# MCPS WATER SAFETY WORKGROUP

Location: Facilities Maintenance Depot, Conference Room 1
Date: January 24, 2019
Time: 9:00 am – 12:00 pm

## Agenda Items

**9:00 – 9:15** **Welcome & Introductions**

Charge for Workgroup (Lynne Zarate, MCPS)
Review and Confirm Minutes from 12/6/2018 Meeting

**9:15 – 11:15** **Review questions & refine based on available data - Lead presenter(s) in parenthesis, input from all**

**9:15 – 9:30** Question 1: What factors contribute to elevated lead levels in water (MCPS/WSSC)
**9:30 – 9:45** Question 2: What is source of testing variation for repeated tests? (MCPS)
**9:45 - 10:00** Question 3: How should the blood lead levels data, tracked by state health officials, be used in evaluating the water safety standards and procedures? (DHHS)
**10:00-10:15** Question 4: What are the options for lead actions levels that determine when to remediate?(all)
**10:15-10:30** Question 5: Is there a practical limit for reducing lead content in plumbing systems? (MCPS/NSF/MCCPTA)
**10:30-10:45** Question 6: What other practices and standards have been adopted by other states and school jurisdictions? (all)
**10:45-11:00** Question 7: What role does periodic flushing have in ensuring water safety?(MCPS/MCPTA)
**11:00-11:15** Question 8: Are there additional best practice procedures that MCPS should implement?(NSF/all)
**11:15-11:30** Question 9: What is most effective way to communicate with parents and educate at home practices?(all)

**11:30-11:50** **Next Steps/Deliverables for next meeting**

**11:50-11:55** **Next Meeting proposed dates: Wed Feb 20 am, Tues –Thurs Feb 26-28 am**

**11:55-12:00** **Meeting Analysis**

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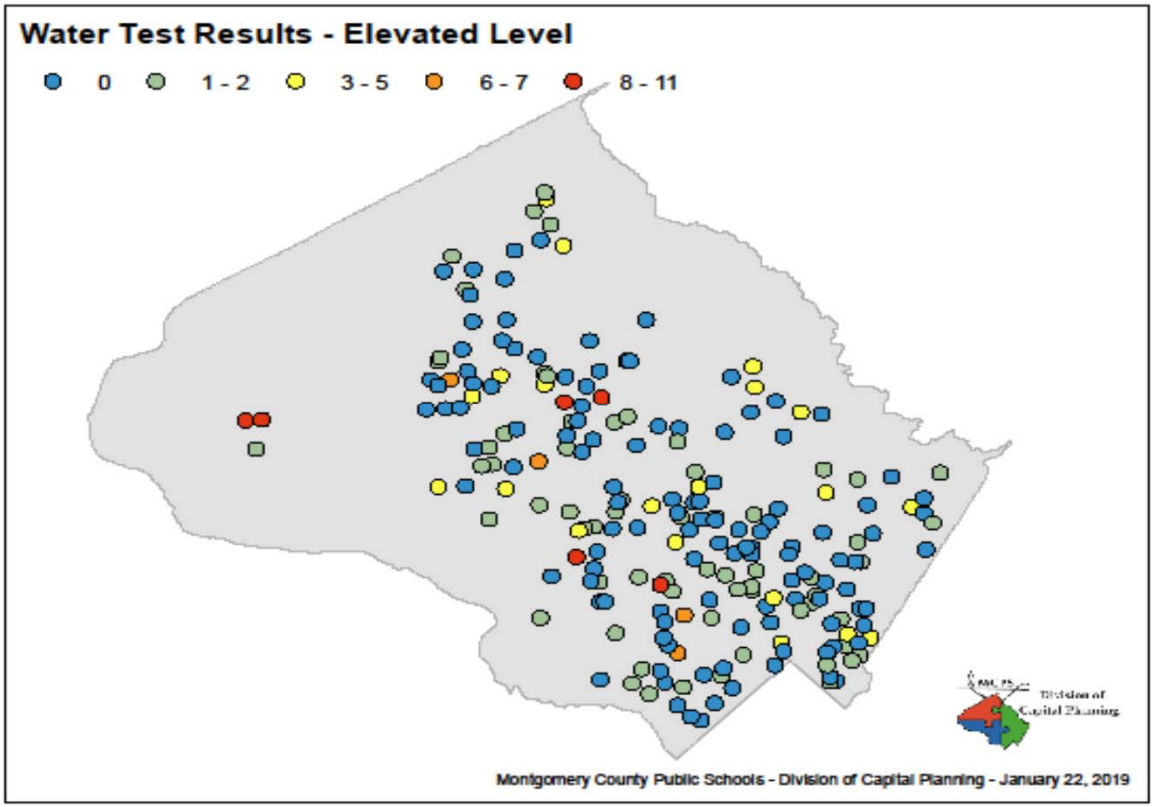
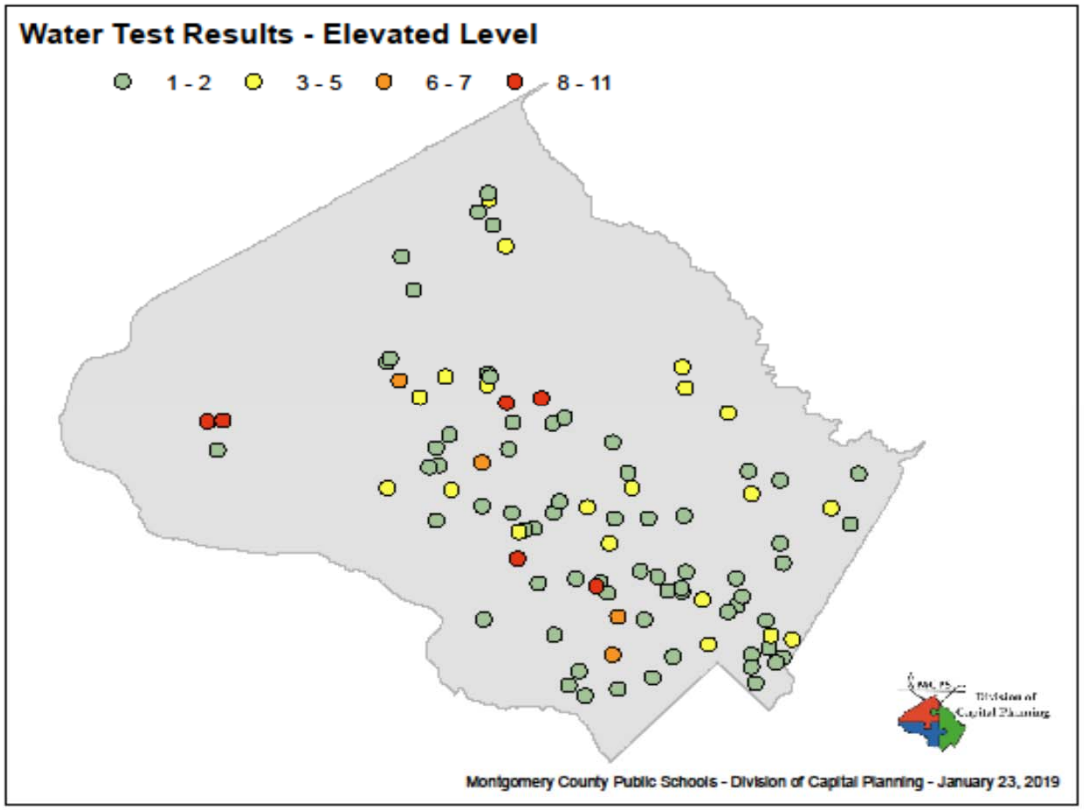
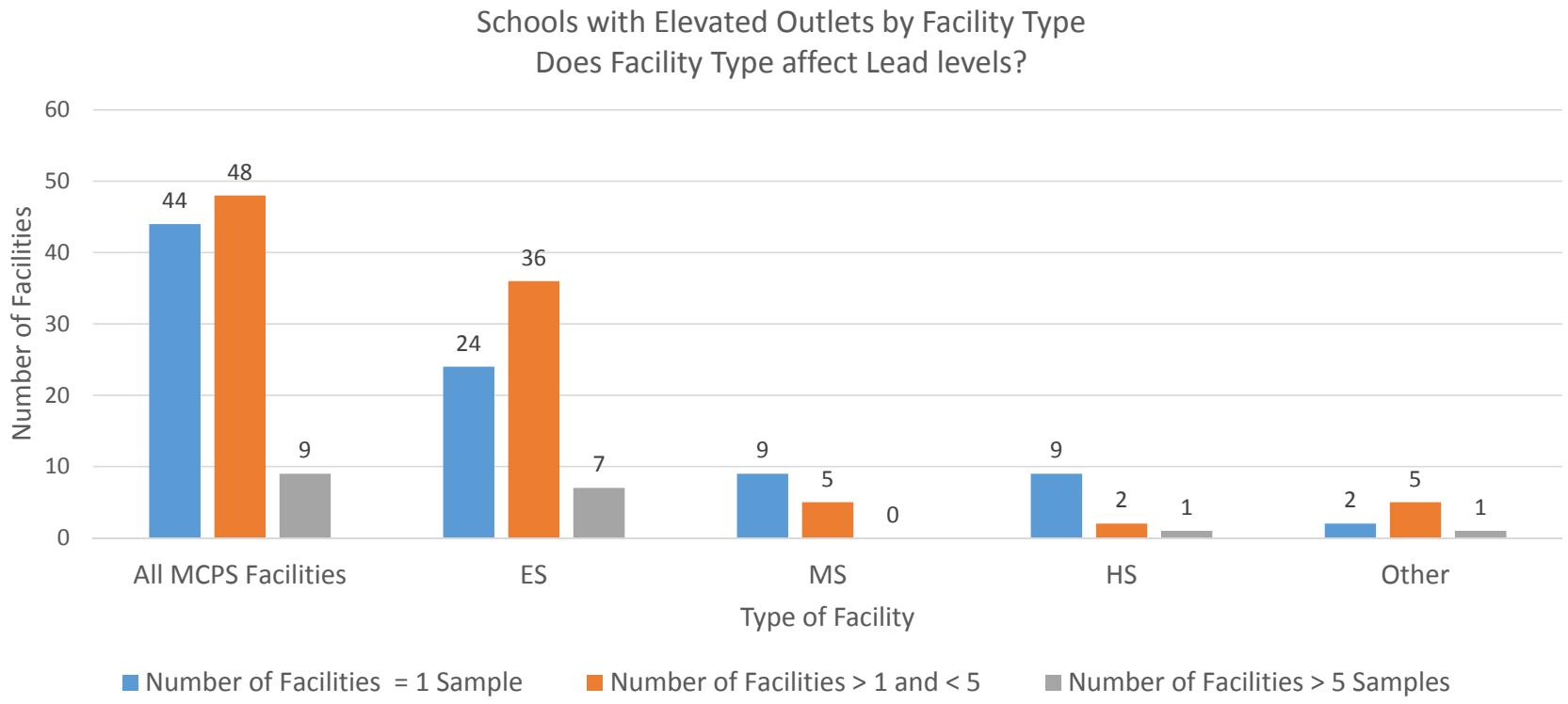
# Review and confirm meeting minutes from 12/6/18

# GIS Mapping of all MCPS Facilities

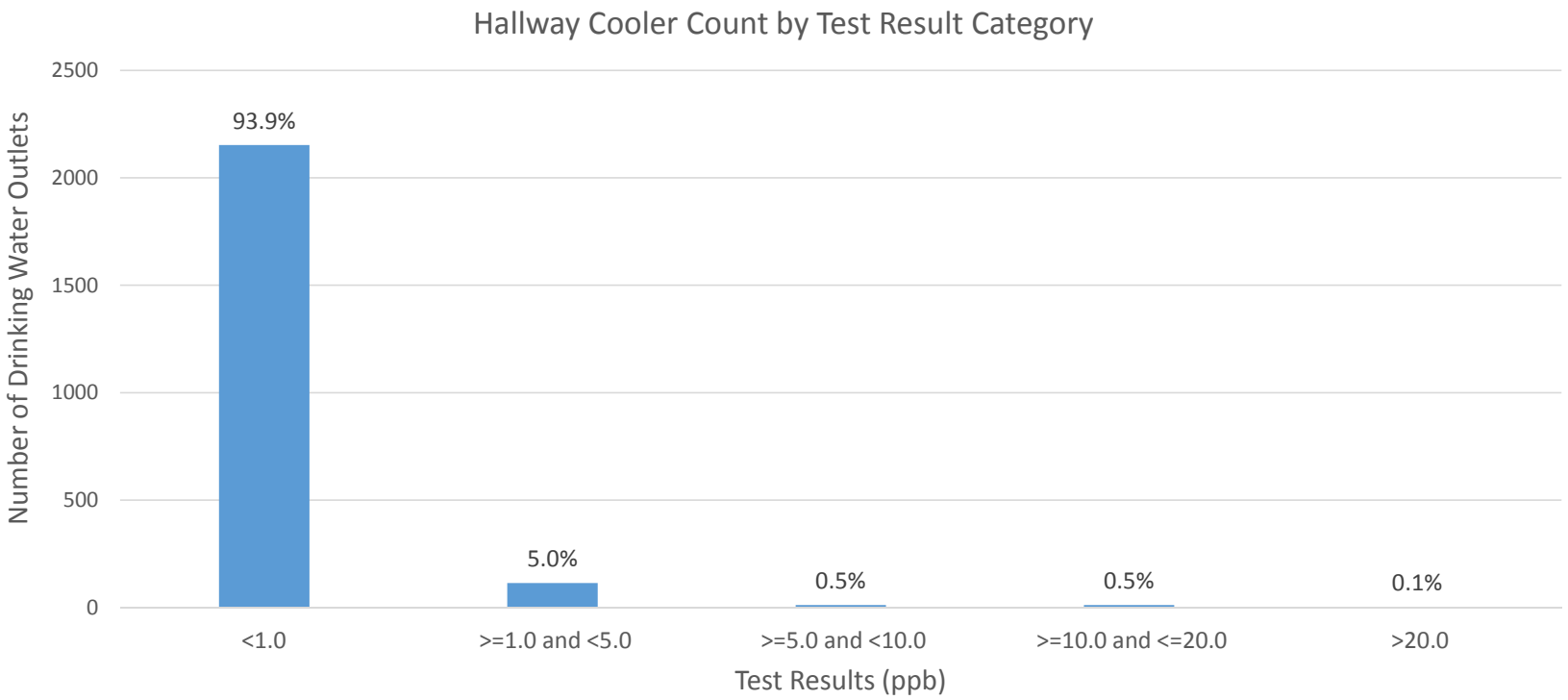


# GIS Mapping of MCPS Facilities with elevated (>20ppb) lead levels






| Facility Type | MCPS Total by Facility | MCPS Percent by Facility (%) | Percent Elevated (%) |
|---|---|---|---|
| ES | 134 | 64.1% | 66.3% |
| MS | 41 | 19.6% | 13.9% |
| HS | 26 | 12.4% | 11.9% |
| Other | 8 | 3.8% | 7.9% |
| Total | 209 | | |




| | <1.0 | >=1.0 and <5.0 | >=5.0 and <10.0 | >=10.0 and <=20.0 | >20.0 |
|---|---|---|---|---|---|
| Number of Coolers | 2153 | 114 | 11 | 11 | 3 |
| Percent | 93.9% | 5.0% | 0.5% | 0.5% | 0.1% |

# Location of Elevated Fixtures



| Fixture Type | Number of Fixtures > 20 ppb | Total Number of Fixtures | % Greater than 20 ppb |
|---|---|---|---|
| Coolers | 3 | 2284 | 0.10% |
| | | | |
| Nurse's Office Sink | 1 | 254 | 0.40% |
| Ice Machine | 1 | 93 | 1.10% |
| Teacher's Lounge Sink | 2 | 242 | 0.80% |
| Home Economics Room Sink | 2 | 136 | 1.50% |
| Other | 38 | 1421 | 2.70% |
| Kitchen Sink | 40 | 1095 | 3.70% |
| Bubblers | 58 | 3526 | 1.60% |
| Classroom Faucet | 91 | 4188 | 2.20% |

# MCPS Facilities Built pre 1940

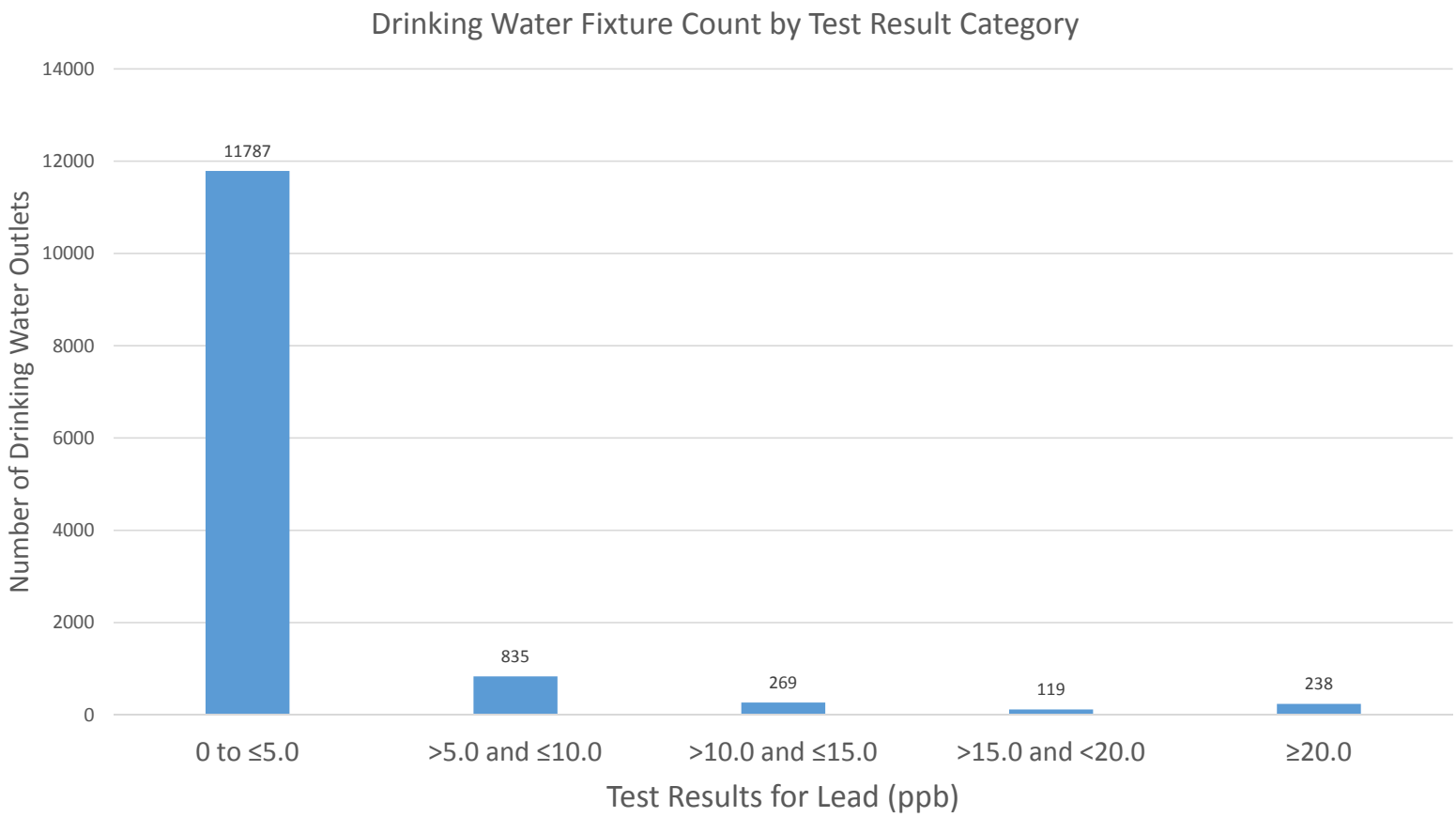
1h

| Facility | Age of Construction |
|---|---|
| Chevy Chase ES | 1936 |
| Damascus ES | 1934 |
| East Silver Spring ES | 1935 |
| Germantown ES | 1934 |
| Poolesville ES | 1925 |
| Westbrook ES | 1938 |

# Testing Variation for Elevated Fixtures



| Facility Name | Outlet Type | Location | Initial Result | Follow-Up (Initial) | Follow-Up (30 Sec) | Post-Remediation (initial) Testing in progress |
|---|---|---|---|---|---|---|
| Baker, John T. MS | Faucet | Home Economics | 195 | 536 | 35.3 | |
| Barnsley ES @ Northlake Center | Bubbler - Indoor | Classroom | 26.6 | 39.1 | 23.4 | |
| Barnsley ES @ Northlake Center | Bubbler - Indoor | Classroom | 356 | 124 | 43.7 | |
| Beall ES | Faucet | Classroom | 58.6 | 1.3 | 39 | |
| Eastern MS | Faucet | Classroom | 56.6 | 197 | 115 | |
| Fairland Center | Faucet | Weight Room | 1410 | 2050 | 54.1 | |
| Maryvale ES | Faucet | Classroom | 27.8 | 10100 | 72.6 | |
| Oak View ES | Bubbler - Indoor | Classroom | 37.6 | 26.7 | 23 | |
| Parkland MS | Faucet | Kitchen | 33.9 | 49.7 | 37.7 | |
| Pine Crest ES | Bubbler - Indoor | Classroom | 28.4 | 3.7 | 41.8 | |
| Poolesville ES | Faucet | Classroom | 60.3 | 268 | 85.2 | |
| Poolesville ES | Faucet | Classroom | 20.4 | 483 | 28.8 | |
| Poolesville ES | Faucet | Classroom | 26.3 | 1690 | 353 | |
| Poolesville ES | Bubbler - Indoor | Classroom | 32.2 | 23.4 | 28.1 | |
| Potomac ES | Faucet | Work Room | 42.1 | 3.7 | 572 | |
| Robert Frost MS | Faucet | Team Room | 62.5 | 19.5 | 20.6 | |
| South Lake ES | Faucet | Classroom | 28.4 | 69.7 | 47.6 | |
| Spring Mill Center | Cooler | Hallway | 31 | 16.6 | 22.2 | |
| Stephen Knolls Center | Faucet | Media Center | 29.3 | 105 | 447 | |
| Strathmore ES | Faucet | Classroom | 30.3 | 835 | 30.7 | |
| Takoma Park ES | Faucet | Classroom | 39.2 | 1400 | 23.1 | |
| Wootton HS | Faucet | Computer Lab | 112 | 1270 | 56.4 | |


Drinking Water Fixture Count by Test Result Category
Number of Drinking Water Outlets
14000
12000
10000
8000
6000
4000
2000
0
11787
835
269
119
238
0 to ≤5.0
>5.0 and ≤10.0
>10.0 and ≤15.0
>15.0 and <20.0
≥20.0
Test Results for Lead (ppb)

# Washington State Tiered Response Actions



The Department of Health recommends schools take the following actions:

- **For each fixture with lead results over the 20 ppb**
- Take the fixture out of service or make it inaccessible to students and staff.
- Take flush samples to determine where the lead is coming from (the fixture or plumbing system).
- Replace fixtures with certified lead-free fixtures or remove the fixtures permanently if they are not needed.
- If replacing fixtures, schools should contact DOH to discuss steps to take to ensure the water is safe to drink before returning it to use.
- **For each fixture with lead results between 10 and 19 ppb one or more of the following**
- Replace fixtures with certified lead-free fixtures or remove the fixtures permanently if they are not needed.
- Implement a flushing program to help reduce lead levels that may increase while fixtures are not in use.
- Clean aerators regularly to remove particulates that may contain lead.
- Install a National Sanitation Foundation (NSF) certified filter to remove lead and replace it as recommended by the manufacturer.
- Permanently convert these fixtures to hand wash only stations.
- Remove the fixture permanently.
- If replacing fixtures, schools should contact DOH to discuss steps to take to ensure the water is safe to drink before returning it to use.
- **For each fixture with lead results between 2 and 9 ppb**
- Implement a flushing program to help reduce lead levels that may increase while fixtures are not in use.
- Clean aerators regularly to remove particulates that may contain lead.

# Theoretical Effectiveness of Flushing based on 2018 Test Results



Data:

- 224 samples were collected for flush samples (some were not collected due to facility closure)
- 22 fixtures had elevated flush samples (9.8%)

Results:

- For all flush samples of fixtures, the average percentage reduction for the flush sample was 69%
- When samples that had elevated flush results are removed from data set, average percentage reduction of the lead levels was 91%

Water Safety Work Group

**Meeting notes from January 24, 2019**

Participants:

| | |
|---|---|
| Harold Chase | National Sanitation Foundation (NSF) International, Legislative Director |
| Sean Gallagher | Montgomery County Public Schools (MCPS), Assistant Director, Department of Facilities Management |
| Dr. Travis Gayles | Department of Health and Human Services (DHHS), Health Officer |
| Carol Gregg | MCPS, Fiscal Assistant, Environmental Services and Indoor Air Quality Services |
| Nasser Kamazani | Montgomery County Government (MCG), Senior Engineer, Department of Environmental Protection |
| Teressa Lloyd | MCPS, Environmental Specialist |
| Rebecca Morley | Montgomery County Council of PTAs (MCCPTA), Chair, Safe Water Committee |
| Brian Mullikin | MCPS, Team Leader, Environmental Services and Indoor Air Quality Services |
| Tim Rule | Maryland Department of the Environment (MDE), SDWA Implementation |
| Jin Shin | Washington Suburban Sanitary Commission (WSSC), Division Manager, Water Quality |
| Laura Stewart | MCCPTA, Vice President of Advocacy |
| Lynne Zarate | MCPS, Director, Division of Maintenance |

Absent:

| | |
|---|---|
| Fred Mason | Maryland State Department of Education (MSDE), Branch Chief, School Facilities |

**Welcome and Introductions:**

The workgroup participants were introduced

**Charge for Workgroup**

**Review and Confirm Minutes from 12/6/18 Meeting**

**Review Questions and Refine Based on Available Data**

**Question 1: What factors contribute to elevated lead levels in water (MCPS/WSSC)**

1a. MCPS does not have data on the age of outlets; they are assumed to be less than or equal to the age of the school construction.

1b(I) MCPS will create a GIS map displaying school age and elevated samples. MCPS
MCPS will create a GIS map showing schools where the percentage of elevated samples exceeds 10% of the total samples analyzed at 5,10, and 15 ppb. MCPS

1b(II) WSSC stated upon observing the GIS Map of elevated samples at MCPS schools that there appeared to be no correlation between water age and the number of elevated samples for schools served by WSSC (MCPS schools are served by the WSSC Potomac filtration plant). Chlorine will decrease as the distance from the treatment plant increases.

1c. MCPS will research the type and frequency of use of kitchen outlets with elevated sampling data. MCPS

1f. MDE will contact the town of Poolesville to determine water treatment procedures used to treat the well water supplied (e.g. corrosion treatment). MDE

1h. MCPS has 6 facilities constructed prior to 1940 (see slide). MCPS does not appear to have lead service lines. MCPS will conduct plumbing assessments of these 6 facilities. MCPS

**Additional Items:**

MCPS to add the K-12 GAO-18-382 Report to the Google Drive. MCPS

It was noted that students in the Pre-K and K age group probably use classroom outlets more than coolers as their source of drinking water.

MCPS will provide more information on outlet sample distribution by type and concentration (e.g. 5-10 ppb, >10 -15 ppb, >15-20 ppb etc.) to expand on information provided in the slide "Location of Elevated Outlets" (e.g. 5-10 ppb, >10 -15 ppb, >15-20 ppb etc.) by facility type. MCPS

MCPS will compare previous sampling data (>2004) with sampling conducted in 2018 for the 6 facilities constructed prior to 1940. MCPS

MDE to send Harvard report related to lead in drinking water in schools. MDE/MCCPTA

**Question 2: What is the source of testing variation for repeated tests? (MCPS)**

MCPS Elevated follow-up samples may be related to irregular use. MCPS will review post-remediation testing data for 22 outlets with elevated flush data (slide 2). MCPS

**Question 3: How should the blood lead levels data, tracked by state health officials, be used in evaluating the water safety standards and procedure? (DHHS)**

3a. Dr. Gayles provided an overview of lead testing in Montgomery County: He stated that:

Blood Lead Level testing is performed on children less than 2 years old.

If a child has been found to have an elevated blood lead level (greater than 5 micrograms/dL in blood), then an investigation is conducted to identify and test potential sources of lead in the places where the child spends time e.g. home, daycare, looking at water and paint.

Children with elevated blood lead levels may have neurological damage and present with abdominal pain, however most are asymptomatic. There have not been significant elevated levels across the community or outside the age group. There have not been the number of cases to indicate that all children should be tested. In 2016 22,000 children were tested in Montgomery County, which is 24% of children aged 1-5. Of these, there were 190 were new cases showing greater than 5ug/L. The CDC has recommended lowering the level to 3.5ug/dL.

3c. The data does not exist to determine the impact of school drinking water on student's blood lead levels.

Question: Are there an increased number of cases in Poolesville? DHHS

**Question 4: What are the options for lead action levels that determine when to remediate? (all)**
Five parts per billion (5 ppb) may be the limit of technology.

4a. Is there health evidence to support the different lead action tiers (consider pre-K/K differently)?

4b. MCCPTA will provide American Academy of Pediatrician's Report. MCCPTA

**Question 5: Is there a practical limit for reducing lead in plumbing systems? (MCPS/NSF/MCCPTA)**

5c. NSF is in the process of creating a voluntary testing method for manufacturers to certify outlets at lower levels (NSF 61 certifies outlets at 5 ppb lead limit as an average of many tests).

**Question 6: What other practices and standards have been adopted by other states and school jurisdictions? (all)**

6a. Refer to Washington State tiered response action slide.

6c 5ppb was set as the action level for MDE waiver based on practical and lab reporting confidence limits across all the labs in the state.

6e. The role of bottle filling stations in encouraging hydration, reducing sugar consumption and reducing plastic bottle waste was discussed. It was mentioned that filter use may cause additional concerns e.g. chlorine removal leading to increased microbial growth.

6f. So far, there is not a lot of remediation information from other school districts in MD, not many schools have used signage.

MCCPTA will supply information related to bottle filling stations implemented in Michigan and Oakland County ($500k for 27 county districts), including:

- How many stations were installed (i.e. costs per fixture/ number of stations per facility, by type e.g. ES, MS, HS)?
- How frequently do the filters need to be changed & what are ongoing preventive maintenance costs?
- Are there sensors that need to be replaced and if so, is that costly?
- how long did it take to complete the installations?
- Are there concerns about unintended consequences – e.g. removing chemicals used for treating biologicals and/or the stations getting "gummed up" and creating bacterial outbreaks.

MCCPTA will also obtain information related to sampling protocols for systems reporting action levels of 5 and 15 ppb (see Nutrition Policy Report slide). MCCPTA

**Question 7: What role does periodic flushing have in ensuring water safety? (MCPS/MCPTA)**

MCPS does not use flushing as the primary means of reducing lead. A sign-off sheet was suggested as a means of recording flushing. Flushing may be useful as a part of a tiered response.

Options:

- To track flushing, consider using a paper system to check vs. book in the office vs. using barcodes to track electronically.
- In Unified School District of San Diego & Los Angeles they have flushing protcols, the principal is responsible to report completion monthly.
- Should MCPS consider signs for fixtures that are between 5 and 20 recommending a 30 second flush, state that this typically reduces lead levels by 90%?

7b. NSF will provide report related to hospital management plans. NSF
PTA will research flushing protocol used in Chicago. MCCPTA

**Question 8: Are there additional best practices MCPS should implement? (NSF/all)**

When outlets are removed from service, the line should be removed up to the main trunk to prevent stagnation and bacterial growth.

8c. Should signage be placed on elevated outlets? Should outlets exceeding 5 ppb have signage?

8d. NSF will forward list of best practices, which includes: NSF

- Drinking fountains & hot water tank reservoirs
- If sampling is conducted more regularly than every three years should ES or elevated outlets be priority?
- Should a whole building flushing program be incorporated into a flushing protocol?
- Should schools where testing data is ≤ 5ppb be waived from the testing program?

**Question 9: What is the most effective way to communicate with parents and educate them on at home practices. (all)**

9a (I) Water Quality reports should be translated into additional languages.

9a (II) The action level should be included in the report.

9a (III) WSSC will provide information related to at home practices that can be provided to parents. WSSC

MCPS will consult with the Office of Communications regarding an effective communication approach. A fact sheet about lead should be developed to share. MCPS

Additional information can be provided in the letter to the parents (i.e. outlets between 5-20 ppb).

The Executive Summary should be included with letter to parents.

Access to reports should be provided for parents without electronic communication.

**Deliverables for next meeting:**

<u>MCPS Detailed Data Review</u>

- GIS Map displaying school age and elevated samples showing schools (MCPS)
- GIS Map displaying schools where the percentage of elevated samples exceeds 10% of the total samples analyzed at 5, 10, 15, and 20 ppb. (MCPS)

- Comparative analysis of previous sampling data (>2004) with sampling conducted in 2018 for the 6 facilities constructed prior to 1940 (MCPS)
- Graphs on outlet sample distribution by type and concentration (e.g. 5-10 ppb, >10 -15 ppb, >15-20 ppb etc.) to expand on information provided in the slide "Location of Elevated Outlets" (e.g. 5-10 ppb, >10 -15 ppb, >15-20 ppb etc.) by facility type (MCPS)

Additional information
Town of Poolesville water treatment procedures (MDE)
Does Poolesville have a difference in elevated BLL? (DHHS)
Frequency of use of kitchen outlets with elevated sampling data (MCPS)
Plumbing assessments of 6 facilities < 1940 (MCPS)

Flushing Information
Hospital management plans (NSF)
Chicago school system flushing protocols (MCCPTA)

Other School District Information/Best Practices
Bottle filling stations implementation in Michigan and Oakland County (MCCPTA)
Other school systems levels and sampling protocols
- Sampling protocols for systems reporting action levels of 5 and 15 ppb (Nutrition Policy Report slide) (MCCPTA)

**Meeting Analysis**

**Plus:** Making progress, It helps to see the data

**Delta:** No comments