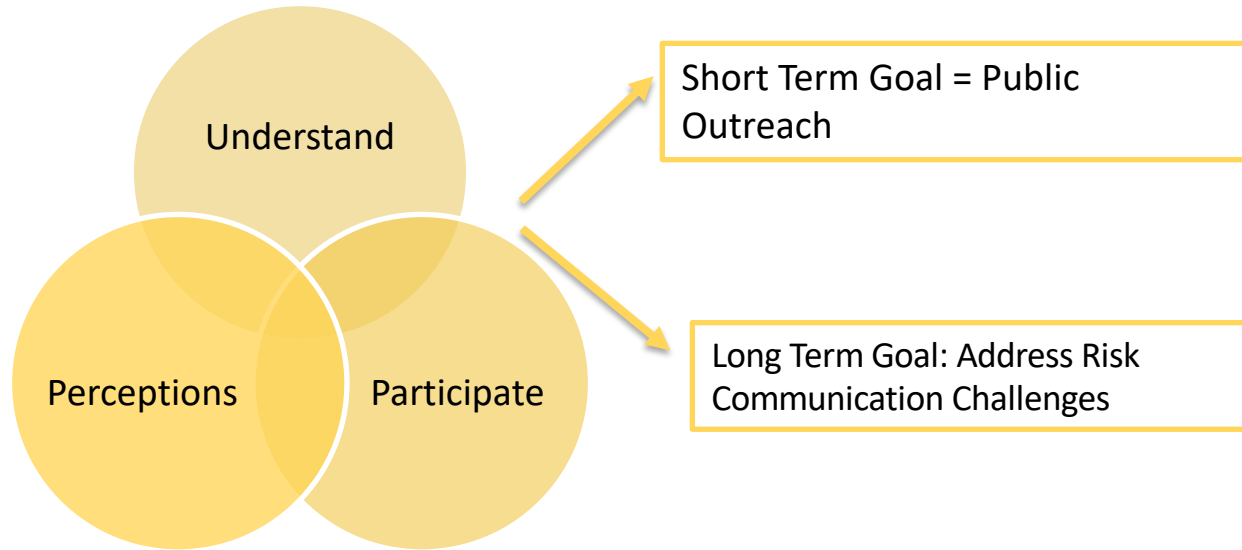


PFAS Risk Communications and Community Engagement, including examples and ITRC Toolkit

Dr. Melissa Harclerode, CDM Smith

Public Outreach & Risk Communication: Short & Long-Term Goals

- Three components of risk communication



Risk Communication Challenges

Regulatory

- Federal and state standards, guidance, and policies for PFAS are not uniform
- Only available for a handful of compounds

Fate and Transport

- Complicated due to the potential of multiple sources
- Persistence and migration in the environment

Toxicological/ Epidemiological

- Risks are not fully known or characterized
- No medical procedure to remove PFAS (such as lead)

Technical

- Difficulty in distinguishing between low levels of PFAS from use of consumer products and PFAS industrial use contamination

Analytical Ability

- Numerous PFAS compounds in existence, yet not all can be measured

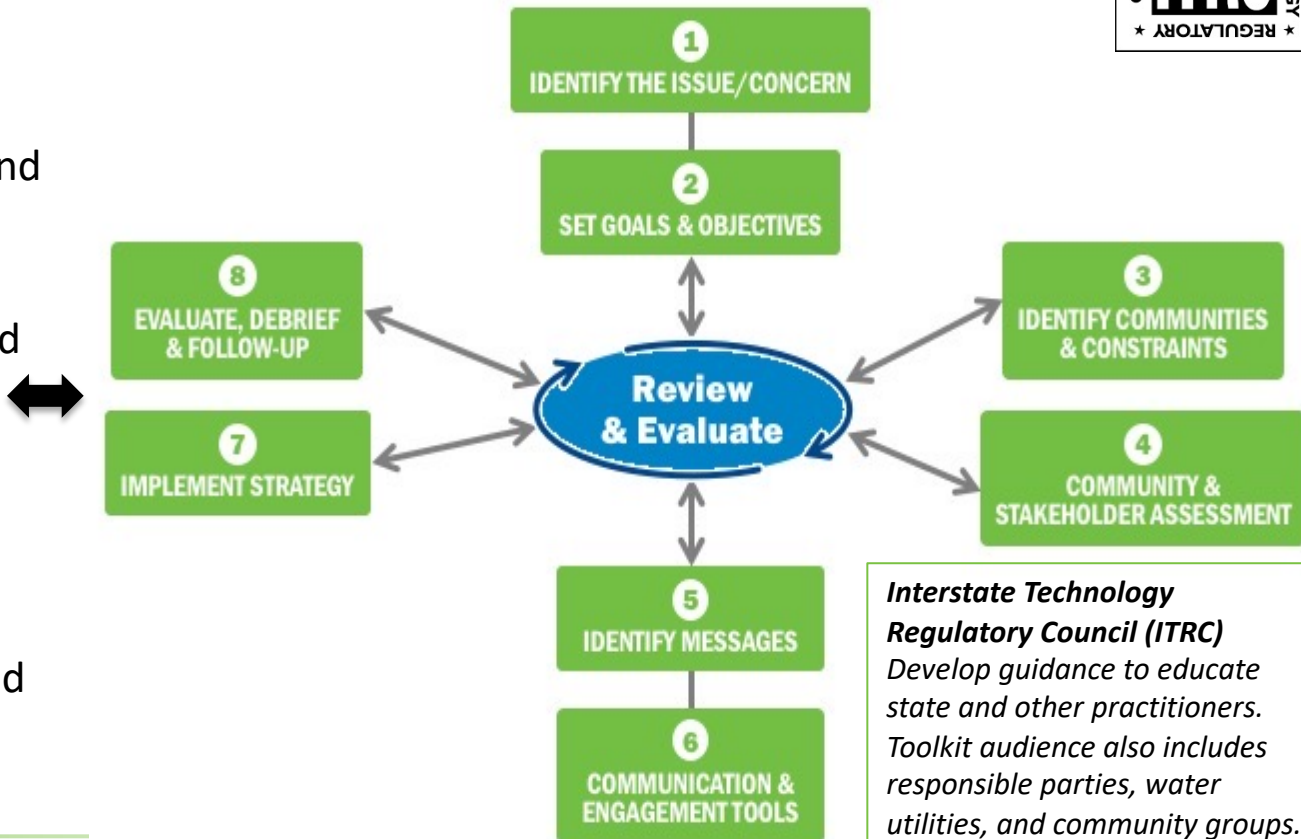
Quality of Life

- Community outrage due to involuntary risk
- Misinformation and misperception of risk

How to Engage Public Stakeholders

ITRC Risk Communication Toolkit

- Collaborative planning process
 - Client Outreach and Communication Team
 - PFAS Technical and Subject Matter Experts
 - May require coordination and partnership with public, private, and regulatory stakeholders



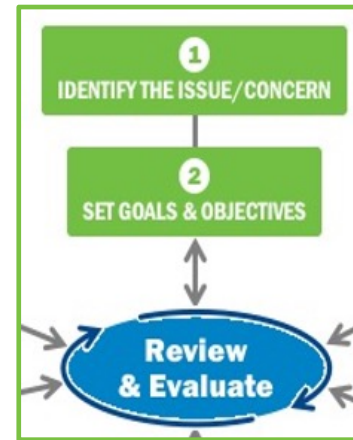
Interstate Technology Regulatory Council (ITRC)
Develop guidance to educate state and other practitioners. Toolkit audience also includes responsible parties, water utilities, and community groups.
<https://rct-1.itrcweb.org/>

Develop and Communicate Performance Metrics & Milestones – Planning Step 2

Develop SMART Goals

- Specific
- Measurable
- Attainable
- Relevant
- Timely

Example: By (date), the community is informed via the municipal website, flyers, and newsletter of PFAS testing results. After (months), a public meeting will be held to present risk management recommendations and obtain community input.



Develop and Communicate Performance Metrics & Milestones – Breakout Exercise

Develop SMART Goals

- Specific
- Measurable
- Attainable
- Relevant
- Timely

Example: By (date), the community is informed via the municipal website, flyers, and newsletter of PFAS testing results. After (months), a public meeting will be held to present risk management recommendations and obtain community input.

- Breakout Exercise:
 - Prepare a SMART Goal for engaging the community to schedule testing of private property compost or potable well.
 - *Post examples in chat box*

Community Assessment – Planning Step 3



Demographic	Outreach Implications
Income	Accessibility to internet, educational resources
Race and Ethnicity	Minority populations often have a greater burden from environmental issues
Proximity to Polluted Property(ies)	Legacy of environmental justice issues (supported by the community assessment and EJSCREEN)
Language Spoken	Accessibility of outreach materials
Education Level	Familiarity of the community with scientific background to the issue, ability of the community to understand new scientific information
Homeowner Status	Potential effect of environmental issue on property values, and need for “buy-in” or participation from property owner/resident

Community Perception Factors

Place & Locality	Trust & Communication	Agency & Power
▪ Long-term health impacts of consuming PFAS-impacted media ▪ Additional sources (e.g., CAFOs) of contamination to surface and/or groundwater ▪ Tradition of using biosolids composting/ private well water for potable supply in rural areas ▪ Nature of local hydrogeology and interconnectedness of surface water and groundwater	▪ Portions of the community have a lack of confidence in the regulatory authority due to evolving regulations pertaining to drinking water source quality and related environmental issues ▪ General distrust in water utility regarding accessibility of customer service and transparency in billing procedures/mechanisms ▪ Potential miscommunication or lack thereof of drinking water treatment process and water quality	▪ Demographic and environmental indicators ▪ General awareness of water quality problems and related environmental issues ▪ Ability to participate in the decision-making process ▪ Sense of reliability for owning a private water supply due to potential for poor water quality of the public utility or bottled water

Community Assessment

Community Perception Indicators and Target Outreach Groups

- Identify populations that require **targeted outreach**
- Develop baseline to evaluate outreach activities
- Town surveys may have helpful demographic data on water quality

Community Perception Indicator	Primary Districts	Primary Demographic
Level of Concern for the Town's Plan to Address Water Issues		
Serious concerns / Town does not have a solid plan	3, 4, and 6	- Age: 55 and up - Residency: >20 years; between 5 to 10 years - Household Income: >\$50,000
Somewhat concerned / not confident in the Town's plan	1 and 5	- Age: 35 to 64 - Residency: >5 years - Household Income: >\$100,000
I do not know enough about the issue to make an informed decision	1 thru 6, with focus on 1, 2, 3 and 5	- Age: 18 and up - Residency: <5 to >20 years - Household income: <\$50,000 to >\$150,000

Identify & Develop Key Messages

Message Mapping Process

A mapped message starts with a question or statement, responds with **three key ideas**, is no more than **twenty-seven words**, and takes no longer than **nine seconds to deliver**.
Followed by supporting materials and facts.



Example: Should we be concerned about PFAS in the future?

1. Water quality monitoring includes quarterly PFAS testing.
2. Consumers are notified if PFAS are confirmed at concentrations above standards.
3. Recommendations will be provided to manage potential risks.

Develop and Communicate Performance Metrics & Milestones

Message Mapping Process

A mapped message starts with a question or statement, responds with **three key ideas**, is no more than **twenty-seven words**, and takes no longer than **nine seconds to deliver**. Followed by **supporting materials** and facts.

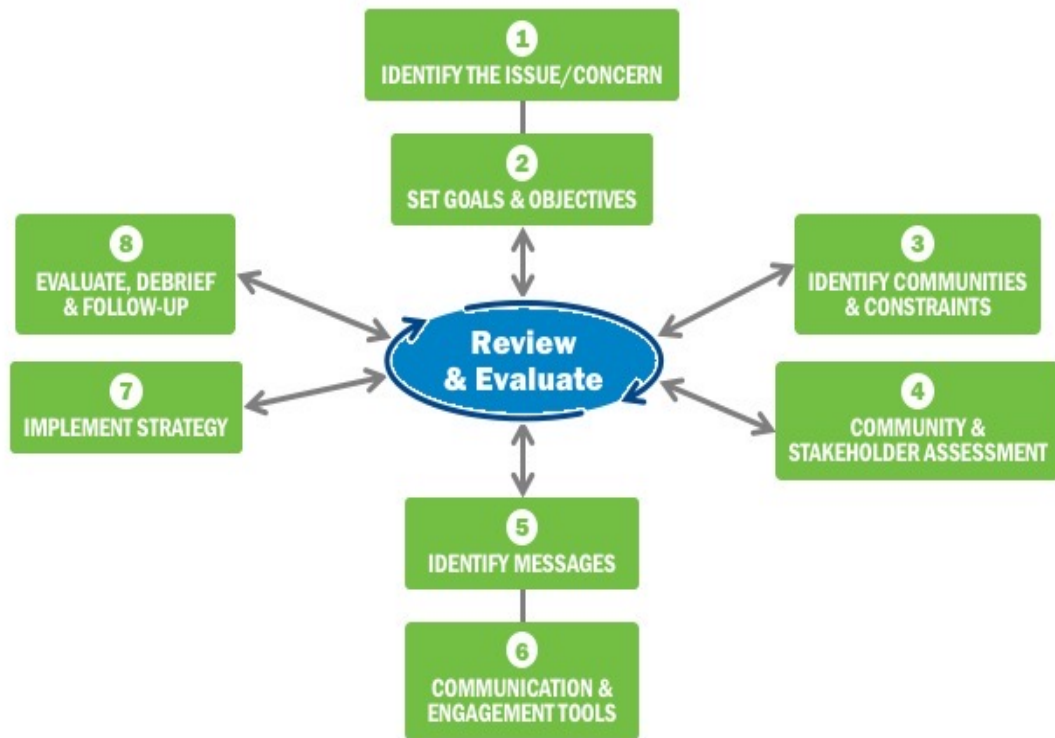
Example: Should we be concerned about PFAS in the future?

Water quality monitoring includes quarterly PFAS testing. Consumers are notified if PFAS are confirmed at concentrations above standards. Recommendations will be provided to manage potential risks.

- Breakout Exercise:
 - Prepare a Mapped Message to inform the community of a rate change due to PFAS treatment requirements

Risk Communication & Community Outreach Planning Process

- Let's revisit Steps 6, 7 and 8
- Engagement tools and best practices presented in the following slides



Risk Communication: Public Outreach Resources

Public Utility Website, OCWD

- Fact Sheets
- FAQs
- Additional Resources

Source: <https://www.ocwd.com/what-we-do/water-quality/pfoapfos/>

The diagram illustrates the lifecycle of PFOA/PFOS. It starts with 'Industry' (factory icon) which leads to 'Consumer Products' (household items icon) and 'Waste Infrastructure' (recycling truck icon). 'Consumer Products' leads to 'Human Exposure' (people icon). 'Waste Infrastructure' leads to 'Environment' (globe icon). 'Fire-Fighting Foam' (fire truck icon) also leads to 'Environment'. The 'Environment' is labeled with 'Air', 'Soil', and 'Water'. Arrows indicate the flow of these chemicals through the system.

Addressing PFOA/PFOS in Orange County

Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) are chemicals that are prevalent in the environment and were once commonly used in many consumer products. They are part of a larger group referred to as per-and polyfluoroalkyl substances (PFAS).

OCWD's Philip L. Anthony Water Quality Laboratory became the first public agency laboratory in California to achieve state certification to analyze for PFAS in drinking water. The District is proactively working with federal, state and local agencies to test, identify and monitor PFAS. OCWD and the water retailers it serves provide some of the cleanest drinking water in the world, and OCWD is committed to ensuring that the community is knowledgeable and has the resources available to understand local water quality. We invite you to learn more through the resources below:

PFOA/PFOS fact sheet

Frequently asked questions

Additional resources

Active Centralized Information Repository

- VT DEC Website: <https://dec.vermont.gov/pfas>

 Drinking Water Implications for Drinking Water	 Investigation & Cleanup UPDATES - CAPs posted for public comment - 3/19/20	 Rivers, Lakes, Wetlands Implications for surface water
 Maps and Studies Maps and studies related to PFAS in Vermont	 Health Information Vermont Dept of Health	 FAQs Frequently Asked Questions about various aspects of PFAS

- NH DES Website: <https://www4.des.state.nh.us/nh-pfas-investigation/>

NH PFAS Investigation

New Hampshire Department of Environmental Services



PFAS IN DRINKING WATER

PFAS IN THE ENVIRONMENT

MAPS & DATA

PUBLIC INFORMATION RESOURCES

FAQS

Risk Communication: Public Education

- Inform on risk assessment factors, including differences among federal and state criteria, *select factors shown below*

State	New Jersey	Texas	USEPA	Vermont
PFOA Threshold Level (ug/L)	0.014	0.290	0.07	0.02
Critical Effect Key Study Reference	Increased liver wt.	Mammary gland developmental effects	Developmental (reduced ossification, accelerated puberty)	Based on EPA Health Advisories
Toxicity Value - RfD (mg/kg-day)	0.000002 (2×10^{-6})	0.000012 (1.2×10^{-5})	0.00002 (2×10^{-5})	
Receptor	Adult	Child (0-6 years) residential, non-cancer	Lactating women	Infant (0-1 year)

Risk Communication Tools: Public Education

- Collaborate with academia and community liaisons
 - Example: Understanding PFOA Class at Bennington College, Vermont



Fact sheets, Bennington College example
<http://www.bennington.edu/center-advancement-of-public-action/environment-and-public-action/understanding-pfoa>

Risk Communication Tools: Social Vision Board

Rate the level of impact to the following quality of life factors	Not At All	Somewhat	Moderate	High Extent
Business Revenue (tourism, agriculture, livestock)	XXX	X	XXX	XXXXX
Property Value	XXXX	XXX	XX	
Neighborhood as a Safe Place	XXX	X		
Financial Burden			XXXX	XXXXX
Physical Wellbeing		XXX	XXX	

- Objective to gain deeper insight into stakeholder concerns, values, and preferred communication mode to facilitate knowledge transfer and capacity building towards a successful risk management strategy.
- Social factors identified via a review of USEPA public meeting notes collected by ITRC PFAS team members

ITRC Risk Communication Toolkit for Environmental Issues and Concerns, PFAS Examples in Toolkit Appendices

Risk Communication: Water Quality Campaign & Bottled Water

- Be creative! Promote good water quality



Advanced purified bottled water sourced
from wastewater

Forty years of water reuse technology and experience is now available in a bottle!

Source: <https://www.ocwd.com/gwrs/bottled-water-campaign/>

- May include education on bottled water
 - NHDES performed statewide sampling of bottled water
Presented at the 2019 AEHS 36th Annual International Conference on Soils, Sediments, Water, and Energy

How to Engage Public Stakeholders

Steps 1 & 2 Identify the Issue & Set Goals

- Agenda for First Internal Communication Team Planning Meeting
- PFAS-specific SMART Goals

Steps 3 & 4 Audience Assessment

- Actor Mapping Tools, including PFAS-specific examples

Steps 5 Identify Messages

- Message Mapping Guide
- PFAS-specific Key Messages

Step 6 PFAS-Specific Communication Methods

- Case Studies
- Active Centralized Information Repositories
- Community Education Classes
- Guidance for Writing Analytical Results Summary Letters
- Guidance for Writing Press Releases
- Social Factors Vision Board
- Analytical Data Package Public Information Fact Sheet
- Tracking Form of Media Correspondence

Compilation of **PFAS Fact Sheets, FAQs and other resources** developed by the ASTHO and ECOS are available:

- <https://www.astho.org/PFAS/>
- <https://www.eristates.org/projects/pfas-risk-communications-hub/>



PFAS Stakeholder Outreach Best Practices

- Don't be complacent, develop a risk communication plan
- Understand stakeholder concerns
- Have empathy and care for those under stress
- Reach out to experts and local champions
- Use multiple modes of communication
- Identify risk management metrics that meet stakeholder needs
- Maintain transparency in uncertainties and limitations
- Evaluate, debrief, and follow-up