Welcome

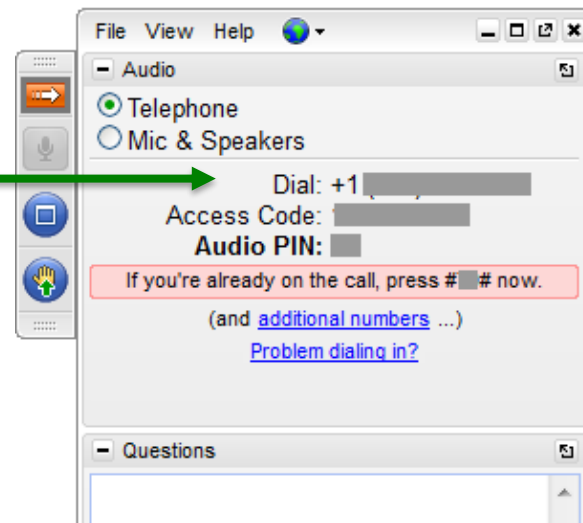## *Public Notification in Water Contamination Events and Outages – Part 1*

Please dial-in, or use your mic & speakers.

Enter your Audio PIN, after you dial in.

(All phone lines are muted for now)

WaterISAC

Reminders

- Slides and recordings will be available to Pro members on the WaterISAC portal by Friday afternoon.

- If you are interested in applying to your state for CEU or PDH credits, email events@waterisac.org for application support materials.

- Don't forget to sign up for Part 2 tomorrow at www.waterisac.org/events.

WaterISAC

How to Ask a Question

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Our Presenter

Lisa Ragain
Aqua Vitae

WaterISAC

Public Notification for Outages & Spills Part 1: Improving Water Sector Practice

Lisa Ragain, Aqua Vitae

July 9, 2014

Domestic water supplies should protect the health and promote the well-being of individuals and communities.

Overview

- Review advisory strategies, practices and tools

- Discuss advisory implementation

- Identify specifics for drinking water supply emergencies such as outages and spills

Why issue drinking water advisories?

- Provide information

- Encourage preparedness

- Recommend & prompt action

- Meet public notification requirements

Drinking Water Advisory Types & Triggers in Current Practice

Uncertainty ←——————————————————————

Severity ——————————————————————→

Triggers

Precautionary	State Specific	SDWA	Contaminant	WBDO	Natural Disaster
Planned Distribution System Work	Pressure ≤ 20 psi	TCR	Positive Indicator	Suspected Outbreak	Warning & Preparation
Reduced Pressure	Pressure = 0 psi	GWR	Turbidity	Confirmed Pathogen	Drought Conservation
Loss of Service	Negative pressure	LT2		Confirmed Outbreak	Store or Conserve Supply Loss
Main Break	Loss of service	Treatment or Disinfection Failure	Amonia, Hyperchlorite	Confirmed Acute Chemical	Recovery
Contaminant Warning Alarm	State Discretion	Nitrate	Radiologic	Confirmed Radiologic	Long term disruption: source water treatment, distribution system
Vandalism	Cyanotoxin	Acute Chemical			

Return to Service

Drinking Water Advisory Criteria

Contaminant	Trigger	Example	Considerations	Uncertainty	Advisory Type
Microbial	Regulation	TCR, LT2, GWR	30%-50% Consumer Compliance	High	Boil Water
	Source Water	Turbidity	Scalding		
	Treatment	Failure	Electricity Status		
	Distribution System	Cross connections			
	WBDO		Health department driven		
			Known contaminant, high urgency		
Chemical	Treatment	Chlorine overfeed	Taste & odor mayl limit exposure	Low to Intermediate	Do Not Bathe
	Regulation	Nitrate	Specific to Infants		Do Not Drink
	Source Water	Acute	Targeted Communication		
	Treatment	Hazmat spill			
	Distribution System				
Radiologic	Intentional	Bioterrorism agent	No Sanitation or fire suppression	Low	Do Not Use
	Hazmat Spill	High concentration	"Nuclear" option, rare use		
All	Option for above	Bottled water, tanker water	Acess to alternative sources, cost, distribution protocol	High to very low	Use Alternative Source
	Known water outage	Loss of supply, system off	Customers will stockpile		Conservation, Limit Use
	Low water supply	Water main break	Compliance challenging		
		Drought	Time frame may limit urgency		
	Hurricane or disaster	Storm preparation	Anticipatory		Prepare, Store Water
	Recovery	Flushing, disinfection			Flush
	Return to service	Aesthetics			

- Research & practice based
- Field tested & valuated
- CDC Seal of approval
- Consistency

Drinking Water Advisory Communication Toolbox: Goals

- Assess regional communication preferences

- Identify clear criteria for issuing different types of advisories

- Incorporate protocols and materials through training with utilities and localities

- Evaluate through a regional exercise.

Informational	Boil Water	Do Not Drink	Do Not Use

(lesser)   Severity of situation   (greater) ⟶

Public encouraged to take immediate action ⟶

Occasional

Used for a range of purposes:

- Failure to meet drinking water standards with non-acute endpoints or administrative requirements

- Efforts to build rapport with customers

- Customer education to increase preparedness for emergencies

- Water conservation messaging

Frequent

Used for potential or demonstrated microbial contamination:

- Low/loss of pressure

- Tier 1 microbial violation (e.g., high turbidity, positive *E. coli*)

- Natural disasters (e.g., flooding, hurricanes)

- Vandalism

Infrequent

Used for potential or demonstrated contamination that could cause acute health effects:

- Nitrite/Nitrate MCL violation*

- Chemical overfeed into the water supply

Rare

Used with caution due to risk associated with lack of sanitation and fire protection:

- Microbial, chemical, or radiological contamination in which any contact is hazardous to public health

- Error in treatment leading to water with a high or low pH that could lead to chemical burns

Drinking Water Sector Findings

- Advice to the public varies widely from state to state and community to community.

- Advisories are a common occurrence in some states and a rare event in others.

- Major events or disasters were the primary reasons for collaboration between drinking water systems and health departments.

- Terminology for advisories is inconsistent.

- Templates and advisory content are difficult to change or adapt to specific audiences or needs.

- The EPA Public Notification Handbook is the primary information source for drinking water advisories.

Health & Response Agency Findings

- Agency responsibilities for communicating with institutions, such as hospitals, schools, and restaurants, are highly variable.

- Good relationships between water systems and local public health departments are often dependent on established relationships between individuals.

- Local health departments may lack the resources or expertise to address drinking water issues.

- Local health departments are willing to be consulted by water systems when requested.

Scope					
Customers		**Water Systems**		**Timing**	
Critical Infrastructure	□	Wholesale/Consecutive	□	Anticipated Event	□
Commercial	□	Shared Source Water	□	Immediate Event	□
Institutions	□	Neighbor Utilities	□	Subsequent to Outbreak	□
Susceptible Populations	□	Multiple Jurisdictions	□		

Scale					
Affected Area		**Population Affected**		**Duration**	
Street	□	< 100	□	< 24 hrs.	□
Neighborhood	□	100 - 1,000	□	24 – 72 hrs.	□
Pressure Zone	□	1,000 – 10,000	□	1 Week	□
Service Area	□	10,000 – 100,000	□	> Week	□
Region	□	100,000 – 500,000	□	1 Month	□
State	□	> 500,000	□	> 1 Month	□

Severity							
Outage		**Uncertainty**		**Contaminant**		**Health Effects**	
Low Pressure	□	Precautionary	□	+ Indicator - sample	□	Low probability	□
Conservation	□	Suspected contamination	□	Confirmed contaminant		Unknown	□
Restriction	□	Contaminant Warning System alarm	□	Microbial	□	+Indicator	□
Cut-offs	□	Confirmed Alarm	□	Chemical	□	+ Pathogen	□
Partial Outage	□	Confirmed Contamination	□	Radiologic	□	+ Chemical	□
Total Outage	□			Unknown	□	Suspected Illness	□
					□	Confirmed Illness	□

Customer Perspective

You said my water is safe.

Then it wasn't safe.

Is it safe now?

Is it safe for my family?

Will this happen again?

Can I trust you?

Checklist: Before an Event

Organizing for Drinking Water Advisories

- ☐   Conduct an assessment of assets and resources needed to issue a drinking water advisory.
- ☐ Review state regulations and guidance for public notification and the EPA [Revised Public Notification Handbook.](#)
- ☐   Consult your organization's strategic communication plan.
- ☐   Plan for media activities.
- ☐ Integrate communications as part of your emergency response standard operating procedures (SOPs).

Collaborating with Partners

- ☐   Identify partners and critical and wholesale customers.
- ☐   Record and regularly update contact information.
- ☐ Develop a communication network of public agencies and private entities for collaboration during an advisory.
- ☐ Meet and discuss protocols and resources for drinking water advisories with agency partners and community organizations.
- ☐   Plan and conduct regular communication among partner agencies and private organizations.

Checklist: Before an Event

Developing a Message

- ☐ Collaborate with your communication network to develop messages for various advisories and specific audiences.

- ☐ Translate and format messages for special populations (e.g., non-English speakers, visually impaired).

Conducting Exercises

- ☐ Refer to the National Incident Management System (NIMS) and the Homeland Security Exercise and Evaluation Program (HSEEP).

- ☐ Plan exercises.

- ☐ Conduct exercises.

- ☐ Debrief after exercises and incorporate appropriate changes in protocols.

Checklist: During an Event

Initiating an Advisory

- ☐ Identify the situation and collect facts.
- ☐ Notify your drinking water primacy agency.
- ☐ Decide to issue an advisory.
- ☐ Identify the boundaries.
- ☐ Notify your internal staff and external partners.
- ☐ Notify public officials.

Preparing an Advisory

- ☐ Develop, format, and translate the message.
- ☐ Approve the advisory.
- ☐ Identify the spokespersons.
- ☐ Assign communication responsibilities.

Distributing an Advisory

- ☐ Implement distribution methods.
- ☐ Use your network to distribute messages.
- ☐ Work with the media.

Ending an Advisory

- ☐ Issue End of Advisory notice.
- ☐ Debrief
- ☐ Modify agency protocol as needed

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What to Say When?

Water Sector

- – Essential information check list

- – Coordination

- – Focus on Essential Information

- – Plan on staging

- – Don't make assumptions on other agencies knowledge of the water sector

- – Boss' Boss method

- – Use the same information source on contaminants

Challenges

- Outside of the regulatory framework

- Urgency

- Surprise

- How?

- Current practice

- Public health intervention

- Unknown, uncertain

The Public Notification Rule has 10 required elements but…

Tools: Maps

ESRI Public Notification
Dashboard
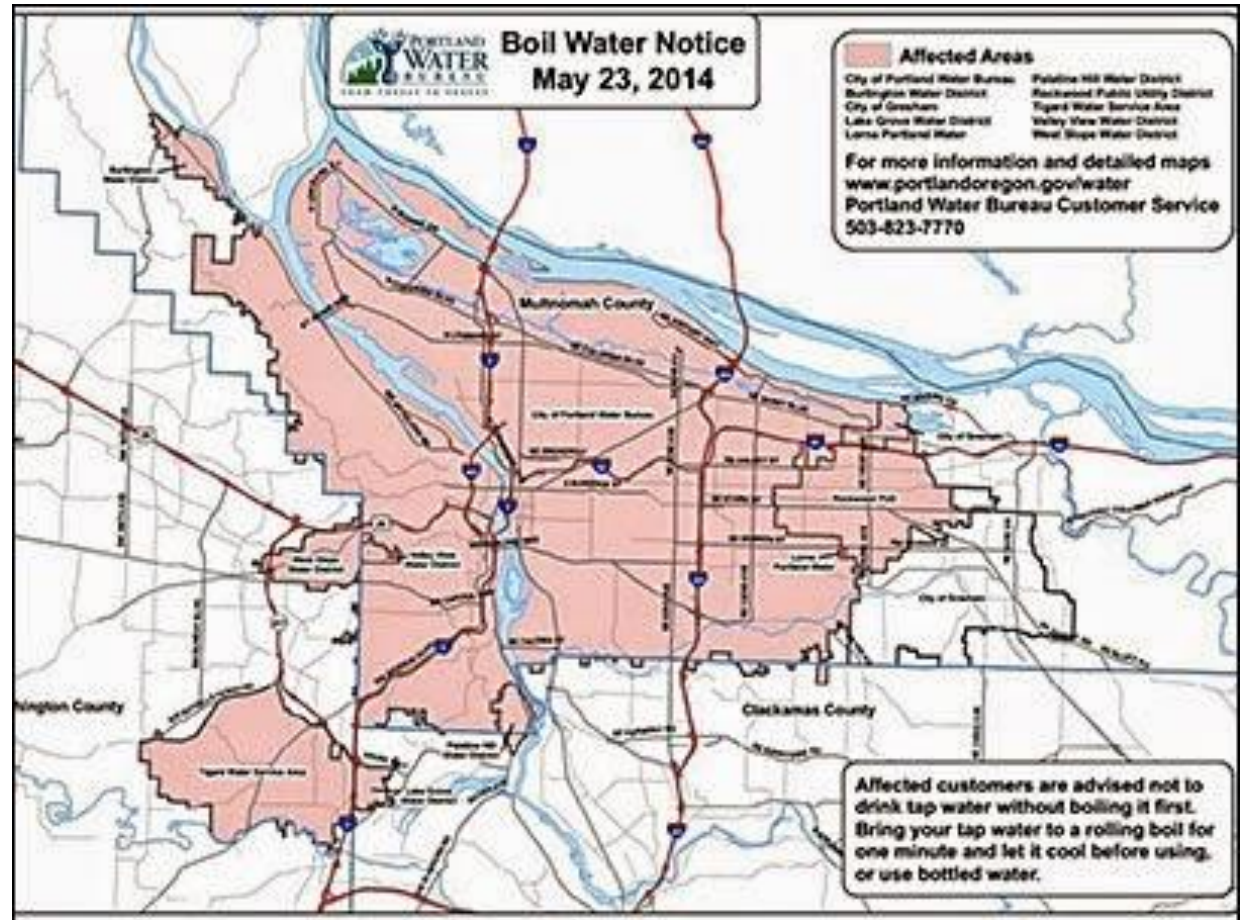
Tools: Signs

Tools: Graphics
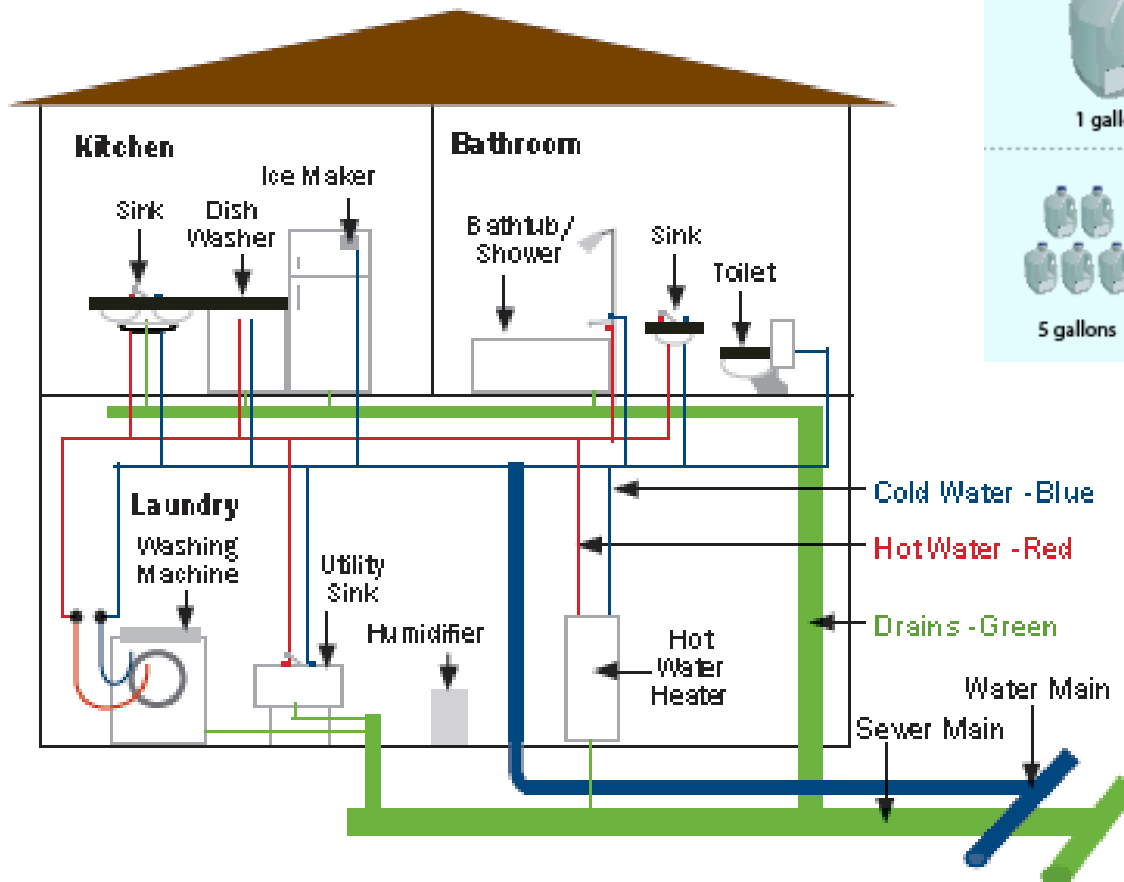
Tools

- Maps
- ESRI Dashboard
- Graphics
- Placement
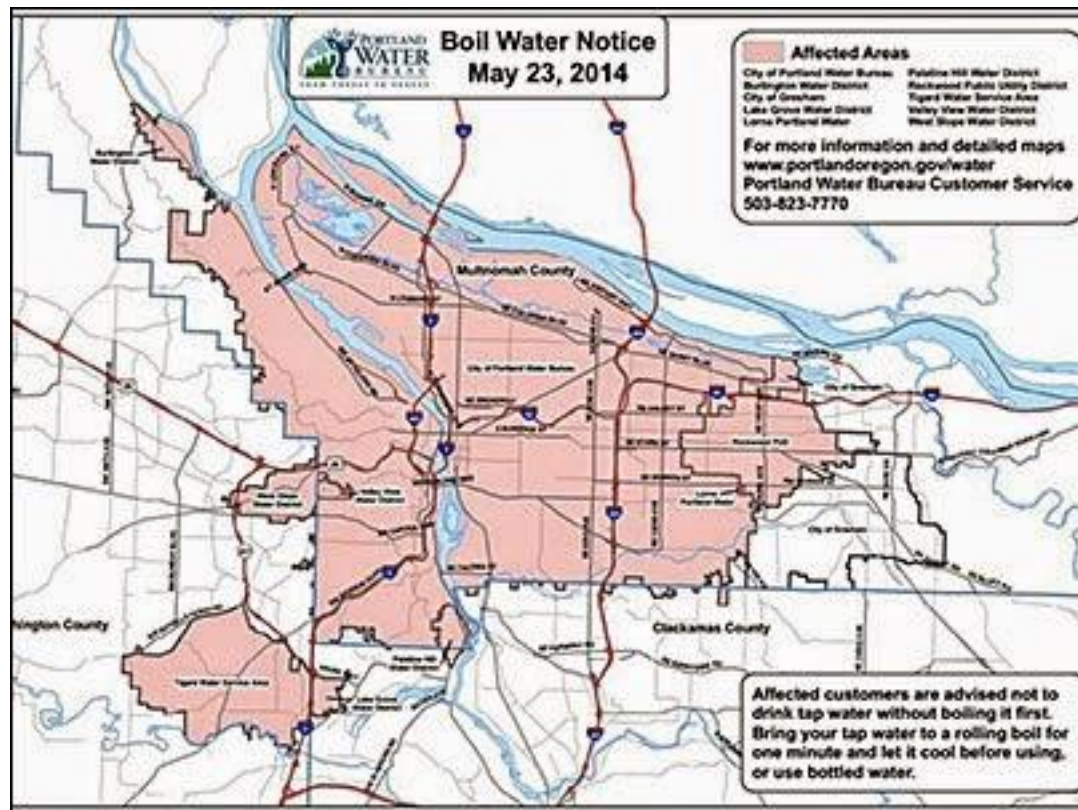
Tools: Customer Preparedness

- Storing Water
- Hygiene

Tools: Planning Guides

Emergency Water Supply Planning Guide for Hospitals and Health Care Facilities

CDC — American Water Works Association

EPA 600/R-11/054 | June 2011 | www.epa.gov

EPA
United States
Environmental Protection
Agency

Planning for an Emergency Drinking Water Supply

WHEN EVERY DROP COUNTS
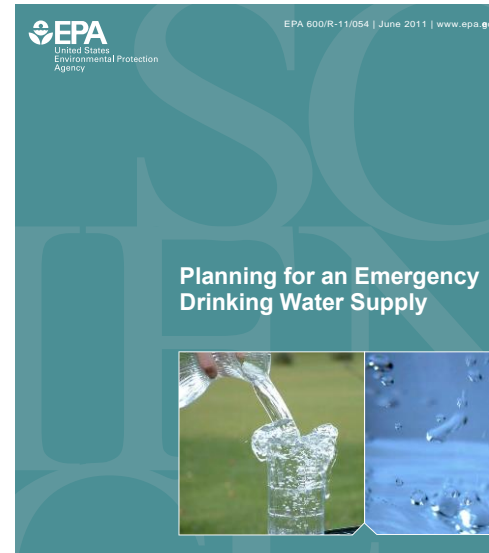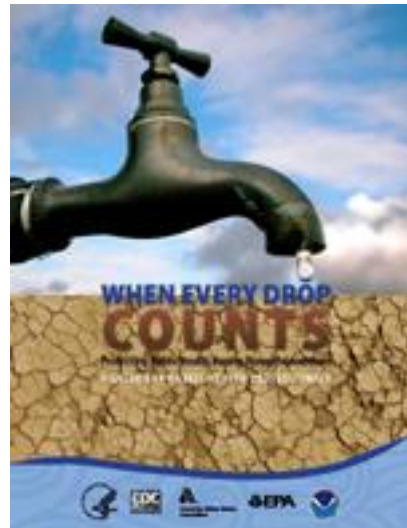
Cryptosporidium and Water:

A Public Health Handbook

1997

One Message, Many Voices

Frame	Message	Examples
Preparedness	We have invested resources in planning for and responding to events We are trained water professionals We are responding and responsive	We plan to ensure that we have plenty of high quality and safe drinking water. We are investigating the event and our labs are sampling to determine the contaminant. We have trained We are collaborating with state and local agencies to manage the situation
Public Health	Drinking water is the foundation of health communities Water professionals will respond to protect public health	The safety and reliability of our drinking water is our primary concern.
	Wise Water Use The Value of Water Natural & Financial Resources Infrastructure Investment Watershed/water Resources	As water systems, we have an excellent track record of making sure that water stays safe to drink. I'm advising people to **use water wisely**. All of us are in this together for safe drinking water in the community, clean water in the environment. Our individual behaviors affect the health of our rivers and our drinking water supply**.**

One Message, Many Voices

Information - the facts

> The who, what, and where, when in the content of a message. In the *Toolbox* this is referred to in each section as essential information.

Message **–** the why

> Extends information and adds the action. In an advisory, customers are asked to take an action or change their behavior.

Information

There is coliform bacteria in the drinking water system.

Message

Take action, there is a health concern

Action

Boil your drinking water water for one minute.

Cool the water before using.

Store cooled water in a clean container with a cover.

Information The advisory is in effect until [Water System] and [other agencies] are confident there is no longer a public health concern. We will provide the next update at [timeframe].

Message *Water systems are acting to reduce health risks and restore drinking water service*

Essential Information

- ☐ Who you are
- ☐ What action customers should take
- ☐ What event occurred and description
- ☐ Where it occurred
- ☐ When it occurred
- ☐ The expected duration

- ☐ Why it happened
- ☐ Who is affected
- ☐ Basic information on the water system
- ☐ Current actions
- ☐ Where to get more information

Decision Tree: Contaminant Warning Advisory Type

```
┌─────────────────┐
│  Contaminant    │
│  Warning Event  │
└─────────────────┘
         │
         ▼
┌─────────────────┐                                              ┌─────────────────┐
│ Use Alternative │◄─────────────────────────────────────────────│ Reduced         │
└─────────────────┘                                              │ Supply or       │
         │                                                       │ Outage          │
         ▼                                                       └─────────────────┘
┌─────────────────┐       No    ┌─────────────────┐    No   ┌─────────────────┐
│  Microbial      │────────────►│  Chemical       │────────►│  Radiologic     │
│  Contaminant    │             │  Contaminant    │         │  Contaminant    │
└─────────────────┘             └─────────────────┘         └─────────────────┘
     Yes                              │                           │
      │                               │      ┌─────────────────┐  │
      │                               └─────►│  Do Not Drink   │◄─┘
      │                                      └─────────────────┘
      ▼                                           │
┌─────────────────┐      ┌─────────────────┐      │      ┌─────────────────┐
│  Boil Water     │─────►│ Inhalation or   │      │      │  Conserve       │
└─────────────────┘      │ Dermal          │      │      └─────────────────┘
                         │ Exposure?       │      ▼             │
                         └─────────────────┘  ┌─────────────┐   ▼
                               │              │ High Toxicity│  ┌─────────────────┐
                              Yes             │ - Volatility?│  │ Prior notice    │
                               ▼              └─────────────┘  │ necessary or    │
                         ┌─────────────┐           │           │ possible?       │
                         │ Do Not Bathe│          Yes          └─────────────────┘
                         └─────────────┘           ▼                 │
                                            ┌─────────────┐         Yes
                                            │ Do Not Use  │          ▼
                                            └─────────────┘    ┌─────────────┐
                                                               │   Store     │
                                                               └─────────────┘
```

- Contaminant Warning Event
- Use Alternative
- Microbial Contaminant — **Yes** → **Boil Water**; No → Chemical Contaminant
- Chemical Contaminant → **Do Not Drink**; Inhalation or Dermal Exposure? — **Yes** → **Do Not Bathe**; No → Radiologic Contaminant
- Do Not Drink → High Toxicity - Volatility? — **Yes** → **Do Not Use**
- Radiologic Contaminant → **Do Not Drink**
- Reduced Supply or Outage — **Yes** → **Conserve** → Prior notice necessary or possible? — **Yes** → **Store**

FAQs

Should I give my pets boiled water?

Pets can get some of the same diseases as people. It is a good idea to give them boiled water that has been cooled.
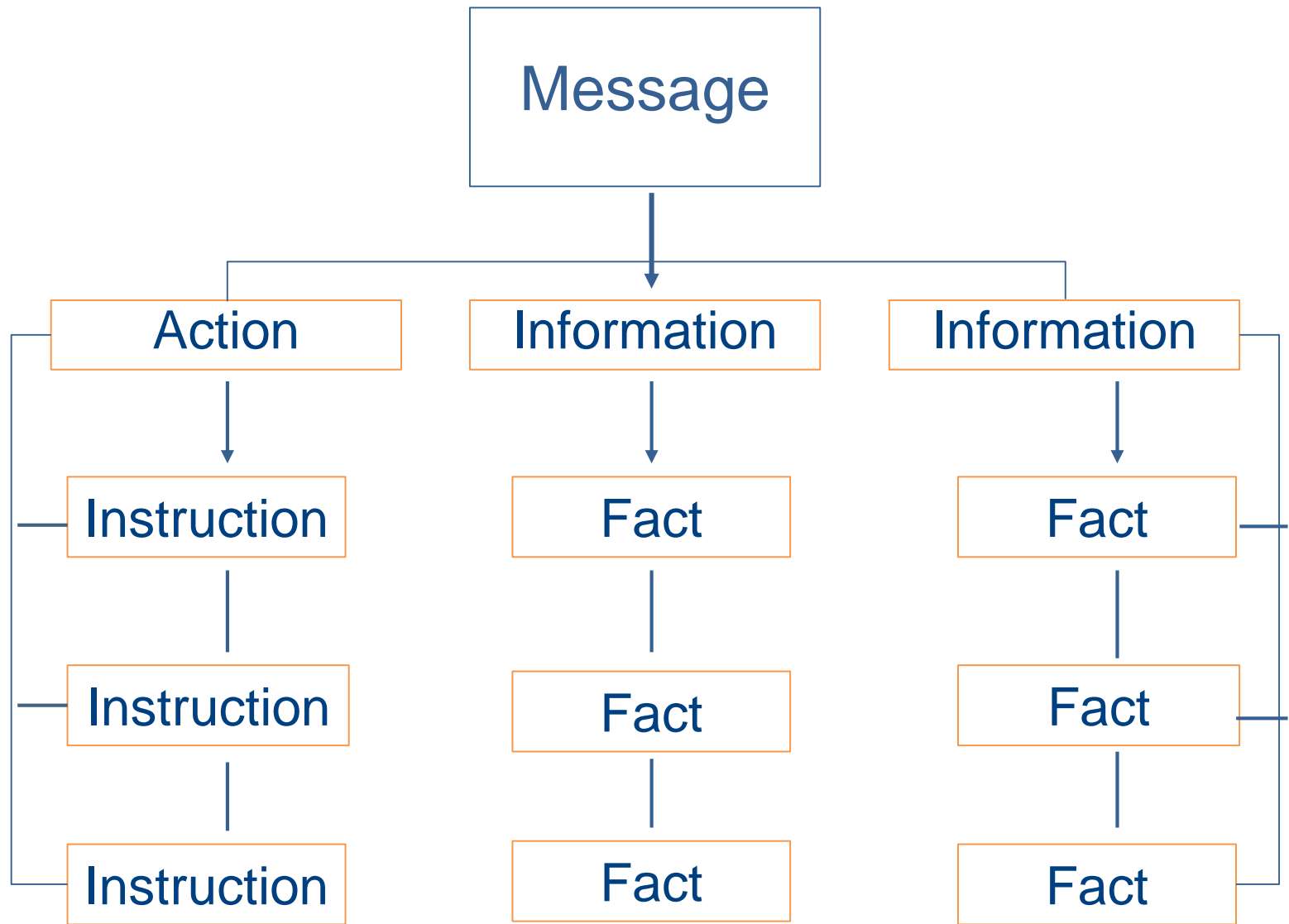
Is it safe to water my garden and house plants?

You can use tap water for house plants and gardens.

Can I use tap water to brush my teeth?

No. You should use boiled or bottled water to brush your teeth.

Message Map Template

Post-Event Checklist

Reporting Requirements

- ☐ Submit report to state drinking water primacy agency.

Debriefing an Event

- ☐ Debrief and conduct an after action review with staff and partners.

Conducting an Evaluation

- ☐ Perform an evaluation.

- ☐ Collect data and information related to the advisory.

- ☐ Analyze and synthesize the data.

Modifying SOPs

- ☐ Incorporate changes to SOPs.

Updating Public Outreach

- ☐ Identify additional communication steps.

- ☐ Follow up with the public.

Water Supply Emergencies: Critical Considerations

- Sampling & Monitoring

- Alternative Water

- Flushing & Decontamination

- Taste & Odor

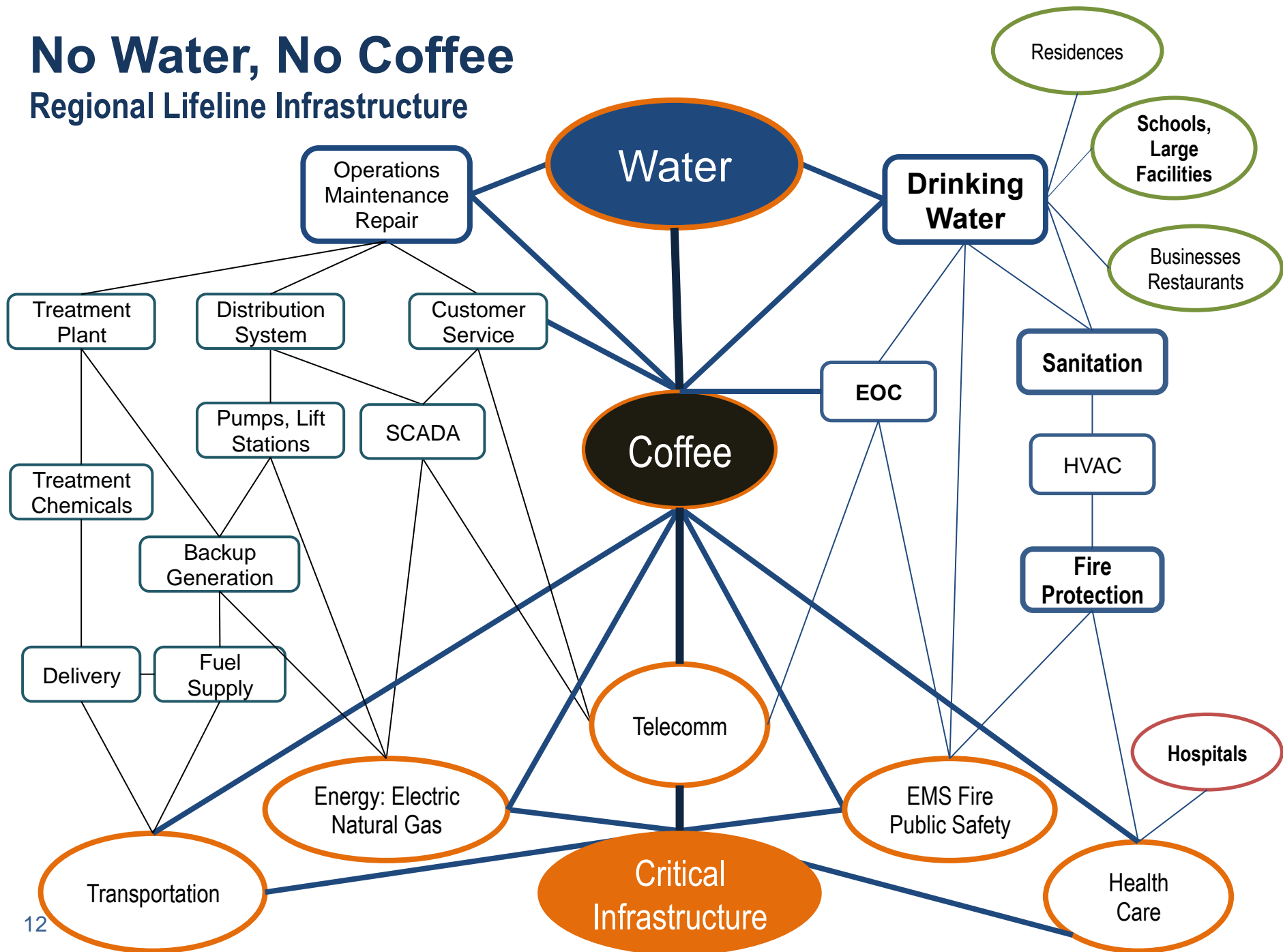# Anticipating Aftermath

- Why wasn't I notified sooner?

- Why did I have to act if there was no contamination?

- Why didn't you…

Improving Practice

- ## Audience Specifics

  - Who needs to know what and when?

- ## Social Network

  - Work of mouth

  - Social Media

- ## Public Notice vs. Public Information

  - The Messenger

No Water, No Coffee
Regional Lifeline Infrastructure

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Thanks to:

AWWA	• Alan Roberson
CDC	• Michael Beach, Julia Gargano, Mark Miller, John Watson & NCEZID
MWCOG	• Steve Bieber & Stuart Freudberg
	• Nicole Condon, Sarah Neiderer & Jonathan Reeves, DC Water
NCR Drinking Water Systems	• Jeanne Bailey & Chuck Murray, Fairfax Water
	• Tom Jacobus, Washington Aqueduct
	• Jim Neustadt, WSSC

NCR Water Systems & Organizations

Arlington County

Fairfax Water

Frederick County

ICPRB

Loudon Water

City of Manassas

Prince William Co. Service Authority

City of Rockville

Virginia American Water

Washington Aqueduct

Share Toolbox Comments:

- Alan Roberson: aroberson@awwa.org
- Lisa Ragain: ragain@aquav.net
- John Watson: HealthyWater@CDC.gov

Resources Referenced

CDC/AWWA

- *Cryptosporidium* and Drinking Water Handbook
  cdc.gov/nceh/ehs/topics/Cryptosporidium.htm

- Drinking Water Advisory Communication Toolbox
  cdc.gov/healthywater/emergency/dwa-comm-toolbox/index.html?s_cid=cs_001

- Do 1 Thing blogs.cdc.gov/publichealthmatters/2013/02/do-1-thing-water/

- Emergency Water Supply Planning for Hospitals and Healthcare Facilities
  cdc.gov/healthywater/pdf/emergency/emergency-water-supply-planning-guide.pdf

- Every Drop Counts cdc.gov/nceh/ehs/publications/Drought.htm

- APHA Get Ready getreadyforflu.org

EPA/AWWA

- Planning for Water Supply Emergencies
  http://cfpub.epa.gov/si/si_public_record_report.cfm?address=nhsrc/&dirEntryId=235197
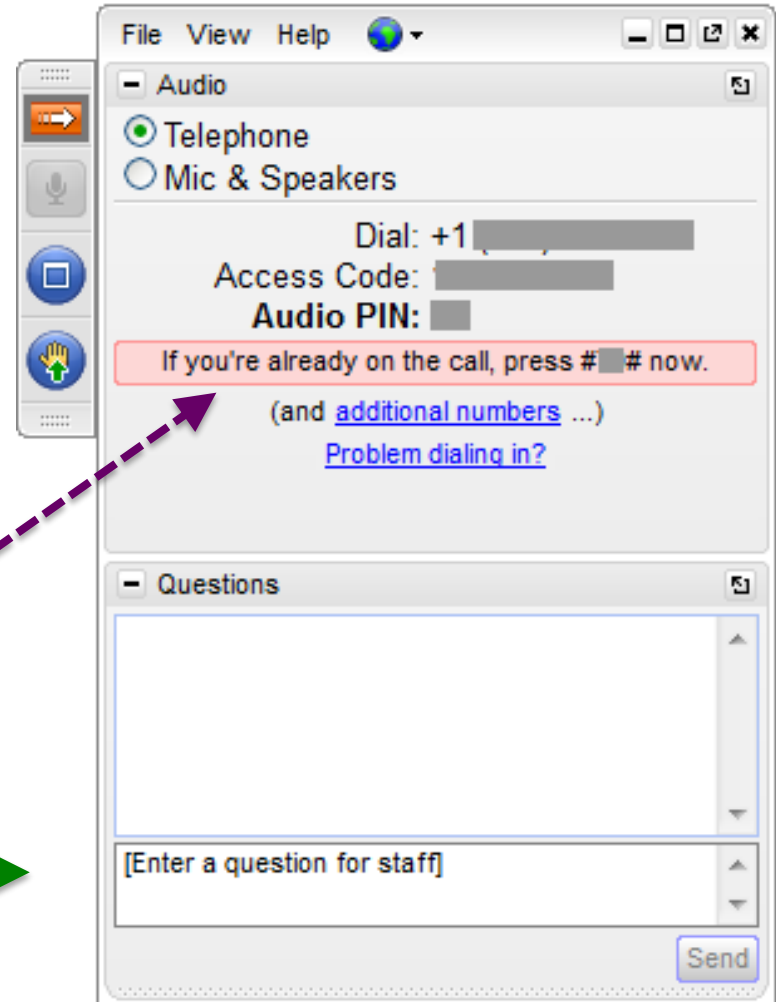
Questions?

Raise your hand ----------▶

*If you dialed in, enter your **Audio PIN** on your phone's keypad.*

or Type and send ------▶

File   View   Help   🌐▾   — ▢ ⤢ ✕

— Audio   ⤢

◉ Telephone
○ Mic & Speakers

Dial: +1 ▓
Access Code: ▓
Audio PIN: ▓

If you're already on the call, press # ▓ # now.

(and additional numbers ...)

Problem dialing in?

— Questions   ⤢

[Enter a question for staff]

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Thank You

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