Kentucky Lead Workgroup Meeting
August 17, 2016
1:30 – 3:00 PM EST
Kentucky Division of Water
300 Sower Blvd
Frankfort, Kentucky 40601

1. Call Meeting to Order and Roll Call of Membership – Greg Heitzman

2. Introduce Guests

3. Approve Minutes of June 15, 2016

4. Presentation by Distribution Piping Sub-group – Bill Robertson

5. National Drinking Water Advisory Council Report on Lead – Greg Heitzman

6. Review Sub-groups Assignments and Schedule

7. Discuss Report Template

8. Open Discussion for Workgroup

9. Public Comment Period

10. Next Workgroup Meeting, 1:30 PM – September 21, 2016

Drinking Water Advisory Council
Lead in Drinking Water (LIDW) Work Group
Draft Meeting Minutes
August 17, 2016

In attendance: Greg Heitzman, Chair (BWK), Jennifer Burt (DPH), Tom Gabbard (DOW), Mike Gardner (BGMU), Ron Lovan (NKYW), Brad Montgomery (ACEC), Bill Robertson (PWWKY), Thomas Rockaway (UofL), Justin Sensabaugh (KYAW),

Liaisons: Gary Larimore (KRWA), Kay Sanborn (KYTN-AWWA)

Absent: Obe Cox (CCW), Rengao Song (LWC), Brian Thomas (MWD)

Division of Water (DOW): Sarah Gaddis, Samantha Kaiser, Todd Ritter

Public Attendees: Amber Agee (DPH), Lane Boldman (KCC), Samantha Morgan Faulkner (KYOAG-ORI), George Haynes II (DCA), Representative Dennis Horlander (LRC), Melissa A. Melton (RCAP), Jim Smith (CCW)

The meeting was held at the Kentucky Division of Water office, 300 Sower Blvd, Frankfort, KY and began at 1:35 p.m. EDT.

Call Meeting to Order and Roll Call of Membership

Chair Greg Heitzman led the roll call and noted the absent members.

Introduction of Guests

Guests introduced themselves.

Approve Minutes of June 15, 2016

Changes were made to June Meeting Minutes and the Workgroup approved the June Meeting Minutes by consensus.

Presentation by Distribution Piping Sub-group

Bill Robertson gave a Power Point presentation regarding water distribution and piping materials. Lead joints in cast iron piping (generally used prior to 1960) should not be a major area of focus for a source of lead contamination in drinking water. The primary source of lead in drinking water in distribution systems will be from lead service lines/piping, pipe fittings that contain lead, such as meters, brass/bronze fittings and valves and from lead based solder.

There is currently no easy method to inventory buried lead service lines. There are methods that require significant amounts of effort and are costly for utilities. He suggested that the first step in inventorying lead services lines is a detailed review of local plumbing codes, customer files, old system maps, old field books, purchasing records, board meeting minutes, etc. to try to determine the location of lead service lines, or the date that utilities phased out the use lead for service lines and replaced with newer materials, such as copper. Several cities, such as Paducah and Louisville report the use of copper as a substitute for lead, beginning in the1930's. Some major US cities (i.e. Chicago) installed lead services into the 1980's.

The next step for inventory of lead service lines is using GIS systems to identify areas that have the greatest potential for lead service lines based on the age of the water main, age of homes, or other historical data, such as service line installation records. Utilities can then excavate adjacent to the water main and look at the service line material. This can be performed by conventional excavation with backhoe, or by using vacuum excavation or hand digging. Another suggested approach is testing the water for lead at each meter and also testing water at the tap inside the home, which is an indirect method but quicker and costs less. The data collected can be analyzed to determine if lead is detected between the water main and meter and between the meter and the customers tap. This method has been used with inconsistent results at best.

The workgroup discussed how utilities deal with lead service lines when they are found. Utilities are not required to, but most do, replace lead services lines once they are exposed during excavation in the field. There is a concern that during a partial lead service line replacement, disrupting the service line could cause elevated lead levels. Once the excavation process begins to find lead service lines, generalizing where they are located can be inaccurate. Lead service lines have been found in close proximity to excavated locations where no lead service line was found, often due to previous repairs on the service line or materials used by plumbers on premise plumbing. Every community is different and every location is different.

Each utility is responsible for their lead service line inventory; some utilities have acquired other water systems which makes it difficult to establish an inventory for those lines. Some utilities are waiting until regulators reach a decision regarding lead service line replacement. Other utilities (i.e. Louisville) have an active lead service line replacement program, replacing up to 1,500 per year. There is not a 'one size fits all' solution for eliminating lead service lines. Each utility should review its history of lead service lines, it's lead compliance record, and treatment methods to determine if a lead service line replacement program should be implemented.

Other issues that need to be addressed are how best to communicate to the public, elected officials, and regulators; how operators need be trained to identify lead service lines; and how to integrate these concepts into standard practice. The group also acknowledged the importance of public education and operator training.

National Drinking Water Advisory Council (NDWAC) Report of Lead

The NDWAC Report on Lead (hard copy provided to Workgroup members) is a good resource for the subgroups to use when preparing subgroup reports. Water industry leaders published this report in August 2015, prior to the Flint Michigan lead crisis and this allows a pre-Flint viewpoint on the lead service line issue.

Review Subgroups Assignments and Schedule

The Workgroup discussed the subgroup assignments and schedule. There will be no meeting in September. The Training subgroup will present at the meeting in October, and the Finance subgroup will present in November.

Discuss Report Template

The Workgroup was reminded to convert each presentation into a text document for its report. Mr. Heitzman will email the report template to the Workgroup members.

Open Discussion for Workgroup

The Workgroup discussed the U.S. EPA Drinking Water Workshop that will take place in Cincinnati, Ohio on August 23 – 25 and Kentucky Rural Water Association's Annual Conference August 22 – 24.

Public Comment Period

No public comments were made.

Next Workgroup Meeting

The Workgroup reached a consensus that there will be no meeting in September. The Workgroup decided the next meeting will be held on October 26, 2016 at 1:30 p.m. EDT at 300 Sower Boulevard, Frankfort, KY. All future meeting presentations will be pushed back by one month. Mr. Heitzman will update the Workgroup membership and schedule spreadsheet and forward to Workgroup members.

Adjournment

The meeting adjourned at 3:00 p.m. EDT.

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Adjournment

The meeting adjourned at 3:00 p.m. EDT.

KENTUCKY LEAD WORKING GROUP

DISTRIBUTION / PIPING SUBGROUP PRESENTATION
DRAFT PRESENTATION
AUGUST 17, 2016

SUBGROUP MEMBERS: [illegible]

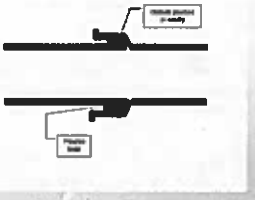
DISTRIBUTION / PIPING SUBGROUP PRESENTATION OVERVIEW

- 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

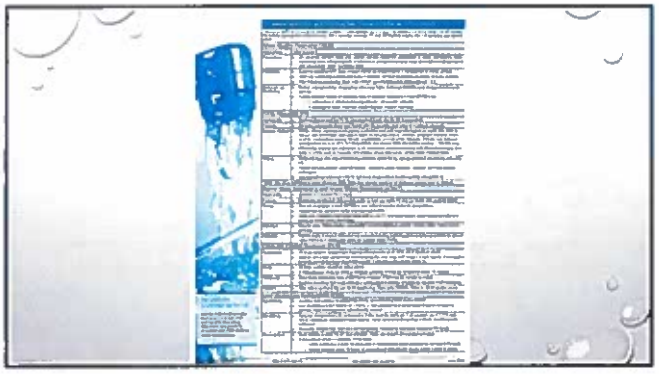
- 2011 – CONGRESS PASSED THE REDUCTION OF LEAD IN DRINKING WATER ACT – REVISED THE DEFINITION OF "LEAD FREE" BY LOWERING THE MAXIMUM CONTENT OF LEAD IN PIPE TO .25% AND ELIMINATED THE REQUIREMENT FOR LEAD FREE PRODUCTS TO BE IN COMPLIANCE WITH VOLUNTARY LEAD LEACHING STANDARDS.
- 2011 – 2013 – EXEMPTED 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 CHALLANGE

REGULATION OF LEAD IN WATER LEAD AND COPPER RULE

- 2004 – MINOR REVISIONS TO EARLIER REVISIONS – CLEANED UP INADVERTENTLY 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

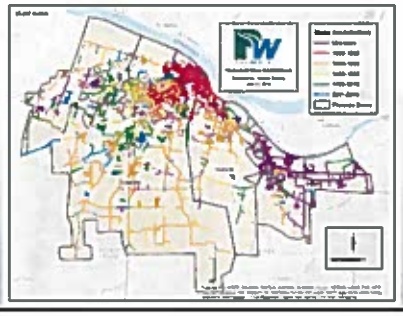
LEAD SERVICE LINE INVENTORY

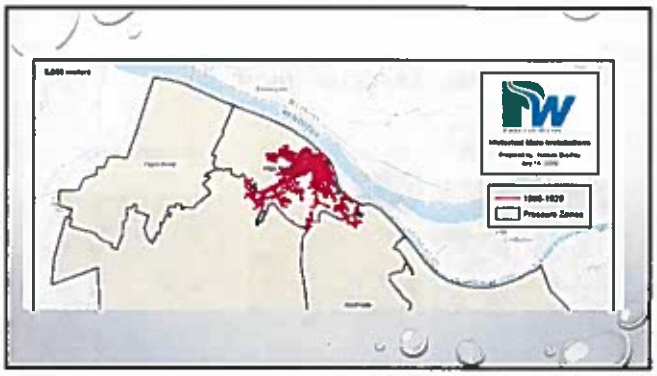
CUSTOMER RECORDS

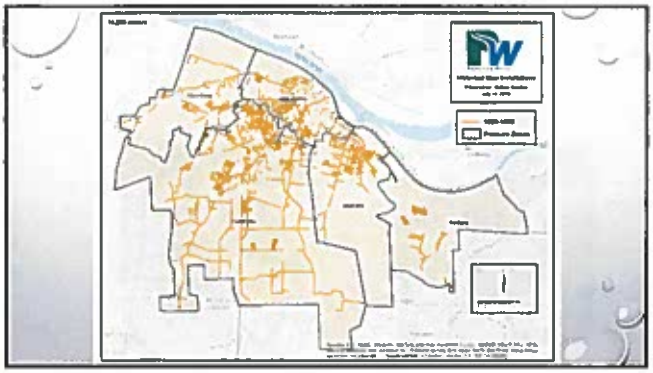
SYSTEM MAPPING

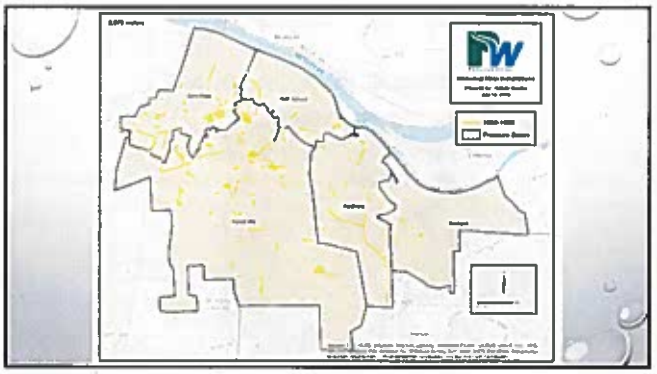
OLD PROJECT BOOKS

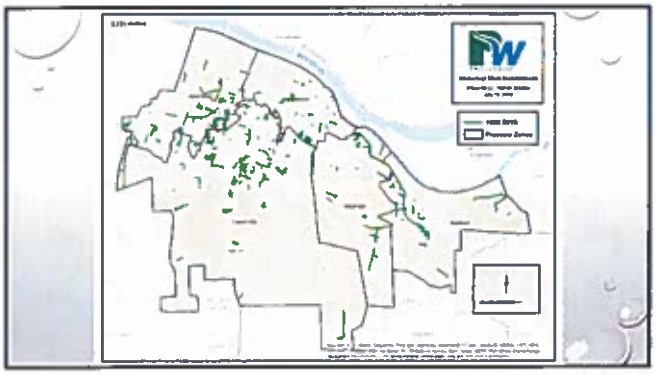
LEAD SERVICE LINE INVENTORY

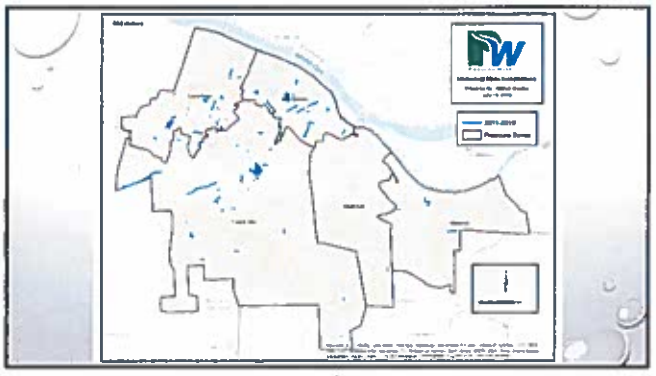












LEAD SERVICE LINE INVENTORY

PREPARATION FOR VACUUM EXCAVATION

VACUUM EXCAVATION

PLASTIC SERVICE LINE

LEAD SERVICE LINE INVENTORY

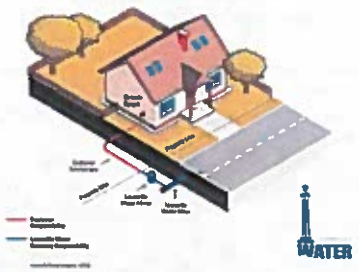
EXCAVATION IN PAVEMENT

LEAD SERVICE LINE

LEAD "GOOSE NECK OR PIG TAIL"

LEAD SERVICE LINES

Typical Water Service Line



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

SERVICE LINE REPLACEMENT

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 ?

LEAD IN DRINKING WATER WORK GROUP
300 Sower Blvd, Frankfort, KY 40601
August 17, 2016
PUBLIC SIGN-IN SHEET

Name	Agency/Organization	Email Address	Phone number
George Haynes II	DCA	george.haynes@ky.gov	(859) 539-2445
LANE BOLDMAN	KY. CONSERVATION COMMITTEE	DIRECTOR@KYCONSERVATION.ORG	502-209-9459 * NEED NOTICES
S. Morgan Faulkner	KY Atty. Gen. - Office of Rate Intervention	samantha.faulkner@ky.gov	502-696-5302
Amber Agee	KY Env. Lead	ambern.agee@ky.gov	(502) 564-4537
Todd Ritter	DOW - CTAS	todd.ritter@ky.gov	502-782-7050
Kay Sanborn	KY/TN Section	ANWA executivedirector@kytnawwa.org	502.550.2992
Sarah Gaddis	KY DOW	sarah.gaddis@ky.gov	
Dennis Horlacher	KY State Lab 40th Year		(502) 931-8000

LEAD IN DRINKING WATER WORK GROUP
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August 17, 2016
WORK GROUP MEMBER SIGN-IN SHEET

Name	Agency/Organization	Email Address	Phone number
Justin Sensabaugh	Kentucky Awwa.com	justin.sensabaugh@gawater.com	859-268-6342
Jim Smith	Carroll Co. Water	@cox@ccwd.com	502-347-9470
Gary Larimore	Ky Rural Water	g.larimore@krwa.org	270-845-2291
Brad Montgomery	ACEC-KY (GRW)	bmontgomery@grwinc.com	(859) 223-3999
Bill Robertson	Paducah Water	brobertson@pwwky.com	270-217-3071
Greg Heitzman	Bluewater	gheitzman@bluewaterky.com	502-533-5073
Mike Gardner	BGMU	mgardner@bgmu.com	270-782-4366
Tom Lockaway	UofL	tlockaway@louisville.edu	502/852-3272
Melissa A Melton	RCAP	mam@capky.org	502.875.5863
Jennifer Burt	DPH	jennifer.burt@ky.gov	502-564-4537
Ron	NKY Water	RColeman@nkywater.org	~~859-578-8116~~ 859-441-5087