

# Exploring Environmental Health Playbook: Safe Drinking Water

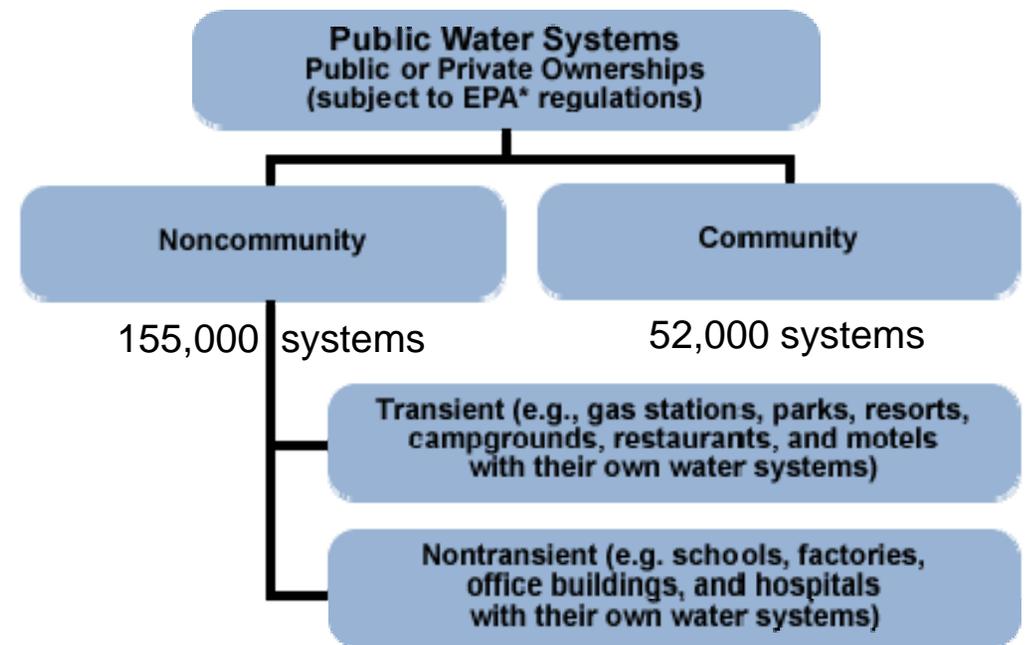
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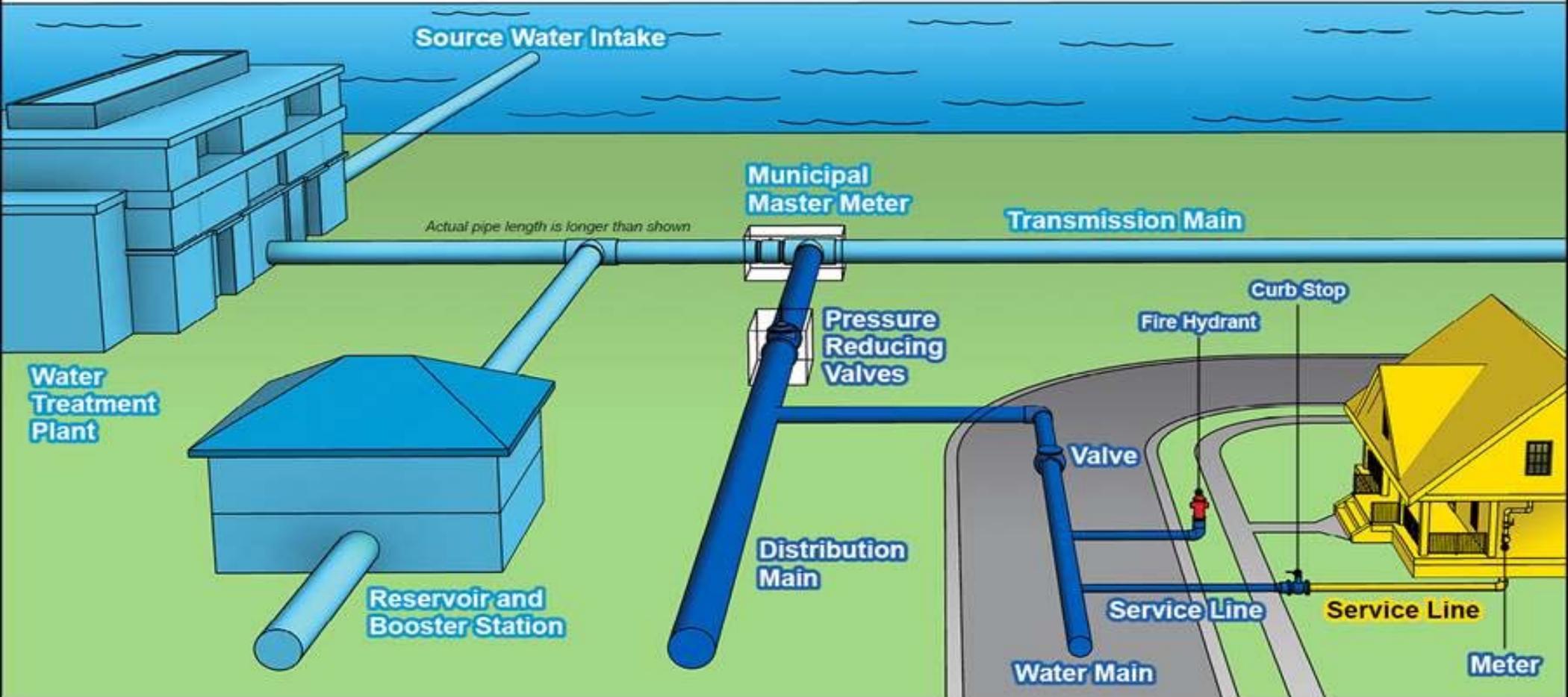


# Context and Terms

- 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



Our water system is a shared responsibility.



■ Great Lakes Water Authority   ■ Municipality   ■ Property Owner

From Great Lakes Water Authority

# 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
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# 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)
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# Health impacts of lead

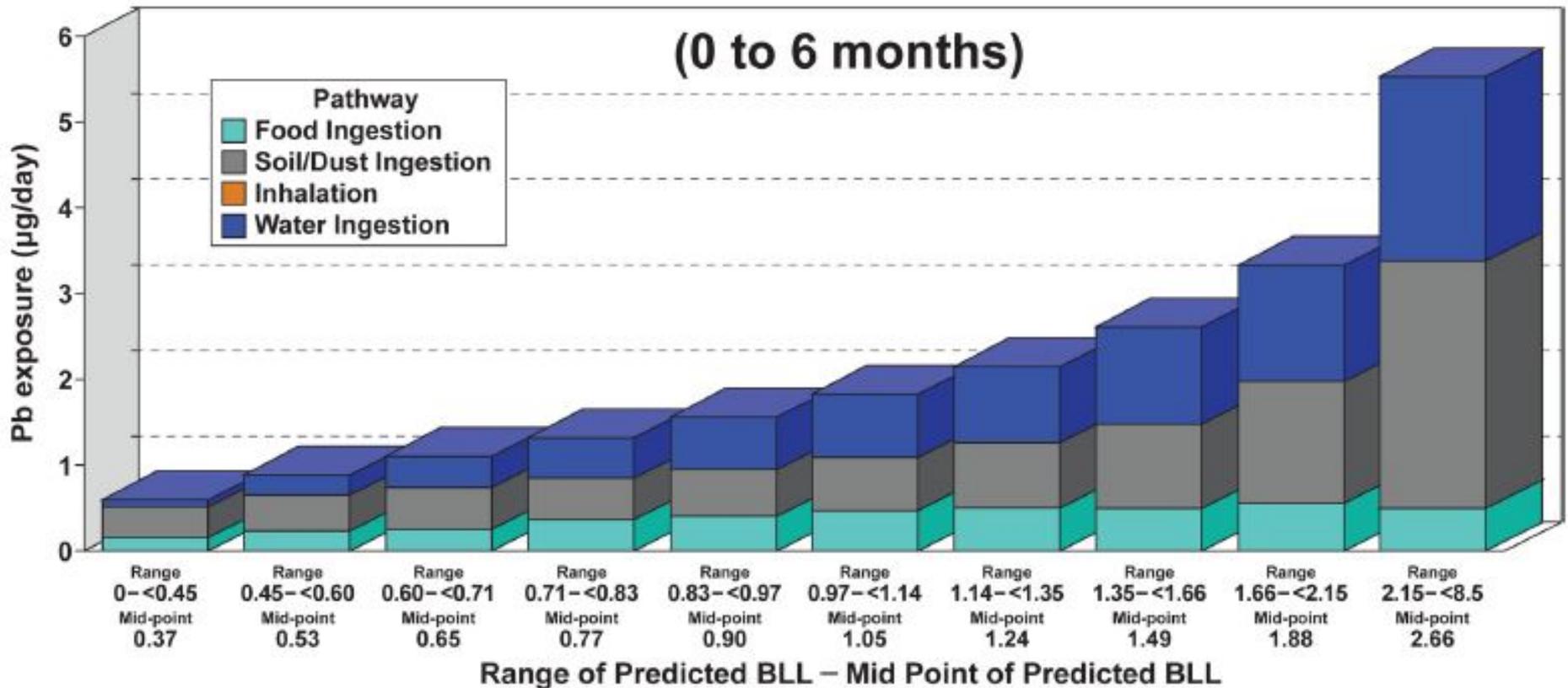
- There is no safe level of exposure to lead
- Health impacts include:
  - Damage to the brain and nervous system
  - Slowed growth and development
  - Learning and behavior problems



- CDC's blood lead level reference value is 5.0  $\mu\text{g}/\text{dL}$ 
  - Expected to drop to 3.5  $\mu\text{g}/\text{dL}$  soon

# Sources of lead exposure for infants

**A Contribution of Effective Pb Exposure from Major Pathways (0 to 6 months)**



# 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

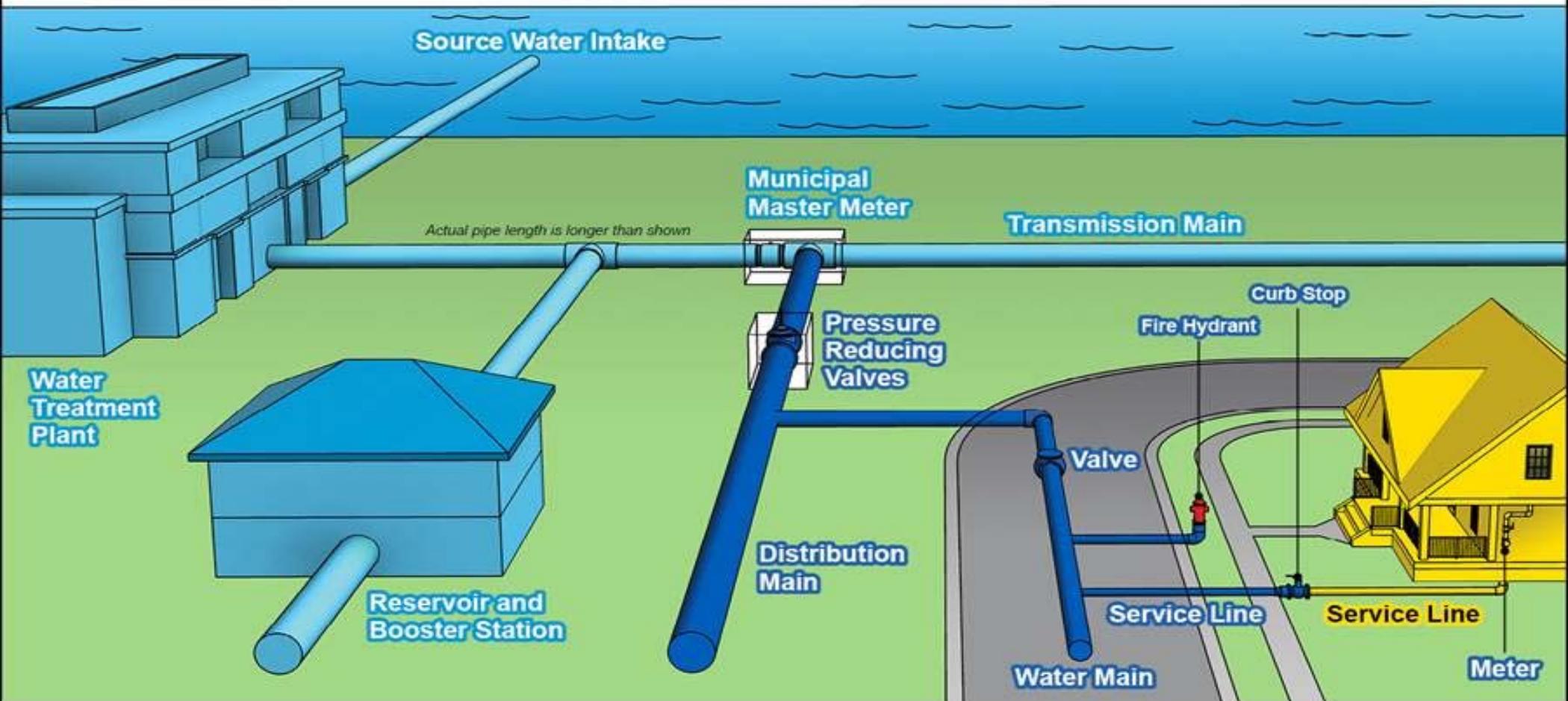




**LEAD SERVICE LINE REPLACEMENT COLLABORATIVE**



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