

Yorktown Water Department

Proposal: Service Line Inventory

Submission To:

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Response Submitted By:

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Service Line Inventory

Introduction:

Service line inventories are the foundation from which water systems take action to address a significant source of lead in drinking water - lead service lines (LSLs). Establishing an inventory of service line materials and identifying the location of LSLs is a key step in getting them replaced and protecting public health.

A comprehensive and accurate inventory has many additional benefits beyond regulatory compliance. Inventorying service line material permits notification to consumers about potential lead risks affecting them, which can facilitate customer actions to reduce lead in drinking water, including flushing, use of filters certified to reduce lead, and customer-initiated LSLR. Inventories allow water systems to publicly track their progress on LSL identification and replacement, engaging the community and enhancing transparency. Inventories can also help water systems and consumers determine the source of high lead levels in drinking water at a home or building and the possible solutions for reducing exposure. Inventories can also make LSLR programs more efficient. Even incomplete inventories may create cost-saving opportunities for water systems by better targeting locations served by LSLs, stretching the value of internal or external funding that water systems receive, such as from the BIL. In addition, service line inventories can help inform decisions for other drinking water rules and could inform future needs surveys and potential future costs.

Objectives:

The LCRR requires CWSs and NTNCWSs to develop a publicly available service line inventory that includes material classifications (Lead, Galvanized Requiring Replacement (GRR), Non-Lead, or Lead status unknown) of all service lines connected to a public water distribution system (40 CFR §141.84(a)(2)). This inventory must define service line ownership, and where dual ownership applies, materials must be defined on both the PWS and customer portion of the line to accurately provide a single classification per service line.

Yorktown and 120Water are entering into an agreement to collaborate and develop a Preliminary Service Line Inventory. A Preliminary Service Line Inventory or *Records Based Inventory*, is an initial evaluation of all records that are publically available and widely available within the Utility. Establishing a Preliminary Service Line Inventory is the first step in achieving compliance with Revised Lead and Copper Rule. The objective of this scope of work is to establish a Preliminary Service Line Inventory within the defined term duration.

Scope of Work:

Developing a preliminary inventory is Phase I of the LSLI process. The goal is to identify, gather, organize, clean and categorize the data appropriately for Implementation into the 120Water Platform. Here is the process describing the various sections for Phase I of the LSLI process:

- The *Implementation* section outlines the steps that begin once the 120Water Platform has been provision and distributed to the PWS
- The *Consider* section outlines the steps that follow once we work with the client to identify data sources and receive the data from the client
- The *Clean* section details steps for bringing the data into a coding environment and preparing the data so that it can be combined
- The *Combine* section details steps for merging data from different sources into a centralized LSLI data source. It is likely that the clean and combine processes will overlap when interacting with the data
- The *Verify* section outlines the steps for organizing the data so that Verify can be budgeted and prioritized
- The *Report* section outlines the steps for reporting the inputs that are auto populated and efficiently reported to the State.

Implementation

120Water will implement a proprietary software built specifically for water systems to manage compliance with the revised Lead and Copper Rule to serve as the foundation to digitize, track, report, and manage all aspects of the development of the Lead Service Line Inventories, and any subsequent compliance requirements. Implementation will begin the next business day after the work order has been executed. 120Water's Client Success team will begin conducting outreach with a goal of scheduling an official client kickoff meeting. In this meeting, the client and 120Water will further discuss the programmatic details, deliverables, timelines and begin investigating some preliminary data sources. Clients will receive an invitation to access their platform at the time of this meeting. The client will be asked to answer questions of available data sources.

<u>Consider</u>

The first step is to determine the best way to pull together the data set by leveraging some unique combination of the data sources that were previously identified. The goal is to consider "combine potential" by taking a closer look at the data. When developing a records-based LSLI, the current LCRR language permits the following as records:

(i) All construction and plumbing codes, permits, and existing records or other documentation

which indicates the service line materials used to connect structures to the distribution system. (ii) All water system records, including distribution system maps and drawings, historical records on each service connection, meter installation records, historical capital improvement or master plans, and standard operating procedures.

(iii) All inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system.

(iv) Any resource, information, or identification method provided or required by the State to assess service line materials.

It should be noted that the State may approve other sources of information not listed below for a system to use in their preliminary inventory. As states come up with their own policies, more information around these additional, acceptable sources will come to light. EPA is in the process of drafting and releasing Lead Service Line Inventory Improvements, as those are released, the Preliminary Inventory may be adjusted.

Included Data Source Processing:

Data Variable / Dataset		
Customer Billing Export (csv or xlsx)		
GIS Shapefiles		
Work Orders Export (csv or xlsx)		
Tax Parcel Data / Records		

Reference **Data Value Examples** for further insights for the types of data 120Water is seeking to capture from these sources. This is located at the end of this document.

Data Source Processing Not Included :

*** Managed Services Required***

Data Variable / Dataset			
Work Orders (hard copy or non csv or xlsx)			
As-Builts or Plat maps			
Tap Cards or similar resource			
Hard Copy Documents			

*** IMPORTANT ***

As-Built, TAP Card or other hard copy records can be a very important and viable source of data when developing a service line inventory. 120Water Program Consultants will work with you to identify the existence, completeness and impact of these records, however there will be an additional cost for the **digitization** (collection and scanning) and **transcription** (data processing and interpretation) of these data sources to be applied to your inventory.

120Water will present the fee for the implementation of these services and the process of transporting hard copy records to our possession.

Clean & Combine

Cleaning and combining the data means to modify, reorganize, and adjust the data in a way that prepares it for more in-depth analysis. Cleaning and combining data happen simultaneously and the process used is contingent on the type of data sources provided and how the data is organized.

120Water Program Consultants will review and analyze all records to determine which locations in Yorktown service area are known to be Lead, Non-Lead, GRR or Unknown which permits identifying areas where LSL's are most likely to exist.

<u>Verify</u>

At this point in the process, a compliant Service Line Inventory has been reached. The goal of this stage is to understand the inventory findings and evaluate what the future holds. Through the Verification Workshop, 120Water will provide a detailed summary with the recommendations of how to verify lead status unknown given the various methods approved by the EPA but also the State Agency. Within this report, 120Water will provide a cost analysis for the verification efforts. As part of the Services 120Water may use data Customer has provided (including, but not limited to, personal information) internally to correct, train, develop, and improve 120Water's Services, the 120Water Platform, and products, e.g., to run statistical analyses of inventors, perform predictive analysis, train and improve algorithms, etc.

<u>Report</u>

At this point in the process, the initial data has been collected, assimilated, and placed in a state compliant inventory format. This initial inventory will merely be the starting point for each utility in their quest to identify all of their system service line material compositions.

Deliverables and Work Product:

The following are all of the Deliverables and work product which will be produced and provided as part of this Scope of Work:

- 120Water Platform access/reports/documents:
 - Preliminary Service Line Inventory
 - Locations Based
 - Inventory Classification Report
 - Tier Site Analysis Report
- Verification of Lead Status Unknown Report
 - Recommendation of Verification Methods

120Water Platform:

With an annual license to PWS LCRR, your program will be supported with expanded functionality from the 120Water platform. While PWS Portal enables you to report your inventory to IDEM, PWS LCRR unlocks the ability to run the programs that build the inventory and will set you for success beyond the preliminary inventory submission deadline of October 16, 2024.

		PWS Portal	LCRR
	Lead Service Line Inventory		
	Reporting to State Dashboard (to Template Standards)		
	Public Transparency Dashboard Microsite		
e	LCRR Tier Sites & Sample Locations		
ftwa	Program Management Modules		
S	LSL Verification		
	LCRR Sampling		
	LCRR Communications		
	Lead Service Line Replacement Program Management		
	Consumables (Cost Per Unit)		
	Survey Postcards		
Kits	Samples (1 liter, 1st/5th)		
	Pitcher Filters		
	Letters		

PWS Portal

Cocations Inv	entory State Report	ing						0 ¢	
State Repo	rting							Submit Inve	entory
Current Inventory Pr	evious Submissions								
Compliance Deadli	ine	Verified Service Connections		1	Materials				
579 Days		5,328 of 9,827	(
October 16th 2024		54.22% of Connections V	erified		🕒 Lead 😑 Galvanized	 Non-Le 	ead 🔵 Unknown		
Search	Q .	Showing 100 of 9,827 Assets							T
Unique Service Line ID \$	Street Address	City	State	Zip	Additional Location Notes	Year Built	Sensitive Population	Disadvantaged	l Neighbor
2670950	675 S MAIN ST #200	ZIONSVILLE	IN	46077				Unknown	:
2438182	250 S ELM ST	ZIONSVILLE	IN	46077				Unknown	:
2140885	1367 Hansomcab Wa	ay Griffin	GA	30212		1982		Yes	•
465287	80 BENNINGTON D	R ZIONSVILLE	IN	46077-1163		1977		Unknown	:
465286	6485 E 650 S	ZIONSVILLE	IN	46077-9010		1903		Unknown	:
465285	405 N 1000 E	ZIONSVILLE	IN	46077-9748		1976		Unknown	:

PWS LCRR (Full Platform)



Estimated Timeline:

Time in Month	Data Variable / Dataset	
1	Customer Billing Export (csv or xlsx)	
2	GIS Shapefiles	
1 Tax Parcel Data / Records		
Total Estimated Time: 6 Months		

120Water estimated the duration to complete the development of the service line inventory however this is purely an estimate that could be impacted by the collaboration of the client for scheduling, transferring of the data and the integrity of the data. On average, clients should expect a Preliminary Inventory to Completed within this timeframe.

Time in Month	Data Variable / Dataset	
1-3+	As-Built(s) Review	
2-4+	Tap Card Digitization & Transcription	
TBD	Hard Copy Records (other)	
To be evaluated	Digital Records (As-Builts, Maps, or Work Orders)	
2	Work Orders Export (xlsx or csv)	

*** IMPORTANT ***

120Water can not confidently estimate the timeline to completion without a true understanding of the integrity of the data, however 120Water will work to minimize the timeline and be as efficient as possible.

Project Milestones/Schedule:

Milestone 1 - Client Kick-off Meeting and Platform Delivery

Host: 120Water Client Success Team

Description: The Client and 120Water have hosted and completed the Project Kick-off meeting. In this meeting, the 120Water Platform is shown to the Client with invitations being received by the Client from Client Success. The goal of this meeting is to begin the Client Onboarding Process and establish the External Knowledge Transfer from the Client to 120Water's Client Success and Program Consulting Teams.

Result: Project Kick-off Meeting Complete - Timelines and Expectations Established - Platform Invitation and Delivery

Deliverable: Access to the 120Water Platform

Milestone 2 - Data Investigation Call Complete

Host: 120Water Program Consultant

Description: The most important component of 120Water developing a Preliminary Inventory begins with the external knowledge transfer with an investigation of all of the various data sources that exist within the utility. It is critically important that the 120Water Program Consultant identify and familiarize themselves with these data sources so we can begin developing the Methodology Document as well as internalize the application of organizing, cleaning and merging these various data sources.

Result: Data Investigation Call is complete and a path forward for transfering identified data sources to the 120Water Program Consultant.

Milestone 3 - Inventory Evolution through Public Property Data

Host: 120Water Program Consultant

Description: Tax Parcel Data plays a pivotal role in creating a Lead Service Line. Within this data set includes Home Age, which is an initial source for identifying lead status unknown per various state regulations.

Result: First evolution of Inventory Status from unknowns to classified know or likely known materials

Milestone 4 - Platform Training - Verification Workshop + Workflow

Host: 120Water Client Success

Description: Now that locations and services are loaded into the 120Water Platform, the client needs to be trained on how to access the platform and how to document any verification efforts that take place during the preliminary inventory development phase. This is critical for ensuring all information and data are most up to date.

Result: Client is enabled on how to track information through the platform and directly through the logbook (offline).

Deliverable: Excel Logbook for Field Services if Platform Access is unavailable

Milestone 5 - Incorporation of Batch 1 of Client Data

Host: 120Water Program Consultant

Description: Applying Batch 1 of Client Data to the Preliminary Inventory inclusive of Tax Parcel Data. Customer Billing is mandatory to be included in Batch 1 of Client Data.

Result: Tax Parcels overlaid with Customer Billing Locations equate to a robust starting point for establishing a Lead Service Line Inventory.

Milestone 6 - Baseline Compliant Inventory

Host: 120Water Program Consultant + Client

Description: All Customer Billing Locations have been identified and service lines tied to each location. Service Line materials may be documented as non-lead or likely non-lead (based on home age) and unknown. Unknown service line materials are allowed for the initial preliminary inventory submission.

Result: A preliminary inventory has been established and a plan for further verifying various records continues.

Data Management and Ongoing Support:

120Water's Platform is purpose built for our customers to actively and efficiently manage their inventory and further enhance their programmatic experiences.

Support Services

Should a client experience an issue, trouble logging in, or other concern while using the 120Water solution, contact should be made to the support team who will triage, work to resolve the issue or escalate the issue. Support can be reached in 3 ways:

- Email: support@120water.com
- Phone: 800.674.7961
- Webform: https://120water.com/support/

Software Services (ticket based)

- Software Training
- Program creation (Sampling or Pitcher Filter)
- Single Monthly update to inventory (formatted in 120Water template)
- Tech support/platform user troubleshooting and guidance

Included Monthly Services (ticket based)

- Regulatory guidance on state or federal rule revisions/updates

Upgrade to Managed Services - Additional Fee

- Unlimited updates to inventory (formatted in 120Water template)
- Verification Cost Analysis Report
- Annual Verification Recommendation Plan
- Quarterly Data Sync
 - Customer Billing, Work order, etc (csv or xlsx formatted per 120WA import template)
- Review of updated Customer Billing

- SFTP GIS/Data Connector
 - Automated updates from GIS into 120Water

Data Value Examples:

Data Variable / Dataset	What to Look For			
GIS Shapefiles				
Customer Locations	Includes street addresses or latitude/longitude data			
Service Lines	Where the service lines are located, material type, pipe size			
Meter Locations	Where the water meters are located			
Meter Type	The type of water meter installed, type of customer served detected through meter size (residential versus commercial)			
Tax Parcels	Building age and building assessed value			
Water Mains	Where water mains are located, material type, pipe size			
Zones/Neighborhoods/Wards	Map of how the city/community is organized, helps with LSLI prioritization			
Customer Billing System				
Unique Customer ID	Such as a unique account number or other code used to identify that specific customer			
Unique Location ID	Location code, street address, or latitude/longitude			
Customer Type	Residential, Commercial, Industrial Customer Types			
	All customer type SLs have to be inventoried but PWS might want to narrow in on residential first			
	Commercial and industrial user SLs are typically larger and pump a lot of water through. Lead is not ideal for larger pipes, lead is better for smaller pipes because of malleability. Can help prioritize. If the pipe is > 2 inches, then they <i>likely</i> do not have lead			
Meter ID				

Tax Parcel Data / Records			
Tax Parcel Identification Number (PIN)	Provides a unique identifier to support data merge		
Home Year Built	Right now we cannot use home built date as a justification for classifying materials type. As-built year can be used as a cross comparison point.		
	You can cross check as-built with home built date from the tax parcel data BUT it does not count/ is not accepted as proof from the EPA (unknown really if they will accept it/not clear right now) that an LSL doesn't exist.		
	One example for where As Builts will be helpful is for <i>neighborhoods</i> <i>established/constructed dates</i> . With Yorktown if we can prove if a neighborhood was built after the state's lead ban date, then EPA is fine with that as proof.		
Lot Size	Smaller lot is more likely to be associated with higher levels of lead, correlation with assessed value		
Property Type	Fallback if we do not get this data on Residential, Commercial, and Industrial from the client		
Latitude/longitude	Location identifier (If client cannot provide this data)		
Street Address	Location identifier (If client cannot provide this data)		
Home Assessed Value	Correlation between home value and probability of lead in SL and internal plumbing (the lower the home value, the higher the SL probability)		
	Useful for environmental justice considerations		
Work Order System			
Service Line Repairs	Looking for material installed, date installed to cross-reference with Ban Dates (1988-1990), pipe size		

Service Line Replacements	Looking for material installed, date installed to cross-reference with Ban Dates (1988-1990), pipe size	
Meter Repairs	Pipe materials on either side of meter location, date installed, pipe size	
Meter Replacements	Pipe materials on either side of meter location, date installed, pipe size	
Tier Sites Data		
Street addresses	Can use street addresses to connect tier site sample results to specific addresses in our baseline file	
Subdivisions or neighborhoods	Can use this as supplemental information to help us understand whether or specific subdivision or neighborhood has a lot of lead exceedances	
Lead concentrations from sample results (ppb or ug/L)	Use this information to help us understand the probability of a lead service line	
LCR event months and year	Use this longitudinal data to understand how lead concentrations have evolved over time and helps us understand the probability of a lead service line	