



Initial Lead Service Line Replacement Plan

Village of Arlington Heights
April 2024



This Initial Lead Service Line Replacement Plan is based on the best available information at the time of its writing. It is recognized that, based on the requirements of the Lead Service Line Replacement and Notification Act, the Community Water System will have the opportunity to

update the Plan in 2025 and 2026, prior to submitting the Final Lead Service Line Replacement Plan, which is due before April 15, 2027.

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1 BACKGROUND

1.1 History of the Lead in Household Plumbing

Lead pipes were commonly used in homes built in the early 20th century as lead was a less expensive and more durable option than iron. Concerns about lead poisoning contributed to the creation of the United States Environmental Protection Agency's (USEPA) Safe Drinking Water Act (SDWA) in 1986. The SDWA prohibited the use of pipes, solder or flux that were not "lead free" in public water systems or plumbing in facilities providing water for human consumption. At the time "lead free" was defined as solder and flux with no more than 0.2% lead and pipes with no more than 8% lead content.

In 1991, the USEPA published the Lead and Copper Rule (LCR) which regulates the concentration of lead and copper permitted in public drinking water by regularly sampling at the consumer's tap. The LCR established an action level of 15.0 parts per billion (ppb) for lead based on the 90th percentile level of tap water samples. This means that no more than 10 percent of samples can be above the action level. The action level is the concentration of lead in tap water which, if exceeded, triggers treatment or other requirements that a water system must follow. If lead levels are found above the action levels, it does not signal a violation but can trigger additional requirements.

1.2 Regulatory Background

In 2021, the Illinois General Assembly found and declared that there is no safe level of exposure to lead, as found by the USEPA and the Centers for Disease Control and Prevention. Furthermore, water service lines composed of lead can convey this harmful substance to the drinking water supply. According to the Illinois Environmental Protection Agency's 2018 Service Line Material Inventory, the State of Illinois is estimated to have over 680,000 lead-based service lines still in operation. The true number of lead service lines is not fully known because Illinois lacks an adequate inventory of lead service lines. Thus, the Illinois General Assembly concluded that for the general health, safety and welfare of its residents, all lead service lines in Illinois should be disconnected from the drinking water supply, and the State's drinking water supply.

As a result, the General Assembly passed the Lead Service Line Replacement and Notification Act (LSLRNA) (Public Act 102-0613), and Governor Pritzker signed the Act with an effective date of January 1, 2022. The complete Act can be found in Appendix A. The purpose of the Act is to require the owners and operators of community water supplies to:

- develop, implement, and maintain a comprehensive water service line material inventory;
- develop, implement, and maintain a comprehensive lead service line replacement plan,
- provide notice to occupants of potentially affected buildings before any construction or repair work on water mains or lead service lines and request access to potentially affected buildings before replacing lead service lines; and,



- prohibit partial lead service line replacements, except as authorized by the Act.

1.3 Material Inventory (Subsections (g) and (h) of the LSLRNA)

The LSLRNA requirements for the comprehensive water service line material inventory include the identification of:

- (1) the total number of service lines connected to the community water supply's distribution system;
- (2) the materials of construction of each service line connected to the community water supply's distribution system;
- (3) the number of suspected lead service lines that were newly identified in the material inventory for the community water supply after the community water supply last submitted a service line inventory to the Agency; and
- (4) the number of suspected or known lead service lines that were replaced after the community water supply last submitted a service line inventory to the Agency, and the material of the service line that replaced each lead service line.

When identifying the materials of construction under paragraph (2) above, the owner or operator of the community water supply shall to the best of the owner's or operator's ability identify the type of construction material used on the customer's side of the curb box, meter, or other line of demarcation and the community water supply's side of the curb box, meter, or other line of demarcation (see Exhibit 1-1).

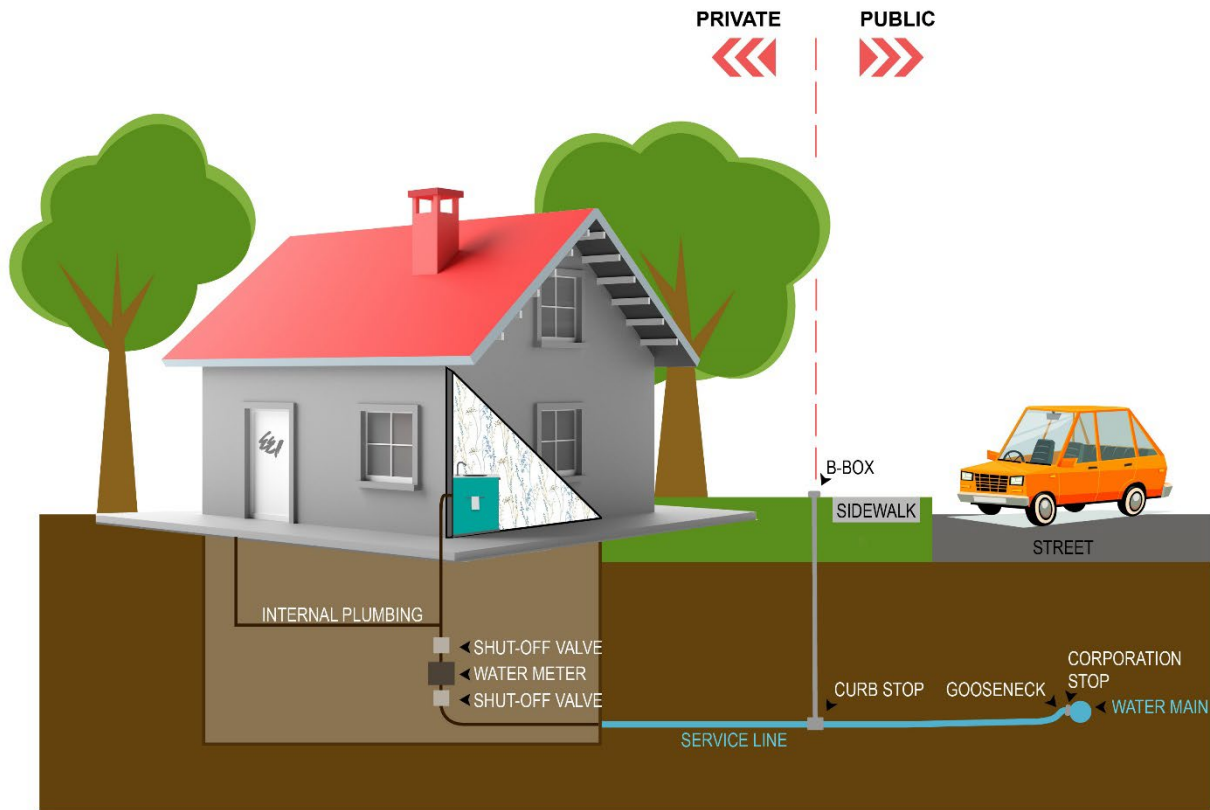
In addition, the LSLRNA requires the owner or operator of a community water supply to:

- (1) prioritize inspections of high-risk areas identified by the community water supply and inspections of high-risk facilities, such as preschools, day care centers, day care homes, group day care homes, parks, playgrounds, hospitals, and clinics, and confirm service line materials in those areas and at those facilities;
- (2) review historical documentation, such as construction logs or cards, as-built drawings, purchase orders, and subdivision plans, to determine service line material construction;
- (3) when conducting distribution system maintenance, visually inspect service lines and document materials of construction;
- (4) identify any time period when the service lines being connected to its distribution system were primarily lead service lines, if such a time period is known or suspected; and
- (5) discuss service line repair and installation with its employees, contractors, plumbers, other workers who worked on service lines connected to its distribution system, or all the above.



Figure 1-1. Service Line

Relative components of water service from the main to the internal water piping.



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1.4 Lead Service Line Replacement Plan (Subsection (p) and (q) of the LSLRNA)

The LSLRNA also requires every owner or operator of a community water supply that has known or suspected lead service lines to:

- (1) create a plan to:
 - (A) replace each lead service line connected to its distribution system; and
 - (B) replace each galvanized service line connected to its distribution system, if the galvanized service line is or was connected downstream to lead piping; and,
- (2) electronically submit, by April 15, 2024, its initial lead service line replacement plan to the Agency;
- (3) electronically submit by April 15 of each year after 2024 until April 15, 2027, an updated lead service line replacement plan to the Agency for review; the updated replacement plan shall account for changes in the number of lead service lines or unknown service lines in the material inventory;
- (4) electronically submit by April 15, 2027, a complete and final replacement plan to the Agency for approval; the complete and final replacement plan shall account for all known and suspected lead service lines documented in the final material inventory; and
- (5) post on its website a copy of the plan most recently submitted to the Agency or may request that the Agency post a copy of that plan on the Agency's website.

The lead service line replacement plan must include the following:

- (1) the name and identification number of the community water supply;
- (2) the total number of service lines connected to the distribution system of the community water supply;
- (3) the total number of suspected lead service lines connected to the distribution system of the community water supply;
- (4) the total number of known lead service lines connected to the distribution system of the community water supply;
- (5) the total number of lead service lines connected to the distribution system of the community water supply that have been replaced each year beginning in 2020;
- (6) a proposed lead service line replacement schedule that includes one-year, 5-year, 10-year, 15-year, 20-year, 25-year, and 30-year goals;



- (7) an analysis of costs and financing options for replacing the lead service lines connected to the community water supply's distribution system, which shall include, but shall not be limited to:
 - (A) a detailed accounting of costs associated with replacing lead service lines and galvanized lines that are or were connected downstream to lead piping;
 - (B) measures to address affordability and prevent service shut-offs for customers or ratepayers; and
 - (C) consideration of different scenarios for structuring payments between the utility and its customers over time; and
- (8) a plan for prioritizing high-risk facilities, such as preschools, day care centers, day care homes, group day care homes, parks, playgrounds, hospitals, and clinics, as well as high-risk areas identified by the community water supply;
- (9) a map of the areas where lead service lines are expected to be found and the sequence with which those areas will be inventoried and lead service lines replaced;
- (10) measures for how the community water supply will inform the public of the plan and provide opportunity for public comment; and,
- (11) measures to encourage diversity in hiring in the workforce required to implement the plan.



2 LEAD SERVICE LINE REPLACEMENT PLAN

2.1 Overview of Community Water System

The Village of Arlington Heights (IL0314030) serves a community of 77,000 residents plus government, commercial and industrial institutes and has an extensive network of 263.5 miles of water main. Based on 2021 data, the Village consumed 2595 million gallons of water, averaging 7.1 million gallons a day and had a daily max of 11.7 million gallons.

At the beginning of 1985 the Village switched from their eleven (11) deep well system to Lake Michigan water purchased from the Northwest Water Commission (NWC). The City of Evanston provides completely treated water to the NWC through a 60-inch diameter transmission main. Treatment provided by the City includes the addition of fluoride and chlorine to the water in accordance with Federal and State regulations and poly orthophosphate as a corrosion inhibitor to protect against the leaching lead and copper. The NWC Receiving Station pumps the treated water to thirteen (13) separate delivery points, four (4) of which are potable water supply for the Village: North #9, North #13, South #16, and South #17. Each of the Village's receiving stations include a booster pump station, water storage tank(s), re-chlorination facility, and an emergency back up well.

2.2 Material Inventory Summary, Subsection (q)(1)-(5)

The Village has completed the required material inventory and submitted it to the IEPA every year except 2021 when the IEPA requested that the inventory not be submitted. A summary of the material inventories is presented in Table 2-1. The Village has continually reviewed historical documentation, as-built drawings, subdivision plans, and made observations in the field to determine service line material construction. As a result, the accuracy and detail of the inventory has improved over time.

The Village utilizes the Illinois EPA Lead Service Line Inventory Template as the basis for its LSL Material Inventory. The most current version of the Village's Material Inventory is posted on the Village's website.

In addition, the Village maintains a Geographic Information System (GIS) based database. Maps showing the location of the composition of water service lines in the Village have been developed and are updated from time to time. A map showing the composition of water service lines is posted on the Village's website.



Table 2-1. Lead Service Line Inventory Summary

The information in this table reflects the Lead Service Line Inventory submitted annually to the Illinois EPA by the Village of Arlington Heights

| | 2023 | 2022 | 2020 | 2019 | 2018 | 2017 |
|---|--------|--------|--------|--------|--------|--------|
| Wholesale Connections | | | | | | |
| Retail Connections | 20,529 | 20,539 | 23,244 | 23,244 | 23,244 | 23,411 |
| Lead | 3,973 | 4,274 | 6,475 | 6,475 | 6,513 | 6,732 |
| Copper/Lead Solder | 16,503 | 16,144 | 13,038 | 13,038 | 16,731 | 16,679 |
| Copper/Non-Lead Solder | | | 3,731 | 3,731 | | |
| Galvanized* | | | | | | |
| Galvanized Requiring Replacment | | 1 | | | | |
| Galvanized Not Requiring Replacement | | | | | | |
| Plastic | | | | | | |
| Unknown Material | 53 | 81 | | | | |
| Unknown Not Lead | | | | | | |
| Cast/Ductile Iron or Transite | | 38 | | | | |
| Service Lead Replaced | | | | | | |

* In 2023, "Galvanized" is no longer a requested field. Instead, it has been split into "Galvanized Required Replacment" and "Galvanized Not Requiring Replacement". If a galvanized service is or has ever been connected downstream to lead, it should be classified as "Galvanized Requiring Replacement"

2.3 LSL Replacement Goals(q)(6)

The Village is actively replacing water service lines when lead is encountered during water main construction, and maintenance or repair operations. In addition, residents are notified as required by the Act and encouraged to replace the customer-owned portion of the water service line, if it is lead. For the purposes of this plan, the number of services to be replaced is 4,206. That includes 3,973 lead services, and 53 services of unknown material. The 53 services of unknown composition are considered lead for the purposes of this plan.

The Village has developed a schedule for replacing the known and suspected LSLs connected to the Village’s distribution system (Table 2-2). The Village replaced 150 lead service lines in 2023. As of November 2023, the Village had received bids for replacing another 462 lead service lines. Based on the available records, the Village believes that most, if not all, of the LSLs identified for replacement as part of the project will be lead. Replacements associated with the project are expected to be completed in 2024.

The Village has the capabilities to perform lead service lines replacements using Village personnel and equipment. Given the current workload, the Village estimates that it will be able to replace approximately 100 lead service lines per year using Village personnel and equipment.



The Village has developed a schedule for replacing the known and suspected LSLs (Exhibit 2-1) connected to the Village’s distribution system as presented in Table 2-2. The table lists the number of LSLs expected to be replaced beginning in 2020 as required by the Act. The number of LSLs in the Village’s material inventory as of December 31, 2023, was 4,206. The Village anticipates replacing approximately 260 LSLs in 2025 and 2026, leaving the Village with approximately 3,124 LSLs to be replaced at the end of 2026. According to the requirements of the Act (Subsection (v)) because the Village estimates it will have more than 1,200 but fewer than 5,000 lead services at the end of 2026, the Village will be required to replace at least 6% of their LSLs beginning in 2027. This equates to the Village being required to replace approximately 188 LSLs per year (approximately 6% of 3,124) for 16 years and 116 LSLs in the 17th year.

Table 2-2. Schedule for Lead Service Line Replacement

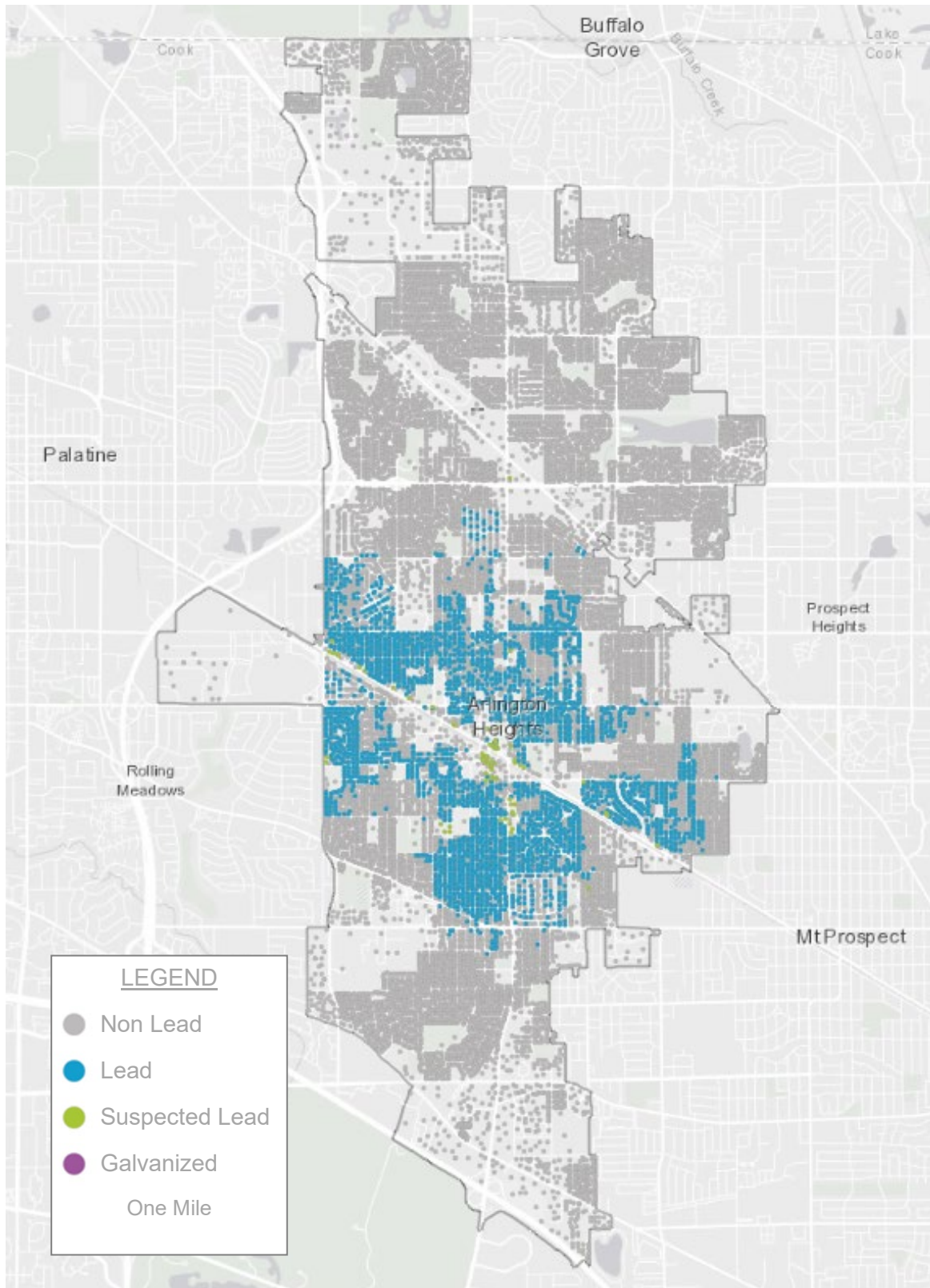
Planned replacement of Lead Service Lines to replace 6% of LSLs per year beginning in 2027.

| Years After Final Plan | Reporting Year | Submittal Date | Number of LSLs | | |
|------------------------|----------------|----------------|----------------|----------|--------|
| | | | Beginning | Replaced | Ending |
| | 2020 | 4/15/2021 | 4575 | 35 | 4540 |
| | 2021 | 4/15/2022 | 4540 | 58 | 4482 |
| | 2022 | 4/15/2023 | 4482 | 126 | 4356 |
| | 2023 | 4/15/2024 | 4356 | 150 | 4206 |
| | 2024 | 4/15/2025 | 4206 | 562 | 3644 |
| | 2025 | 4/15/2026 | 3644 | 260 | 3384 |
| | 2026 | 4/15/2027 | 3384 | 260 | 3124 |
| 1 | 2027 | 4/15/2028 | 3124 | 188 | 2936 |
| 2 | 2028 | 4/15/2029 | 2936 | 188 | 2748 |
| 3 | 2029 | 4/15/2030 | 2748 | 188 | 2560 |
| 4 | 2030 | 4/15/2031 | 2560 | 188 | 2372 |
| 5 | 2031 | 4/15/2032 | 2372 | 188 | 2184 |
| 6 | 2032 | 4/15/2033 | 2184 | 188 | 1996 |
| 7 | 2033 | 4/15/2034 | 1996 | 188 | 1808 |
| 8 | 2034 | 4/15/2035 | 1808 | 188 | 1620 |
| 9 | 2035 | 4/15/2036 | 1620 | 188 | 1432 |
| 10 | 2036 | 4/15/2037 | 1432 | 188 | 1244 |
| 11 | 2037 | 4/15/2038 | 1244 | 188 | 1056 |
| 12 | 2038 | 4/15/2039 | 1056 | 188 | 868 |
| 13 | 2039 | 4/15/2040 | 868 | 188 | 680 |
| 14 | 2040 | 4/15/2041 | 680 | 188 | 492 |
| 15 | 2041 | 4/15/2042 | 492 | 188 | 304 |
| 16 | 2042 | 4/15/2043 | 304 | 188 | 116 |
| 17 | 2043 | 4/15/2044 | 116 | 116 | 0 |

Key: Italicized numbers are planned



Exhibit 2-1. Map of Water Service Lines by Composition





2.4 Financial Analysis (q)(7)

There are several factors that control the cost associated with replacing lead service lines including cost of materials, construction methods, availability of qualified contractors, demand, and competition. Although these factors will certainly change over the next 20 years, the Village has made a good faith effort to estimate the cost of replacing lead service lines. Recognizing the uncertainty of future costs warrants adding a contingency to the cost estimates. The uncertainty in estimating future costs is relatively high. Therefore, it is recommended that a 30% contingency be added to the best estimate of cost.

The Village received thirteen (13) bids for replacing 462 lead service lines in 2023. Based on the best available information it appears that the privately-owned portion of the services to be replaced as part of the project are not composed of lead or galvanized piping. Table 2-3 presents a summary of the bids. The total bid amounts range from 2,964,990 to \$5,775,000, with an average of \$4,600,715.

Table 2-3. Summary of Bids Received 9/20/2023

Number of Bids: 13; Number of Services to be Replaced: 462 (Public Side)

| | Total Bid | Unit Price |
|---------------------------------|-------------|------------|
| Engineer’s Estimate | \$4,944,300 | \$10,702 |
| Highest Bid Received | \$5,775,000 | \$12,500 |
| Lowest Bid Received | \$2,964,990 | \$6,418 |
| Average of Bids Received | \$4,600,715 | \$9,958 |

The bids received by the Village provide the basis for estimating the cost of future projects. In estimating future costs, a conservative approach is recommended. Therefore, the average of the bids received has been used here. Engineering design services are estimated to be 2.5% of the bid amount and construction engineering services are estimated to be 5% of the bid amount. Using this approach, the estimate cost to replace a publicly-owned water service is presented in Table 2-4.



Table 2-4. Estimated Cost to Replace Publicly- Owned Service

| <u>Item</u> | <u>Estimated Cost</u> |
|---|-----------------------|
| Average Price to Replace Publicly-Owned Service | \$9,958 |
| <u>Engineering (7.5%)</u> | <u>\$747</u> |
| Estimated Cost to Replace Publicly-Owned Service Line | \$10,705 |

Several lead service line replacement projects conducted over the past couple of years for community water systems located in Northeast Illinois indicate that privately-owned water service replacements range from approximately \$4,000 to \$8,000 per service with an average of approximately \$6,000 per service. Again, engineering design services are estimated to be 2.5% of the bid amount and construction engineering services are estimated to be 5% of the bid amount. Using this approach, the estimate cost to replace a privately-owned water service is presented in Table 2-5.

Table 2-5. Estimated Cost to Replace Privately- Owned Service

| <u>Item</u> | <u>Estimated Cost</u> |
|--|-----------------------|
| Average Price to Replace Privately-Owned Service | \$6,000 |
| <u>Engineering (7.5%)</u> | <u>\$450</u> |
| Estimated Cost to Replace Privately-Owned Service Line | \$6,450 |

2.4.1 Affordability

The Village does not have a written policy regarding the replacement of lead service lines. The current practice, which is outlined in Exhibit 2-2, is preliminary and may change as regulations, or other factors change. The Village will continue to evaluate it options for establishing a lead service line replacement policy as required by the LSLNA.

The Village has discussed the possibility of working with local banks to provide residents with a resource for acquiring funds to pay for a private contractor to replace their lead service line. The Village has also discussed the possibility of an assistant program based on need similar to its



Sewer Back-up Rebate Program. To date, the Village has not adopted an official policy on how to address affordability and how to prevent service shut-offs.

The Village has an approved IEPA State Revolving Fund (SRF) Project Plan and is pursuing funding for lead service line replacements through SRF.

Exhibit 2-2. Village Practice

Village Practices Regarding the Replacement of Lead Service Lines

| Scenario | Financial Responsibility |
|--|--|
| <p>Required Due to Addition or New Construction</p> <ul style="list-style-type: none"> • Building addition that requires replacement of the service • New construction that requires replacement of the service | <p>Property owner pays for and installs public and private side</p> |
| <p>Property Owner Initiated Replacement</p> <ul style="list-style-type: none"> • No specific reason • Leak/Damage on private side of service | <p>Property owner pays for and installs private side Village pays for and installs public side</p> |
| <p>Village Initiated Replacement</p> <ul style="list-style-type: none"> • Village replaces adjacent water main • Leak/Damage on public side of service • Planned service replacement (FY27 and beyond) | <p>Village pays for and installs public and private side*</p> |

* Property owners may refuse to have the private section of a lead service line replaced if they sign a waiver and install a water filter (provided by the Village).

2.5 Prioritizing High Risk Facilities (q)(8)

The Village recognizes that some facilities, such as preschools, day care centers, day care homes, group day care homes, parks, playgrounds, hospitals, and clinics, may represent an increase in lead exposure to children, who are the most susceptible to the effects of lead. According to the Center for Disease Control and Prevention, children less than six years old are at a higher risk of lead exposure. This is because their bodies are rapidly developing and more susceptible to taking in lead if exposed.

Although the Village has sought to identify lead service lines that serve such facilities, to date the Village has not identified any such facilities as having lead service lines.

2.6 Service Line Replacement Map (q)(9)

The map presented as Exhibit 2-3 shows the approximate locations of the LSLs that will be replaced as presented in Table 2-2. Area 1 is the project area for LSLs to be performed by a contractor in 2024. The remaining areas are approximately where the LSLs will be replaced over 17 years beginning in 2027. There are several factors that may require modifying the areas

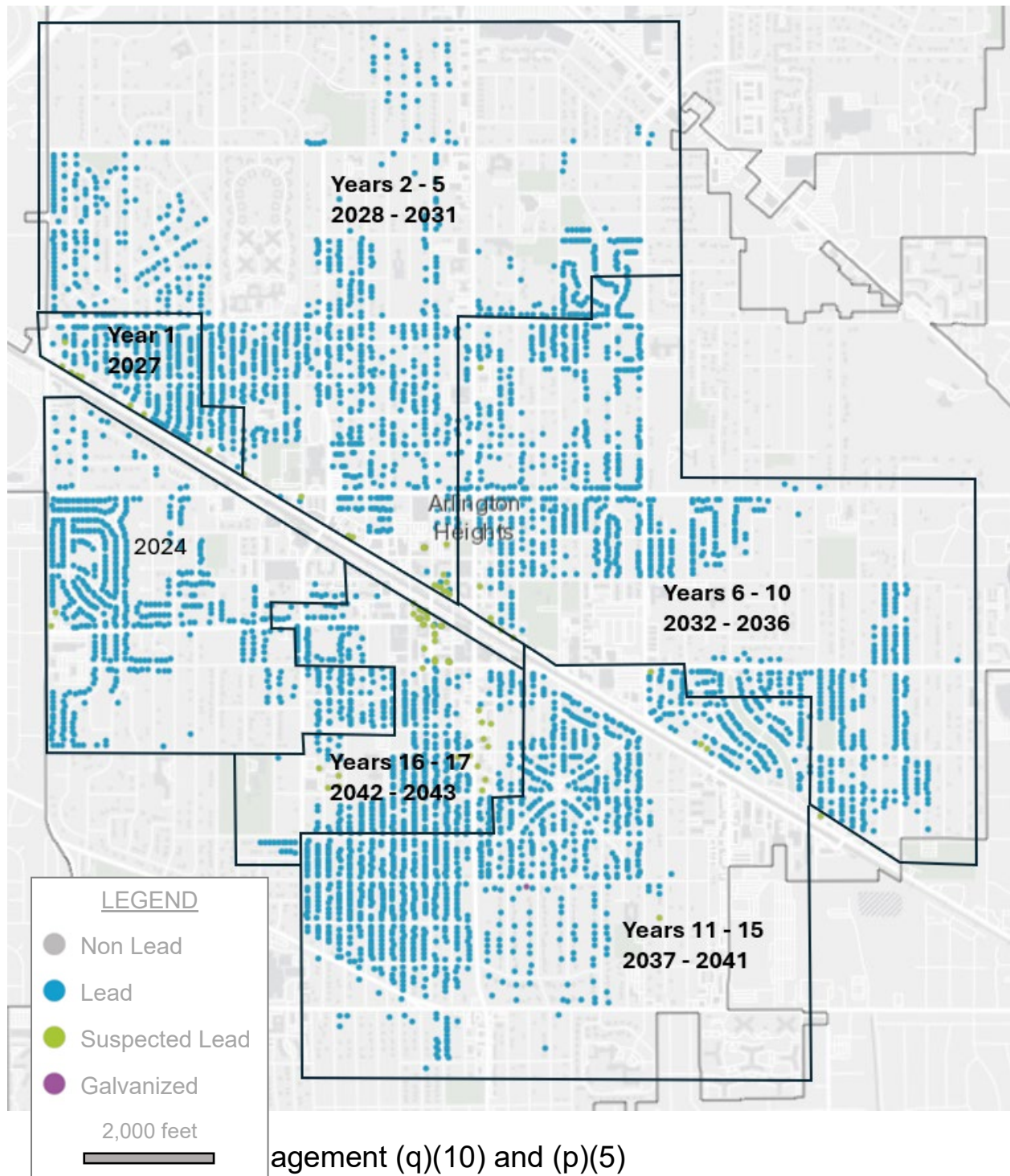


identified in Exhibit 2-4. Therefore, the map will be updated annually based on updated information.

Exhibit 2-3. Lead Service Line Replacement Plan Map

Map of Known and Suspected LSLs to be Replaced For Year-1, -5, -10, -15 and -17 Goals.





The Village of Arlington Heights Public Works Department will present the Lead Service Line Replacement Plan to the Village Board during a regular Committee-of-the-Whole meeting. The Plan will be included in the meeting agenda packet and residents will be given an opportunity to comment on the Plan during the meeting.



In addition, the Village will post the Plan on its website. The posting will provide instructions on how residents can submit comments regarding the Plan to the Public Works Department. Comments received will be considered during the implementation or future updates of the Plan.

2.8 Construction (q)(11)

2.8.1 Measures to Encourage Diversity in Hiring in the Workforce

The Village encourages diversity in hiring in the workforce required to implement the Plan through its General Conditions and Instructions To Bidders for Public Improvements / Construction contracts, which includes the following:

6.05 EQUAL EMPLOYMENT OPPORTUNITY: During the performance of this contract the contractor agrees as follows:

(a) That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex national origin or ancestry and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.

(b) That if it hires additional employees in order to perform this contract or any portion hereof it will determine the availability (in accordance with the Fair Employment Practices Commission's Rules and Regulations for Public Contracts) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.

(c) That in all solicitations or advertisements for employees placed by it or on its behalf it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, national origin or ancestry.

(d) That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding a notice advising such labor organization or representative of the contractor's obligations under the Illinois Fair Employment Practices Act and the Commission's Rules and Regulations for Public Contracts. If any such labor organization or representative fails or refuses to cooperate with the contractor in its efforts to comply with such Act and Rules and Regulations the contractor will promptly so notify the Illinois Fair Employment Practices Commission and the contracting agency and will recruit employees from other sources when necessary to fulfill its obligations, there under.

(e) That it will submit reports as required by the Illinois Fair Employment Practices Commission's Rules and Regulations for Public contracts. Furnish all relevant information as may from time to time be requested by the Commission or the contracting agency, and in all respects comply with the Illinois Fair Employment Practices Act and the Commission's Rules and Regulations for Public Contracts.



(f) That it will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and the Illinois Fair Employment Practices Commission for purposes of investigation to ascertain compliance with the Illinois Fair Employment Practices Act and the Commission's Rules and Regulations for Public Contracts.

(g) That it will include verbatim or by reference the provisions of paragraphs 1 through 7 of this clause in every performance subcontract as defined in Section 2.10(b) of the Commission's Rules and Regulations for Public Contracts. So that such provision will be binding upon every such subcontractor and that it will also include the provisions of paragraphs 1, 5, 6 and 7. In every supply subcontract as defined in Section 2.10 (a) of the Commission's Rules and Regulations for Public Contracts so that such provisions will be binding upon every such subcontractor. In the same manner as with other provisions of this contract, the contractor will be liable for compliance with applicable provisions of this clause by all its subcontractors: and further it will promptly notify the contracting agency and the Illinois Fair Employment Practices Commission in the event any subcontractor fails or refuses to comply therewith. In addition no contractor will utilize any subcontractor declared by the Commission to be non-responsible and therefore ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

The Village of Arlington Heights does not discriminate on the basis of handicapped status in admission or access to, or treatment or employment in its programs and activities.

2.8.2 Procedure for Conducting Full Lead Service Line Replacement

Prior to replacement, the Village will provide door hangers to all impacted residents that states a temporary water shutoff will be occurring as a result of LSLR work. A phone number is provided so any additional questions can be addressed.

When conducting LSLR, the Village will utilize one of the three common methods: 1) open cut excavation, 2) trenchless methods, or 3) pipe pulling/pipe splitting. The Village's approach in applying each of these methods are described below.

Open cut excavation is a conventional approach that requires the saw cutting and/or breaking of service materials and excavation of soil from the corporation stop at the water main along the entire length of the service line to be replaced. In this technique, precautions must be taken since other underground utilities may have not been properly located. The excavation equipment employed in the open-cut replacement method shall be appropriately scaled to accommodate the entire depth of the hole. Safety measures shall be implemented concerning both the resident's property and any nearby pedestrian and/or vehicular traffic. Upon proper exposure and identification of the service line, the existing pipe shall be disconnected from the main as well as the private side of the connection. The new service line shall properly connect to the main and private side and the new material shall meet the requirements of the Safe Drinking Water Act and other federal regulations for potable water systems. Select bedding and/or designated fill material, in conjunction with the surface treatment, shall be placed to comply with all applicable requirements. The new service line placement shall reduce or eliminate the possibility of settling beyond the allowable limit along the excavation path.



A trenchless lead service line replacement involves the use of equipment to install a new service line in a new location while abandoning the old pipe in place in the ground. Trenchless methods require minimal excavation, and typically only two access pits are required to be excavated: one at the water main to make the new connection, and one at the property line to install the new curb stop. Additional access pits may be required, but typically excavation is kept to a minimum and no open cutting is required along the new service line. In order to accomplish this, various machines can be used including horizontal directional drills, where a machine drills the path of the new water service from the point of connection through the foundation, or a pneumatic hammer where the machine creates pulses to move underground creating the path for the new water service. With both of these machines, the new water service pipe is pulled back through the new path to set the service in place. Soil conditions may dictate which machine is viable, and open cutting may be required if bedrock is encountered. Trenchless methods are not viable options in every service line replacement instance.

Two additional methods of replacing lead service lines without cutting an open trench are pipe pulling or pipe splitting. Pipe pulling removes and extracts the existing pipe while simultaneously replacing it with a new pipe, and pipe splitting leaves the existing pipe in the ground but enables the new pipe to be installed along the original route as it splits open the original pipe. Both methods require access pits to be excavated at the curb stop and the water main and also for the service line to be disconnected at the point of replacement. A cable is fed through the existing service line and a mechanical device is attached to the cable at one end. For pipe pulling, the mechanical device serves as an anchor and the lead pipe is removed from the ground when the cable is pulled. New replacement pipe is attached to the mechanical device and pulled into the ground simultaneously. With pipe splitting, the mechanical device attaches to the replacement pipe and the cable pulls the new pipe within the old one, splitting it open and depositing the new pipe along the original route. These methods are easy to use and less invasive, but soil conditions and pipe conditions such as bends or encrustation can act as impediments to straightforward replacement.

The exact method of replacement will vary depending on site restraints or equipment available. Whenever possible, the Village will avoid open cut excavation and opt for a less disruptive method such as trenchless or pipe pulling/pipe splitting. Open cut excavation will be considered a last resort option after all other methods have been exhausted.

In the event of an emergency repair where a partial service replacement is being completed (either main to b-box or b-box to meter) and lead is discovered on the other side of the service, additional measures must be taken to ensure compliance. Currently, regulations do not allow for partial replacements, so if the remainder of the lead service to be removed is on the private side, the resident will either have to allow for the replacement of the private side of the service or sign a waiver indicating they are opting out of the program. Removal of the remaining lead service line must be completed within 30 days of the initial repair or partial replacement of the lead service line. The Village will also supply the resident with drinking water filters certified to NSF/ANSI 53 and NSF/ANSI 42 standards for the reduction of lead and particulate.



After the replacement of the lead service, the line must be properly flushed, and the resident(s) notified of the replacement. Notification must also be provided to the IDPH if a full lead service line replacement could not be completed due to refusal of entry or denial by the property owner.

