DMPS LEAD IN DRINKING WATER MANAGEMENT PLAN

for

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Prepared by

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Last updated: 9/4/18

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1.0 INTRODUCTION

In the best interests of our students, staff, and community, the Des Moines Public Schools has decided to take a voluntary and proactive approach to the potential issue of lead in drinking water. The purpose of this Management Plan (MP) is to identify the objectives and control measures implemented by Des Moines Public Schools (DMPS) to control lead in drinking water throughout school district facilities. There are no federal or state laws requiring testing of drinking water in schools, except for schools that have their own water supply and would be subject to the Safe Drinking Water Act of 1974 as amended in 1986 and 1996. The 1988 Lead Contamination and Control Act (LCCA) is aimed at identifying and reducing lead in drinking water in school facilities. In response, the U.S. Environmental Protection Agency (USEPA) prepared guidance documents to assist school district in meeting the requirements of the LCCA. This Management Plan uses the guidance documents issued by the USEPA to make educated decisions. The main document utilized by DMPS is the 3Ts for Reducing Lead in Drinking Water in Schools published by the USEPA in October 2006. DMPS is using these guidelines as a framework to thoroughly test, evaluate, and control lead in water throughout district facilities.

2.0 DESCRIPTION OF OBJECTIVES & RESPONSIBILITIES

2.1 Program Objectives

DMPS believes it has a responsibility to proactively collect and report data regarding the concentrations of lead in drinking water throughout all facilities to provide a safe environment for students and staff. The main objectives of the plan include:

- Provide a safe and suitable environment for students and staff to learn, work, and visit which is not impacted by the presence of lead in drinking water.
- Identify sources of lead in drinking water.
- Implement approved strategies to mitigate real and perceived issues.
- Continue implementing lead reducing practices in new construction and renovations of facilities.

Lead in drinking water will be detected by following established practices and guidance established by the USEPA. Sampling will be completed in all DMPS facilities by trained staff that are proficient in water sample collection.

2.2 Program Responsibilities

The implementation of the MP is the responsibility of the Facility Services Department. Facilities Services will test buildings to determine locations where there is potential for lead to be ingested by drinking water. Test results and pertinent lead in drinking water information is to be regularly updated to the district's website.

The lead in drinking water sampling program manager for DMPS is the district Environmental Specialist. The Environmental Specialist will be responsible for overseeing and coordinating the overall management of the sampling program including prioritizing the schools to be sampled, communicating with the sampling team, coordinating with State of Iowa certified laboratories, and insuring data is transmitted accurately.

3.0 PLAN IMPLEMENTATION

3.1 Program Definitions

Action Level – A threshold for when corrective actions are required to reduce concentrations of lead in drinking water. The action level is established as 15 parts per billion (ppb). The action level is consistent with the USEPA Lead and Copper Rule; however, it is lower than the action level of 20 ppb recommended in the USEPA 3T guidance for Reducing Lead in Drinking Water in Schools.

First Draw Sample – Drinking water sample collected immediately from a fixture without flushing.

Flush Sample – Drinking water sample collected after allowing water to flow from a fixture for 30 seconds. Used to help identify the source of lead contamination.

Initial Building Screening – Drinking water screening limited to first draw samples collected from hallway drinking fountains, nurse's office, at least one kitchen sink, and selected classrooms.

Drinking Water Survey – The process of following the guidelines of this MP to collect water samples from drinking water fixtures throughout a building.

Periodic Follow-up Monitoring – Ongoing program implemented to monitor district drinking water.

Point of Entry – Location where drinking water enters a facility.

Sampling Technician – The person responsible for completing lead in water sampling in a facility. This person must be either an employee or subcontractor of the district. The sampling technician follows the direction of the Environmental Specialist.

3.2 Sampling Protocols

Facilities will be tested on a revolving five year schedule. The testing schedule will evolve as initial building data is compiled and evaluated.

In order to identify issues throughout DMPS facilities in a timely manner, DMPS has elected to complete an initial building screening to identify the presence of lead in specified areas of facilities. Initial building screening samples are to be collected from: hallway drinking fountains, nurse's offices sink, at least one kitchen sink, and selected classrooms. A flowchart of the district's initial building screening protocol can be found in **Attachment A**.

Following the completion of all initial building screenings, all DMPS facilities will be scheduled for periodic monitoring of lead in drinking water. A flowchart of the district's lead in drinking water survey protocol can be found in **Attachment B**.

DMPS will utilize a lead action level of 15 ppb rather than the USEPA's guidance which recommends action be taken for taps with detected lead concentrations greater than 20 ppb. DMPS currently receives all drinking water from a public water utility, Des Moines Water Works (DMWW). DMWW is required to use a 15 ppb threshold as a trigger for treatment and publically available information indicates that drinking water provided by DMWW contains lead less than 15 ppb.

4.0 SAMPLE COLLECTION PROCEDURES

Drinking water samples will be collected in pre-cleaned high density polyethylene (HDPE) 250mL wide mouth rigid sample containers provided by the laboratory. Attempt will be made to start sampling events closest to the point of water entry into the building and continue to the furthest-away tap to maintain stagnant

water in the plumbing. The sampling technician will be required to wear nitrile gloves to prevent contamination of the water samples during collection.

Each sample will be properly identified on the sample bottle, the laboratory chain of custody, and the site map provided by the Environmental Specialist. DMPS has devised a sample identification system that provides specific information regarding collection location, date, and fixture types.

For example: ML-DF-0504-001-FD indicates it is the first sample collected at Merrill Middle School from a drinking fountain on May 4th. ML is the building code associated with the building, DF stands for drinking fountain, 0504 is the month and day of collection, 001 is the sample number from the sampling event and FD indicates it is a first draw sample.

Drinking water samples will be collected from fixtures after a minimum eight-hour stagnation period. Samples collected from sinks will be collected from the cold water tap. During the initial building screening, the first draw samples will be collected following an 18 hour minimum stagnation period. First draw samples will be collected by placing the sample container under the tap before turning the water on. Flush samples will be collected following a minimum 30 second purge.

Samples will be submitted under proper chain of custody to an Iowa-licensed laboratory for analysis by EPA Method 200.8 or other methods approved by the EPA for the analysis of lead in drinking water.

4.1 Initial Building Screening

The initial building screening will be limited to collecting samples from:

- Hallway drinking fountains,
- Nurse's office sink,
- At least one kitchen sink,
- Selected classrooms.

In locations where the initial building screening identify lead concentrations greater than the action level a flush sample will be collected from the fixture to further determine the nature of potential lead levels.

Drinking water will be sampled from the outlets after any existing filter. Existing filters will not be replaced until the sampling is complete. Aerators and screens will not be removed prior to or during the sampling event. Utility sinks, science classroom sinks, and outside spigots will not be sampled during the initial building screening.

4.2 Full Building Survey

In the event lead concentrations in first draw samples collected from early childhood or elementary classroom sinks or sink-mounted bubblers are detected above the action level, first draw samples will be collected from all drinking water sources throughout the facility. The results of the samples collected during the full building survey will be evaluated and any fixtures found to contain lead greater than the action level will be repaired or replaced.

4.3 Periodic Monitoring

A periodic monitoring schedule will be established based on the results of the initial building screening and full building surveys, where completed. Periodic monitoring may include the collection of samples from the following areas:

- Classroom bubblers
- Classroom sinks
- Drinking water fountains
- Kitchen fixtures
- Cafeteria fixtures
- Teacher lounge fixtures
- Nurse's office fixtures
- Home economics classroom fixtures
- Bathroom fixtures
- Outside spigots
- Point of entry

Drinking water will be sampled from the outlets after any existing filter. Existing filters will not be replaced until the sampling is complete. Aerators and screens will not be removed prior to or during the sampling event. Utility sinks and science classroom sinks will not be sampled during periodic monitoring.

Periodic monitoring samples will be collected using flush methods to replicate water conditions during typical use. Available guidance and training will be addressed to staff and occupants of district facilities to inform them of the importance of allowing the water to run prior to use. Guidance and training is to be completed through a partnership with DMWW.

One point of entry sample will be the last sample collected during periodic monitoring. The point of entry sample will be a flush sample intended to determine the lead concentration from the service connection. The result will be compared to other samples taken throughout the facility. A copy of the Periodic Monitoring Schedule is included as **Attachment C**.

5.0 CORRECTIVE ACTIONS

Following drinking water sample collection and analysis, the district will determine the most appropriate corrective actions, where required. Corrective actions will be based on the available laboratory test results, institutional knowledge and regulatory guidelines. A summary of localized and system-wide corrective actions to be completed is presented below.

5.1 Localized Corrective Actions

Localized corrective actions will be completed for those water fixtures from which initial first-draw samples indicate the presence of lead at concentrations above the action level of 15 ppb, but follow-up flush sampling produces results that are less than the action level of 15 ppb. Localized corrective actions will be based on the type of fixtures from which the samples were collected.

5.1.1 Drinking Fountains and Water Coolers

Wall-mount or free-standing drinking fountains and water coolers that are determined to contribute to localized lead concentrations that exceed the action level of 15 ppb will be addressed as follows:

1. The fixture will be temporarily removed from service.
2. Control valving and interior piping in porcelain fixtures will be removed and replaced with certified lead-free hardware.
3. Water coolers will be removed and replaced with certified lead-free equivalents.
4. Follow-up sampling will be completed to determine that the corrective actions are complete.

5.1.2 Classroom Faucets and Sink-Mounted Bubblers

Classroom sink faucets and sink-mounted bubblers in early childhood and elementary schools that are determined to contribute to localized lead concentrations that exceed the action level of 15 ppb will be addressed as follows:

1. A daily fixture flushing program will be initiated to insure that water is being moved through the supply piping and fixture on a regular basis. A copy of the instructions and log form for the district's building flushing program are attached as **Attachment D**.
2. A full-building drinking water survey will be completed.
3. Fixtures with lead concentrations in excess of the action level of 15 ppb, based on the results of the full-building water survey, will be repaired or replaced.
4. Follow-up sampling will be completed to determine that corrective actions are complete.

5.1.3 Sink Faucets – Not in Classrooms

Sink fixtures in locations other than early childhood and elementary school classrooms that are determined to contribute to localized lead concentrations that exceed the action level of 15 ppb will be addressed as follows:

1. The fixture will be temporarily removed from service.
2. The fixture will be repaired or replaced.
3. Follow-up sampling will be completed to determine that the corrective actions are complete.

5.2 System-Wide Corrective Actions

System-wide corrective actions will be completed when the results of both initial first-draw and follow-up flush samples indicate that lead concentrations exceed the action level of 15 ppb at one, or more, fixtures. The nature and extent of system-wide corrective actions may be as limited as the repair and replacement of a localized fixture and associated supply piping or as extensive as temporary termination of drinking water services to a facility. System-wide corrective actions will, at a minimum, include the following:

1. Impacted fixtures will be temporarily removed from service.
2. Fixtures will be repaired or replaced.
3. Supply piping and valving will be removed, at a minimum, to the nearest building supply main.

4. Follow-up sampling will be completed to determine that the corrective actions are complete.

5.3 Routine Best Practices

The following actions are considered routine best practices by the USEPA and Des Moines Water Works that should be completed to reduce, or eliminate, the potential for exposure to lead in drinking water above the action level of 15 ppb.

1. Use only cold water for food and beverage preparation.
2. Allow water to run through sink faucets and drinking fountains until the water is cold to the touch, prior to consumption.

6.0 COMMUNICATION

DMPS will periodically inform interested parties of the sampling results and provide the information on the district's website.

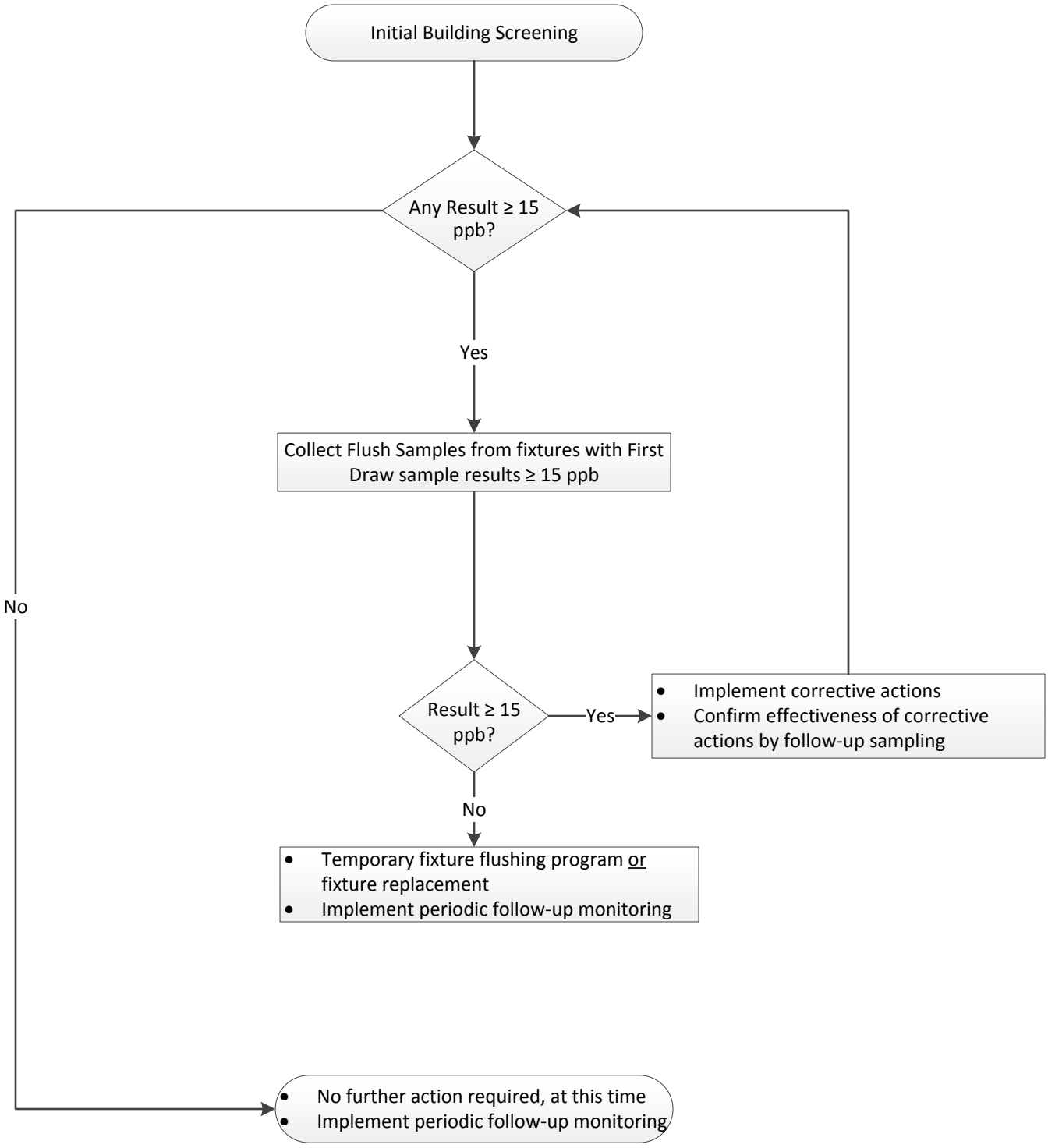
7.0 PLAN UPDATES

This MP has the ability to be changed as new regulations or guidance are put in place and experience is gained. Any questions regarding the MP should be addressed to Environmental Specialist in Facilities Services at tyler.puls@dmschools.org or 515-242-7706.

ATTACHMENT A

Lead in Drinking Water Initial Building Screening Protocol

DMPS LEAD IN DRINKING WATER INITIAL BUILDING SCREENING PROTOCOL



Notes:

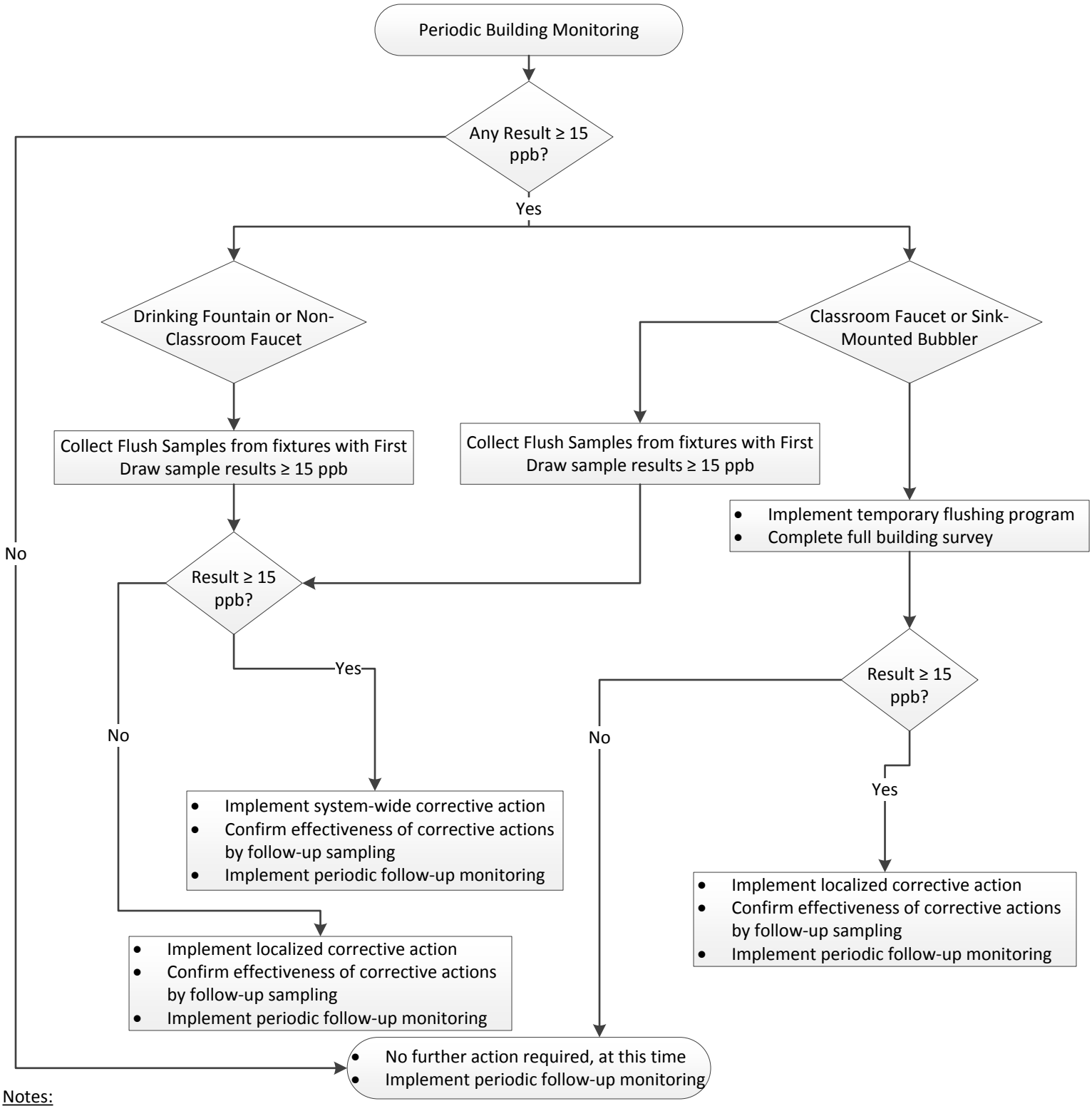
1) Initial Building Screening samples collected from: hallway drinking fountains; nurse's office; at least one kitchen sink; selected classrooms.
2) First Draw samples collected following minimum 18-hour stagnation period.
3) Flush Samples collected following 30-second purge of water supply lines to sampled fixture. Minimum 8-hour stagnation period for all Flush Sample locations.
4) All samples analyzed by United States Environmental Protection Agency (USEPA) method 200.8.
5) Sample and response approach based on: *3Ts for Reducing Lead in Drinking Water in Schools* (USEPA, October 2006).
6) Schedule for periodic follow-up monitoring and corrective actions presented in DMPS Lead In Drinking Water Management Plan
7) Fixture flushing program to be terminated following completion of initial round of periodic follow-up monitoring and completion of any requisite corrective actions.

Revised: May 27, 2016

ATTACHMENT B

Lead in Drinking Water Survey Protocol

DMPS LEAD IN DRINKING WATER SURVEY PROTOCOL



Notes:

1) Initial Building Screening samples collected from: hallway drinking fountains; nurse's office; at least one kitchen sink; selected classrooms.
2) Classroom faucet/sink-mounted bubbler sampling pathway applies exclusively to early childhood and elementary schools.
3) First Draw samples collected following minimum 18-hour stagnation period.
4) Flush Samples collected following 30-second purge of water supply lines to sampled fixture. Minimum 8-hour stagnation period for all Flush Sample locations.
5) All samples analyzed by United States Environmental Protection Agency (USEPA) method 200.8.
6) Sample and response approach based on: *3Ts for Reducing Lead in Drinking Water in Schools* (USEPA, October 2006).
7) Fixture flushing program to be terminated following completion of full-building survey, completion of any requisite corrective actions and follow-up sampling.

Revised: May 27, 2016

APPENDIX C

Periodic Monitoring Schedule

DMPS LEAD IN DRINKING WATER MANAGEMENT PLAN
PERIODIC MONITORING SCHEDULE

Year 1	Year 2	Year 3	Year 4	Year 5
2323 Grand	Central Campus/Downtown School	Cattell	2100 Fleur	Aviation Lab
Agricultural Lab	Central Nutrition Center	Dean	Callanan	Brubaker
Brody	Cowles	Finley	Central Academy	Capitol View
East High Outdoor Athletics	Garton	Hanawalt	East	Carver
Goodrell	Greenwood	Hubbell	Harding	Edmunds
Lincoln	Hillis	Jackson	Hiatt	Howe
Lincoln High Outdoor Athletics	Jefferson	King	Hoover	Mann
Lincoln RAILS Outdoor Athletics	Madison	Lincoln RAILS	Hoover High Outdoor Athletics	McKee
Lovejoy	Mann	McKinley	Hoyt	Mitchell
Park Avenue	Moore	Merrill	McCombs	Monroe
South Union	Phillips	Moulton	Meredith	Morris
Woodlawn	Samuelson	North	Prospect	Riverwoods
	Smouse	North High Outdoor Athletics	Roosevelt	Taylor
	Stowe	Oak Park	Roosevelt Outdoor Athletics	Windsor
	Studebaker	Perkins	Van Meter	Wright
	Walnut St	Pleasant Hill	Walker St	
		Willard	Weeks	
			Welcome Center	

APPENDIX D

DMPS Drinking Water Flushing Plan

DMPS WATER FAUCET FLUSHING INSTRUCTIONS

A temporary water faucet flushing program is being implemented to help reduce the potential for lead to be found in the drinking water in your building. This is being done in response to one, or more, initial water tests collected from building classrooms that displayed lead concentrations above the recommended action level of 15 parts per billion (ppb). Follow-up sampling has indicated that running water through the building's fixtures results in acceptable lead levels. This flushing program is being done as a precautionary measure and is not intended to be a long-term solution to this issue. DMPS Facility Management staff will be working to repair and/or replace any impacted fixtures and flushing will be discontinued once additional water testing indicates that all samples from the building have results less than the action level of 15 ppb.

Flushing Schedule

1. Flushing activities will be completed on a daily basis.
2. Flushing will be completed by custodial staff members responsible for the daily cleaning of classrooms, offices and other building spaces and will be paired with daily custodial run activities

The custodial staff member responsible for the daily cleaning of a classroom, office or other space is to complete the following:

Water Faucets

1. When entering a space to begin daily cleaning activities, turn the cold water tap of all water faucets on to a medium flow rate, similar to what one would use to fill a glass with drinking water. This includes classrooms, offices and the building's kitchen.
2. Leave all faucets within a space on until cleaning activities are completed or, at a minimum, for at least 30 seconds or until the water from the faucet runs cold.
3. Turn off faucet and proceed to the next room or space.
4. In the even that there is a drinking fountain/bubbler attached to the sink(s) in a space, once the faucet has been flushed, run the drinking fountain/bubbler continuously for at least 30 seconds.

Drinking Fountains

1. Flush water through all building drinking fountains for at least 30 seconds, or until water runs cold.

Record Keeping

1. After completing all flushing activities, initial and date the ***Water Flushing Log Form*** located in the building's custodial office. Each custodial staff member that assists with daily flushing activities is responsible for completing the form. An example of the form is attached.
2. ***Water Flushing Log Forms*** are to be retained in the custodial office and copy provided to the Custodial Zone Manager for the building on a monthly basis.

DMPS WATER FLUSHING LOG FORM

Building: _____ **Month/Year:** _____

Date	All Fixtures Flushed (Y/N) Run 1	Run 2	Run 3	Problems Identified	Completed By (Initials - a.m. and p.m. as appropriate) Run 1	Run 2	Run 3

Notes:

1) All fixtures are to be flushed for a minimum of 30 seconds, or until water runs cold.

2) Flushing to be coordinated with availabilty and scheduling of custodial staff

3) Flushing Log Form to be retained in the custodial office