



Water Resources Council (WRC)

January 15, 2025



Procedures for Online Meeting

- Today's presentation will be posted on the WRC website at: <https://www.nctcog.org/envir/committees/water-resources-council>
- Roll call today in lieu of sign-in sheet.
- Please keep your microphone on mute when not speaking.
- Please use the "raise hand" feature to ask a question or provide a comment. When called on, state your name and entity you are representing.
- Approval of action items will still be done by a voice vote. Please only vote if you are a member of the WRC.

Welcome and Introductions

- Roll call
- Welcome guests.
- Thank you all for attending!

Speaker Presentation

“Water and Wastewater Cyber Resilience”

Jennifer Walker, WaterISAC, and Cynthia Baughman, City of Garland

Water and Wastewater Cyber Resilience

JANUARY 15, 2025

Prepared for:
NCTCOG Water Resources Council

Presented by:
Jennifer Lyn Walker, WaterISAC
Cynthia Baughman, City of Garland



GARLAND
WATER UTILITIES



On Tap

- Why Cybersecurity is Critical
- Threat Landscape
- Leadership Responsibility
- Key Areas of Focus
- Available Resources
- Metrics for Success





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Cybersecurity Landscape

Cybersecurity is not just an IT issue; it's a business resilience issue.

Why Cybersecurity is Critical

- Water Utilities are essential
- Threats are rapidly evolving
- Real-world risk
 - American Water
 - Texas utilities: Muleshoe, Hale Center
- Texas DIR is proposing new legislation

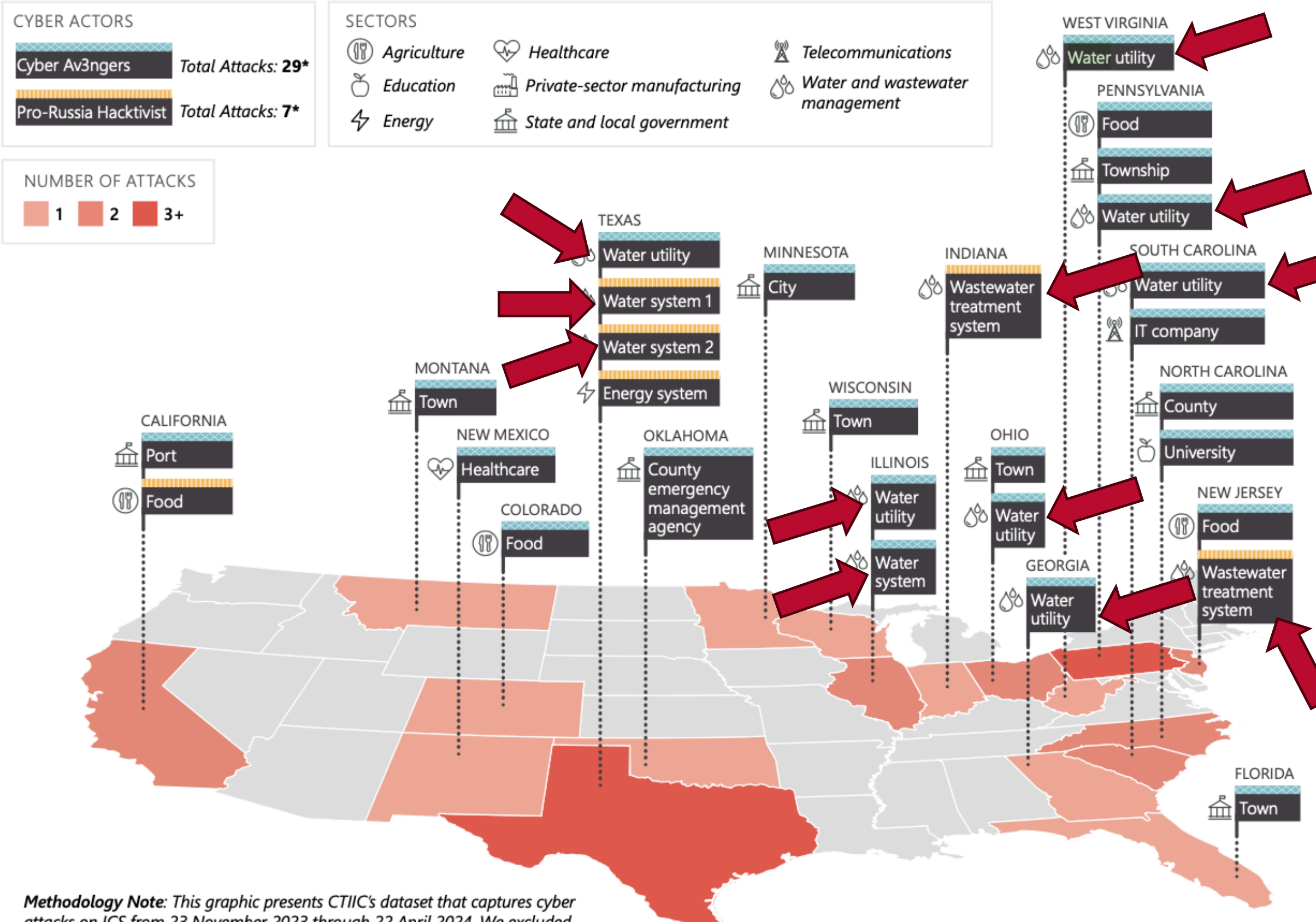


Who's Watching? | Advocates

- White House
- EPA
- CISA
- Congress
- Sector associations
- Private firms
- FBI InfraGard



REPORTED CYBER ATTACKS ON US ICS, 23 NOVEMBER 2023 THROUGH 22 APRIL 2024



Who's Watching? | Adversaries

Reported Cyber Attacks on US Critical Infrastructure (Source: ODNI)

Methodology Note: This graphic presents CTIIC's dataset that captures cyber attacks on ICS from 23 November 2023 through 22 April 2024. We excluded ransomware attacks on critical infrastructure entities.

*Including seven attacks at additional US locations.

Who's Watching? | Adversaries

- Nation State or State-aligned
 - People's Republic of China (Volt Typhoon)
 - Russian (Cyber Army of Russia Reborn - CARR)
 - Iranian (Cyber Av3ngers)
- Methods of Cybercrime
 - Ransomware
 - Phishing
 - Exploiting outdated (vulnerable) systems
 - Targeting ICS/SCADA

Cybersecurity is a Leadership Priority

We can't be complacent – please continue protecting the vital services Americans rely on most.

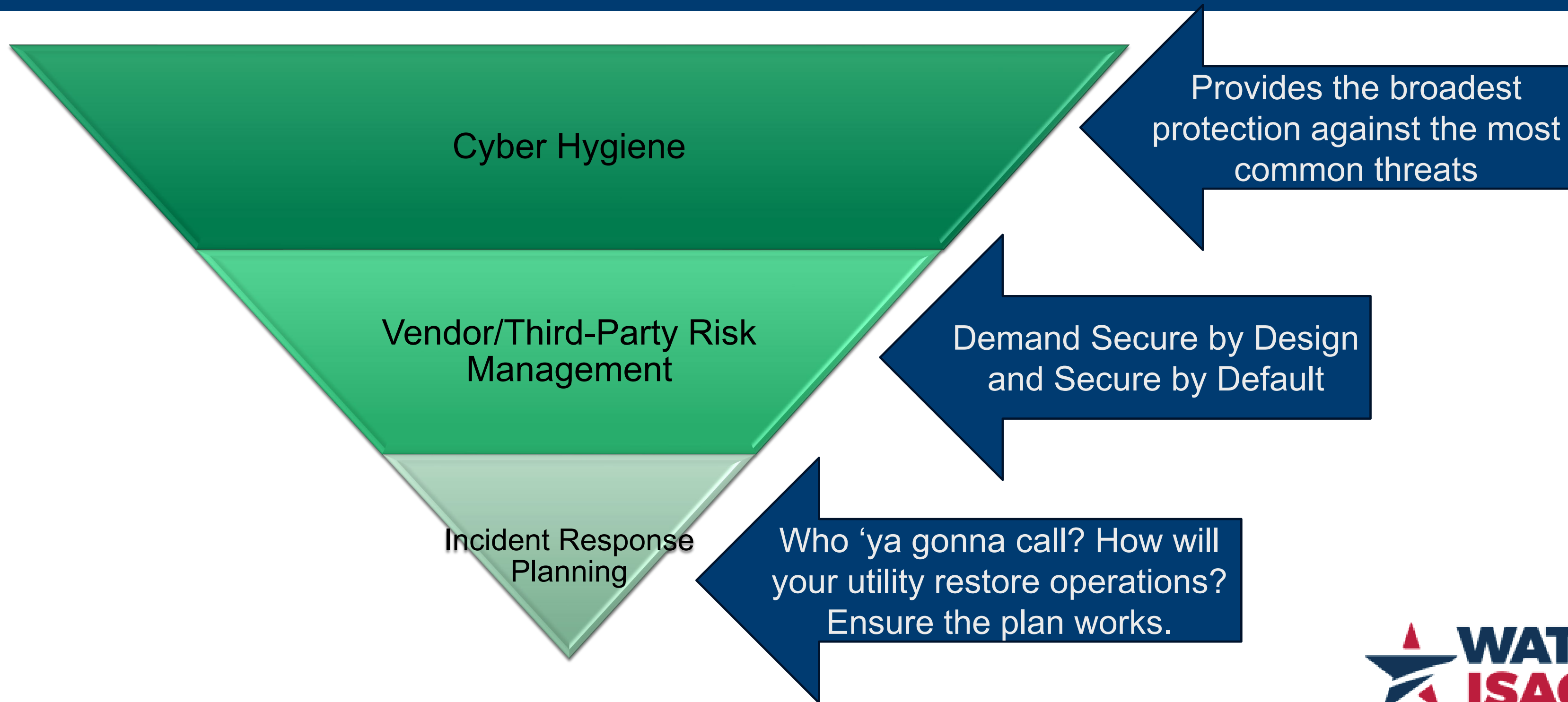


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Key Areas for Executive Focus

What actions can we take today to improve our cyber resilience?

Key Executive Focus Areas



Cyber Hygiene Helps...

Prolifically Poor Practices

- Using default passwords
- Sharing login credentials
- Failing to effectively disable access for departing employees/contractors


Poor Perimeter Protection

- Overly permissive policies for communication to untrusted networks (*including the internet*)
- Critical assets on the same network
- SCADA devices exposed to the internet (*SCADA isn't plug 'n play*)




Cyber Hygiene | Foundational Resources

 Top Cyber Actions for Securing Water Systems

 CISA's Free Cyber Vulnerability Scanning for Water Utilities

 Water and Wastewater Sector – Incident Response Guide

 Technical Assistance (from EPA or CISA Cybersecurity Advisors)

 AWWA Small Systems Guidance

 *CISA Cross-Sector Cybersecurity Performance Goals (CPGs)*

Top Cyber Actions for Securing Water Systems

- Reduce Exposure to the Public-Facing Internet
- Conduct Regular Cybersecurity Assessments
- Change Default Passwords Immediately
- Conduct an Inventory of Operational Technology/Information Technology Assets
- Develop and Exercise Cybersecurity Incident Response and Recovery Plans
- Backup OT/IT Systems
- Reduce Exposure to Vulnerabilities
- Conduct Cybersecurity Awareness Training

Cyber Hygiene | Fundamental Resources



WaterISAC's 12 Cybersecurity Fundamentals for Water and Wastewater Utilities



AWWA Cybersecurity Guidance & Self-Assessment Tool



CISA Cross-Sector Cybersecurity Performance Goals (CPGs)



12 Cybersecurity Fundamentals for Water and Wastewater Utilities

Download the guide: www.waterisac.org/fundamentals

2024



**12 Cybersecurity Fundamentals
for Water and Wastewater Utilities**

*Recommended Practices to Reduce Exploitable
Weaknesses and Consequences of Attacks*



WATERISAC.ORG

1. Incident Response Planning
2. Minimize Control System Exposure
3. Cybersecurity Culture
4. Threat Detection & Monitoring
5. Understanding Assets
6. Enforce Access Controls
7. Physical Access Protection
8. Cyber-Physical Safety Systems
9. Vulnerability Management
10. Governance
11. Third Party Risks
12. Information Sharing

What Keeps Me Up At Night?
Don't *assume* cybersecurity...



Third-Party Risk | Secure by Design

Secure by Design

- OEMs

Secure by Default

- OEMs
- Suppliers
- Integrators

Secure by Demand

- Owners/Operators

<https://www.cisa.gov/securebydesign>

<https://www.cisa.gov/resources-tools/resources/secure-by-design>

<https://www.cisa.gov/securebydesign/pledge>

Incident Response and Planning (IRP)

“Everyone has a plan until they get punched in the face.” – Mike Tyson

■ Developing and Testing Plans

- America’s Water Infrastructure Act of 2018 (AWIA)

■ Communications Strategies

Actions to Prepare for a Cyber Incident

Utility

- Identify all mission critical information technology (IT) systems, considering business enterprise, process control and communications. Document the key functions of the mission critical objectives, and identify the personnel or entity responsible for operating and maintaining each IT system.
- Identify an overall IT security lead to coordinate with each IT system manager and oversee all cyber-related duties.
- Ensure that IT system managers enforce cybersecurity practices on all business enterprise, process control and communications systems. For example, verify adherence to user authentication, current anti-virus software and installation of security patches.
- Identify priority points of contact for reporting a cyber incident and requesting assistance with response and recovery. Include any state
- Review and update the utility’s emergency response plan (ERP) to address a cyber incident impacting business enterprise, process control and communications systems. Account for all potential impacts on operations, and ensure emergency contacts are current.
- Prevent unauthorized physical access to IT systems through security measures such as locks, sensors and alarms. Include workstations and process control systems (e.g., programmable logic controllers or PLCs).
- Train all essential personnel to perform mission critical functions during a cyber incident that disables business enterprise, process control and communications systems. Include the manual operation of water collection, storage, treatment and conveyance systems.
- Conduct drills and exercises for responding to a cyber incident that disables critical business enterprise, process control and communications

My Contacts and Resources

CONTACT NAME	UTILITY/ORGANIZATION NAME	PHONE NUMBER
	Law Enforcement	
	IT Staff/Vendor	
	SCADA Staff/Vendor	
	DHS Cybersecurity and Infrastructure Security Agency (CISA)	
	Local Laboratory	
	State Primacy Agency	
	Local Emergency Management Agency	
	Local Health Department	
	WARN Chair	
	State Emergency Management Agency	



More Resources

■ CISA

- Vulnerability Assessments
- Free tools on CISA.gov



America's Cyber Defense Agency

NATIONAL COORDINATOR FOR CRITICAL INFRASTRUCTURE SECURITY AND RESILIENCE

■ Grants and Funding Opportunities

- Clean Water State Revolving Fund (CWSRF) | US EPA
- Drinking Water State Revolving Fund (DWSRF) | US EPA
- Midsize and Large Drinking Water System Infrastructure Resilience and Sustainability Program | US EPA
- CISA State and Local Cybersecurity Grant Program (SLCGP)



■ WaterISAC

- Threat alerts
- Mitigation practices
- Intelligence and information sharing



WaterISAC | About

- Established in 2002 at the urging of the White House, FBI, and EPA
- 600+ Members: utilities, consulting firms, government agencies
- Board Members: utility managers and a state primacy agency administrator



Advancing the security of the sector

WHO WE ARE

The Water Information Sharing and Analysis Center (WaterISAC) is the only all-hazards security information source for the water and wastewater sector. We were formed over 20 years ago by the sector's leading national associations at the urging of the White House, FBI, and EPA.

OUR MEMBERS

We serve over 600 utilities and member companies with 3,900+ active water and wastewater sector personnel. Our utility members provide water and wastewater services to Americans across the nation. We also serve utilities in Canada, Australia, and New Zealand.

Category	Color
Utilities	Dark Blue
State/Local Government	Medium Blue
Federal Government	Light Blue
Consultants	Teal
Associations	Lightest Blue

WaterISAC | Information Gathering, Curation, Analysis & Dissemination



EDUCATION

Over **12,000 items** available 24/7 in our online Resource Center Library.



1,870 attendees at our monthly Cyber Threat Web Briefings.

Represented and spoke at **29 engagements** throughout the year.



OUTREACH

Distributed **171 mailings** and advisories throughout the year, including 100+ Security & Resilience Updates.



Racked up close to **200,000 impressions and views** across social media channels and website ads.

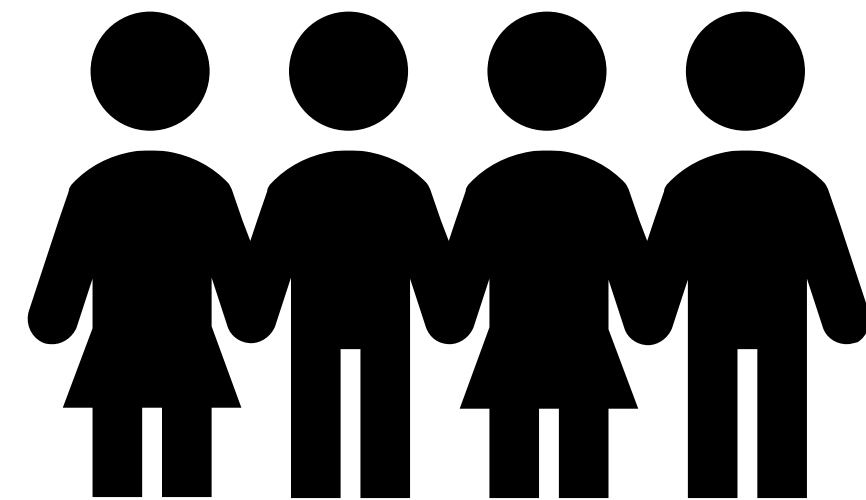


Make sure to follow us @waterisac!





Let's Shift the Balance
Create a Secure Future



Be a Good Neighbor
Invite a Friend to Your Next
Cybersecurity Event

Contact Information

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WaterISAC

Website | www.waterisac.org

Incident Reporting Form | <https://www.waterisac.org/report-incident>

24 Hour Line | 866-H2O-ISAC

Email | analyst@waterisac.org



GARLAND

WATER UTILITIES





Top 20 Secure PLC Coding Practices



Protecting Critical Water Systems with the Five ICS Cybersecurity Critical Controls



SANS Five ICS Cybersecurity Critical Controls



Cyber Readiness Institute Resiliency for Water Utilities Program



Dragos OT-CERT & Community Defense Program



CIS Controls

More Cyber Hygiene Resources | *Beyond the Basics*



Questions?



North Central Texas Council of Governments
**Environment
& Development**

[www.nctcog.org/
WaterResources](http://www.nctcog.org/WaterResources)

Action Item

Meeting Summary

The October 9, 2024 meeting summary will be presented for approval.

Discussion

89th Texas Legislative Session Update

NCTCOG will be tracking water-related bills. The WRC is invited to share any pertinent water resource issues, topics, news, or bills of interest to date.

The full matrix of water-related bills can be found [here](#).

Discussion

89th Texas Legislative Session Update*

*As of January
13, 2025

<u>Bill Number</u>	<u>Author</u>	<u>Topic</u>	<u>Status</u>	<u>Companion Bill</u>
HB 156	Raymond	Relating to a study by the Texas Commission on Environmental Quality regarding the protection of certain water facilities from catastrophes.	Filed (11/12/2024)	N/A
HB 359	Goodwin	Relating to the authority of a property owners' association to assess a fine for discolored vegetation or turf during a period of residential watering restriction	Filed (11/12/2024)	HB 517 Davila (Duplicate) SB 542 Schwertner (Identical)
HB 638	Tepper	Relating to a requirement that certain water districts make audio and video recordings of open meetings available on the Internet	Filed (11/12/2024)	N/A

Discussion

89th Texas Legislative Session Update*

*As of January
13, 2025

<u>Bill Number</u>	<u>Author</u>	<u>Topic</u>	<u>Status</u>	<u>Companion Bill</u>
HB 685	Bell, Cecil	Relating to rates established by municipalities for water or sewer service for certain entities.	Filed (11/12/2024)	N/A
HB 1245	Goodwin	Relating to a prohibition on the use of water on nonresidential property to irrigate nonfunctional turf during a drought.	Filed (11/12/2024)	N/A
HB 1424	Goodwin	Relating to the structuring of water rates by retail public utilities to promote water conservation; authorizing a fee.	Filed (11/20/2024)	N/A

Discussion

89th Texas Legislative Session Update*

*As of January
13, 2025

<u>Bill Number</u>	<u>Author</u>	<u>Topic</u>	<u>Status</u>	<u>Companion Bill</u>
HB 1432	Goodwin	Relating to restrictive covenants regulating certain landscaping and water conservation practices.	Filed (11/21/2024)	N/A
SB 191	Menéndez	Relating to the adoption of a healthy and safe school water plan by public schools.	Filed and Received by the Secretary of the Senate (11/12/2024)	N/A


Discussion

Regional Strategies to Engage Homeowner Associations (HOAs)

NCTCOG staff and the WRC will brainstorm appropriate ways to partner with HOAs to increase regional messaging regarding conservative irrigation practices.

Discussion

Regional Strategies to Engage Homeowner Associations (HOAs)

HOA DIRECTORY	2024
 <small>HOA contact information is provided as a courtesy to residents, and is limited to the HOAs that completed voluntary registration with the City of Frisco. The City assumes no liability for any errors, omissions or inaccuracies of the data.</small>	Updated Quarterly

Example

- Residents report water waste using app, city can then send notices/violations to HOA contacts
- Send Sustainable Irrigation Program reports to HOA

Discussion

Regional Strategies to Engage Homeowner Associations (HOAs)

- Have you utilized an HOA Directory? How did you utilize it?
- What other methods of contact do you utilize with HOAs?
- What type of resources can NCTCOG provide for HOA engagement?
- Should outreach resources be targeted at the HOA, or at homeowners through the HOA?

Discussion

Energy and Water Conservation Signage for Municipally Owned Buildings

NCTCOG staff will present a current project to draft and print energy and water conservation signage to promote behavioral change among municipal building occupants. The WRC will be asked to provide feedback on the messages NCTCOG staff should prioritize in developing this deliverable.

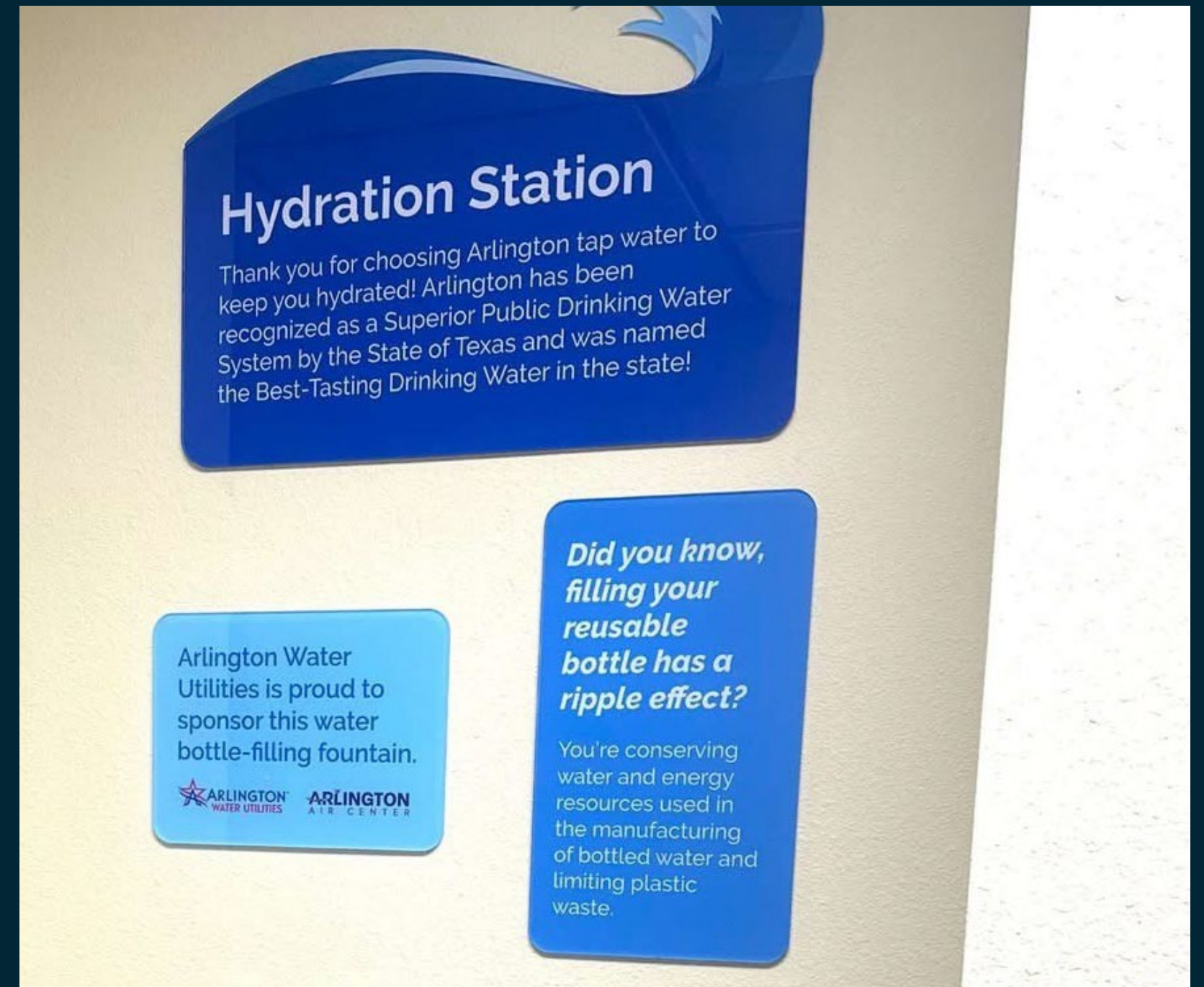
Discussion

Energy and Water Conservation Signage for Municipally Owned Buildings

Examples:

REUSABLE WATER BOTTLES

Consider the use of reusable bottles to reduce bottled water consumption. By using fewer resources, we can help conserve water and reduce pollution associated with manufacturing processes.



Source: Arlington Municipal Airport

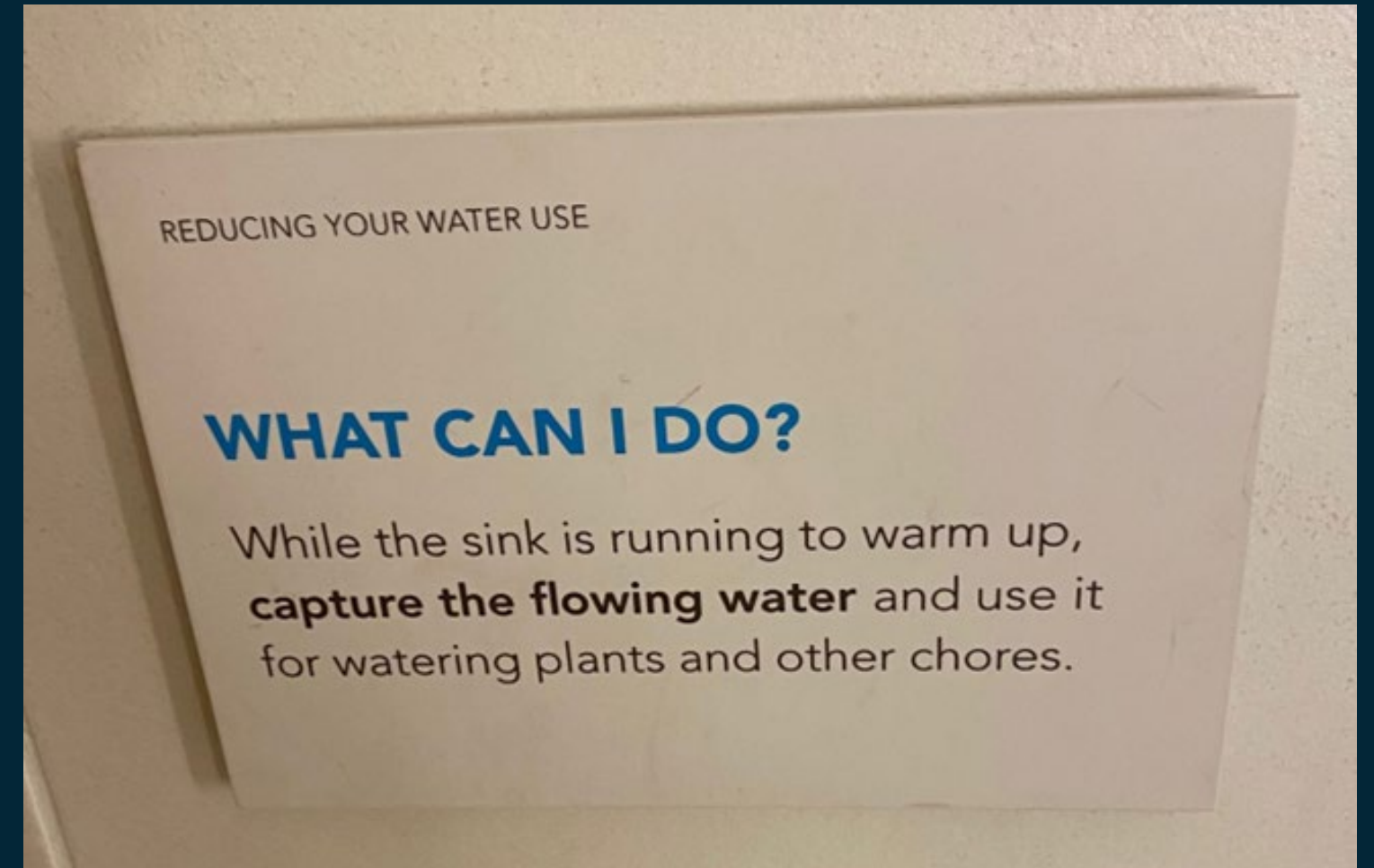
Discussion

Energy and Water Conservation Signage for Municipally Owned Buildings

Examples:

WATER REUSE

Don't let your water go to waste! Find another use for any excess or leftover water rather than putting it down the drain! This may look like using your leftover drinking water to water indoor plants or asking your coworkers if they have a use for it. This can also apply to ice cubes leftover from your drink!



*Source: Botanical Research
Institute of Texas*

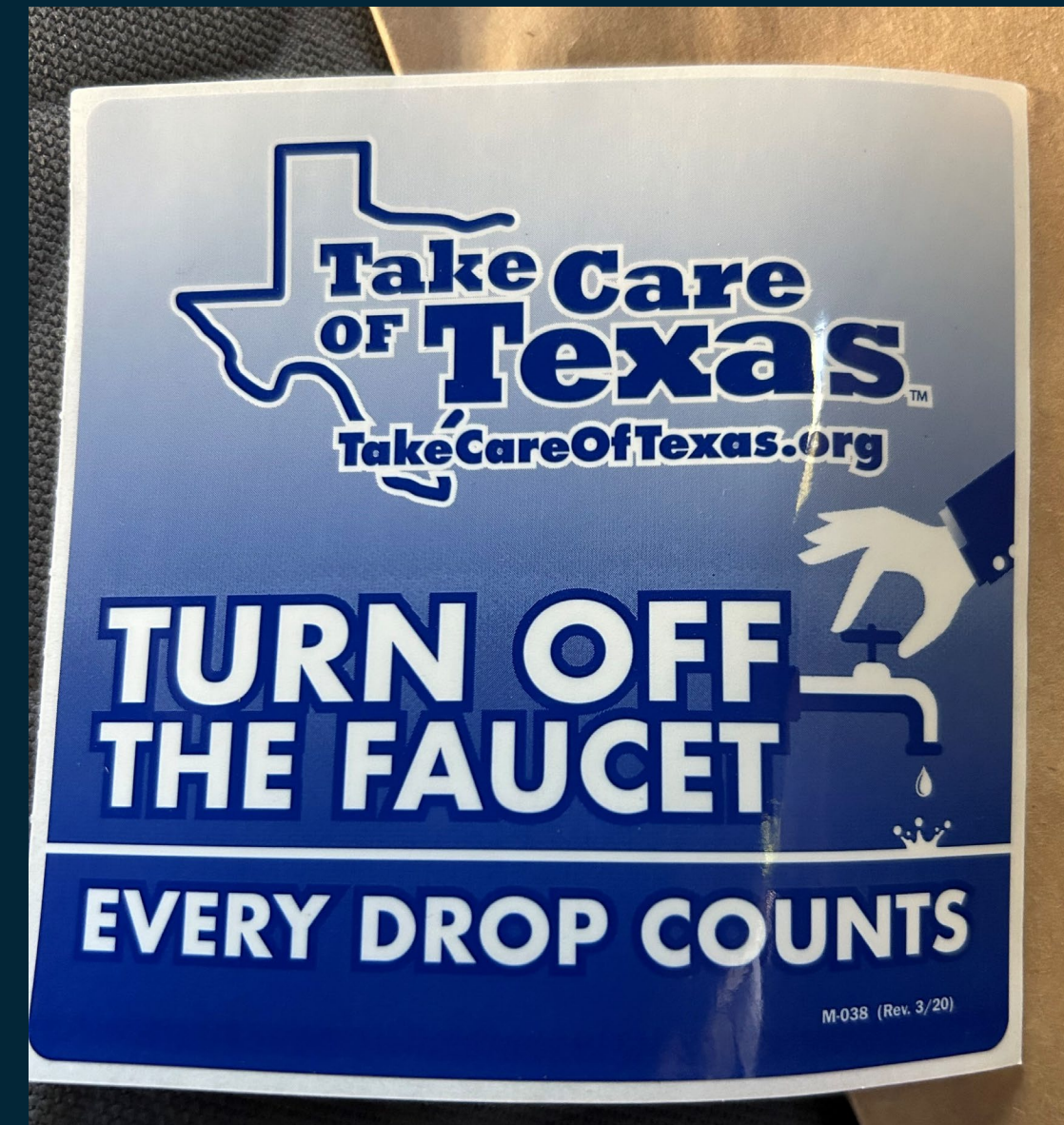
Discussion

Energy and Water Conservation Signage for Municipally Owned Buildings

Examples:

TURN OFF THE FAUCET

When washing your hands, turn off the water while lathering and scrubbing your hands, then turn it back on to rinse.



Source: TCEQ

Discussion

Energy and Water Conservation Signage for Municipally Owned Buildings

Examples:

IRRIGATION

Raining outside? Be sure to turn off sprinklers, to conserve water, rain, or shine.

**SPRINKLER & IRRIGATION
BEST PRACTICES**

It's just dirt, right?

Follow these watering and irrigation best practices to help prevent runoff of soil, pesticides, and fertilizers.

- Maintain sprinkler heads and irrigation systems to prevent unnecessary water loss.
- Don't water in the rain or freezing temperatures.
- Water at the right time of day.
- Refer to the label for pesticides and fertilizers to make sure you are applying them correctly and watering at the right time.



NCTCOG Updates

Dallas–Fort Worth Air Quality Improvement Plan: Comprehensive Climate Action Plan Updates

- NCTCOG is still accepting feedback on the DFW–AQIP Priority Climate Action Plan and suggestions for the Comprehensive Climate Action Plan via [online survey](#)
- Seeking input for wastewater projections

NCTCOG Updates

Total Maximum Daily Load (TMDL) Implementation Plan (I-Plan) Revisions

- The TMDL program is seeking feedback on implementation strategies for addressing bacteria impairment in the [TMDL I-Plan](#).
- Send comments and feedback to Hannah Ordonez at hordonez@nctcog.org.

NCTCOG Updates

Region C Regional Water Planning Group Meeting

- Monday, February 24, 2025; 1:00 p.m.–4:00 p.m.
- NCTCOG Offices, Transportation Council Room.

NCTCOG Updates

2025 Watershed Stakeholders Meeting

- Tuesday, March 4, 2025; 10:00 a.m.–12:00 p.m.
- NCTCOG Offices, William Pitstick Conference Room
- [Register here](#)

NCTCOG Updates

NCTCOG Webinar: *From the Ground Up: The Whys and Hows of Groundwater Protection*

- Wednesday, February 12, 2025; 10:00 a.m.
- Virtual, via Microsoft Teams
- [Register here](#)

NCTCOG Updates

NCTCOG Webinar: *Overcoming Water Affordability Challenges with Customer Assistance Programs*

- Date to be determined
- Virtual, via Microsoft Teams



CLIDE

Celebrating Leadership In Development Excellence
Awards 2025



Applications accepted Feb. 3 – Feb. 28, 2025

www.developmentexcellence.com



Celebrating Leadership in Development Excellence (CLIDE) Awards honors development and planning projects that exemplify the region's Principles of Development Excellence which outline a vision for sustainable, livable communities in North Texas.

The North Central Texas Council of Governments (NCTCOG) is looking for projects and programs in North Texas that exemplify these principles.

Applications accepted Feb. 3 – Feb. 28, 2025
www.developmentexcellence.com



CATEGORIES FOR SUBMITTAL

New Development

Projects on previously undeveloped sites exemplifying many Principles of Development Excellence.

Redevelopment

Projects that reuse or rebuild existing structures, exemplifying many Principles of Development Excellence.

Special Development

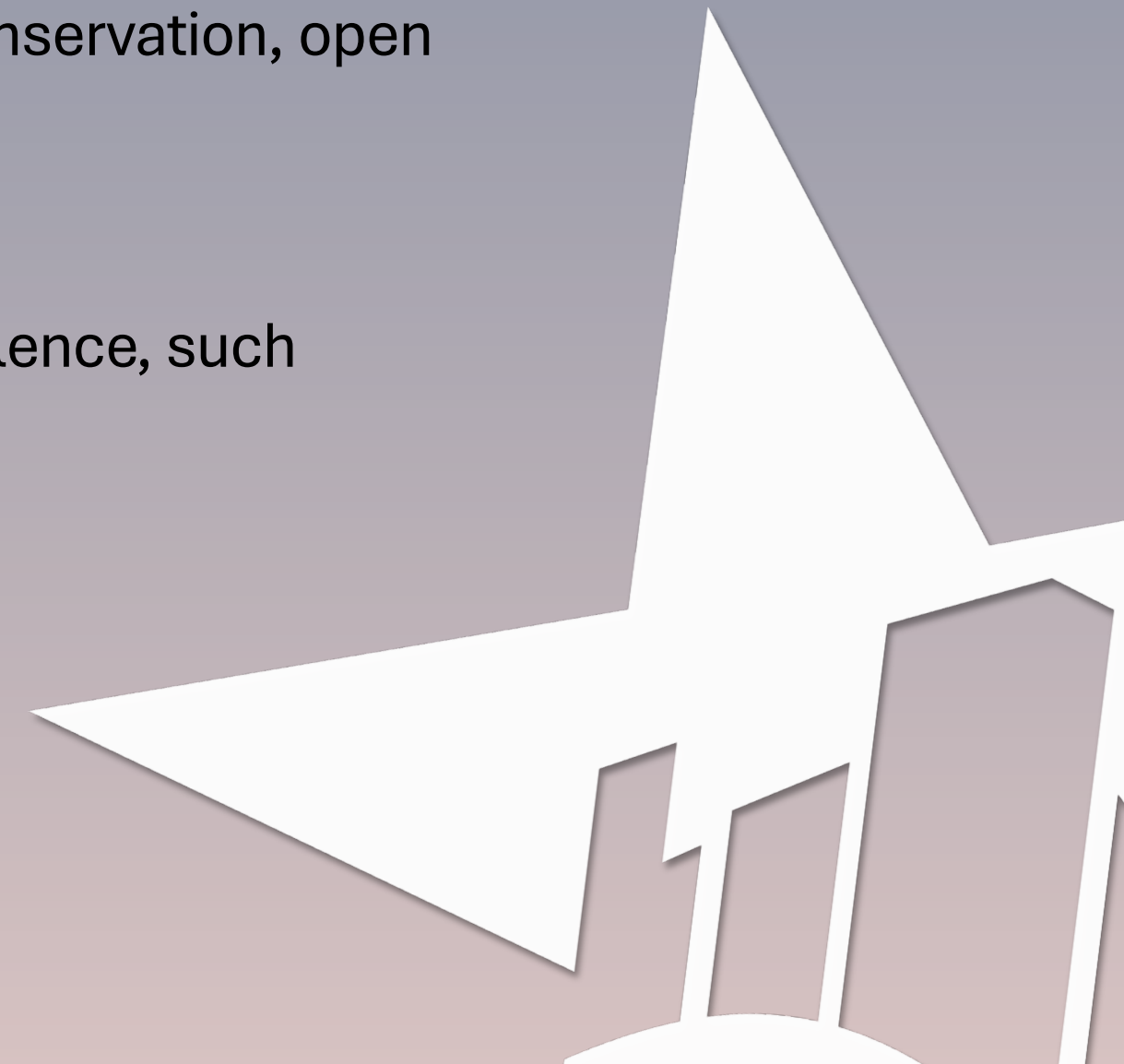
Projects that excel in promoting one or two Principles of Development Excellence, which could include Environmental Stewardship. Examples include sustainable infrastructure, energy conservation, open space or trail projects, and low-impact development.

Raising Public Awareness

Organizations or individuals that have educated the public about development excellence, such as through media stories or public education campaigns.

Public Policy and Planning

Entities that have adopted policies or programs related to Principles of Development Excellence. Examples include mixed-use policies, open space protection, historic preservation, design standards, and comprehensive plans.



Future Agenda Items

The WRC can present future agenda items & discuss the priority and format of previously requested items.



Roundtable

The WRC is invited to share what is happening in their communities.

Next Meeting

Wednesday, April 16, 2025

- 10:30 AM – 12:30 PM
- In-person at NCTCOG
- [Add to Calendar](#)

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