

Muskegon County Environmental
Coordinating Council
Muskegon, MI
April 18, 2023

Muskegon Area Water Infrastructure Improvements

Dan Sorek, PE

Prein&Newhof

Outline

Funding

Applications

Purpose

Michigan's Lead and Copper Rule (LCR)

Lead Service Line Replacements (LSLR)



Funding

- SAW
- WAMP
- DWAM
- ARPA
- BIL
- DWSRF
- CWSRF
- LSL



www.kveller.com

Recent Local Funding

- [Michigan Water Infrastructure Funding and Financing Dashboard \(arcgis.com\)](#)

Num	Community	Year	Amount	Grant	Water/Sewer	Description
5675-01	Muskegon	2019	\$11,500,000		Sewer	Sewer Repairs/Replacement
7449-01	Muskegon	2019	\$2,000,000		Water	WM Replacement, LSL
5679-01	Muskegon	2020	\$4,715,000		Sewer	Sewer Rehab/Pump Station Replacement
7466-01	Muskegon	2020	\$4,225,000		Water	WM Replacement, LSL
5767-01	Muskegon	2022	\$3,535,000	\$707,000	Sewer	Sewer Rehabilitation
7565-01	Muskegon	2022	\$3,240,000	\$300,000	Water	LSL
7566-01	Muskegon	2022	\$1,603,000	\$464,070	Water	WM Replacement
7575-01	Muskegon Heights	2022	\$3,640,000	\$3,000,000	Water	LSL
7576-01	Muskegon Heights	2022	\$2,831,500	\$821,135	Water	Water Main Improvements
7467-01	Muskegon	2023	\$9,205,000	\$4,692,745	Water	Water Main Improvements, LSL
7640-01	Muskegon Heights	2023	\$8,400,000	\$8,400,000	Water	WM Replacement, LSL
7731-01	Muskegon Heights	2023	\$3,000,000	\$3,000,000	Water	WM Replacement, LSL
	Total		\$57,894,500	\$21,384,950	36.9%	Grant Funded



Next Rounds of Funding

- FY2024 CWSRF – 250 Applications, \$2.2 Billion Applied
- FY2024 DWSRF – 280 Applications, \$1.9 Billion Applied
- Disadvantaged vs. Overburdened

So what is this all about?

- Lead is harmful especially to infants and children
 - ✓ Impaired Mental Development
 - ✓ IQ Deficits
 - ✓ Shorter Attention Spans
 - ✓ Low Birth Weights
 - ✓ Delinquency, Aggression
 - ✓ Inattention, Social Problems



Lead and Copper Rule (LCR) History

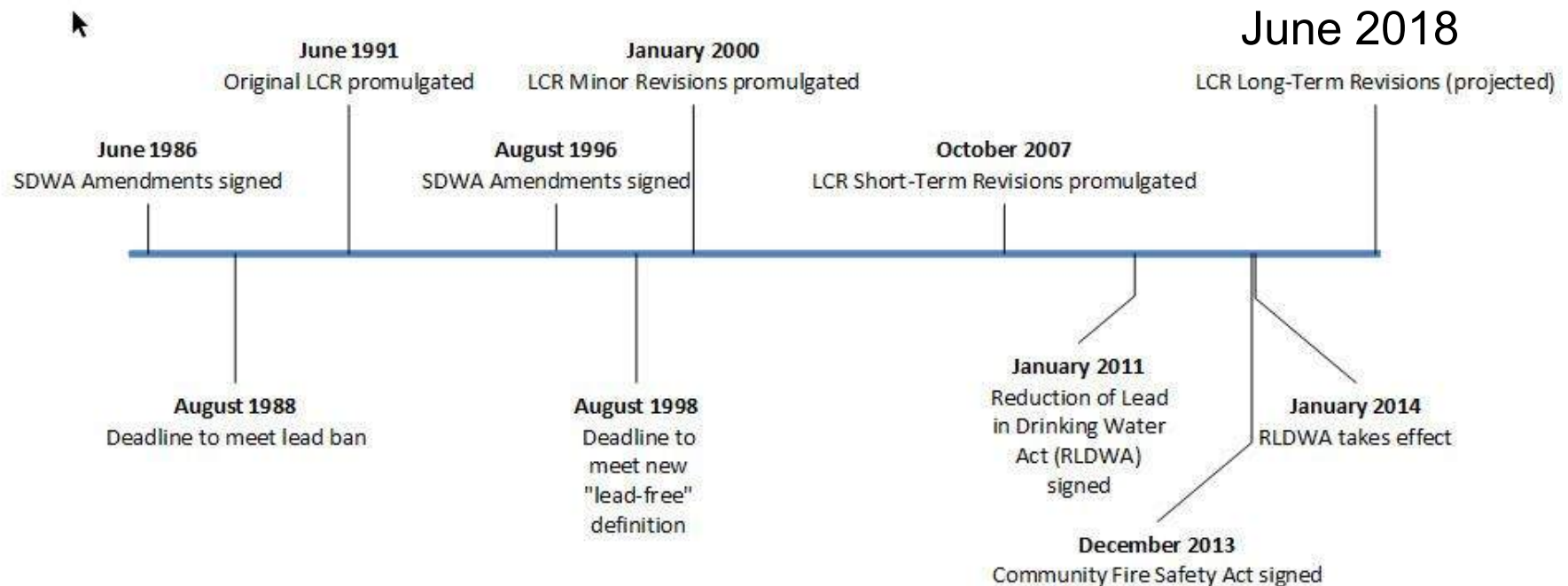
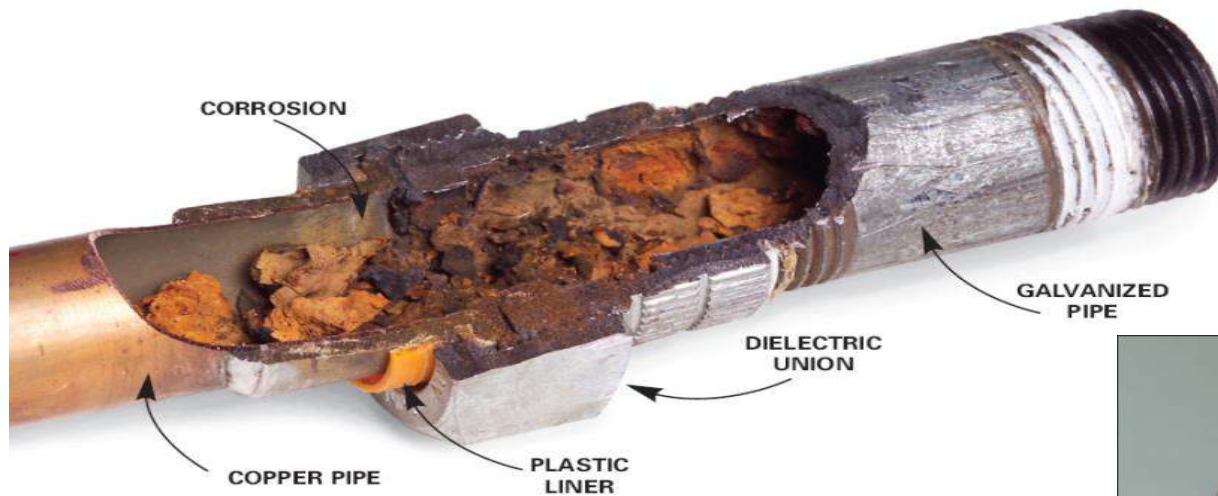


Exhibit 2.1: Timeline of Regulatory Actions Related to the Lead and Copper Rule

How does lead get into the water?



Michigan Recent Lead History

- April 2014 – Flint changes water source
- Sept 2015 – Increased Blood Levels in Flint
- Dec 2015/Jan 2016 – Reconnection to Detroit
- April 2016 – Criminal/Civil Cases
- March 2017 – Governor wants new LCR
- 2nd Half of 2017 – Stakeholder Meetings
- Nov 2017 – Public Meeting
- Jan 2018 – 1st Draft Rule
- March 2018 – Public Hearing
- June 2018 – Rule Finalized





Existing	Revised
Action Level 15ppb	Action Level 12 ppb
Defines Service Connection but not service line. Includes definition for lead service line	Added definition of Service Line and updated definition of Lead Service Line
Distribution system materials inventory maintained by water system, no updates, reporting or field verification required	Requires preliminary (“desktop”) and field verified inventory. Includes public and privately owned portions of service line. Requires periodic reporting, notification and updates
Sampling Pool by Tiers	Revised requirements for sampling pool selection
One First Draw Sample per site	If LSL: Two Samples per site
90 th Percentile based on all samples	90 th Percentile based on highest results per site
LSLR only if exceed AL after installation of CCT	LSLR required @ 5%/year or as part of an approved Asset Management Program
LSLR: Responsibility limited to publicly owned portion of line	LSLR requirement includes public and privately owned portions of LSL
LSLR: does not include replacement of galvanized lines	Includes replacement of galvanized lines that are or were connected to LSL
WQP monitoring requirements	Requires additional parameters and triggers for monitoring
Public Notification and Communication Requirements	Threshold population change for web postings, establishes requirement for Water Advisory Council, revised public education language

Michigan LCR Key Dates

- January 1, 2020: Preliminary inventory based on existing infrastructure
- January 1, 2020: Updated Sampling Pool
- January 1, 2025: AL reduced to 12ppb
- January 1, 2025: Field Verified Inventory



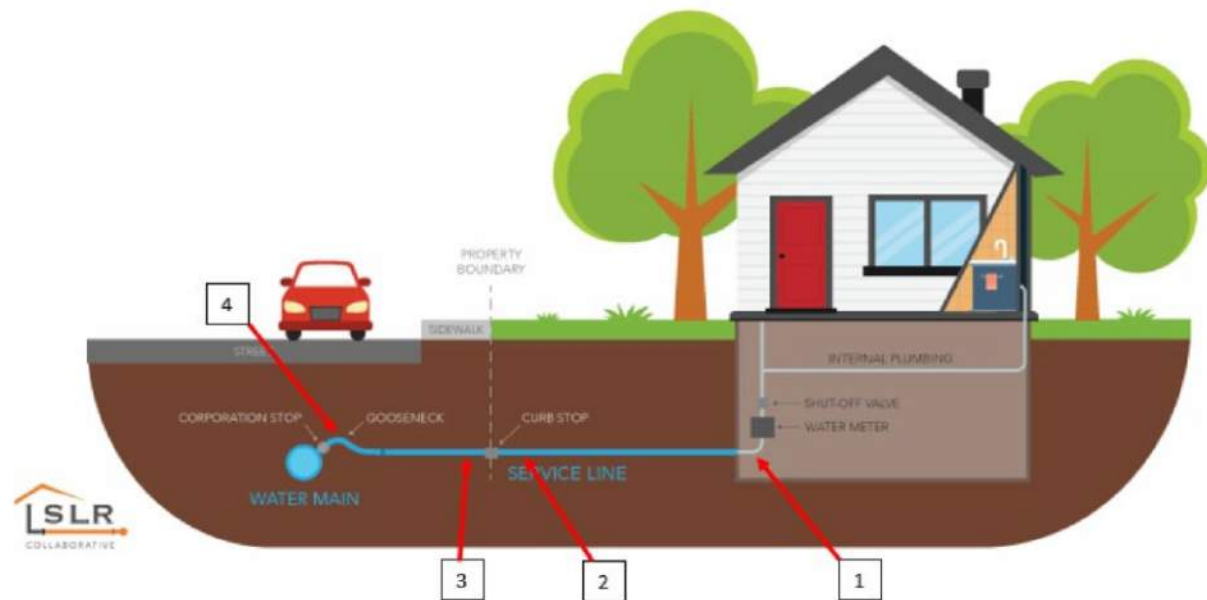
System Inventories - Verification

- 4 Points of Verification

EGL

MINIMUM SERVICE LINE MATERIAL VERIFICATION REQUIREMENTS

- Research History
- Predict, Test, Verify
- Random Sample
- Retain Records



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Michigan LCR Material System Inventory

- Preliminary inventory based on existing information
- Field Verified Inventory
 - Must keep record of refusals
 - If unable to verify, must assume LSL
- Must notify customers if served by LSL
- Requires periodic updates
- Requires submittal to state
- CCR requirements (annual Community Water Quality Report)



Michigan LCR Sampling Revisions

- Sample sites
 - Samples must be collected at sites with lead service lines or lead piping
 - If no lead service lines, collect from single family homes with copper piping and lead solder installed before July 1988
- For Systems with LSL: Two Samples per site
 - First Draw
 - 5th Liter
 - Minimum 6 hour Stagnation
 - No Pre-Flushing
 - Do not remove Aerator
 - Sample Collection by Resident or Water System
- 90th Percentile based on highest result from each site



Michigan LCR Lead Service Line Replacements (LSLR)

- Partial Service Line Replacements are Banned and allowed for Emergencies ONLY
- If AL exceeded with corrosion control – must replace 7% each year
- If AL not exceeded, must replace 5% per year or in accordance with approved schedule in Water AMP
- Must replace lead or galvanized if it **IS OR WAS** connected to lead piping (gooseneck) – no Sunset

(a) A water supply shall replace all lead service lines, and galvanized service lines if the service line **is or was** connected to lead piping. Service lines that are physically disconnected from the distribution system are exempt from this requirement.



Area Lead Levels

- Muskegon Heights – 3 ppb (2020)
- Muskegon – 4 ppb (2020)
- Norton Shores – 3 ppb (2020)
- Fruitport Twp – 3.45 ppb (2022)
- Muskegon Twp – 2.2 ppb (2021)
- N Muskegon – 3.1 ppb (2020)
- Whitehall – 8 ppb (2020)
- Montague – 8 ppb (2020)

NOTE: Testing required every 3 years and is done during the summer months.



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Area Lead Service Lines (Muskegon & N Ottawa County)

WSSN	System Name	Known Lead	Known Galvanized Previously Connected to Lead (GPCL)	Unknown - Likely Lead	Unknown - No Information	Unknown - Likely Not Lead	No Lead or GPCL	Total Service Lines	LSL	5%
2285	Ferrysburg	0	0	0	0	0	1,534	1,534	0	0
2507	Fruitport	0	0	0	0	0	4,563	4,563	0	0
2750	Grand Haven	1,711	0	0	0	0	2,542	4,253	1,711	86
2760	Grand Haven Twp	0	0	0	0	378	5,079	5,457	378	19
4470	Montague	140	503	0	0	640	0	1,283	1,283	65
4590	Musk Co Eastside	0	0	0	0	0	2,783	2,783	0	0
4577	Musk Co Northside	0	0	0	0	0	1,687	1,687	0	0
4570	Muskegon	0	0	11,197	0	0	1,701	12,898	11,197	560
4580	Muskegon Heights	0	95	3,338	0	0	358	3,791	3,433	172
4780	North Muskegon	1,075	462	0	0	0	234	1,771	1,537	77
4850	Norton Shores	161	29	0	287	0	9,535	10,012	477	24
5800	Roosevelt Park	254	128	0	0	0	1,030	1,412	382	20
6235	Spring Lake Twp	0	0	0	0	0	4,185	4,185	0	0
6230	Spring Lake Village	186	0	50	64	971	0	1,271	1,271	64
7100	Whitehall	300	120	380	80	210	400	1,490	1,090	55
Total								58,390	22,759	1,142

New Saddle and Corporation Valve



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Chinese Finger



Entrance to basement



Coil in basement



Typical “pull”: curb box to meter



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New Pulling Equipment

- Contractor in Kalamazoo purchased KOBUS equipment from England
- <https://www.youtube.com/watch?v=A0eC8pyZR6w>
- <https://youtu.be/92sPLYf3chw>



Scrap Disposed to Landfill



Communication is Key

Public Notice – Please Read

May 25, 2018

City of Kalamazoo Lead Pipe Water Services Replacement Project

Our records indicate that your home address may have a lead pipe water service line. The City of Kalamazoo is scheduling technicians to investigate and replace any lead services in coordination with its 2018 street reconstruction projects to minimize disruption.

Frequently Asked Questions

How does this involve me?

If you are a resident and/or home owner on **Hays Park Avenue, Reed Avenue, James Street, or Race Street**, your water service is scheduled for inspection and possible replacement in the summer of 2018.

This is not optional. You need to schedule your inspection and pipe replacement as soon as possible. If you are renting, please provide your landlord's name and phone number when you schedule your inspection.

On the day of your scheduled replacement, you

How do I schedule my inspection/replacement?

Please go to this URL address and fill out this form as soon as possible: <https://goo.gl/MyMhF1>

You may also call Mark Moored from Prein&Newhof at 269-779-4527 or at mmoored@preinnewhof.com between the hours of 7:00AM – 3:30PM, Monday – Friday.

How will this affect my property?

Prior to the service being replaced, you may see

CONSTRUCTION ACTIVITY COULD AFFECT YOUR DRINKING WATER QUALITY

State of Michigan

Environmental Assistance Center

800-662-9278 | deq-assist@michigan.gov

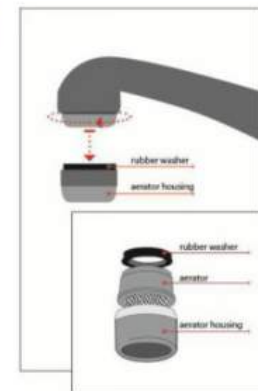
Upcoming construction activity in your neighborhood could affect your drinking water quality. We anticipate this project will proceed smoothly, with every effort made to minimize any inconvenience to you during construction.

Our records indicate that in your neighborhood, some of the pipes connecting homes to the water mains may be made of lead. Lead service lines can increase your risk of exposure to lead through drinking water, especially when the ground is disturbed close to your home. This increased risk is because the ground disturbance could cause particulates to shake free from inside the network of underground pipes. Your water may appear discolored.

During this construction and until lead service lines are replaced, you should take precautions to minimize exposure to lead in your drinking water by taking the following actions:

Clean your faucet aerator. The aerator on the end of your faucet is a screen that will catch debris. This debris could include particles of lead which have fallen off the insides of lead pipe. The aerator should be removed at least monthly to rinse out any debris. During this upcoming construction activity, check your aerator more often. Start by checking it weekly and if no debris is present, return to a monthly schedule.

Flush your pipes before drinking. The longer water sits in your home piping, the more lead may leach from lead-containing pipes, solder or brass fixtures. Anytime a faucet used for drinking or food prep has not been used for six hours or longer, the tap should be "flushed" by turning on the cold water and letting it run until it is as cold as possible. Flushing should not take long (5-30 seconds) if there has been routine daily water use. If there has not been recent daily water use, it could take two minutes or longer for the water to become cold. Your water utility can tell you if longer flushing times are needed if you do not get cold water in a few minutes.



Aerator with sediment

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Post Replacement Instructions



**American Water Works
Association**

Dedicated to the World's Most Important Resource®

ANSI/AWWA C810-17
(First Edition)

AWWA Standard

Replacement and Flushing of Lead Service Lines

Water Service Flushing Recommendations

Upon completion of the work involving your water supply, please follow the recommended flushing procedures below for your internal plumbing:

Flush all your faucets using these steps:

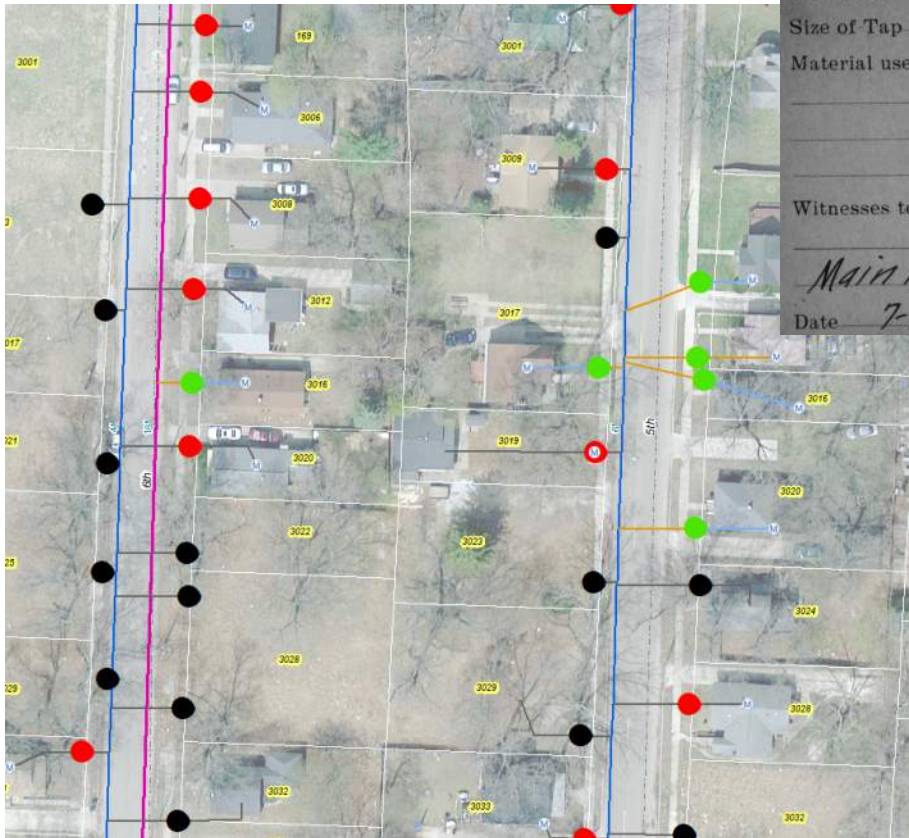
1. Remove faucet aerators from all cold water taps in the building.
2. Beginning in the lowest level of the building, fully open the COLD water taps throughout the building. Be sure to include any exterior spigots.
3. Let the water run for at least 30 minutes at the last tap you opened (top floor).
4. Turn off each tap starting with the taps in the highest level of the home. Be sure to run water in bathtubs and showers as well as faucets.
5. It is not recommended to consume tap water, open hot water faucets, or use icemaker or filtered water dispensers until after flushing is complete.
6. You may also wish to use a home filter for water to be used for drinking and cooking, particularly if you are pregnant or have children under age six. If you would like a water filter certified to remove lead, please contact _____.

Please refer to the enclosed fact sheet from the Michigan Department of Environment, Great Lakes and Energy (EGLE) for more information about your line, including the use of filters and removal of aerators for the best results.

If you should have any more questions or concerns about your water, please feel free to contact the City

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Documentation!



2037 RECORD OF HOUSE SERVICES

Location 536 Reynolds St Permit No. _____

Size of Tap 5/8" Connected to 4 inch Main W.S. Reynolds St.

Material used: Lin. ft. 120 Pipe 3/4"

1 Gooseneck

1 Stop and Curb Box

4 Corporations

Witnesses to Curb Box 25.0' from S.E. corner
20.0' from N.E. corner
Main 130' from p.L.

Date 7-13-20 Signed J.C. Miller

Water Service Location Data				
Building Address 2037 Reynolds			Prime Contractor SWT Excavating	
Parcel Number			Permit Number	
Project Number and Name			Plan Sheet Number	
2211096 City of Muskogee Heights LSL, Contract 4, DWHF 7575-01			NA	
Main	Connection	Service (Main to CS)	Curb Stop (CS)	Service (CS toward Bldg)
St Name Reynolds	Repl	Repl	Repl	Repl
Diameter (IN) 4"	Diameter (IN) 1"	Diameter (IN) 1"	Diameter (IN) 1"	Diameter (IN) 1"
Material Make Ford	Material Copper	Material Copper	Material PEX	Material PEX
Polyswapped <input checked="" type="checkbox"/> Corp <input checked="" type="checkbox"/> TS&V <input type="checkbox"/> Tee	If Used, Diagram Couplings		If Used, Diagram Couplings	
Cast iron main	<input checked="" type="checkbox"/> Ball <input type="checkbox"/> Gate <input type="checkbox"/> Plug		<input checked="" type="checkbox"/> Ball <input type="checkbox"/> Gate <input type="checkbox"/> Plug	
Diagram Service - Include Existing Service Information				Indicate North Arrow
Existing Service Public = Lead Gooseneck to 3/4" Galvanized Existing Service Private = 3/4" Galvanized				

Prein & Newhof

Contact Information:

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Questions?

