

'Water Security and Emergency Preparedness'

- Are We Ready? -

State of Connecticut

SERC Conference

April 28, 2009

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U.S. EPA – Region 1



The Presentation

- Background
- Drinking Water Security
- Water Emergency Response
- Pandemic Preparedness
- Sources of Information
- Final Thoughts





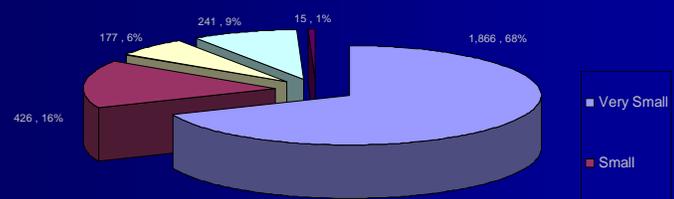
New England – What's the Profile?

- It's a Region of a few very large public water supply systems and many, many small systems;
- Vast majority of public water supply systems are ground water – dependent, and do not provide routine disinfection;
- Some major surface water systems serve > 100,000;
- NE has unique geological formations, with heavy reliance on bedrock wells;
- There are over 800,000 private wells in New England, serving 2.3 million people;

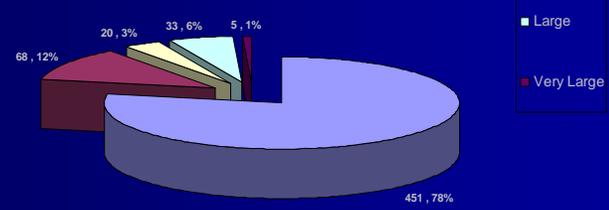


Community Water Systems According to Size

Region 1



CT



**“Water Security:
The Latest On
Advisories,
Incidents and
Tools”**



Drinking Water Security Background – The Experts

“Terrorists use surveillance to select targets, identify facility vulnerabilities, observe security measures...Terrorists use dry runs during the final stages of operational planning...”

Joint Homeland Security Assessment
Federal Bureau of Investigations
August 30, 2007

“...recent vehicle-borne improvised explosive devices in Iraq underscore terrorists’ ability to conduct attacks that incorporate chlorine. Extremists...could target water treatment or other chemical facilities...”

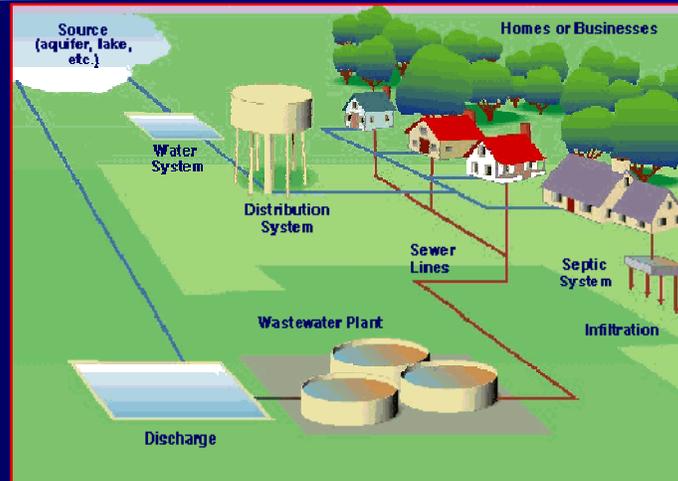
Joint FBI-DHS Bulletin
May 11, 2007

“...terrorists such as al Qa’ida... pose a threat to the water sector given their stated intent and potential capability to contaminate or sabotage water systems.”

Homeland Infrastructure Threat
& Risk Analysis Center
October 27, 2006

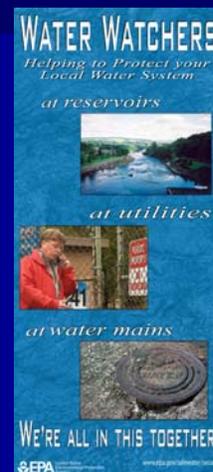


Vulnerabilities??



-The 2002 Bioterrorism Act- Preparing for Water Emergencies

- Water Security Results
- New England has met goal of 100% compliance with for systems serving > 3,300;
 - ✓ Conducted Vulnerability Assessments;
 - ✓ Updated Emergency Response Plans;
- Coordinate with Local Emergency Planning Committees;
- Increases penalties for persons who tamper with public water systems.





Types of Incidents in Connecticut

- Broken valve and locking mechanism;
- Attempted break-in to storage vaults
- fence cut; lock broken;
- Tank hatch open; lock broken; entrance gate pried open;
- Break-in to generator room;
- Intruder found in plant;
- Chlorine gas leak;
- Suspicious phone calls and surveillance;



The Blackstone Incident

Water Security Incident in Blackstone MA – the Rhode Island Perspective

Pair Charged in Water-plant Break; Ban on Use Lifted

Blackstone Prank Gives Legs to Boston Bill

Mass. Police Investigate Possible Contamination

Breach at Water Tank is Reminder of Vulnerabilities in Security

Officials Probe Possible Contamination of Water in Blackstone

MassDEP Issues 'Do Not Use' Order for Town of Blackstone Water Supply Following Incident at Water Storage Tank

Blackstone Residents Told to Boil Water



■ Lessons Learned

- ✓ It's not just about terrorists;
- ✓ Storage tanks – common targets;
- ✓ Chemicals can be a vulnerability;
- ✓ Need for enhanced coordination with law enforcement, public health, local/state emergency responders and public.



Suggested Areas of Coordination between Drinking Water and Emergency Response Programs

- Share emergency contact names/numbers and agree on response protocols for water emergencies;
- State DW programs can provide information on:
 - ✓ Geographic location of water utilities affected or potential impacted and source water protection areas;
 - ✓ Current treatment;
 - ✓ Population served and service area;
 - ✓ Water sector emergency contacts;
 - ✓ Public health consequences.
- Recommend that state and federal DW staff and utilities have ICS/NIMS training;



- Coordinate and conduct drills impacting critical water infrastructure;
- Prioritize inspections (e.g. SPCC) of utilities with potential impacts to drinking water sources;
- Learn about related water sector response and preparedness tools:
 - ✓ Water Response Protocol Tool Box;
 - ✓ CD of EPA Table Top Exercises for Water Utilities;
 - ✓ Top Ten List for Water Security for Law Enforcement.
 - ✓ Water Watchers Brochure

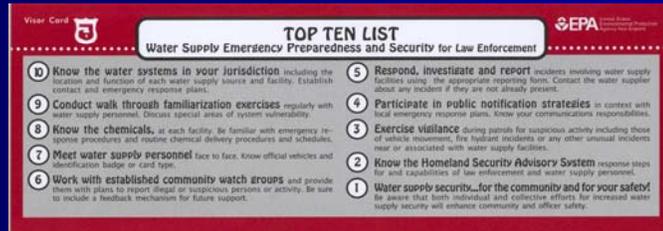
Incident Command System (ICS) & National Incident Management System (NIMS) courses – for water sector



- Water professionals *are* first responders
- 100, 200, course materials customized for the water and wastewater sector
- Contact EPA to schedule, free
- Course materials also available soon to other certified ICS instructors to conduct this training
- Training held in at all NE States

www.epa.gov/safewater/watersecurity/

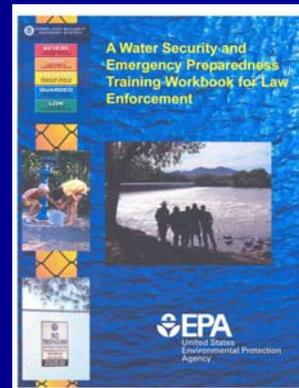
EPA NE's "Top Ten" series of tips for drinking & waste water emergency preparedness



- Door/pipehanger card with tips for Emergency Preparedness for small groundwater systems
- Police cruiser visor card with tips for Law Enforcement
- Luggage tag with tips for LEPCs/First Responders

Tools to train law enforcement on water security

- New in 2008, to educate law enforcement on water & wastewater sector security and preparedness issues
- Partnered with many state, federal and local law enforcement groups
- Workbook and CD for short roll-call training segments
- Encourage partnering of utilities with local law enforcement, visit utilities, know the water responders



Available on www.waterisac.org, or from EPA



Citizens

- "Water Watchers- A Citizen's Guide for Water Security"
- "Protect Your Drinking Water"- Volunteer on Stream Team
- "Are You Providing Safe Drinking Water at Your School"

WATER WATCHERS

Helping to Protect your Local Water System

at reservoirs



at utilities



at water mains



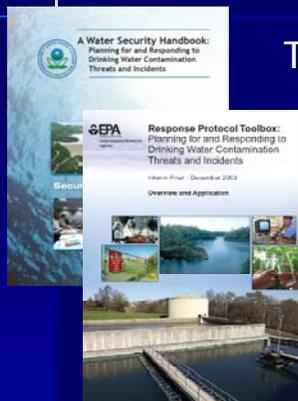
WE'RE ALL IN THIS TOGETHER



United States Environmental Protection Agency

www.epa.gov/safewater/security

EPA's Emergency Response Protocol Toolbox



Two options:

- 1) short summary overview
- 2) complete book of 6 modules, each module targeted to certain emergency response roles

Use to prepare BEFORE an emergency

www.epa.gov/safewater/watersecurity/

Water ISAC Water Security Network (Pro or Basic versions)



www.waterisac.org

Water Contaminant Information Tool (WCIT)

- Secure, web-based database of current information on priority contaminants of concern to water security
- Focuses on short-term exposure and how to effectively manage a contamination event
- Currently contains data on over 90 contaminants
 - Pathogens
 - Biotoxins
 - Chemical warfare agents
 - Radionuclides
 - Pesticides
 - Other toxic compounds



www.epa.gov/wcit



"Water Emergency Response"



Emergencies & Hurricane Katrina

In September 2005

- More than 1,000 public water systems were affected;
- More than 500 systems were on boil water notices;
- Flood waters exceeded standards for e. coli and lead;
- More than 2.5 million customers suffered power outages;
- EPA HQs, FEMA, and U.S. ACE negotiating pre-scripted mission assignment for EPA support efforts with water sector under ESF #3.



Flooding in New England



EPA R1 Ramp Up Strategy

- Working closely with FEMA and U.S. ACE to increase capacity for EPA regional water staff to support states in responding to emergencies affecting critical water infrastructure under ESF #3:
 - ✓ EPA R1 Water Emergency Workshop with Rs 4 & 6, U.S. COE, FEMA and NE States;
 - ✓ In FY'07, commenced work on R1's Water Emergency Team:
 - ICS/NIMS/OSHA Training;
 - Cross-training with FEMA/U.S. COE;
 - DW Staff Fly Away Kits;
 - Sanitary Survey and Damage Assessment training;
 - GIS/SDWIS Mapping Tool;
 - ✓ In FY'08 R1 established Water Team of 33 staff/managers and provided key equipment.



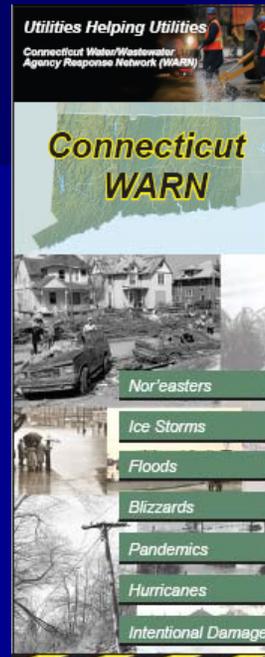
EPA R1 Ramp Up Strategy – Cont'd

- Support development of 6 Intra-State WARN programs and NE Inter-State Mutual Aid Compact
- In partnership with NE states and NEWWA:
 - Community-based water emergency response workshops and drills in all states;
 - Development of utilities emergency notification forms:
 - Annual information form;
 - Pandemic status report;
 - Emergency notification form;
 - Generator Brochure.



Mutual Aid
Utilities helping Utilities
Thru
Water/Wastewater Agency
Response Networks
(WARN)

"It's a Beautiful Thing."
Jane Downing





Why Water and Wastewater Response Network (WARN)?

- Past disaster response and lessons learned:
 - Utility operations are specialized
 - Utilities must be self-sufficient
 - Utilities must fill the gap between disaster onset and arrival of other governmental aid
 - Water/wastewater restoration provides hope



WARNS in New England

Case Study: In July 2007, Bethel Water District's sole reservoir destroyed due to flash flooding. Auburn Water District came to rescue with personnel and equipment to create temporary impoundment. FEMA will reimburse such work in a federally declared disaster if done under signed mutual aid (WARN) agreements.





Who's Involved in Connecticut?

- Utility owner/operators
 - Tom Chaplik (Chair) – South Central CT Regional Water Authority
 - 14 members in CT WARN
- Professional association representation
 - CT Water Works Association
 - Atlantic States Rural Water Association
- State water and wastewater primacy agency
 - CT Department of Public Health
 - CT Department of Public Utility Control
 - CT Department of Environmental Protection
- State emergency management and or homeland security agency
 - CT Department of Emergency Management and Homeland Security
- US EPA regional representation

What's the Latest on CTWARN?

- See www.ctwarn.org
- CT WARN tabletop exercise on 5/27/09 in Portland CT;
- Finalized WARN Operational Plan;
- Partnering with State agencies for GETS services and utility resources;
- Investigating legal authority for inter-state WARNs;
- Active outreach to water sector.





New England WARN Activities

- EPA R1 supporting efforts of established WARN programs in each NE State;
- Provided outreach materials and technical assistance;
- All New England states now have active WARN programs.
- Conducting table top exercises, WARN workshops, and ICS/NIMs water sector training;
- Working with all states to investigate WARNs across state lines, a NE-wide Interstate Mutual Aid program. (EMAC does exist for this presently)



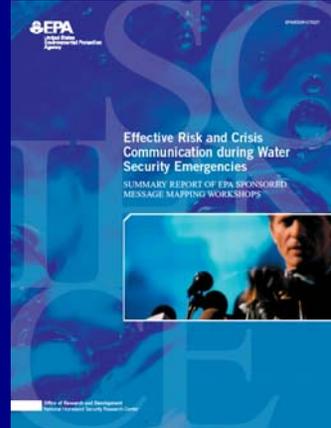
Special Projects

- Chemical Supply Chain Vulnerabilities
 - ✓ Essential chemicals for essential functions;
 - ✓ National and regional manufacturers;
 - ✓ New England suppliers;
 - ✓ Some vulnerabilities identified
- Generators Report
 - ✓ In MA, emergency response plans for community water systems contain backup power provisions;
 - ✓ NH using EPA grant to provide electrical costs for installation of generators;
 - ✓ More work needed to develop baseline, support capacity for backup power, and provide outreach to water operators.



EPA Message Mapping: Risk Communication tool for Water Incidents

- Details steps, techniques for developing effective crisis messages about water related incidents.
- Process to predict 95% of questions likely to be asked by the media and others following an incident
- How to prepare clear and concise answers to the questions along with supporting information
- Practice effective message delivery before a crisis occurs!

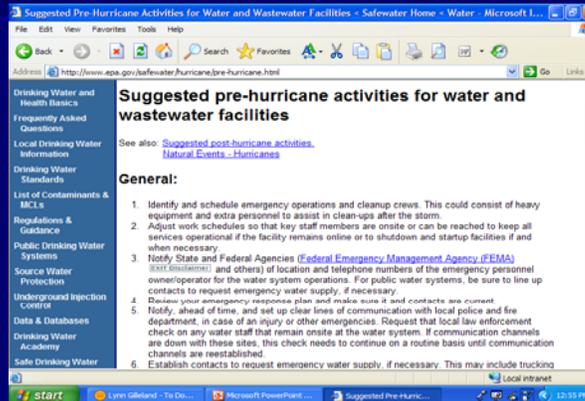


Mutual Aid and WARN tools



- WARN brochures available
 - EPA's WARN tabletop facilitator's guide and scenarios on web
 - AWWA resource typing manual for water sector
 - EPA funded/facilitated tabletop exercises for WARNs, available 2008/2009 (HSEEP compliant)
- www.nationalwarn.org
- www.epa.gov/safewater/security

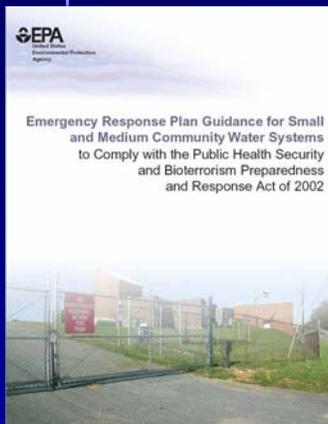
EPA's Hurricane information for water utilities



Pre and Post - hurricane activities listings just for water utilities, easy to use

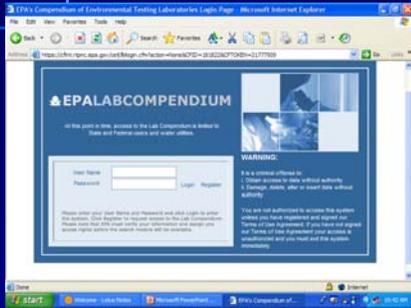
www.epa.gov/safewater/hurricane/

Emergency Response Plans for drinking water



- Keep in a safe, accessible, alternate location – update!
- Contains critical contact info. needed by staff in an emergency
- Includes information and protocols for: emergency contacts, disinfection, public notification, boil order templates, sampling, generator needs, communications, system maps

EPA Lab Compendium



- Database of nationwide environmental labs available to water utilities and to federal and state agencies
- Has each lab's specific capabilities to analyze chemical and biological analytes, as well as chemical warfare, bioterrorism, and radiochemical agents

E-mail: labcompendium@fedcsc.com

<https://cfext.epa.gov/cet/>

"Pandemic Preparedness for Water Utilities"



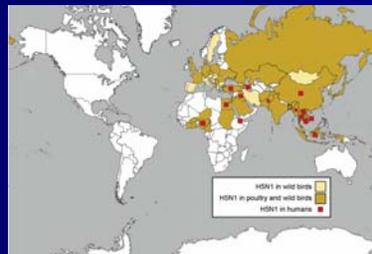
Context – The Experts

- "The current outbreaks of highly pathogenic avian influenza, which began in South-East Asia in mid-2003, are the largest and most severe on record. Never before in the history of this disease has so many countries been simultaneously affected..."
 - The WHO Pandemic Alert is Phase 3: No or very limited human-to-human transmission

World Health Organization
December 2005

- "Recent survey show that the majority of people are concerned about a pandemic outbreak (in many countries and the U.S.)

Harvard School of Public Health
January 2006



IN THE NEWS

Spooked by Bird Flu, Egyptians Hoard Water
Residents of Cairo Fear Chickens Dumped in the Nile
Could Infect Their Drinking Supply

Health officials told the public the city's water supply is safe after farmers began to dump stricken birds into the Nile River. (By Nasser -- Associated Press)



Unique Challenges Posed by a Pandemic

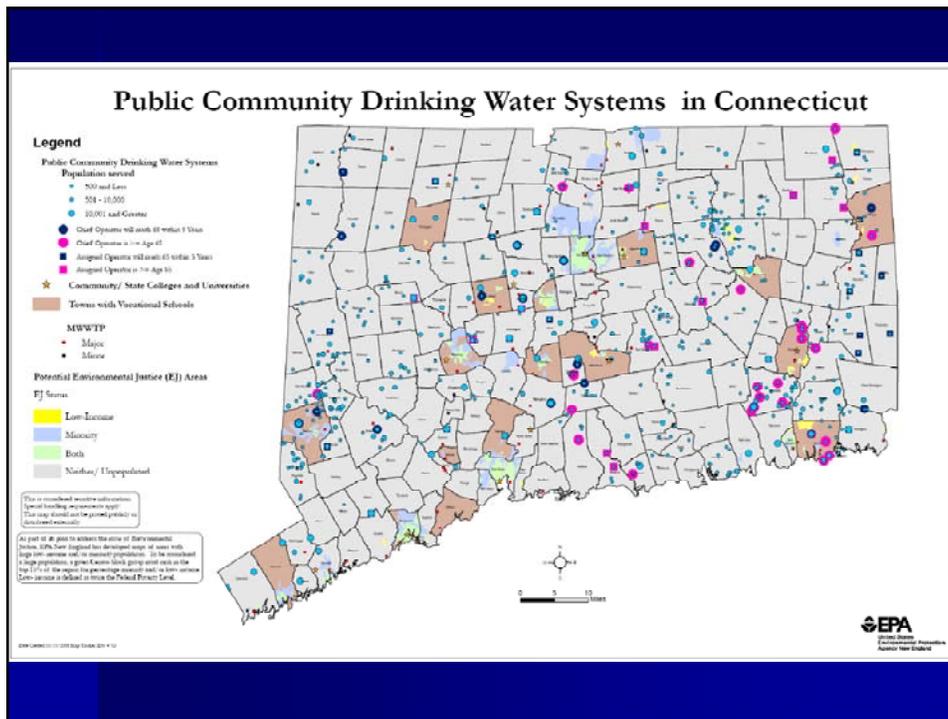
- Outbreaks may occur at the same time across the country in many different places;
- Transportation services may be disrupted;
- Critical and everyday supplies may be limited;
- Schools and businesses may close for an extended period of time;
- Lack of certified operators will become an issue;
- Workers will need advice and support.



EPA New England Experience

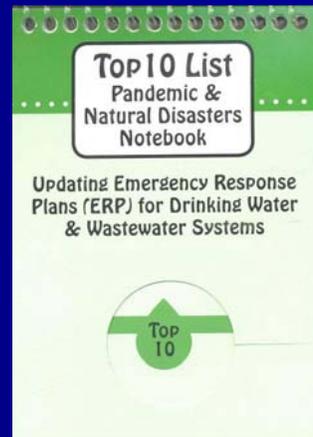
- What Have We Learned?
 - ✓ The degree of automation will be both a help and hindrance;"
 - ✓ "Most systems have chemical supplies lasting between 2 weeks to 1 month;"
 - ✓ "Local planning will be essential in identifying alternate workforce for critical functions;"
 - ✓ "Like water security, emergency response plans and drills will be critical;"
 - ✓ "Systems need to assess potential impacts to their critical functions such as disinfection;"
 - ✓ "Some systems may experience a lack of certified operators."





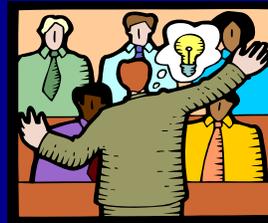
EPA New England DW Pandemic Plan

- What Efforts are Underway in Coordination with NE States and Other Partners?
 - ✓ Produce "Top Ten Steps" Water Utilities can take to prepare for Natural Disasters (hurricanes, pandemic);
 - ✓ New England Inter-State Compact;
 - ✓ State-wide Programs;
 - ✓ Continue community-based emergency preparedness workshops, including pandemic drills;



Suggested Areas of Coordination

- Get involved in Business Continuity Planning;
- Get to know your water suppliers – ask questions about critical functions, critical chemicals, critical assets;
- Discuss workforce shortage impacts - consider cross-training;
- Participate in water sector drills and invite water managers into local/regional drills



Pandemic Preparedness Tools

Pandemic Planning Checklists

- ✓ Business Continuity Planning in the Event of an Influenza Pandemic: A Reference Guide (AMWA/Water ISAC);
- ✓ State and Local Pandemic Influenza Planning Checklist (DHHS/CDC);
- ✓ Business Pandemic Influenza Planning Checklist (DHHS/CDC);
- ✓ Pandemic Influenza Planning: A Guide for Individuals and Families (DHHS);
- ✓ Pandemic Influenza Checklist (NRWA);



Pandemic Preparedness Guidances

- Disposal of Domestic Birds Infected by Avian Influenza – Overview of Considerations and Options (U.S. EPA, 8/11/06);
- Utilities Helping Utilities: An Action Plan for Mutual Aid and Assistance Networks for Water and Wastewater Utilities (AWWA, 3/06);
- Avian Influenza (“Bird Flu”) – Fact Sheet (WHO, 2/06);
- It’s Not Flu As Usual – What Businesses Need to Know about Pandemic Flu Planning (Trust for America’s Health);
- Pandemic Influenza: Preparedness, Response and Recovery – Guide for Critical Infrastructure and Key Resources;

Pandemic Preparedness Guidance

- OSHA Guidance Update on Protecting Employees from Avian Flu Viruses;
- HHS Public Affairs Guidance (HHS, 5/06);
- Human Capital Planning for Pandemic Influenza (U.S. OPM, 8/06);
- Briefing Note to the Water Industry on Avian Influenza “Bird Flu” (Water ISAC – UK Advisory, 4/06);
- “The Great Influenza” By John M. Barry.



Tools Continued

Websites

www.pandemicflu.gov

www.epa.gov/avianflu

www.epa.gov/safewater

www.usda.gov/birdflu

www.epa.gov/ne

www.waterisac.org

www.watersc.org

www.bt.cdc.gov



POP QUIZ

- Who's the Chairman of the CT Warn?
- What is the name of the web-based database of information on water contaminants of concern?
- Name 1 essential chemical needed to deliver safe water?
- What challenges will the Water Sector face during a pandemic?
- What team will win the NBA Championship?
- What will YOU do to enhance coordination between the Water Sector and Emergency Response Agencies?

Final Thoughts

