

KENTUCKY LEAD WORKING GROUP

DISTRIBUTION / PIPING SUBGROUP PRESENTATION
 LEAD PRESENTATION
 AUGUST 17, 2014

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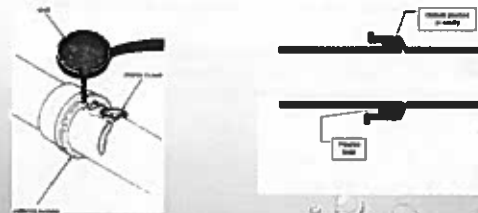
DISTRIBUTION / PIPING SUBGROUP PRESENTATION OVERVIEW

- DISTRIBUTION SYSTEM PIPING MATERIALS
- LEAD IN PIPING MATERIALS
- SDWA / LEAD AND COPPER RULE IMPACT ON PIPING MATERIALS
- SYSTEM INVENTORY
- GETTING THE LEAD OUT

DISTRIBUTION SYSTEM MATERIALS IN USE THROUGHOUT MODERN HISTORY

- WOOD
- LEAD
- CAST IRON – LEAD JOINT – SLIP JOINT – MECHANICAL JOINT
- ASBESTOS CEMENT – AC – TRANSITE
- DUCTILE IRON – SLIP JOINT (PUSH ON) – MECHANICAL JOINT
- PVC – SLIP JOINT – FUSED – GLUED
- HDPE – FUSED – MECHANICAL JOINT
- STEEL – WELDED
- GALVANIZED STEEL
- COPPER
- BRASS
- CONCRETE

LEAD JOINT CAST IRON PIPE



WHY WAS LEAD PIPE USED?

- FLEXIBLE
- DURABLE
- EASY TO WORK WITH
- NOT SUBJECT TO PIN HOLE LEAKS
- PLUMBERS PROTECTING THEIR JOBS

REGULATION OF LEAD IN PLUMBING

- 1986 – CONGRESS AMENDED THE SAFE DRINKING WATER ACT – PROHIBITED THE USE OF PIPES, SOLDER OR FLUX THAT WAS NOT "LEAD FREE" IN PLUMBING OF FACILITIES FOR HUMAN CONSUMPTION. LEAD FREE WAS NO MORE THAN 8% LEAD IN PIPE AND .2% IN SOLDER OR FLUX.
- 1996 – CONGRESS AMENDED THE SAFE DRINKING WATER ACT – REQUIRED PLUMBING FITTINGS AND FIXTURES TO BE IN COMPLIANCE WITH VOLUNTARY LEAD LEACHING STANDARDS. ALSO PROHIBITED SELLING ANY PIPE, FITTING OR FIXTURE THAT WAS NOT LEAD FREE.

REGULATION OF LEAD IN PLUMBING

- 2011 – CONGRESS PASSED THE REDUCTION OF LEAD IN DRINKING WATER ACT – REVISED THE DEFINITION OF "LEAD FREE" BY LOWERING THE MAXIMUM CONTENT OF LEAD IN PIPE TO .25% AND ELIMINATED THE REQUIREMENT FOR LEAD FREE PRODUCTS TO BE IN COMPLIANCE WITH VOLUNTARY LEAD LEACHING STANDARDS.
- 2011 – 2013 – EXEMPTED REQUIREMENTS TO BE "LEAD FREE" FOR PLUMBING FIXTURES USED FOR NON-POTABLE USE, FIRE HYDRANTS, DISTRIBUTION SYSTEM VALVES, SERVICE SADDLES, ETC.

REGULATION OF LEAD IN WATER LEAD AND COPPER RULE

- PRIOR TO 1991 – LEAD LIMIT WAS SET AT 50 PPB AT THE DISTRIBUTION SYSTEM ENTRY POINT
- 1991 – LEAD AND COPPER RULE – ESTABLISHED A MCLG OF 0 PPB, ESTABLISHED TESTING REQUIREMENTS AND FREQUENCY, ESTABLISHED AN ACTION LEVEL FOR LEAD OF 15 PPB, IDENTIFIED TREATMENT TECHNIQUE TO REDUCE CORROSION OF LEAD IN THE DISTRIBUTION SYSTEM
- 2000 – MINOR CORRECTIONS TO THE LEAD AND COPPER RULE – ADDRESS IMPLEMENTATION ISSUES ARISING FROM LEGAL CHALLENGE

REGULATION OF LEAD IN WATER LEAD AND COPPER RULE

- 2004 – MINOR REVISIONS TO EARLIER REVISIONS – CLEANED UP UNADVERTENTLY DROPPED TEXT FROM PREVIOUS REVISION
- 2007 – REVISIONS TO RULE (SHORT TERM REVISIONS) – THESE REVISIONS ADDRESS MONITORING, TREATMENT, CUSTOMER AWARENESS AND LEAD SERVICE LINE REPLACEMENT, THE REVISION ENSURED CUSTOMERS RECEIVED MEANINGFUL, TIMELY AND USEFUL INFORMATION.



? THE BIG QUESTION ? LEAD SERVICE LINE INVENTORY

- RIGHT NOW NO EASY METHOD EXISTS TO INVENTORY LEAD SERVICE LINES
- ONE POSSIBLE APPROACH IS A MULTI-STEP APPROACH WITH EACH SUBSEQUENT STEP REQUIRING MORE EFFORT AND COST FROM THE UTILITY
- WE CAN START WITH A DETAILED REVIEW OF LOCAL PLUMBING CODES, CUSTOMER FILES, OLD SYSTEM MAPS, OLD FIELD BOOKS, PURCHASING RECORDS, BOARD MEETING MINUTES, ETC. TO TRY AND DETERMINE THE LOCATION OF LEAD SERVICE LINES OR THE LAST DATE THAT LEAD SERVICE LINES WERE INSTALLED IN THE DISTRIBUTION SYSTEM
- WE CAN THEN USE OUR GIS SYSTEM TO IDENTIFY AREAS THAT HAVE THE GREATEST POTENTIAL FOR LEAD SERVICE LINES BASED ON THE AGE OF THE WATER MAIN
- FINALLY WE CAN EXCAVATE ADJACENT TO THE METER OR AT THE CORPORATION STOP AND LOOK AT THE SERVICE LINE MATERIAL

? THE BIG QUESTION ? LEAD SERVICE LINE INVENTORY

- ANOTHER POSSIBLE APPROACH IS TO TEST THE WATER AT EACH METER FOR LEAD. THIS WOULD BE AN INDIRECT METHOD BUT QUICKER AND AT LESS COST.
- THE WATER RESEARCH FOUNDATION HAS AN RFP FOR PROJECTS THAT WILL INVESTIGATE SERVICE LINE MATERIAL IDENTIFICATION TECHNIQUES

LEAD SERVICE LINE INVENTORY

CUSTOMER RECORDS



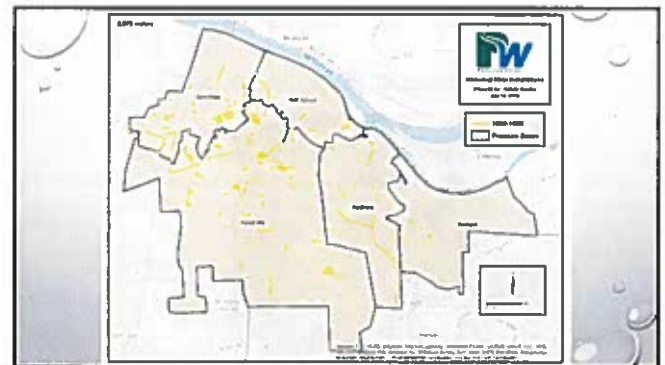
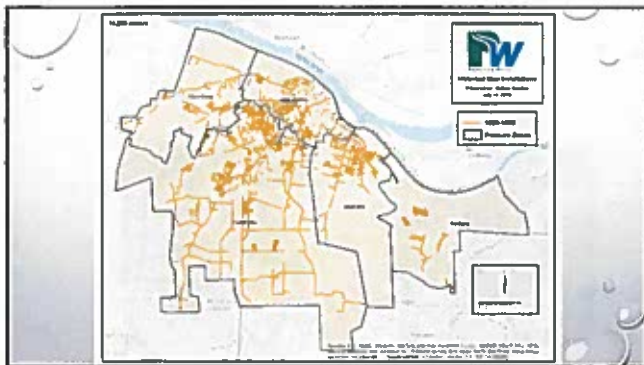
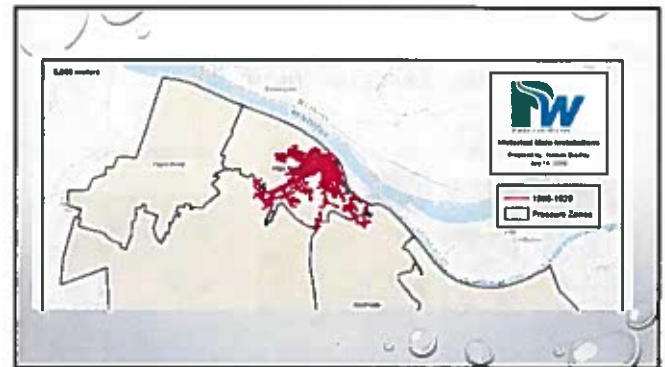
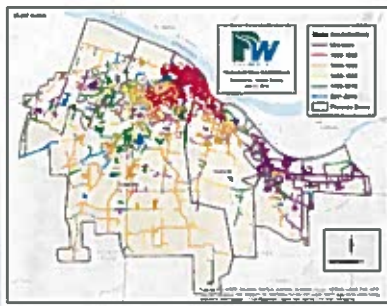
SYSTEM MAPPING

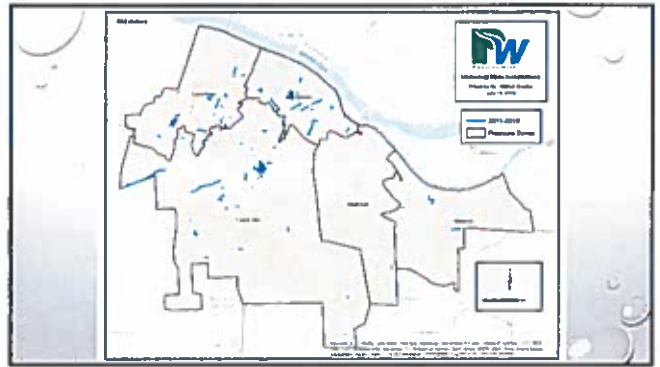
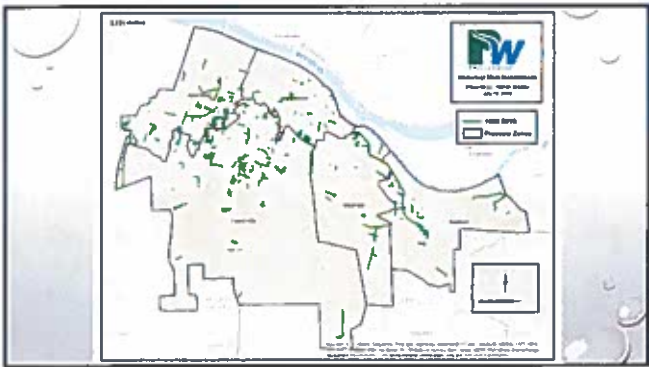


OLD PROJECT BOOKS



LEAD SERVICE LINE INVENTORY






LEAD SERVICE LINE INVENTORY

PREPARATION FOR VACUUM EXCAVATION 	VACUUM EXCAVATION 	PLASTIC SERVICE LINE 
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LEAD SERVICE LINE INVENTORY

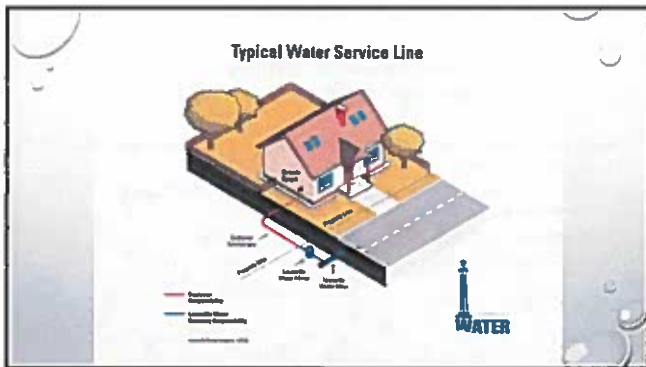
EXCAVATION IN PAVEMENT 	LEAD SERVICE LINE 
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LEAD "GOOSE NECK OR PIG TAIL"



LEAD SERVICE LINES

	
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HOW DO WE ADDRESS LEAD SERVICE LINES ?

- DO NOTHING
- CONTROL CORROSION / TEST AND MONITOR
- ADD PHOSPHATE / TEST AND MONITOR
- REPLACE ALL LEAD 'PIG TAILS' AND SERVICES



Available Water Services & Neofit's Advantages

Neofit is available in lengths ranging from 10' to 100' and is available in 1/2" and 3/4" diameters. It is available in 1/2" and 3/4" diameters. It is available in 1/2" and 3/4" diameters. It is available in 1/2" and 3/4" diameters.

Project Name: [Redacted]

Date of water shut-off: [Redacted]

Hours: 8:00 AM to 5:00 PM

30 Day warranty

2 Year warranty

WATER

Take lead out of contact with drinking water with the Neofit System

Neofit System Advantages

- Available in 1/2" and 3/4" diameters for existing underground water services with leads dimensions up to 12"
- Service performance superior to existing copper and galvanized pipe
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Call us at 1-800-368-3688

CORROSION CONTROL IS THIS THE ANSWER ?

- CORROSION CONTROL WAS REVIEWED BY RENGAO SONG AT OUR LAST MEETING.
- IF WE IMPLEMENT CORROSION CONTROL WE MUST EVALUATE THE DISTRIBUTION SYSTEM TO DETERMINE THE BEST APPROACH FOR EACH SYSTEM. CORROSION CONTROL WITHOUT PHOSPHATES USUALLY RESULTS IN HIGH PH WATER LEAVING THE WATER TREATMENT PLANT.
- ONCE IMPLEMENTED, WE MUST MONITOR THE DISTRIBUTION SYSTEM TO MAKE SURE THE SELECTED APPROACH IS EFFECTIVE. IF NOT EFFECTIVE, WE CAN MODIFY OUR APPROACH.

PHOSPHATE ADDITION IS THIS THE MIRACLE CHEMICAL ?

- POLY-PHOSPHATE WILL NOT PREVENT CORROSION. IT WILL HELP WITH "CLEANING UP" THE DISTRIBUTION SYSTEM.
- ORTHO-PHOSPHATE WILL HELP PREVENT CORROSION IN THE DISTRIBUTION SYSTEM BY COATING THE INTERIOR OF PIPES.
- PHOSPHATE ADDITION WORKS BEST AT A MODERATE PH OF 7.4 TO 7.8.
- TYPICAL DOSES OF PHOSPHATE RANGE FROM .6 MG/L TO 2.0 MG/L.

CORROSION CONTROL

- EVERY SYSTEM IS UNIQUE AND WHAT WILL WORK FOR ONE SYSTEM MAY OR MAY NOT WORK FOR ANOTHER. EACH SYSTEM WILL HAVE TO BE EVALUATED TO DETERMINE THE BEST APPROACH FOR CORROSION CONTROL.
- DISTRIBUTION SYSTEM MONITORING IS ESSENTIAL FOR SUCCESS. IMPLEMENTATION IS NOT AS SIMPLE AS HOOKING UP A CHEMICAL FEED PUMP, HAVING THE CHEMICAL SALES PERSON SET THE DOSE AND YOUR DONE.
- UPPER MANAGEMENT MUST BE INVOLVED AND COMMITTED TO SUCCESS. CORROSION CONTROL CAN BE EXPENSIVE AND AT TIMES FRUSTRATING.

QUESTIONS ?