



Healthy Public Building Assessment Act Report 2017



Written by the Department of General Services



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I. EXECUTIVE SUMMARY

This report fulfills the requirement in the Healthy Public Buildings Assessment Act of 2016 (D.C. Law 21-237; 64 DCR § 939) (“Healthy Public Buildings Act”). This report provides the status of the Healthy Public Buildings Act and the protocols created to ensure the Department of General Services (DGS) is in compliance with this act.

Per the requirements of the law, DGS assessed public buildings to identify environmental risk and worked with the Department of Energy and the Environment (DOEE) and the Department of Health (DOH) to produce protocols that will be posted on the DGS website.

II. INTRODUCTION

This report provides assessments of potential environmental risks in the District’s public buildings as well as descriptions of the protocols established to conduct these assessments.

III. PROTOCOLS AND THEIR RESPECTIVE FY 2017 RESPONSE

DGS modernized eight (8) protocols during the summer of 2017 to better assess the public buildings after reviewing and incorporating comments received from DOH and DOEE.

Each protocol describes:

- The frequency and methods of assessment;
- Assessment criteria and threshold levels at which remediation measures are taken; and
- The actions to be taken following the assessment and how such actions will be communicated to the public.

During FY 2017, all self-assessed and publicly generated inquiries were brought into compliance with the associated DGS protocols. Below please find the break out of each assessment and their compliance with the protocols. A synopsis of the protocols designed to protect human health and the environment is as follows (the complete protocols are attached in Attachment A):

1. Indoor Air Quality: Standard operating procedures for the assessment and maintenance of Indoor Air Quality (IAQ)

There were forty-six (46) buildings with air quality issues throughout the District of Columbia. These buildings have been assessed and, if necessary, remediated and are in compliance with DGS protocols.

Carbon Monoxide – Incorporated into Indoor Air Quality (IAQ)

Outdoor Air Quality – Incorporated into Indoor Air Quality (IAQ)

Ventilation – Incorporated into Indoor Air Quality (IAQ)

Temperature Control – Incorporated into Indoor Air Quality (IAQ)

2. Mold or Mildew: Standard operating procedures for the assessment and remediation of mold and mildew

There were one hundred and three (103) facilities with mold and mildew issues throughout the District of Columbia found through work requests and routine assessments. All mold and mildew issues have been assessed and, if necessary, remediated and are in compliance with DGS protocols.

3. Pests and Pesticides: Standard operating procedures for Integrated Pest Management (IPM) that reduces the risk of unnecessary pesticide exposure

All District of Columbia facilities are using minimum risk pesticides and organics and are in compliance with DGS protocols.

Pests – Incorporated into 'Pests and Pesticides' Integrated Pest Management

4. Hazardous Materials: Standard operating procedures for Hazardous Material handling, disposal and spill/release response

All District of Columbia facilities have access to Safety Data Sheets (SDS) for all hazardous material handling, via online resources provided by the

Department General Services available to the public, staff, and responders. All facilities are in compliance with DGS protocols.

5. Asbestos: Standard operating procedures for the assessment and remediation of Asbestos Containing Materials (ACM)

Ninety-one (91) DC Public School buildings have been assessed with six (6)-month surveillance and three (3)-year re-inspections and, if necessary, remediated. All other school buildings are certified as asbestos free. All school buildings are in compliance with DGS protocols.

Forty-five (45) non-school buildings throughout the District of Columbia have been assessed and, if necessary, remediated and are in compliance with DGS protocols.

6. Lead-Based Paint: Standard operating procedures for the assessment and remediation of lead based paints

DC Public Schools have been assessed and if necessary, remediated through Lead Based Paint routine inspections and risk assessments. These schools are in compliance with DGS protocols.

Thirty-five (35) non-school buildings throughout the District of Columbia have been assessed and if necessary, remediated. These facilities are in compliance with DGS protocols.

7. Lead in Drinking Water: Standard operating procedures for the assessment and filtration of lead in drinking water sources

Annual testing of all traditional and non-traditional drinking water devices has been tested in one hundred eighty-two (182) facilities. Filtration and remediation have been completed and are in compliance with DGS protocols.

8. Radon: Standard operating procedures for the assessment and remediation of Radon gases

One hundred seven (107) DC Public Schools were surveyed over a (4)-year cycle and if necessary, remediated. These schools are in compliance with DGS protocols.

IV. CONCLUSION

DGS is in compliance with the Healthy Public Buildings Assessment Act of 2016. We will provide our last update to the DC Council by September 30, 2018.

ATTACHMENT A:
HEALTHY PUBLIC BUILDING ASSESSMENT ACT
PROTOCOLS



Indoor Air Quality Assessment Standard Operating Procedures

▪ Public Buildings

I. Purpose

The intent of this document is to establish and/or document in-place standard operating procedures for the assessment and maintenance of Indoor Air Quality (IAQ) in order to protect human health and the environment, which includes prompt response to indoor air quality concerns, and effective recommendations for resolution, to build a partnership between building management and occupants to maintain a healthy livable environment. Operating procedures detailed within are for all public buildings as defined below and are executed with the oversight of the Department of General Services (DGS) Facilities Division, Environmental Health and Safety (EHS). DGS may be responsible for the continued development of management Plans in Schools.

II. Definitions

1. ANSI – American National Standards Institute
2. ASHRAE – American Society of Heating, Refrigerating and Air-Conditioning Engineers
3. CDC – Centers for Disease Control and Prevention
4. Certified Industrial Hygienist (CIH) -- One certified in the comprehensive practice of industrial hygiene by the American Board of Industrial Hygiene (ABIH)
5. DGS – Department of General Services
6. EHS – Environmental Health and Safety
7. EPA – United States Environmental Protection Agency
8. FPM – Feet Per Minute
9. HEPA – Refers to high-efficiency particulate filter capable of trapping and retaining at least 99.97 percent of all monodispersed particles 0.3 micrometers in diameter
10. HVAC – Heating, Ventilation and Air-Conditioning system
11. IH – One certified in the comprehensive practice of industrial hygiene by the ABIH
12. LEED – Leadership in Energy and Environmental Design, a rating system devised by the United States Green Building Council (USGBC) to evaluate the environmental performance of a building and encourage market transformation towards sustainable design
13. M/S – Meter Per Second
14. NAAQS – EPA National Ambient Air Quality Standards
15. NIOSH – National Institute for Occupational Safety and Health

16. OSHA – Occupational Health and Safety Administration

17. PM – particle matter in air

18. PPM – Parts per million

19. PPB – Parts per billion

20. Public Building – Defined as any building owned by the District of Columbia where people regularly occupy the building, including assembly places, places of employment and educations, child and adult care facilities, health care centers, foster care facilities, and homeless shelters

21. TVOCs -- Total Volatile Organic Compounds that include a wide range of organic chemical compounds in air

III. Regulations and Standards

This procedure is implemented and managed by DGS EHS for all public buildings. Standards used in the implementation of the procedure include, but are not limited to the following policies which should be viewed as primary sources of information for indoor air quality.

- Healthy Public Buildings Assessment Act of 2016
- The Clean Air Act (CAA)
- 40 CFR Part 50. National Ambient Air Quality Standards (NAAQS)
- 29 CFR Part 1910.1000, OSHA Standards for Air Contaminants
- ANSI/ASHRAE) Standard 62.1 (2016). Ventilation for Acceptable Indoor Air Quality
- OSHA 3430-04 (2011). Indoor Air Quality in Commercial and Institutional Buildings
- U.S. EPA, CDC and NIOSH. Building Air Quality: A Guide for Building Owners and Facility Managers
- U.S. EPA and NIOSH (1998). Building Air Quality Action Plan
- U.S. Green Building Council LEED Standard for Indoor Air Quality Assessment
- Asbestos Hazardous Emergency Response Act 40 CFR- Part 763

IV. Assessment Frequency

Indoor Air Quality (IAQ) Assessments shall be performed in response to valid occupant concerns and/or associated with emergency responses, such as water leaks, sewage leaks, gas leaks and fire damage. In addition to response assessments, the DGS performs baseline IAQs in representative facilities throughout the year to assess for the presence of Asbestos, Mold, Lead, Rodents and Histoplasmosis. Based on the concern and assessment focus a HVAC system evaluation or outdoor air assessment may be performed.

V. Work Order Response Assessment

In response to a complaint, work order, or other form of report of poor indoor air quality, an EHS representative will be dispatched to initiate an investigation. The EHS representative or contractor shall perform a field assessment by interviewing the listed contact to gather information; discuss the background, history, area of concern, and knowledge of concern; and perform an initial visual observation of the indoor environment, including the HVAC and Mechanical Air Handler system if applicable. The EHS representative will pass on the information to the contracted Certified Industrial Hygienist (CIH) or industrial hygienist under the supervision of a CIH of DGS to perform an IAQ Assessment.

VI. Indoor Air Quality Assessment

Assessment scope of investigation is dependent upon the concern which generated the assessment and is specific to the facility and nature of concern. In general, an IAQ Assessment shall consist of: visual observations and measurement of selected indoor air quality parameters, evaluation of the building ventilation system, and assessment of outdoor air in the immediate vicinity of the concerned building. These three components of an IAQ Assessment are further elaborated below:

A. Visual Observations and Measurement of IAQ Parameters

1. The CIH/IH or representative shall perform a visual and sensory observation of surrounding areas checking for typical IAQ problem symptoms such as odors, moldy odors, dirty or unsanitary conditions, evident signs of moisture intrusions, sewer gas smell from dry traps, evidence of suspected microbial growth, staining or discoloration of building materials, poorly maintained filters, uncomfortable temperatures or humidity, inadequate ventilation or air flow, blocked vents, presence of chemicals, unusual ballasts noises from light fixtures, computer cooling fans, or other electrical devices, evidence of pest infiltration, (boiler room and generators if available) new furniture and carpet, exhaust from motor vehicles fumes from underground parking facilities(exhaust fans functioning) or fumes from outdoor activities, etc.
2. The CIH/IH, or representative shall measure the levels of comfort parameters (i.e., Temperature, Relative Humidity, Carbon Monoxide and Carbon Dioxide) and Respirable Particulates (PM_{2.5}µm and PM₁₀µm size classes) in representative indoor locations using calibrated field instruments. Outdoor measurements of the above

parameters shall also be obtained preferably near the air intake of the building for comparison.

3. The CIH/IH, or representative, may use additional equipment such as a moisture meter to check for material moisture content, a thermal imaging camera to inspect behind walls or inside ducts, and a calibrated photo-ionization detector (PID) to measure total volatile organic compounds (TVOCs) in air.
4. In the event of moldy odors subsequent to a water intrusion event, the CIH/IH or representative shall collect non-viable fungal spore samples on *Air-O-Cell* cassettes using a Buck BioAire calibrated pump, in representative locations. One outdoor sample will be collected for comparison of mold population profile and concentration. The samples will be submitted for analysis by a certified laboratory under strict chain-of-custody procedures.

B. Ventilation Evaluation

1. Visual Inspection of the HVAC System

The HVAC system shall be inspected to ensure that no visible contaminants are present. If no contaminants are evident through visual inspection, further verification of the system cleanliness through gravimetric or wipe testing analysis testing may be requested at the discretion of the DGS EHS representative.

In addition, the following evaluations may be performed:

- a) Compare carbon dioxide concentrations and pressure gradients
- b) Inspect for leaks of oil, water, or refrigerants around HVAC equipment
- c) Inspect equipment for signs of corrosion, high humidity
- d) Check for under ventilation cause by obstructed vents, faulty dampers or other HVAC system malfunctions, or from problems within the occupied space
- e) Lift a ceiling tile and examine the plenum for potential problems after consulting with the management plan for the effective building for the presence of asbestos
- f) Check supply diffusers to see if air is moving (using chemical smoke)
- g) Check for deterioration and/or unsanitary conditions (e.g., corrosion, water damage or standing water, mold growth or excessive dust in ductwork, debris or damaged building materials in ceiling plenum)

- h) Inspect outdoor air intakes to check condition and for unsanitary conditions, standing water, or nearby pollutant sources such as exhaust vents or motor vehicles
- i) In general, evaluate whether defects in the HVAC system could have caused the specific IAQ concerns highlighted by the building occupant(s)
- j) Visibly inspect the boiler room, generators and USTs, if applicable
- k) Visibly inspect the location of the exhaust stack connected to the boiler room of other commercial facilities stationed within the building

2. Collect data to evaluate the HVAC system

- a) If the HVAC system is suspected to be a contributing factor to poor indoor air quality of a facility, the CIH shall perform a detailed evaluation of the HVAC system through measurement of the following data:
 - i. Velocity pressure and average velocities
 - ii. Duct dimensions and area
 - iii. Total volume flow rate
 - iv. Static pressure reading
- b) The CIH/IH or representative shall use air velocity meters to estimate the following:
 - i. Velocity exiting from replacement air systems without ductwork
 - ii. Cross drafts in a room
 - iii. Hood capture velocity
 - iv. Duct velocities less than 3 m/s 600 fpm; and slot velocities

C. Outdoor Air Assessments

1. The CIH/IH or representative shall also evaluate the immediate environment around the concerned building to identify potential outdoor air pollutants that could also have implications on indoor air quality, and cause health and safety concerns for building occupants who may spend some time outdoors (e.g., school students in playgrounds). Special attention shall be focused on the area near the outdoor air intakes to check for any unsanitary conditions, standing water, or other pollutant sources such as exhaust vents, idling motor vehicles, underground parking exhaust system and construction activities that generate dust or fumes. Close attention should be paid to the fuel supply sulfur content of the oil upon delivery [40 CFR 60.48c (f)]. The CIH/IH or representative may decide to measure the levels of EPA listed six principal air pollutants; carbon monoxide, lead, nitrogen dioxide, ozone, particle matter, and sulfur dioxide, and compare them against the NAAQS thresholds.

VII. Threshold Levels for Corrective Action

The indoor air quality parameter measurements shall be compared against the following standards and thresholds for action:

IAQ Parameter	Standard/Guideline	Threshold / Range
Temperature	ASHRAE 55-2013	Winter: 68 to 75°F Summer: 73 to 79°F
Relative Humidity	ASHRAE 62.1-2016	<65%
Carbon Monoxide	EPA NAAQS	9 ppm/8hr to 35 ppm/1hr
Carbon Dioxide	ASHRAE 62.1-2016	Ambient + 700ppm 300 to 500 ppm
PM _{2.5} µm	EPA NAAQS	12 µg/m ³ (annual mean)
PM ₁₀ µm	EPA NAAQS	150µg/m ³ (24 hr. average)
TVOC	LEED	500 µg/m ³
Mold Spores	There are no definitive regulations or standardized guidelines for airborne mold in an indoor setting. If building systems (ventilation, envelope) are functioning properly, the indoor population profile should mimic what is encountered outdoors, and the concentrations should be below the ambient levels.	

The EPA NAAQS thresholds for the six principal air pollutants in outdoor environments are summarized below:

Pollutant	Primary/Secondary	Averaging Time	Level	Form
	Primary	8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Lead (Pb)	Primary & Secondary	Rolling 3-month average	0.15 µg/m ³	Not to be exceeded.
Nitrogen Dioxide (NO ₂)	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years

Pollutant		Primary/Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		Primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		Primary & Secondary	Rolling 3-month average	0.15 µg/m ³	Not to be exceeded.
Nitrogen Dioxide (NO ₂)		Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary & Secondary	1 year	53 ppb	Annual Mean
Ozone (O ₃)		Primary & Secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Matter (PM)	PM _{2.5}	Primary	1 year	12.0 µg/m ³	annual mean, averaged over 3 years
		Secondary	1 year	15.0 µg/m ³	annual mean, averaged over 3 years
		Primary & Secondary	24 hours	35.0 µg/m ³	98th percentile, averaged over 3 years
	PM ₁₀	Primary & Secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO ₂)		Primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Note:

Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

VIII. Mitigation of Air Quality Issues

Based on the results of the above-mentioned investigations, corrective action may be warranted. The following procedure is used:

- A. The CIH/IH or representative shall develop a remediation plan for housekeeping, mechanical, and other building deficiencies as necessary to abate identified issues contributing to poor indoor air quality.
- B. The CIH/IH or representative shall compile a report noting assessments conducted, testing performed, and remediation efforts initiated. Brief concise findings are reported to a designed EHS representative of DGS.

- C. The CIH/IH or representative shall perform a post-mitigation site walk through to evaluate the status of corrective measures implemented in the areas of concern.
- D. A final closeout report is issued to the EHS representative summarizing all investigation and remedial efforts. The report shall be uploaded onto Salesforce®.

Corrective actions to address specific IAQ issues documented may include, but are not limited to, the following:

- A. A work request response may be retained by DGS entered into Salesforce® to track remediation efforts for other facility team member. Some examples include adjustments for temperatures, replacement of filters, cleaning of vents, filling traps with water, cleaning out dumpsters, fixing plumbing leaks, and patching building penetrations.
- B. Use of Vapor Shark or fogging odor neutralizer unit may be run in the area to neutralize unpleasant odors.
- C. Use of air scrubbers with HEPA filters and/or carbon filters.
- D. Deep cleaning of impacted area.
- E. Mold Remediation as necessary in accordance with DC regulation as administered by DOEE - all professionals – without respect to the location of the work performed – who perform mold assessment or remediation should be certified and licensed by DOEE.
- F. Ventilation repair / upgrades.
- G. Rerouting of the Exhaust Stack to the highest point available. In cases where taller buildings are build adjoining the existing building of lesser height. Regulations should be established for the conversions of exhaust stacks to the height of the newly built facility.
- H. Boiler Adjustment: Each year, adjust the combustion of each boiler to minimize emissions of carbon monoxide (CO) and oxides of nitrogen (NOx) [20 DCMR 805.8].

Integrated Pest Management Standard Operating Procedures

▪ Public Buildings

I. Purpose

The intent of this document is to establish and/or document in-place standard operating procedures for Integrated Pest Management (IPM) in order to protect human health and the environment from risk of unnecessary pesticide exposure. Operating procedures detailed within are for all public buildings as defined below and are executed with the oversight of the Department of General Services (DGS) Facilities Division, Environmental Health and Safety (EHS).

II. Definitions

1. Integrated Pest Management (IPM) -- A systematic process for achieving long-term, environmentally sound control of pests through the use of many different tools and management practices in an economical manner.
2. IPM Contractors -- Responsible for responding to complaints, proficient pest identification, inspections, use of IPM tools and tactics, the implementation and daily operations of controlling pests while reducing the hazards of pests and pesticide exposure to the public, protecting the environment, communicating with facility staff on IPM related issues, keeping detailed records, and regularly reevaluating the success of their activities.
3. Pesticide -- Any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant, or any nitrogen stabilizer.
4. Action Threshold -- The predetermined point of pest infestation at which an IPM contractor takes action to reduce a pest's numbers.

III. Regulations and Standards

This procedure is implemented and managed by DGS Facilities Division, Environmental Health and Safety (EHS) for operating public buildings. Standards used in the implementation of the procedure include, but are not limited to the following:

- Loretta Carter Hanes Pesticide Consumer Notification Act of 2008 – requires that citizens are provided with information and notification of outdoor pesticide applications.
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) – provides for federal regulation of pesticide distribution, sale, and use.
- The Pesticide Education and Control Amendment Act of 2012 – restricts the application of restricted use pesticides on public use property, near waterways, at schools, at day care centers, and on District Property.

IV. Work Order Response

Work order responses are initiated by the presence or likely presence of pest as observed by maintenance / facility personnel or by occupant complaints.

A. Service Requests

EHS communicates, orders, and tracks all work with its IPM Contractors through the use of Salesforce, which allows for instant collaboration and coordination between the contractor and EHS staff.

IPM Contractors are to respond to service requests categorized by priority. All high priority request initiates on-site service within 2 hours. If the service request is categorized as routine, then a 24-hour response is necessary.

B. Pest Control Contractor Responsibility

The IPM contractor shall report their corrective actions to the EHS office and the status of the pest activity upon completion. If additional follow up services are required or recommended the EHS office coordinates such re-visits. The contractor shall maintain detailed and accurate notes in the IPM logbook including everything about all IPM program activities, all pest sightings, actions taken, recommendations made and reports written.

The contractor shall also maintain verbal communications with the staff at the facility during the service visits, usually the Building Manager, Custodial Foreman and Cafeteria Manager.

The contractor shall ensure staff has the necessary experience and licenses to perform the required work. The contractor shall identify a Project Manager and or a Supervisory IPM Technician to serve as key personnel. The Project Manager or Supervisory IPM Technician shall serve as the District's point of contact and should be a senior member of the contractor's management team who has the authority and responsibility for ensuring that the contractors responsibilities are properly discharged. The IPM Technician Supervisory personnel shall be properly licensed and have the requisite knowledge of IPM service.

V. Routine Assessment

As part of routine assessments, the following are performed at public buildings and are typically undocumented observations as facility and maintenance personnel perform routine tasks. In addition, where pest concerns persist, an IPM contractor performs routine:

A. Monitoring

Maintenance and Facility

Maintenance and facility personnel routinely observe their facility. In doing such it is their responsibility to identify and report the presence or likely presence of pest and submit a work order through Salesforce for response by the EHS through a representative or contractor.

IPM Contractor:

For IPM contractors with service contracts to a specific facility their monitoring includes the following activities:

- Identifying and locating pests
- Identifying areas of critical sensitivity (classrooms, infirmary, etc.)
- Estimating size of pest populations
- Identifying the factors that are contributing to the pest problem (poor sanitation, improper storage, holes in walls, etc.). In addition, the IPM contractor shall note contributing factors such as alternative serving models, where breakfast is served in classrooms in accordance with the Healthy Schools Act of 2010 Section 203.
- Reporting management practices that could affect pest populations or pest management activities (trash pickup, lighting, construction, etc.)
- Identifying non-target species that could be killed or injured
- Assessing natural enemies and potential secondary pests
- Assessing environmental conditions (temperature, humidity, weather or seasonal changes) There are three basic components to the monitoring program:
- walk-through visual inspections of all areas of the building including the outside;
- Use of various types of monitoring traps; and
- Information from personnel working on site.

B. Environmental Health and Safety

EHS manages the IPM Program, IPM contractors, and all information on pest control efforts made in the DGS maintained properties, including material safety data sheets of each pesticide or bait station that may be used in facilities, or on the grounds and site-specific information on pest control activities at each location. EHS duties and responsibilities include the following:

- Adoption of suitable IPM methods and programs;
- Document management, such record keeping allows EHS to track trends and patterns Manage pests only when necessary through identification of action thresholds at which pest population warrant action;
- Coordination with DGS and Agency Staff to provide IPM related information to tenants and staff as appropriate; Communication and reinforcement of

- IPM policies and procedures to Building occupants, staff, and maintenance personnel as opportunities arise;
- Collaborating with maintenance and building contacts to ensure that each site is undertaking housekeeping, sanitation, and repair actions necessary to reduce or prevent pest problems;
 - Oversight of the public notification procedures related to pesticide application;
 - Utilize pesticides only as needed where need is determined by pest population monitoring and previous unsuccessful attempts to solve the pest problem with non-chemical strategies; while producing the desired level of effectiveness, pose the least harm to human health and the environment, and as appropriate, notifying Building Managers before applications and provide a copy of the pesticide label to the Building Manager.
 - Provide and Post Pesticide Use Notification signs or other warnings in coordination with DGS EHS personnel.
 - coordination of any IPM education or training;
 - Receive, approve, and assign work requests for Pest Services through Salesforce;
 - Manage the pest control contracts and ensure that the contractors follow the IPM Program; and monitor , track and maintain records including regular sampling and assessment of pests, surveillance techniques, remedial actions taken, and assessment of program effectiveness;
 - Prevent pest entry and movement, monitor and maintain structures and grounds including sealing cracks, eliminating moisture intrusion and accumulation and add physical barriers to prevent pest entry and movement.
 - Address conflicts and complaints related to IPM and pesticide use.

C. DGS Maintenance Staff

A primary role of maintenance staff in IPM is to "pest-proof" walls, doors, windows, and other areas that are allowing pests to enter the building or move from room to room, as identified by the IPM contractor. They also report any pest problems that they observe to EHS. DGS Maintenance staff shall ensure comprehensive inspections of the facilities are conducted and oversee the management of consistent IPM principles and IPM reporting including recommendations to prevent future pest infestations.

D. Building Janitorial and Staff

Building janitorial staff or custodians have the primary responsibility for sanitation and trash management in most facilities. Poor sanitation makes life easy for cockroaches, flies, ants, mice, rats, and other pests that need nothing more than a little spilled food, a drippy faucet and a place to hide. Janitorial staff needs to understand the connection between pest problems and food, standing water, and clutter. They need to respond to requests from the IPM

Contractor and/or EHS Staff for housekeeping or trash management action. They also have a responsibility to report any pest problems they notice.

E. Building Tenants

All tenants or building occupants should practice and encourage good sanitation practices: eating in food areas, cleaning up leftover food and food debris, minimizing clutter, and the like to help prevent pest problems from occurring. Building tenants should report any pest sightings, problems, or conditions that might favor pests to and submit a work request through Salesforce for pest control services, as appropriate.

VI. Remediation

A. Action Plans

The IPM contractor in general (based on specific task) adheres to the following action plan for pests commonly found in or around District properties.

The contractor shall provide IPM Technicians as part of the IPM Program per facility for various DC properties listed and other properties which may be added later on. The contractor shall ensure its Technicians understand and promote the difference between IPM and traditional pest control in that IPM is not based on regular or automatic use of pesticides; IPM depends heavily on nonchemical methods of control such as sanitation, exclusion, long term control of landscape and structural pests, while protecting the health, the environment and the quality of life of the public.

Common Pest Type Action Plan		
Pest Type	Immediate Response	Treatment
Interior arthropods (cockroaches, ants, fleas, silverfish, spiders, ticks & mites)	Survey of area to determine the presence of pest.	Start with baits and monitors to determine level of infestation. Follow up after one week. *Liquid treatment recommendation if baits not sufficient.
Mosquitos	Inspect to determine the level of infestation and not fungus gnats or midges.	Schedule exterior building treatment Follow-up after three weeks during mosquito.
Interior/Exterior rodents (mice and rats)	Survey to determine the presence of pest. Set out trapping devices, and inspect for rodent signs (burrows, rub marks, fecal droppings, gnaw marks). **Treat burrows with tracking powder. Install rodent bait stations and monitor activity. Identify contributing conditions/factors and work towards resolution.	Follow up with three visits every other day for outside burrows. If not controlled, continue on weekly basis for three weeks. Interior pest: Follow up after 24 hours for glue boards and snap traps.

Common Pest Type Action Plan		
Pest Type	Immediate Response	Treatment
Raccoons, Opossums, and Squirrels	Survey to determine facility entry.	Drop a Have-a-Hart or any other suitable trap and check daily until animal is trapped. If heavily populated area will be checked daily. If it is a warehouse facility with limited employees it will be checked bi-weekly.
Any pest in or around food preparation and dining areas.	Monitor Inspect, assess, and identify target pest. *** Use mechanical or glue traps and check daily. Conduct or recommend immediate sanitation/housekeeping and/or structural improvements (facility maintenance) necessary to arrest such infestation.	Identify contributing conditions/factors and work toward resolution. Create inhospitable living conditions for pests. Caulk/seal cracks along stainless-steel sinks and work areas. Report missing/damaged screens on vents, windows, and floor drains. Install weather stripping and door sweeps. Discussion with EHS and Kitchen Manager: sanitation issues, leaks, recommend keeping floor drain traps full at all times, and drains clean at all times, improved cleaning practices, removing grease accumulation from vents, ovens, stoves, and between equipment., correct food storage, prompt trash removal. Notify EHS and Food Service Staff if the use of pesticides is necessary.

*Determine the reason for bait failure before resorting to liquid treatment. For example different baits work with different species and may also be ineffective at different life cycle stages. Also bait treatment may be ineffective if, due to poor sanitation, 'tastier' food remain easily available to the pest(s) which would also render the liquid treatment less effective. Note liquid treatments are usually more easily available to non-target species and children than properly applied baits.

**Tracking powders are generally "Restricted Use Pesticide" which require and exemption from the Department of Energy and Environment for use and also they must be applied under the authority of a licenced DC pesticide Operator/Applicator.

***Roach bait must only be used for the control of cockroaches and not for 'any pest in or around food preparation and dining areas.

VII. Use of Minimum Risk Pesticides and Organics

The IPM contractor is responsible for maintaining a list of all pesticides that have been approved for use, tracking pesticide use, all purchasing of pesticides to be used, and authorizing / training personnel to bring or apply pesticides on Public Buildings. Over application is strictly prohibited.

A. Approved Use Products include, but are not limited to, the following:

- Insecticide or rodenticide baits and traps;
- Caulking agents and crack sealants;
- Borates, silicates and diatomaceous earth;
- Soap-based products;
- Natural products on the FIFRA's 25(b) list (40 CFR part 152.24(g)(1));
- Natural products on the California Certified Organic Farmers organic list;
- EPA "Generally Recognized as Safe" (GRAS) products pursuant to federal EPA;
- Cryogenics, electronic products, heat and lights;
- Biological controls, such as parasites and predators;
- Microbial pesticides;
- Insect growth regulators; and
- Physical barriers

B. Limited Use Products

A written request for a particular pesticide not on the Approved List must be submitted to EHS for a specific and limited purpose. EHS may grant a limited use exemption, not to exceed three months, upon finding that the requestor has:

- Identified a compelling need to use the pesticide;
- Made a good-faith effort to find alternatives to the particular pesticide;
- Demonstrated that effective, economic alternatives to the particular pesticide to not exist for the particular use; and
- Developed a reasonable plan for investigating alternatives to the pesticide in question during the exemption period.

C. Banned Use Products (high health risk) will not be allowed on the Approved List:

- Pesticides linked to cancer, (US EPA Class A, B and C carcinogens and chemicals known to the state of California to cause cancer under Proposition 65);
- Pesticides that cause birth defects or reproductive or developmental harm (identified by the US EPA or known to the State of California under Proposition 65 as reproductive or developmental toxins);
- Pesticides that interfere with human hormones;
- Pesticides classified as Toxicity Categories I and II by US EPA;
- Carbonate or organophosphate pesticides; and

- Foggers, bombs, fumigants or sprays that contain pesticides identified by the state of California as potentially hazardous to human health (CFR 6198.5).

Hazardous Materials Management Standard Operating Procedures

▪ Public Buildings

I. Purpose

The intent of this document is to establish and/or document in-place standard operating procedures for Hazardous Materials Management in order to protect human health and the environment. Operating procedures detailed within are for all public buildings as defined below and are executed with the oversight of the Department of General Services (DGS) Facilities Division, Environmental Health and Safety (EHS).

II. Definitions

1. Department of Energy and Environment (DOEE) -- The leading authority on energy and environmental issues affecting the District of Columbia.
2. Environmental Protection Agency (EPA) -- Has a mission to protect human health and the environment.
3. Safety Data Sheet (SDS) -- A document that provides workers with procedures for safely handling or working with a particular substance.
4. National Environmental Policy Act of 1969 (NEPA) -- Signed into law on January 1, 1970. NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions.
5. Resource Conservation and Recovery Act (RCRA) -- The public law that creates the framework for the proper management of hazardous and non-hazardous solid waste.

III. Regulations and Standards

This procedure is implemented and managed by DGS Facilities Division, Environmental Health and Safety (EHS) for operating public buildings. Standards used in the implementation of the procedure include, but are not limited to the following:

- 40 CFR 260 – Hazardous Waste Management System: General Resource Conservation and Recovery Act (RCRA)
- 40 CFR 261 – Identification and Listing of Hazardous Waste
- 40 CFR Part 273 – Standards for Universal Waste Management
- 40 CFR Part 279 – Standards for the Management of Used Oil
- 40 CFR Part 761 – Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
- Consumer Product Safety Act
- District of Columbia Hazardous Waste Management Act of 1977 effective March 16, 1978, as amended (D.C. Law 2-64; D.C. Code §§ 8-1301 to 8-1322)
- Federal Hazardous Substance Act

- Federal Food, Drug and Cosmetic Act
- Federal Insecticide, Fungicide, and Rodenticide Act Federal Alcohol Administration Act
- Solid Waste Disposal Act
- Title 20, Chapter 42 – Standards for the Management of Hazardous Waste and Used Oil
- Title 20, Chapter 43 – Hazardous Waste Management Regulations Administration and Enforcement

IV. Regulatory Compliance

A. Hazardous Waste Generator Building Identification

All public buildings that generate hazardous waste maintain an active EPA Identification (EPA ID Number), which is unique for each location. Most DGS maintained hazardous waste generating facilities are categorized as Conditionally Exempt Small Quantity Generators (220 pounds or less/month). Other waste that require management as hazardous waste include universal waste and waste oil. Transportation of hazardous waste, universal waste, and waste oil is handled by an approved waste hauler to an EPA approved landfill or disposal facility. In addition, facilities generating, accumulating, or shipping any hazardous waste, universal waste or waste oil, are registered as a generator through DOEE hazardous waste branch.

B. Safety Data Sheets

DGS building management personnel and tenants in each facility that generate or use hazardous material shall submit request for support to the EHS office if required. EHS supports the proper uploading, categorization, and filling into the electronic binder available on-line to all DGS employees and tenants through the SDS On-line system. The online system in general includes the following capabilities:

1. Chemical Inventory
Including the record, the name of each product, information about the manufacturer, and the general work area where the product is found within the building.
2. Safety Data Sheets
Any SDS sheet not available can be requested to any EHS representative.
3. Container Labels
Present on all applicable hazardous materials.

4. Site-Specific Hazard Communication Program

Occupant uploaded information, emergency response contacts, and Right-to-know procedures are offered to each facility using the online management system.

V. **Safe Practices**

A. **Collection and Storage**

Proper collection and storage techniques are essential for limiting risk associated with hazardous material. The Resource Conservation and Recovery Act (RCRA), its associated federal regulations, and state and local environmental regulations require all federal agencies to properly store hazardous waste generated at facilities. The purpose of the storage requirements is to prevent or minimize potential harm to people and the environment.

Some of the basic storage requirements are as follows:

- Store hazardous wastes in containers or storage tanks that are in good condition. Wastes stored in defective containers (signs of rust, cracks, leaks, or other deterioration) must be transferred to containers in good condition.
- Store hazardous wastes in containers that are chemically compatible with the container itself and other wastes in the container.
- Store hazardous waste containers in secured areas to reduce the risk of exposure to people and the environment.
- Keep containers closed or sealed at all times during storage, except when transferring waste to or from the container.

Label all storage containers and tanks with the words “Hazardous Waste” (see the sample hazardous waste label below), the type or name of waste and associated hazards, and the following:

- Storage, handling, and disposal information
- Start date of waste accumulation
- Contact information

1. **Waste Oil**

Waste oil is required to be stored in a secondary containment area.

- Put down absorbent pads to reduce the spread of oil.
- Block drains and sewer lines to prevent contamination.
- Collect all pads and seal into plastic container.
- Store in safe location until contractor pick up of oil.

2. Paint

A determination should be made of “unsure paint” when the disposed does not contain any hazardous material that would classify it as a hazardous waste, which would require treatment as a hazardous waste. Oil-based paint is always considered hazardous and should be disposed of at a hazardous-waste collection facility.

3. Latex Paint

Latex paint is less detrimental to our environment than oil based paints because it contains less hazardous ingredients. However, latex paints do contain acrylics, vinyls, and epoxies and can pose environmental problems if poured down the drain, into a storm drain, or if the liquid is disposed of in the regular trash. For small amounts of paint in original containers, add paint hardener and allow paint to dry.

- a. Dispose of can and dry material in solid waste dumpster.
- b. Ensure paint does not contain any hazardous materials.
- c. If the quantity of containers or volume of paint is large, then consolidate cans if possible and store in safe area until contractor can pick up paint.

4. Solvents

- a. Ensure a solvent being disposed does not contain hazardous materials that would classify it as a hazardous waste, which would require treatment as a hazardous waste.
- b. Leave materials in original containers.
- c. Do not mix any solvents.
- d. Store in safe area until contractor picks up solvents.

5. Disposal

Limit to the best of practically allowable the amount of time between disposal pick-ups of hazardous material, to reduce the amount stored at any facility at one time.

B. Spill Control Procedures for School Laboratory Chemicals (flammable acids and bases)

1. Each laboratory should have access to a spill kit that includes acid and base neutralizers and spill control procedures that should be followed.
2. Combustible organic materials (sawdust, excelsior, wood scraps and shavings, paper, rags, or burlap bags) should never be used to absorb or clean up spillage.

3. Attend to anyone who may need medical attention. If medical attention is needed contact 911, and the school nurse.
4. Notify occupants in the immediate area about the spill.
5. Keep students and staff away from the spill area.
6. If the spill material is flammable, turn off all ignition and heat sources to include magnetic stirrers.
7. Avoid breathing vapors of the spilled material.
8. Turn on fume hood and open windows, where possible, to increase ventilation.
9. Verify that protective apparel is resistant to spill material.
10. Review SDS (chemical data sheets) for cleanup information.
11. Confine or contain spill to original spill area.
12. Proceed with cleanup measures as instructed in SDS (chemical data sheets).

VI. Routine Assessment

As part of routine assessments, the following are performed at public buildings and are typically undocumented observations as facility and maintenance personnel perform routine tasks. Each agency occupying public buildings are responsible for compliance and ensuring hazardous waste is handled, generated, or stored as prescribed directly by their agency specific operations.

A. Environmental Health and Safety

The EHS office responds to support request and spill (release) responses. For facility operation hazardous waste generation, DGS relies on hazardous waste handlers to manage disposal.

B. Occupant Agency Risk Manager

- (1) Provide training that covers all of the following items:
 - Explain the purpose of this law and employee rights under this law;
 - Explain how the chemicals found in your facility can be hazardous;
 - Discuss how to control exposure to hazardous chemicals by using appropriate work practices and control measures;
 - Explain how employees can obtain information on what hazardous substances are used in their facility through SDS On-line;
 - Explain how to use the information found on SDS and product labels; and
 - Discuss the importance of properly labeling portable receptacles used to store chemical substances.

- (2) Document that training was given. Be sure to keep records that include:
 - Names of persons trained;
 - Dates and lengths of training sessions;
 - Name of individual(s) who conducted the training; and
 - Type of training provided, including an outline or lesson plan.
- (3) Train new employees prior to their initial assignment.

Provide additional training when new hazardous substances are introduced to your facility, when exposure to existing hazardous chemical increases, or when additional information is available on a product.

VII. Remediation

As remediation and corrective action response are required DGS will hire a licensed contractor to create a site / response specific remedial plan. Remedial responses can include but not limited to:

- A.** Spill cleanup
- B.** Disposal (material and contaminated media)
- C.** Testing (to confirm the presence of lack thereof)

Radon Standard Operating Procedures Public Buildings

I. Purpose

The intent of this document is to establish and/or document in-place standard operating procedures for the management of Radon in order to protect human health and the environment in regards to assessment and remediation. Operating procedures detailed within are for all public buildings as defined below and are executed with the oversight of the Department of General Services (DGS) Facilities Division, Environmental Health, and Safety (EHS).

II. Definitions

1. Certified Industrial Hygienist (CIH) -- One certified in the comprehensive practice of industrial hygiene by the American Board of Industrial Hygiene
2. DGS -- Department of General Services.
3. EPA -- Environmental Protection Agency
4. Public Building -- Defined as any building owned by the District of Columbia where people regularly occupy the building, including assembly places, places of employment and educations, child and adult care facilities, health care centers, foster care facilities, and homeless shelters.
5. The survey -- The assessment of radon impacts by testing radon levels both in short and long-term testing regimens.

III. Regulations and Standards

This procedure is implemented and managed by DGS Facilities Division, Environmental Health and Safety (EHS) for operating public school buildings. The radon program is based on guidance documents produced by the EPA, The EPA's *Indoor Air Quality Tools for Schools*, and the EPA National Radon Action Plan of 2015. EPA guidance documents were developed through collaborative efforts with organizations such as the American Lung Association, American Association of Radon Scientists and Technologists, EPA, US Department of Health and Human Services, and US Department of Housing and Urban Development.

IV. Surveys / Assessment

As part of routine assessments, the following are performed at educational locations. All other public buildings will receive radon surveys on a request basis with valid concerns.

A. Survey Conditions

1. Assessment shall be proceeded by a period of in occupancy, typically a weekend.
2. Testing should be conducted under closed conditions for a minimum of 48 hours, during the coldest months of the year (October 15 – March 15), and with the HVAC systems operating normally.
3. Testing shall not be conducted during abnormal weather conditions such as major storms or high winds, during structural changes to a school building and/or the renovation, or during replacement of the HVAC system.

B. Survey

1. Before any testing or placement of any test kits, an industrial hygienist confirms the required survey conditions are acceptable and obtains a building layout plan for survey use.
2. Short-term passive test kits are placed in all frequently occupied rooms in which the shell of the room comes in contact with the ground (typically the lowest level, unless on a hillside). Rooms typically consist of classrooms, offices, laboratories, cafeterias, libraries, bathrooms, kitchens, and gymnasiums. Rooms typically not included in the survey are utility shafts, staircases, hallways, and closets.
3. Test kits must be placed away from any drafts; vents; appliances (e.g., computers, projectors, etc.); 20 – 24 inches above the floor; 3 feet away from any exterior door, window, or interior wall; 4 inches away from the other objects; away from heat, areas of high humidity, and direct sunlight; and where they are least likely to be disturbed. Place kits every 1,000 square feet for larger spaces.
4. Duplicates and blanks are also dispersed for quality control.
5. Signage placed next to each test kit to limit risk of disturbance.
6. After testing over at least 48 hours, retrieve all testing devices on the same day. Complete the device tracking sheets, including comments, if the devices appear to have been tampered with or if windows are found to be open.

7. Submit test kits for analysis to a certified laboratory.

V. Interpretation of Results

Test results are evaluated upon receipt from the laboratory and compared to project notes. Also, the duplicate and blanks samples are evaluated for discrepancies. If the short-term test kits result in a measurement of 4.0 pCi/L (picocuries per liter), the location should receive a long-term test kit to determine if the reading is accurate over an extended period of time. If the long-term test kit exceeds 4.0 pCi/L mitigation and/or remediation steps will be initiated (see Section VII).

VI. Frequency

Schools are surveyed on a 4-year cycle for radon. If radon measurements are exceeded and mitigation is implemented the school will be surveyed every two years.

VII. Remediation / Mitigation

Upon any exceedance of the above 4.0 pCi/L threshold, DGS will consult with a radon mitigation company to provide a Scope of Work and Project Design tailored to each specific building's results. Testing frequency will increase to ensure compliance. Remediation may include ventilation improvements, vapor barriers, or a passive or active vapor mitigation system.

Asbestos Management Standard Operating Procedures

I. Purpose

The intent of this document is to establish and/or document in-place standard operating procedures for the management of Asbestos Containing Materials (ACM) in order to protect human health and the environment in regards to assessment and remediation. Operating procedures detailed within are for all public buildings as defined below and are executed with the oversight of the Department of General Services (DGS) Facilities Division, Environmental Health and Safety (EHS).

II. Definitions

1. Asbestos Abatement -- The removal, encapsulation, enclosure, disposal, or transportation of asbestos or material that contains asbestos
2. Asbestos-containing Material (ACM) -- Defined as any material containing more than 1% asbestos
3. Certified Industrial Hygienist (CIH) -- One certified in the comprehensive practice of industrial hygiene by the American Board of Industrial Hygiene (ABIH)
4. Thermal System Insulation (TSI) -- ACM applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain and that contains more than 1% asbestos.
5. Surfacing Material -- Material that is sprayed, troweled-on, or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).
6. Class I Asbestos Work -- Activities involving the removal of TSI and surfacing ACM.
7. Class II Asbestos Work -- Activities involving the removal of ACM which is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.
8. Class III Asbestos Work -- Repair and maintenance operations, where "ACM", including TSI and surfacing ACM and PACM (Presumed ACM), is likely to be disturbed.
9. Class IV Asbestos Work -- Maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.
10. DGS -- Department of General Services.
11. DP -- The Designated Person appointed by the LEA.
12. Friable -- Defined as when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.
13. HEPA -- Refers to high-efficiency particular filter capable of trapping and retaining at least 99.97 percent of all monodispersed particles 0.3 micrometers in diameter.

14. LEA -- The Local Education Agency.
15. National Emission Standards for Hazardous Air Pollutants (NESHAP) size removal -- Defined as removal of asbestos-containing material
 - a. Greater than or equal to 160 square feet
 - b. Greater than or equal to 260 linear feet
 - c. Greater than or equal to 35 cubic feet
16. Public Building -- Defined as any building owned by the District of Columbia where people regularly occupy the building, including assembly places, places of employment and educations, child and adult care facilities, health care centers, foster care facilities, and homeless shelters.

III. Regulations and Standards

This procedure is implemented and managed by DGS Facilities Division, Environmental Health and Safety (EHS) for all DGS maintained facilities. The Department of Energy and the Environment (DOEE) is the enforcement agency. Standards used in the implementation of the procedure include, but are not limited to the following:

- Healthy Public Buildings Assessment Act of 2016
- Asbestos Hazard Emergency Response Act (AHERA)
- 40 CFR 61 Subparts A and M – National Emission Standards for Hazardous Air Pollutants (NESHAP)
- 29 CFR 1926.1101 – Asbestos Standard for the Construction Industry
- 29 CFR 1910.1001, Subpart Z – Toxic and Hazardous Substances, Asbestos
- 29 CFR 1910.134 – Respiratory Protection
- 29 CFR 1926.33 – Employee Exposure and Medical Records
- 29 CFR 1926.59 – Hazard Communication
- 29 CFR 1926.28 – Personal Protective Equipment
- 49 CFR Part 171-180 – Hazardous Substances
- 40 CFR Part 763, Subpart G, Worker Protection Rule
- 40 CFR Part 763, Subpart E, Appendix A -Transmission Electron Microscopy Methods
- Title 20, Chapter 8, Section 800. - Control of Asbestos

IV. Routine Assessment

A. Asbestos Management Plan (AMP)

In accordance with the AHERA, all District of Columbia Public Schools (DCPS) maintain an AMP. The AMP contains at the least, but is not limited to, general building information (including DP's contact information), asbestos inspection and re-inspection data, response actions information, operations and maintenance information, periodic surveillance information, annual notification letters, analytical results, and applicable certifications. A copy of the AMP is present at all operating DGS educational facilities and at a central location with DGS administration facilities. An electronic version of the AMP is also available in Salesforce under individual Building Attachments.

B. 3-Year Re-inspections

Every three years, a re-inspection is performed at all DGS educational facilities. The re-inspection is an update of the previous or original survey, which updates information such as quantities, ACM condition, friability, and release documentation. If hazards (damaged ACM) are identified they are reported and remediated in accordance with Section VI of this document. The 3-year re-inspection is subsequently placed in the AMP. Re-inspections shall be performed by an EPA AHERA Certified Asbestos Inspector.

C. Periodic Surveillance

On a 6-month interval (at minimum), an on-site surveillance is performed at all operating DGS educational facilities. The reconnaissance of this activity is to monitor ACM conditions and evaluate hazards. Any identified hazards are reported to DGS for response action. Once completed the surveillance report is placed in the AMP.

D. Work Order Response Assessment

Prior to any work (whether emergency, scheduled, or operations and maintenance) at all public buildings, a certified asbestos inspector is dispatched to a facility on an "as requested" basis to determine if the work will disturb any ACM present. The inspector reviews any available asbestos information to determine if the materials contain asbestos. If no documentation is present indicating whether the material is ACM or non-ACM, a sample(s) is collected and sent to an accredited analytical laboratory for testing. Findings with any required testing results are forwarded through the EHS office to the appropriate project manager.

Any work orders that are positively identified not to disturb ACM (by either sampling or checking existing records) are determined as "Code A" and would

be cleared for repair by the inspector. In the event the inspector observes the work has potential to disturb ACM, he/she will determine the work order as a “Code B” and would proceed to develop an asbestos abatement design. The scope of the design will be limited to the remediation of ACM associated with the work order, unless additional abatement is deemed appropriate by the EHS office.

V. Asbestos Abatement

A. Project Design

As asbestos abatement is required, whether by a renovation/demolition or a condition change identified during an inspection or surveillance, a certified project designer (typically the on-call industrial hygiene contractor) generates a project design. The design indicates the method of abatement (such as encapsulation or removal), material to be abated, quantities, and locations which are provided to a selected abatement contractor.

B. Notifications

When abatement activity is NESHAP size, a 10-day notification is provided to DOEE by the DC licensed Asbestos Abatement Contractor to obtain a permit, which is maintained onsite throughout the abatement. Submittals must include the certificate of insurance naming the contractor and DGS as additional insured; the bond; the list of subcontractors; a copy of individual DC licenses for all crew members; DC company abatement license; proof of current medical surveillance program and respiratory protection program; SDS for chemicals to be used onsite; the projected schedule; and a brief waste management plan.

The 10-working-day notification requirement before the start of abatement work may be waived by DOEE for bona fide emergencies. The asbestos abatement contractor (with DGS’ approval) wishing to start work before submitting a 10-day notification must request a waiver from DOEE. The waiver request must include a complete and accurate notification for the abatement work and a letter explaining why the 10-day notification period should be waived. However, DOEE will determine whether a notification qualifies for a waiver of the 10-day notification requirement.

DGS, or designated representatives, shall inform occupants not less than 30 days prior to commencement of a DOEE-permitted asbestos abatement. Any requests for a waiver from this requirement in the case of an emergency must be submitted in writing to DOEE.

When projects require non-NESHAP size abatement a courtesy notification is provided to DOEE also by the DC licensed Asbestos Abatement Contractor. Prior to commencement of abatement, building occupants are notified of the activity using signage on the main entrance door.

Display caution signs, measuring at least twenty (20) inches by fourteen (14) inches, wherever airborne asbestos fibers may be present, in accordance with the provisions of 29 CFR 1926.58 (k)(1); and

Except in emergency situations, at least three (3) days before engaging in an asbestos abatement, post these signs immediately outside all entrances to and exits from the work site or asbestos abatement to inform the public in the immediate vicinity that asbestos abatement will be done and keep the signs posted until the Administrator receives notice of final air monitoring results.

C. Abatement

In accordance with the project design the abatement contractor repairs, removes, encapsulates, or encloses the asbestos hazard. The abatement workers must be licensed through the District to perform abatement activity. It is the responsibility of the abatement contractor to maintain a respiratory program, perform personnel monitoring and personnel medical surveillance, provide personnel with appropriate personal protective equipment (PPE), and maintain a safe work environment. The area adjacent to any abatement activity must have a barrier which must include signage/danger ribbons.

OSHA classifies asbestos construction work and spells out mandatory, simple, technological work practices that employers must follow to reduce worker exposures. Additional requirements below are extended as DOEE requirements.

- **Class I** work must use one or more of the following control methods:
 - A minimum of -0.02 column inches of water pressure differential, relative to outside pressure, shall be maintained within the NPE as evidenced by manometric measurements,
 - At least 4 air changes per hour shall be maintained in the NPE,
 - The NPE shall be kept under negative pressure throughout the period of its use, and
 - Air movement shall be directed away from employees performing asbestos work within the enclosure, and toward a HEPA filtration or a collection device. Use negative pressure systems inside enclosures that

- exhaust air through a high-efficiency particulate air (HEPA) filter at a flow rate that changes the air at least once every fifteen (15) minutes and where practical, are vented to outside air;
 - Glove bag systems to remove ACM from piping.
 - Negative-pressure glove bag systems to remove asbestos or PACM from piping.
 - Negative-pressure glove box systems to remove asbestos or ACM from pipe runs.
 - Water spray process systems to remove asbestos or PACM from cold-line piping if employees carrying out the process have completed a 40-hour training course on its use in addition to training required for all employees performing Class I work.
 - Small walk-in enclosure that accommodates no more than 2 people (mini-enclosure) if the disturbance or removal can be completely contained by the enclosure. HVAC systems shall be isolated in the regulated area by sealing with a double layer of 6 mil plastic or the equivalent; impermeable drop cloths shall be placed on surfaces beneath all removal activity; all objects within the regulated area shall be covered with impermeable drop cloths or plastic sheeting which is secured by duct tape or an equivalent.
- When **Class II** work is performed:
 - Do not sand flooring or its backing,
 - Do not rip up resilient sheeting,
 - Do not dry sweep,
 - Perform mechanical chipping only in a negative-pressure enclosure,
 - Use vacuums equipped with HEPA filters to clean floors,
 - Remove resilient sheeting by cutting with wetting of the snip point and wetting during delamination,
 - Use wet methods to scrape residual adhesives and/or backing,
 - Remove tiles intact, unless impossible (you may omit wetting when tiles are heated and removed intact), and
 - Assume resilient flooring material—including associated mastic and backing—is asbestos-containing unless an industrial hygienist determines that it is asbestos-free.
- When **Class III** work is performed:

Contractors must use wet methods and local exhaust ventilation, to the highest extent possible in accordance with OSHA regulations. When drilling, cutting, abrading, sanding, chipping, breaking, or sawing of asbestos-containing thermal system insulation or surfacing materials occurs, contractors must use impermeable drop cloths as well as mini-enclosures, glove bag systems, or other effective isolation methods and ensure that workers wear respirators.
- When **Class IV** work is performed:

Employees conducting Class IV asbestos work must have previously attended an asbestos awareness training program and subsequent annual refresher trainings. They must use wet methods and HEPA vacuums to promptly clean asbestos-containing or presumed asbestos-containing debris. When cleaning debris and waste in regulated areas, employees must wear respirators. In areas where thermal system insulation or surfacing material is present, workers must assume that all waste and debris contain asbestos.

D. Abatement Monitoring and Clearance

During abatement activity, an industrial hygienist monitors airborne fiber concentrations within the work area. The purpose of this sampling is to continuously evaluate engineering controls established within the work area. The fiber concentrations in air should be maintained at lowest possible levels at all times. If these fiber levels are exceeded the contractor shall review and re-enforce proper engineering controls until acceptable levels are achieved. The industrial hygienist shall also collect Phase Contrast Microscopy (PCM) air samples from outside the work area during each shift. Outside fiber concentrations in air should be maintained at lowest possible levels, not to exceed 0.010 f/cc, as determined by NIOSH Method 7400. If concentrations rise above or equal to 0.010 f/cc, stop abatement work and re-evaluate engineering controls.

Upon completion of abatement, and all surfaces within the containment have been thoroughly cleaned free of any visible residue, final clearance maybe performed.

For abatement activities with DOEE issued permits, aggressive TEM (transmission electron microscopy) air sampling [using the methods specified in 40 CFR 763 Subpart E Appendix A] must be used for final clearance of all occupied areas in schools. The industrial hygienist will collect final clearance air samples inside the removal area after the containment enclosure is inspected, found clear of all visible residues, is encapsulated by the abatement contractor and the encapsulate has sufficiently dried. As per the AHERA 40 CFR Part 763 method, and DC MR800, thirteen (13) TEM samples will be collected as follows: five samples will be collected inside the containment (one of which will be taken by the nearest air return intake); five ambient air samples will be collected outside of the containment; two field blanks (one near entrance to work area and one ambient site); one sealed blank. While all 13 TEM samples will be submitted to an accredited laboratory for analysis, the laboratory will initially only analyze the five interior samples to determine if occupancy criteria have been met. If the average result of the five samples collected inside the work area/containment is less than 70 structures per square millimeter (70 s/mm^2), the area is cleared for occupancy and tear down of containment will be granted by the industrial hygienist. Should the five interior samples exceed an average of 70 s/mm^2 ,

the AHERA protocol of re-cleaning and re-sampling of the interior work area will be enforced. Should the second set of interior samples fail, the five outside samples will be analyzed for comparison.

PCM air sampling may be used for final clearance only in demolition projects, confined spaces, unoccupied areas and outdoor abatements or if a Clearance Variance Request is approved by DOEE. The clearance level requires that the measured airborne concentration of asbestos fibers longer than five (5) microns must be less than one hundredth (0.01) fiber per cubic centimeter (< 0.01 f/cc) using the methods specified in NIOSH 7400. At least two (2) samples per 2,500 square feet of floor area are required. The cleaning process is repeated and a second round of sampling is performed if the regulated thresholds are exceeded.

Within twenty-four (24) hours of receipt of final written monitoring-results, data indicating the asbestos concentration in the work area after cleaning and before barriers are removed should be submitted to DOEE. Results shall be submitted by the DC licensed Asbestos Abatement Contractor or DGS representative to DOEE via email at asbestos.permit@dc.gov. may be faxed to the attention of the Air Quality Division, Compliance & Enforcement Branch.

E. Disposal

When disposing of asbestos waste the asbestos contractor must dispose of the waste at an accepting / EPA approved facility using manifest documentation to track its disposal. Waste manifest shall include volume of materials in cubic yards, date of transport, name of transporter, driver and vehicle number, date of receipt and disposal, and all signatures. In general packaging includes two 6-mil polyethylene bags using controls such as wetting. For larger disposals, waste can be encapsulated in polyethylene in the transport vehicle. All asbestos materials, waste, shower water (filtered), plastic, disposable equipment and supplies must be disposed of as contaminated waste. All waste bags and containers must contain required generator identification information according to DOT Standard 49 CFR 172.304.

Mold Standard Operating Procedures

▪ Public Buildings

I. Purpose

The intent of this document is to establish and document in place standard operating procedures for Mold Assessment and Remediation in order to protect human health and the environment. Operating procedures detailed here within are for all public buildings as defined below and executed with the oversight of the Department of General Services (DGS) Facilities Division, Environmental Health, and Safety (EHS).

II. Definitions

1. DGS -- Department of General Services.
2. Department of Energy & Environment DOEE -- Department of Energy & Environment and is the leading authority on energy and environmental issues affecting the District of Columbia.
3. Emergency -- A situation in which water damage has occurred and a delay in mold remediation would allow indoor mold growth to increase.
4. EPA -- Environmental Protection Agency and has a mission to protect human health and the environment.
5. MA -- Mold Assessor and is an individual who is authorized to conduct mold assessment activities within the District of Columbia, under the laws and regulation administered by the Department of Energy and Environment, Lead-Safe and Healthy Housing Division.
6. Mold Assessment -- An inspection, investigation, or survey, including by visual observation or other means, of a dwelling unit or other structure regarding the presence, identification, or evaluation of mold that may include one or more of the following:
 - (a) The development of a mold assessment report;
 - (b) The development of a mold remediation protocol;
 - (c) The development of a mold management plan; and
 - (d) The collection or analysis of a mold sample(s).
7. Mold Remediation -- The removal, cleaning, sanitizing, demolition, or other treatment, including preventive activities, of mold or mold-contaminated matter.
8. Mold -- Living or dead fungi or related products or parts, including spores, hyphae, and mycotoxins.
9. MR -- Mold Remediator and is an individual who is authorized to conduct mold remediation activities within the District of Columbia, under the laws and regulation administered by the Department of Energy and Environment, Lead-Safe and Healthy Housing Division.
10. National Environmental Policy Act of 1969 (NEPA) -- Signed into law on January 1, 1970. NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions.

11. Public Building -- Defined as any building owned by the District of Columbia where people regularly occupy the building, including assembly places, places of employment and educations, child and adult care facilities, health care centers, foster care facilities, and homeless shelters.
12. Survey -- An activity undertaken in a building to determine the presence or absence, location, or quantity of indoor mold or to determine the underlying condition(s) contributing to indoor mold growth, whether by visual or physical examination or by collecting samples of potential mold for further analysis.
13. Visible -- Capable of being seen with the naked eye, either by a lay person following the guidelines or by an indoor mold assessment professional following the standards in this chapter and best industry practices.

III. Regulations and Standards

This procedure is implemented and managed by DGS Facilities Division, Environmental Health and Safety (EHS) for operating public buildings. Standards used in the implementation of the procedure include, but are not limited to the following policies which should be viewed as primary sources of information for indoor air quality.

- Air Quality Amendment Act of 2014
- District Department of the Environment Establishment Act of 2005
- Healthy Public Buildings Assessment Act of 2016
- IICRC S500 Standard and Reference Guide for Professional Water Damage Restoration
- The Clean Air Act (CAA)
- *Mold Remediation in Schools and Commercial Buildings*; Environmental Protection Agency (reprint of EPA document 402-K-01-001; dated March 2001)

IV. Prevention

As part of the operating procedures, mold prevention plays a critical role in maintaining a hazard free environment for occupants. Mold spores are everywhere and can thrive in damp and humid environments. To prevent mold from growing or returning, it is necessary to keep indoor spaces dry, clean, and at a low relative humidity, ideally 30%-50%. This can be achieved by using a dehumidifier, increasing the indoor air temperature, and adhering to the following:

- Fix plumbing leaks as soon as possible
- Clean and repair roof gutters regularly
- Keep air conditioning drip pans clean and the drain lines unobstructed and flowing properly
- Protect vulnerable areas from flooding
- Keep areas prone to humidity, like kitchens and bathrooms, well ventilated with fans and windows

- Vent water vapor to the building exterior from appliances that produce moisture, such as clothing dryers, and stoves.
- Insulate cold water pipes and other areas that may collect condensation

V. Assessments and Monitoring

EHS and / or contractor will perform mold assessments / investigations in response to a valid occupant complaint, work orders, emergency response or other reports of mold.

Maintenance and facility personnel routinely inspect their facility. In doing such, it is their responsibility to identify and report the presence or likely presence of mold as found by maintenance, facility personnel or building tenants by submitting a work order through Salesforce for response by EHS. Investigations / assessments performed by EHS and contractors are associated with work order responses and emergency response.

As part of routine monitoring for mold, the following are performed at public buildings and typically are undocumented observations:

A. Facility personnel

Building cleaning staff or custodians have the primary responsibility for mold prevention through good housekeeping practice and cleanliness. They also have the responsibility to request any maintenance and regular maintenance work that will lead to future mold growth before it occurs.

B. DGS Maintenance Staff

A primary role of maintenance staff is mold prevention. Responding promptly to work leading to water leaks and moisture problems in buildings will avoid mold growth. They will also report any mold or suspected mold observed during maintenance work to EHS.

C. Building Tenants

All tenants or building occupants should practice and encourage good sanitation practices: minimizing clutter at workspaces, closets and storage units and the like to help prevent mold problems from occurring. Building tenants should report any mold sightings, problems, or conditions that might favor mold growth and submit a work request through Facility personnel.

D. Environmental Health and Safety

EHS manages the Mold Program, Mold Assessors (MA), Mold Remediation (MR) Contractors and all information on mold remediation efforts made in the DGS maintained properties. EHS duties and responsibilities include the following:

- Adoption of suitable mold remediation methods and programs;
- Document management, such record keeping allows EHS to track trends and patterns;
- Coordination with DGS and Agency Staff to provide mold related information to tenants and staff as appropriate;
- Collaborating with maintenance and building contacts to ensure that each site is undertaking housekeeping, sanitation, and repair actions necessary to reduce or prevent mold problems;
- Oversight of public notification procedures related to mold remediation;
- Receiving, approving, and assigning work requests for Mold Assessor and Mold Remediation contractors through Salesforce;
- Managing the Mold Remediation contracts and ensure that contractors follow the Mold Remediation Standard Operating Procedures.

VI. Work Order Response

EHS communicates, orders, and tracks all work with its Mold Inspectors and Mold Remediation Contractors through the use of Salesforce, which allows for instant collaboration and coordination between the contractor and EHS staff.

Prior to any work (whether emergency, scheduled or operations and maintenance) at all public buildings, a District licensed mold assessor is dispatched to a facility. He/she will determine if the work will be classified as mold remediation and what necessary actions to take based on the degree of impactation.

MA and MR contractors shall document all observations, corrective actions, and recommendations via Salesforce to the EHS office. If additional follow-up services are required or recommended, the EHS office will coordinate with building occupants.

VII. Assessment

In response to a complaint, emergency response, work order, or other reports of mold, a District licensed Mold Assessor will be dispatched as an EHS representative to initiate an investigation. The individual will perform a field assessment by interviewing the listed contact, making visual observations, and professional judgment. Physical samples will not be collected if he/she concludes remediation is necessary, except in rare cases (see results interpretation matrix below).

1. MA will interview the contact listed on the Salesforce work order, or other individual onsite to discuss the background, history, area of concern, and knowledge of the matter.
2. MA will perform a visual observation for signs of moisture and mold. All surrounding areas are investigated to include underneath floors, crawl spaces, utility areas, tunnels, or air plenums. The building envelope may need to be checked (roof, windows, doors, skylights). The investigator may also use other senses (such as smelling musty odors or feeling moisture or lack of air movement on the skin).
3. MA may use additional equipment such as a moisture meter to check for material moisture content, an inspection camera to inspect behind walls or inside ducts, a hygrometer to measure temperature and humidity gradation in the area, etc.
4. In cases of severe contamination, penetrations may need to be made to identify the moisture source. The appropriate Facilities Maintenance Units should be consulted as necessary.
5. A Mold Remediation Response plan is developed to include a descriptive location, type of material impacted, possible cause and location of moisture source, and a recommendation for remediation. If the problem is simply a minor accumulation of mold or mildew in a shower or from a one-time water infiltration event, the inspector can wear proper personal protective equipment and remove the mold using damp cloths and antimicrobial solutions.
6. MA will enter collected information and assessment results (Assessment Date, Date of Inspection, Assessment Code, and Notes) into Salesforce.
7. For additional repairs required by DGS maintenance (repair a pipe leak, roof leak, etc.), a related work request is entered into Salesforce.
8. MA will notify DOEE when he or she determines ten or more square feet of indoor mold growth and no more than five (5) calendar days after issuance of a mold assessment report, mold remediation protocol or a mold management plan.

VIII. Remediation

After repairs are made to correct the source of moisture, mold remediation work is performed according to the Mold Remediation Plan. All mold remediation work should be carried out under the supervision of a District licensed mold remediator, when mold contamination is more than 10 square feet.

All attempts should be made to clean the existing material and remove mold to avoid removal and extensive damage. However, if necessary, mold contaminated material should be removed. EHS recommends the following EPA guidelines for remediating building materials with mold growth on EPA 402-K-01-001 (for less than 10 square feet of mold contamination).

Material or Furnishing Affected	Cleanup Methods [†]	Personal Protective Equipment	Containment
SMALL – Total Surface Area Affected Less Than 10 square feet (ft²)			
Books and papers	3	Minimum N-95 respirator, gloves, and goggles	None required
Carpet and backing	1, 3		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (Linoleum, ceramic tile, vinyl)	1, 2, 3		
Non-porous, hard surfaces (Plastics, metals)	1, 2, 3		
Upholstered furniture & drapes	1, 3		
Wallboard (Drywall and gypsum board)	3		
Wood surfaces	1, 2, 3		
MEDIUM – Total Surface Area Affected Between 10 and 100 (ft²)			
Books and papers	3	Limited or Full Use professional judgment, consider potential for remediator exposure and size of contaminated area	Limited Use professional judgment, consider potential for remediator/occupant exposure and size of contaminated area
Carpet and backing	1, 3, 4		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (Linoleum, ceramic tile, vinyl)	1, 2, 3		
Non-porous, hard surfaces (Plastics, metals)	1, 2, 3		
Upholstered furniture & drapes	1, 3, 4		
Wallboard (Drywall and gypsum board)	3, 4		
Wood surfaces	1, 2, 3		
LARGE – Total Surface Area Affected Greater Than 100 (ft²) or Potential for Increased Occupant or Remediator Exposure During Remediation Estimated to be Significant			
Books and papers	3	Full Use professional judgment, consider potential for remediator exposure and size of contaminated area	Full Use professional judgment, consider potential for remediator/occupant exposure and size of contaminated area
Carpet and backing	1, 3, 4		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (Linoleum, ceramic tile, vinyl)	1, 2, 3, 4		
Non-porous, hard surfaces (Plastics, metals)	1, 2, 3		
Upholstered furniture & drapes	1, 3, 4		
Wallboard (Drywall and gypsum board)	3, 4		
Wood surfaces	1, 2, 3, 4		

Table developed from literature and remediation documents including Bioaerosols: Assessment and Control (American Conference of Governmental Industrial Hygienists, 1999) and IICRC S500, Standard and Reference Guide for Professional Water Damage Restoration (Institute of Inspection, Cleaning and Restoration, 1999.)

The MR contractor will use professional judgment to determine prudent levels of Personal Protective Equipment and containment for each situation, particularly as the remediation site size increases and the potential for exposure and health effects rises. Increase use of Personal Protective Equipment (PPE), if, during the remediation, more extensive contamination is encountered than was expected. Consult Table 1 in EPA 402-K-01-001 if materials have been wet for less than 48 hours, and mold growth is not apparent.

These guidelines are for damage caused by clean water. If anyone knows or suspects that the water source is contaminated with sewage, or chemical or biological pollutants, then the Occupational Safety and Health Administration (OSHA) requires PPE and containment.

Since molds gradually destroy the things they grow on, if mold growth is not addressed promptly, some items may be damaged such that cleaning will not restore their original appearance. If mold growth is heavy and items are valuable or important, a restoration/water damage/remediation expert may need to be consulted. Please note that these are guidelines; other cleaning methods may be preferred by some professionals.

A. Cleanup Methods

Method 1: Wet vacuum (in the case of porous materials, some mold spores/fragments will remain in the material but will not grow if the material is completely dried). Steam cleaning may be an alternative for carpets and some upholstered furniture.

Method 2: Damp-wipe surfaces with plain water or with water and detergent solution (except wood—use wood floor cleaner); scrub as needed.

Method 3: High-efficiency particulate air (HEPA) vacuum after the material has been thoroughly dried. Dispose of the contents of the HEPA vacuum in well-sealed plastic bags.

Method 4: Discard – remove water-damaged materials and seal in plastic bags while inside of containment, if present. Dispose of as normal waste. HEPA vacuum area after it is dried.

B. Personal Protective Equipment (PPE)

Minimum: Gloves, N-95 respirator, goggles/eye protection

Limited: Gloves, N-95 respirator or half-face respirator with HEPA filter, disposable overalls, goggles/eye protection

Full: Gloves, disposable full body clothing, head gear, foot coverings, and full-face respirator with HEPA filter

C. Containment

Limited: Use polyethylene sheeting ceiling to floor around affected area with a slit entry and covering flap; maintain area under negative pressure with HEPA-filtered fan unit. Block supply and return air vents within containment area.

Full: Use two layers of fire-retardant polyethylene sheeting with one airlock chamber. Maintain area under negative pressure with HEPA-filtered fan exhausted outside of building. Block supply and return air vents within containment area.

IX. Sampling

Since no EPA or other Federal threshold limits have been set for mold or mold spores, sampling cannot be used to check a building's compliance with Federal mold standards. Sampling for mold should be conducted by District licensed MA with specific experience in designing mold sampling protocols, sampling methods, and interpretation of results. Sample analysis results should be compared to an ambient air sample collected at the same event as their comparison samples.

It is important to understand air sampling for mold provides information only for the moment in time in which the sampling occurred, much like a snapshot. Air sampling will reveal, when properly done, what was in the air at the moment when the sample was taken.

A. Pre-Remediation

If visible mold growth is present, sampling is unnecessary until remediation is complete with several exceptions. In specific instances, such as cases where litigation is involved, the source(s) of the mold contamination is unclear, or health concerns are a problem, EHS may consider approving sampling as part of MA site evaluation.

B. Post Remediation

Post-Remediation sampling will be decided by MA only when necessary to determine whether remediation efforts have been effective. After remediation, the types and concentrations of mold in indoor air samples should be similar to what is found in the local outdoor air.

Lead-Based Paint Hazard Elimination Standard Operating Procedures

▪ Public Buildings

I. Purpose

The intent of this document is to establish and/or document in-place standard operating procedures for management of Lead-Based Paint elimination in order to protect human health and the environment in regards to assessment and remediation. Operating procedures detailed within are for all public buildings as defined below and area executed with the oversight of the Department of General Services (DGS) Facilities Division, Environmental Health and Safety (EHS).

II. Definitions

1. Abatement -- A set of measures, except interim controls, that eliminates lead-based paint hazards by either the removal of paint and dust, the enclosure or encapsulation of lead-based paint, the replacement of painted surfaces or fixtures, or the removal ore covering of soil, and all preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures.
2. Child-occupied facility -- A building, or portion of a building, constructed prior to 1978, which as part of its function receives children under the age of six (6) on a regular basis, and is required to obtain a certificate of occupancy as a precondition to performing that function. The term “child-occupied facility” may include a preschool, kindergarten classroom, and child development facility licensed under subchapter II of Chapter 20 of Title 7 of the D.C. Official Code. The location of a child-occupied facility as part of a larger structure does not make the entire structure a child-occupied facility. Only the portion of the facility occupied or regularly visited by children under age six (6) shall be considered the child-occupied facility.
3. Clearance examination -- An evaluation of a property to determine whether the property is free of any deteriorated lead-based paint and underlying condition, or any lead-based paint hazard, underlying condition, lead-contaminated dust, and lead-contaminated soil hazards, that is conducted by a risk assessor, a lead-based paint inspector, or in accordance with limitations specified by statute or by rule, a dust sampling technician. Title 20 DCMR – Chapter 33 (Regulation of Lead-Based Paint Activities).
4. Clearance report -- A report issued by a risk assessor, a lead-based paint inspector, or a dust sampling technician that finds that the area tested has passed a clearance examination, and that specifies the steps taken to ensure the absence of lead-based paint hazards, including confirmation that any encapsulation performed as part of a lead hazard abatement strategy was performed in accordance with the manufacturer's specifications.

5. Containment -- A system, process, or barrier used to contain lead-based paint hazards inside a work area.
6. Demolition -- The removal or destruction of a part of a building, such as the walls, or the gutting of an entire building that leaves the exterior shell of the structure in place.
7. Deteriorated paint -- Paint that is cracking, flaking, chipping, peeling, chalking, not intact, or otherwise separating from the substrate of a building component, except that pinholes and hairline fractures attributable to the settling of a building shall not be considered deteriorated paint.
8. Dust action level - The concentration of lead that constitutes a lead-based paint hazard for dust and requires lead-based paint hazard elimination.
9. Encapsulation -- The application of a covering or coating that acts as a barrier between the lead-based paint and the environment, and that relies for its durability on adhesion between the encapsulant and the painted surface and on the integrity of the existing bonds between paint layers and between the paint and the substrate.
10. Enclosure -- The use of rigid, durable construction materials that are mechanically fastened to the substrate to act as a barrier between lead-based paint and the environment.
11. Exterior surfaces:
 - a) All surfaces that are attached to the outside of a property;
 - b) All structures that are appurtenances to property; and
 - c) Fences that are part of the property.
12. Interim controls -- A set of measures designed to temporarily reduce human exposure or likely exposure to lead-based paint hazards, including specialized cleaning, repairs, maintenance, painting, temporary containment, ongoing monitoring of lead-based paint hazards or potential hazards, and the establishment and operation of management and resident education programs.
13. Lead-based paint -- Any paint or other surface coating containing lead or lead in its compounds in any quantity exceeding one half percent (0.5%) of the total weight of the material or more than one milligram per square centimeter (1.0 mg/cm²), or such more stringent standards as may be specified in federal law or regulations promulgated by EPA or the United States Department of Housing and Urban Development (HUD), which shall be adopted by the Mayor by rule.
14. Lead-based paint activities -- The identification, risk assessment, inspection, abatement, use of interim controls, or elimination of lead-based paint, lead-based paint hazards, lead-contaminated dust, and lead-contaminated soil, and all planning, project designing, and supervision associated with any of these activities.
15. Lead-based paint hazard -- Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, deteriorated lead-based paint or presumed lead-based paint, or lead-based paint or presumed lead-based paint that is disturbed without containment.
16. Lead-contaminated dust -- Surface dust based on a wipe sample that contains a mass per area concentration of lead equal to or exceeding:
 - a) For dust action levels or for the purpose of clearance examination:

- 1) Forty micrograms per foot (40 µg/sq. ft. on floors); or
- 2) Two hundred fifty micrograms per square foot (250 µg/sq. ft.) on interior windowsills;
- b) For the purpose of clearance examination:
 - 1) Four hundred micrograms per foot (400 µg/sq. ft.) on window troughs; or
 - 2) Eight hundred micrograms per square foot (800 µg/sq. ft.) on concrete or other rough exterior surfaces; or
17. Lead-contaminated soil -- Bare soil on real property that contains lead in excess of four hundred parts per million (400 ppm).
18. Lead-safe work practices -- A prescribed set of activities that, taken together, ensure that any work that disturbs a painted surface on a structure constructed prior to 1978, generates a minimum of dust and debris, that any dust or debris generated is contained within the immediate work area, that access to the work area by non-workers is effectively limited, that the work area is thoroughly cleaned so as to remove all lead-contaminated dust and debris, and that all such dust and debris is disposed of in an appropriate manner, all in accordance with the methods and standards established by Occupational Safety and Health Administration (OSHA) and Department of Energy and Environment (DOEE) by rule consistent with applicable federal requirements, as they may be amended.
19. Person at risk -- A child under age six (6) years or a pregnant woman.
20. "Presumed lead-based paint" paint or other surface coating affixed to a component in or on a building or child-occupied facility, constructed prior to 1978.
21. Public Building -- Defined as any building owned by the District of Columbia where people regularly occupy the building, including assembly places, places of employment and educations, child and adult care facilities, health care centers, foster care facilities, and homeless shelters.
22. Regularly visits -- A child under the age of six (6) years or a pregnant woman who spends or is expected to spend any amount of time at a public building, or a child-occupied facility, at least two (2) different days within any week, provided that each visit lasts at least three (3) hours and the combined annual visits last at least sixty (60) hours in a given calendar year, and provided the public building manager or the administrator of the child-occupied facility is notified or otherwise aware of such presence.
23. Renovation -- The modification of any existing structure or portion thereof that results in the disturbance of painted surfaces, unless that activity is performed as part of an abatement. The term "renovation" includes the removal, modification, or repair of painted surfaces or painted components, the removal of building components, weatherization projects, and interim controls that disturb painted surfaces.
24. Risk assessment -- An on-site investigation to determine and report the existence, nature, severity, and location of conditions conducive to lead poisoning, including:

- a) The gathering of information regarding the age and history of the building and occupancy by persons at risk;
 - b) A visual inspection of the building;
 - c) Dust wipe sampling, soil sampling, and paint testing, as appropriate;
 - d) Other activity as may be appropriate;
25. Work area -- The space that a certified risk assessor, abatement worker or supervisor, a certified renovator or a certified project designer determines is sufficient to contain all dust and debris generated by work that disturbs paint.

III. Regulations and Standards

This procedure is implemented and managed by DGS Facilities Division, Environmental Health and Safety (EHS) for all DGS maintained facilities. Standards used in the implementation of the procedure include, but are not limited to the following:

- 40 CFR 745 – Lead-based Paint Poisoning Prevention in Certain Residential Structures
- Title 20 DCMR – Chapter 33 (Regulation of lead-based paint activities)
- Lead Renovation, Repair and Painting Program (RRP) Rule
- 29 CFR 1926.62 – Safety and Health Regulations for Construction – Occupational Health and Environmental Controls - Lead
- Toxic Substances Control Act (TSCA) Section 403 – Hazard Standards for Lead in Paint, Dust and Soil
- Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X)
- Resource Conservation and Recovery Act (RCRA)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

IV. Routine Survey / Assessment

As part of routine assessments, the lead-based paint survey / risk assessment will be performed at educational locations in areas occupied by persons at risk. All other public buildings will receive lead-based paint survey / risk assessment on a request basis with valid concerns.

- The lead-based paint activity shall be performed in compliance with Housing and Urban Development Department and DOEE guidelines.
- The lead-based paint evaluation activity shall be performed in the child-occupied facilities and/or on a request basis with valid concerns.

- If an X-Ray fluorescence analyzer to be used, work shall be scheduled off school operation hours or when areas in question tested for lead-based paint are unoccupied.
- The lead-based paint activity shall be conducted by a certified DOEE inspector/risk assessor.
- Any equipment to be use during the lead-based paint activity must be in compliance with the District and the manufacturer requirement.
- Samples to be collected during the assessment shall be analyzed by an accredited NVLAP Laboratory.
- After initial assessment being completed, a 3-year re-assessment shall be conducted to update the previous or original.
- Risk Assessments and survey results are processed by an EHS representative for appropriate corrective action when a hazard is identified associated with lead based paint.

V. Work Order Response Assessment

As part of this assessment, painted areas requiring repair, renovation, or otherwise disturbed receive a response assessment. The response assessment includes the following:

- Review all available existing data (such as risk assessments and previous surveys) to determine if lead based paint data is present.
- If there is no previous data available, a targeted lead-based paint survey shall be conducted by a certified DOEE inspector.
- If an X-Ray fluorescence analyzer will be used, work shall be scheduled off school operation hours or when areas in question tested for lead-based paint are unoccupied.
- Any equipment to be used during the lead-based paint activity must be in compliance with the District and the manufacturer requirement.
- Samples to be collected during the assessment shall be analyzed by an accredited NVLAP Laboratory.
- If existing data or survey results require abatement prior to activities, an EHS representative is informed and provides the project manager with provided information.
- A Lead-based Paint Remediation Design is created by a representative from the EHS Office or consultant. Lead-based Paint Remediation work is performed by a certified Lead-Based Paint abatement-renovation contractor.
- If existing data and / or survey information determines remedial action is not applicable, the EHS representative informs the project manager they can proceed without lead precaution.

VI. Lead-Based Paint Abatement

A. Remediation Design

As lead-based paint abatement is required, whether by a renovation/demolition or a condition change identified during and inspection or surveillance, a project designer (typically the on-call industrial hygiene contractor) generates a remedial design. The design indicates the method of abatement (such as removal or stabilization), material to be abated, quantities, and locations which are provided to selected abatement contractor.

B. Notifications

When abatement activity is warranted by DGS, a DOEE voluntary Notification Form should be completed and filed with DOEE at least 7-business days before the start of work. DOEE will review the filed Form to determine whether an abatement or renovation permit is necessary for the proposed project. If a permit deemed necessary, a DOEE Lead Abatement Permit or Renovation Application Form must be submitted to DOEE at least 7 business days before starting work. DGS requires abatement contractors to maintained DOEE lead abatement or renovation permit onsite throughout the abatement. Submittals to DGS must include the certificate of insurance naming the contractor and DGS as additional insured; the bond; the list of subcontractors; a copy if individual DOEE licenses for all crew members; DOEE company abatement license; proof of current medical surveillance program and respiratory protection program; MSDS for chemicals to be used onsite; the projected schedule; and a brief waste management plan.

C. Remediation (Abatement and Interim Control Plans)

In accordance with the project remedial design the abatement contractor stabilizes, removes, encapsulates, or encloses the lead-based paint hazard and will follow all applicable lead safe work practices as required by Section III Regulations and Standards and any others as required. The abatement workers must be licensed through the District to perform abatement activity. It is the responsibility of the abatement contractor to maintain a medical surveillance program, respiratory program, perform regular personnel monitoring and, provide personnel with appropriate personal protective equipment (PPE), and maintain a safe work environment. The area adjacent to any abatement activity must have a barrier which must include signage/danger ribbons.

1. Containment / Work Preparation

- The work area must be isolated using polyethylene, duct tape, spray glue and other materials as appropriate.
- All existing furniture or items that cannot be removed must be protected.
- The area shall be demarcated by danger signs and tape posted at the perimeter of the work area and all potential entry points prior to abatement commencement.
- Regulate each work area using proper signage and barrier tape at entrance to work area. Close all doors and windows within 20 feet of the renovation. Establish a 20-foot perimeter around the work area if space permits.
- Place two poly drop cloths beneath work area. Ensure that doors within the work area are covered with plastic sheeting in a manner that allows workers to pass through while confining dust and debris.
- Cover the ground with plastic sheeting or other disposable impermeable material extending a minimum of 10 feet beyond the perimeter or a sufficient distance to collect falling paint debris, whichever is greater.
- In situations such as where work areas are in close proximity to other buildings, windy conditions, etc., take extra precautions in containing the work area, like vertical containment.

2. Stabilization Methods

- All deteriorated lead based paint must be removed using a wet cleaning method and manual tools.
- Mist the area with a spray bottle or commercial sprayer throughout the removal process.
- Allow for the water to soak into the material. Do not use too much water, which could cause runoff and damage to the building; however, keep debris and paint chips adequately wet. The only time wet methods are not recommended is near electricity. Be sure to use GFCI connections, and never use water around outlets, electrical boxes, or wiring.
- Manually remove all paint chips, dust, and debris.
- All contaminated material must be bagged and treated as lead waste.

3. Personal Protective Equipment

Respirator protection must be worn in accordance with 29 CFR 1910.134. Protective clothing must include (at a minimum) properly fitting, full body, disposable coveralls, head covers, and gloves. Additional protection is recommended for eye protection, hard hats, and footwear. When fall

protection is required, certified and approved equipment must be work by trained workers.

4. Disposal

Construction / abatement waste determined to contain more than 5% by weight (by TCLP methods) are disposed of by an accepting landfill using Waste Manifest that shall include volume of materials in cubic yards, date of transport, name of transporter, driver and vehicle number, date of receipt and disposal, and all signatures.

D. Abatement Monitoring and Clearance

During abatement activity, an industrial hygienist monitors airborne contaminated dust concentrations within and adjacent to the work area. The purpose of this sampling is to continuously evaluate engineering controls established within the work area. The lead contaminated dust concentrations in air should be maintained at lowest possible levels, the contractor shall review and re-enforce proper engineering controls until no lead in air levels are present.

Upon completion of abatement, and all surfaces within the containment have been thoroughly cleaned free of any visible residue, clearance examination shall be performed.

After passing the visual clearance examination, no sooner than one (1) hour and no later than three (3) days, a DOEE certified inspector/risk assessor must collect dust wipes in accordance with 40 CFR 745.227 and Title 20 DCMR – Chapter 33 (Regulation of lead-based paint activities) and samples must be analyzed by a NVLAP laboratory. If lead contaminated dust remains the cleanup process must be repeated and additional clearance sampling is required.

A final clearance report shall be submitted to DOEE and DGS within seven (7) day after abatement work completion.

E. Close Out Documents

Close out documentation must include a copy of all daily project logs, completed landfill manifest/waste shipment records, and final wipe clearance results from NVLAP lab.

Water Filtration Testing Protocol

I. Purpose

The District of Columbia's goal to promote a healthy and safe environment for students, staff, and community members in District facilities (DCPS and DPR) is being accomplished in part through a 4-phase remediation and filtration program to test and reduce the level of lead in drinking water sources. DGS has successfully completed the first two phases, is finishing the third phase, and is embarking on the fourth phase shortly. This protocol will outline the operations aspects of the first three phases. This protocol will be updated as the fourth phase of the 4-phase remediation program is undertaken.

At the time of this report being written, The Department of General Service was updating the protocol to include the most recent information. To view the most up to date Water in Lead Protocol please visit our website: <https://dgs.dc.gov/node/1227721>.