

# Large Water System Perspective on Drinking Water Regulatory Changes

PNWS-AWWA 2018

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# Presentation Topics

- System overview
- Brief Federal Regulatory History
- SPU Regulatory Highlights
  - DBPR
  - TCR
  - LCR
  - UCMR
- Future Changes
- Challenges and Strategies
- Plans: Federal and SPU



# SPU Drinking Water System

Seattle Retail Service Area

Wholesale Customers

Watersheds



# SPU System Facts

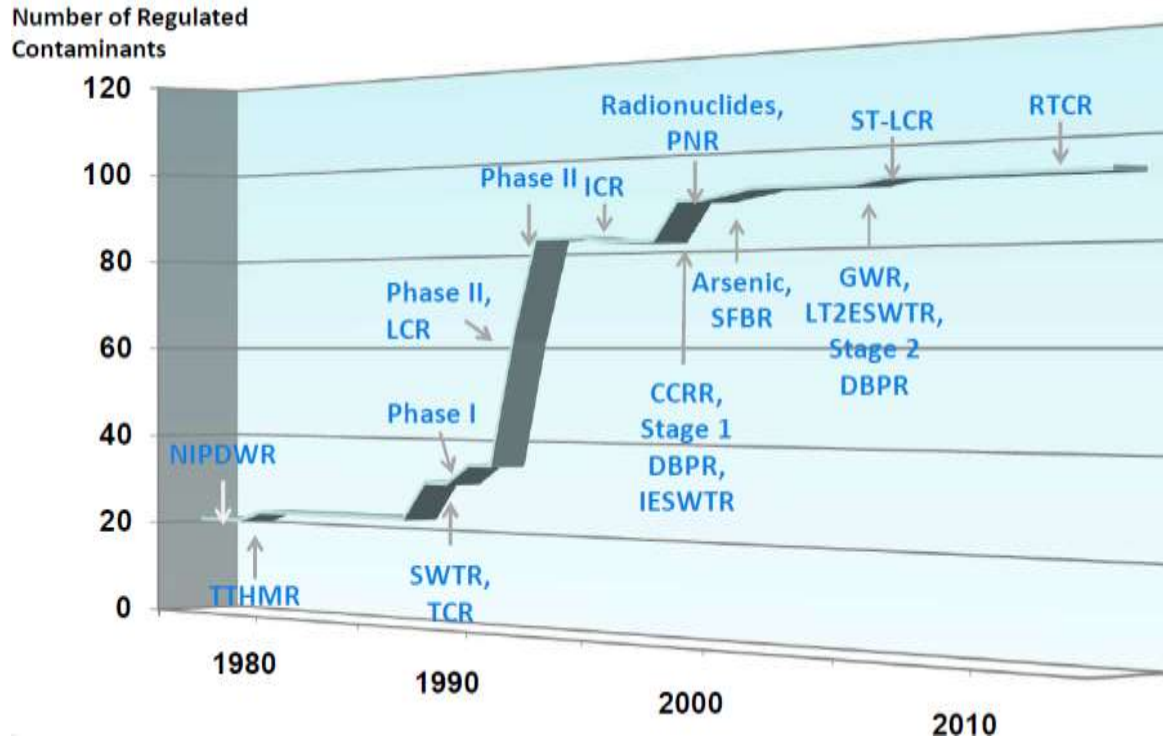
- History
  - 1889 Seattle Water Department formed
  - 1901 Seattle began supplying water from Cedar River
  - 1964 Seattle added South Fork Tolt River supply
- Accounts
  - 164,000 single family/ duplex retail
  - 27,000 multifamily/commercial
  - Wholesale to CWA and 18 other utilities
- Major Regulators
  - Washington State Department of Health (WDOH)
  - Washington State Department of Ecology
  - State and Federal Fish and Wildlife Agencies
- 1.4 million people live in areas receiving SPU water
- 122 million gallons used per day (mgd) on average
- 54 mgd (45%) sold to retail customers
- 61 mgd (50%) sold to wholesale customers
- 7 mgd (5%) non-revenue water
- 1,823 miles of pipeline
- 31 billion gallons of water *supply* storage at 2 mountain reservoirs
- 327 million gallons of *treated* water storage
- 3 groundwater wells

# SPU Drinking Water Quality



- Regulatory Compliance
- Health Protection
- Customer Confidence

# SDWA History



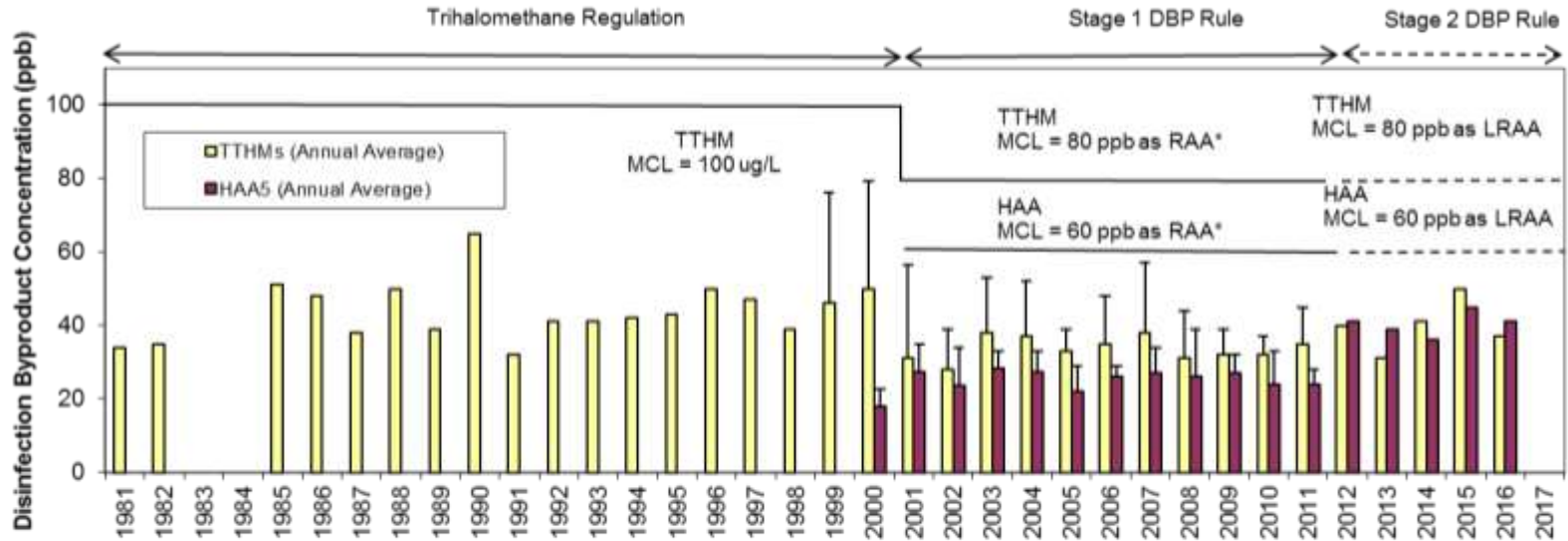
Source: Adapted from VA-AWWADrinkingWaterAesthetics Conf. slides

# U.S. Per Capita Bottled Water Consumption



Source: Adapted from Statistica.com

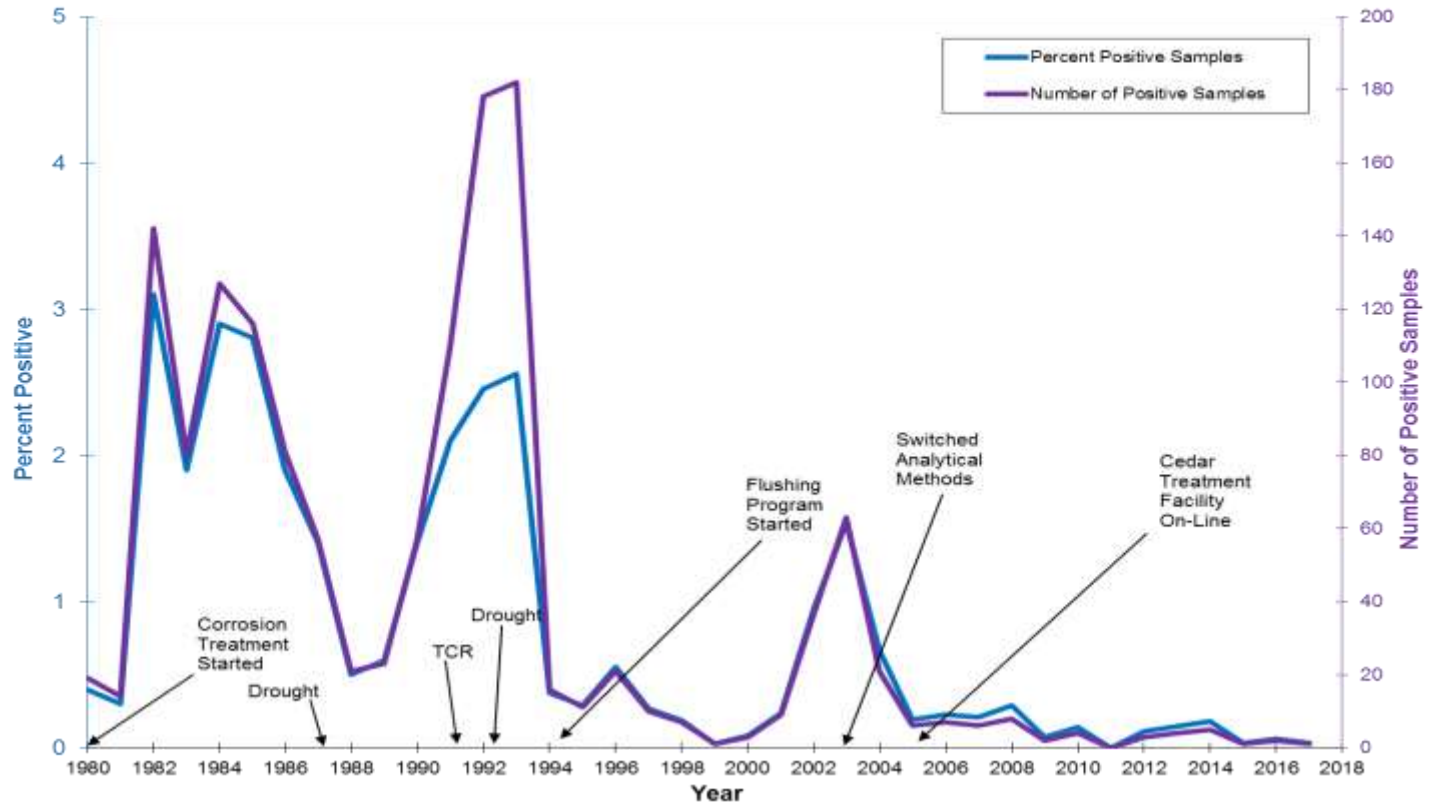
# SPU DBPR





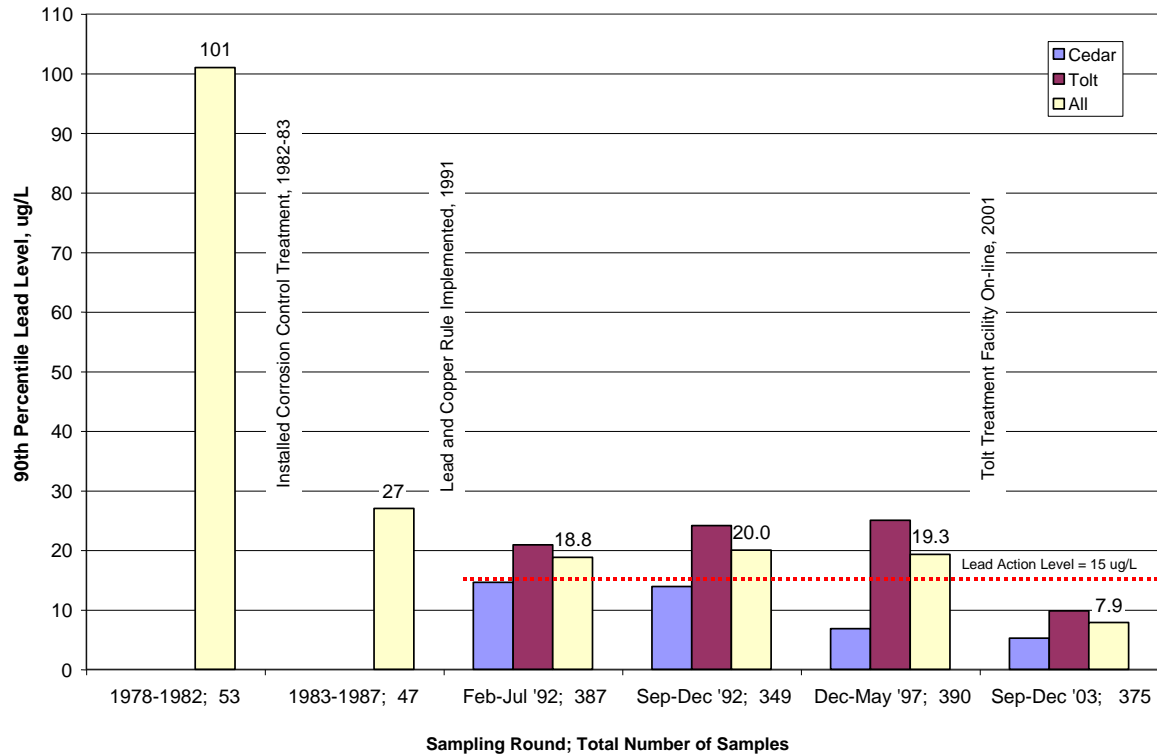
# SPU TCR

Seattle Public Utilities  
Direct Service Area Distribution System Total Coliform Levels  
Percent Positive and Number of TC Positive Samples per Year  
1980 to 2017



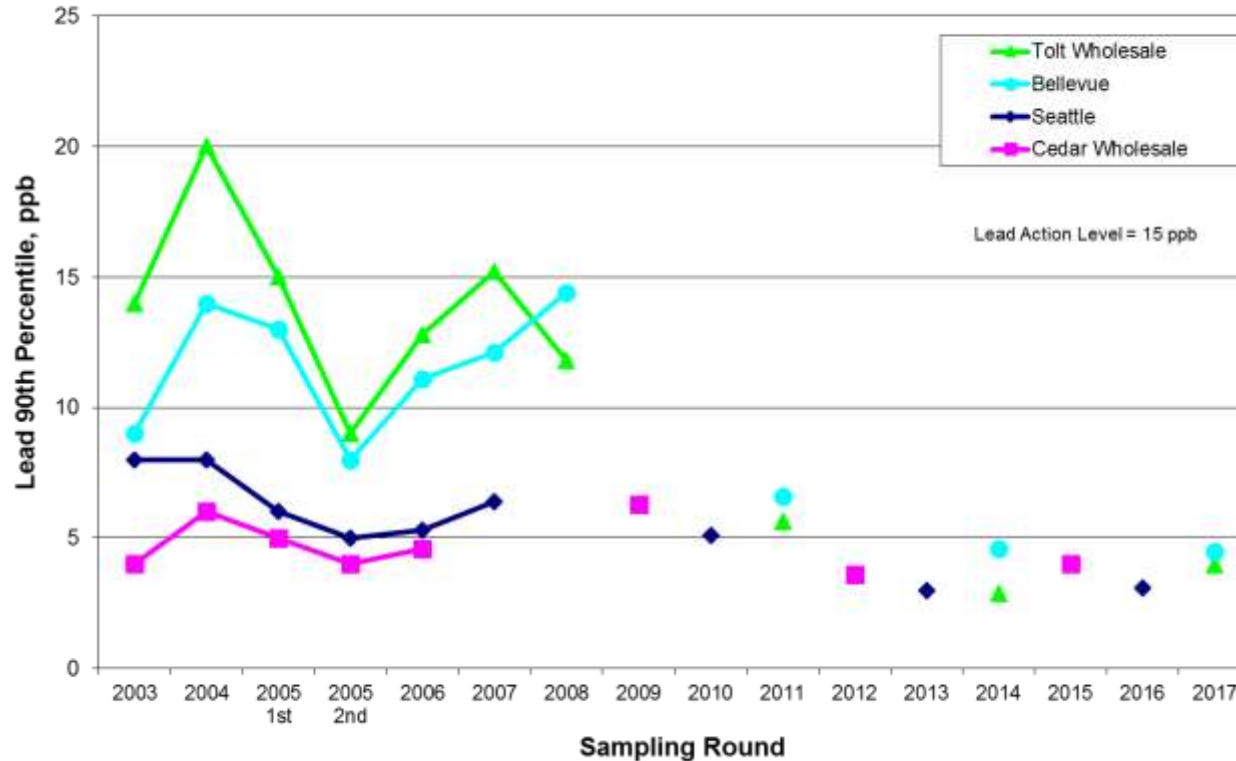
# SPU LCR 1978 - 2003

Seattle Public Utilities  
Regional Lead and Copper Monitoring Program  
Comparison of 90th % Residential Lead Levels



# SPU LCR 2003 - Present

Summary of Lead Levels in Seattle's Regional Lead and Copper Program



# SPU UCMR 3 – completed 2015

SEATTLE'S 2015 UCMR3 MONITORING RESULTS		
Contaminant	Range	Average
Strontium, ppb	12–36	29
Vanadium, ppb	ND–0.76	0.5
Total Chromium, ppb	ND–0.33	0.24
Hexavalent Chromium, ppb	0.063–0.17	0.12
Chlorate, ppb	ND–61	17

*ND = not detected; ppb: 1 part per billion = 1 ug/L = 1 microgram per liter*

There were also 23 contaminants that were monitored for but not detected for UCMR3, shown in the following table.

CONTAMINANTS NOT DETECTED	
1,2,3-Trichloropropane	17-β-Estradiol
Chlorodifluoromethane (HCFC-22)	17-α-Ethynylestradiol
Bromomethane (methyl bromide)	Estriol
Chloromethane (methyl chloride)	Equilin
Bromochloromethane (Halon 1011)	Estrone
1,3-Butadiene	Testosterone
Perfluorooctanoic Acid (PFOA)	4-Androstene-3,17-Dione
Perfluorononanoic Acid (PFNA)	Molybdenum
Perfluorobutanesulfonic Acid (PFBS)	Cobalt
Perfluorohexanesulfonic Acid (PFHxS)	1,4-Dioxane
Perfluoroheptanoic Acid (PFHpA)	1,1-Dichloroethane
Perfluorooctanesulfonic Acid (PFOS)	

*Monitoring conducted in January, April, July, and October 2015.*

# SPU UCMR 4 – beginning late 2018

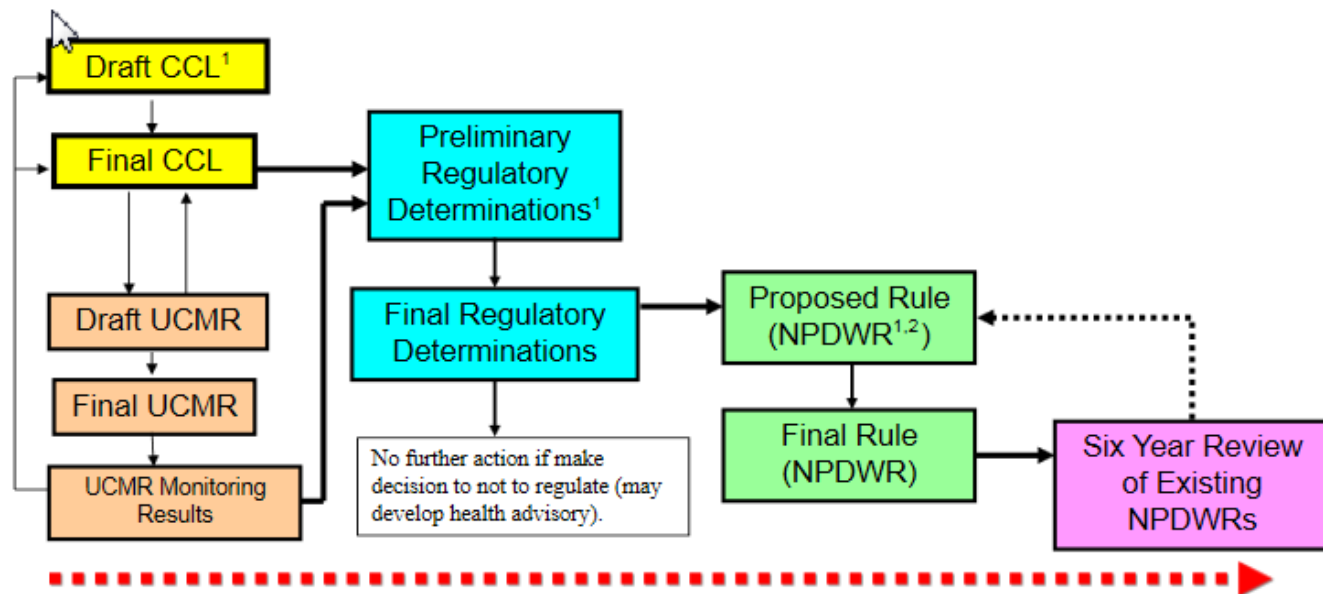
## 10 Cyanotoxins (Nine Cyanotoxins and One Cyanotoxin Group)

total microcystins	microcystin-LA	microcystin-RR	microcystin-LF	microcystin-YR
microcystin-LR	microcystin-LY	nodularin	cylindrospermopsin	anatoxin-a

## 20 Additional Contaminants

germanium	manganese	alpha-hexachlorocyclohexane	profenofos	chlorpyrifos
tebuconazole	dimethipin	total permethrin (cis- & trans-)	ethoprop	tribufos
oxyfluorfen	HAA5 <sup>1</sup>	HAA6Br <sup>1</sup>	HAA9 <sup>1</sup>	1-butanol
2-propen-1-ol	2-methoxyethanol	butylated hydroxyanisole	o-toluidine	quinoline

# Future Changes



# Future Changes

- UCMR 4
  - Too early to tell
  - HAA9 data from UCMR4 may influence Stage 3 DBPR
  - Regulatory determinations estimated for 2021
- Lead and Copper Rule
  - Proposal expected from EPA later 2018
  - Possible change in LSL definition
  - Emphasis on removal all the way to the building
  - Emphasis on optimized corrosion control

# Future Changes

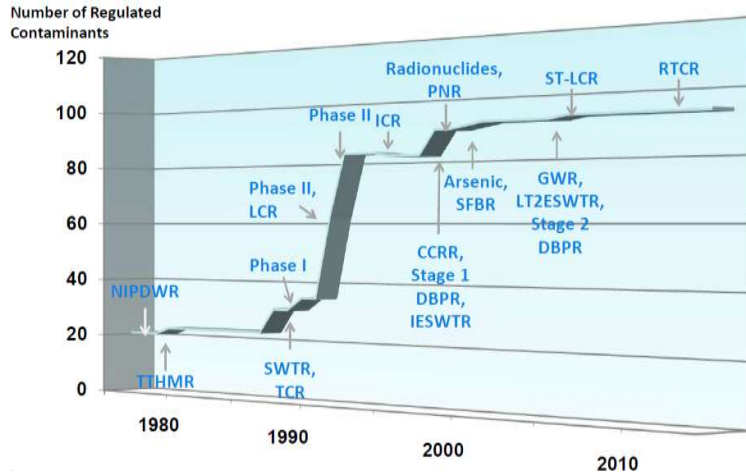
- EPA funding has decreased
  - No new regulated contaminants since 1996
  - Limited research on health effects
  - Health advisory approach continues to be problematic
- Most state funding has decreased as well
- Yet, changes occur and new things keep coming up
  - 1,4 dioxane
  - PFOA and PFOS
  - Renewed emphasis on legionnaires
  - Fluoridation standard controversial to some



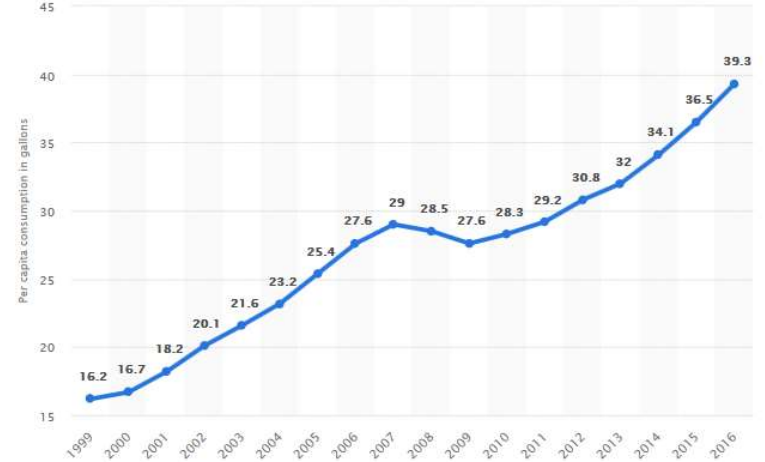
# Challenges and strategies

- Uncertainty of timing and scope for new regulations
- Affordability and diminished funding
- Public trust and perception
- ✓ Partner with regulatory community
- ✓ Efficient, resilient application of public resources
- ✓ Effective health risk communication

# Challenges and strategies

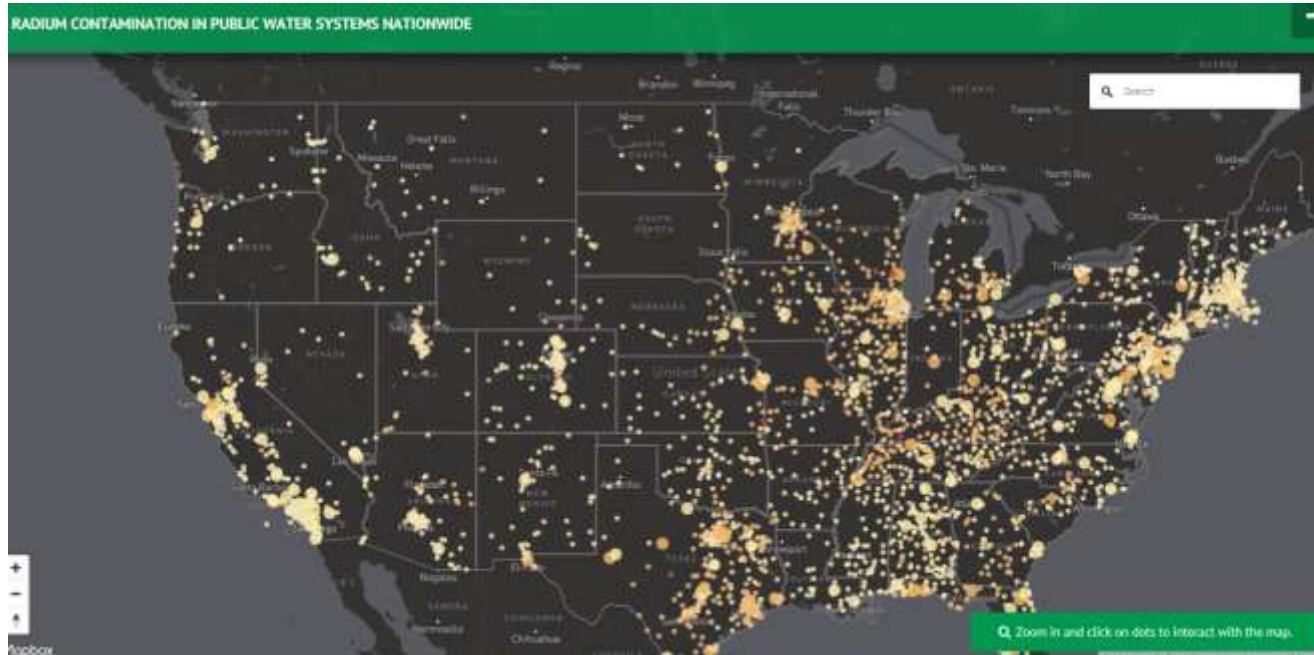


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# Challenges and strategies

**170 Million in U.S. Drink Radioactive Tap Water (????)**









# Challenges and strategies

- Health Risk Communications Basics
  - Perception is reality
  - High stress, low trust situations
  - Know your stakeholders
- Understand their concerns
- Develop 3 key messages
  - Back them up with 3 supporting facts
  - Practice delivering them
- Deliver through the appropriate channels
  - CCR
  - Partner with local and state health agencies
  - Community meetings
  - Local and social media
- Lots of WRF Resources:
  - Message Management: Effective Communications (2005)
  - Advancing Collaborations for Water-Related Health Risk Communication (2006)
  - Communicating the Value of Water (2008)
  - Developing a Risk Management Culture – Mindfulness in the International Water Utility Sector (2009)
  - Webcast on Risk Communication on Contaminants of Emerging Concern (2017)
  - Four Steps to Effective Cyanotoxin Communications: A Risk Communications Toolkit (2018)

# Federal Strategy

## EPA Drinking Water Action Plan

 <p>Promote Equity and Build Capacity for Drinking Water Infrastructure Financing and Management in Disadvantaged, Small, and Environmental Justice Communities</p>	 <p>Advance Next Generation Oversight for the Safe Drinking Water Act</p>
 <p>Strengthen Source Water Protection and Resilience of Drinking Water Supplies</p>	 <p>Take Action to Address Unregulated Contaminants</p>
 <p>Improve Transparency, Public Education, and Risk Communication on Drinking Water Safety</p>	 <p>Reduce Lead Risks through the Lead and Copper Rule</p>

# SPU Strategy

## Strategic Business Plan

SPU IS A COMMUNITY-CENTERED UTILITY WORKING TO MAKE SEATTLE THE BEST PLACE TO LIVE FOR EVERYONE:

Our six primary goals:

- Achieving excellence in core service delivery
- Increasing affordability and accountability
- Improving investment value
- Enhancing public health and environment
- Ensuring equity and inclusion
- Expanding impact through strong partnerships

**Thank you.**

**Questions?**

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