

Deconstructing the Cost of Lead Service Line Replacement

Executive Summary

The Environmental Protection Agency (EPA) estimates that there are up to 10 million lead service lines (LSLs) delivering water to homes in the United States, and a variety of funding proposals have been made over the past year to accelerate the pace of lead service line replacement (LSLR).¹ Where present, LSLs are the largest source of lead in drinking water and they provide a constant risk of exposure to lead even in water systems with consistent corrosion control treatment.²

This paper describes and quantifies the cost of bold, large-scale LSLR programs that include resident-focused outreach and risk mitigation activities. This cost benchmarking is intended to assist in the proper planning and funding of these types of programs. LSLR programs across the country will take different approaches based on the number of LSLs, age of the city and past construction codes, income levels, and historical development. The cost of full lead service line replacement (FLSLR) will vary from city to city but will become more predictable over time as creative solutions evolve and experience develops efficiency, especially in cities with a large number of LSLs. Nevertheless, LSLR programs in every city will ultimately need to incorporate three different programmatic approaches to LSLR to get all LSLs out of the ground: 1) Planned full lead service line replacement (FLSLR) associated with water main replacement, 2) Planned FLSLR in neighborhood-based programs that do not include water main replacement, and 3) Individual FLSLR where unique circumstances require replacing a small number of LSLs at a time.

Protective public health policy requires realistic cost estimates to propose and sustain funding for protective infrastructure maintenance and replacement. Inflated cost predictions slow health protective policy and provide an environment where contractors are enabled to overcharge for their services, further delaying resolution for vulnerable populations who have had no option but to drink water from LSLs for decades. Inflated cost estimates, especially those developed without the context of quantified benefits, should not be used to delay LSLR, further permitting generations the daily risk of exposure to lead in drinking water.

Historically, cost estimates for water distribution renewal needs have not included LSLR, making the cost of LSLR appear to be “extra” even though the service line is the final critical pipe that affects the quality of all water delivered to an individual home. Adding the cost of replacing all LSLs to water distribution needs estimates results in a mere 3% increase in the national cost estimate for water main renewal.

Per the cost analysis provided here, replacing the nearly 30,000 LSLs in Washington, DC is projected to cost \$142 million, but could range from a low of \$78 million up to \$228 million. The cost of replacing the estimated 400,000 LSLs in Chicago is estimated at \$2.3 billion over 25 years, although the cost could range from \$1.4 billion to \$3.7 billion. Meanwhile, the cost estimates provided by each of these cities is more than two times greater than the maximum costs projected in this paper based on real benchmarking data.

Policy barriers that contribute to elevated cost estimates can be removed or reduced when transparency and public accountability are coupled with dedicated resident-centered outreach and inclusion. Engineering cost efficiencies are achieved through practice, creativity, and innovation. When and if LSLR is communicated and addressed as the public health necessity that it is, there will be increasing public pressure to address and decrease barriers and costs over time. New cost information must be published as it becomes available, to keep a realistic accounting of overall costs, while identifying efficiencies and bottlenecks as this work expands. Now is the perfect time to initiate work on protective LSLR programs, especially in cities with the largest quantities of LSLs, supported by new and expansive state and federal infrastructure funding initiatives.