deters, Ohio
Joanna Burkey, Lead Independent Director, ReliabilityFirst Corp, Former CISO HP Inc and Siemens, Independent Director at CorVel Corp and Beyond Inc.

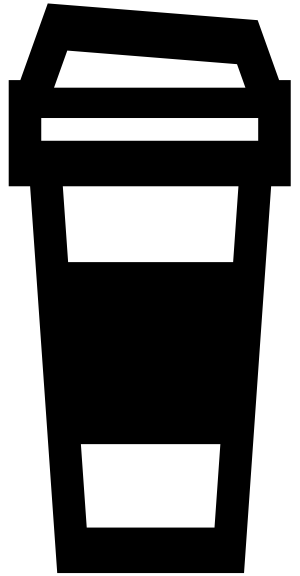
Beyond FERC

Hon. Jehmal Hudson, Virginia
Willie Phillips, Former FERC Chair,
Partner, Holland & Knight, LLP

Bench Banter

Hon. Mark Christie, Chair, FERC
Hon. Kelsey Bagot, Virginia

Derby Brew Coffee Break in the Bluegrass Room.



Next sessions begin promptly at 10:30

MACRUC

Nuclear Renaissance

Passing Fancy or Emerging Reality

Moderator:
Hon. Angie Hatton, Kentucky

***Participants**:*

Neil Chatterjee, Government Affairs Chief, Palmetto, Former Chair FERC

Charlotte Mitchell, McGuire Woods, Former Chair NC

Marcus Nichol, Executive Director, New Nuclear, NEI

Dwayne Pickett, Vice President of Regulatory Advocacy, Constellation

Derby Brew Coffee in the Bluegrass Room.

Next sessions begin promptly at 12:00

MACRUC

Surviving the Storm

Utilities' Roles in Preparing for and Responding to Extreme Weather

Moderator:
Hon. Jehmal Hudson, Virginia

Participants:
Hon. Jeff Hughes, North Carolina
Shannon Becker, President, Aqua-North Carolina
Mary Anna Holden, Managing Director, Grove Street Advisors
Robert Powelson, President & CEO, NAWC
Laura Runkle, President, Virginia ad Maryland American Water

“Surviving the Storm”

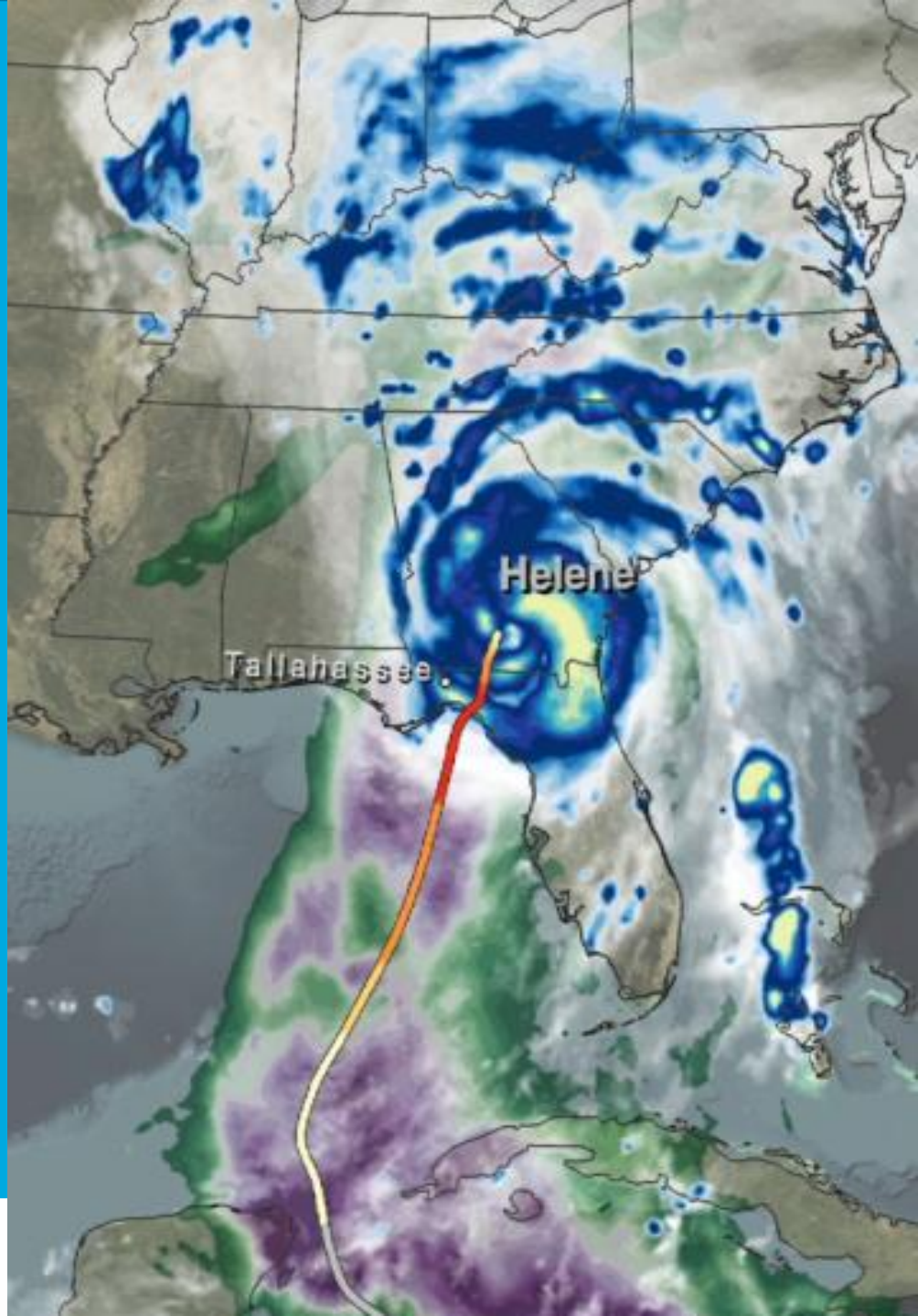
Water Sector Resilience

MACRUC
June 24, 2025

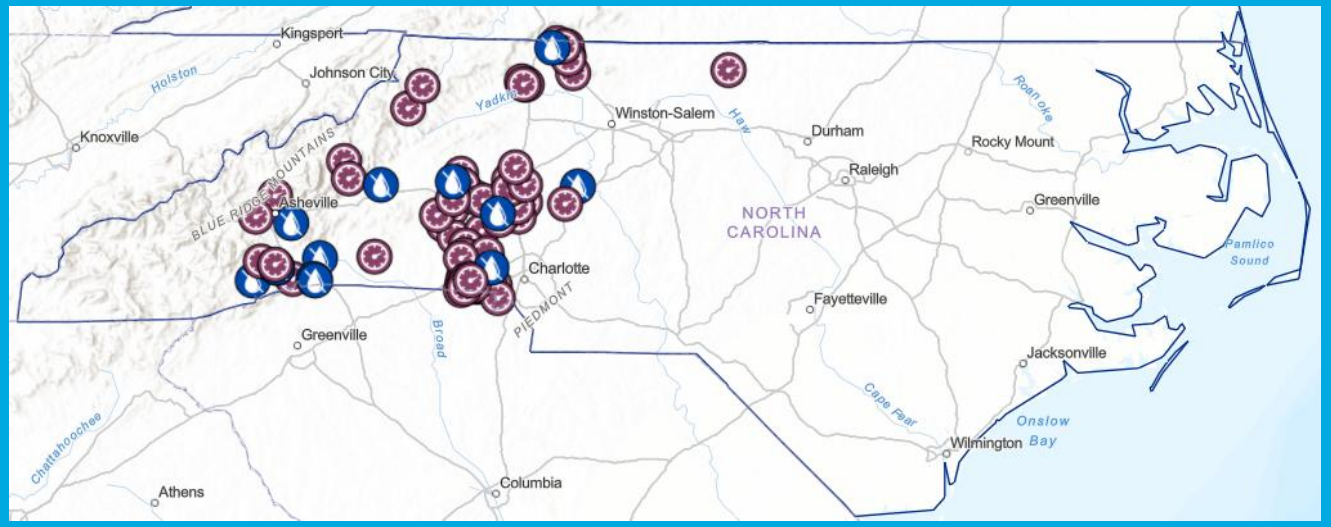
AQUA SM

An Essential Utilities Company

Shannon V. Becker, President,
Aqua North Carolina, Inc.



Hurricane Helene
(Cat 4, 140 Mph Wind)



NC Impact:
- *107 Fatalities*
- *$59.6 Billion in Damages*

NC Impact:
- *90 water systems / 6900 Homes affected*
- *69 systems/4800 connections restored within 48 hours*
- *all but 4 systems restored within a week*

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Challenges

Information Availability

Access

A Lot of Little

Inter-Utility Coordination

Safety

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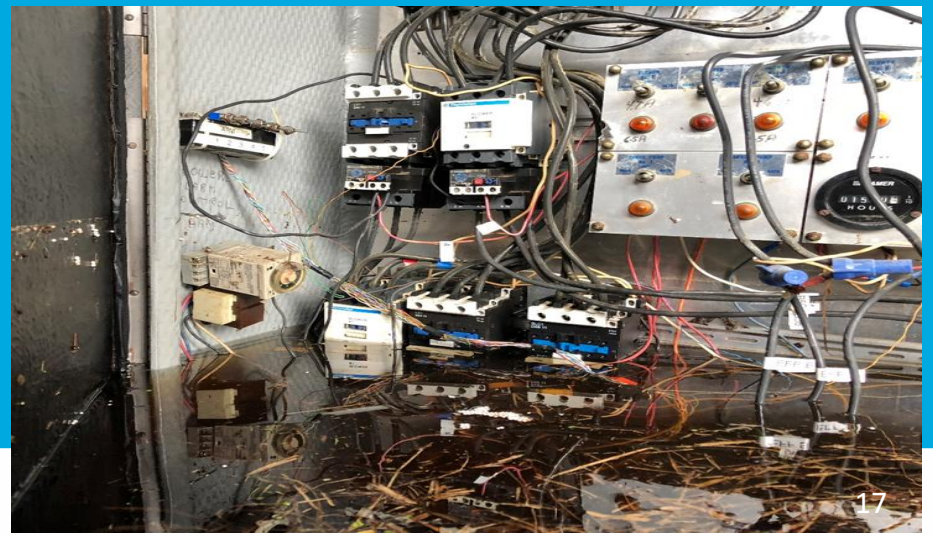
Resiliency

Infrastructure Resiliency:

- A system's ability to withstand and recover from chronic and acute shocks and stresses caused by droughts, floods, extreme weather events, pollution, and seasonal variability.

Utility Resiliency:

- A utility's ability to prepare for and recover service from chronic and acute shocks and stresses. This includes the establishment of and rigor in various plans and controls before, during, and after acute events:
  - Administrative,
  - Field/Operations, and
  - Engineering



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Administrative Plans/Controls

Advance Communications

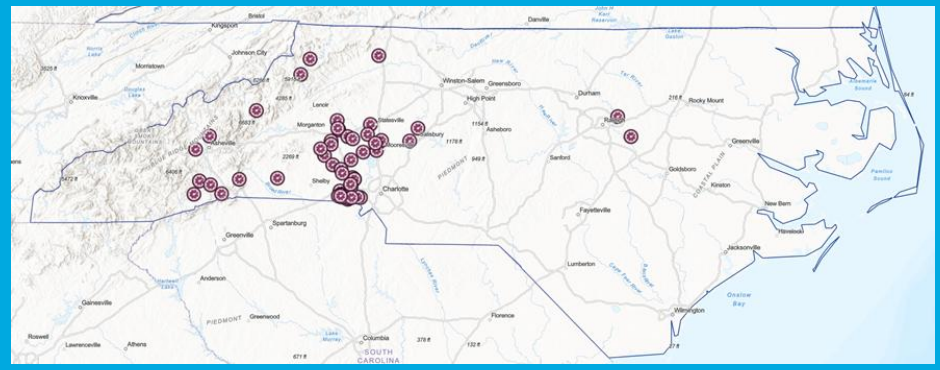
- Customer Education (Do's/Don'ts – freezing, drought, power outage) (e.g., grinder pump usage)
- Pre-Event Warnings impact area
- E-mail, bill inserts, texts/Bitly, web page updates

Active Event Communications (Customer & Field)

- Emergency notifications
  - Reverse 911 (e.g., SPA, BWN) (phone, text. email)
- E-Portal - Interactive customer reporting to facilitate field response time (*see slide 8*)
- Disruption event viewer (*see slide 9*)
- After-hours customer service updates
- Regulator communications / updates

Field Support/Coordination

- Mobilization support
  - Post-Disaster Re-entry Form (*see Slide 10*)
  - Housing (Hotels, Airbnb, VRBO)
  - Aqua state/corp assistance (Aqua VA , Fleet)
- Contractor retainage / Executed Contracts & MSAs
  - water trucks, pump trucks, generators, fuel
- Asset Inventory / GIS Mapping
- Inter Utility Coordination/Collaboration
  - Shared system mapping
  - Outage prioritization
  - Peer Assistance (WARN, IOU's, NC Public Staff)



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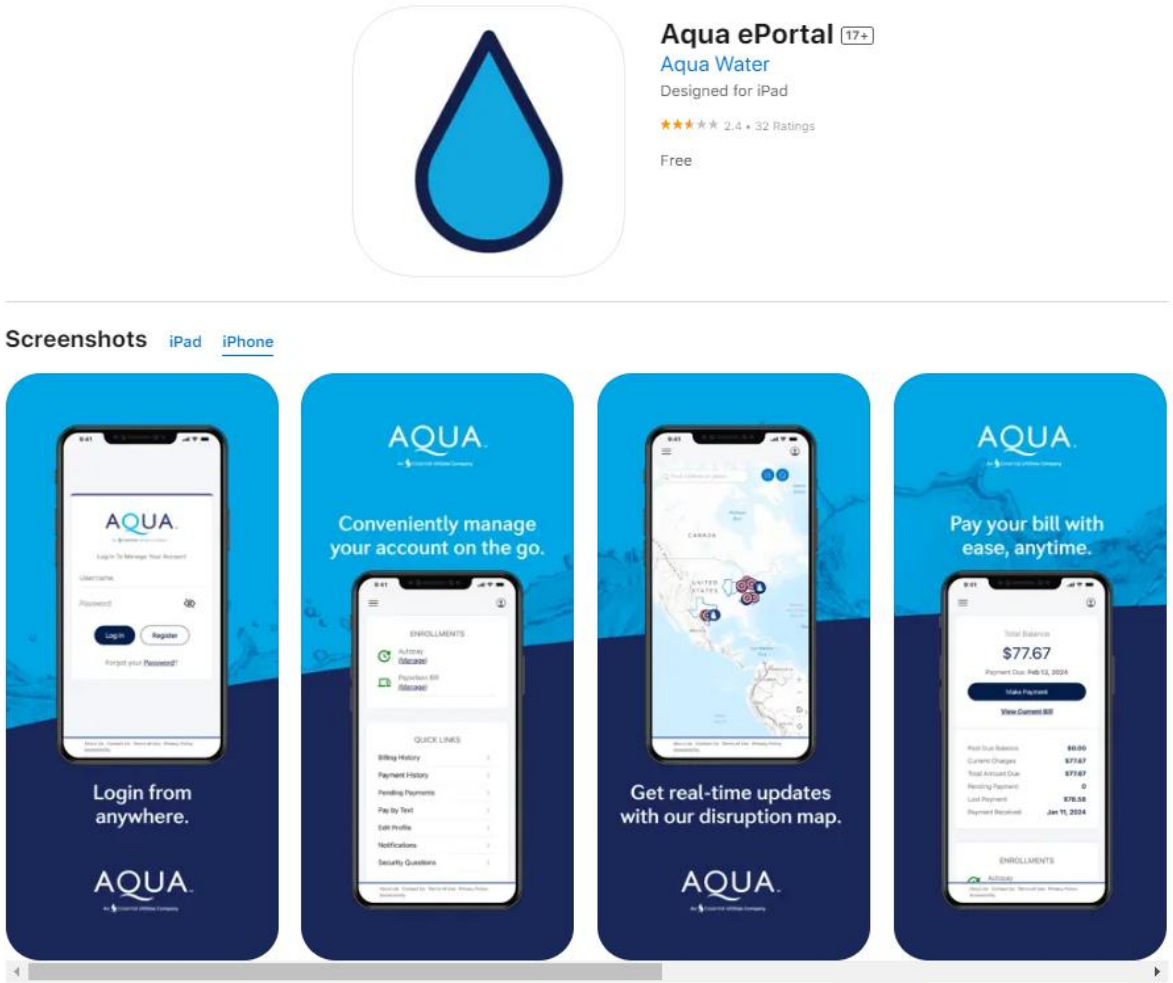
Aqua Customer ePortal



Online Customer Portal

Through our online destination and app our customers have access to:

- Improved customer tools for account maintenance and notifications, viewing and paying bills
- Customer consumption data
- Integrated Disruption Event Map, which will provide additional details for outages and can pinpoint a customer's current location

Customers can access the Aqua ePortal on their desktop or on the new Aqua app.

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Disruption Event Viewer

Aqua Disruption Event Viewer for Water System Outages, Advisories and Updates

Links to our Disruption Event Viewer are made available to our customers on Aqua's website AquaWater.com, customer ePortal, WaterSmart Alerts, signage and door hangers.

The viewer shows: Low Pressure, No Water, Line Repair, Conservation Request/Notice, Flushing Event and General Advisories.

**Linked to Aqua's ePortal and self-service reporting of disruptions, no water, and move-in and move-out

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Post Disaster Re-Entry Forms

This

Certificate of Post Disaster Re-Entry

is issued to

NCWaterWARN

and identifies the bearer as a representative of a certified

Life

in accordance with N.C.G.S. 166A-19.70 and grants the bearer the privilege of entering a designated curfew area provided the following requirements are met:

1) There is a declaration of a state of emergency or state of disaster in effect; and,
2) There is a curfew in effect in the declared area; and,
3) The Governor has issued an executive order invoking the privileges listed in N.C.G.S. 166A-19.70.
4) Entry shall be granted for the limited purpose of delivering or assisting in the distribution of essentials or assisting in the restoration of utility services.
5) The bearer of this certificate and all associates must follow the route specified by law enforcement or other local official, if any.

Secretary, Department of Public Safety

Director, Division of Emergency Management

Expires: April 30, 2026

N.C.G.S. 166A-19.70 ensures the availability of emergency supplies and utility services. The statute allows utility service providers and others to enter curfew areas to restore utility services, deliver supplies, and secure property that presents a risk to public health and safety conditions. A credentialing process, administered by NCDPS, Emergency Management, certifies stakeholders transporting essentials in commerce and permits access into curfew areas. Stakeholders bearing reentry certificates agree to adhere to terms established in the Memorandum of Agreement on reentry standards. Reentry certificates may be copied and distributed, as needed, for entry into curfew areas.

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Field/Operations

- **NIMS / IWERP** - Incident Management Protocols & Planning (slide 12)
  - Personnel hierarchy – designate cross-functional responsibilities
  - Equipment prep = generators, tankers, fuel, materials

- **Mobilization of resources**
  - Regional and inter-state support (non-impact area)
  - Staging of equipment (e.g., portable generators)
  - Sat Phones / Starlink

- **Damage Assessment Teams**
  - Drones
  - Digitized damage assessment forms

- **Clean-up Teams** (contractors)

- **Remote Monitoring / Alarms (SCADA)**
  - power, flows, tank capacity, pH

- **Active Event Collaboration**
  - peer water/sewer utilities
  - power utilities
  - multi-utility support programs (e.g., NC WARN)
  - Consumer Advocate
  - DEQ

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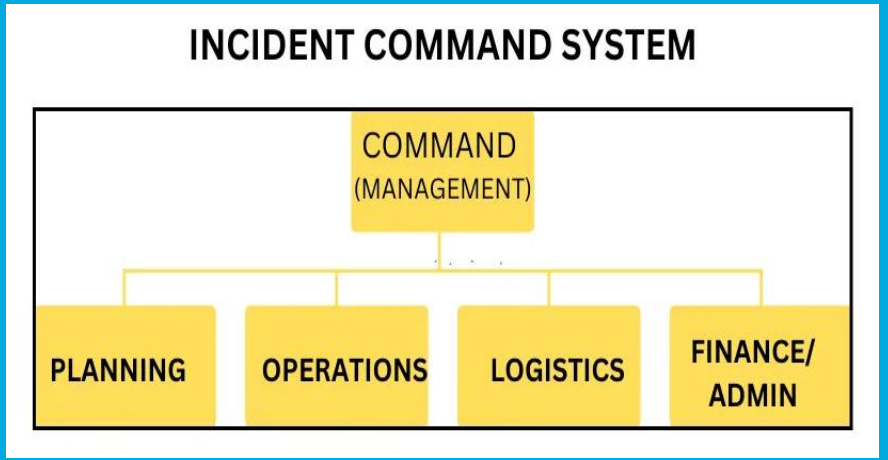
NIMS
(National Incident Management System)

FEMA

NIMS Guiding Principles:

1. **Standardization**
2. **Flexibility**
3. **Unity of Effort**
   - Coordinate activities among various organizations to achieve common objectives.
   - Enables organizations with specific jurisdictional responsibilities to support each other while maintaining their own authorities.



NIMS Framework Components

Enable diverse organizations to integrate functional capabilities and achieve shared goals:

1. **Resource Management**
   a) **standard** mechanisms to systematically manage resources, including personnel, equipment, supplies, teams, and facilities, both before and during incidents in order to allow organizations to more effectively share resources when needed.
2. **Command and Coordination**
   a) Defines leadership roles, processes, and recommended organizational structures for incident management at the operational and incident support levels and explains how these structures interact to manage incidents effectively and efficiently.
3. **Communications and Information Management**
   a) systems and methods that help to ensure that incident personnel and other decision makers have the means and information they need to make and communicate decisions.

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Engineering

Standardized specifications allowing for easier maintenance between sites

- Consistent design and use of infrastructure and mechanicals (adaptors, connectors, and pumps) provides streamlined use of tools/field inventory (vs “one-offs”)
- Ease of operations for employees – fewer “specialists”

Developer and Asset Replacement Spec Examples:

- CMU Bock wellhouses
- Quick-connects for back-up power
- Floodproofing vertical infrastructure
- Heat trace/insulation
- Wastewater surge/equalization tanks
- Remote monitoring and SCADA built into sites
- Smart manhole covers to reduce SSOs
- Redundant water supply (emergency interconnects)

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Questions?

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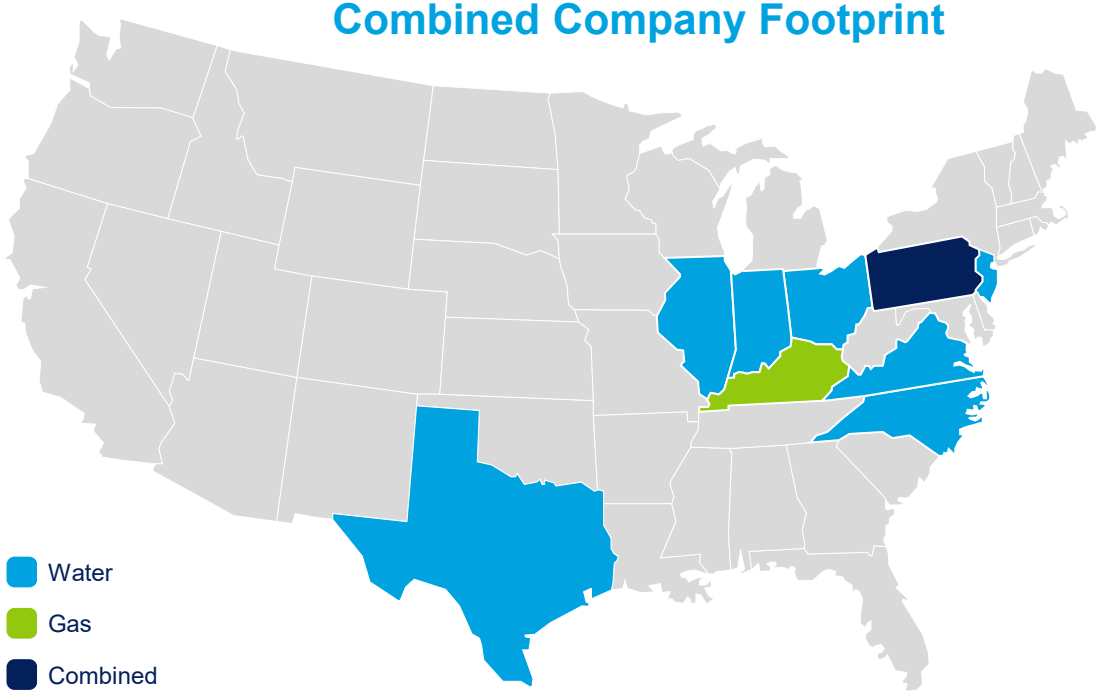
Slide Support (Extras Follow)

Essential: Proven, Thoughtful Stewards of Natural Resources

Our Mission:

To sustain life and improve economic prosperity by safely and reliably delivering Earth's most natural resources to our customers and communities.

Combined Company Footprint



Essential Utilities Capital Investment

2024 Capital Investment	$1.3 Billion
'25–'29 Capital Investment	$7.8 Billion

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State by State Comparison of Services

Aqua

State	Rate Base (millions)	Water Connections	Wastewater Connections	Total Customers
PA	$4,538	458,504	62,429	520,933
IL	$578	69,724	24,751	94,475
OH	$555	153,489	11,267	164,756
TX	$679	76,044	25,209	101,253
NC	$398	87,320	23,380	110,700
NJ	$281	56,048	6,909	62,957
IN	$130	1,456	31,402	32,858
VA	$130	27,461	8,474	35,935
TOTAL	**$7,289**	**930,046**	**193,821**	**1,123,867**

Peoples

State	Rate Base ($000s)	Total Customers
PA	$4,025	704,674
KY	$164	40,765
TOTAL	**$4,189**	**745,439**

Note: As of 12.31.24

Aqua North Carolina At a Glance

Water

87K WATER CONNECTIONS

1519 WELLS

737 WATER SYSTEMS

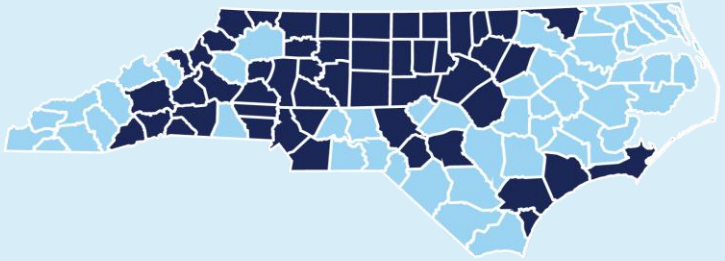
500+ MILES OF WATER MAINS

184 EMPLOYEES

51 COUNTIES

330K PEOPLE SERVED

2% CUSTOMER GROWTH RATE



Corporate Headquarters: Cary
Regional Operations Centers: Hampstead, Fayetteville, Kernersville, Gastonia, and Denver, NC

Wastewater

23K WASTEWATER CONNECTIONS

59 WASTEWATER TREATMENT FACILITIES

5.1 MILLION GALLONS TREATED DAILY

50+ LIFT STATIONS

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NIMS
Sample Position Assignments

POSITION	INCIDENT RESPONSIBILITY
Incident Commander	Overall management responsibility for the incident, which requires numerous personnel and resources focusing on prevention, protection, mitigation, response, and recovery.
Environmental Compliance Officer	Monitors, tracks, and controls environmental compliance activities and ensures notification to customers and environmental regulators is made in accordance with regulations.
Operational Technology Officer	Ensures operational technology (SCADA/Dispatch) business continuity is maintained throughout the incident.
Public Information Officer	Collects, verifies, prepares, coordinates, and disseminates information to impacted customers and media via various comms platforms.
Finance Officer	Advises the Incident Commander on financial and administrative matters (expense/capital tracking).
Safety Officer	Monitors incident operations and advises the Incident Commander (IC) on all matters relating to the health and safety of emergency response personnel
Engineering Officer	Directs, coordinates, and manages incident engineering work, including engineering/surveying, project contractor procurement, project administration, inspection, and approval for operation.
Area Team Leader Central	Prioritizes, Directs and manages response and recovery activities within their specific Area. Collaborates with the Incident Commander and other Command Staff to ensure a coordinated response.
Task Force Leaders	Provides direct supervision and guidance to an individual staff person or a crew, who respond as a deployable resource. Reports to Area Team Leader on work progress and status of resources, maintains work records on assigned personnel, and communicates other essential information.
Personnel Resource Officer	Provides support in personnel staffing for incident response, may verify personnel and personnel's family well-being, responds directly to personnel issues to minimize time impacts on others, and enlists the personnel's supervisor if necessary to resolve issues.
Logistics Manager	Manages the provision of supplemental supplies before, during, and after the incident. These supplies include consumables, temporary lodging, and transportation.
Customer Care Officer	Manages and monitors the direct contact between our Customers and Aqua, and ensures customer issues are promptly forwarded to NIMS team for response, and that appropriate event information is provided to direct contact customers.
Corp Field Services Leader	Manages and monitors the Work Order/Fiori/SAP system and supports Team Leaders, Field Supervisors with communicating work to staff through electronic means.

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Surviving the Storm

Utilities' Roles in Preparing for and Responding to Extreme Weather

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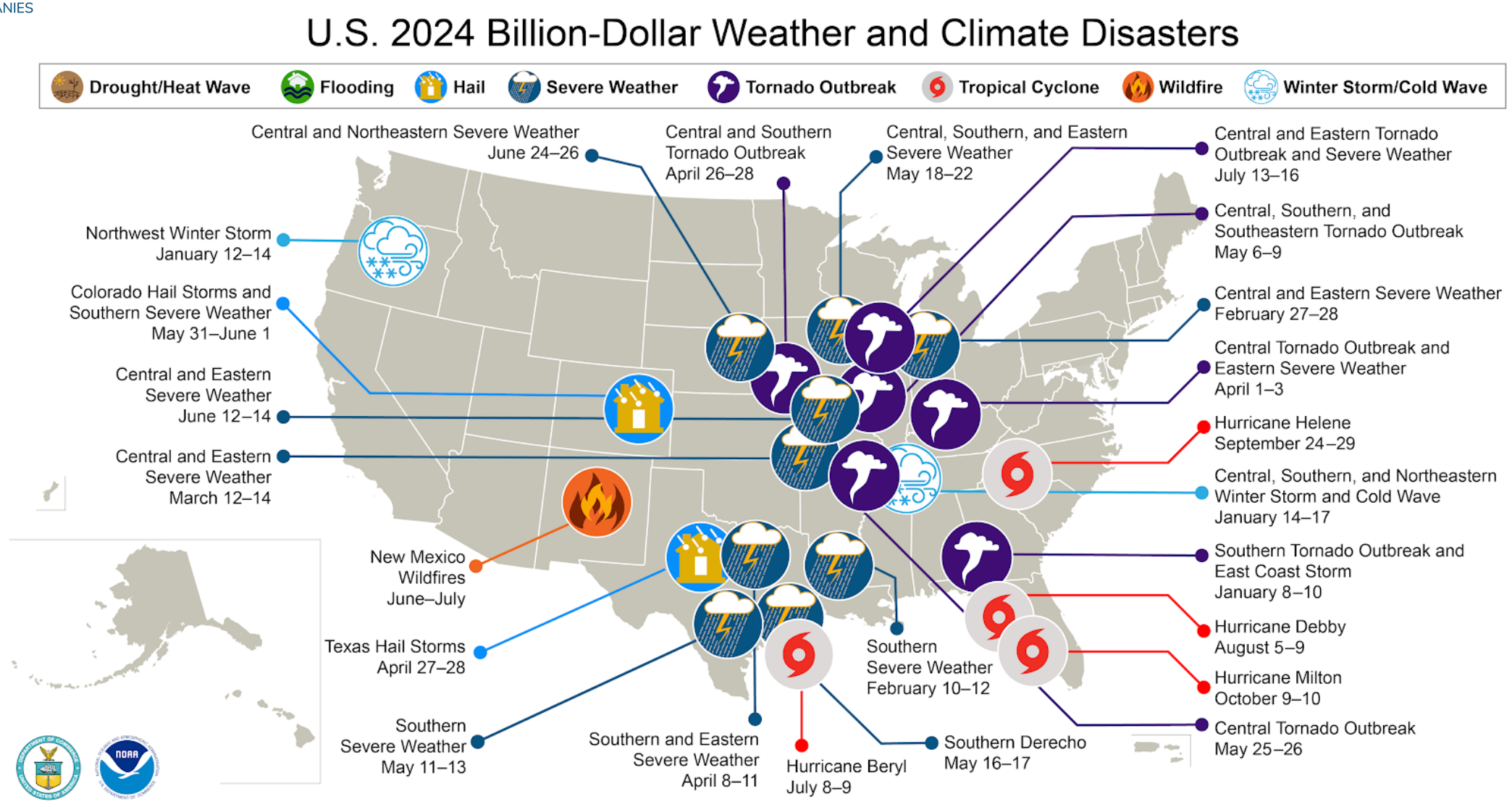
Surviving the Storm: Utilities' Roles in Preparing for and Responding to Extreme Weather

Rob Powelson, President & CEO
National Association of Water Companies

NATIONAL ASSOCIATION OF WATER COMPANIES
SINCE 1895

NAWC
NATIONAL ASSOCIATION OF WATER COMPANIES
SINCE 1895

Large-scale Climate Disasters are Varied and Widespread…



*This map denotes the approximate location for each of the **24 separate billion-dollar weather and climate disasters that impacted the United States through October 2024.***

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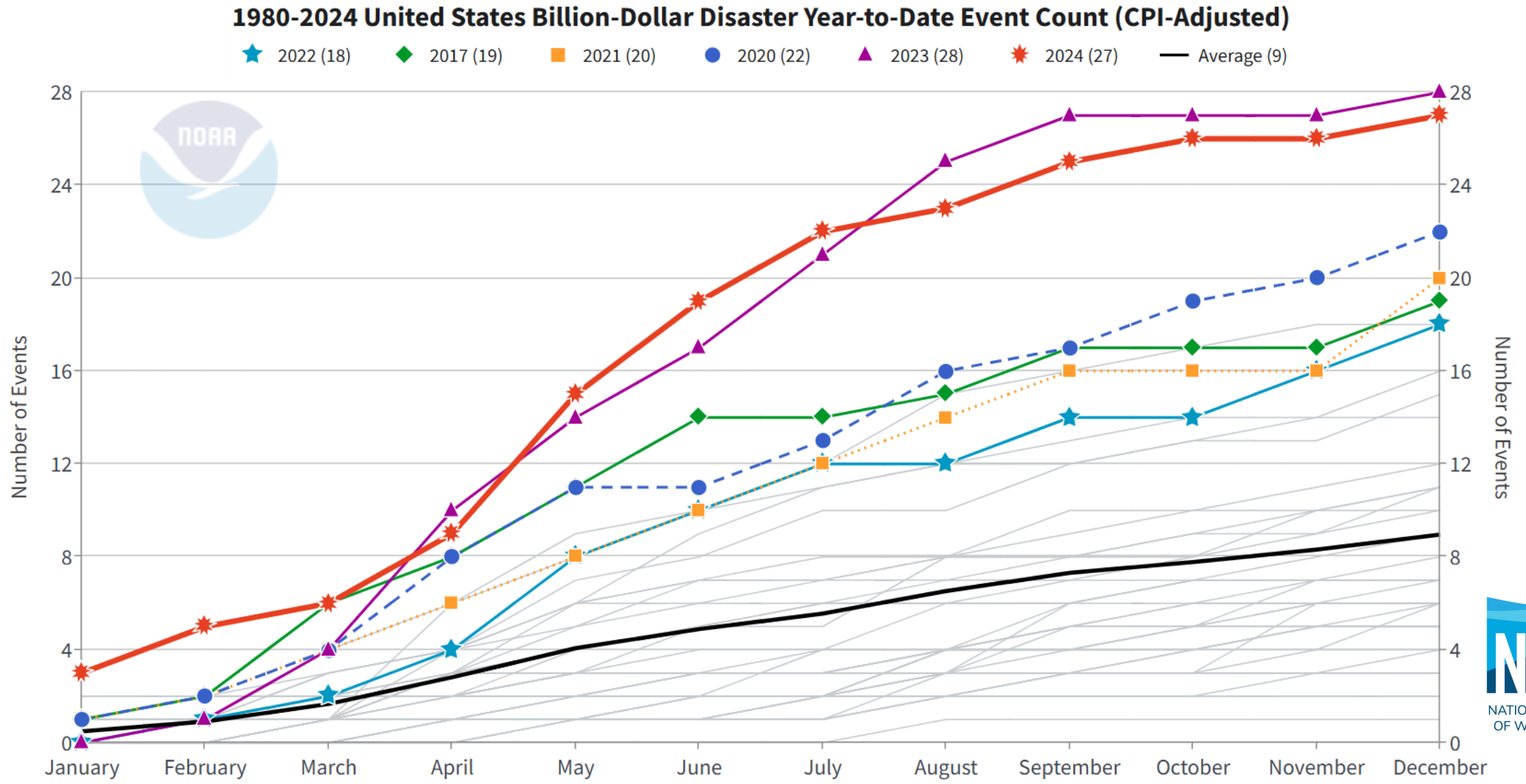
NATIONAL ASSOCIATION OF WATER COMPANIES
SINCE 1895

Increasing in Frequency



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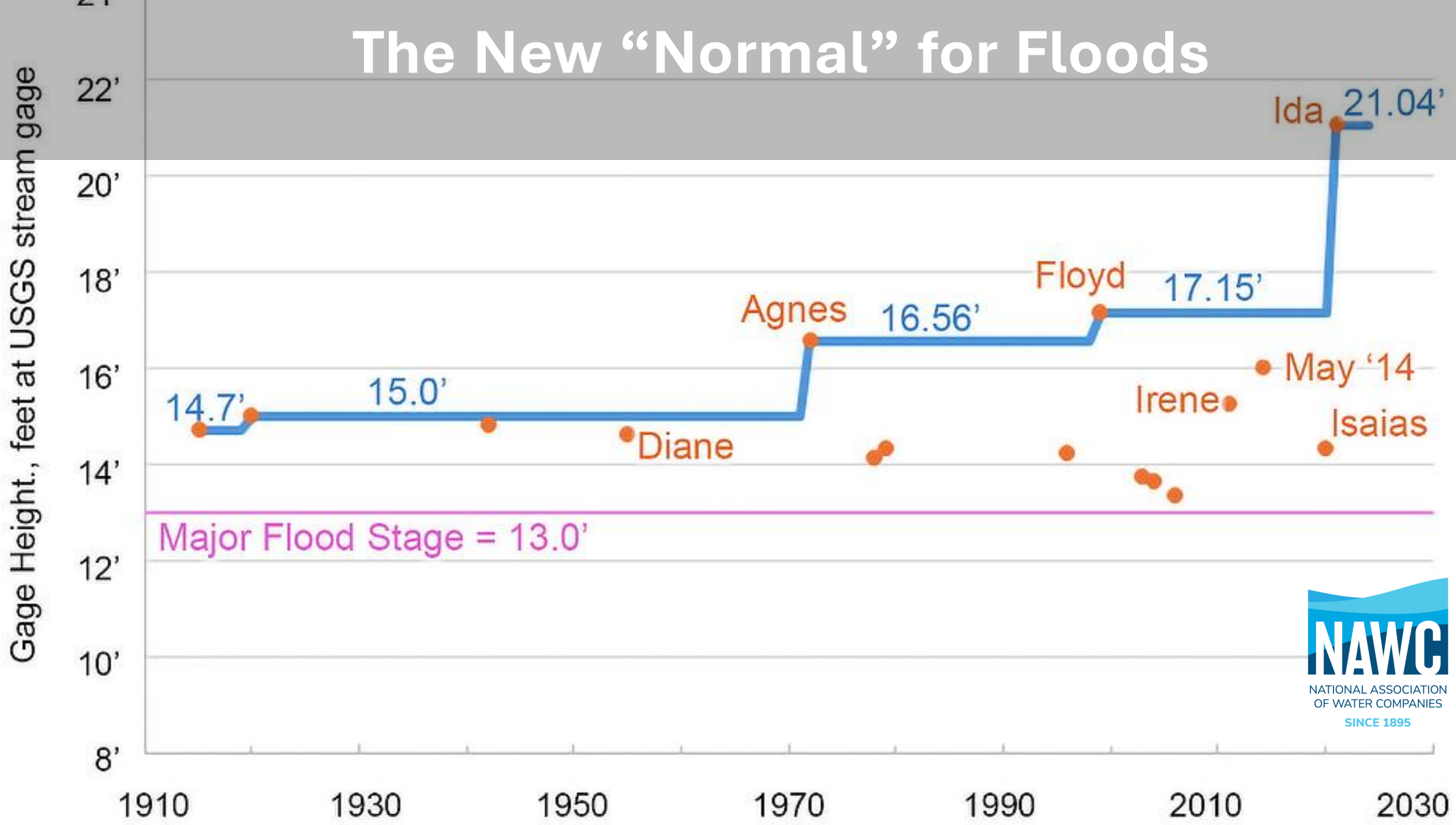
The New “Normal” for Floods



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Water Sector Weather Risks

- Drought
- Source Water contamination
- Flooding
- Hurricanes
- Tornados
- Earthquakes
- Ice storms
- Wildfires

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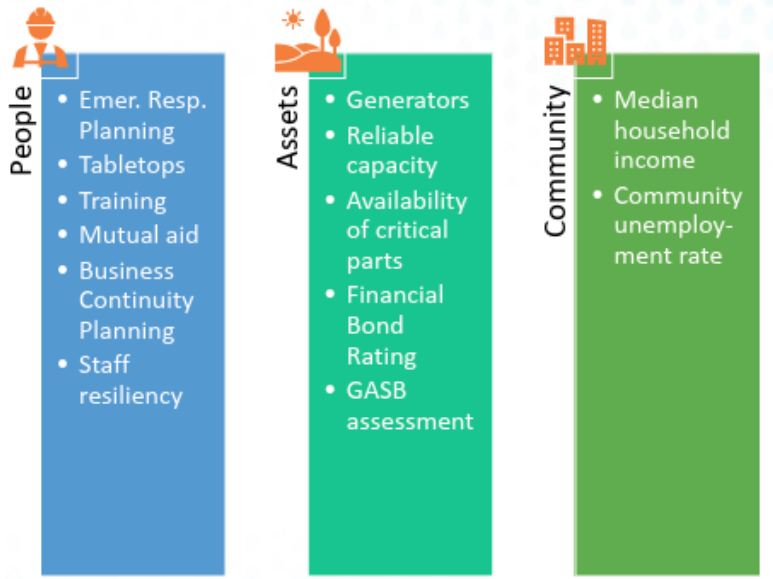
Utility Resilience Index (URI)

An industry developed rubric using the weighted average of two indicators to measure resilience:

1. Operational: **tactical capability** to react to an event
2. Financial: **fiscal capacity** to recover (utility & community)

Intent is to establish a uniform index that can provide a gap analysis and assist in targeting improvement areas



What does the term “100-year flood” mean?

It doesn’t refer to a flood that can happen only once every 100 years. In fact, 100-year flood could happen 2 years in a row. The term, 100-year flood is used to describe the extreme nature of floods and help us better understand the predictability of these events. Some scientists prefer to say it is a 1-percent flood, to remove the confusion with how frequently it could occur. The fact is the frequency of these events are having a profound impact on water utility infrastructure and watersheds.

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Aqua-PA's
Pickering Creek Wastewater Plant
Post-Hurricane Ida

The Northeastern United States has seen an increase in extreme precipitation, more so than any other region, with a 60% increase in storms between 1958 and 2022.

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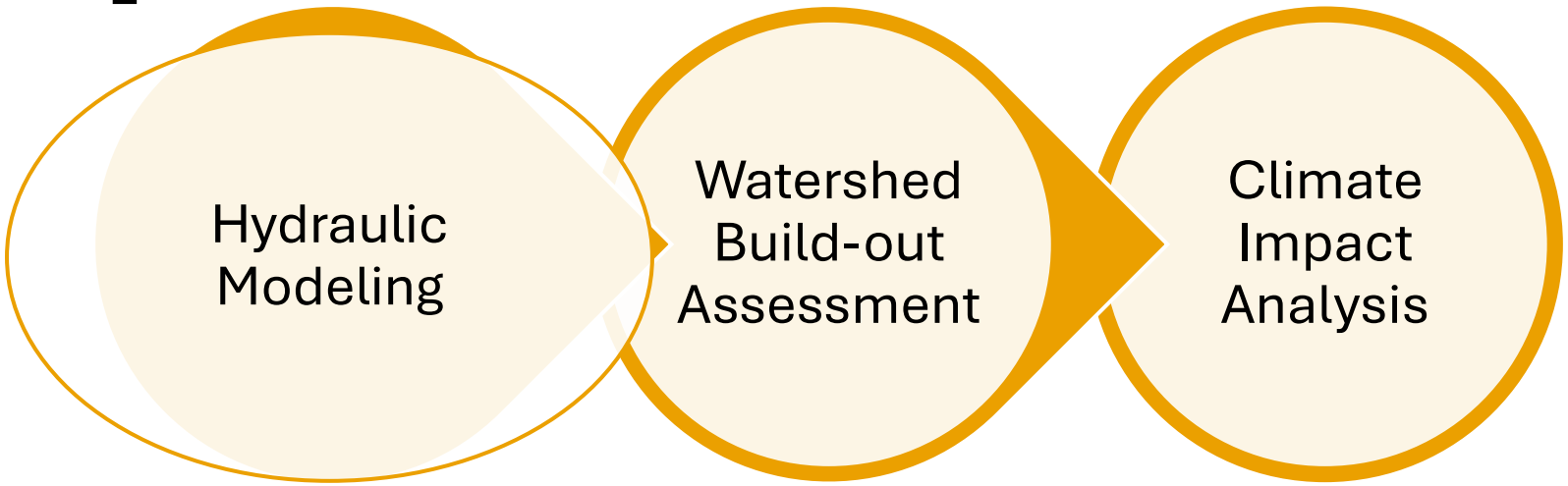
SINCE 1895

Be Prepared!!!



Water utilities need to manage enterprise risk, but more importantly they need to approach resiliency investment through the lens of a holistic risk evaluation process. Utilities must engage communities, state and federal primacy agencies and know when to act when facing extreme weather events.

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Use of Forward-Looking Models and Design Standards to Prepare for Climate Impacts

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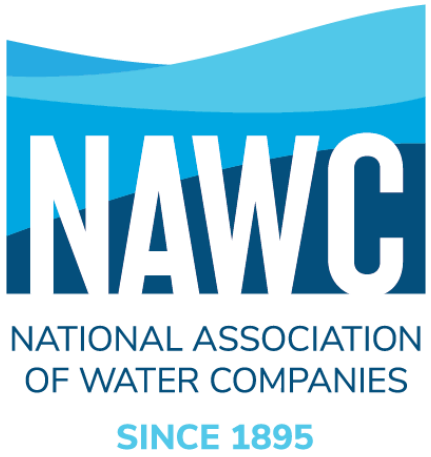

Thank you

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Lunch THEN Learn
Utility Family Feud and
2025 MACRUC
Presidential Address

The Hon. Jehmal Hudson

Starring

Com. Z

The Hon.
Dennis Deters
MACRUC President 2025-2026

Busses begin departing at 4:50 from Broadway and will continue to loop until 7:00

Kentucky Big Breakfast begins at 7:30 a.m.

8:30 Data Centers – Driving the Conversation and the Load Growth