


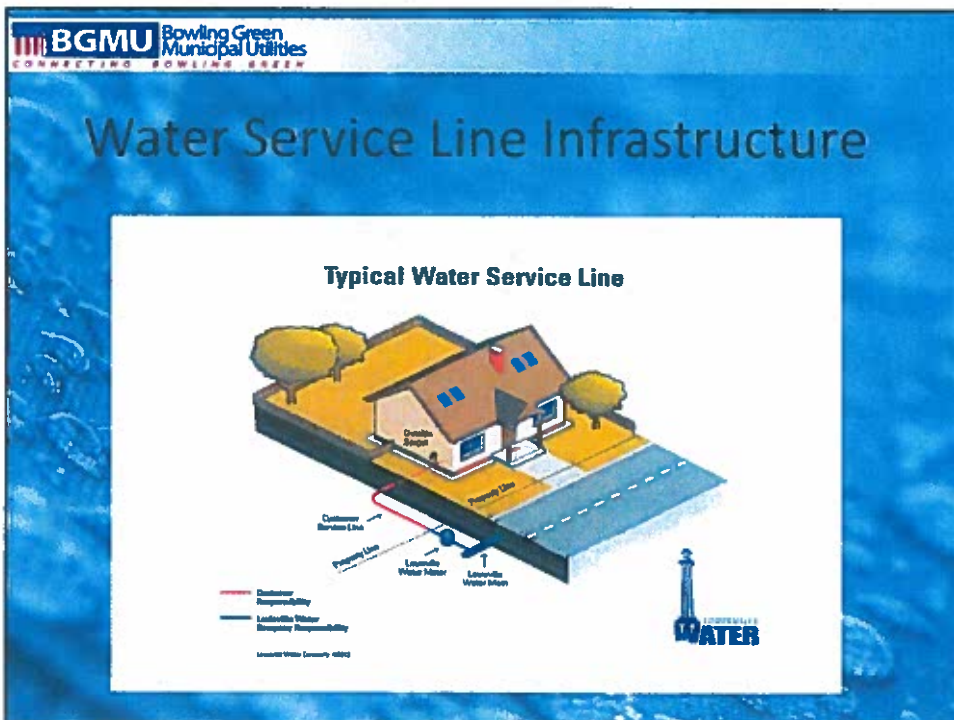
**Kentucky Lead Workgroup  
Finance Subgroup Presentation  
December 21, 2016**

**Subgroup Members:  
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**Summary of Lead Removal Options  
(from Distribution/Piping Subgroup)**

- Corrosion Control vs. Replacement
- Partial Service Line Replacement
- Full Service Line Replacement
- Private Property Infrastructure




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## Questions:


- How many water systems in KY have lead service lines?
- How much does it cost to replace a lead service line?
- How much does it cost to replace ancillary lead components in a service line?
- What other cost issues will utilities experience in replacing lead service lines?
- What is the overall cost statewide for lead removal from drinking water systems?



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## Questions:

- How can water utilities finance the cost of lead service line replacement?
- What is the cost for NOT replacing lead service lines?
- Should lead service lines be replaced all at once or over some period of time?
- How have other communities handled costs for lead service line removal?

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## Questions:

- How much does it cost for a homeowner to replace their private lead plumbing?
- What financing methods are available to homeowners for private plumbing replacement?
- Who should pay for lead piping replacement in rental properties, schools and daycares?
- What is the cost for a public education program regarding lead in drinking water?

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### Where is the lead? How many water systems in KY have lead service lines?

- Most Kentucky utilities transitioned from lead to copper between 1935 and 1950
- Significant growth in Water Districts after 1950, typically no lead service lines
- Challenges with water system acquisitions/mergers, particularly with lack of records

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### How much does it cost to replace the public portion of a lead service line?

- Entire Service Line (main to meter)
- Coordination with Private Portion of Service Line
- Open Cut vs. Pulled Line
- Variables affecting Cost (length, depth, soil type, other utility conflicts, surface restoration, traffic control)
- Range of costs \$1,600 to \$8,000 (public portion)



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## How much does it cost to replace ancillary lead components in a public service line?

- Ancillary Components Only
- Ancillary Components and Line to Meter (galvanized or other non-lead)
- Coordination with Private Portion of Service Line
- Open Cut vs. Pulled Line
- Variables affecting Cost (length, depth, soil type, other utility conflicts, surface restoration, traffic control)
- Range of costs \$800 to \$3,000 (public portion)
- Unknown number of ancillary lead components in Kentucky

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## What other cost issues will utilities experience in replacing lead service lines?

- Street Repair
- Customer Disruption/ Traffic Rerouting
- Other Utility Conflicts
- Public Concern education
- Crew Time Disruption/Reprioritization
- Capital Reprioritization for Other Infrastructure Projects

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## What is the Estimated Cost to Replace the Private Portion of Lead Service Lines?

- Unknown number in Kentucky
- Typically from the meter or property line to the house
- May include connection through the foundation into basement or crawl space
- On rare occasions internal plumbing is lead.
- Typically installed under grass, but may include landscaping, trees, retaining walls, sidewalks, drives, irrigation systems
- Open cut vs. pulled line

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## US Lead Service Line Inventory


- AWWA Journal Article, June 2016 by Cornwell, Brown, Via
- AWWA/EPA estimates 6.1 million public Lead Service Lines (LSL) in U.S. (range of 5.5 to 7.1 million LSL)
- Includes full and partial LSL (public and private)
- Largest density in in systems serving 10,000 to 50,000 Population. (not expected)
- Generally utilities transitioned from lead to copper between 1930 and 1960 across the US.
- Source of data analysis of AWWA/EPA survey of utilities and extrapolation of data.
- National cost estimate of \$18 to \$36 billion (Heitzman) for 6.1 million LSL, assumes \$3,000 to \$5,000 per LSL replacement costs





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## Kentucky Lead Service Inventory




- AWWA/EPA estimate 53,000 Public LSL in Kentucky
- Replacement Cost Range of \$1,500 to \$3,000 each
- Estimate of \$79.5 to \$159 million for public portion
- Estimate 13,000 Private LSL in Kentucky
- Replacement Cost Range of \$1,000 to \$2,000
- Estimate of \$19.5 to \$26 million for private portion
- Total Kentucky Estimate for removal of Public and Private LSL of \$92.5 to \$185 million
- Other plumbing fixtures in distribution system: auxiliary lead components

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## How does Kentucky Compare?

- United States Survey Data:
  - US 2015 Population 320 million people
  - 293 million people served by Community Water Systems (92% served)
  - 97.7 million household connections (assumes 3 people per connection)
  - 6.1 million Lead Service Lines (AWWA Journal Article June 2016)
  - Estimate that 6.2% of US Houses have full or partial Lead Service Lines
- Kentucky Survey Data:
  - Kentucky 2015 Population of 4.4 million
  - 4.2 million people served by Community Water System (95% served)
  - 1.4 million household connections (assumes 3 people per connection)
  - 53,000 Lead Service Lines (AWWA Journal Article June 2016)
  - Estimate 3.8% of KY Houses have full or partial Lead Service Lines
- Kentucky Compares Favorably to National



## Financing Options

- Public Service Line Replacement
  - Pay Go
  - Bonds
  - Low Interest Loans
    - » SRF
    - » WIFIAWIN/WRDA
    - » Rural Development Grants/Loans (70/30)
    - » Other State Loan Programs – RIA Funds B & C
  - Other
    - » Federal/Congressional Authorization



## Financing Options

- Private Service Line Replacement
  - Homeowner/Property Owner
  - Schools/Daycares
  - Utility Loan on water bill
  - Federal Programs (will SRF criteria change?)
  - State Funding
  - Foundations
  - Grants



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## What is the cost for NOT replacing lead service lines? Corrosion Control vs. Replacement

- Specific Techniques
- Relative Costs
- Public Perception
- Public Acceptance
- Ability to Optimize treatment if action level  $\times 10$  ppb
- Does EPA regulate action level to comply
  - additional treatment
  - additional lead line/component removal

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## Should lead service lines be replaced all at once or over a period of time?


- When Uncovered
- Scheduled Replacement
- Experience at:
  - Madison, WI
  - Washington DC
  - Louisville, KY



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## How have other communities handled costs for lead service line replacement?

- Madison, WI
- DC Water
- Louisville Water
- BGMU Water




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## Who should pay for lead piping replacement in rental properties, schools and daycares?

- Socio-Economic Issues
- Out of State Landlords
- Landlords Passing Costs to Renters
- School District Budget Challenges
- Affordability for Daycares






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## Will Future Home Purchases Require Lead Disclosure


- Home inspections for lead piping?
- Water sampling for home purchase?
- Will FHA home loans require inspection/mitigation as condition for loan eligibility?
- Will lenders require inspection/mitigation as condition for loan eligibility?



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## What is the cost for a public education program regarding lead in drinking water?

- Large Communities
- Small Communities
- Louisville Water Experience

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## Draft Finance Subgroup Recommendations

- Kentucky utilities should consider validating and/or updating the estimate of lead service lines and refining cost estimates for replacement
- Utilities should consider adopting a goal to replace all public lead service lines in Kentucky by 2037 (20 years)
- Develop consumer education materials on lead in drinking water in partnership with industry associations, regulators and utilities.
- Develop a model program for financial assistance for homeowners to replace private portion of lead service lines

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## Draft Finance Subgroup Recommendations

- Develop a model program for public/private schools and daycares for testing, education and replacement of all lead plumbing within school facilities
- Revise the state criteria for prioritization of water projects to include lead service lines
- Develop a portfolio of funding sources for utilities to finance lead service line replacement, including KIA, Rural Development and SRF funding.