

DENVER WATER LEAD REDUCTION PROGRAM

QUARTERLY REPORT – Q3 2020

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Presented by: Denver Water



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PART 1: INTRODUCTION

As we noted in our March 18, 2020 Notice¹ to the Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) describing the impacts of the COVID-19 emergency, Denver Water has taken a number of steps in light of the pandemic. You will see in this report that we are not aware of impacts on the pH/alkalinity adjustment or the Filter Program. However, in response to the COVID-19 pandemic, Denver Water has had to modify the collection process for Lead and Copper Rule Tap Sampling, the Communications Outreach and Education Program (COE) and the Accelerated Lead Service Line Replacement Program (ALSLR). The impact of the adjustments made to these parts of the Lead Reduction Program Plan are not fully known at this time and may not be known until the conclusion of calendar year 2020.

Denver Water is committed to significantly reducing the lead exposure levels to customers from lead service lines and plumbing. The Lead Reduction Program provides a holistic and permanent lead reduction approach that will significantly reduce lead exposure to our customers and be less harmful to the environment. In December 2019, Denver Water began the process of implementing the Lead Reduction Program Plan in accordance with the EPA's December 16, 2019 Variance and the November 15, 2019 letter from CDPHE regarding conditional approval of Denver Water's request for modification of optimal corrosion control treatment (OCCT).

This quarterly report was prepared in compliance with paragraph 7.B of the Variance and commitments made by Denver Water in the 2019 Lead Reduction Program Plan. The report addresses the third quarter of 2020 for the period of July 1 through September 30, 2020. During this time period, Denver Water has provided three monthly reports for July 2020, August 2020 and September 2020 to CDPHE. This report includes data and information from these monthly reports as well as additional reporting as required by the Variance for the quarterly reports.

[What to Expect in this Quarterly Report with Respect to Reporting on Program Activities](#)

The purpose of the quarterly (and subsequent annual) reports is to document the implementation of the Lead Reduction Program, describe the actions taken by Denver Water to reduce lead levels and support the subsequent evaluation of the Lead Reduction Program in anticipation of an extension to the Variance request beyond three years.

The performance data included for the different elements of the Lead Reduction Program described in this quarterly report varies depending on the launch date of the different program elements (see Table 1).

¹ See Appendix REG-3 Copies of Letters for Compliance-Related Submissions (Third Quarter).

TABLE 1. WHAT TO EXPECT IN THIS QUARTERLY REPORT

| Paragraph (and LRP Task) | What to Expect in this Quarterly Report and Status |
|---|---|
| 7.B.i CCT | This section includes a summary of results previously submitted in the three-monthly reports ² for July, August and September 2020. |
| 7.B.ii LSL Inventory | Data included in the LSL Inventory described in this quarterly report are current up to September 18, 2020. Denver Water first published the LSL Inventory on its website on March 5, 2020. The map was updated on the Denver Water website on September 29, 2020 using data current up to September 18, 2020. |
| 7.B.iii LSL Replacements (aka ALSLR Program) | This section summarizes the number and type of replacements completed. Denver Water’s own forces have been replacing lead service lines since January 1, 2020. Contractors started lead service line replacement on March 5, 2020. |
| 7.B.iv Filters (aka Filter Program) | This section summarizes filter distribution. Filter distribution started on February 12, 2020 with distribution to customers included in the ALSLR Program in year 1. Denver Water initiated broader filter distribution on March 28, 2020 and results through September 21, 2020 are described in this quarterly report. |
| 7.B.v Compliance Metrics | The Equivalency Model will be updated using data collected for the program year and will be presented in the annual report. |
| 7.B.vi Communications, Outreach and Education | This section describes Denver Water’s efforts to reconvene the Stakeholder Advisory Committee, make direct contact with more than 95 percent of customers enrolled in the Filter Program, and launch outreach to select households constructed between 1983 to 1987 with formula-fed infants. |
| 7.B.vii Health Equity and Environmental Justice | This section summarizes Denver Water’s continued update and implementation of the COE Plan, updates on partnerships with iNow and CREA Results, and continuation of virtual community meetings. This section also describes the launch of a paid media campaign focused on priority neighborhoods and Denver Water’s translation of materials into Spanish. |
| Additional Requirements and Miscellaneous Deliverables | This section summarizes submissions to EPA and CDPHE identified in the LRPP, ² including nitrification control plan, distribution system water quality modeling, and pipe rack testing. |
| Appendices | Appendices include CCT, LSL inventory, water quality results, LSL replacements, customer refusal lists, and COE. |
| ALSLR = Accelerated Lead Service Line Replacement CCT = Corrosion Control Treatment COE = Communications, Outreach and Education HE&EJ = Health Equity and Environmental Justice | LRPP = Lead Reduction Program Plan LSL = Lead Service Line |

² See Appendix REG-3 Copies of Letters for Compliance-Related Submissions (Third Quarter).

The reporting dates for the different program elements are shown in Table 2. In general, data shown for the second quarter continues from the data included in the first quarter with a few exceptions to either provide additional information not included in previous quarterly reports or to align with other reporting timelines (for example, with Lead and Copper Rule six-month reporting periods). Details are shown in Table 2.

TABLE 2. DATES FOR DATA INCLUDED IN THE THIRD QUARTERLY REPORT

| Description | Second Quarterly Report | Third Quarterly Report |
|--|--|--|
| CCT pH/alkalinity Adjustment Start-up | May 1 at the Moffat WTP | All three WTPs have the capability to adjust pH |
| LCR 90th Percentile Lead Concentration based on Compliance and Customer Requested Samples | All LCR samples collected from January 1 to June 30. All customer requested samples reported in LIMS by July 6. | No LCR samples were collected between July 1 to September 18. All customer requested samples in LIMS between July 7 and September 18. |
| Elevated Lead Response Reporting | January 1 to June 30 | July 1 to September 18 |
| Water Quality Sampling from Select Households (1983 to 1987 Homes) | Not applicable | July 1 to September 18 Sampling initiated on September 8, 2020 in response to outreach launched on August 21. |
| Inventory – Posting of Map to Denver Water’s Website | Data through April 23 Posted April 24 | Data through September 18 Posted September 29 |
| Inventory - Update | March 30 through June 30 | July 1 to September 18 |
| Investigations – Verification Potholing as Part of ALSLR Program | January 1 to June 26 | June 27 to September 18 ¹ |
| Investigations – Investigative Potholing Independent of ALSLR Program | March 24 to May 31 | None performed |
| Investigations – Water Quality Sampling as part of ALSLR Program (not included in 90th Percentile Calculation) | All results reported in LIMS from January 25 to June 30 | All results reported in LIMS from January 25 to September 18 (to present data year-to-date) |
| Investigations – Water Quality Sampling Independent of ALSLR Program (not included in 90th Percentile Calculation) | All results reported in LIMS from June 4 to June 30 (Sampling initiated June 4) | All results reported in LIMS from June 4 to September 18 (to present data year-to-date) |
| Water Quality Sampling Post-LSL Replacement | All results reported in LIMS between January 1 and June 30 (Sampling initiated May 13) | All results reported in LIMS from May 13 to September 18 (to present data year-to-date) |
| ALSLR Program Replacements | March 24 to June 26 | June 27 to September 18 |
| ALSLR Program Consent Forms | March 24 to June 26 | June 27 to September 18 |
| Initial Filter Distribution | April 1 to June 26 | June 27 to September 21 |
| Replacement Filter Distribution | March 24 to June 26 | June 27 to September 18 |

| Description | Second Quarterly Report | Third Quarterly Report |
|---|---|---|
| Filter Program Occupancy Changes² | March 31 to June 26 | June 27 to September 18 |
| Informal Filter Adoption Survey as Part of ALSLR Program | January 1 to June 30 (presenting additional details that were not previously included) | July 1 to September 18 |
| Filter Testing in the Field | February 18 to June 2 sample collection dates (full data set per LCR sampling period) | No samples were collected between June 2 and September 18 |
| COE Activities | March 29 through June 30 | July 1 to September 18 |

¹ Includes verification potholing at 23 critical customers for which the lead service line was replaced if found.

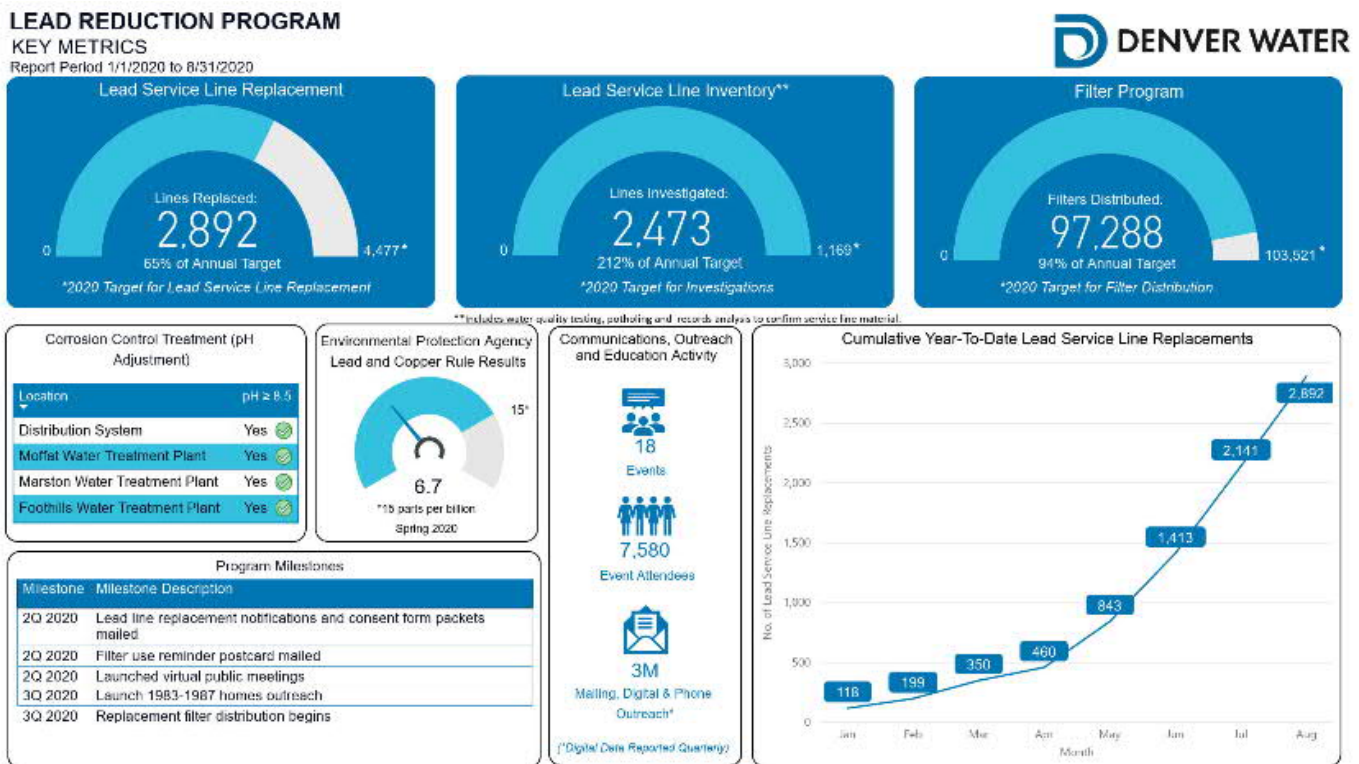
² Includes occupancy changes at ALSLR properties by definition.

Summary of Key Performance Indicators Year-to-Date

Denver Water uses a dashboard to communicate key metrics to share the progress of the Lead Reduction Program with the public. The dashboard was posted on the Denver Water website on September 15, 2020 in both English and Spanish, including data through August 31, 2020.³ The dashboard can be accessed from the Denver Water website at:

<https://www.denverwater.org/your-water/water-quality/lead/dashboard>

FIGURE 1. DASHBOARD AS POSTED TO THE DENVER WATER WEBSITE (DATA TO AUGUST 31, 2020)



³ See Second Quarterly Report for a summary of Key Metrics Dashboard for an explanation of the metrics used in the dashboard.

PART 2: REQUIRED REPORTING

7.B.i CCT

Denver Water uses a combination of water quality parameters and lead sampling results to report the performance of Corrosion Control Treatment. Information that was previously reported as part of the Monthly Reports for July, August and September 2020 are not included in this report with the exception of a summary of some of the data.

During this reporting period, Denver Water continued to operate at or near a pH of 8.8 at all three plants. Denver Water also submitted several miscellaneous reports to CDPHE and EPA as required in the LRPP as described in Table 3.

TABLE 3. OVERVIEW OF 7.B.I REQUIREMENTS

| Paragraph Reference | Description | Refer to |
|---|---|---|
| 7.B.i.a | Submit Elevated Lead Response Plan by March 30, 2020 per paragraph 2.B.iv. | Submitted as part of Implementation Plan. Approved July 17, 2020. |
| 7.B.i.b | Notify CDPHE of elevated lead levels and actions taken by Denver Water to reduce lead exposure. | See Table 4 and Appendix. ⁴ |
| 7.B.i.c | Lead sampling results per the Lead and Copper Rule and from customer requested sampling. | See Table 5 (90 th P to date). See monthly reports ⁵ for July, August and September 2020 submitted previously. |
| LRPP III.E (p 70) | Monthly trending of LCR compliance samples and customer requested samples. | See monthly reports ⁵ for July, August and September 2020. |
| 7.B.i.d | CCT parameters for pH and alkalinity, reported monthly. | See Table 6. See monthly reports for July, August and September 2020. ⁵ Daily reporting to CDPHE was discontinued on August 14, 2020. ⁵ |
| LRPP III.E (p 70) | Install automated pH control loops at all three treatment plants by March 2020. | All three plants have feedback loops in place and are functioning. |
| 7.B.i.e | All lead and water quality sampling results from investigations for LSLs. All lead and water quality sampling results from post-LSL replacement sampling. Note that lead results from investigations and post-LSL replacement sampling are not included in the calculation of the 90 th percentile lead concentration. | See monthly reports for July, August and September 2020. ⁵ See Table 8. |
| LRPP Executive Summary LRPP III.E (p 65) | Targeted communications for 1983 to 1987 homes to self-identify expecting and existing families with formula-fed infants and children up to 2 years of age; offer water quality sampling; provide filter if lead measured > 3 µg/L. | Described with section 7.B.vi. Outreach materials launched August 21, 2020. |

⁴ See Appendix CCT-5 Summary of Response to Elevated Lead Levels (Third Quarter).

⁵ See Appendix REG-3 Copies of Letters for Compliance-Related Submissions (Third Quarter).

| Paragraph Reference | Description | Refer to |
|--------------------------|---|-------------------------|
| LRPP III.E (p 71) | Complete distribution system modeling, evaluating pH, disinfection by-products and water age by January 31, 2020. Submit nitrification control plan by June 30, 2020 to address sampling, monitoring and flushing. | Submitted July 6, 2020. |
| Voluntary | Results from continued operation of the pipe racks. | Submitted July 6, 2020. |

Denver Water manages lead and water quality samples via its Laboratory Information Management System, with analysis performed by either the Denver Water Quality Lab or a contract lab. The sub-program under which the sample was collected is reported in LIMS, including Lead and Copper Rule compliance samples, customer requested samples, customer requested samples from homes built between 1983 to 1987 (self-identifying as a home with a formula-fed infant), pre-LSL replacement investigative water quality samples, and post-LSL replacement water quality samples.

Elevated Lead Level Response Summary

Denver Water set the elevated lead investigative response level at 15 and 25 µg/L in LCR compliance and customer requested samples, respectively. Denver Water provides a description in the monthly report of actions taken when this occurs.

All customer requested samples above 25 µg/L analyzed by month are listed in Table 4; a detailed summary of responses is provided in the monthly reports for all properties reviewed as part of the elevated lead response plan from July 1 through September 30, 2020.⁶ A lead result over 25 µg/L in the first sample bottle for a customer home will trigger follow up and investigative sampling, as outlined in the Corrosion Control Treatment Implementation Plan. Lead results over 5 µg/L in the second or third sample bottle will trigger a review of inclusion in the LRP, and the property will be added to the list for LSL replacement and added to the Filter Program if not already listed.

TABLE 4. COUNT OF PROPERTIES WITH ELEVATED LEAD CONCENTRATIONS IN LCR AND CUSTOMER REQUESTED SAMPLES¹

| Description (Based on Sampling Date) | July 2020 | August 2020 | September 2020 | Response |
|--|-----------|-------------|----------------|--|
| Properties with Lead > 25 µg/L in <u>any</u> sample bottle | 4 | 4 | 3 | Reported to CDPHE in monthly report. See Appendix. ⁶ |

¹ Although the Elevated Lead Response Plan applies only to LCR and customer requested samples, the features of the plan are applied to results generated from investigative water quality samples obtained from properties included in the LRP for a consistent customer experience.

⁶ See Appendix CCT-5 Summary of Response to Elevated Lead Levels (Third Quarter).

Lead Sampling Results from LCR Compliance and Customer Requested Sampling

Data for LCR compliance and customer requested sampling were provided in the individual monthly reports for July, August and September 2020.⁷ The cumulative 90th percentile lead concentration for July 1 through September 18, 2020 is presented in Table 5 for LCR compliance samples only. Data used to calculate the 90th percentile lead concentration reported in the first and third quarterly reports align with results reported in Denver Water’s LIMS by the end of those quarters and do not reflect the final 90th percentile lead concentration for the six-month LCR compliance periods. Data used to calculate the 90th percentile lead concentration for the second and fourth quarterly reports align with reporting requirements of the LCR: all samples collected between January 1 and June 30 and between July 1 and December 31 respectively. In response to the COVID-19 pandemic, on March 17, 2020 Denver Water staff discontinued collecting samples from inside the homes of customers included in LCR compliance sampling. Consistent with previous years, customers were asked to collect LCR compliance samples from the tap with video instructions made available in early April. Denver Water staff resumed collecting LCR compliance samples for the Fall 2020 sampling period.

TABLE 5. SUMMARY OF LCR 90TH PERCENTILE LEAD CONCENTRATIONS JULY 1 TO SEPTEMBER 18, 2020

| LCR Compliance Results for Lead – Third Quarter of Fall 2020 ¹ | Result | Number of Homes |
|--|--|-------------------------------|
| LCR Compliance 90th Percentile Lead | No samples collected this reporting period | |
| Overall 90th Percentile Lead Concentration using LCR Compliance + Customer Requested Samples | 3.7 µg/L | 411 (0 + 411) ² |

¹ Includes results for all LCR compliance and customer requested samples (from 1951 and older homes) and reported in LIMS between July 1 and September 18, 2020. Data are provided to CDPHE as part of the monthly reports.

² All 411 samples were collected by customer request; no samples were collected from LCR compliance locations during this reporting period. Water quality sampling conducted to support the ALSLR Program are excluded from the compliance calculation by definition.

Customer requested samples were collected at seven properties assumed to have copper piping with lead solder between July 1 and September 18, 2020. Lead concentrations for all samples were ≤ 1.0 µg/L and the 90th percentile lead concentration for these properties was calculated as 0.5 µg/L. These properties are also included in the overall 90th Percentile Lead Concentration reported in Table 5. The Fall 2020 LCR compliance samples will begin September 28, 2020 and therefore are not included in this reporting period.

Corrosion Control Treatment Results

Chemical feed systems were brought into service for enhanced pH corrosion control treatment on March 3, 2020 at the Marston and Foothills Water Treatment Plants and on May 1, 2020 for the Moffat Water Treatment Plant. Trends for pH and alkalinity are included in monthly reports since January 1, 2020; operating data with adjusted pH are included in the March 2020

⁷ See Appendix REG-3 Copies of Letters for Compliance-Related Submissions (Third Quarter).

report and subsequent monthly reports. Data for pH in treated water from the active water treatment plants and the distribution system are summarized in Table 6 based on the lowest daily average pH measured each month from each sampling point. On August 13, 2020, Denver Water wrote to CDPHE that steady state performance of corrosion control treatment was achieved in the distribution system. In response, CDPHE indicated that daily submissions with pH results no longer needed to be provided to CDPHE.

TABLE 6. MONTHLY DAILY AVERAGE MINIMUMS FOR WATER QUALITY PARAMETERS¹

| Description | July 2020 | August 2020 | September 2020 |
|--|--|-------------|----------------|
| Variance Requirement | pH ≥ 8.5 in all parts of the system. | | |
| Marston Water Treatment Plant Entry Point | 8.81 | 8.79 | 8.77 |
| Foothills Water Treatment Plant Entry Point | 8.78 | 8.79 | 8.79 |
| Moffat Water Treatment Plant Entry Point | 8.78 | 8.77 | 8.77 |
| Distribution System | Not applicable until pH stabilization is achieved, however pH levels in the distribution have been above 8.5 since March 12, 2020. | | |

¹ See Monthly Reports submitted previously for detailed pH data.

Water Quality Sampling Results from Pre-LSL Investigations

Results from water quality sampling can provide an indication of lead at single-family residential properties and when reviewed with additional investigation methods the status of a service line can be changed in the inventory (i.e., from possible lead to known lead⁸). The 3-bottle test is performed at properties in the City and County of Denver and the distributors:

- Before LSL replacements to confirm the service line material included as part of the 2020 ALSLR Program Task Orders at properties where lead has not been confirmed (i.e., p-value < 1⁹).
- To inform the inventory, the predictive model is used to identify properties in the City and County of Denver with a suspected or possible lead service line (i.e., p-value of 0.5 to 0.8).
- At all single-family residential properties within a distributor boundary identified with a suspected or possible lead service (i.e., p-value of 0.5 or higher).
- To validate customer comments on the presence (or absence) of a lead service line and requests to opt in or opt out of the LRP.

⁸ See discussion in Section 7.B.ii LSL Inventory.

⁹ Prior to July 22, 2020, kits were only sent to properties with p-values of 0.5 to 0.7. Since then, kits are sent to all properties with a p-value of 0.5 to 0.9. Any property with a p-value < 1 undergoes verification by field investigations before starting the replacement of the service line, such as a visual inspection of materials in the building interior and potholing on the exterior.

TABLE 7. SUMMARY OF WATER QUALITY RESULTS TO SUPPORT INVESTIGATION OF SERVICE LINE MATERIAL (PRE-LSL REPLACEMENT) AT SINGLE-FAMILY RESIDENCES USING THE 3-BOTTLE TEST

| Water Quality Sampling for Investigation (pre-LSL Replacement) | Result for 2020 Year-to-Date | Unit |
|--|------------------------------|------|
| Total Number of Kits Mailed Out¹ | 8,966 | Kits |
| Total Number of Kits Received and Analyzed to Investigate the Service Line Material² | 3,130 | Kits |
| Maximum Lead Concentration³ | 2,415 | µg/L |
| Average Lead Concentration (in second and third bottle only) | 3.5 | µg/L |

¹ 1,908 kits were shipped by Denver Water’s Water Quality Laboratory starting January 25, 2020. An additional 7,058 kits were shipped by the LRP contract laboratory starting June 4, 2020. If a sampling kit is re-sent to a property, it will be counted twice.

² As reported in LIMS between January 1 and September 18, 2020.

³ Measured in the third bottle from the 3-bottle test during the second quarter reporting period. The lead service line was replaced on July 18, 2020. The highest value measured in the third quarter reporting period was 545 µg/L (measured in the first bottle); this property is being investigated by Denver Water.

Water Quality Sampling Results for Post-LSL Replacement

Denver Water offers water quality sampling to all customers approximately four months after LSL replacement. Historically, Denver Water mailed letters to offer post-replacement sampling four months after LSL replacement, regardless of property type, for replacements completed before December 31, 2019. Customers could then call Denver Water to request a sampling kit. This process was discontinued on April 2, 2020.

For LSL replacements completed since January 1, 2020, single-family residential property customers are automatically mailed a 3-bottle sampling kit approximately four months after replacement. Customers in multi-family and commercial properties are mailed a letter to offer post-LSL replacement sampling approximately four months after replacement. These customers can request a 1-bottle sampling kit if they elect to participate. This letter is sent to every unit in a multi-family or commercial property.

The 3-bottle post-LSL replacement sampling kits for single-family residential customers were mailed as of May 13, 2020. Letters to offer the 1-bottle post-LSL replacement sampling kit to multi-family and commercial properties were mailed as of August 1, 2020. Summaries of post-LSL replacement sampling from single-family residential properties as well as from multi-family and commercial properties are provided in Tables 8 and 9, respectively.¹⁰

¹⁰ See Appendix CCT-4 Post LSL Replacement Water Quality Results (Year-to-Date).

TABLE 8. SUMMARY OF WATER QUALITY RESULTS AFTER LSL REPLACEMENT AT SINGLE-FAMILY RESIDENTIAL PROPERTIES

| Water Quality Sampling after LSL Replacement | Count ¹ | | |
|---|--------------------|-----------------|------------------|
| | July 2020 | August 2020 | September 2020 |
| Total Number of Kits Mailed Out² | 159 ³ | 56 ⁴ | 487 ⁵ |
| Total Number of Kits Received and Analyzed to Confirm post-LSL Replacement Water Quality | 32 | 45 | 1 |
| Number of Properties with Lead > 15 µg/L in First Bottle (triggers additional investigation effort) | 0 | 0 | 0 |
| Number of Properties with Lead ≥ 5 and < 15 µg/L in the Second and/or Third Bottle (triggers additional investigation effort) | 0 | 0 | 0 |
| Number of Properties with Lead ≥ 5 and < 15 µg/L in First Bottle (triggers customer education) | 0 | 1 | 0 |

¹ Counts are based on the month of sample collection; the number analyzed refers to results in LIMS by September 18, 2020.

² If a duplicate sampling kit was sent to a property, it is counted twice.

³ This value includes 159 kits sent to single-family properties with LSL replacements completed in February and March 2020.

⁴ This value includes 56 kits sent to single-family properties with LSL replacements completed in April 2020.

⁵ This value includes 457 kits sent to single-family properties with LSL replacements completed in May 2020 plus additional properties completed in April 2020. This also includes the mailing of 14 kits in duplicate during this month.

TABLE 9. SUMMARY OF WATER QUALITY RESULTS AFTER LSL REPLACEMENT AT MULTI-FAMILY AND COMMERCIAL PROPERTIES

| Water Quality Sampling after LSL Replacement | Count ¹ | | |
|---|------------------------|-----------------|-----------------|
| | July 2020 ² | August 2020 | September 2020 |
| Total Number of Letters Mailed to Offer Post-LSL Replacement Sampling³ | 0 | 112 | 126 |
| Total Number of Properties (or Primary Addresses) Associated with Offer Letters | 0 | 39 ⁴ | 39 ⁵ |
| Total Number of Kits Requested by Customers | 1 ⁶ | 0 | 1 |
| Total Number of Kits Received and Analyzed to Confirm Post-LSL Replacement Water Quality² | 0 | 0 | 0 |
| Number of Properties with Lead > 15 µg/L in First Bottle (triggers additional investigation effort) | 0 | 0 | 0 |
| Number of Properties with Lead ≥ 5 and < 15 µg/L in First Bottle (triggers customer education) | 0 | 0 | 0 |

¹ Counts are tabulated based on the month the sample was collected. Total number of kits analyzed refers to results available in LIMS by September 18, 2020.

² No letters offering post-LSL replacement sampling were sent in July while Denver Water reviewed the post-LSL replacement sampling protocol at multi-family and commercial properties.

³ If a duplicate letter was sent to a property, the property is counted twice.

⁴ This value includes properties with LSL replacements completed in February, March or April. Six letters to offer a sample kit were mailed in duplicate.

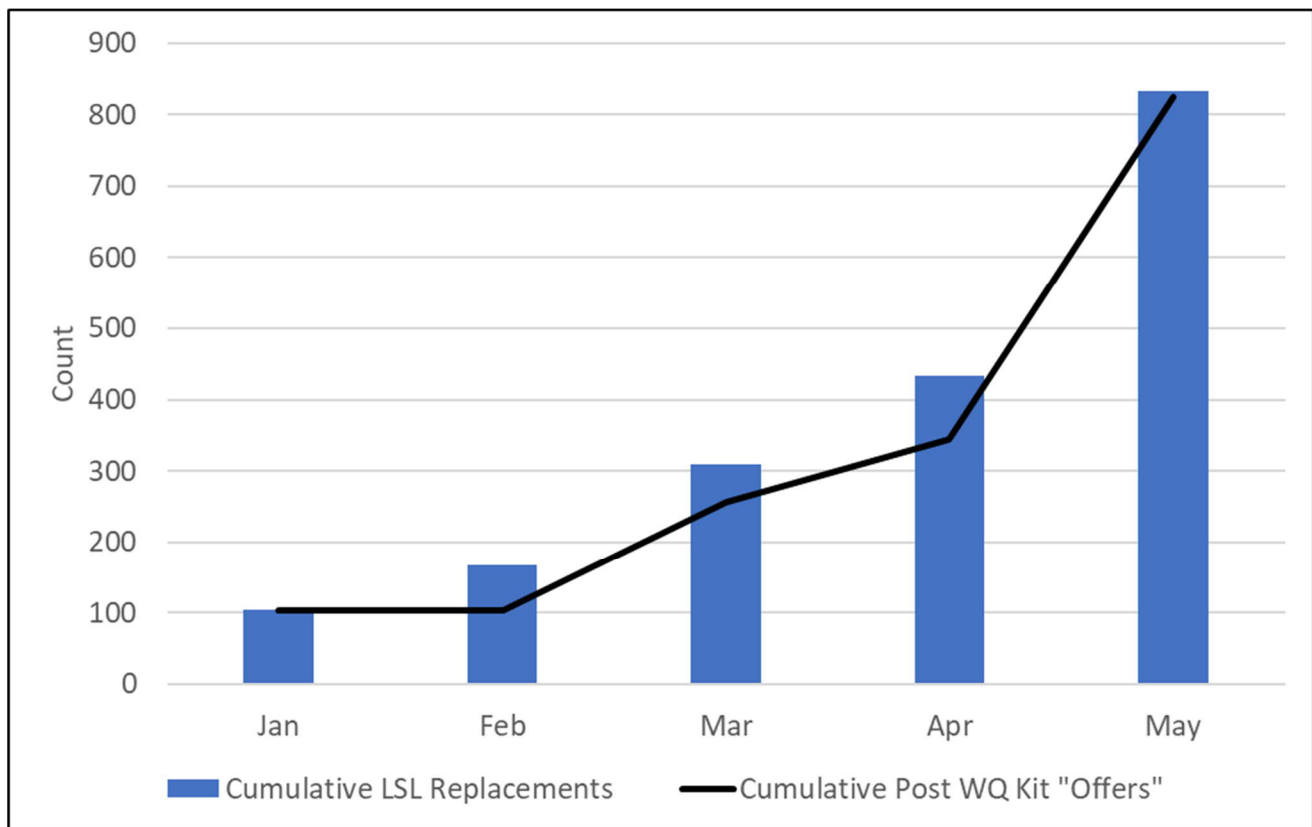
⁵ This value includes properties with LSL replacements completed in May and additional properties in April.

⁶ One post-LSL replacement sample kit was requested from a customer before the letter to offer the test was mailed out.

During the third quarter reporting period, nine properties (including single family, multi-family and commercial buildings) did not receive sampling kits or letters offering sampling from Denver Water following lead service line replacement. To understand why this occurred, the engagement with the property as part of the LRP was reviewed.¹¹ Since post-LSL replacement sampling has been offered through the LRP, nine properties were excluded due to their tap status in the inventory (i.e., inactive or irrigation and therefore ineligible) or an error in the mailing address. Of the nine properties, five will receive letters to offer post-LSL replacement sampling in the fourth quarter by mail or hand delivery.

Figure 2 is included to show the timing of post-LSL replacement sampling relative to the timing of LSL replacement as reported in the first and second quarterly reports. Results are presented using the cumulative number of service lines replaced with the cumulative number of post-LSL replacement samples. Because the post-LSL replacement sample is collected within six months of LSL replacement, data for sampling lags replacement: replacements completed in the third quarter have not received their sample kit or letter to offer sampling for post-LSL replacement sampling. By September 18, 2020, 824 sample kits or offers to sample were made to 833 properties following LSL replacement.

FIGURE 2: 2020 LSL REPLACEMENT AND DISTRIBUTION OF POST REPLACEMENT SAMPLE KITS (TO SINGLE FAMILY PROPERTIES) AND LETTERS (TO MULTI-FAMILY AND COMMERCIAL PROPERTIES)



¹¹ See Appendix CCT-6 Post LSL Replacement Sampling – Summary of Incomplete Offer to Test (Year-to-Date).

Water Quality Results from Select Households (1983 to 1987 Homes)

Outreach to customers residing in select households was launched during the third quarter reporting period. “Select households” are defined as homes built from 1983 to 1987 with copper plumbing and lead solder with customers that self-identify as having a formula-fed infant under the age of 24 months. When a select household is identified, the customer can request a water quality sampling kit. If lead is measured above 3 µg/L, the customer is invited to enroll into the Filter Program. Water quality sampling at select households was initiated on September 8, 2020 with results available in LIMS by September 18, 2020 presented in Table 10. Four customers requested water quality sampling under this program: lead was measured less than 1 µg/L in all samples and therefore no customers in select households were enrolled in the Filter Program during the third quarterly reporting period.

TABLE 10: SUMMARY OF WATER QUALITY RESULTS FROM SELECT HOUSEHOLDS

| Water Quality Sampling at Select Households (1983 to 1987 Homes Self-identified with Formula-fed Infant) | Result | | |
|---|--------------|----------------|-------------------|
| | July 2020 | August 2020 | September 2020 |
| Total Number of Kits Requested and Mailed Out | 0 | 0 | 4 |
| Total Number of Kits Received and Analyzed for Lead | 0 | 0 | 4 |
| Number of Properties with Lead > 3 µg/L in any Bottle (triggers enrollment in the Filter Program) | 0 | 0 | 0 |

7.B.ii LSL Inventory

Denver Water submitted the initial LSL Inventory designating known, suspected, and possible LSLs on February 5, 2020.¹² On March 5, 2020, Denver Water made the LSL Inventory publicly available on its lead website (<https://www.denverwater.org/your-water/water-quality/lead>) and the map was re-posted on September 29, 2020 with updates to the inventory made to September 18. An overview of the LSL Inventory reporting requirements is shown in Table 11.

TABLE 11. OVERVIEW OF 7.B.II REQUIREMENTS

| Paragraph Reference | Description | Refer to |
|-------------------------------|--|---|
| 3.A | Complete initial LSL Inventory no later than 35 days after the effective date. | Submitted February 5, 2020. ¹² |
| 3.C | Publication of LSL Inventory no later than 70 days after the effective date. | Re-posted to Denver Water website on September 30 using data through September 18, 2020. |
| 7.B.ii.a | Total number of LSLs. | Refer to Table 12. See Appendix. ¹³ |
| 7.B.ii.b | Total number of replaced LSLs during the Variance. | Refer to Table 13. |
| 7.B.ii.c | Total number of known, suspected and possible LSLs. | Refer to Table 12. |
| 7.B.ii.d | Total number of unlikely lead. | Refer to Table 12. |
| 7.B.ii.e | Total number of non-lead service lines. Total number of non-lead determined solely by statistical methods. | Refer to Table 12. Described after Table 12. |
| 7.B.ii.f 3.D | Number of investigations that result in a change in the status of the service line in the LSL Inventory (and that are performed independently of a LSL replacement). | Refer to Table 17. |
| LRPP III.B (p 51) | Use results from investigations to update the predictive model which is used to plan and prioritize efforts of the COE Plan, ALSLR Program and Filter Program. | See Section 7.B.vii. |
| 7.B.ii.g | Updated LSL Inventory Map. | https://www.denverwater.org/your-water/water-quality/lead |
| 7.B.ii.h | Rationale for change to status of the service line in the LSL Inventory. | See Appendix. ¹⁴ |

Current LSL Inventory

Denver Water updated the base LSL Inventory using additional information and further analysis of the data presented in the September 2019 LRPP (see Table 12). Adjustments to the status of a service line (i.e., lead or non-lead) were made based on a desktop assessment completed with Denver Water records, customer records, and individual distributor records (i.e.,

¹² See Appendix REG-1 Copies of Letters for Compliance-Related Submissions included with the first quarterly report.

¹³ See Appendix INV-6 Summary of Service Line Status and p-Value (Third Quarter).

¹⁴ See Appendix INV-7B Line by Line p-Value Changes by Status (Third Quarter).

total service, read and bill, and master meter); potholing results; and water quality sampling results. The information presented in Table 12 is used to compare the current understanding of the inventory with the original base inventory submitted in September 2019. The inventory is used to establish the total number of estimated lead services and the mandated annual number of replacements. Therefore, the total “known lead” service lines includes the number of properties with a known lead service that remain in the ground and those that have been replaced by the LRP.

TABLE 12. LEAD SERVICE LINE INVENTORY AS OF SEPTEMBER 18, 2020

| Status of Service Line | September 6, 2019 Submittal (August 8 Data) | February 5, 2020 Submittal (January 28 Data) | April 10, 2020 Submittal (March 29 Data) | July 10, 2020 Submittal (June 30 Data) | October 10, 2020 Submittal (September 18 data) |
|---|---|--|--|--|--|
| | BASE INVENTORY ¹ | | | | CURRENT INVENTORY ² |
| Known Lead | 1,066 | 1,149 | 1,659 | 1,851 | 5,605 ⁴ |
| Suspected Lead | 61,374 | 60,549 | 59,994 | 58,758 | 56,109 |
| Possible Lead | 22,106 | 21,788 | 20,311 | 20,961 ³ | 20,227 |
| Unlikely Lead | 89,388 | 90,745 | 89,664 | 88,386 | 88,702 |
| Non-lead | 145,766 | 146,528 | 145,683 | 150,800 | 150,107 ⁵ |
| Total Number of Services | 319,700 | 320,759 | 317,311 | 320,756 | 320,750 |
| TOTAL ESTIMATED Number of Lead Service Lines | 63,955 | 63,195 | 62,510 | 62,044 | 63,136⁶ |

¹ The “base inventory” is the basis for the 7 percent LSL replacements per year.

² The “current inventory” is the basis of enrollment in the Filter Program (calculated as the sum of the properties with a known, suspected and possible lead service line, plus distribution of additional filters to multiple units at the same property and less the number of vacant properties).

³ “Possible lead” as defined in the Variance includes service lines where $0.5 \leq p < 0.8$. In the first quarterly report; 184 of these service lines were previously included as “suspected lead.”

⁴ The third quarter count for “known lead” includes 3,411 properties where the LSL was replaced as part of the LRP year-to-date (see Tables 13 and 19). The values from previous submittals identified in this table include replacements in the “non-lead” category.

Note: The LSL replacements completed year-to-date (3,411 from Table 13) are included in Table 12 in the “known lead” category, thus reducing the “non-lead” count by 3,411 accordingly. In the LRP database, the p-value at properties following replacement is changed to 0 for “non-lead”. Due to ongoing data integration and QC processes, 222 of the 3,411 properties with lead replacements remain to be integrated into the LRP database to drive a p-value change. Because the p-values of some of these 222 properties are still set to > 0 in the LRP database (versus 0), the counts for known, suspected, possible lead and unlikely lead as shown in Table 12 are over-estimated by up to 222 replacements. Similarly, the counts for non-lead are underestimated by up to 222 replacements in Table 12.

⁵ The third quarter count for “non-lead” does not include the properties at which the LSL was replaced as part of the LRP (see Tables 13 and 19).

⁶ See Appendix INV-6 for details on how this was calculated.

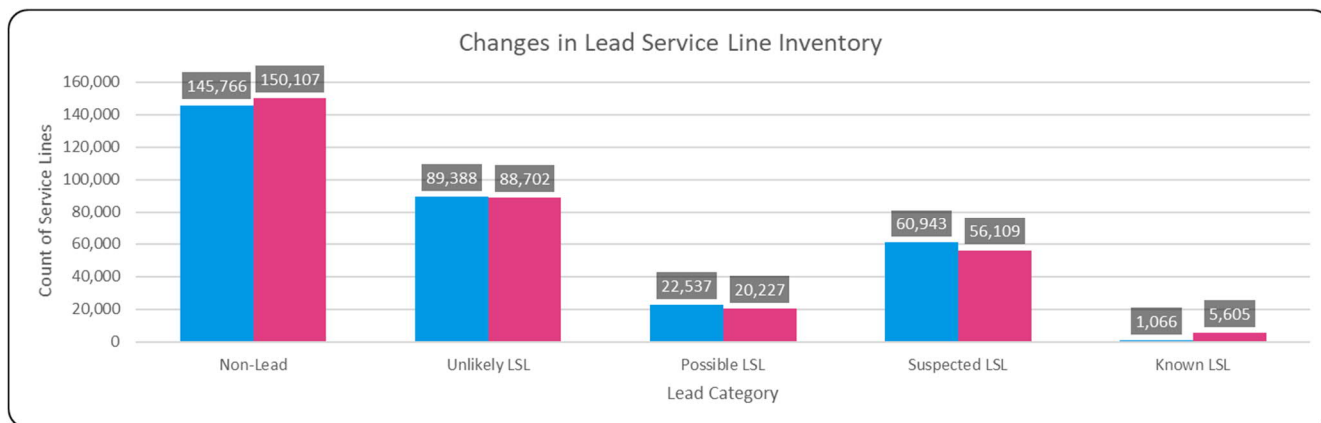
On September 29, 2020, Denver Water updated the publicly available map, which incorporated the September 18, 2020 LSL Inventory information. The LSL Inventory is updated daily, and an updated inventory summary table is provided with each quarterly report.¹⁵ The website map is updated quarterly to reflect these changes to the LSL Inventory.

Of the 150,107 service lines identified as non-lead in Table 12, 139,185 are included in this category based solely on statistical assumptions¹⁶ such as the age of the house, history of development in the Denver Water service area, operating rules requiring copper at post-1971 properties, water main tap date, etc. Properties built or connected between 1951 and 1971 are considered “unlikely lead” based on historical records and evidence of non-lead materials.¹⁷

Summary of Changes to the LSL Inventory

Between July 1 and September 18, 2020, updates to the LSL Inventory continued as additional data were gathered and reviewed. During this period, 5,753 changes were made to the LSL Inventory of which 5,745 were changes to the status of the service line (i.e., p-value).¹⁸ This included changes based on confirmation from Denver Water, customers and distributors; review of historical data; direct evidence such as water quality and/or potholing; and replacements. In addition to material status changes, eight service lines were removed from the inventory including six from outside the Denver Water service area and two inactive services with a pending cut tap.¹⁹ Two service lines previously deemed inactive were re-activated during the third quarter and therefore added to the inventory. These changes are shown in Figure 3 and are accounted for in Table 12.

FIGURE 3. CHANGES IN THE BASE AND CURRENT INVENTORY (AUGUST 8, 2019 AND SEPTEMBER 18, 2020 USING DATA FROM COLUMNS 2 AND 5 FROM TABLE 12)



¹⁵ See Appendix INV-6 Summary of Service Line Status and p-Value (Third Quarter).

¹⁶ This is the number which retains the original number of non-lead properties (p=0) from the LRPP (see Appendix III.B.2, Preliminary Identification of Lead Service Lines). Subsequent changes to the LSL Inventory did not result in a change to the number of non-lead properties (p=0).

¹⁷ See Appendix II.B.2 of the Lead Reduction Program Plan for details and assumptions.

¹⁸ See Appendix INV-7B Line by Line p-Value Changes by Status (Third Quarter).

¹⁹ See Appendix INV-9 Addresses of Disconnected Properties (Cut Taps).

Number of LSL Replacements Completed and Incorporated into the Inventory

The total number of lead services lines replaced by Denver Water and the ALSLR contractors between June 27 and September 18, 2020 is shown in Table 13.

TABLE 13. NUMBER OF LSL REPLACEMENTS BETWEEN JUNE 27 AND SEPTEMBER 18, 2020

| Description | Count |
|---|-------|
| Number of LSLs Replaced in July 2020 ¹ | 796 |
| Number of LSLs Replaced in August 2020 | 819 |
| Number of LSLs Replaced in September 2020 | 415 |
| Total Number of LSLs Replaced Third Quarter 2020 | 2,030 |
| Number of LSLs Replaced but Not Reported in Second Quarter ² | 23 |
| Total Number of LSLs Replaced in Year 1 ^{3,4} | 3,411 |

¹ July LSL replacement count includes replacements completed from June 27, 2020 through the end of July 2020.

² This value refers to lead service lines that were replaced but not reported during the second quarter.²⁰ The desktop review of historical data was revisited for all properties included in the ALSLR Program that previously were identified as copper replacements (i.e., that were identified as having copper from the main to meter, copper from the meter to building, and copper on the interior). From this review, 23 service lines that were previously included in the second quarterly report as a copper service line were re-classified as a lead service line replacement based on the updated information (i.e., all field data applicable to the property).

³ LSL count in Year 1 is a year-to-date count from January 1, 2020 to September 18, 2020.

⁴ The number of replacements identified in the "Lead Replacement" column of Appendix INV-7B Line by Line p-Value Changes by Status (Third Quarter) do not match the number of lead service line replacements shown in Table 13 due to a lag in the quality assurance during data integration from field to LRP database.

Investigations that Resulted in a Change to the Status of a Service Line

Investigations are performed at properties to improve the assumptions that were used to develop the LSL Inventory. A completed investigation at a property may include desktop evaluation of available data from Denver Water, distributors, and customers; water quality sampling; potholing and/or visual investigation. After 15 years of the LRP, there should be no remaining properties in the LSL Inventory categorized as suspected or possible lead and all known LSLs should be replaced.

The number of properties which are investigated and result in a change in status to known lead or non-lead are counted toward the required 1.4 percent of the LSL Inventory investigated each year. Investigations as part of the ALSLR Program, such as potholing before replacing a LSL, do not count toward the 1.4 percent investigations required each year.

A property at which the status (i.e., p-value) of a service line is changed is counted as a completed investigation if all the following conditions apply:

- 1) The property is originally classified as a suspected or possible lead service (see paragraphs 3.B and 3.D in the Variance).
- 2) The investigation was performed independently of LSL replacement and not as part of the 2020 ALSLR Plan (see paragraph 3.D in the Variance).

²⁰ See Appendix LSL-10 Addresses and Types of Replacements for Properties Not Previously Counted (from Second Quarter).

- 3) The investigation results in a change in status of a service line to either a known lead ($p = 1$) or unlikely lead ($p = 0.02$) or non-lead ($p = 0$) (see paragraphs 7.B.ii.f and h in the Variance). For example, a water quality result with lead measured above $5 \mu\text{g/L}$ in the second or third sample bottle in the 3-bottle test would result in an adjustment to the p-value to 1.
- 4) "Investigation(s)" that result in a status change can involve one or more methods including water quality samples, pothole, visual inspection, or other methods.

A three-point verification is used to pothole the status of a service line: from the main to water meter, from the water meter to the building, and inside the building where the service line enters. Potholing on its own is not conclusive for "non-lead" but it can be used in combination with other investigative methods to determine that a property is "unlikely" to have a lead service (i.e., p-value of 0.02). To confirm "unlikely lead", there can be no lead or galvanized present in any of the three points used for potholing and there can be no contradictions with the desktop records review and/or water quality sampling results. "Verification" potholing is used at properties included in the 2020 ALSLR Plan to confirm the material of the service line before replacement. "Investigative" potholing is used at properties to improve the knowledge of the inventory at properties that are not included in the 2020 ALSLR Plan.

Results from verification potholing are presented in Table 14 along with the next steps to either replace a service line that is confirmed to be lead or to pursue additional investigative methods. If copper is observed at all three points used for verification (i.e., COPP-COPP-COPP is observed at two exterior potholes and one interior location), the service line is not categorized and the p-value is not adjusted; rather, the property is subjected to additional investigation efforts (i.e., water quality sampling, data review, additional potholing) to help identify the service line material.

Denver Water does not count the replacement of copper service lines (i.e., no lead) toward the total number of lead service line replacements for compliance purposes.²¹ The third quarterly report excludes replacements of copper service lines from the counts shown in Table 13. The first and second quarterly report data were reviewed, and any copper service line replacements found to be lead were adjusted in the third quarterly report as shown in the year-to-date numbers in Table 13.²²

On July 7, 2020, the method used for verification potholing was modified. Prior to July 7, all properties with a p-value ≥ 0.5 were potholed before replacement; after July 7, only those properties with a p-value ≥ 0.5 and < 0.8 were potholed. As a result, any property with a p-value ≥ 0.8 was replaced without verification potholing as of July 7. The material of the replaced service line at properties with $p \geq 0.8$ was reviewed after replacement (for example by using water quality sampling results obtained before replacement) and while the majority were

²¹ See paragraph 4.B of the Variance.

²² See Appendix LSL-10 Addresses and Types of Replacements for Properties Not Previously Counted (from Second Quarter).

confirmed to be lead, a number of copper service lines were replaced since July 7. On August 10, 2020 verification potholing prior to replacement was re-instated for all properties with a p-value ≥ 0.5 to reduce the likelihood of replacing a non-lead service line.

TABLE 14. OUTCOMES FROM VERIFICATION POTHOLING¹ AS PART OF THE 2020 ALSLR PLAN FROM JUNE 27 TO SEPTEMBER 18, 2020

| Service Line Status before Potholing | Potholing Outcome ² | Update Inventory and Follow-up Action |
|--|---|---|
| Initial Status $p \geq 0.8$ (total 807) | 602 confirmed lead (lead observed at least one of three points) | Property is confirmed for 2020 ALSLR Plan. |
| | 75 inconclusive (copper observed at all three points) | Review historical and water quality data to confirm status. |
| | 130 incomplete (could not pothole all three points) | Return to property or find a way to obtain third point. Or proceed with other investigation to confirm status. |
| Initial Status $0.5 \leq p < 0.8$ (total 161) | 56 confirmed lead (lead observed in at least one of three points) | Property is confirmed for 2020 ALSLR Plan. |
| | 42 inconclusive (copper observed at all three points) | Review historical and water quality data to confirm status. |
| | 63 incomplete (could not pothole all three points) | Return to property or find a way to obtain third point. Or proceed with other investigation. |
| Total Number of Properties Potholed and Included in the 2020 ALSLR Program (Verification Potholing) | | 968 |

¹ Potholing to verify the material of the service line at properties included in the 2020 ALSLR Plan do not contribute to the required 1.4 percent investigations. Potholing outcomes on their own do not necessarily result in a status change of a service line and additional investigative steps may be necessary.²³

² Denver Water investigated critical customer properties in advance of replacement: if lead was found, the property was scheduled for replacement in 2020 and therefore the investigation is considered a verification pothole. This occurred at 23 properties included in this table.

During the third quarter reporting period Denver Water did not complete any additional investigative potholing independent of the 2020 ALSLR Plan.

Table 15 (investigations performed as part of the 2020 ALSLR Plan) and Table 16 (investigations performed independent of the 2020 ALSLR Plan) present the total number of investigative water quality samples reported in LIMS as of September 18, 2020. Water quality results with lead measured above 5 µg/L in the second or third bottle of the 3-bottle test are conclusive for a lead service line. Lead measured below this threshold at properties with an initial status of possible or suspected lead (i.e., $p \geq 0.5$) is inconclusive for non-lead and additional investigations or review of data are needed to determine the status of the service line material. Lead measured below this threshold at properties with an initial status of unlikely lead

²³ See Appendix INV-8A Results from Potholing for Verification as part of the 2020 ALSLR Program.

(i.e., $p < 0.5$) is considered conclusive for non-lead and no additional investigations are undertaken and the property is removed from the LRP. Finally, lead measured below the detection limit of 1 µg/L is also considered indicative of non-lead when no contradictions with other data sources exist.

TABLE 15. OUTCOMES FROM WATER QUALITY INVESTIGATIONS¹ AS PART OF THE 2020 ALSLR PLAN (JANUARY 25 TO SEPTEMBER 18, 2020)

| Service Line Status in Baseline Inventory | Water Quality Sampling Outcome | Update Inventory and Follow-up Action during Third Quarter |
|--|---|--|
| Initial Status $0.5 \leq p < 0.9^2$ (total 1,304) | 614 confirmed lead (lead measured > 5 µg/L in the second or third sample bottle from the 3-bottle test) | Add property to list for LSL replacement. |
| | 690 inconclusive (lead measured ≤ 5 µg/L in the second or third sample bottle from the 3-bottle test) | Review historical and potholing data to confirm status Or proceed with other investigation. |

¹ Excludes customer requested sampling. These samples were collected at properties included in the 2020 ALSLR Plan and therefore do not count toward the required 1.4 percent investigations.

² To capture more properties for participation in investigative water quality sampling, the criteria for inclusion as defined by the p-value was expanded to 0.9 from 0.8 during the third quarter.

TABLE 16. OUTCOMES FROM WATER QUALITY INVESTIGATIONS¹ INDEPENDENT OF THE 2020 ALSLR PLAN (JANUARY 25 TO SEPTEMBER 18, 2020)

| Service Line Status in Baseline Inventory | Water Quality Sampling Outcome | Update Inventory and Follow-up Action during Third Quarter |
|--|---|--|
| Initial Status $0.5 \leq p < 0.9^2$ (total 1,716) | 56 confirmed lead (lead measured > 5 µg/L in the second or third sample bottle from the 3-bottle test) | Add property to list for LSL replacement. |
| | 1,660 inconclusive (lead measured ≤ 5 µg/L in the second or third sample bottle from the 3-bottle test) | Review historical and potholing data to confirm status Or proceed with other investigation. |

¹ Excludes customer requested sample results. These samples were collected at properties independent of the 2020 ALSLR Plan and therefore do count toward the required 1.4 percent investigations if they result in a completed investigation.

² To capture more properties for participation in investigative water quality sampling, the criteria for inclusion as defined by the p-value was expanded to 0.9 from 0.8 during the third quarter.

The status of 779 properties was changed during the third quarter reporting period from either a suspected or possible LSL to a known lead service due to water quality as shown in Table 17. This is reflected in the September 18, 2020 LSL Inventory in Table 12. All other changes to the status of a service line were made using desktop methods.

TABLE 17. NUMBER OF INVESTIGATIONS COMPLETED (MEETING CRITERIA OF "INVESTIGATION")

| Number of Properties Investigated | Count |
|---|---|
| Required Number of Investigations | 1,168 (1.4% of all suspected and possible lead services from the September 2019 inventory) |
| Number of Investigations Completed by Investigative Potholing Alone in the Third Quarter as reported in the LRP database | 0 |
| Number of Investigations Completed by Investigative Water Quality Sampling Alone in the Third Quarter as reported in the LRP database | 779 |
| Number of Investigations Completed by Desktop Methods Alone in the Third Quarter | 893 |
| Total Number of Investigations Completed in Third Quarter | 1,672 |
| Total Number of Investigations Completed in Year 1 | 2,915 |

As the knowledge of the inventory continues to advance, there are some instances where new information reveals a change to the material status of a service line. For example, a service line may change from a suspected lead to non-lead and then again to known lead (i.e., a p-value change from 0.7 to 0.02 would count as a completed investigation as would the subsequent p-value change from 0.02 to 1). To avoid double-counting the number of completed investigations, properties included as a completed investigation in the third quarter were reviewed for duplication with properties counted in the second quarterly report; this is shown in the inventory²⁴ as being removed from the third quarter count and only included in the second quarter count. This includes 461 properties in distributor areas that were confirmed as known lead (p = 1) during the second quarter and subsequently revised to unlikely lead (p = 0.02) in the third quarter and therefore only counted as a completed investigation in the second quarter.

²⁴ See properties identified as “previously counted” Appendix INV-7B Line by Line p-Value Changes by Status (Third Quarter).

7.B.iii LSL Replacements

Denver Water continues to replace LSLs as part of water main replacements and in response to service line leaks. Replacements under the ALSLR Program started on March 5, 2020 and continued through the third quarter. An overview of the LSL replacement requirements is shown in Table 18.

TABLE 18. OVERVIEW OF 7.B.III REQUIREMENTS

| Paragraph Reference | Description | Refer to |
|----------------------|--|--|
| 4.A | Implement accelerated LSL replacement within 90 days of the effective date. | Contractors were given Notice to Proceed on March 5, 2020. |
| 4.E | Offer post-LSL replacement sampling within six months. | Ongoing. |
| 7.B.iii.a | Address and date of all replacements. | See Appendix. ²⁵ |
| 7.B.iii.b | Type of replacement. | See Table 17 and Appendix. ²⁵ |
| 7.B.iii.c 4.H | Refusal list with service point id and documented attempts for customer contact. Track changes in customer account holders against Service Line Refusal List. | See Appendix. ²⁶ |
| LRPP III.D (p 62) | Provide education and filters to residents of multi-family properties on the Service Line Refusal List. | Not applicable for this reporting period. |
| 7.B.iii.d | Number of properties where an emergency repair was performed using a partial LSL replacement and consent was not granted by the property owner to replace a lead service line in full. | See Table 19 and Appendix. ²⁷ |
| LRPP III.D (p 57) | Replace LSL at properties with consistently high lead release and critical care customers. | Described in this section. |
| LRPP III.D (p 58) | Complete approximately 2,000 investigations per year in the first five years of the Lead Reduction Program to update the predictive model and improve the quality of information in the LSL Inventory. | See Table 17. |
| LRPP III.D (p 60) | Property owners will be reminded via signage placed at the limits (ends of streets) within geographic work areas four to five weeks in advance of construction. | Implemented July 20, 2020 |
| LRPP III.D (p 60) | Provide flushing instructions following LSL replacement. | Provided to all customers as part of the post-LSL replacement education package. ²⁸ |

Denver Water Transmission and Distribution and ALSLR contractors have increased production rates to make up for delays due to the COVID-19 pandemic in order to achieve the

²⁵ See Appendix LSL-7 Addresses and Types of Replacement (Third Quarter).

²⁶ See Appendix LSL-8 LSL Replacement Refusal List (Third Quarter).

²⁷ See Appendix LSL-9 Properties with Emergency Repairs Resulting in a Partial Replacement (Third Quarter).

²⁸ See second quarterly report.

required number of LSL replacements for 2020. The ALSLR contractors are averaging an estimated 145 LSL replacements per week, focusing primarily on geographic task order work areas. Denver Water T&D crews continue to target critical customers (schools, daycare centers, and childcare facilities) within City and County of Denver (total of 181 customers) to confirm the status of the service line and replace lead where found.

Protocols to manage the health and safety concerns of COVID-19 are still reinforced with mask usage by field crews and customers along with physical distancing protocols to allow work to continue. To date, customers have complied, and protocols are being followed with limited disruption to the progress of the ALSLR Program.

In addition to the ALSLR contractors, Denver Water T&D completes LSL replacements as part of water main replacement work and emergency repairs. Denver Water T&D crews assist with individual and geographic area LSL replacements. Individual replacements are completed within approximately two weeks at properties where lead is measured above 150 µg/L and within approximately two months at properties where lead is measured above 25 µg/L if the property is not already scheduled for replacement as part of the 2020 ALSLR Plan.

A total of 28 geographic task orders each with approximately 200 properties have been developed and distributed to the ALSLR contractors. In July, three geographic task orders (approximately 200 properties in total) were distributed to Denver Water T&D crews. The annual requirement for LSL replacements is expected to be achieved in Year 1, again barring any unforeseen complications created by the COVID-19 pandemic and inclement weather.

Number of LSL Replacements Completed during this Reporting Period

The ALSLR contractors received the fourth and final wave of geographic task orders with Notice to Proceed during this reporting period. Notifications were mailed to all properties included in the task orders, after which multiple efforts were undertaken to obtain signed consent forms.²⁹ Reconnaissance or pre-construction meetings are conducted with each property owner to plan the LSL replacement work and schedule the replacement.

The types of replacements completed between June 27 and September 18, 2020 are summarized in Table 19. A detailed list of the addresses where LSL replacements are completed is maintained³⁰ by Denver Water. During this reporting period, the ALSLR contractors and Denver Water T&D crews performed partial replacements at five properties (i.e., some lead remains in the ground), for a year-to-date total of six partial replacements.³¹ A review of properties that were previously described as copper service line replacements resulted in the re-categorization to lead service line replacements: this affected the status of 23 replacements completed during the

²⁹ See Appendix LSL-8 LSL Replacement Refusal List (Third Quarter).

³⁰ See Appendix LSL-7 Addresses and Types of Replacement (Third Quarter).

³¹ See Appendix LSL-9 Properties with an Emergency Service Line Repair Resulting in a Partial Replacement (Third Quarter).

second quarter and these lead replacements have been added to the total number of replacements counted during the third quarter in Table 13.³²

TABLE 19. TYPE AND SOURCE OF LSL REPLACEMENTS (JUNE 27 TO SEPTEMBER 18, 2020)

| Type of LSL Replacement June 27 through September 18, 2020 | ALSLR Program ² | Emergency Repairs | Water Main Replacements | Developments and Scrape-off ³ | Third Parties as Inspected by Denver Water | Total ⁴ |
|---|----------------------------|----------------------|----------------------------|---|--|--------------------|
| Full Lead Replacement | 806 | 89 | 54 | N/A | 2 | 951 |
| Partial Lead Replacement, such that no Lead Remains After Replacement | 798 | 35 | 64 | N/A | 5 | 902 |
| Full Galvanized Replacement | 5 | 0 | 0 | N/A | 0 | 5 |
| Partial Galvanized, such that no Lead or Galvanized Remains After Replacement | 164 | 2 | 6 | N/A | 0 | 172 |
| TOTAL REPLACEMENTS, with no Lead Remaining After Replacement | 1,773 | 126 | 124 | N/A | 7 | 2,030 |
| Emergency Repair, Partial Replacement (i.e., where consent was NOT granted and lead remains in the ground)¹ | 0 | 0 | 5 | N/A | 0 | 5 |

¹ One partial replacement was the result of an owner that did not provide consent for the replacement and four partial replacements were due to COVID-19 related restrictions and the inability to either schedule the work to replace the service line from the meter to the building. These replacements were part of a water main project.

² Includes 91 LSL replacements by T&D at critical customer properties and geographic work areas.

³ Replacements by developments and scrape-offs are under review and will be included in the fourth quarterly report.

⁴ The number of replacements identified in the “Lead Replacement” column of Appendix INV-7B Line by Line p-Value Changes by Status (Third Quarter) do not match the number of lead service line replacements shown here due to a lag in the quality assurance during data integration from field to LRP database. The counts included as replacements by the ALSLR Program contractors (i.e., disposition code “LSLR” in Appendix INV-7B) and as replacements by Denver Water (i.e., disposition code “DWSLR” in Appendix INV-7B) exceed the total number of lead service line replacements shown here for the third quarter.

Customer Consent for LSL Replacement

Denver Water started distribution of notification letters including consent forms on January 21, 2020 to property owners. Since then all properties identified in the 2020 geographic work areas have been contacted.

A summary of the number of property owners contacted and number of signed consent forms returned is presented in Table 20. Between June 27 and September 18, 2020, 15 property

³² See Appendix LSL-10 Addresses and Types of Replacements for Properties Not Previously Counted (Second Quarter)

owners refused to participate in the ALSLR Program. Denver Water attempts to obtain voluntary consent from a property owner before work can start to replace the lead service line.

A range of outreach methods was used to contact property owners.³³ At least two attempts at contact by mail plus one attempt at contact in person is made before a property is considered non-responsive. If an owner refuses to participate in the ALSLR Program, the property is added to the LSL Replacement Refusal List, as well as an explanation for refusal if available. When a property owner declines to participate, Denver Water is committed to continue engagement with the property owner to encourage participation. While the ALSLR contractors are in an area with active construction activity, additional attempts may be made to contact the property owner to seek consent. Denver Water maintains a database to track attempted contacts at properties where consent to replace the LSL has not been provided.³⁴ Denver Water is committed to follow-up with the property owner at least once a year to encourage participation. Additionally, any change in the water account holder will be used to trigger additional outreach to obtain consent to replace the LSL.

TABLE 20. SUMMARY OF CONSENT AND LSL REFUSAL LIST (JUNE 27 TO SEPTEMBER 18, 2020)

| Description | Consent Form Signed ¹ | Customer Refused ^{2,3} |
|---|----------------------------------|---------------------------------|
| Number of Properties Responding after First Mailed Attempt | 837 | 5 |
| Number of Properties Responding after Second Mailed Attempt | 801 | 10 |
| Number of Properties Responding after Third Mailed Attempt | 143 | 0 |
| Number of Properties Responding after In-person Contact | 431 | 0 |
| Total Number of Properties for which Consent was Given or Refused during the Third Quarter | 2,212 | 15 |
| Total Number of Properties for which Consent was Given or Refused Year-to-Date | 4,184 | 19 |

¹ Consent form signed totals are representative only of the ALSLR contractor results and do not include attempts at properties identified for replacement by Denver Water T&D crews.

² Where a customer refuses, the service point ID is provided to the COE team for follow-up. See explanations in Appendix LSL-8 LSL Refusal List (Third Quarter).

³ Denver Water refusals as part of the geographic task order work are tracked under Customer Refused.

There are circumstances where consent has been given, but an inspection of the property reveals a safety hazard that prevents the LSL replacement from being performed. The property owner is informed both verbally and in writing that the hazard must be addressed within 14 days

³³ See Appendix COE-C.1 Strategy Denver Water LRP 2020 Communications Plan included with the first quarterly report.

³⁴ See Appendix LSL-8 LSL Replacement Refusal List (Third Quarter).

of receiving the notification. If the problem is not fixed within that time frame, the property is treated as not responding and is added to the list of “non-response” until the issue is resolved and the lead service line can be replaced.³⁵

³⁵ See Appendix COE-D.12 for Safety or Repairs Needed Notification Letter included with the second quarterly report.

7.B.iv Filters

The Filter Program targets properties with known, suspected, and possible LSLs (i.e., with p-values 0.5 and higher). The Filter Program includes the distribution of pitcher filters, on-going outreach and education to encourage pitcher filter use and the distribution of filter replacements. Using the current LSL Inventory from Table 12, it is estimated that Filter Program participants consist of approximately 102,140 Denver Water household units.

This section summarizes the milestones of the Filter Program to date, including the initial distribution of pitcher filters with a six-month supply of replacement filters, filter refusals/opt outs, six-month supply of replacement filters distributed post-LSL replacement, filter survey results from the ALSLR Program, and filter sampling in the field. An overview of the filter reporting requirements is shown in Table 21.

TABLE 21. OVERVIEW OF 7.B.IV REQUIREMENTS

| Paragraph Reference | Description | Refer to |
|---|--|---|
| 7.B.iv.a | Address of all customers enrolled in the Filter Program and provided with filters and cartridges. Certification of number of customers with a known, suspected or possible LSL that use their own filter or bottled water. | See Appendix. ³⁶ |
| 7.B.iv.b | Total number of filters and cartridges distributed per year. | See Annual Report. |
| 7.B.iv.c | Percent filter adoption rate per year. Description of method used to determine the filter adoption rate. | See Annual Report. |
| 7.B.iv.d | Maintain list of addresses and Service Point Identification that use a filter or bottled water and any changes to the list. | See Appendix. ³⁷ |
| 7.B.iv.e 5.A | Maintain Filter Refusal or Opt Out List. Maintain list of addresses and SP IDs that have refused enrollment in the Filter Program or opted out. | See Appendix. ^{37,38} |
| 7.B.iv.f 7.B.iv.g 5.F.ii | Confirmation of filter performance in the field (50+ locations included in the LCR compliance sampling). Collect samples using a protocol approved by EPA and CDPHE. Collect additional information regarding the use and operation of the filter. | No filter performance sampling was conducted in the third quarter. Protocol for filter sample collection was approved July 17, 2020 by EPA. Included in this section. |
| 7.B.iv.h | Notify CDPHE and EPA within 10 days of receiving sample results indicating measurable lead in filtered samples and provide data for same. | No filter performance sampling was conducted in the third quarter. |
| 5.A | Begin distribution of education materials, filters and replacement cartridges within 90 days of the effective date. Complete distribution of first six monthly supply within 270 days of the effective date. | Distribution began February 12, 2020. See Section 7.B.vi. |

³⁶ See Appendix FIL-18 Filter Delivery Addresses (Third Quarter).

³⁷ See Appendix FIL-24 Filter Program Opt Outs (Third Quarter).

³⁸ See Appendix FIL-20 Filter Program Refusals (Third Quarter).

| Paragraph Reference | Description | Refer to |
|---|---|--|
| 5.B | Distribute replacement cartridges to customers enrolled in the Filter Program per the filter manufacturers' recommended replacement rate and until six months after LSL replacement. | See this section. Distribution by T&D from January 2 to March 23. Distribution as part of Filter Program since March 24. |
| 5.C | Provide education materials within two weeks of a change in customer account. Provide filters and replacement cartridges within 35 days of a change in customer account. | See Appendix. ³⁹ See Appendix. ⁴⁰ |
| 5.D | Offer filters to 1983 to 1987 households with formula-fed infants and children under 2 and lead > 3 µg/L in the first bottle of the 3-bottle test. Develop COE plan to focus on this audience. | See this section and results in section 7.B.i CCT. |
| 5.E.i | Survey enough customers enrolled in the Filter Program to receive 1,059 responses. Seek approval from CDPHE and EPA for the filter adoption survey questions prior to distribution. | Not applicable for this reporting period. Approved on September 10, 2020. ⁴¹ |
| 5.F.i | Confirmation of filter performance before distribution within 90 days of the effective date. | Submitted February 13, 2020. Approved April 1, 2020. See first quarterly report. |
| 5.G | Document contact to provide lead outreach and education materials to at least 95% of customers enrolled in the Filter Program each year. | See Appendix. ⁴² |
| LRPP Executive Summary (p 9) and III.C (p 56) | If the localized filter adoption rate is less than 75%, additional outreach and education will be provided to that area. | Not applicable for this reporting period. |
| LRPP III.C (p 55) | Survey filter use as part of ALSLR Program following LSL replacement. | See this section and Appendix. ⁴³ |

Filter Distribution

Denver Water began filter distribution on February 12, 2020 with distribution to customers included in the ALSLR Program in year 1. Denver Water initiated broader filter distribution on March 28, 2020 to all 102,140 customers currently enrolled in the Filter Program (as identified in Table 12). During the third reporting period, pitcher filters and a six-month supply of replacement filters were distributed to 16,051 households (see Table 22 for initial distribution and Table 23 for a summary of distribution of replacement filters). Customers that previously received a ZeroWater filter from Denver Water and who still have a lead service line were provided with a

³⁹ See Appendix FIL-27 Occupancy Changes - COE Distribution (Third Quarter).

⁴⁰ See Appendix FIL-26 Occupancy Changes - Pitcher Filter Distribution (Third Quarter).

⁴¹ See Appendix FIL-29 OMB Approved Filter Adoption Survey Questions.

⁴² See Appendix FIL-18 Filter Delivery Addresses (Third Quarter) and Appendix FIL-22 Filter Distribution Analysis including Return-to-Sender (January 1 through September 21, 2020).

⁴³ See Appendix FIL-23 Filter Adoption Survey Results Summary (Third Quarter).

new Brita filter by July 24, 2020. Distribution of ZeroWater filters was discontinued after July 24, 2020 to limit fluoride removal from water passed through the filter.

TABLE 22. SUMMARY OF FILTER DISTRIBUTION

| Description | Count | Comment |
|--|---------------|--|
| Number of Households Provided with a Filter Kit between January 1 and March 31, 2020 | 3,635 | See first quarterly report. |
| Number of Households Provided with a Filter Kit between April 1 and June 26, 2020 | 84,523 | See second quarterly report. |
| Number of Households Provided with a Filter Kit between June 27 and September 21, 2020 | 16,051 | See Appendix. ⁴⁴ |
| Total Number of Households Provided with a Filter Kit between January 1 and September 21, 2020 | 99,897 | Excludes return-to-sender. |
| Number of Households that Use their own NSF-Certified Filter or Bottled Water between January 1 and September 18, 2020 | 40 | See Appendix ⁴⁵ and see first and second quarterly reports. |
| Number of Households that Declined to Use a Filter or Bottled Water between January 1 and September 18, 2020 | 22 | See Appendix ⁴⁶ and see first and second quarterly reports. |

TABLE 23. SUMMARY OF SIX-MONTH SUPPLY OF FILTERS DISTRIBUTED POST LSL REPLACEMENT

| Description | Count | Comment |
|---|-------|---|
| Number of Households Provided with Six-month Supply of Filter Replacements Post Lead Service Line Replacement between January 1 and March 23, 2020 | 280 | See first quarterly report. |
| Number of Households Provided with Six-month Supply of Filter Replacements Post Lead Service Line Replacement between March 24 and June 26, 2020 | 150 | See second quarterly report. |
| Number of Households Provided with Six-month Supply of Filter Replacements Post Lead Service Line Replacement between June 27 and September 18, 2020 ¹ | 1,658 | This includes emergency repairs and replacements performed by Denver Water. See Appendix. ⁴⁷ |
| Total Number of Households Provided with Six-month Supply of Filter Replacements Post Lead Service Line Replacement between January 1 and September 18, 2020 | 2,088 | Sum of first, second, and third quarters. |

¹ This value may not match the number of lead service line replacements completed during the third quarter: for example, if a customer received their initial filter pitcher and replacement filters within two months of having their lead service line replaced, additional replacement filters are provided on the six month replacement schedule and not as part of the lead service line replacement activities.

⁴⁴ See Appendix FIL-18 Filter Delivery Addresses (Third Quarter).

⁴⁵ See Appendix FIL-24 Filter Program Opt Outs (Third Quarter).

⁴⁶ See Appendix FIL-20 Filter Program Refusals (Third Quarter).

⁴⁷ See Appendix FIL-19 Distribution of Post Lead Service Line Replacement Six-Month Cartridge Replacement Supply (Third Quarter).

Attempts were made to distribute pitcher filters with a six-month supply of replacement filters to 105,874 customers between January 1 and September 21, 2020. During this time, the inventory improved and some customers were removed from the Filter Program. As of September 21, 2020, Denver Water confirmed that pitcher filters were successfully distributed to 99,897 customers (see Table 24). During the distribution of the filter kits, some were “returned-to-sender” despite the review process employed to vet addresses before mailing.⁴⁸ There were 1,195 returns⁴⁹ in the third quarter. An unsuccessful delivery prompts an investigation and upon reconciliation a filter kit is re-sent to the correct address or if vacant, the property is removed from the LSL Inventory and Filter Program.

TABLE 24. FILTER DISTRIBUTION ANALYSIS INCLUDING RETURN-TO-SENDER (JANUARY 1 TO SEPTEMBER 21, 2020)

| Row | Description | Number | Notes |
|------------|---|----------------|--|
| 1. | Number of filters distributed | 105,874 | Total number of filters distributed. |
| 2. | Vacant properties | 1,135 | Filter sent and returned for vacant lot. |
| 3. | Number of non-lead service confirmed | 3,734 | p-value changes at properties confirmed non-lead. |
| 4. | Number of participants enrolled in Filter Program | 102,140 | Remaining Filter Program participants based on updated LSL Inventory with p-value ≥ 0.5 minus vacant properties. |
| 5. | No such address | (847) | Filter mailed and returned due to no such address. |
| 6. | Customer refused mail | (15) | Filter mailed and refused by customer. |
| 7. | Customer opted out of Filter Program | (1) | Filter mailed and customer opted out of Filter Program. |
| 8. | Unclaimed mail by customer | (21) | Filter mailed and unclaimed by customer. |
| 9. | Insufficient address | (220) | Filter mailed and address insufficient – additional research underway to confirm address. |
| 10. | Non-delivered | (361) | Not enough information from tracking information – must call to see if there is a better address for mailing. |
| 11. | No access to delivery location | (148) | Filter mailed and delivery was attempted but not completed – additional research underway to confirm address and delivery. |
| 13. | Ordered, not confirmed delivery status | (359) | No confirmation of successful delivery to customer. |
| 14. | Shipped, not confirmed delivery status | (2,870) | No confirmation of successful delivery to customer. |
| 15. | Total number of distributed, but unconfirmed delivery, of filters | (4,842) | Total of Rows 5 through 14 |
| 16. | Filters with confirmed delivery status | 99,897 | Data as of 9/21/2020 (Row 1 - Row 2 - Row 15) |
| 17. | % confirmed delivery | 98% | Percentage of filters with confirmed delivery status (Row 16 ÷ Row 4) |
| 18. | % distributed | 100% | Percentage of filters distributed to customers enrolled in the Filter Program |

⁴⁸ See section 7.B.iv in the first quarterly report.

⁴⁹ See Appendix FIL-22 Filter Distribution Analysis including Return-to-Sender (January 1 through September 21, 2020).

Confirmed Successful Filter Distribution: Did the filter reach the intended customer?

The distribution of all filter kits is tracked using the United States Postal Service (USPS). A number of actions were taken to confirm the successful delivery of filter kits, including follow-up of filter kits that were never confirmed as delivered or that were returned to the sender.

The complete distribution of pitcher filters is dynamic, with multiple causes for weekly changes made to the customer base:

- Occupancy changes, with customers moving in and out of residences.
- Missing pitchers, with customers reporting pitcher filters were not received in contrast to Denver Water records showing a successfully delivery.
- Broken pitchers, with customers requesting replacement pitcher filters if they arrive broken in the mail or if they become broken.
- Additional participants in the Filter Program, for example, additional customers are confirmed to live at the residence than recorded in Denver Water’s database, such as multi-family units, and more filters are needed.
- Confirmation of a non-lead service line, with customers removed from the LRP.

Each property included in the Filter Program⁵⁰ is assigned one of three conditions to indicate the status of filter distribution: ordered, shipped, or delivered.

An initial review in May 2020 by Denver Water’s Customer Care and Billing group investigated 235 addresses within the City and County of Denver where contact information was available. Of these 235 addresses, 73 pitcher filters were re-sent to reconciled addresses and a formalized return-to-sender analysis was undertaken. The remaining addresses from this early review are included in the return-to-sender analysis of Table 24.

Between January 1 and September 21, the status of 3,229 filter kits was listed as “ordered” or “shipped,” meaning that the filter kits had been ordered and distribution had been attempted by USPS but delivery could not be confirmed and therefore a status of “delivered” could not be assigned. Of these 3,229 customers, Denver Water had phone numbers for 1,141. During the virtual meetings conducted with residents of the City and County of Denver between June 11 and July 21, 2020, 94 customers reported that they had not received a pitcher filter and provided their phone number. As a result, robocalls were made to all customers identified with a filter distribution status of “ordered” or “shipped” (1,141 + 94 = 1,235). Of 1,235 robocalls made:⁵¹

⁵⁰ This analysis does not include filter distribution to 1983 to 1987 homes with copper piping and lead solder, a formula-fed infant up to 24 months old, and where lead is measured above 3 µg/L. Paragraphs 5.A and 5.G of the Variance applies to customers enrolled in the Filter Program as defined in paragraph 1.E as those properties with a known, suspected or possible lead service line.

⁵¹ See Appendix FIL-22 Filter Distribution Analysis including Return-to-Sender (January 1 through September 21, 2020).

- 103 customers responded that they had received their pitcher filter and the delivery records were updated to a status of “delivered.”
- 86 customers responded that they had not received their pitcher filter and pitcher filters were re-sent for delivery the week of September 21.
- The remaining 1,046 customers did not respond to the robocall.

Between January 1, 2020 and September 21, 2020 there were 2,748 undeliverable pitcher filters that were returned-to-sender. These addresses were sorted into:

- Vacant property.
- No such address.
- Customer refused mail.
- Customer opted out of Filter Program.
- Unclaimed mail by customer.
- Insufficient address.
- Non-delivered.
- No access to delivery location.

The analysis⁵¹ of the return-to-sender as well as the ordered and shipped status of pitcher filters from January 1, 2020 through September 21, 2020 is summarized in Table 24. Investigation of these addresses will continue, including outreach efforts such as individual phone calls, robocalls, emails, mailers, etc. The total undeliverable or unconfirmed pitcher filter delivery as of September 21, 2020 is 4,842 pitcher filters (see row 15 in Table 24).

Denver Water confirms that filter pitchers have been successfully delivered to 98 percent of customers enrolled in the Filter Program

Pitcher filter distribution was attempted for 105,874 addresses between January 1, 2020 and September 21, 2020. Of these, 1,135 properties were confirmed vacant and 3,734 properties were removed from the Filter Program because a non-lead service line was confirmed. The remaining Filter Program participants minus vacant properties and non-lead service lines total to 102,140, as shown in row 4 of Table 24. Of this total, 99,897 pitcher filters are confirmed delivered and Denver Water can confirm that 98 percent of Filter Program participants have successfully received a pitcher filter (see Table 24).⁵²

Denver Water used this same information from distribution of LRP Introductory Letters, LRP Overview Booklets and filter pitchers (including educational materials on proper filter use and maintenance) to confirm direct contact was made with more than 95 percent of customers enrolled in the Filter Program.⁵³

⁵² Per paragraph 5.A of the Variance. See Appendix FIL-22 Filter Distribution Analysis including Return-to-Sender (January 1 through September 21, 2020).

⁵³ Per paragraph 5.G of the Variance. See Appendix FIL-30 COE Materials Distribution to Customers Enrolled in Filter Program.

Occupancy changes that occurred between June 27 and September 18, 2020 were added to weekly filter distribution batches to allow new occupants to receive a pitcher filter within 35 days of new occupancy. Occupancy changes were tracked on a daily basis to provide multiple mailings per week to allow new occupants to receive their LRP Introductory Letter and LRP Overview Booklet within 14 days of the change in occupancy.

The number of properties that choose to opt out of the Filter Program to date is relatively small. Customers that opt out of the Filter Program are contacted by Denver Water to understand the reason for opting out. Of the 40 customers that have opted out since the launch of the Filter Program, four use bottled water as an alternative to the filter and six use their own filter certified to NSF 53 for lead removal. For the 30 remaining customers, Denver Water was unable to confirm if the customer was using an NSF 53 certified filter. Denver Water will continue to attempt contact with customers as part of an annual reminder to customers that have opted out or refused to participate in the Filter Program.

From June 27 through September 18, 2020, notice of refusal to participate in the Filter Program was received for nine properties. The reasons given for refusal include the property is vacant or the resident thought their service line was previously replaced. This brings the total number of refusals to 22 year-to-date.

Additional details related to filter kit distribution are provided in the Appendices:

- List of premise addresses for all households where filter kits were provided.⁵⁴
- List of six-month supply of replacement filters provided after lead service line replacement.⁵⁵
- List of premise addresses and service point IDs for all households that refuse to participate in the Filter Program.⁵⁶
- List of premise addresses that have returned filter kits to sender.⁵⁷
- Filter adoption survey results summary⁵⁸ from informal filter use surveys conducted in the field as part of LSL replacement and virtual meeting filter survey summary.
- List of premise addresses and service point identification numbers for all households that opt out⁵⁹ of the Filter Program and for whom it has been certified that the household is using their own filter (NSF-certified to remove lead) or bottled water.

⁵⁴ See Appendix FIL-18 Filter Delivery Addresses (Third Quarter).

⁵⁵ See Appendix FIL-19 Distribution of Post Lead Service Line Replacement Six-Month Cartridge Replacement Supply (Third Quarter).

⁵⁶ See Appendix FIL-20 Filter Program Refusals (Third Quarter).

⁵⁷ See Appendix FIL-21 Filter Program Pitcher Returns (Third Quarter).

⁵⁸ See Appendix FIL-23 Filter Adoption Survey Results Summary (Third Quarter).

⁵⁹ See Appendix FIL-24 Filter Program Opt Outs (Third Quarter).

- Replacement filter distribution.⁶⁰
- Occupancy changes for pitcher filter distribution.⁶¹
- Occupancy changes for filter education information – LRP Introductory Letter and LRP Overview Booklet.⁶²
- Detailed responses from the informal filter use field survey responses collected as part of lead service line replacement activities.⁶³

Filter Distribution to Infants in Select Households

Only four requests for water quality sampling were made from 1983 to 1987 homes that self-identified as having a formula-fed infant less than 24 months old, i.e., a select household as identified in paragraph 5.D of the Variance. Lead concentrations were measured below 1 µg/L in all three bottles of the 3-bottle test and therefore no filters were distributed to select households during the third quarter.⁶⁴

Filter Adoption Survey and Results

The questionnaire for the Filter Adoption Survey was approved by EPA on September 10, 2020. Denver Water is preparing to mail the survey questionnaire⁶⁵ to approximately 20 percent of customers enrolled in the Filter Program in the first week of October. There is therefore no formal reporting for the filter adoption rate in this quarterly report.

Informal surveys have been performed by ALSLR contractors during pre-construction meetings asking customers about filter adoption and use. Between June 27, 2020 and September 18, 2020, pre-construction meetings were conducted at properties included in the 2020 ALSLR Plan. During the pre-construction meetings, residents were informally asked about their filter use practices. Responses from 646 participants were captured in the LRP database.⁶⁶ This accounts for 14 percent of the total customers who are expected to have their LSLs replaced in 2020 and suggests that the majority of customers are using filtered or bottled water for drinking, cooking and infant formula:

- Customers at 646 locations participated in the filter adoption survey informally conducted during pre-construction meetings before their LSL was replaced.
- Of these, the majority of customers responded that they used filtered or bottled water for drinking (92 percent) and cooking (79 percent).

⁶⁰ See Appendix FIL-25 Replacement Cartridge Distribution (Third Quarter).

⁶¹ See Appendix FIL-26 Occupancy Changes - Pitcher Filter Distribution (Third Quarter).

⁶² See Appendix FIL-27 Occupancy Changes - COE Distribution (Third Quarter).

⁶³ See Appendix FIL-17 Filter Adoption Survey Detailed Responses (Third Quarter).

⁶⁴ See Appendix CCT-7 Summary of Water Quality Sampling Results from Select Households (1983 to 1987 Homes).

⁶⁵ See Appendix FIL-29 OMB Approved Adoption Survey Questions.

⁶⁶ See Appendix FIL-23 Filter Adoption Survey Results Summary (Third Quarter).

- All households with a formula-fed infant indicated that they used filtered water when preparing formula, except one.

Informal surveys using the same questions about filter use were conducted as part of virtual community meetings launched in June 2020. Between June 11 and July 21, 2020, ten virtual community meetings were held targeting customers in approximately 70 neighborhoods in Denver. On September 10, 2020, an additional meeting was held targeting customers in distributor areas. During the virtual meetings, participants were polled on their awareness of the program and filter use practices. Analysis of responses for meetings held in June and July show:

- The majority (63 percent) of meeting participants were either somewhat or very aware of the LRP.
- Of those who stated they had received a filter, the majority (84 percent) were using their filter, bottled water or other filter for drinking water.
- Of those who stated they had received a filter, a smaller majority (59 percent) were using their filter, bottled water or other filter for cooking.
- Of those who stated they had received a filter, the majority (74 percent) were using their filter, bottled water or other filter to prepare infant formula.⁶⁷

Confirmation of Filter Performance and Usage in the Field

Field sampling is conducted by Denver Water in conjunction with LCR compliance sampling (see section 7.B.i). There were no filtered water samples collected from the field during the third quarter reporting period.

⁶⁷ See Appendix FIL-23 Filter Adoption Survey Results Summary (Third Quarter). Also see Section 7.B.vi Communications, Outreach and Education of this report for an overview of steps taken in response to polling results.

7.B.v Compliance Metrics per Paragraphs 2.C, 3.D, 4.I, 5.G and 6.B

A summary of the performance metrics that will ultimately be used to evaluate the overall performance of the LRP is presented in Table 25.

TABLE 25. SUMMARY OF COMPLIANCE

| Paragraph | Description | Comment |
|-----------|--|--|
| 2.C | <p>C. Corrosion Control Treatment Metric. Denver Water must consistently <u>maintain in all parts of the System a minimum target pH of 8.5 during the first year of operation</u> under this Variance.</p> <p>In the future, Denver Water must maintain pH and alkalinity within the ranges designated by CDPHE in its modification decision under Section 11.26(3)(d)(ii) of 5 CCR 1002-11.</p> | See Section 7.B.i |
| 3.D | <p>D. LSL Inventory Compliance Metric. Denver Water <u>must investigate a minimum of 1.4% of the total estimated number of suspected and possible LSLs in the LSL Inventory each Program Year (based on a subset of Y as described in paragraph 3.A above), as adjusted.</u></p> <p>These investigations are performed independently of the LSL replacements.</p> | See Section 7.B.ii |
| 4.I | <p>I. Accelerated LSL Replacement Compliance Metric. Denver Water <u>must annually achieve at least a 7.0% cumulative average Program Year LSL replacement rate</u> as determined based on reporting required in paragraph 7.B.</p> | See Section 7.B.iii |
| 5.G | <p>G. Filter Communication Compliance Metric. Denver Water <u>must make direct contact with lead outreach and education materials to 95% of all customers enrolled in the Filter Program in every Program Year.</u> . . . Compliance shall be documented by mailing lists and mail receipts, lists of customer email addresses for customers who elect to receive email communication, or other forms of documentation approved by CDPHE.</p> | See Section 7.B.vi |
| 6.B | <p>B. Comprehensive LRPP Performance Metric. Denver Water must demonstrate to EPA's satisfaction, using the updated equivalency model results as reported under paragraph 7.C, that the <u>combined actual performance of the LRPP as implemented continues to be "at least as efficient as" orthophosphate treatment in reducing lead exposure on an annual basis.</u> Denver Water may account for the CCT optimization period in this demonstration.</p> | To be provided in Annual Report for Year 1 |

7.B.vi Communications, Outreach and Education

During the third quarter of 2020, Denver Water continued to implement public outreach and engagement strategies as described in the LRPP and 2020 COE Plan. This included launching new program components, including a paid media campaign and outreach to customers in homes built between 1983 and 1987. COE efforts specific to each program element are also included in those element sections of this report, and reporting requirements are identified in Table 26.

TABLE 26. OVERVIEW OF 7.B.VI REQUIREMENTS

| Paragraph | Description | Comment |
|--------------------------|---|--|
| 7.B.vi | 2020 COE Plan | See first quarterly report. |
| 7.B.vi.a | Description of COE activities conducted. Copy of materials. | Discussed in this section. See Appendix for copies of materials included. ⁶⁸ |
| 7.B.vi.b | Ambassador Program Overview. | See first quarterly report. |
| 7.B.vi.c | Response, date and time of in-person surveys of filter adoption and use. | See section 7.B.iv. See Appendix. ⁶⁹ |
| 8.G | Notify customers enrolled in Filter Program of LRP and launch multi-media campaign. | Multi-media campaign launched March 23, 2020. |
| LRPP III.E (p 64) | Targeted messaging to homes with copper piping and lead solder to flush the tap after periods of non-use. | Discussed in this section. See first quarterly report. |
| LRPP III.F (p 74) | Stakeholder Advisory Committee | Discussed in this section. |

Outcomes of COE activities between July 1 and September 18, 2020 (unless otherwise noted)

- A total of six virtual community meetings were conducted to provide an overview of the LRP to customers in areas included in the Filter Program. 4,715 customers participated via phone or video.
- In addition, Denver Water received requests for presentations on the LRP from three local, state and national organizations and held these presentations in the third quarter.
- The Stakeholder Advisory Committee met for the second time on July 30, 2020, to receive an update on the LRP and discuss opportunities for improved education and awareness surrounding cooking with filtered water. The next meeting will be held virtually on September 24, 2020.

⁶⁸ See Appendix COE-G.1 through G.21 for a copy of materials.

⁶⁹ See Appendix FIL-28 Filter Adoption Survey Detailed Responses (Third Quarter).

- 48 points of contact were made with local government officials and staff, including Denver City Council and elected officials in suburban jurisdictions.
- Denver Water met the compliance metric for 2020 to contact at least 95 percent of customers enrolled in the Filter Program during each program year.⁷⁰
- 116,819 unique page views to the program website since the launch of comprehensive LRP information on March 5, 2020.⁷¹
- 2,072 views of LRP TAP stories published on denverwaterTAP.org.
- 800,776 individuals reached through Denver Water social media activity.
- 14 mentions of the LRP in news media stories, with a potential aggregate readership of 78,198,259.
- Copies of new outreach materials are provided in Appendix series COE-G.

The following section highlights COE program activities carried out during the third quarter of the program year, organized by strategy type.

Public Outreach

Overview of public outreach activity grouped by program component:

- Virtual Meetings
 - Denver Water scheduled and hosted six bilingual, one-hour virtual community meetings in the third quarter, including distributor areas and approximately 60 neighborhoods within Denver.
 - The meetings were an opportunity to inform customers about the program, encourage filter use and answer questions. In the third quarter, 4,715 customers participated in a virtual meeting. Combined with participation from the second quarter, a total of 8,446 customers have participated via phone or computer in a virtual community meeting this year.
 - To promote participation in the virtual meetings, outbound calls were made to customers in the specific neighborhoods addressed with each meeting. As part of these outbound calls, voicemails were left with those who did not answer. In the third quarter, 17,907 customers enrolled in the LRP received a voicemail providing information about why they were receiving the call, where to learn more about the LRP and how to contact Customer Care. Voicemails were recorded in both English and Spanish.

⁷⁰ See Appendix FIL-30 COE Materials Distribution for Customers Enrolled in Filter Program.

⁷¹ See Appendix COE-G.21 Website Traffic.

- During the virtual community meetings, Denver Water was able to poll participants regarding their awareness of the program and filter use. Participants were able to respond to the polls by clicking their selection online or by pressing a dial key over the phone.
- Analyzing these responses for meetings held in June and July, Denver Water learned that 63 percent of meeting participants were either somewhat or very aware of the LRP. Of those who stated they had received a filter, the majority (84 percent) were using their filter, bottled water or other filter for drinking water. Of those that identified as having a formula-fed infant and as having received a filter, a majority (74 percent) were using their filter, bottled water or other filter to prepare infant formula. A smaller majority (59 percent) were using their filter, bottled water or other filter for cooking.⁷²
- In reviewing polling results, Denver Water identified the following action items:
 - Conduct follow-up with meeting participants who believe they are enrolled in the program but indicated that they had not received a filter at the time of the meeting. Outbound calls to customers to confirm they had received a filter were made in September.⁷³
 - Incorporate education and awareness surrounding cooking with filtered water into future COE activities and planning. This has been integrated into a new paid media campaign that will launch in late September.
- Denver Water also presented to organizations on request to provide an overview of the LRP, gather feedback and identify areas for potential coordination. These meetings included:
 - Denver Metro Association of Realtors (July 1)
 - Supplier Diversity, targeted to potential Denver Water contractors, including an overview of the LRP (August 18)
 - Hispanic Chamber of Commerce (August 27)
- Stakeholder Advisory Committee
 - The Stakeholder Advisory Committee met for a second time on July 30, 2020. A diverse group of organizations participated, reflecting a mix of perspectives including health care, education, nonprofit, government

⁷² See Appendix FIL-23 Filter Adoption Survey Results Summary (Third Quarter).

⁷³ See Filter Program section and Appendix FIL-22 Filter Distribution Analysis including Return-to-Sender (January 1 through September 21, 2020).

and Registered Neighborhood Organizations (specifically representing neighborhoods identified for lead service line replacements in this calendar year).

- Denver Water provided an overview of progress to date on the LRP and, based on the polling data from the virtual community meetings, gathered feedback related to increasing awareness and education on cooking with filtered water.
- Government Relations
 - Denver Water made 48 proactive contacts with local government officials and staff, including Denver City Council and elected officials in suburban jurisdictions, to share program information and updates on the LRP.
 - These contacts included annual meetings with members of Denver City Council to provide updates and receive feedback about the program, emails with an explanation of the mailings sent to customers in Denver regarding 1983 to 1987 homes, updates regarding the program inside Denver and in suburban areas (including filter distribution and use) and notification to suburban local government staff regarding the virtual community meeting for customers in distributor areas.
 - Staff also met with Jefferson County regarding coordination with the Women, Infants and Children program (WIC) for the LRP, met with the Denver Early Childhood Council and presented proposed work areas for the 2021 ALSLR plan to CDPHE.
- Distributor Communications
 - Denver Water provided an update on the program, focused on 1983 to 1987 homes outreach, at the distributors forum meeting on August 18, 2020.
 - Updates on the LRP were published in the July and August monthly distributor newsletters.
 - Denver Water held a virtual community meeting for distributor customers on September 10, 2020. 1,147 customers attended representing 26 distributor districts. To inform distributor customers of the meeting, a direct mailing was sent the week of July 6, email notifications were sent September 5, September 9 and September 10, and outbound calls were made on September 9 and September 10.
 - Denver Water provided co-branded water quality test kits, filter introduction letters and filter kits to distributor customers.

- Denver Water continued to coordinate with each district on water quality sampling results.
- Denver Water worked with distributors to identify the co-branding approach for 1983 to 1987 homes communications and prepared for mailing notification letters.
- Denver Water shared the 1983 to 1987 homes inventory with distributors to incorporate feedback and answer questions, including meeting with distributors on request to discuss the program.
- Paid Media
 - A paid media strategy focused on priority neighborhoods within the City and County of Denver was developed to promote the LRP and encourage customers to use their water pitchers and filters.
 - The campaign ran from June 29 to July 26, 2020.⁷⁴
 - 3,300,000 total impressions were generated through digital media, with 9,975 total clicks on the online media placements.
 - Posters were circulated in targeted community newspapers and magazines with a combined circulation of 263,073.
- Earned Media
 - The LRP was covered in digital, print and broadcast news, including FOX31, 1150 AM, The Colorado Springs Gazette and MSN Online.⁷⁵
 - There were 262 posts about the LRP on social media channels in this reporting period, resulting in 800,776 impressions. Ambassador Program partners also shared Denver Water social media posts on their own networks.
 - Impressions for all social posts made by others and Denver Water on Facebook and Twitter from January 1 through September 18 totaled 3,355,144 impressions.
- Digital Communications
 - Denver Water distributed emails on August 11 and September 1 to a growing database of 9,169 subscribers who have opted in for program

⁷⁴ See Appendix COE-G.18 Paid Media Campaign Overview.

⁷⁵ See Appendix COE-G.17 Earned Media Report.

updates.⁷⁶ Emails promoted engagement opportunities, encouraged proper filter use and provided an overview of ongoing program activities.

- In addition, Denver Water distributed the email sent on August 11 to 46,569 customers who were contacted to participate in the virtual community meetings.
- These customers will continue to receive email updates in addition to those who have opted in for program updates.
- Denver Water distributed an email to 249 community organizations, childcare centers, cultural institutions and Registered Neighborhood Organizations. These groups were encouraged to share information regarding the LRP with their networks.
- Denver Water posted four TAP stories⁷⁷ on denverwaterTAP.org providing updates on the LRP and information on proper filter use. One of these stories were published in Spanish.
- Denver Water published a video showing how lead service lines are replaced.⁷⁸
- The LRP website, denverwater.org/Lead, was updated with the schedule for and past recordings of virtual community meetings, program dashboard, updated lead service line inventory and 2020 work areas map.⁷⁹
- 1983 to 1987 Homes (Select Households)
 - In August and September, notification letters were sent to customers within Denver living in homes built between 1983 and 1987. This letter encourages customers who are expecting or have a formula-fed infant under 24 months to request a water quality test kit.⁸⁰
 - If this test kit shows lead results above 3 µg/L, the customer is offered a filter kit containing a water pitcher and filter.
 - The filter kit is followed by a two-year supply of replacement filters to use until formula-fed infants in the home reach 24 months.

⁷⁶ See Appendix COE-G.16 July and August Subscriber Emails.

⁷⁷ See Appendix COE-G.19 TAP Stories Published.

⁷⁸ See Appendix COE-G.20 Videos Published.

⁷⁹ See Appendix COE-G.15 2020 Work Area Maps.

⁸⁰ See Appendix COE-G.11 1983-1987 Homes Notification Letter Mailing List and Appendices COE-G.6 through G.8 for copies of outreach materials.

- Information on the 1983 to 1987 homes program was posted to denverwater.org/Lead and talking points were developed to support Customer Care in fielding customer requests and inquiries.

Material Development

The following materials were developed in the third quarter in support of the various program components as outlined below:

- Program Dashboard
 - The public-facing dashboard was updated to share progress and key metrics for the LRP through August 31, 2020. The updated dashboard is posted monthly to the denverwater.org/Lead and is available in both English and Spanish.⁸¹
 - A letter was developed to notify customers of the need to re-complete a water quality test due to sampling error or instances of samples being damaged in transit.⁸²
 - A letter was developed to offer customers in multi-family properties a free post-replacement water quality test kit.⁸³
- ALSLR Outreach
 - Service line replacement illustrations were created to help customers understand and visualize the lead service line replacement process.⁸⁴
 - Yard signs were created to help raise awareness of construction activity in neighborhoods and provide a physical leave-behind to show completed work.⁸⁵
- Strategy and Implementation for 1983 to 1987 Homes
 - A notification letter, customized water quality results letter, customized filter kit insert and frequently asked questions⁸⁶ and answers were developed for this group.
- Early Childhood Development Outreach
 - Frequently asked questions and answers were developed specifically for early childhood development centers and care provided. The document

⁸¹ See Figure 1.

⁸² See Appendix COE-G.10 Water Quality Retest Notification Letter.

⁸³ See Appendix COE-G.9 Multi-family Post LSL Replacement Water Quality Test Notification Letter.

⁸⁴ See Appendix COE-G.3 Service Line Replacement Illustrations.

⁸⁵ See Appendix COE-G.2 Construction Yard Signs.

⁸⁶ See Appendix COE-G.6 through G.8 and COE-G.14 for copies of these materials.

provides guidance for parents, guardians and caregivers of young children and infants who are impacted by the program.⁸⁷

- Virtual Meetings Support Materials
 - During the virtual community meetings, participants could ask questions through an online chat box or over the phone. Denver Water received over 1,400 questions and answered as many as possible during each meeting. Denver Water then reviewed all questions for common themes and developed a document with 42 of the most frequently asked questions. This document is currently in translation and will be placed on the Denver Water website. Once on the website, a link will be sent via email to meeting participants.

Internal Communications and Coordination

The following summarizes efforts made by Denver Water to continue to educate its employees and contractors about the components and messaging of the LRP. This ongoing engagement supports the ability of Denver Water staff and representatives to provide customers with accurate information and enhances efforts to make the program accessible for all.

- Training
 - Two internal trainings were conducted to provide updates on the LRP to Denver Water employees.
- ALSLR Contractor Trainings
 - A virtual training was provided on July 28, 2020, to ALSLR contractors, which focused on providing excellent customer service , understanding guidelines for media relations and honoring the many different cultures, customs, traditions and beliefs of Denver Water customers.
 - New COE materials were added to the training manual to provide more insight into culturally appropriate customer interactions.⁸⁸
 - As part of their training, contractors are encouraged to document “Above and Beyond” stories, which will be reported annually and used to improve LRP outreach to customers. Examples from the third quarter are included below.

⁸⁷ See Appendix COE-G.13 Early Childhood Development FAQ.

⁸⁸ See Appendix COE-G.1 ALSLR Training Binder.

- Community Partner Trainings
 - A virtual training was conducted in Spanish on August 27, 2020, for iNow and CREA Results partners to explain the LRP, why customers should participate and how to do so.
 - The training was designed to prepare partners to serve as ambassadors for the program in priority neighborhoods.
 - Virtual and hard copy training binders were developed and given to iNow and CREA Results to share key program materials and resources.⁸⁹
- Talking Points for Customer Care
 - Program-wide talking points continue to be updated to align with program progress, efforts and common questions received by Customer Care and other customer-facing Denver Water staff.

Above and Beyond Stories

- In July, crews invested additional resources and effort into working around a tree on a customer's property. Crews were able to go under the tree and connect to the interior plumbing in the home in what the customer described as an "amazing" feat.
- In August, crews noticed one of the neighborhood children taking interest in the construction activity and that the child watched them until they packed up. The next day, crews gave the boy a safety vest and hard hat so that he could feel like he was part of the crew while continuing to observe from a safe distance.
- In August, crews worked closely with a resident to ease her concerns about the replacement activity. In the process, they moved the customer's recycling cart to the adjacent alley so the customer would not miss the pickup day. The customer was very appreciative and impressed that the crew did this without being asked.

⁸⁹ See Appendix COE-G.5 Community Partner Training Binder.

7.B.vii Health Equity and Environmental Justice

Health equity and environmental justice (equity) principles have been integrated into every aspect of the LRP, including COE activities. This commitment creates a holistic mindset that allows the principles of equity to shape when and how Denver Water invites and involves community members in the program. This approach positions Denver Water to overcome potential barriers to establishing awareness, understanding and behavior change among these important populations.

An overview of HE&EJ reporting requirements is presented in Table 27.

TABLE 27. Overview of 7.B.vii Requirements

| Paragraph Reference | Description | Refer to |
|------------------------------|--|---|
| 7.B.vii LRPP V (p 77) | Summary of activities conducted and designed to address HE&EJ principles. | See first quarterly report. See LRPP (p 77). |
| 7.B.vii.a | Description of how HE&EJ principles were incorporated into the implementation of the: <ul style="list-style-type: none"> • ALSLR Program. • Filter Program. • COE Plan. | See first quarterly report and updates in this section. |
| 7.B.vii.b | Socioeconomic and demographic data collected through the filter adoption survey. | No data were collected. Annual Report. |
| 7.B.vii.c | Socioeconomic or demographic data collected from other sources to target communications, outreach and education programs to specific neighborhoods, demographic cohorts, or non-English speaking groups. | Annual Report. |
| 7.B.vii.d | Documentation that outreach and education materials have been provided to at least 95% of the households enrolled in the Filter Program. | See Section 7.B.vi.a. See Appendix. ⁹⁰ |
| LRPP V (p 77) | Commitment to continue to consult and collaborate with the organizations and HE&EJ experts, stakeholders, community members and customers to continually improve upon integration of the HE&EJ principles with the Lead Reduction Program. | Annual Report. |
| LRPP V (p 79) | Collaborate with other agencies to address lead exposure from all sources. | Annual Report. |

The following section describes how the principles of equity were used to inform Denver Water's approach to the LRP during the third quarter reporting period:

⁹⁰ See Appendix FIL-30 COE Materials Distribution to Customers Enrolled in Filter Program.

Ambassador Program

- Denver Water’s Ambassador Program is designed to build partnerships with trusted community organizations and community leaders to reach more people in more places and, when needed, in the languages they prefer. As part of this program, two partners, iNOW and CREA Results, have been working with Denver Water to help reach key populations.
 - iNOW, formerly the Colorado African Organization, is a community organization that specializes in supporting immigrant populations from Africa and Asia.
 - CREA Results is a community organization that specializes in the Latinx community.
- As outlined in the second quarterly report, Denver Water has been working with community partners to shift their in-person activities to virtual engagements as a result of the COVID-19 pandemic. The shift from in-person activities to virtual activities for Denver Water and impacted communities required setting up a new framework for how community partners would complete work, determining where partners could access and meet with community members and setting up new ways to engage in the virtual world.
- During the third quarter, [CREA Results](#) engaged in the following work:
 - Produced and aired seven public service announcements (PSAs) in Spanish language radio and social media. These PSAs included messaging on the LRP and encouraged proper and consistent filter use for customers enrolled in the program.
 - Discussed the LRP during a Spanish-language interview on August 31 with radio hosts on 1150 KNRV-AM.
 - Created an article⁹¹ that was published in Spanish magazines, El Comercio de Colorado and El Pueblo Catolico. The article provided an overview of the LRP and announced CREA Results as an ambassador for the program.
 - Attended two in-person community events to discuss the LRP with community members and provide resources to answer program questions.
 - Montbello COVID-19 Testing and Food Drive (August 22)
 - Lalo Delgado Mobile Testing and Food and Resource Drive (September 10)

⁹¹ See Appendix COE-G.4 CREA Results Article.

- During the third quarter, iNOW engaged in the following work:
 - Promoted virtual help desk assistance for the LRP to answer customer questions in five languages, including Amharic, Arabic, French, Nepali and Somali.
 - Created a video to promote filter use in five languages, including Amharic, Arabic, French, Nepali and Somali which will be shared on partners' social media channels.

Paid Media

- The paid media campaign, which ran from June 29 to July 26, 2020, targeted priority neighborhoods to promote the LRP and encourage proper filter use.

Critical Customer Outreach

- In the third quarter, Denver Water continued outreach efforts to critical customers, such as childcare facilities, that were closed due to COVID-19 to encourage the return of their consent forms and scheduling of their lead service line replacement.
- These outreach efforts included additional phone calls, door-knocking and material drop-offs.

Virtual Community Meetings

- Spanish interpretation was available for every virtual community meeting. The meetings were fully bilingual, from the initial meeting promotion to the meeting presentation, poll questions and Q&A responses. The meeting recordings are also available in both Spanish and English at denverwater.org/Lead.
- 151 Spanish-speaking customers enrolled in the LRP attended a virtual community meeting.

Materials

- All customer-facing materials produced in the third quarter were translated into Spanish. Program materials available in Arabic were outlined in the second quarter report.
- All virtual community meetings presentations, promotional materials and follow-up communications are provided in both Spanish and English.
- All monthly program dashboards are available in Spanish and English at denverwater.org/Lead.

Tenant Outreach

- To better understand how to reach tenants in multi-family complexes, Denver Water conducted a leasing office focus group on July 20, 2020. The focus group included representatives from Cornerstone Apartments, Four Star Realty and Market Street Management. The group provided feedback on draft outreach materials and current filter distribution processes for tenants during the move-in process.
- This feedback is currently being incorporated into the outreach materials and filter distribution process to support the full participation of tenants in the program.

Learning by Doing

Five of the six elements that together make up the LRP are used to evaluate the overall effectiveness of the program (COE Plan, LSL Inventory, Filter Program, ALSLR Program and Corrosion Control Treatment). The sixth element is Learning by Doing: presented as a strategy (versus a desired outcome), quantitative performance metrics were not identified in the Variance Order.

As part of the Learning by Doing element of the LRP, Denver Water is committing to:

- Evaluate the performance of the Lead Reduction Program to improve outcomes.
- Establish an Advisory Committee to inform Denver Water on more efficient and effective ways to implement the Lead Reduction Program to achieve the Variance goals.

This means that Denver Water incorporates the Learning by Doing approach to improve outcomes during the life of the Lead Reduction Program. An overview of the Learning by Doing approach was provided in the second quarterly report. During the third quarter, Denver Water continued to identify potentially more efficient or effective ways to implement the program in the Learning by Doing log. The outcomes tracked in the Learning by Doing log will be presented in the annual report, with preliminary ideas presented in this section.

Additionally, the LRP Advisory Committee uses external stakeholders to apply the Learning by Doing approach programmatically.

Efforts continue to use the Learning by Doing approach to address challenges and improve effectiveness of outreach in hard to reach communities.