

# Indoor Air Quality Management Plan

## Bluffview Montessori 4001-07

Approved 12/21/23

*Every Minnesota public school district must have a health and safety program that complies with health, safety, and environmental regulations and best practices including indoor air quality management. This includes charter schools. (Minn. Stat. § 123B.595, Subd. 4. Facilities plans; and Minn. Stat. §124E.03, Subd.2. General federal, state, and local requirements.)*

*There are four types of policies described in this Model Plan.*

- **'Required'**
  - *policies that are the minimum to comply with the state statutes (shown above) and associated MDE policy letters.*
- **'Recommended in IAQ Plan; but certain regulations apply'**
  - *districts must comply with these regulations, regardless of whether they are included in the IAQ Plan; these policies should be in the IAQ Plan.*
- **'Recommended in IAQ Plan; certain regulations may apply'**
  - *districts may need to comply with these regulations (depending on conditions at school buildings); these policies should be in the IAQ Plan, if applicable.*
- **'Recommended'**
  - *policies that do not have to be included in the IAQ Plan and that are not regulated; nonetheless, these are significant issues that should be considered in the IAQ Plan.*

*Policies should be unique and tailored to the specific needs of the district. Additional guidance and tools, such as checklists, forms and schedules, can be found in the [MDH IAQ Plan Development Package](#)].*

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## 1. Indoor Air Quality Coordinator *[Required]*

Bluffview Montessori has identified the Head of School (also is a BMS Building Corporation Member) as the Indoor Air Quality Coordinator. The coordinator administers the IAQ Management Plan. The school administration and school board are committed to providing the necessary support to implement the IAQ Plan. The IAQ Coordinator reports to the BMS School Board.

The IAQ Coordinator is:

1. an individual that is either based in the district or spends most of their time in the district.
2. able to answer basic questions from parents:
  - a. where parents can find answers to their IAQ questions and concerns;
  - b. where parents can obtain checklists and self-help information to evaluate their child's out-of-school situation: [Attachment 4: List of Information Resources for Parents](#)
  - c. how parents can access information about the school; and
  - d. what parents can do—how parents can effect change.
3. authorized to respond to parents and local complaints as well as problems and complaints forwarded by state agencies.
4. fulfills a separate IAQ function from that of building systems maintenance expert.

The IAQ Coordinator's responsibilities also include:

1. Develop and implement a written IAQ Management Plan, encompassing the U.S. EPA 'Tools for Schools' and MDH guidelines
2. Conduct and document an annual building walkthrough.
3. Conduct and document an annual ventilation and building checklist.
4. Monitor plan implementation including documenting issues and work practices that require indoor air quality remediation.
5. Inform and educate staff about indoor air quality procedures and policies.
6. Develop a communication plan/policy to include response to building complaints.
7. Respond to regulatory agency correspondence, guidelines, and recommendations.
8. Monitor regulatory changes and new developments.
9. Review the IAQ Plan and obtain school board approval at least annually.
10. Notify parents about the IAQ Coordinator through (annual newsletter, policy letter, website, etc.)
11. Communicate proactively with staff, parents, and other parties regarding the progress made with the IAQ Plan and any other relevant IAQ information.
12. Manage IAQ projects
13. Manage compliance with other IAQ-related regulations, such as smoking, vaping, asbestos, lead, vehicle idling, mercury, and pesticide applications
14. Review and approve renovation projects to determine whether they appropriately address IAQ concerns and are consistent with the IAQ Management Plan and other requirements
15. Report IAQ activities (such as routine assessment, concern investigation, addressing identified issues) the Building and Grounds Committee and the BMS School Board
16. Coordinate the IAQ Team's activities and meetings.

## 2. School Board Adoption *[Required]*

The BMS school board adopted the first district IAQ Plan on 12/15/22. School board adoption will be obtained every year in December moving forward. The IAQ Plan will reside on the BMS [Building and Grounds Committee website page](#). School board minutes indicating annual IAQ Plan approval are maintained in the [School Board meeting minutes](#).

*\* NA for BMS: The school board adopts the IAQ Plan as part of the ten-year facility plan [required of school districts and intermediate districts, not charter schools, under statute 123B.595].*

## 3. Annual Update *[Required]*

BMS will update the IAQ Plan as necessary. Charters are not required to have a 10-year facilities plan. The IAQ Coordinator and Building Manager will conduct at least one formal annual (fall) Facility Walkthrough Inspection and a Building and Grounds Maintenance Checklist to be reported to the Building and Grounds Committee. Informal inspections occur frequently throughout the year, including scheduled work by our contracted HVAC preventative maintenance contractor.

The following in italics is a placeholder in the event that we do need one in the future:

*\*NA at this time: BMS performs an annual update of the IAQ Plan, as part of the updates to the ten-year facility plan [which is required of school districts and intermediate districts, not charter schools, under statute 123B.595]. Records of the annual update are maintained [name location, for example, as an Attachment to this IAQ Plan].*

*An annual review involves:*

- 1. Verifying an IAQ Coordinator is functioning in the roles stated under 'IAQ Coordinator' policy*
- 2. Ensuring an operational IAQ Management Plan is implemented*
- 3. School board review*
- 4. Walkthrough inspections*
- 5. Building systems evaluations*
- 6. Reviewing IAQ Concern Reports and other information*
- 7. Discussing new issues with the IAQ Team*
- 8. Creating a 'Plan to Address Identified Issues'*
- 9. Reviewing and changing the IAQ Management Plan as needed]*

## 4. Goals and Objectives *[Recommended]*

The health, comfort, and learning environment of students and staff are important aspects of the school mission. Indoor air quality (IAQ) is a critical component for a healthful and comfortable learning environment. BMS IAQ goals are as follows.

1. Minimize indoor air pollutants, which will reduce the likelihood of health problems, including asthma, transmission of infections, respiratory symptoms, and potential chronic hazards.
2. Manage temperature, humidity, and ventilation and associated problems, which will foster students' comfort and learning.

3. Prevent indoor air quality problems, which will slow building deterioration, avoid school closures, minimize liability risks, and foster a positive relationship among parents, teachers, and the school administration.

BMS has implemented an IAQ Management Plan that will monitor and improve the quality of air in school buildings. The objectives of the IAQ Plan are the following.

1. Reduce the levels of indoor air pollutants through preventive measures such as routine maintenance activities, periodic building evaluations and inspections, and IAQ-specific policies.
2. Provide and maintain adequate air exchanges by maintaining ventilation equipment.
3. Respond to IAQ-related concerns and problems in a thorough and prompt manner, through investigation, documentation, and effective communication.

## 5. Indoor Air Quality Team *[Recommended]*

BMS established an IAQ team that represents staff, students, parents, service providers. The IAQ team assists the school administration by reviewing IAQ-related information and recommending IAQ policies to maintain and improve the air quality within district facilities and school buildings.

The Building and Grounds Committee will serve at the Indoor Air Quality Team.

The IAQ team is involved in the following efforts.

1. The team members contribute to the IAQ Plan creation and implementation. The IAQ team members have reviewed the United States Environmental Protection Agency's (USEPA) IAQ Tools for Schools (TfS) kit, focusing on the 'backgrounder' resources and checklists relevant to each team members' expertise.
2. The team evaluates non-routine IAQ concerns that have been reported to the IAQ Coordinator. The Team takes steps or recommends measures to resolve the reported concern.
3. The team meets regularly every other month to review ongoing IAQ issues and projects. The Head of School and Building Manager meet frequently on daily projects/issues.
4. The team meets annually to conduct an annual review the IAQ Plan.
5. Meeting minutes, reports and other documents are kept with the IAQ Plan B&G Committee minutes and this information is routinely accessible to the public as School Board consent agenda items/reports.

## 6. Building Evaluations *[Recommended]*

School buildings are evaluated every year. HVAC is evaluated during contracted fall and spring preventative maintenance conducted by a licensed HVAC contractor. The evaluations cover the ventilation systems and maintenance activities. The ventilation evaluation checks air intakes, air filters, condensate areas, coils, cleanliness, mechanical rooms, dampers, controls, air

movement, exhaust fans and The maintenance evaluation checks building supplies, dust control, floor cleaning, drain traps, moisture, and combustion appliances.

The Head of School and Building Manager administer and evaluate the checklists each year by the December B&G meeting, preferably August before school begins. The two checklists in #3 above will be used, and provided to the B&G Committee for review no later than their December meeting. The checklists will be kept as part of the Committee minutes.

The IAQ Coordinator, Building Manager, and HVAC contractor conducting the preventative maintenance will offer reviews of findings and drafts ideas to address findings. If the source of problems cannot be identified and concerns persist, a different evaluation method may be used. Information from the evaluations is used during the walkthrough inspections to verify or further investigate the issue. Records of annual evaluations are kept in B&G Committee minutes. Identified issues are addressed, as described in Section 8 with details. The [Attachment 3: Template Schedule to Address Identified Indoor Air Quality Issues](#) will be used as needed to guide the process.

## 7. Walkthrough Inspections *[Recommended]*

An IAQ [walkthrough inspection](#) is conducted annually of all functional spaces in buildings that house administrative or educational operations. The purpose of the walkthrough inspection is to identify new problems, further evaluate previously identified problems, and confirm corrective actions and other changes. The inspection is a quick overview of each building. The walkthrough inspections provide insight regarding the type, location, and magnitude of apparent IAQ-related issues and problems.

The walkthrough inspections assess IAQ visually and through smell. The inspections check the occupied spaces (classrooms, hallways, offices, kitchens) and other areas that may affect IAQ (exterior, roof, mechanical rooms, bathrooms, storage rooms, and boiler rooms). The walkthrough identifies problems related to cleaning, fresh air ventilation, pests, nearby pollutants, pesticides, moisture, walk-off mats, temperature, humidity, odors, mold, occupant concerns, dry drain traps, exhaust ventilation, chemicals, fuel containers, engines, combustion appliances, lead, and radon.

IAQ issues identified during the walkthrough inspections will be addressed by the IAQ team and any appropriate contractors. This is described in the 'Schedule to Address Identified Issues' Section 8.

## 8. Schedule to Address Identified Issues *[Recommended]*

The walkthrough inspections and building systems evaluations may identify IAQ issues that need attention. These issues are prioritized from most important to least important and

tracked in the 'Schedule to Address Identified Issues Table' located in the [Attachment 3: Template Schedule to Address Identified Indoor Air Quality Issues](#).

Issues are categorized and addressed through one or more the following methods:

1. Completing one-time repairs (immediate or near future actions).
2. Scheduling and executing mid to long- term projects.
3. Identifying deferred maintenance items that may be addressed if/when funding is available.
4. Adopting new policies and practices as part of the IAQ Plan annual review.

The schedule describes the timeline to correct the IAQ issues. It also assigns an individual who is responsible for completing the task or overseeing the work. The IAQ Plan is also updated every year to address identified issues. Responses to specific staff concerns and complaints are addressed according to the 'Concerns' policy (section 19).

## 9. Mercury *[Recommended in IAQ Plan; certain regulations apply]*

Mercury can affect the brain and nervous system. It may be found in areas where previous spills occurred, certain building materials, some instruments, and chemical storage areas.

In compliance with MN Statute 121A.33, elemental mercury and mercury-containing instruments are not permitted on school grounds. BMS no longer purchases mercury containing instruments (such as thermometers, barometers, and the like). This prohibition does not apply to light bulbs or thermostats for heating, ventilation, and air conditioning.

School staff have evaluated all buildings for the presence of mercury containing chemicals, instruments, and materials.

While mercury is prohibited in our schools, in the unlikely event that mercury is brought to school, school staff are prepared to respond to a mercury spill. In the event of a spill, school staff will follow Minnesota Pollution Control Agency (MPCA) guidance. Students will be removed from the affected area. The space is isolated from the rest of the building. Mercury spill clean-up kits are present and will be used for small spills (one thermometer or less). In larger spills, school staff will contact the Minnesota Duty Officer (1-800-422-0798 or 651-649-5451) and possibly local authorities and the MPCA.

## 10. Tobacco and E-cigarettes *[Recommended in IAQ Plan; certain regulations apply]*

BMS protects employees, students, and the public from the hazards of secondhand smoke and involuntary exposure to aerosol or vapor from electronic delivery devices. Secondhand smoke and e-cigarette aerosols harm the cardiovascular system and can cause cancer.

Tobacco smoking, chewing and ingestion are prohibited in all school facilities and vehicles (as mandated under MN Statute 144.4165). Carrying or using an activated electronic delivery device (such as an e-cigarette) is also prohibited. The prohibition includes lighted or heated product containing, made, or derived from nicotine, tobacco, marijuana, or other plant, whether natural or synthetic, that is intended for inhalation. Signs are posted at all entrances.

The lighting of tobacco by an adult as a part of a traditional Native American spiritual or cultural ceremony is the only exemption to these prohibitions in schools. While the state law does not apply to outdoor smoking, BMS has also banned smoking on school grounds.

## 11. Pest Management *[Recommended in IAQ Plan; certain regulations apply]*

Pests (such as mice and cockroaches) and pesticides can cause health problems, such as allergy and asthma symptoms. Integrated Pest Management (IPM) is an important strategy for maintaining IAQ because it reduces both pesticide use and pest problems.

The school strives to minimize pesticide use and utilize non-chemical options where feasible. Individuals that apply certain pesticides must be properly licensed by the Minnesota Department of Agriculture. Should the school/district contract with a pest management company it would stipulate in its contract with the company that proper licensing is maintained. Pesticides are only applied indoors during unoccupied times and with fresh air supply air set to 100 percent outdoor air. If pesticides are applied outdoors, by an air intake, this work is also done during unoccupied times and the intake is turned off. Landscaping is maintained to reduce pest harborage, including pruning shrubs and trees that are touching walls.

Parents and staff are notified about the application of certain pesticides, per MN Statute 121A.30, by September 15 of each school year. General notification occurs with an “allschool” email and via the website RSS feed. Individual notification is also provided, when requested by a parent or staff. The BMS and associated policies are listed on the school website. Copies of individual notification are kept for six years, filed in a Pest Management Notification folder in the office.

## 12. Asbestos *[Recommended in IAQ Plan; certain regulations apply]*

Asbestos is a mineral fiber that can be found in some building materials, such as floor tiles, linoleum, pipe insulation, ceiling tiles and wall plaster. If these materials are damaged or disturbed, they may release asbestos fibers into the air. Airborne asbestos fibers pose an increased health risk for mesothelioma, lung cancer, and asbestosis.

In compliance with federal law, BMS has developed and maintains an Asbestos Hazard Emergency Response Act (AHERA) Management Plan. This plan reduces the likelihood of exposure to asbestos. Asbestos containing materials are regularly inspected. Removal is done safely, following applicable state and federal laws. The AHERA plan is available for review and



located in the school office. Parent, teacher, and employee organizations are notified yearly about the AHERA Plan by the school through the RSS feed.

The most recent asbestos inspection occurred 1/10/23. The contractor that conducted the inspection stated that we are not obligated to do ongoing, Third Year Inspections due to the lack of findings along with the age of the building. Any construction projects should and will include asbestos mitigation. They also told us to include examining any new shipments of ceiling tiles, reviewing the “ingredients” listed due to the fact that some tiles come from outside the United States and may contain asbestos. This is detailed in the “Renovations” section below (#24).

### **13. Lead *[Recommended in IAQ Plan; certain regulations may apply]***

Lead can be found in paint and varnishes, in pre-1978 building structures, and possibly other materials and items. When lead is released as dust or chips, individuals may inhale or ingest the lead. This can affect the nervous system, and young children are particularly susceptible.

The district has determined that, due to the construction date of the Bluffview school building(s), they do not contain lead paint. No further plan needs to be written regarding this area.

### **14. Arena Air Quality *[recommended in IAQ Plan; certain regulations may apply]***

Fuel-burning ice resurfacing equipment emit carbon monoxide and nitrogen dioxide into the air, which may cause health problems. Since Bluffview does not have an ice arena, district staff will maintain this notice within the plan for future consideration, if an arena were to be considered: Minnesota Ice Arena Rule (MN Rules, Chapter 4620.3900 - 4620.4900), to ensure acceptable air quality in the arena.

### **15. School Bus Idling *[Recommended in IAQ Plan; certain regulations may apply]***

Vehicle exhaust contain gasses and particles that can affect the lungs and heart. Children are particularly vulnerable to diesel emissions. BMS busing is provided by Winona Area Public Schools.

To reduce exposure to combustion by-products from diesel school buses, BMS has adopted a policy (WAPS Policy 709 addresses this) to limit bus idling and established parking and loading zones away from school air intakes, in compliance with MN Statute 123B.885. School bus loading zones are located no less than 50 feet from building entrances and fresh air intakes. If this location is deemed unsafe, blocks traffic, or is not cost-effective, the location can be

reviewed by the school board. In addition, idling is never permitted (newer engines that need no warm-up) or limited to specific duration under specific situations (turbo-charged buses, sub-freezing temperatures) as detailed in the bus operator manual. Buses should not park in a line if avoidable to limit intake of tailpipe emission from one bus to another. At BMS space does not allow for diagonal parking, so they are to keep a minimum space of three car lengths if in a line. Bus drivers are educated about this policy when hired, and refresher training is conducted in accordance with Winona Area Public School Policy.

## 16. Radon *[Recommended in IAQ Plan; certain regulations may apply]*

Radon is a naturally occurring gas that can enter any building from the underlying soil. In some cases, radon can build-up in classrooms, which may increase occupants' risk for developing lung cancer. While radon testing is not required, Bluffview has chosen to test buildings. Bluffview buildings were initially tested on 12/2/22 and will be tested every 5 years thereafter.

In compliance with MN Statute 123B.571, when radon testing is conducted:

- The Minnesota Department of Health radon testing plan is followed;
- The results are reported to the Minnesota Department of Health; and
- The results are reported at a school board meeting.

Radon testing and mitigation is conducted by licensed individuals following the requirements in statute, rule, and national radon standards (according to MN Statute 144.4961). Testing is conducted between November 1 and March 31, using short-term tests, on school days or with HVAC operating under occupied conditions. The following rooms are tested: 1) all occupied and intended to be occupied rooms in contact with the ground; 2) 10% of upper floor rooms; and 3) other rooms specified in the ANSI/AARST standard, where applicable. Follow-up testing is completed in rooms that have radon  $\geq 4$  pCi/L using a continuous radon monitor, whenever possible, to evaluate levels during occupancy. If elevated radon is confirmed, mitigation is completed in occupied and intended to be occupied rooms. After mitigation, the buildings are re-tested to verify radon reduction.

Further information, including radon testing (form to submit to the state) and mitigation conducted in district buildings, can be found on the MN Department of Health website:

<https://health.state.mn.us/communities/environment/air/radon/radonschool.html>

## 17. Pool Operation *[Recommended in IAQ Plan; certain regulations may apply]*

Bluffview does not have a pool, so this section is NA. The italicized text below will remain as a place holder in the event BMS adds a pool in the future.

*\*Chlorine used in pools can bind to swimmers' body waste and form chemicals called chloramines. This chemical can off gas from the water and irritate the skin, eyes, and respiratory tract.*

*To reduce exposure to chloramine in pool areas, operation and maintenance are conducted in compliance with state pool code requirements. This includes:*

- *Posting sign and posters to encourage swimmers about personal hygiene and showering*
- *Ensuring airflow maximizes fresh air across the water's surface, and sufficient fresh outdoor air and exhaust ventilation is supplied*
- *Monitoring combined chlorine levels in the water and treating the water when levels are too high*

## 18. Communication *[Recommended]*

Communication is a critical element to successfully manage IAQ. The IAQ Coordinator and other district authorities try to limit misinformation and confusion through effective communication. When an IAQ issue is raised or identified, communications are completed throughout the assessment and resolution process. The IAQ Coordinator and other district employees communicate with relevant parties in a prompt, courteous, and consistent manner until the issue is resolved to the greatest extent possible. It is the goal of BMS administration to develop and maintain the trust of the community and staff.

The IAQ Coordinator is prepared to answer parents' basic questions, as described under the 'IAQ Coordinator' policy. A list of checklists and other resources, which parents can use to evaluate IAQ at home, can be found in [Attachment 4](#). This information is provided to parents to complement efforts to evaluate IAQ concerns in the school.

The IAQ Team and Coordinator inform parents and staff annually about the following.

1. The IAQ Plan and how to view the Plan upon request.
2. How to report IAQ concerns.
3. How to contact the IAQ Coordinator.
4. Scheduled pesticide applications and how to be notified individually about unscheduled applications

Bluffview informs parents and staff about the availability of this IAQ information by adding it to the parent handbook, staff handbook, reviewing it annually in an open meeting, and posting it on the school website.

In the unlikely event of an IAQ emergency, the district will strive to accommodate the needs of students, parents, and staff. The media will be alerted when it is necessary to provide information to a broader audience. Every effort will be made to share appropriate information as soon as it becomes available to the school district.

## 19. Concerns *[Recommended]*

Bluffview encourages the reporting of all IAQ concerns. The prompt reporting and resolution of IAQ issues has the potential to prevent serious problems from developing, which should

prevent potential health effects, discomfort, and unnecessary costs. This makes the investigation of all reported concerns worthwhile.

The IAQ Coordinator **requires** concerned individuals report their IAQ concern in writing. A written description of the concern should reduce misunderstanding and create a history that can be referred to at a future date. The 'IAQ Concern Reporting Form', located in [Attachment 2](#), is made available to staff and parents. This form should be completed and sent to the IAQ Coordinator to initiate an official IAQ concern reporting process.

The IAQ Coordinator investigates the concern using situationally appropriate documents and will request specialized help/contractors as deemed necessary along with the 'IAQ Concern Reporting Form'. The IAQ Coordinator may meet with the individual to collect additional information. Findings and any changes implemented are documented. The IAQ Coordinator reports the measures taken and the resolution of the identified concern to the individual. Other staff are also contacted, if affected, including maintenance, administrators, and service providers. This ensure all interested parties know about the issue and the action(s) that have been taken and should minimize misinformation. Where possible, the resolution of the issue, to the satisfaction of the concerned individual, is also documented.

If the problem cannot be identified or persists despite the school staff's efforts to identify and remediate it, the IAQ Coordinator discusses the matter with the appropriate school official(s), to determine whether a contracted service provider is needed. When the problem requires a policy change or significant resources, the IAQ Coordinator discusses specific policy changes or needed resources with the IAQ Team (B&G Committee) and the School Board as deemed necessary.

Completed IAQ concern forms and associated documents are stored in a file in the front office. Information collected is processed and stored according to data practices policies. Findings and changes associated with reported concerns are reviewed during the annual review, or sooner if needed, to determine whether changes to the IAQ Plan are warranted.

## 20. Ventilation *[Recommended]*

Adequate outdoor air and local exhaust ventilation are critical components of buildings. Ventilation rates affect occupant comfort and satisfaction and reduce odors and contaminant levels. Local exhaust ventilation prevents contaminants from migrating from storage and contaminant producing activities to other part of the building. Adequate ventilation can benefit learning outcomes and prevent illnesses, including the transmission of respiratory illnesses through aerosols exhaled by occupants.

Adequate ventilation (outdoor air supply) under normal operations is approximately 15 cfm/person. School staff maintain the school buildings according to the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) recommended parameters described in standards 55 and 62. If the current parameters cannot be met, school staff make

ventilation adjustments that provide a fresh air delivery, temperature, and humidity level that are as close as possible to the 2019 ASHRAE standard and that meet the building code requirement applicable to the heating, ventilation and air conditioning (HVAC) systems. HVAC systems are inspected periodically as described in the operations and maintenance schedule (see policy and attachment 1).

## 21. Filtration *[Recommended]*

Filters in air handlers and portable air cleaners can remove some pollutants from outdoor and indoor sources. This includes fine particles that can damage the heart and lung, allergens that can trigger asthma, and respiratory aerosols from occupants that may contain infectious microorganisms. It is preferable to remove the source of pollutants (whenever possible) and ensure adequate ventilation; filtration is a complementary measure in a multi-layered intervention strategy.

Air handling units utilize the highest filtration efficiency filters compatible with the air handlers. The filters have a MERV rating of MERV 8. Filters are replaced according to the operation and maintenance schedule for each building, described in Attachment 1. Filters are also checked periodically for over-loading, moisture, and damage or gaps that could allow for by-pass of air flow.

Upon such time that the school air handlers are replaced/upgraded, the goal will be to have the upgraded system use MERV 13 filters.

Portable air cleaners are also used to further reduce particles. These are placed in all general ed classrooms, gym, library, and band room. High efficiency air filtration (HEPA) air cleaners are typically used. Ultraviolet germicidal air cleaners may be considered. Air cleaners that have established evidence of safety and efficacy are selected. The clean air delivery rate or room sizing are reviewed when determining the right cleaner for a room. When considering the acquisition and use of products with technology that may generate ozone, staff must verify that the equipment meets UL 867 standard certification (Standard for Electrostatic Air Cleaners) for production of acceptable levels of ozone, or preferably UL 2998 standard certification (Environmental Claim Validation Procedure (ECVP) for Zero Ozone Emissions from Air Cleaners) which is intended to validate that no ozone is produced.

## 22. Preventive Maintenance and Operations *[Recommended]*

Preventive maintenance means the routine inspection, cleaning, adjustment, and repair of building structures and systems, including the heating, ventilating, and air conditioning systems (HVAC), local exhaust ventilation, drain traps, and flooring. Preventive maintenance plays a major role in maintaining the quality of air, by assuring that the building systems are operating

effectively and efficiently. Moreover, it helps to maintain a comfortable temperature and humidity in occupied spaces.

Preventive maintenance schedules are contracted out with a local HVAC contractor to ensure that the work is done correctly and to allow proactive troubleshooting stemming from inspections. It describes the building and ventilation components that are inspected and maintained on a routine basis. The schedule was established using the past experiences, service provider recommendations, the availability of resources, and technical guides (including the manufacturer's specifications). The person performing the preventive maintenance follows the contract, and the HOS and Building Manager monitor its completion. All records of completed preventive maintenance kept by the IAQ Coordinator.

### 23. Training *[Recommended]*

All district employees play an important role in maintaining and improving air quality. Staff behaviors can affect air quality in a room and specific staff need to be aware of certain policies. In addition, an employee with an understanding of IAQ is more likely to report IAQ concerns quickly and accurately. The staff are educated about IAQ.

BMS performs an annual IAQ training session of all staff, shall be held within the first 2 months of the school year. The IAQ Coordinator or other qualified person performs the training. The training (summarize training agenda) includes describing the importance of IAQ to health and learning, behavior factors, operations, and maintenance issues that are associated with IAQ.

In addition to the general training, specific staff receive training on policies and procedures related to their rooms or jobs.

1. Teachers: animals, food, plants, furniture, clutter, chemicals, air movement/unit ventilators, sensitive students, reporting leaks, reporting IAQ concerns, cleaners
2. Bus drivers: idling
3. Custodians: cleaning, moisture, chemicals, problem identification and reporting
4. Grounds: pesticides, chemicals, grass clippings away from unit vents
5. Facilities staff: ventilation, operations, maintenance, moisture

### 24. Renovation *[Recommended]*

The district considers IAQ when planning construction and renovation projects. The IAQ Coordinator (Head of School), B&G Committee (because it houses the BMS Building Corporation Board members), school board discuss major structural changes that may impact IAQ. Proposed renovations are evaluated in relation to the school's history of IAQ findings and concerns reported. This history is summarized in the yearly 'Plan to Address Identified Issues', filed in [Attachment 3](#). In addition, the presence of lead, asbestos, PCBs, and other possible hazards are evaluated prior to renovation, and school staff comply with relevant regulations.

The use of environmentally preferable building materials and products are specified in renovation and construction projects, where cost and quality are comparable to conventional materials. This may include programs such as EPA Safer Choice (aka, Design for the Environment), Green Guard, Green Seal, Carpet and Rug Institute Green Label, and ANSI 208 certified.

To the extent possible, major renovations are performed when school is not in session. If renovation projects must be performed while school is in session, the return air from any area being renovated is isolated from the main ventilation system. Other engineering controls, such as plastic sheeting and local exhaust ventilation, may be used to contain and minimize the distribution of dust and other contaminants produced by construction activities. Cleaning operations are more frequent during and after renovation. After completion, additional ventilation may be used to air out chemicals that may off-gas from new materials.

The design and construction of school buildings considers various factors that impact IAQ such as:

1. Site selection (such as water drainage issues)
2. An environmental assessment of the site (such as water table level)
3. External contaminants from neighboring sites (such as farming or industrial activities)
4. Possible radon entry and use of radon resistant construction
5. Building design factors that promote good IAQ and prevent moisture intrusion
6. Internal contaminant sources (such as asbestos or lead-based paint)
7. Space allocation (such as accessibility to HVAC areas or proper storage of chemicals)
8. Building materials and furnishing (such as selecting those that release low levels of gases, are not porous, easy to maintain, and store well)
9. HVAC system design that could affect IAQ, such as air intake and distribution, filters, coil, drain pans, ducts, positive building pressure, ducting of return air, adequate exhaust systems, comfort, humidity, air diffusers

*\*We may reference US EPA resources such 'Design Tools for Schools' and 'Energy Savings Plus Health', as additional best practices guides used in the planning of renovation and construction projects.*

## 25. Mold Prevention and Removal *[Recommended]*

Mold growth in buildings can cause illness (including allergies, asthma, and respiratory symptoms), costly damage, and discomfort. Molds need moisture, a food source (such as drywall) and moderate temperatures to grow. Moisture control is critical to prevent and respond to mold growth.

BMS officials pay close attention to water intrusion and microbial growth during the walkthrough inspections, buildings systems evaluations, preventive maintenance activities, and the investigation of reported concerns. The maintenance staff have received basic training

about identifying moisture problems. Other staff are encouraged to report water damage promptly. School staff are expected to report and address problems in a prompt manner.

Large flooding events are handled by a local mitigation contractor/company. This company can respond to water problems at any time, and will be contacted as soon as possible to initiate restoration, such as drying and cleaning.

Water damaged materials are replaced when possible (e.g., ceiling tiles, boxes, books). Materials that cannot be easily replaced and must be kept (e.g., carpets, sheet rock, insulation, structural lumber, etc.) are dried, preferably within 24 hours, but no later than 48 hours. Porous materials that remain wet longer or items wetted are evaluated on a case-by-case basis, but these are usually replaced; porous materials contaminated with sewage or overland flooding are always replaced.

Materials contaminated with mold growth are promptly cleaned or replaced. Mold growth is removed from non-porous and semi-porous surfaces (solid wood, concrete, metal, etc.) by cleaning with a detergent, followed by application of diluted bleach or other antimicrobial, where necessary, and then thorough drying. Porous materials (drywall, carpet, particle board, paper, etc.) that have mold growth are replaced.

Minor mold cleanup may be handled by maintenance staff. Mold or moisture problems that are larger or difficult to identify or remediate are contracted to a trained professional. Where necessary, the district will contract with a licensed mitigation company/contractor to investigate mold and moisture problem, and to remediate mold. Large-scale remediation projects also follow the 'Renovation and Construction' policy and 'Pest Management' policy if antimicrobials are applied.

Containment and personal protection measures may be necessary where old growth is present or suspected. The district will follow guidelines from: USEPA, MDH, IICRC, AIHA, or IAQA, etc. as deemed appropriate when work is done by school staff or a contracted service provider.

## 26. Animals *[Recommended]*

Animals can be a source of allergens that cause allergy and asthma symptoms, and microorganisms that can cause infectious diseases, bites, and stings. BMS has adopted an animal policy (602 Animals in Classrooms and 535 Service Animals in School) that strives to minimize animal-related problems while recognizing the positive educational role animals can have in schools.

Information gathered from walkthrough inspections, building systems evaluations, IAQ concern reports, and staff meetings is used to create and update this policy. Specific types of animals will be restricted if a valid concern is expressed by staff, students, or parents. BMS reserves the right to prohibit certain animals if they pose a threat to the safety or well-being of staff and students.



Before an animal is brought to a classroom, the teacher must review and comply with the requirements in policy 602, III., B. If a sensitive individual is present or uses the room, then the request may be denied. Requests for animals that are merely pets and serve no educational purpose may also be denied. This policy does not apply to service animals (policy 535), which are permitted in school buildings. If or when animals are brought to school on a temporary basis (e.g., 'show and tell' events), the event will be held, where possible, outdoors or in a room with a hard floor (e.g., gym). Cold-blooded animals (fish, reptiles, amphibians) are recommended over warm-blooded, or feathered animals (mammals and birds).

If an animal is permitted, the responsible staff person is expected to watch for any obvious health symptoms that may be related to the animals, such as allergy or asthma symptoms. The staff person is also responsible for the care of the animal, including cleaning and maintenance of the habitat and other areas that may become soiled. Staff and students' hands must be washed after handling animals or contacting their waste. Animals must be kept in an appropriate habitat when they are not being used for education. They should be kept away from carpeted areas, to minimize the transfer of allergens to and soiling of the carpets. Finally, animals should be kept away from air supply and return vents.

## 27. Plants *[Recommended]*

Individuals can be allergic to certain plants, such as cut flowers and flowering plants. In addition, mold can grow on the soil, plant, or pot. If a student (or staff) plant related allergy is present, the situation will be evaluated case by case and appropriate steps will be taken to ensure the health of the student / staff.

Plants are an important part of the school's curriculum. A large arrangement of flowers and flowering plants are discouraged; flowers delivered for personal use/celebrations should be taken home at the end of the day. Staff are responsible for plants in their area, and they should immediately clean up any water or dirt that spills out of the plant. Plants should not be over-watered and cannot be placed on carpet, ventilators, or other locations where accidental over-watering can cause problems. Plants that develop mold (on leaves, on soil, or pot) must be removed unless part of a controlled experiment and proper ventilation is ensured.

All plants should have their original tag on them for easy and timely identification in the event of consumption or a reaction due to touching them.

## 28. Cleaning and Chemicals *[Recommended]*

Regular and thorough cleaning is an important means for the removal of air pollutant sources; however, the cleaning products themselves release chemicals into the air that can trigger respiratory illnesses. Keeping flooring and furniture clean can help to minimize dust, allergens, and the likelihood of mold growth (if the flooring becomes wet).

To ensure that cleaning practices remove pollutant sources while using cleaning products appropriately, the following standards have been adopted:

1. Custodial cleaning products are stored in a secure area. All bottles must be clearly labeled according to OSHA requirements. Bottles of cleaning agents must be closed tightly when stored. Products are stored in rooms with local exhaust ventilation.
2. Environmentally preferable ('green') products are used for general cleaning purposes, such as Green Seal certified, EPA Safer Choice (Design for the Environment) or equivalent products, where cost and performance are comparable to conventional cleaning products.
3. Where enhanced cleaning and disinfection is necessary to reduce COVID transmission, products are selected from the EPA 'List N: Disinfectants for Coronavirus (COVID-19)'.
4. Art supplies that are non-toxic under the Arts and Crafts Materials Institute (D4236) standard are used.
5. Aerosol products should be avoided whenever possible, in favor of other formulations.
6. HEPA-filtered vacuum cleaners are preferred to clean carpeting and entry mats.
7. Microfiber cloths are used to clean hard floors and smooth surfaces.
8. Teachers and other staff are provided a green cleaner for spot cleaning. Staff and students are not permitted to bring cleaning products from home, including wipes.
9. Teachers and other staff are encouraged to minimize clutter, to ensure rooms are easier to clean and to minimize dust collecting surfaces.
10. Students do not handle cleaning and disinfection supplies. Water/soap solutions are OK for student use.
11. All material safety data sheets are stored in an area available to all staff, and the location of this information is discussed in the district's 'Employee Right to Know' annual training.
12. Most cleaning and other maintenance is completed during unoccupied hours. Most routine cleaning is performed after school.
13. The building and rooms are maintained at reasonable cleanliness. Each building's operations and maintenance schedule specify the cleaning and maintenance schedule for flooring, entry mats, and furnishings, and these schedules can be found in Attachment 1.

## 29. Flooring and Furnishing *[Recommended]*

New flooring and furniture may emit volatile organic compounds, which can irritate people's airways and trigger asthma. Older furniture and flooring accumulate dust, allergens, and dust mites, which can be released into the air from time to time. If porous flooring or furniture becomes wet, they can develop mold growth.

When performing building evaluations, walkthrough inspections, and reviewing concern reports, the condition of flooring and furnishings is evaluated. Where persistent problems are found, the flooring or furniture is replaced, preferably with low-maintenance, smooth, and non-porous surfaced flooring, and furniture.

Flooring and furniture are cleaned according to the operations and maintenance schedule, which can be found in Attachment 1. Carpets are vacuumed and hard flooring mopped daily. In addition, carpet is deep cleaned (extracted) and hard flooring is refinished during summer “break” while no general classes are attending. After extraction cleaning, carpeting is dried with floor fans, continuous operation of the HVAC system, and dehumidifiers if deemed necessary. Hard flooring is re-finished during the summer using environmentally preferable products.

When purchasing flooring and furniture, the district prefers environmentally preferable products, such as Green Guard or Green Label products. All purchased flooring must be free of mercury. Staff are not allowed to bring personal furniture or area rugs to school unless they are professionally cleaned first. The district approves and purchases furniture that is used on school property. Bluffview does not currently have a “Construction and Renovation Policy.

Walk-off mats reduce dirt, pollen, chemical residues, and moisture that could be tracked into buildings. Walk-off mats are placed at every entrance and are all at least 5 feet long. Mats must be cleaned routinely to be effective, and are checked for excess loading and moisture, including underneath the mats (this can lead to mold growth). They are checked and cleaned according to the district operation and maintenance schedule. Landscaping is maintained and designed to minimize dirt and moisture in front of building entrances.

### 30. Outdoor Air Pollution *[Recommended]*

Outdoor air pollution, from agriculture, industry, fires, or traffic, may affect school occupants’ health and comfort. Pollutants such as fine particulate matter, ozone, and odors can be a problem intermittently.

The IAQ Coordinator tracks the daily air quality index. When air quality is not ‘good’, steps are taken to protect staff and students. Outdoor and strenuous activities may be limited, depending on conditions, following the MN Pollution Control Agency guidance. Individual susceptible children have been identified and additional precautions may be taken to protect their health.

Building operations and maintenance improvements have been made and may be adjusted when necessary. MERV 8 have been installed in the HVAC systems to filter particle pollution. Exterior windows and door are kept closed. The school buildings are operated at positive pressure to limit the infiltration of outdoor air pollution, and this pressurization is checked if any concerns or mechanical updates occur. Portable air cleaners are deployed to provide additional air cleaning. Any indoor sources of particle pollution are minimized, if possible, such as cooking, kilns, aerosol products, and vacuuming during school hours.

### 31. Extreme Heat *[Recommended]*

Elevated heat conditions can cause discomfort and affect learning. In more extreme conditions, it can cause heat exhaustion, heat stroke, and increase the risk of cardiovascular disease (stroke, heart attacks). Hotter temperatures have become more common and can be a problem during the start or end of the school year.

The school district complies with OSHA requirements (such as 5205.0110) to protect worker health and safety. Monitoring of adequate ventilation and airflow, as described in other sections of this plan, help to prevent heat hazards. Workspaces are monitored for elevated heat conditions, according to OSHA, depending on work activity intensity.

BMS is fully air conditioned.

### 32. Emergency Response *[Recommended]*

Emergencies are defined as situations that require immediate action. IAQ-related emergencies include situations that are potentially life threatening, such as the following:

1. widespread and sudden complaints of headaches and nausea or combustion odors
2. confirmed infectious air borne disease (e.g., Legionnaire's, measles, coronavirus)
3. liquid spills (e.g., mercury) or gaseous leaks (e.g., pool chlorine) of hazardous materials

In addition, emergencies include situations where there is limited time available to prevent serious property damage or health problems, such as major flooding.

Emergencies are determined on a case-by-case basis, using the above definition as a general guideline only. If doubt exists about whether exposure to a specific hazard constitutes an emergency, a precautionary approach may be used where the matter is handled as an emergency. Non-emergency situations are addressed according to the 'Concerns' policy.

Details of the BMS emergency preparedness and response plan can be found in [Policy 806 "Crisis Management."](#)

\*Original IAQ Plan Template and information came via:

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Indoor Air Unit  
625 Robert St N  
PO Box 6975  
St. Paul, MN 55164-0975  
651-201-4933  
[indoorair.health@state.mn.us](mailto:indoorair.health@state.mn.us)  
[www.health.state.mn.us9/9/22](http://www.health.state.mn.us9/9/22)*

*To obtain this information in a different format, call: 651-201-4933*