



Department of Administration  
Budget and Management Division

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October 29, 2018

Ref: 2019 BF, 7-C

MEMORANDUM

To: Ald. Michael Murphy  
From: Bill Christianson  
Subject: Cost of Increasing Lead Service Line Replacements to 5,000 per year

To answer your request concerning the annual cost and sources of funds to accelerate lead service line replacement program to 5,000 replacements per year, a number of assumptions must be made. These assumptions are clearly identified on the attachment for your review. The goal of this analysis was to provide a one year snapshot of the cost of replacing 5,000 lead service lines per year. This analysis uses 2018 dollars when making cost projections, and does not take inflation in future years into account. Additionally, this analysis assumes that the only funding sources for the program are Water Works ratepayer funds for the utility side and a combination of City capital funding and property owner contribution for the private side. While some additional funding will be available in 2019 and 2020, specifically \$900,000 of carryover Safe Drinking Water funds in 2019 and \$2,500,000 from Waukesha in 2020, these are both one-time sources with no continuing annual commitment so those were not factored in. This analysis also assumes no changes to City ordinances governing this program.

The primary challenge in developing this estimate was developing what we would term a "scale-up premium". This refers to the additional incremental cost per replacement that would result from increasing the number of projects beyond the capacity of eligible contractors currently performing this work. The 2019 lead service line replacement program in the 2019 Proposed Budget intends to replace 1,000 lead service lines. According to Water Works engineers, 1,000 replacements in a year is very near the limit of the current capacity of eligible contractors. Scaling up, especially to as many as 5,000 replacements, would require contractors to invest in additional equipment and labor. Experience has shown that when contractors bid on work that is beyond their current capacity (i.e. would require adding crews, equipment), their bids are typically higher than their bids for work that is within their current capacity.

An in-depth feasibility study would likely be able to shed light on how much this "scale up premium" would increase the cost per replacement. Without the time or resources to complete a feasibility study, we instead chose to provide two cost estimates for how much it would cost to replace 5,000 lead service lines each year. The first estimate was developed using the average cost per replacement that has been experienced in 2018, \$6,000 for the utility side and \$6,000 for the private side. This first estimate does not take into account the cost of scaling the program up beyond current contractor capacity. The second estimate used a modest "scale up premium" of 5% per 1,000 additional lead service lines. Using this assumption, the cost per replacement increases to \$7,200 for the utility side and \$7,200 for the private side. It is important to note that since this analysis assumes no change to City ordinances governing the program, the City portion will be \$5,600 per private side replacement while the property owner contribution remains limited to \$1,600.



<b>Using 2018 Average Cost: 70,000 RESIDENTIAL CUSTOMER CLASS LSLs (annual costs)</b>					
Years to 70,000 Replacements	Number of Replacements	Total Annual Cost (MWW, City & Prop. Owners)	Water Works	City Capital	Property Owners
<b>14</b>	<b>5,000</b>	<b>\$60,000,000</b>	<b>\$30,000,000</b>	<b>\$22,000,000</b>	<b>\$8,000,000</b>
<b>Including Scale Up Premium: 70,000 RESIDENTIAL CUSTOMER CLASS LSLs (annual costs)</b>					
Years to 70,000 Replacements	Number of Replacements	Total Annual Cost (MWW, City & Prop. Owners)	Water Works	City Capital	Property Owners
<b>14</b>	<b>5,000</b>	<b>\$72,000,000</b>	<b>\$36,000,000</b>	<b>\$22,000,000</b>	<b>\$8,000,000</b>

**Key Assumptions**

- Current Average LSL Replacement Cost: \$12,000 per replacement; \$6,000- utility side, \$6,000 private side
- No changes to the current City LSL ordinances.
- No additional funding sources beyond MWW ratepayer funds, City capital funding, and property owner payments.
- Due to lack of current contractor capacity, MWW anticipates a 5% increase in the average LSL replacement cost for every additional 1,000 LSLs remediated annually. This 5% “scaling up premium” is necessary to account for the associated risks of increasing business infrastructure (labor, equipment, etc.), thus the average cost of replacing 5,000 private-side service lines would increase by 20% resulting in an estimated average private-side service line replacement cost of \$7,200.
- Currently, MWW has plans to perform all utility-side LSL replacements in-house by MWW crews. This analysis assumes MWW in-house replacement costs will be equal to current contractor costs (\$6,000 per LSL). MWW would also experience a 5% “scaling up” premium due to a significant increase in workload. Without a lengthy analysis, estimating MWW’s “scaling up” premium vs. contracts is difficult. Given these difficulties, this analysis 5% “scaling up” premium per 1,000 LSLs, would result in an average public-side replacement cost of \$7,200 per service line (20% premium for 5,000 LSLs).
  - The City’s estimated average share of each private-side LSL replacement would be \$5,600 due to this analysis assuming no change in the cost sharing agreement and the \$1,600 property owner’s liability limit.
- Additionally, this analysis assumes no change to the current LSL replacement program specifications that the private-side costs of child care LSL replacements will be fully subsidized by the city.
- Further, this analysis assumes 100% of Owner-initiated private side LSL replacements costs will be assumed by the property owner at no cost to the City
- Furthermore, assumes there will be 56 child care facilities receiving the full City subsidy and 16 owner-initiated replacements receiving no subsidy in the years after 2019, resulting in average City-subsidy replacement costs balancing at \$7,200 (72 x \$5,600 = \$403,200; 56 x \$7,200 = \$403,200).

**Other Important Points to Consider**

- The Public Service Commission of Wisconsin (PSC) sets water rates. PSC approval is needed prior to any water rate increase. It is uncertain whether the PSC would permit a rate increase sufficient to fund an accelerated LSL replacement program costing approximately \$30-36 million annually, amounting to approximately a 75-93% increase to residential water rates.
- Additional cost increases resulting from scaling up to 5,000 replacements that are not reflected in the estimates:
  - Engineering, permits, DPW contract administration, DNS inspection staffing

Please contact me with any questions at extension 5588.

DY: bc  
Attachment

Budget\2019budget\F&P Write up\Water Works Scale up LSL Replacements to 5,000