

City of El Mirage
El Mirage Lead Service Line (LSL) Inventory Study – 2025

Scope of Services – FINAL

July 28, 2025

This document outlines the proposed FINAL Scope of Services for Carollo Engineers, Inc. (Carollo) for the City of El Mirage (City) Lead Service Line (LSL) Inventory Study – 2025 project.

The principal purposes of the LSL Inventory Study – 2025 project are:

- Identification and review of available records on service line materials.
- Incorporation of known service line (SL) data into a database for use in inventory development.
- Summary charts / tables estimating the quantity of service lines that are lead, status unknown, or non-lead materials.
- Determination of areas within the City’s system most likely to contain LSLs or GRRs (Galvanized Requiring Replacement) and areas recommended for future field verification.

This FINAL Scope of Services describes the work breakdown structure to be performed by Carollo for the project.

PROJECT ASSUMPTIONS

This Scope of Services is based on the following assumptions:

- A. The City will furnish Utility and GIS maps, models, 120Water database information, water system data, permits, repair records, billing information, water meter information, and as-built drawings for the water distribution system and ancillary infrastructure.
- B. The City will furnish previously completed studies and planning documents related to the water distribution and treatment systems.
- C. The City will be responsible for contracting water sampling of the distribution system separately, if necessary.
- D. The City will be responsible for providing access to the SLs.
- E. Carollo will perform Quality Control (QC) of all task deliverables as identified in this Scope of Services.
- F. Carollo will not be updating, developing or calibrating the existing LSL Inventory model.
- G. Carollo will use the current (most recent) Inventory models developed during previous projects with the City for the LSL analysis. No additional development of the LSL base models will be conducted for this project.
- H. Cost opinions provided by Carollo will be consistent with Class 4 Estimates as defined by the Association for the Advancement of Cost Engineering (AACE) International. This level of engineering cost estimating is generally made with limited information, including scaled quantity takeoffs, historical unit pricing, preliminary material and equipment lists, and conceptual layouts. Typical accuracy for Class 4 Estimates is expected to be in the range of +50/-30 percent.
- I. In providing opinions of cost, financial analyses, economic feasibility projections, and schedules for potential projects, Carollo has no control over cost or price of labor and material; unknown or latent

conditions of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality of performance of third parties; quality, type, management, or direction of operating personnel; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, Carollo makes no warranty that the City's actual project costs, financial aspects, economic feasibility, or schedules will not vary from the Carollo's opinions, analyses, projections, or estimates.

- J. Carollo will be responsible for the level of competency and standard of care presently maintained by other practicing Professional Engineers performing the same or similar type work at the time notice to proceed is issued. Carollo and the City mutually agree that the standard of care, as applied to design professionals, will be defined as the ordinary and reasonable care required and established by expert testimony of what a reasonable and prudent professional would have done under the same or similar circumstances.

SCOPE OF SERVICES (EXHIBIT A)

The Scope of Services is based on the following work breakdown structure:

TASK 100 – PRE-STUDY SERVICES: EXISTING INFORMATION REVIEW

TASK 200 – RECREATIONAL VEHICLE (RV) PARK INVENTORY IMPROVEMENTS

TASK 300 – MISCELLANEOUS SERVICES IN “NEW” AREAS

TASK 400 – OLD TOWN EL MIRAGE EVALUATION AND ANALYSIS

TASK 500 – OLD NEIGHBORHOODS OF EL MIRAGE EVALUATION AND ANALYSIS

TASK 600 – PREPARE PROJECT PLAN FOR FIELD CONFIRMATION

TASK 700 - ALLOWANCES - MISCELLANEOUS SERVICES AND OTHER DIRECT COSTS

TASK 100 - PRE-STUDY SERVICES: EXISTING INFORMATION REVIEW

- a. Obtain, and review approved inventory, including notes and communications with 120Water.
- b. Establish point of contact with Arizona Department of Environmental Quality (ADEQ).
- c. Confirm working list of LSL services for inventory use Hazen-Sawyer LSL Framework Technical Memorandum Final Report dated March 27, 2024.
- d. Assumption is that approximately 4,500 unknowns per City of El Mirage email dated March 14, 2025.

TASK 200 - RECREATIONAL VEHICLE (RV) PARK INVENTORY IMPROVEMENTS

- a. Organize service line (SL) confirmation strategy for the three major RV Parks.
 - i. Sunflower RV Resort
 1. Cross-check addresses in LSL Inventory working list (approximately 1000 addresses)
 2. Review if clearly built after 1988 (some extrapolation or statistical assumptions of year of construction will be required, not all year of construction dates will be definite)
 3. Contact RV Park management for construction records and pursue acceptable proof of all entire site with singular proof of construction.
 - ii. Rosewood Estates
 1. Cross-check addresses in LSL Inventory working list (approximately 240 addresses)

2. Review if clearly built after 1988 (some extrapolation or statistical assumptions of year of construction will be required, not all year of construction dates will be definite)
 3. Contact management for construction records and pursue acceptable proof of all entire site with singular proof of construction.
- iii. Pueblo El Mirage RV Resort
 1. Cross-check addresses in Inventory working list (approximately 600 addresses)
 2. Review if clearly built after 1988 (some extrapolation or statistical assumptions of year of construction will be required, not all year of construction dates will be definite)
 3. Contact management for construction records and pursue acceptable proof of all entire site with singular proof of construction.
- b. Document and summarize the inventory updates of addresses from Task 200.
 - i. Coordinate with ADEQ to confirm locations are acceptable to inventory as non-lead, based on as-built or other construction records. Pending ADEQ confirmation, develop a brief technical memorandum (TM) summarizing and describing the water system within the RV Park, focusing on materials used and documentation. One for each of the three locations as defined in Scope sections 200.a.i, 200.a.ii, and 200.a.iii), with a listing of addresses in a TM appendix.
 - ii. Develop a brief cost analysis to establish cost per service removed: by Task 200 analyses and by future field investigation performed by the City.
 - iii. Recalculate unknown SLs remaining and make decision whether to proceed with Task 300.

TASK 300 - MISCELLANEOUS SERVICES IN “NEW” AREAS

- a. Organize an implementation strategy for documentation, including coordination of documentation requirements from ADEQ.
- b. Review orthophotos for non-lead by date, or proof with no structure visible.
- c. Document and summarize the inventory updates of addresses from Task 300.
 - i. Coordinate with ADEQ to confirm if acceptable to inventory as non-lead, based on date of construction proved by orthophotos. Pending confirmation with ADEQ, develop one-page template document per address, showing proof of construction after lead ban year.
 - ii. Do quick cost analysis to establish cost per service removed: by Task 300, compare with Task 200 and by field investigation piloted by El Mirage.
 - iii. Recalculate the remaining unknowns and make decision whether to proceed with Task 400.

TASK 400 - OLD DOWNTOWN EL MIRAGE EVALUATION AND ANALYSIS

- a. Coordinate with City staff, collect and review building, plumbing, other construction related data by address.
- b. Organize implementation strategy for documentation, which would allow for proof of construction materials by paper records. Pending confirmation with ADEQ, develop one-page template document per address, showing proof of construction after lead ban year.
- c. Review orthophotos to look for infill lots built on after 1988. Orthophoto engineering review hours are capped by the project Fee Proposal at 64 hours.
- d. Based on records available, decide if implementation of detailed records review is worthwhile.
- e. Document and summarize the inventory updates of addresses from Task 400.

- i. Coordinate with ADEQ to confirm acceptable to inventory as non-lead, based on construction material proof, or infill lots by orthophoto.
- ii. Do brief cost analysis to establish cost per service removed: by Task 400, compare with previous Tasks.
- iii. Recalculate the remaining unknown services and make decision whether to proceed with Task 500.

TASK 500 - OLD NEIGHBORHOODS OF EL MIRAGE EVALUATION AND ANALYSIS

- a. Search for additional possible sources of construction records available from El Mirage or Maricopa County.
- b. Organize implementation strategy for documentation, which would allow for proof of construction materials by paper records. Pending confirmation with ADEQ, develop one-page document template per address, showing proof of construction after lead ban year.
- c. Review orthophotos to look for infill lots built on after 1988. Orthophoto engineering review hours are capped per the project Fee Proposal at 112 hours.
- d. Based on records available, decide if implementation of detailed records review is worthwhile.
- e. Document and summarize the inventory updates of addresses from Task 500.
 - i. Coordinate with ADEQ to confirm acceptable to inventory as non-lead, based on construction material proof, or infill lots by orthophoto.
 - ii. Do brief cost analysis to establish a cost per service removed: for the Task 500 services, compare the cost to remove with previous Tasks.
 - iii. Recalculate unknowns remaining and make decision whether to proceed with Task 600.

TASK 600 - PREPARE PROJECT PLAN FOR FIELD CONFIRMATION.

- a. First, based on experience of data sources in Tasks 200 – 500 and conversations with ADEQ, determine if there are additional desktop methods to remove more unknowns.
- b. Write a Project Plan (PP) that includes community outreach, phasing / sequencing, staffing and resources, and documentation control to implement field review of the remaining unknown SLs. The PP will include a typical replacement plan should any lead materials be encountered.
- c. Once the PP is approved by the City, provide a Scope of Services and Fee Proposal for PP oversight, implementation, and data management, based on the field SL confirmation work being performed by City staff. If the City elects, provide a Scope of Services and Fee Proposal for PP oversight, implementation, and data management, based on the field SL confirmation work being performed by third-party contractors as subconsultants to Carollo.
- d. Prepare final updated LSL Inventory Study with the results from all Tasks and report to ADEQ.

TASK 700 – ALLOWANCES - MISCELLANEOUS SERVICES AND OTHER DIRECT COSTS

The direct costs that Carollo will be reimbursed for miscellaneous services and/or other direct costs (ODCs) such as, but not limited to, printing, mail, courier service, travel, and lodging.

FEE PROPOSAL (EXHIBIT B)

The scope of service described in Tasks 100 through 700 are submitted on a time and material, not-to-exceed basis for a cost of \$126,000.

PROJECT SCHEDULE (EXHIBIT C)

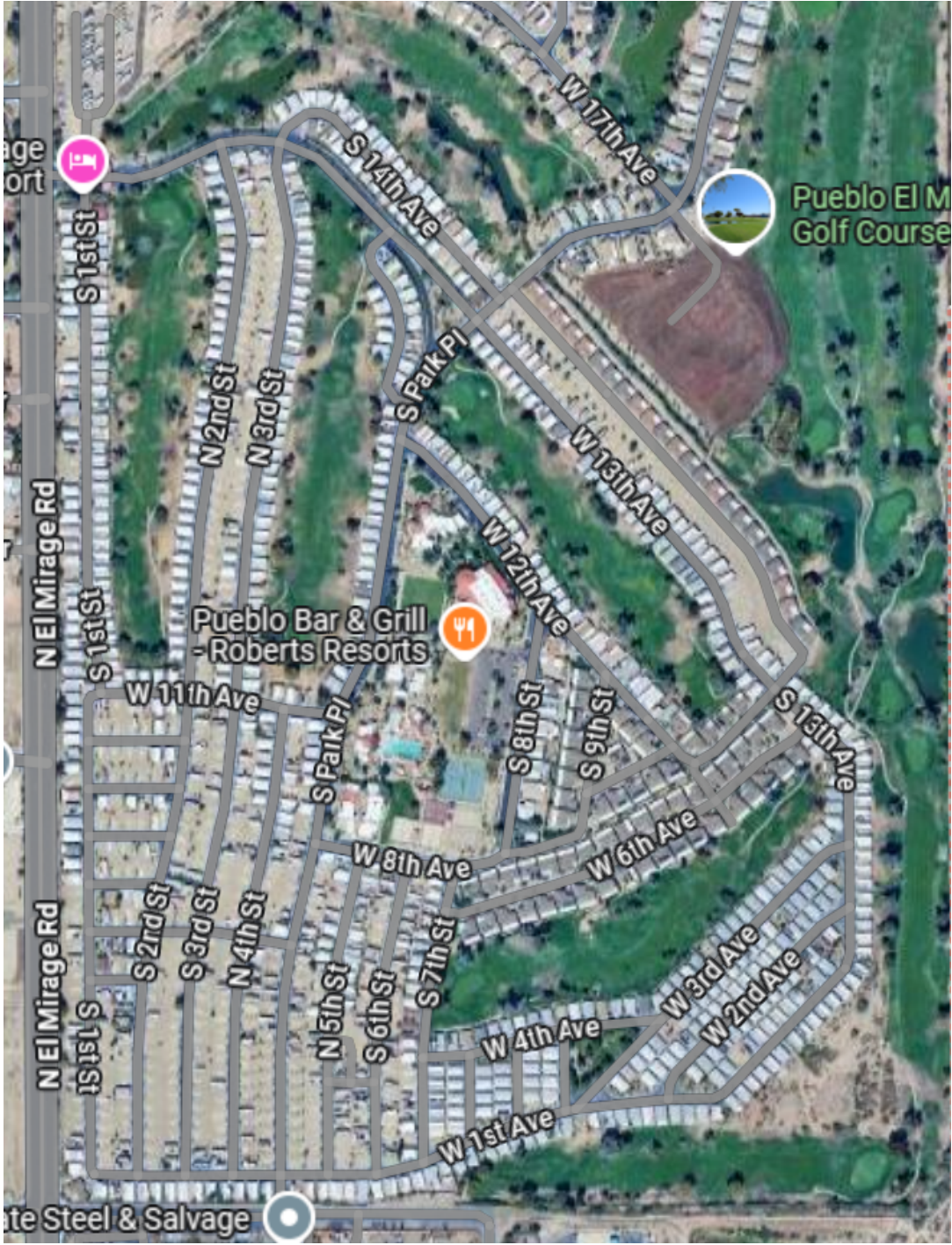
This project is estimated to take twelve (12) months to complete from Notice-To-Proceed, estimated as September 2025 through September 2026 at this point in time.



Sunflower RV Resort



Rosewood Estates



Pueblo El Mirage RV Resort