



SAN JOSE WATER

DECODING THE CHANGES IN LEAD AND COPPER REGULATIONS

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LSL INVENTORY
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Lead and Copper Rule (LCR): Overview and Purpose

- Established in 1991 by the EPA
 - Designed to protect public health by reducing lead and copper levels in drinking water.
- Addressing Lead and Copper Risks
 - Lead leaches from old lead pipes and plumbing fixtures, posing health risks.
 - Copper, while less hazardous, can still cause health issues at high levels.
- Action Levels
 - Lead: 15 parts per billion (ppb)
 - Copper: 1.3 parts per million (ppm)

LCR Requirements

- Prioritize sampling from sites with lead sources in contact with drinking water
- Collect first-liter samples after water has been stagnant for at least 6 hours
- Highest priority:
 - Copper pipes with lead solder
 - Lead pipes
 - Lead service lines
- Systems serving >50,000 people must have corrosion control treatment



Corrosion Control

Strategies and treatments used by water utilities to prevent lead and copper from leaching into drinking water from pipes, plumbing fixtures, and other materials.

pH and Alkalinity Adjustment: Increase pH to reduce corrosion using Lime, Soda Ash, or Caustic Soda.

Corrosion Inhibitors: Use chemicals like orthophosphates to form protective pipe coatings.



Limited exception- *naturally occurring corrosion control*

If a water system's source water naturally contains minerals that provide sufficient corrosion control, they might not need to implement additional treatment methods.

Requires extensive monitoring of pH, alkalinity, calcium, conductivity, temperature, and orthophosphate



Re-evaluating Lead and Copper Rule: The Impact of Flint, Michigan (2014)

- Water source switched from Lake Huron to the Flint River.
- Corrosion control treatment was not applied.
- Flint River's more corrosive water caused aging lead pipes to release lead into the drinking water, leading to a public health crisis.



Lead and Copper Rule Revisions (LCRR)

Purpose: Strengthen protections against lead and copper in drinking water

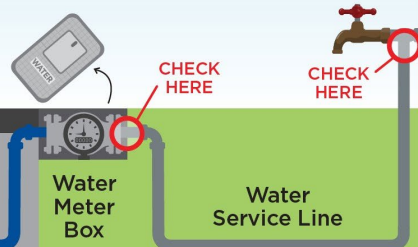
- The EPA released the LCRR in January 2021, with a compliance date of October 16, 2024.
- Key Enhancements:
 - *Required lead service line inventories and replacements*
 - Mandated testing at schools and childcare facilities
 - Increased transparency and public education requirements
- Building on the Original Rule:
 - Focused on identifying and removing lead risks in high-priority areas

Overview of Drinking Water Service Lines



A **drinking water service line** is the pipe that connects a water utility's distribution main (usually located under a street) to an individual building or home.

The service line delivers treated drinking water from the public water supply to the property.



customer-owned

Service lines can be made from various materials, including copper, plastic, or, in older systems, lead.



Copper

If you scratch a copper pipe with a penny, the color of the pipe is similar to the penny. A magnet **will not** stick to copper.



Galvanized Steel

If you scratch galvanized steel, it is not easily scratchable and the color is a dull gray. A magnet **will** stick to it.



Plastic

A plastic pipe can be various colors such as white, black, blue, green, etc., which won't change when scratched. A magnet **will not** stick to plastic.



Lead

Lead pipes scratch easily and the scratched surface is shiny and silver. A magnet **will not** stick to a lead pipe.

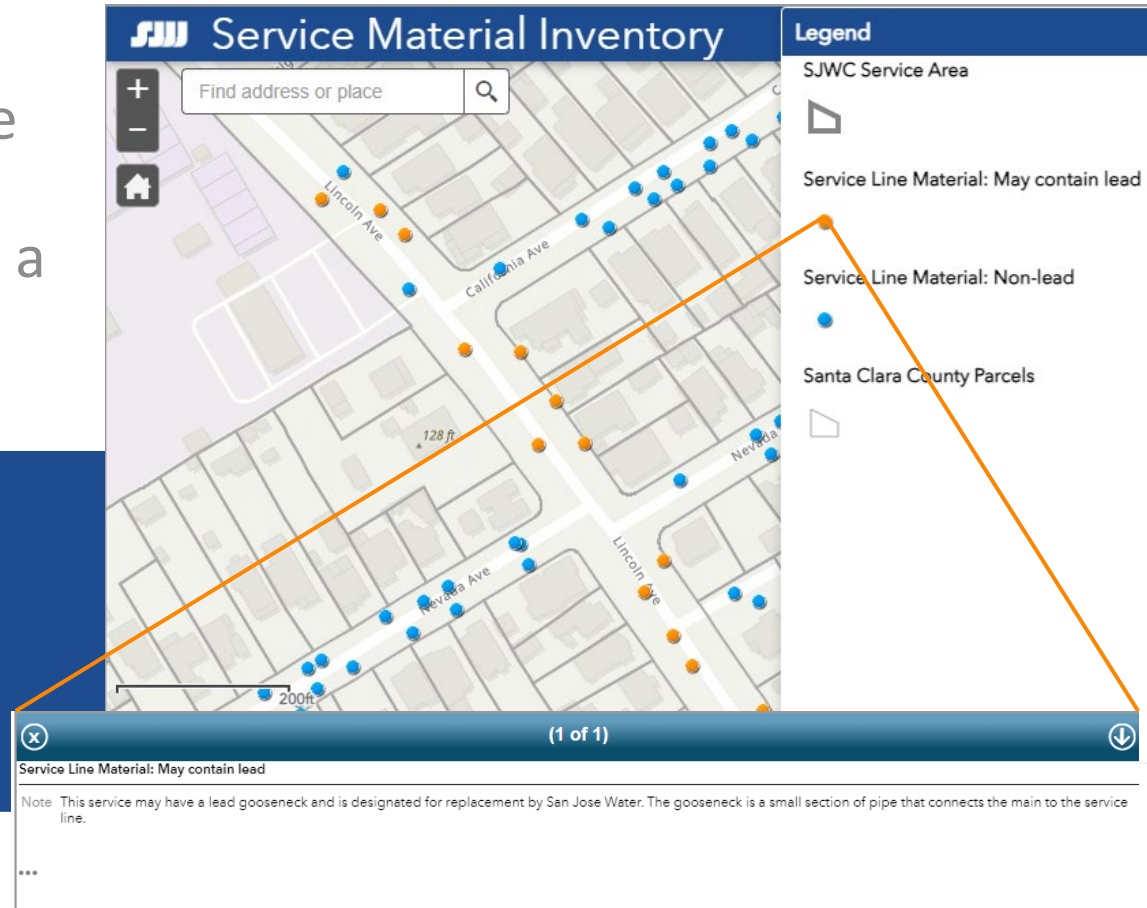
***Sometimes found connected to pre-1948 service lines, a gooseneck is a short, flexible piece of lead piping used to connect the main water distribution pipe to the service line*

Mapping SJW's Utility Service Lines: Findings from the 2019 Inventory

- California Senate Bill 1398 and Senate Bill 427, directed all California public water systems to prepare and submit a service line inventory of utility-side customer services.

SJW reported 233,608 service lines in the service area.

- No lead service lines found.
- Six lead fittings identified (goosenecks).



Addressing Legacy Lead Goosenecks: Insights from the 2019 Investigation

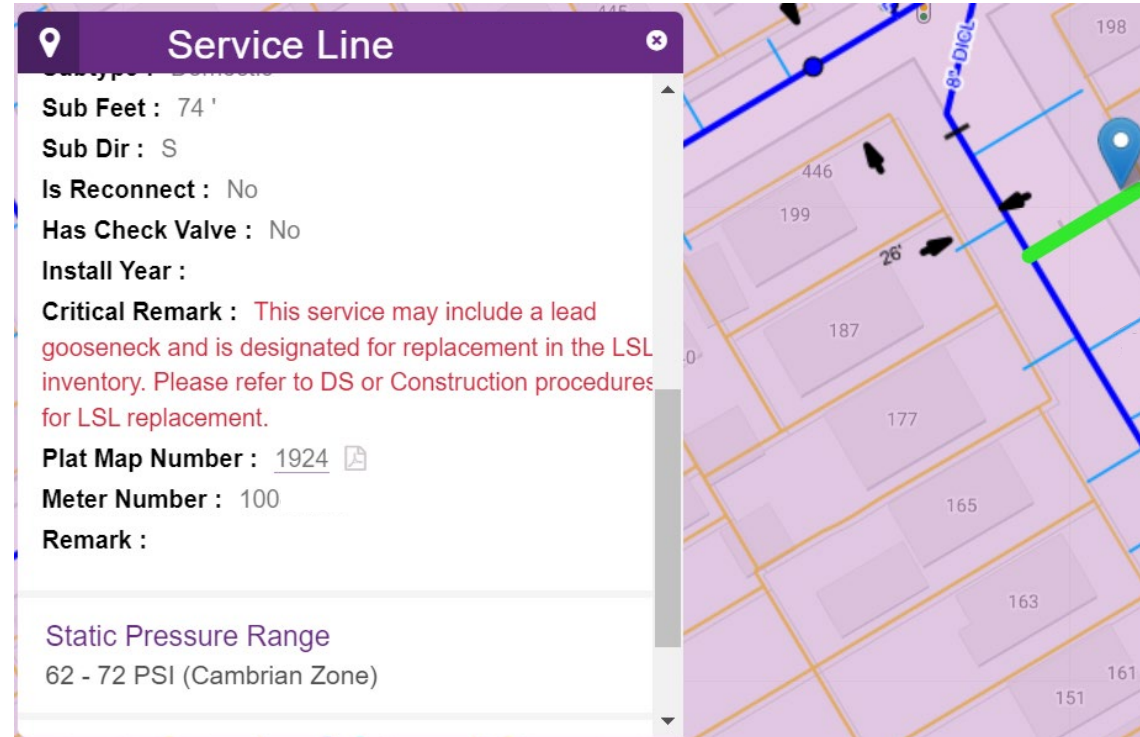


*Lead gooseneck removed from
Asbury St in San Jose 2023*

- Fewer than 1,000 lead goosenecks remain out of 6,500 pre-1948 lines
- Found on lines from 1932–1945
 - Downtown San Jose, Saratoga, and Los Gatos
- 19 water main segments confirmed with goosenecks
 - 1,181 pre-1948 water main segments may have them
- Only found on cast iron mains, followed by galvanized lines—guiding future searches

Building Safer Water Systems: Service Line Upgrades (2020–2030)

- SJW's 2019 service line inventory identified a need to remove lead goosenecks.
 - *No lead service lines were discovered.*
- There are no utility-side lead service lines in schools or daycares.
- Service replacements are prioritized based on a water main risk analysis.
- Over 6,000 service lines will be replaced, targeting 10% per year.
 - As of 10/30/2024 1,882 service lines have been replaced.



SJW tracks any potential lead goosenecks using its internal GIS/Asset Mapping System

SJW is committed to removing all remaining service lines that may have goosenecks by December 31, 2030.

Service Line Inventory:

Ensuring Safe, Lead-Free Water

SJW has never found a lead service line in the system, although lead goosenecks can sometimes be found connected to water mains installed before 1948.

- San Jose Water is dedicated to eliminating lead from our distribution system and ensuring safe drinking water for all customers.
- The 2019 Service Line Inventory met DDW requirements but does not fully align with the Lead and Copper Rule Revisions (LCRR).
- Current inventory limitations include missing service line material data for:
 - The customer portion of the residential and commercial services
 - Fire services
 - Irrigation services

2024 Service Line Inventory- Methods

• Predictive Models

- With industry experts, SJW used advanced tools to predict service line material
- Focus on high-probability areas based on past data.

• Stratified Random Sampling

- Service lines grouped by factors like age and material.
- Service line materials were checked at the meter box
- Random samples verify predictions, covering all risk categories.

Year of Water Main Installation	Number of Service Lines Connected to Mains	Number to Physically Verify ^{1,2}	Verification Locations		
			Water Meter, Customer Side	Water Meter, Utility Side	Gooseneck
1880 - 1886	1,780 total ³	89	Yes	Yes	If utility service is found to be galvanized iron
1887 - 1896		89	Yes	Yes	
1897 - 1906		89	Yes	Yes	
1907 - 1916		89	Yes	Yes	
1917 - 1926	1,092 ³	218	Yes	Yes	No
1927 - 1936	1,521 ³	306	Yes	Yes	
1937 - 1948	2,481 ³	333 ⁴	Yes	Yes	
1949 - 1986	In progress	383	Yes	Yes	No
1987 - 2024	In progress	Zero ⁵	No	No	No

Notes:

1. Verification numbers determined using methodology developed by Michigan Dept. of Environment, Great Lakes and Energy - Drinking Water and Environmental Health Division.

2. Numbers based on worse-case scenario that no service lines could be declared non-lead from initial data analysis.

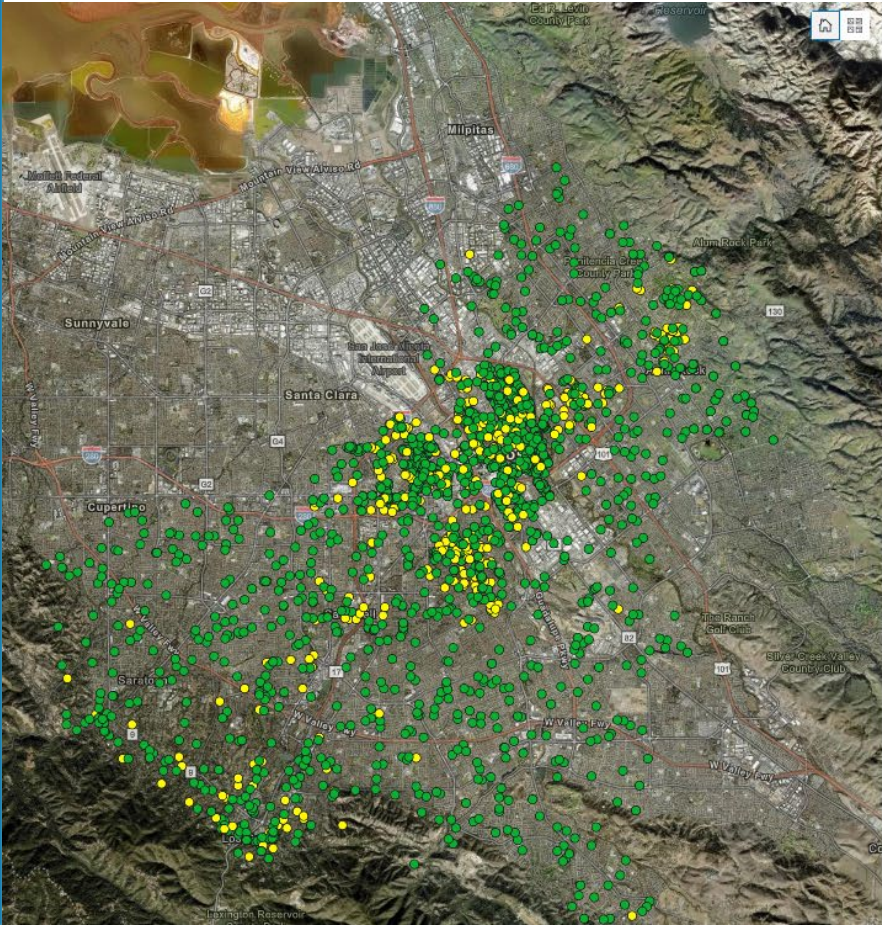
3. Per 2017 Gooseneck Study

4. Conservatively assumes that number of unknown services is >90,000 but <228,000

5. Services after 1987 are declared non-lead and do not require verification

Data Refinement

- Results from each sampling round were reviewed, and the predictive model was updated to improve accuracy.

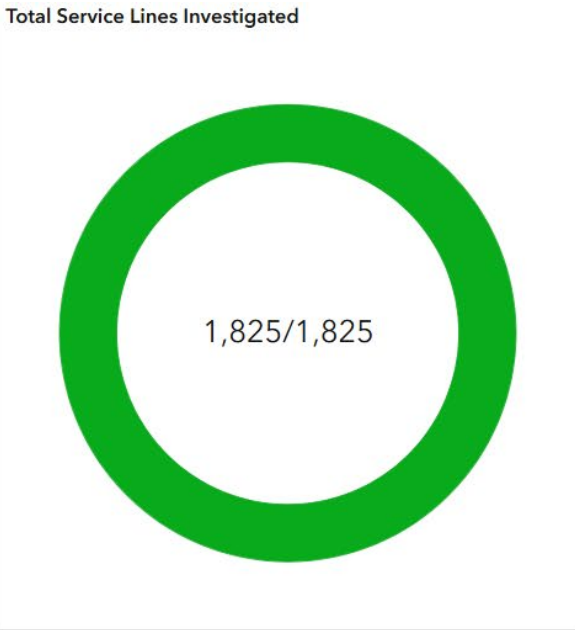


Status	Service Line Count
Completed	823
In Progress	998
In Progress QC	4
To Be Completed	325

Overall Material	Service Line Count
Galvanized	11
Non-Lead	474
To Be completed	1
Unknown	337
Completed Service Lines	823

Customer Material	Service Line Count
Galvanized	87
No	1
Non-Lead - Copper	356
Non-Lead - Plastic	120
Unknown - Material Unknown	258
Unknown - Unlikely Lead	1
Completed Service Lines	823

Utility Material	Service Line Count
Galvanized	5
Non-Lead - Copper	413
Non-Lead - Other	2
Non-Lead - Plastic	94
Unknown - Material Unknown	299
Unknown - Unlikely Lead	10
Completed Service Lines	823



Customer Self Reporting

- **Cross-Checking**

- The information you provided through the Service Line Questionnaire was cross-referenced with any existing records.

- **Model Accuracy**

- Your input improved our predictive model's ability to identify service line materials.

- **Better Focus**

- With validated data, we were able to prioritize our field verification locations.



Can you help
us find some
information?



Over 3,000 responses received!



Service Line Inventory Summary

Inventory Summary by Ownership	SJW Main System		Cupertino System	
	Number of Water System Owned Service Lines	Number of Customer Owned Service Lines	Number of Water System Owned Service Lines	Number of Customer Owned Service Lines
Lead	0	0	0	0
Galvanized	5036	13652	44	258
Galvanized Requiring Replacement	0	0	0	13
Non-Lead - Copper	28996	1343	491	326
Non-Lead - Plastic	21289	5010	1	161
Non-Lead - Other	181020	216336	3858	3636
Unknown	0	0	0	0
TOTAL	236341	236341	4394	4394

Service Line Material Classification	Definition
Lead	Any portion of the service line is known to be made of lead.
Galvanized Requiring Replacement (GRR)	The service line is not made of lead, but a portion is galvanized, and <i>the system is unable to demonstrate that the galvanized line was never downstream of a lead service line.</i>
Non-Lead	All portions of the service line are known NOT to be lead or GRR through an evidence-based record, method, or technique.
Lead Status Unknown	The service line material is not known to be lead, GRR, or non-lead line. For the entire service line or a portion of it (in cases of split ownership), there is no evidence to support material classification.

Easily Access the Service Line Inventory

Service Line Material Inventory

Search by address or APN

Service Line Material (SJW)

Address	110 W TAYLOR ST
SJW Side Material	Copper
May have Lead Goose Neck (designated for replacement)	No

Information

San Jose Water Company (SJW) provides location of utility owned and each customer service line material in the service area in accordance with updated EPA regulations regarding lead and copper materials in water systems.

Legend

Left side of the symbol represent San Jose Water owned service line
Right side of the symbol represent customer-owned portion of the service line

San Jose Water Material

- Copper
- Galvanized
- Plastic
- Lead
- Non-Lead

Customer Material

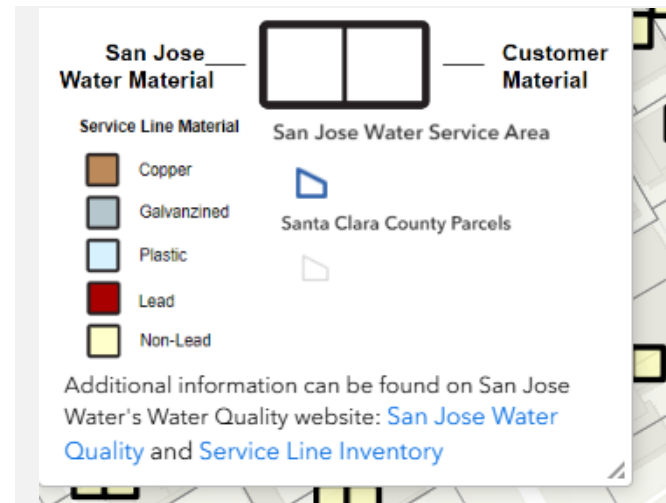
San Jose Water Service Area

Santa Clara County Parcels

Additional information can be found on San Jose Water's Water Quality website: [San Jose Water Quality and Service Line Inventory](#)

Validating and Expanding Our Service Line Data

- Over the next 5 years we'll be performing field validations of predicted service line material at nearly 400 locations
 - Combination of “potholing”, verification at the meter, and on customer property
- Additional field checks to be conducted through 2030
- Online inventory will be updated with new data monthly



Lead and Copper Rule Improvements (LCRI)

- Increases testing frequency in high-risk areas with quicker response times.
- Introduces 5th liter sampling to better capture lead levels in service lines.
- Targets lead exposure risks in schools and childcare facilities.
- Requires detailed inventories, improved mapping, and proactive customer updates.
- New lead action level set at 10 ppb, triggering earlier interventions.

The final rule focuses on key areas that will protect our communities



Achieving Lead Pipe Replacement Within 10 years



Locating Legacy Lead Pipes



Improving Tap Sampling



Lowering the Lead Action Level to 10 µg/L



Strengthening Protections to Reduce Exposure



Communicating Transparently and Frequently

Preparing for Lead and Copper Rule Improvements (LCRI) in 2025



Sampling in Schools and Childcare Facilities

No Lead Service Lines: SJW's system has no lead service lines.

Previous Testing: Completed lead testing at K-12 public schools in 2018-2019.

Upcoming Sampling: New round of sampling in schools and childcare facilities scheduled for Q1 2025.



System Monitoring

Residential Sampling: Routine tap sampling will be conducted at 100 homes in April and September 2025 to monitor system-wide lead levels.

It's important to note that SJW has never exceeded the Lead Action Level.

Conclusion and Key Takeaways



San Jose Water remains dedicated to maintaining a lead-free drinking water system that meets and exceeds regulatory standards.



Through the Lead and Copper Rule Revisions and Improvements, we're taking concrete steps to continue to monitor, manage, and mitigate any potential lead exposure risks.



Our ongoing efforts in inventory expansion, customer engagement, and field verification underscore our commitment to transparency and community trust.



With new regulations on the horizon for 2025, we're proactively strengthening our processes and infrastructure to support lasting resilience and reliability in our water system.

Building a Better Water System Together



- **Thank You for Your Participation**

- Your contributions have been invaluable in creating a more transparent and informed water system.

- **Our Commitment to You**

- We remain dedicated to providing the highest quality service and will continue to prioritize the safety and reliability of your water.

- **Together, We're Making a Difference**

- Every effort, from self-reporting to field verifications, and lead sampling at the tap, helps us ensure a resilient water supply for our community.



Thank You