

Achieving and Maintaining Water Quality

Louisville Water's Lead Program

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Water Quality & Public Health

- Louisville's drinking water is regarded as one of the highest quality in the United States, exceeding national standards.
- Louisville's drinking water does not contain lead when it leaves the treatment plant
- Lead can become a potential risk for drinking water in the distribution system with lead pipes and plumbing

Water Quality & Public Health

Three-pronged approach for managing potential risk with lead:

- Water chemistry/treatment and research
- Focus on infrastructure
- Customer education



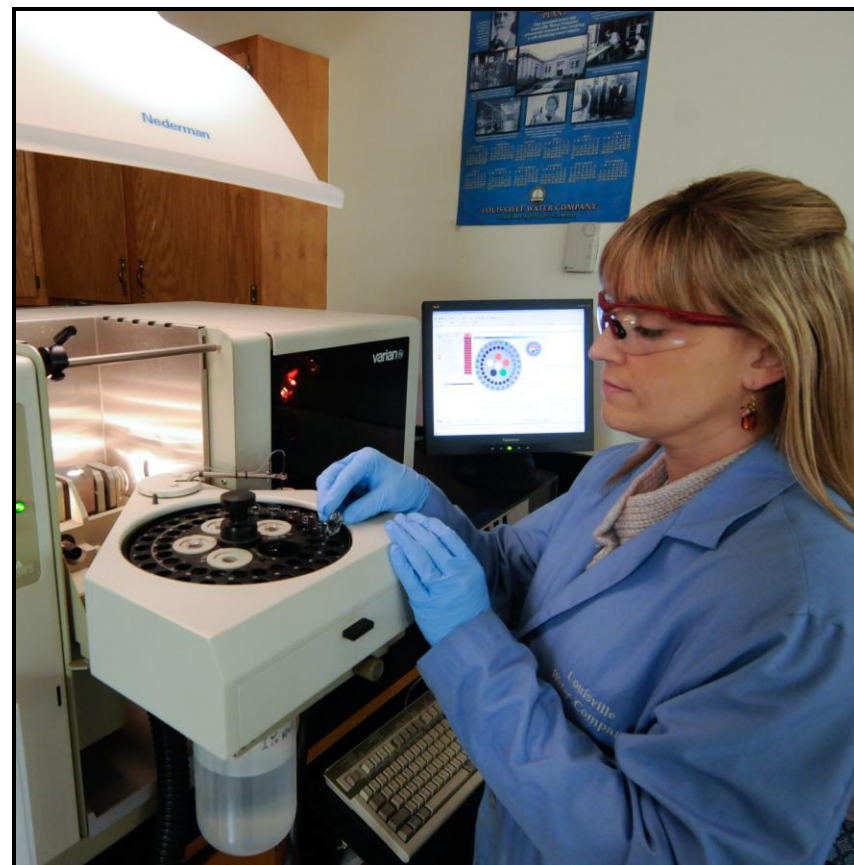
Water Treatment & Research

- EPA established the Lead and Copper Rule in 1991
- Sampling occurs at the customer's tap in sites with known lead service lines or lead/copper solder
- Louisville Water's results are below the EPA's "Action Level"

EPA Action Level Lead	Louisville Water Lead	EPA Action Level Copper	Louisville Water Copper
15 ppb	6.2 ppb	1.3 ppm	0.064 ppm

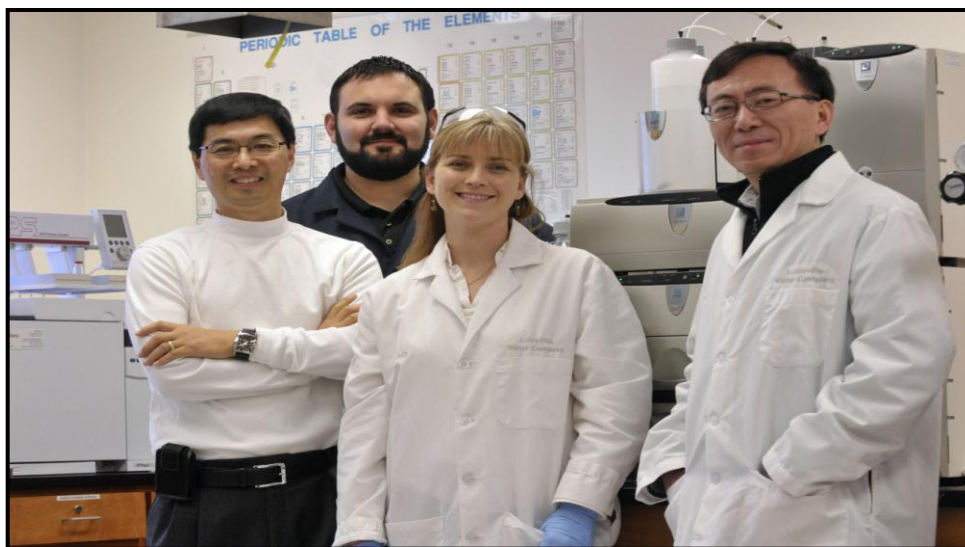
Water Treatment & Research

- Routine customer requests for testing and from Louisville Metro Health Department
- In 2016, all customer samples received to test for lead are below detection limits



Water Treatment & Research

- Research focuses on corrosion control, adjusting the pH of the water
- Water chemistry has to be correct at the plant and in the distribution system
- Daily monitoring throughout our service area



Focus on Infrastructure

- Louisville Water began in 1860 as Kentucky's first public water provider
- Infrastructure includes:
 - Transmission mains
 - Distribution mains
 - Service lines
- Until 1950, it was common for a utility to install lead service lines from the distribution main to the customer's service line

Lead Service Lines

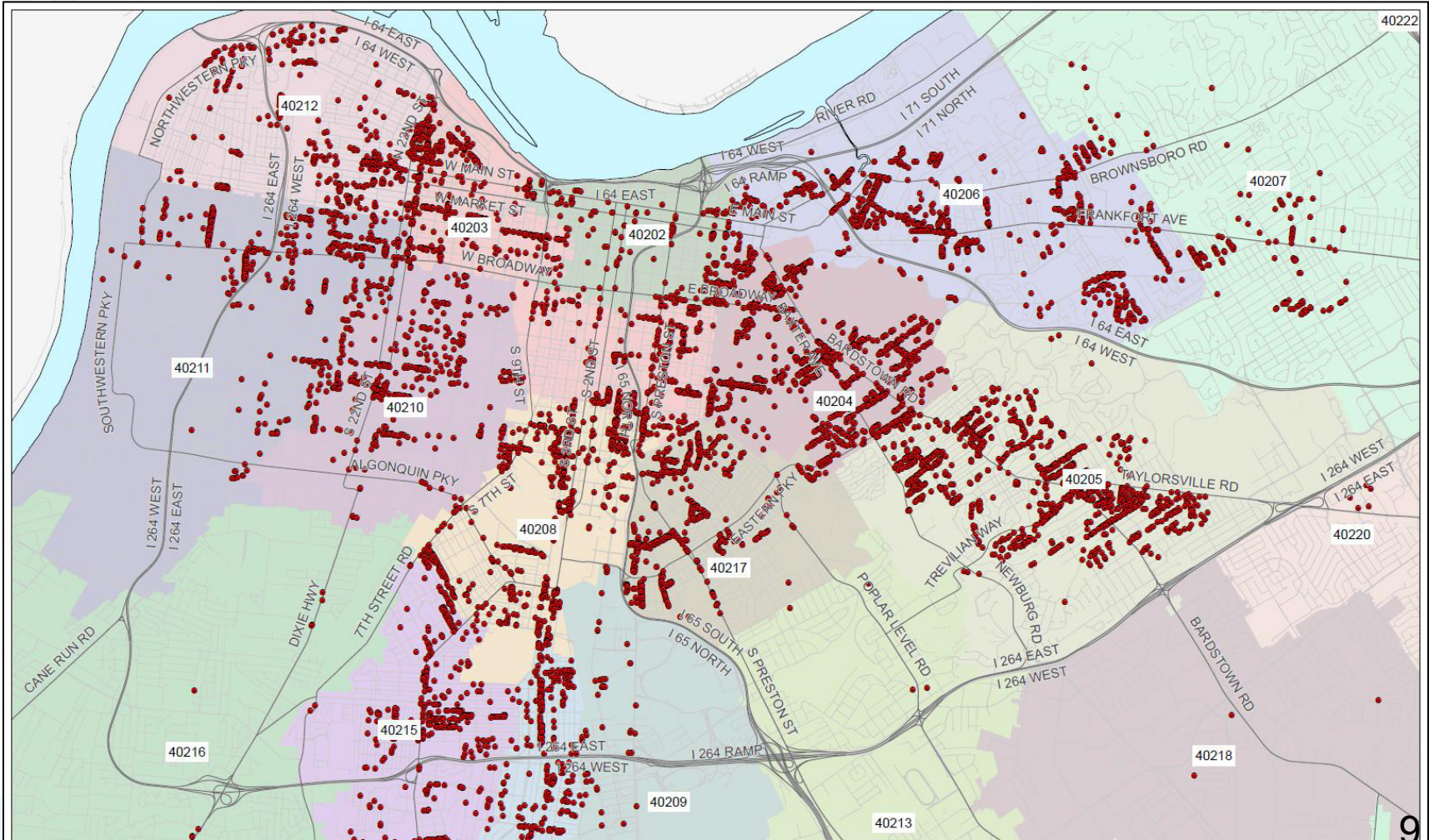
- Louisville Water began replacing its lead service lines in the 1980s and then began an aggressive strategy in the 1990s.
- Today - estimated 7,700 remaining lead services
- Goal is to complete the removal by early 2025





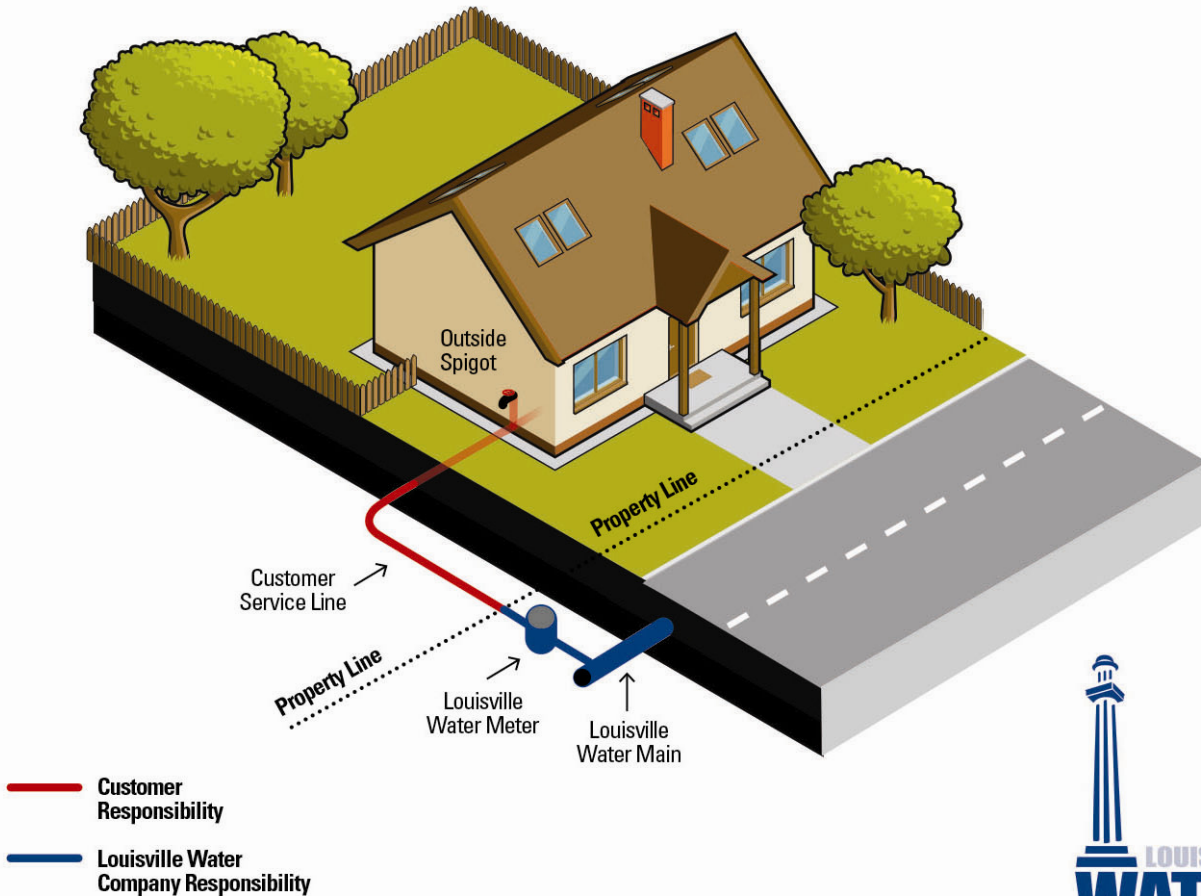
Remaining Lead Service Lines

2.8% of 281,000 services



Replacing a Lead Service Line

Typical Water Service Line



Public Education & Communication

- Increase public awareness on water quality and lead
- Face-to-face, written and on-line
- Highlight the importance of water treatment, infrastructure and public health



Public Education & Communication

- Local and national attention since the Flint, Michigan incident
- Highlight a water utility's critical link to public health
- Louisville's story of research, water treatment and communication
- Wrapping up a community effort to raise funds for children in Flint impacted by high lead levels

2016 LEAD SERVICE RENEWAL PROJECTS

Lead Service Renewal Area 1
Total Project Cost : \$560,000
Project Bid Date : 2/3/16

Lead Service Renewal Area 2
Total Project Cost : \$560,000
Project Bid Date : 2/17/16

Lead Service Renewal Area 3
Total Project Cost : \$500,000
Project Bid Date : 3/2/16

Lead Service Renewal Area 5
Total Project Cost : \$560,000
Project Bid Date : 3/23/16

Lead Service Renewal Area 4
Total Project Cost : \$500,000
Project Bid Date : 2/10/16

Lead Service Renewal Area 6
Total Project Cost : \$560,000
Project Bid Date : 2/24/16

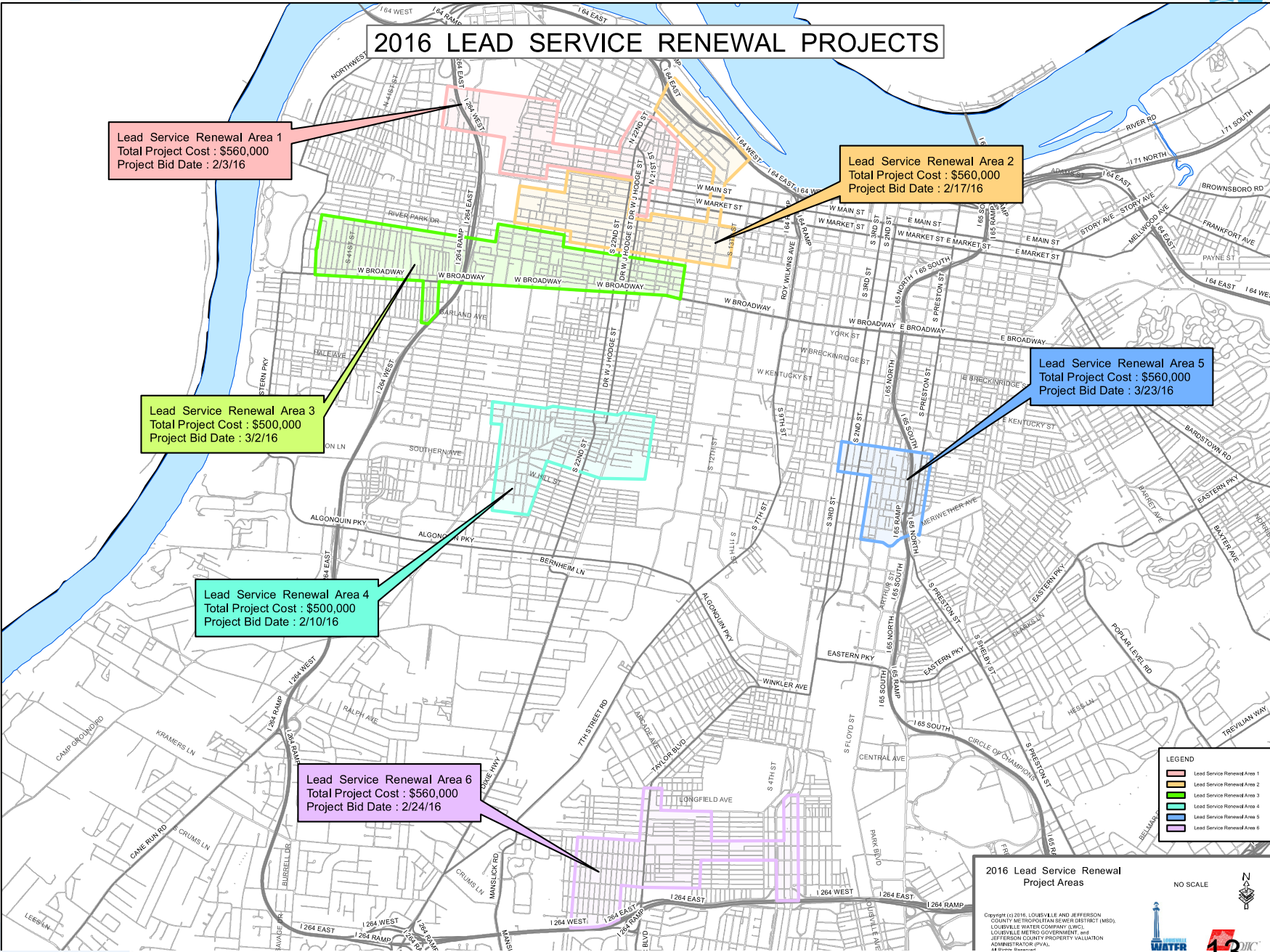
LEGEND

- Lead Service Renewal Area 1
- Lead Service Renewal Area 2
- Lead Service Renewal Area 3
- Lead Service Renewal Area 4
- Lead Service Renewal Area 5
- Lead Service Renewal Area 6

2016 Lead Service Renewal Project Areas

NO SCALE

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2016 Additional Work

- Restoration from existing projects
- Main Replacement & Rehabilitation Program
 - Smaller distribution pipes
 - Projects throughout the service area
- Transmission Inspection
 - Large water mains
 - Robotic technology
 - Identify and repair potential issues



Upcoming EPA Revisions

- EPA is revising the Lead and Copper Rule
- Expect to include:
 - Guidance on efforts in replacing lead service lines
 - Engaging customer in replacement of private lead service lines
 - Strengthen water treatment requirements
 - More robust public education
- Louisville Water is well positioned to meet potential revisions

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