Exploring Environmental Health Playbook: Safe Drinking Water

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Context and Terms

- Public water systems v. private wells
  - Public water systems regulated by EPA under Safe Drinking Water Act
  - Private wells subject to state and local regulations, if any

- Surface water v. ground water

- Private v. public ownership
  - Of community water system
  - Of service line

- Maximum contaminant level v. non-regulatory health advisory

- Quality v. quantity
Key Safety Issues

• Source water
  – Pathogens such as legionnaires
  – Harmful algae blooms such as cyanobacterial toxins
  – Per- and poly-fluorinated alkyl substances (PFAS)
  – Perchlorate

• Treatment
  – Disinfection byproducts
  – Perchlorate from degradation of perchlorate

• Distribution
  – Lead from lead service lines, pipes, solder and brass
Systemic issues

• Infrastructure issues
  – Rehabilitation badly needed
  – Rates used in low-income communities
  – Consolidated, mergers, coordination

• Financing
  – Rates
  – State Revolving Loan Fund (SRF)
  – Water Infrastructure Finance and Innovation Act (WIFIA)
Health impacts of lead

• There is no safe level of exposure to lead

• Health impacts include:
  • Damage to the brain and nervous system
  • Slowed growth and development
  • Learning and behavior problems

• CDC’s blood lead level reference value is 5.0 µg/dL
  • Expected to drop to 3.5 µg/dL soon
Sources of lead exposure for infants

EPA 2017 at https://ehp.niehs.nih.gov/ehp1605/
Lead service lines (LSLs)

- Pipe that connects main under the street to the home
- Estimated 6 million homes drink water through a lead pipe, most without knowing it
- Corrosion control treatment to limit leaching is essential
- But ultimately, LSLs must be removed
Our water system is a shared responsibility.