Preparing for Effective, Adaptive Risk Communication about PFAS Assessment and Management

RemPlex Global Summit

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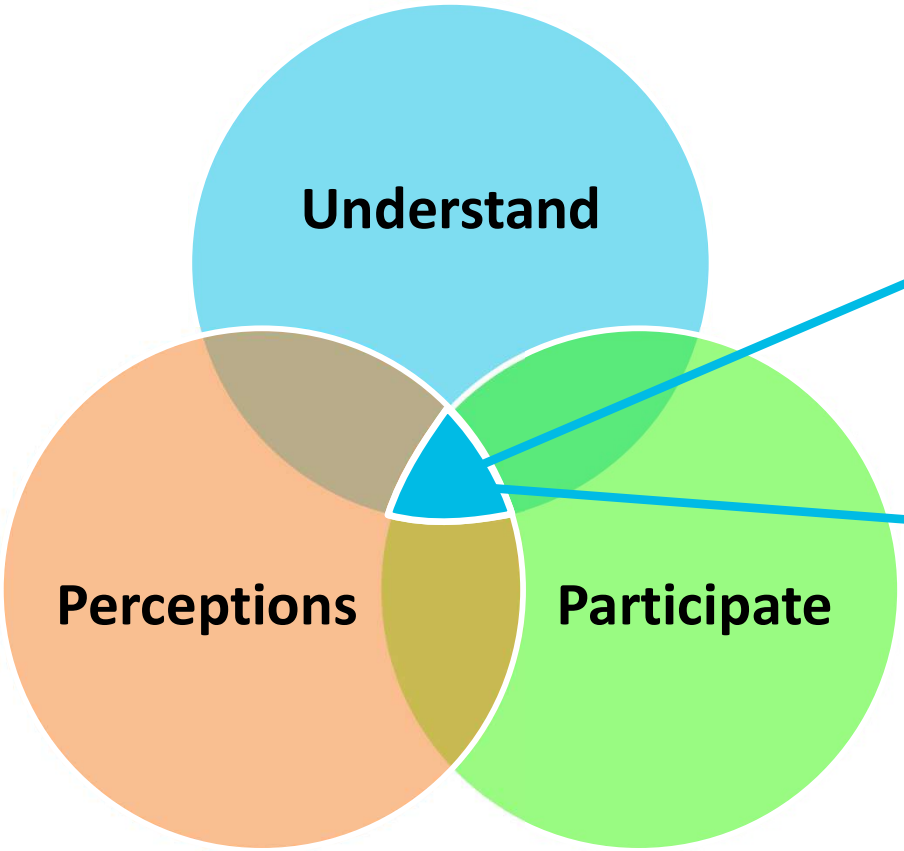
Public Outreach and Risk Communication: Short and Long-Term Goals

Three Components of Risk Communication



Short Term Goal = Public Outreach

Long Term Goal: Address Risk Communication Challenges

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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

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Overcoming Risk Communication Challenges: Build A Community-Specific PFAS Cycle

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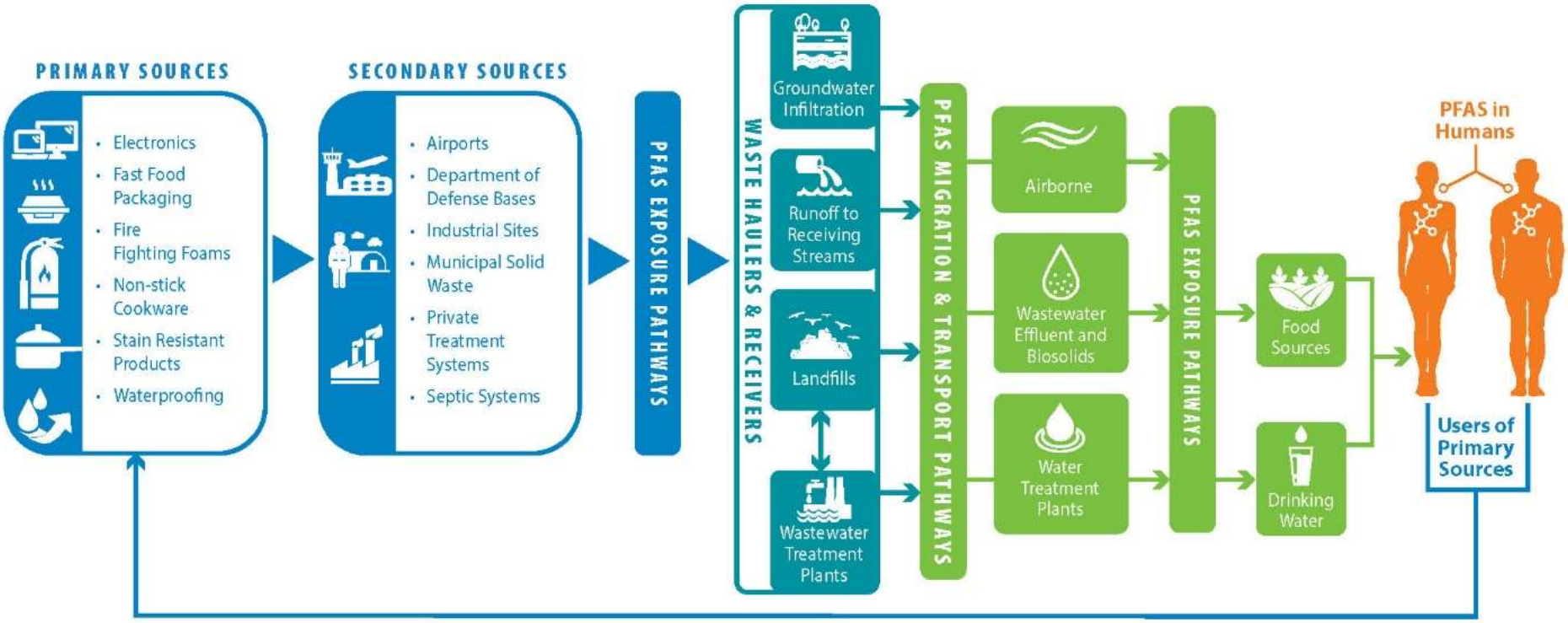
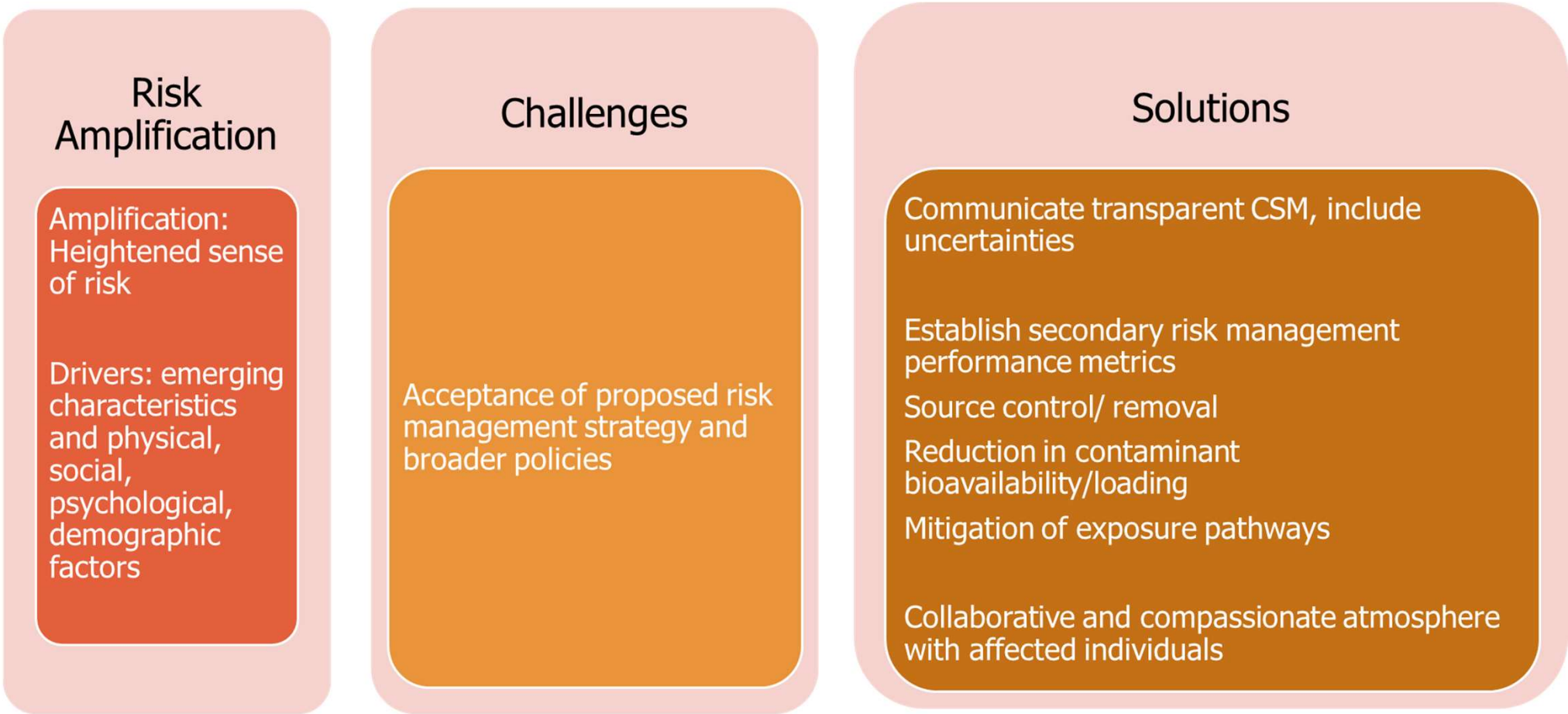


Overcoming Risk Communication Challenges

Extent of Risk Amplification and Risk Attenuation

Overcoming Risk Communication Challenges: Risk Amplification



Source: ITRC Risk Communication Toolkit Training (September 2021)

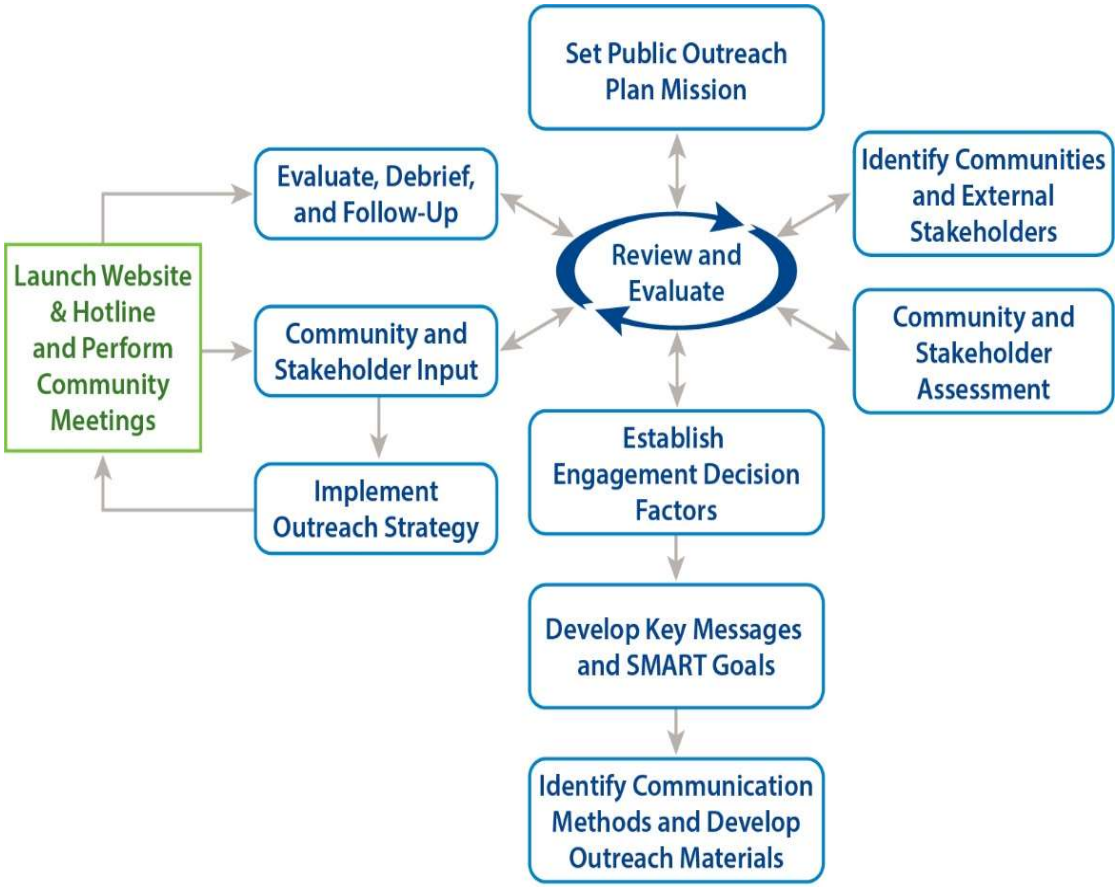
Overcoming Risk Communication Challenges: Risk Attenuation

Risk Perception	Challenge	Solutions

Attenuation:
Diminished sense of risk
 	
Drivers: physical, social, psychological, demographic factors
	• Inaction in risk reduction measures
	  • Blood testing
	  • Installation of water treatment system
	  • Use of an alternate water source
	  • Abatement and mitigation activities
		• Identify site-specific risk perception factors and integrate into the community involvement plan

Source: ITRC Risk Communication Toolkit Training (September 2021)

Overcoming Risk Communication Challenges: Develop Public Outreach Strategy and Plan



- Communicate PFAS Cycle and Assessment Solutions
- Formalized outreach strategy planning framework
- Community assessment
  - *Underserved populations*
  - *Customer profiles*
  - *Community values*
- Communication methods
  - *Virtual meetings, including use of Gather tool*
  - *Fact sheets, FAQs, surveys, press releases, magnets, social media*

Adapted from ITRC. 2020. *Risk Communication Toolkit*. Washington, D.C.: Interstate Technology and Regulatory Council.

Community Assessment: Town Survey

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

Community Perception Indicators and Target Outreach Groups

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

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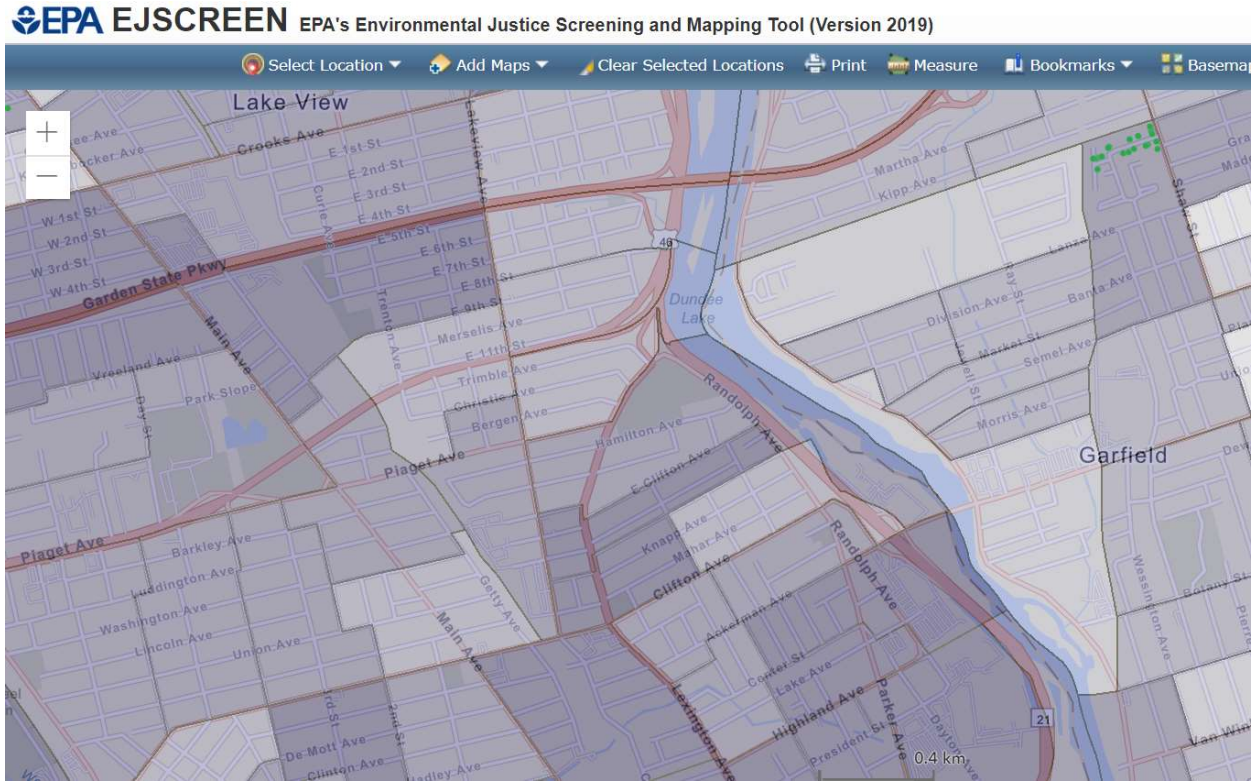
Consider Community-Specific EJ Populations

- Preliminary identify communication needs
  - Cultural considerations
  - Translation needs
  - Educational level
  - Access to broadband
- More equally distribute unintended and intended community impacts from site activities and redevelopment



Example tool: EPA's Environmental Justice Screening and Mapping Tool

- Minority population layer example
  (darker color is increased demographic population)
- *Best practice to confirm data with municipality, ground canvassing*

Consider Community-Specific Dialogue

- Local and regional newspapers
  - Including comments
- Social media posts
  - Town and utility sites
  - Community action groups
  - Affected stakeholders
    - Neighborhood association
    - Firefighter association
- Communications with officials
  - Town clerk and municipal staff
  - Health department
  - Water/wastewater plant
  - Municipal solid waste

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Examples of Community Risk Perception Factors

Place and Locality	Trust and Communication	Agency and Power
▪ **Unknown extent of water supply issues (public and private well contamination)** ▪ Long-term health impacts of consuming PFAS-impacted media ▪ **Potential impact of PFAS contamination on property values** ▪ Potential impact of PFAS contamination on tourism and the local economy ▪ **Potential impact of PFAS contamination on ecological assets**, including food sources such as fish, shellfish, and deer	▪ **Importance of establishing a regularly-updated timeline of events to help ensure understanding of actions and key events** ▪ Public desire to identify responsible party(ies) and enforce accountability measures ▪ **Isolated events of distrust noted due to previous delays in communication of potential PFAS impacts** ▪ Lack of confidence among some stakeholders in regulatory authority, public utility, mitigation measures, and treatment technologies	▪ **Demographics, low-income households, minority populations, and non-English speakers** ▪ Ability to participate in the decision-making process ▪ **Accessibility to experts and medical professionals** ▪ Ability to reduce personal exposure ▪ **Financial limitations of individuals to reduce use of PFAS products and/or treat private well water**

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Integrating Community Assessment Findings

Select Community Assessment Findings	Select Community PFAS Risk Perception Factors	Select Key Message Topics
Statewide and national actions on PFAS issues influences community perception and stakeholder response at a local level, including agency/municipality actions and spending decisions for PFAS sampling and assessment	<u>Role and extent of local vs. state vs. federal oversight and regulations to address public health concerns</u> *Gratitude and relief for sampling and proactive communications*	Agency/municipality is in compliance with applicable regulations, and collaborating with regulators and other PFAS decision makers on assessment and related activities

Bolded indicates a risk perception factor relating to Place and Locality
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Harclerode, Melissa, et al. "Preparing for effective, adaptive risk communication about per-and polyfluoroalkyl substances in drinking water." AWWA Water Science 3.5 (2021): e1236.

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	Need for clarity of regulatory information and knowledge transfer	PFAS regulations and standards are specific to sample media and exposure routes, and cannot be applied broadly to multi-media sampling results

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PFAS are generally understood by the public and the local news agencies to be persistent, widespread, and dangerous to human health	Financial limitations of individuals to reduce use of PFAS products and/or treat private well water Ability to reduce personal exposure	Home filters and treatment systems are available to remove PFAS from private water supply sources Local and state programs are available to provide sampling support A long-term plan to further assess and eventually control or mitigate PFAS loading water supply is underway

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	Ability to reduce and eliminate PFAS-laden commercial product use	Community can play a role in reducing PFAS loading from general refuse and other commercial products

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	Ability to reduce and eliminate PFAS-laden commercial product use	Community can play a role in reducing PFAS loading from general refuse and other commercial products
	Impacted resources are associated with local economic stimulus and property values **Impact of PFAS contamination on ecological resources**	Sampling is being performed in the interest of protecting the health and financial well-being of the community, drinking water sources, and natural resource assets

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Example Town #1 Outreach Strategy

- Unengaged customer base with pending utility drinking water sampling activities
- Key message topics
  - Communication and implementation of ongoing sampling results
  - Connecting community members with resources
  - Consistency in messaging among utilities serving overlapping communities, or closely-connected geographical areas
- Triggers for revisiting the strategy if regulatory or PFAS cycle conditions change
  - Pencil-ready in the event of sampling authorization
- Communication Methods
  - State environmental regulatory agency analytical letter templates
  - Email or memorandum for internal or intra-decision maker communication
  - Press release with news media and other local press outlets

Example Town #2 Outreach Strategy

- Highly-engaged public with strong interest in PFAS contamination of drinking water and land-applied biosolids, and associated Town assessment and actions
- Formed a multi-stakeholder communication team and charter
- Communication Methods
  - PFAS website with FAQs and fact sheets
  - Press release
  - Community forums
- Periodic updates
  - New PFAS data collected
  - Public inquiries received
  - Changes to the regulations and/or PFAS cycle

Example Town #2
Sustainable Risk Performance Metrics and Key Messages

- *Performance Metric:* ***Elimination of exposure pathway***
  - Message: Reduction and elimination of PFAS-laden municipal solid waste, biosolids and/or potable water from private wells removes residents, property owners, and other users as potential receptors to PFAS and reduces the community's long-term risk for PFAS exposure.

- *Performance Metric:* ***Improvement of community natural resource quality***
  - Message: Reduction and mitigation of commercial PFAS products, accompanied by identification of suitable PFAS-free alternatives, can help prevent migration to groundwater, surface water bodies, and ecological assets (including food sources, such as deer, fish, and shellfish) in the future.

- *Performance Metric:* ***Mitigation of property value reduction***
  - Message: Participating in community-based PFAS reduction and mitigation best practices helps mitigate the potential for long-term reductions in property value that may result from a PFAS-impacted private water well.
  - Message: Connection to the public water supply will also help some property owners to avoid property value impacts.

[21] Harclerode, Melissa A., et al. "Early decision framework for integrating sustainable risk management for complex remediation sites: drivers, barriers, and performance metrics." Journal of environmental management 184 (2016): 57-66.

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Key Takeaway

Creation of a community-specific outreach plan for site-specific per- and polyfluoroalkyl substances (PFAS) issues is necessary for effective risk communication and outreach.

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Thank you for attending!

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For more information check out AWWA Water Science publication:

https://awwa.onlinelibrary.wiley.com/doi/full/10.1002/aws2.1236