


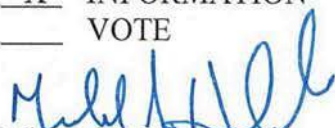
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: November 15, 2017
SUBJECT: Update on Lead and Copper Rule Compliance – Fall 2017
 And Update of Local and National Activities

COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

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 Preparer/Title


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MWRA system-wide lead levels in the September 2017 sampling round were below the Action Level of 15 parts per billion (ppb) again for the 22nd consecutive sampling round. MWRA system-wide 90th percentile value for calendar year 2017 is 8.6 ppb. Four communities were individually above the Lead Action Level. MWRA continues to meet the copper standard.

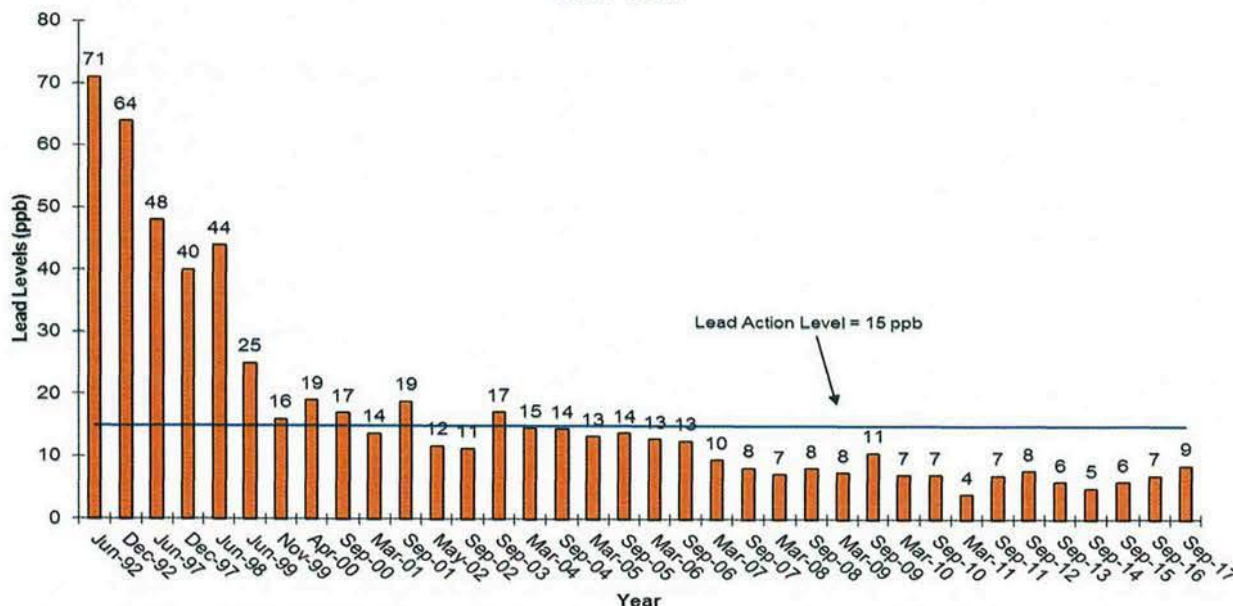
RECOMMENDATION:

For information only.

DISCUSSION:

MWRA and its member communities conducted the calendar year 2017 sampling round beginning in September 2017. The 90th percentile value for the system as a whole was 8.6 parts per billion (ppb), which is below the Lead Action Level of 15 ppb.

**90% Lead Levels in MWRA Fully Served Communities
1992 - 2017**



Under EPA's Lead and Copper Rule, each year MWRA and every fully-supplied community must collect and test tap water in a sample of homes¹ that are likely to have high lead levels. These are usually homes with lead services or lead solder. EPA requires that nine out of ten of the sampled homes must have lead levels at or below the Action Level of 15 ppb.

Starting in 2012, MWRA's fully supplied communities were only required to sample for lead and copper once per year, as long as their 90th percentile results are below the Action Level. A community that exceeds can return to once-per-year sampling after it has two consecutive sampling rounds under the Action Level. In September 2016, two communities, Malden and Quincy, were above the Action Level. Both were below the Action Level in the March 2017 sampling round, but Quincy was once again above in this September 2017 sampling round, and will need to sample twice in 2018.

Quincy was over the Action Level this round despite making substantial progress on a lead service line removal program. The sampling plans for each community must include lead service lines or lead lined service lines, if any are still remaining. Quincy has removed most of its lead service lines, but still have lead lined service lines remaining. Two of these sites were over the Action Level and caused Quincy to exceed the Action Level. These two sites have already had their service lines replaced and will not be included in the next sampling round.

Three other communities, Medford, Melrose and Winthrop, were also above the Action Level in the September 2017 sampling round, and will need to sample twice in 2018. Malden was under for both rounds, and will be back to one sampling round in 2018.

Massachusetts Department of Environmental Protection (DEP) has had extensive interactions with all four communities with regard to fulfilling the requirements of the Lead and Copper Rule. All four communities have been notified and will be required to meet education requirements, including mailing lead education brochures, and will be required to meet lead service line replacement requirements set by DEP. All four communities have been over the Action Level before, so they have experience successfully working with DEP on meeting the requirements of the Lead and Copper Rule. MWRA provides the educational brochures, and staff have offered assistance in working with DEP on the education requirements and service line documentation.

Under the LCR, each community is also required to collect samples from two schools or childcare facilities. As discussed under the school program update below, all school testing results are uploaded to DEP's on-line school database and MWRA staff immediately contact any community that had a school above the Action Level.

MWRA has already formally transmitted these results to DEP. The results were also transmitted to the communities, and, through them, to every individual homeowner or school that collected a sample for the program. MWRA staff has directly contacted communities with schools above the Action Level or any individual homeowners with very high or unusual results.

¹ In most communities, 15 homes are sampled; the exceptions are Boston, which collects 25 samples, and Lynnfield and Nahant, which collect 10 samples. A total of at least 450 samples are collected.

Update on School Testing Program

MWRA has been working with MWRA communities on testing school fixtures used for drinking or cooking. DEP created a technical assistance and laboratory analysis program to test schools throughout the state, and MWRA offered lab services in parallel with the DEP program. From April 2016 through the end of October 2017, MWRA's Laboratory performed 32,226 tests on samples from 320 schools in 36 different MWRA communities. Approximately 4.7 percent of all lead samples were above the Action Level. 125 of the 320 schools had one or more sample test over the Action Level. All communities and schools with elevated levels have been contacted and technical assistance materials provided. Results from all schools across the state that have been tested have been posted by DEP on-line, and a link to this site is on MWRA's website. Most communities also have had local outreach efforts.



School Samples at MWRA's Central Laboratory

As reported to the Board earlier this year, school systems used the information collected to take remedial action at locations where sampling indicated elevated lead levels. These remedial actions included shutting off or removing fixtures (particularly where they were not needed or required, such as individual sinks in classrooms), replacing older fixtures which were contributing excessive lead with new lead-free ones, using bottled water until other actions could be taken, labeling bathroom sinks as for handwashing only, and developing flushing programs to clear stagnant water from plumbing within walls until extensive plumbing alterations can be undertaken.

While MWRA community school sample data did identify many locations which required remedial action, results from MWRA communities were somewhat better than statewide numbers from the DEP program, likely indicating that MWRA corrosion control is providing substantial benefit at reducing lead corrosivity.

The first round of the DEP Program is complete, a report was published on the results, and DEP announced another round of sampling assistance earlier in October. MWRA sent information on school sampling to local water and school officials right after DEP announced its program, again offering free laboratory services to our communities. The number of samples the MWRA laboratory received over the summer was much less than the peak in Fall 2016, but is expected to increase as DEP and MWRA promote the second round of sampling. DEP's recommendation is that all locations used for drinking or cooking be tested, and that repeat sampling be conducted on one-third of locations each year so that no location is sampled less than every three years, in line with the national guidance contained in the Lead Contamination and Control Act (LCCA) which governs lead control efforts in

schools. Communities may also want to prioritize buildings with the most vulnerable younger children or which had a higher incidence of elevated sample results.

Staff continue to work with DEP at assuring that all data collected on lead levels is provided to the public, and at collaborating with DEP in considering appropriate outreach and testing approaches for other locations where children might be exposed to elevated lead levels such as playgrounds and childcare facilities. (Only the larger “early education centers” were included in DEP’s initial program.)

Review of Corrosion Control Technology

EPA released a new guidance document on the evaluation of optimum corrosion control treatment to state primacy agencies in 2016. At DEP’s request, MWRA staff are in the process of reviewing MWRA’s historical water quality data and the most recent science on corrosion control. Staff discussed the preliminary results with DEP at a regular DEP/EPA/MWRA drinking water coordination meeting earlier in October, and will provide DEP with a written document by the end of the calendar year. Staff’s preliminary conclusions are that MWRA’s corrosion control treatment is working well, that water quality is stable, and that changes in treatment are both not warranted and potentially counter-productive. Further, permanent long-term improvements in reducing the potential for lead exposures will come from the Lead Service Line Loan Replacement Program that the Board approved in 2016.

Update on Lead Service Line Replacement Loan Program

In March 2016, the Board approved an enhancement to the Local Water System Assistance Program to provide up to \$100 million in 10-year, zero-interest loans to communities solely for efforts to fully replace lead service lines, and approved the Program Guidelines for the Lead Loan Program in May. Each community can develop its own program, tailored to its local circumstances.

Through November 2017, MWRA has made five financial assistance distributions for a total of \$7.2 million under the Lead Loan Program:

• Newton in FY17	\$4.0 million
• Quincy in FY17	\$1.5 million
• Winchester in FY17	\$0.5 million
• Marlborough in FY18	\$1.0 million
• <u>Revere in FY18</u>	<u>\$0.2 million</u>
Total	\$7.2 million

The Quincy program is well underway, and has received good participation as the City is funding 100 percent of the work, including removal of the portion of the lead service line on private property. Having made substantial progress on removing all lead service lines, Quincy has moved to replacing lead-lined steel service lines. The Newton program is also underway and includes a 10-year, zero-interest loan to homeowners for the private portion. The Marlborough program includes full funding for the private portion similar to the Quincy program. Winchester is still working on the program management stage of its project. In November 2017, Revere received \$195,000 for a design and oversight of a project to replace 282 full lead service lines. The funding for the associated construction project will come from the Drinking Water State Revolving Fund.

Somerville has submitted an application for a \$1.2 million Lead Loan which is awaiting local authorization. Winthrop has submitted an application for a \$0.2 million Lead Loan to initiate a multi-phase program and is planning a second application in 2018. Some additional communities have expressed interest in the program for later in FY18 or in FY19. Future EPA requirements may stimulate lead service line removal work over the next few years.

MWRA's goal in providing financial assistance to member communities is to improve local water systems so that the high quality water MWRA delivers can make it all the way to the consumer's tap. The presence of a lead service line connecting a home to the main in the street can lead to elevated lead levels in tap water, especially if that water sits stagnant for an extended period. MWRA's stable water quality and effective corrosion control treatment reduce the risk that a lead service line will cause elevated lead levels, and measured lead levels in high risk homes have decreased by 90 percent since corrosion control was brought on-line in 1996. However, the risk of elevated levels remains as long as lead service lines are in use.

MWRA staff have been active in working with a national group called the Lead Service Line Replacement Collaborative, which is a voluntary collaborative effort of over two dozen water, environmental health and community advocacy groups. While these groups typically do not work together, they are collaborating effectively with a goal of accelerating local efforts toward full lead service line replacement. The Collaborative has launched an extensive web site. MWRA and community efforts are already highlighted, and staff will be contributing additional materials and case studies from regional lead service line programs.

A link to the Collaborative's website is included on MWRA's website, and it has been highlighted in DEP's periodic newsletter to public water suppliers.

Update on MWRA Coordination with MDPH on Testing Homes

Massachusetts Department of Public Health (MDPH) has now moved ahead with its partnership with MWRA to sample for lead in the tap water at homes where a child has an elevated lead blood level, and identify if there is a lead service line. Very few lead poisoning prevention programs around the country have collected information on lead in water levels.

MWRA staff assisted in training for the MDPH field staff that visit homes, and coordinated how to perform the sampling. Sample bottles, appropriate chain of custody forms, as well as boxes with return postage were provided to MDPH staff. Residents are provided educational information about the potential for lead in water, as well as actions they can take to reduce levels.

Samples began to arrive in early October 2016, and to date 67 households with a child having elevated lead blood levels have returned samples with 2 samples at each household. So far, all of the test results have been below the Action Level, and all but one of the samples was below 10 ppb. 65 percent of homes had both sample results less than the detection level of 1 ppb. MWRA reports the results back to MDPH as they are analyzed which then provides the results to the residents, preserving the required confidentiality under federal health privacy laws.

MWRA and MDPH staff continue to coordinate on the program, and anticipate an increased number of samples as MDPH will be expanding the definition of "elevated blood lead level" later this year.

Lead Forum:

Staff conducted a regional forum for local water department staff on lead issues in late June, including regulatory updates, current scientific findings, results of school testing, and updates on lead service line replacement programs. Speakers included staff from MWRA, local communities in the midst of lead service line programs, DEP and MDPH. The forum was well received, particularly the direct experience of community staff. MWRA staff are considering when it would be appropriate to conduct another one, likely as additional communities undertake lead service line replacement programs and have results and recommendations to share.

Revisions to the Lead and Copper Rule:

There has been little formal movement on EPA's continuing work to revise the Lead and Copper Rule since the last update to the Board in February. In addition to the recommendations of the National Drinking Water Advisory Council (previously described to the Board), EPA has received extensive comments from Congressional committees and other groups investigating the Flint situation, as well as many comments from the public and other interested parties. In October 2016, EPA issued a White Paper providing an overview of the issues and approaches they are considering as they draft the revisions. The White Paper provided few specifics beyond what had already been discussed in the National Drinking Water Advisory Council (NDWAC) recommendations. In October 2017, EPA released a peer review of approaches to developing a "Health-Based Benchmark" which could be used identify sample results which are high enough to immediately require local health officials be notified, as recommended in the NDWAC report.

MWRA staff will continue to track EPA's efforts, evaluating their potential impact on MWRA and MWRA communities, and will be actively involved along with the water professional associations in commenting as appropriate.

BUDGET /FISCAL IMPACT:

MWRA began modern effective corrosion control treatment to reduce lead and copper levels at the tap in 1997. MWRA's corrosion control treatment involves raising the pH and alkalinity to the water to provide a stable, non-corrosive product, reducing the potential for both lead and copper to leach from customer's home plumbing. The current annual cost for corrosion control is approximately \$3.5 million (\$3.2 million in soda ash costs, and \$0.3 million in carbon dioxide costs.)