Lead Service Line and Fixture Mapping as Required by HB 512
The Village of Williamsport
March 7th, 2017
Lead Mapping Narrative

Background

This map, narrative, and sampling point list is intended to meet the requirements of HB 512. The Village of Williamsport operates a public water system including a Class 1 water treatment facility and a Class 1 Distribution system. Most of the distribution is older, containing cast iron pipes. The village serves approximately 350 accounts representing a little over 1,000 people. In 2016 the Village began contracting with Earnhart Hill Regional Water and Sewer District to operate their water and distribution system.

Lead Service Lines

Upon searching the records in the water plant no evidence was found if either lead service lines were permitted or prohibited years ago. At this point in time each property constructed before 1986 could possibly have a lead service line based on OEPA's mapping guidance, which cites the lead service line ban that went into effect in 1986.

Map Details

The properties served by the Village are sorted by date ranges which correspond to guidance provided by the OEPA. Buildings constructed prior to 1999 have the greatest risk of lead exposure, followed by buildings constructed between 2000 to 2013, and the lowest risk to lead exposure are buildings constructed after 2013. Due to the fact little is known about the service lines in Williamsport, properties constructed before 1986 are identified as possibly having a lead service line.

Identifying characteristics of buildings with lead exposure potential

In 1986, the Safe Drinking Water Act (SDWA) was amended to ban the use of lead solders which contain more than 0.2% lead. The lead ban provisions of the act became effective in Ohio Plumbing Code on March 30, 1998. SDWA amendments also required the use of lead free flux, pipes, and fittings in new installations and repairs of public water systems, or any plumbing within a residential or nonresidential facility which provides water for human consumption. Lead free was defined at the time as having no more than 8.0% lead (note this 8.0% was lowered to 0.25% in 2014).

In 1996, the SDWA was further amended to state the following is unlawful:

1. For any person to introduce into commerce any pipe, pipe fitting, plumbing fitting or plumbing fixture, that is not lead free, except for a pipe that is used in manufacturing or industrial processing; or
2. Any person engaged in the business of selling plumbing supplies; except manufacturers, to sell solder or flux that is not lead free; or
3. Any person to introduce into commerce any solder or flux that is not lead free unless the solder or flux bears a prominent level stating that it is illegal to use the solder or flux in the installation or repair of any plumbing providing water for human consumption.

In 2011, SDWA Section 1417 was amended for the prohibition on use and introduction into commerce of lead pipe, solder and flux. These new requirements became effective on January 1, 2014. The amendments specifically modified the applicability of the prohibitions by creating exemptions for certain non-potable applications, changed the definition of "lead-free" by reducing lead content from 8% to a weighted average of not more than 0.25% in the wetted surface material (primarily affecting brass/bronze), eliminated the provision that required certain products to comply with "voluntary" standards for lead leaching, and established a statutory requirement for calculating lead content.

The exemptions to the SDWA Section 1417 are pipes, pipe fittings, plumbing fittings or fixtures, including backflow preventers, which are used exclusively for non-potable services, such as manufacturing, industrial processing, irrigation, outdoor watering, or any other uses where the water is not anticipated to be used for human consumption. The exemption also applies to toilets, bidets, urinals, fill valves, flushometer valves, tub fillers, shower valves, service saddles, or water distribution main gate valves that are 2-inch diameter or larger. In addition the SDWA, the Community Fire Safety Act of 2013 exempted fire hydrants from this requirement.

As a result of these amendments, buildings constructed after 2014 are the least likely to have plumbing containing lead materials, so these consumers are at the lowest risk of exposure to lead from drinking water.

Because it is practically impossible to determine the lead content of an installed fixture, fitting or pipe, it should be assumed that the manufacture or installation date is the primary indicator of the lead content. Therefore, the characteristics of buildings and piping solder or fixtures would be buildings in Ohio built prior to 1998 or that use plumbing material or solder manufactured before 1998 may have materials with greater than 8% lead and are at a higher risk of contributing lead to the drinking water than materials manufactured after 1998. In addition, buildings built and plumbing materials manufactured after 2014 were required to have less than 0.25% lead by weight and have the lowest risk for contributing lead to the drinking water. It should be noted however that, although prohibited, some use of leaded solder or leaded components may have occurred after the prohibitions became effective.

The OEPA defines lead and copper testing priority based on a three Tier system, with Tier 1 sites having the highest priority. The definitions are as follows:

Tier 1 – Single family residences that contain copper pipes with lead solder installed after 1982 or contain lead pipe. Multiple family residences with such piping can be included in they are at least 20 percent of the structures served by the water system. Residences with point-of-use or point-of-entry devices, such as water softeners, are usually excluded.

Tier 2 – Buildings, including multiple-family residences that contain copper pipes with lead solder installed after 1982 or contain lead pipes; building including multiple-family residences, with lead service lines.

Tier 3 – Single family residences that contain copper pipes with lead solder installed before 1983.

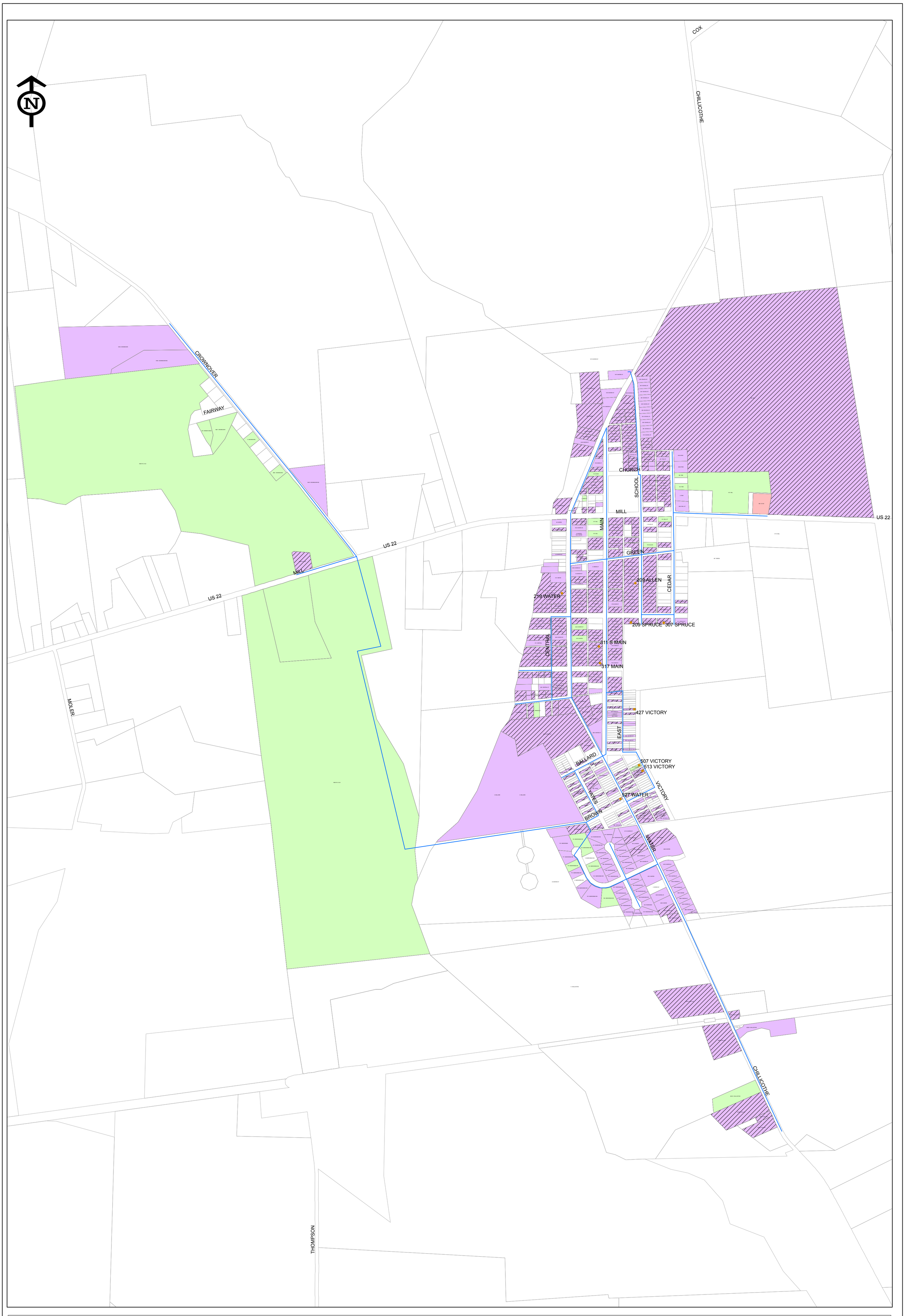
As the reader will note from the definitions above the testing priority doesn't quite match up the likelihood of finding lead in household drinking water as outlined in the HB 512 mapping guidance. As is the case for Williamsport, Tier 1 single family sites would be those with copper plumbing and lead solder constructed after 1982. However, per the mapping instructions provided by OEPA, the older sites (prior to 1998) would be the most likely to have an occurrence of lead in the drinking water. As a result the required triennial lead and copper testing will not always align with those structures having the greatest probability of an occurrence with lead in the drinking water.

Lead and Copper Sample Sites OH 6503012

The Village is required to sample drinking water at point of use on a triennial basis. The last round of sampling was performed in 2016 for OH6503012. Ten samples are required. Consumers agreeing to be tested in 2016 are shown on the map. The results of the testing are in the table below.

The Village of Williamsport OH6503012				
2016 Lead and Copper Sampling				
NUMBER	**STREET**	**SAMPLE LOCATION**	**Copper ug/l**	**Lead ug/l**
[redacted]	[redacted]	Kitchen Sink	101	12.9
[redacted]	[redacted]	Laundry Sink	229	12.7
[redacted]	[redacted]	Kitchen Sink	93	11.1
[redacted]	[redacted]	Kitchen Sink	60	5.8
[redacted]	[redacted]	Kitchen Sink	63	<5.0
[redacted]	[redacted]	Kitchen Sink	69	<5.0
[redacted]	[redacted]	Kitchen Sink	106	<5.0
[redacted]	[redacted]	Kitchen Sink	80	<5.0
[redacted]	[redacted]	Kitchen Sink	<50	<5.0
[redacted]	[redacted]	Kitchen Sink	79	<5.0

The 2016 Williamsport samples did not meet the action level threshold set by the EPA defined as being the 90th% for lead of 15.5ug/L or 90th% for copper at 1,350 ug/L.



HOMES CONSTRUCTED PRIOR TO 1999 AND HAVING COPPER PLUMBING HAVE A GREATER RISK OF LEAD EXPOSURE

HOMES CONSTRUCTED BETWEEN 2000 - 2013 AND HAVING COPPER PLUMBING HAVE LESS RISK OF LEAD EXPOSURE THAN HOMES CONSTRUCTED PRIOR TO 1999

HOMES CONSTRUCTED AFTER JANUARY OF 2014 HAVE THE LOWEST RISK OF LEAD EXPOSURE

PROPERTIES CONSTRUCTED BEFORE THE 1986 LEAD SERVICE BAN

CAST IRON WATER MAINS

LEAD SAMPLING POINT

WILLIAMSPORT WATER SYSTEM

PWSID : 6503012

LEAD SERVICE LINE AND FIXTURE MAPPING AS REQUIRED BY HB 512

SCALE : 1" = 500'

DATE : 03/03/17

DRAWN BY : C BENNETT