Testing Drinking Water for Lead and Copper in Public Schools Project

Progress: November 14, 2016

- The draft sampling strategy was presented to both the advisory committee and the Rhode Island Association of School Maintenance Directors (http://www.riasmd.com). The response from the facilities directors was very positive, they seemed confident that their staff could effectively collect the samples provided clear instructional materials.
- Learned that several school districts have already conducted sampling for lead and copper, have begun the process to access those data.
- Received revised quotes from labs based on lead-only analysis and will proceed with selecting a contractor through URI purchasing. The decision to test for lead only is based on general agreement of advisory committee members at the 10/27/16 meeting. Rationale for lead-only testing follows.
- Produced scope of work for assistance in development of communication materials with Sue Stableford and submitted request for purchase order, which is being processed.
- Compiled contact information for school superintendents.
- Compiled contact information for school principals/directors, updated to include school building age and capacity (where available).
- Revised draft letters to share project information with school superintendents and principals/directors.
- Revised lead checklist to be completed by school principals/directors
    - Now shorter
    - More focused on specific information for this project
    - Could serve as the basis for a more comprehensive form to be completed on a regular basis if a lead and copper plan requirement were implemented by RIDE or RIDOH for schools.
- The scope of work for this project has been somewhat revised in response to miscommunication regarding available funding. A significantly lower budget has meant that some initial assessment of existing data, more extensive sampling plan development, some communication efforts and analysis and reporting using visual assessment tools such as GIS will not be possible. Following approval by DOH, the revised scope of work will be posted on the project website.
- Continued maintenance and updates to the project website, revised site URL to better reflect focus on lead (http://web.uri.edu/nemo/lead-in-water/).

Rationale for Testing Lead Only

- To ensure as broad a sampling approach as possible and based on the greater health impacts from lead exposure than from copper, we've investigated the option of analyzing samples for just lead and not include copper. Unlike lead, some copper in small amounts is essential for human health. However, too much copper can cause adverse health effects, including vomiting, diarrhea, stomach cramps, and nausea. It has also been associated with liver damage and kidney disease, thus the requirement for public water supplies to monitor copper levels. Assessing results from Massachusetts schools (http://www.mass.gov/eea/docs/dep/water/drinking/alpha/i-thru-z/lccasampres11102016.xlsx) only

1% of samples had copper values that exceeded the action level of 1.3 mg/l (93/6388), and only 0.66% (42/6388) had copper that exceeded the 2 mg/l copper criteria set by the World Health Organization (WHO). Only 14 samples (0.22%) exceeded the 4 mg/l that had been found to create symptoms in families ingesting various levels of elevated copper in recent studies (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1247412/) suggesting that copper is likely to not be a significant concern in local schools. Whereas lead results from Massachusetts schools exceeding the 0.015 mg/l action level occurred at a rate of approximately 10% (671/6395). Given the lower frequency and often visible symptoms of exposure to excess levels of copper versus the greater frequency and invisible nature of lead-exposure, it would be advantageous to analyze more samples for lead rather than fewer for both lead and copper. We believe given the limited financial resources, lead-only analysis maintains the spirit of the legislation to better understand plumbing fixture impacts on school drinking water in order to protect children's' health.