

# Alexandria City Public Schools Indoor Air Quality (IAQ) Management Plan



**October 2021**

**ACPS Indoor Air Quality Management Plan**

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# ACPS Indoor Air Quality Management Plan

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## 1. Introduction and Mission Statement

The Alexandria City Public School (ACPS) Indoor Air Quality (IAQ) Management Plan provides uniform procedures and practices to be implemented consistently throughout the school division to improve and maintain safe and healthy indoor air quality. Safe and healthy indoor air quality contributes to a favorable learning environment for students, productivity for teachers and staff, and a sense of comfort, health and well-being for all school occupants and community visitors. Ultimately, this plan helps us achieve our core mission of providing a high quality, equitable education to all children. Through the careful and consistent implementation of this Management Plan, all school facilities will better prevent, identify, and remedy IAQ concerns.

ACPS had begun implementing sound and responsible IAQ practices at its schools and facilities pre-pandemic. Recently and in response to Covid-19, the Department of Facilities and Operations felt it important to formalize its IAQ practices, procedures, and responsibilities into a comprehensive management plan. This formal plan was completed in October 2021.

The health, comfort and learning environment of students and staff are important aspects of ACPS' mission. Working with our external environmental consultant and implementing the Environmental Protection Agency's (EPA) "IAQ Tools for Schools" Program, we developed an IAQ Management Plan that will help monitor and improve the quality of air in school buildings. The plan also provides proactive measures that can be taken to improve air quality. The objectives of this IAQ Management Plan are:

- Reduce the levels of indoor air pollutants through preventive measures such as routine maintenance activities, periodic building evaluations, targeted indoor air quality sampling (as needed), inspections and IAQ-specific policies.
- Provide and maintain adequate airflow by repairing and maintaining ventilation equipment, which will promote a comfortable and healthy learning and working environment.
- Respond to IAQ-related concerns and problems in a prompt and thorough manner, and effectively communicate the progress of investigations and their resolution to all interested parties.

### 2. Role of the IAQ Coordinator and IAQ Team

#### IAQ Coordinator

ACPS has identified the Director of Safety and Security Services as the IAQ Coordinator for the division. The Director of Maintenance and Custodial Services will be a supplemental coordinator, providing support to the Director of Safety and Security Services as needed. The Executive Director of Facilities and Operations, Superintendent and School Board are advocates of the plan and are committed to providing the necessary support to meet the school district's IAQ Management Plan objectives. The IAQ Coordinator's responsibilities include:

- Acting as the key contact person within the district to respond to and address IAQ issues and concerns
- Coordinating the development and management of the district's IAQ Management Plan. This includes:
  - Establishing and overseeing an IAQ Team
- Coordinating building walkthrough inspections
- Coordinating building system evaluations
  - This objective will be coordinated through the Director of Maintenance and Custodial Services
- Coordinating the investigations of reported IAQ issues and concerns
- Modifying the IAQ Management Plan to fit the division's specific needs and objectives
- Responding to IAQ concerns and issues that are discussed or reported
- Coordinating the IAQ Team's activities and meetings, including distribution of the IAQ checklists
- Communicating with staff, parents and other parties regarding the progress made with the Plan and the process of reporting IAQ concerns
- Coordinating the annual review of the Plan, which involves building walkthrough inspections, building systems evaluations and revising the Plan to include new information.
- Obtaining school board approval of the IAQ Management Plan after every major revision.

#### IAQ Team

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ACPS has established an IAQ Team to represent all facilities within the ACPS portfolio. The IAQ Team assists school division administration by reviewing IAQ-related information and recommending IAQ practices, procedures and policies to maintain and improve the air quality within division facilities and school buildings. Led by the IAQ Coordinator, the IAQ Team is involved in the following efforts:

- Supporting the IAQ Coordinator to ensure acceptable IAQ in all facilities
- Contributing to the IAQ Management Plan creation and implementation. The members distribute IAQ policies, procedures and processes to the appropriate staff members
- Meeting regularly to review and resolve IAQ issues
- Meeting annually to review the IAQ Management Plan, which includes the review of existing policies in the IAQ Management Plan
- Meeting to evaluate and respond to IAQ concerns that have been reported to the division. The IAQ Team takes steps or recommends measures to resolve the reported concern
- Maintaining IAQ Team meeting minutes, reports and other documents in the IAQ Management Plan

The following individuals are members of the IAQ Team:

Name	Title	Contact Information	Specific Duties
Dr. Alicia Hart  Vanessa Duenas	<i>Executive Director of Facilities and Operations</i>  <i>Administrative Assistant to the Executive Director</i>	<a href="mailto:alicia.hart@acps.k12.va.us">alicia.hart@acps.k12.va.us</a> <a href="mailto:vanessa.joyce.duenas@acps.k12.va.us">vanessa.joyce.duenas@acps.k12.va.us</a>	Provide support and advocacy for IAQ Management Plan Initiatives to Senior Leadership and the School Board  Maintain documentation and meeting minutes relating to IAQ Team
John Contreras	<i>Director of Safety and Security Services</i>	<a href="mailto:john.contreras@acps.k12.va.us">john.contreras@acps.k12.va.us</a>	Responsible for oversight of IAQ Management Plan

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Amanda Ou	<b><i>Director of Maintenance and Custodial Services</i></b>	<a href="mailto:amanda.ou@acps.k12.va.us">amanda.ou@acps.k12.va.us</a>	Provides supplemental support to IAQ Coordinator/develops cleaning protocols and building inspection processes to help support IAQ Management Plan
John Finnigan	<b><i>Director of Educational Facilities</i></b>	<a href="mailto:john.finnigan@acps.k12.va.us">john.finnigan@acps.k12.va.us</a>	Ensures non-capacity CIP projects are budgeted for/implemented to help assist with IAQ Management Plan initiatives
Mark Carlson Julius James	<b><i>Assistant Director of Maintenance and Custodial Services</i></b>  <b><i>Building Systems Manager</i></b>	<a href="mailto:mark.carlson@acps.k12.va.us">mark.carlson@acps.k12.va.us</a> <a href="mailto:julius.james@acps.k12.va.us">julius.james@acps.k12.va.us</a>	Completes verification of ventilation and HVAC system operation within the division to ensure proper functionality

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### 3. Background and IAQ Findings

IAQ is a critical component of providing a healthy and comfortable learning environment. Indoor air pollutants, when left unresolved, may contribute to accelerated aging of facility infrastructure and health concerns. In addition, indoor air pollutants and extremes in temperature and humidity may cause discomfort, which can affect students' ability to concentrate and learn. Inadequate indoor air quality can:

- Hasten building deterioration
- Contribute to the closing of schools, interrupting learning for students

The IAQ Coordinator, with support from the IAQ Team, researches IAQ issues affecting the school. For example, issues that are investigated and documented include schools' histories related to:

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- Radon
- Mold
- AHERA
- Pests
- and other IAQ issues

During annual walkthrough inspections and building systems evaluations, the IAQ Coordinator, appropriate members of the IAQ Team, maintenance and custodial staff, and external consultants (as necessary) identify problems and issues using the ***IAQ Inspection Checklist (Attachment 1)***. These walkthroughs will typically occur during the summer, when most facilities are unoccupied. The issues are prioritized from most important to least important. Urgent issues are addressed first and issues that require continual attention are scheduled appropriately.

Custodial team members and building engineers will be responsible for regular inspections of spaces during the school year as part of their normal work program. In general, these inspections should include verification of the following:

- Trash is removed daily
- Food is not kept in classrooms/other areas overnight
- Classroom/area is dusted, cleaned and free from unnecessary clutter
- All spills/leaks are immediately addressed/removed
- Indoor surfaces are free from condensation
- Area around/under classroom sinks are free from clutter and leaks
- Ceiling tiles are not stained or discolored
- Spaces are cooling/heating properly
- Vents are unobstructed by books/other materials

Outside of the formal inspection process, concerns/issues from building occupants can be reported anytime to the IAQ Coordinator via the ACPS work order system. The IAQ Coordinator documents all IAQ concerns, performs an initial investigation, documents findings and communicates next steps to stakeholders. Many issues are resolved using in-house staff. However, external support may be needed to resolve specific issues.

The IAQ Coordinator and IAQ Team use a number of tools to help identify IAQ problems. If the problem cannot be identified or persists despite the division's efforts to identify and

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remediate it, the IAQ Coordinator determines whether a contracted service provider is needed.

When a problem has been identified, the IAQ Coordinator:

- Coordinates a response
- Communicates with the relevant parties
- Documents actions taken
- Keeps copies of all documents
- Ensures all relevant documents are posted on the webpage

More information regarding the sequence of response can be found in ***Attachment 2, “Basic Response Sequence”***. When the problem is not urgent but requires a policy change, the IAQ Coordinator organizes a meeting with the Director of Policy and Board Initiatives to develop and recommend specific policy changes. These policy changes are presented to the appropriate school officials for review and adoption. All new or revised policies are added to the existing IAQ Management Plan.

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### 4. IAQ Policies and Plans

ACPS Policies relevant to the IAQ Management Plan can be found at [Policies / Policies](#)

- Animals in the Classroom Policy (***Policy KKA; JHC-R***)
- Food in the Classroom Policy (***Policy JHCF-R***)
- Hazardous Materials Policy (***Policy EBAA-GBDA***)
- Asbestos Hazard Emergency Response Act (AHERA) Management Plan (***Policy EC-R***)
- Radon Gas Policy (***Policy EC-R***)
- Buildings and Grounds Management and Maintenance (***Policy EC***)
- Non-Smoking Policy (***Policy GBEC; KGC; Reg EEBA-R***)
- Anti-Idling Policy (***Policy EECA***)

#### Animals in the Classroom Policy



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While the use and inclusion of animals are important to instructional programming, they can be a source of allergens, asthma triggers and microorganisms that may cause infectious diseases. Animals, to include service animals, are permitted within ACPS facilities as long as they are in compliance with division policy. To provide additional clarity on this matter, ACPS has instituted **Policy JHC-R: Animals in Schools** ([Animals in School - Policy JHC-R](#)) and **Policy KKA: Services Animals in Schools** ([Service Animals in Public Schools - Policy KKA](#)). These policies provide guidance on the type(s) of animals that are permitted within schools and the process to obtain permission to have animals within ACPS facilities.

### Food in the Classroom/Facilities Policy

Food should be primarily consumed in the cafeteria and approved break rooms within our schools and facilities. When food is consumed elsewhere, it is important to ensure all food trash is properly discarded. Food should not be left in classrooms, offices, auditoriums, gymnasiums or other instructional spaces. When it is necessary to store food in classrooms, it must be kept in airtight, sealed containers to minimize the potential for pests, rodents, odors and biological growth. Wellness guidelines can be found within ACPS **Policy JHCF: Wellness Policy for the Alexandria City Public Schools** ([File: JHCF-R WELLNESS GUIDELINES FOR THE ALEXANDRIA CITY PUBLIC SCHOOLS I. Student Wellness Guidelines During the 2020-2021 Scho](#) )

### Hazardous Materials Policy

It is important to handle hazardous materials according to the manufacturers' guidelines. Wastes generated from hazardous materials should be stored separately from regular waste and disposed of in appropriate containers. Hazardous materials are common in art, science and vocational/industrial classes. Training sessions for staff can help explain the risks associated with hazardous materials and the importance of complying with this policy. The school division's Hazardous Materials Policy is located on the ACPS webpage under the **Reporting of Hazards Policy** ([File: EBAA/GBDA REPORTING OF HAZARDS](#)) and in the main office of all facilities.

### Asbestos Hazard Emergency Response Act (AHERA) Management Plan

An AHERA Management Plan is required by Federal law and is intended to prevent staff exposure to asbestos during general operation and maintenance activities. It describes the location and condition of asbestos-containing building materials, and documents their removal and repairs. The AHERA Management Plan also describes the proper recordkeeping practices that school officials must follow. Schools must update their AHERA

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Management Plans with information collected from their periodic surveillance every 6 months, re-inspection of buildings for asbestos-containing materials every 3 years and response actions taken within the school. The AHERA Management Plan is located in the Office of Safety and Security Services; copies will be available at school sites as well.

### Radon Gas Policy

Radon is a naturally-occurring gas that can enter into school buildings from the underlying soils, and build-up to levels that increase occupants' risk for developing lung cancer. Radon testing is slated to begin during Fall 2021 (September or later when school buildings are occupied). Radon measurement standards will be based on ANSI/AARST and EPA Guidance as noted below:

- “For buildings or portions of buildings that are non-residential and not significantly occupied both day and night, the measurements shall be conducted at a time that is representative of normal occupied building operating conditions”
- Where the building or portion of the building is not significantly occupied 24 hours a day, such as a school or office building, testing shall only be conducted during portions of a week when the building is significantly occupied.

### Non-Smoking Policy

ACPS prohibits tobacco use in all public school facilities and school-owned vehicles. Information about smoking regulations is located in *ACPS Policy GBEC/JFCH: [Tobacco-Free School for Staff and Students - School Board Policy GBEC/JFCH](#)*

### Anti-Idling Policy

Delivery and bus pickup and drop off zones have been located away from building outdoor air intakes to ensure that exhaust fumes do not enter the facility. ACPS prohibits buses and cars from idling while waiting to pick up or drop off students. Buses shall idle no longer than the time required to bring engines to proper operating temperature and to defrost all windows. This policy is not in effect when temperatures fall below 32 degrees Fahrenheit. The school district's anti-idling policy is located in the Office of Pupil Transportation and Fleet Management.

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## 5. Procedures/Programs

- Cleaning and Chemicals

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- Painting
- Flooring
- Integrated Pest Management
- Preventive Maintenance and Operations
- Construction and Renovation
- Microbial Management

### Cleaning and Chemicals

Regular and thorough cleaning is an important means for the removal of air pollutant sources. However, the use of cleaning products may also contribute to indoor air pollution. To ensure that cleaning practices remove pollutant sources while using cleaning products appropriately, guidelines have been created.

- Custodial staff shall only use cleaning agents approved by the district for school use. All products must be clearly labeled and stored in a secure area. Bottles of cleaning agents must be tightly closed when stored.
- All Safety Data Sheets (SDS) should be stored in an area available to all staff, and the location of this information is discussed in the division's "Employee Right to Know" annual training.
- Rooms must be kept clean. Slightly damp cloths are used to remove dust from surfaces — however, wiped surfaces should not be left damp or wet for extended periods of time, since this can cause mold growth.
- Ammonia-based cleaning agents and chlorine-containing cleaners (such as bleach) must never be mixed because this generates toxic gases.
- During routine operations, pollutant-releasing activities are restricted by time of day, week, or year. For example, the waxing of floors will be performed when schools are unoccupied.
- Areas of frequent use should be cleaned more often than areas of infrequent use.
- Large walk-off mats should be used to trap dirt and moisture at building entrances. These mats are cleaned according to manufacturers' guidelines to ensure optimal performance. Trapping dirt and moisture at building entrances helps to maintain the cleanliness of floors and carpets throughout the building.
- Staff are not permitted to bring and use any personally provided
  - Cleaning products
  - Pesticides
  - Air fresheners
  - or other chemicals into the school

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### **Painting**

The Office of Maintenance and Custodial Services (and external contractors) must use latex, water-based paints; using paints that contain mercury or lead is prohibited. Painting and drying should only occur when the area of the building is unoccupied and properly ventilated. It is also important to inform all affected stakeholders before a painting job begins.

### **Flooring**

The two most common types of floor covering for general use in schools are carpet and resilient floor covering products. Carpet offers acoustical and comfort benefits that are generally not available with other floor coverings. Many schools prefer to use carpet in classrooms and administrative areas. Resilient flooring is used for high traffic areas including:

- Classrooms
- Hallways
- Cafeterias
- Art rooms
- Restrooms
- Clinics/Health Suites
- and anywhere liquid spills are likely

ACPS recognizes that there are advantages and disadvantages associated with all types of floor coverings. Regardless of the floor covering type, regular and effective cleaning and maintenance is essential to keep it dry and clean. All carpets must be cleaned with hot water extraction at least twice a year. Carpets should be dried within 24 hours after cleaning to prohibit microbial growth.

### **Integrated Pest Management Program**

Integrated Pest Management (IPM) is a comprehensive strategy for controlling pests, pest-generated substances (such as cockroach fecal matter) and pesticides, which can act as irritants and trigger allergies and asthma. The division's IPM program aims to reduce the frequency and magnitude of both pesticide use and pest problems. The oversight of the IPM program is managed by the Office of Maintenance and Custodial Services.

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### **Preventive Maintenance and Operations**

Preventive maintenance involves routine inspection, adjustment and repair of building structures and systems, including:

- The heating, ventilating and air conditioning system (HVAC)
- Unit ventilators
- Local exhaust
- Fresh air intakes

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 comfortable temperatures and humidity in occupied spaces.

The preventive maintenance schedule for ACPS is maintained by the Office of Maintenance and Custodial Services. The schedule describes the time intervals and locations of building and ventilation components that are inspected and maintained on a routine basis. The schedule was established using the recommendation of our HVAC contractor and school division maintenance professionals, the availability of financial resources and technical guides (including the manufacturer's specifications). Records of preventive maintenance are kept by the Office of Maintenance and Custodial Services.

In most cases, ACPS does not recommend opening windows within classrooms or throughout facilities, as this brings in unfiltered air with more particulates, pollen, etc. into interior spaces and destabilizes the air balance and relative humidity levels. This cross contaminates the filtered air and can elevate moisture levels, increasing the risk of mold growth which may impact indoor air quality. We do encourage the opening of classroom doors throughout the day, which helps promote interior air circulation within a facility.

Unless otherwise noted, school buildings should be maintained according to the American Society of Heating, Refrigerating and Air-Conditioning Engineers' (ASHRAE) recommended comfort parameters. If the recommended parameters cannot be met, the division staff makes ventilation adjustments that provide fresh air, temperature and humidity levels that are as close to the ASHRAE parameters as possible.

### **Construction and Renovation**

ACPS staff considers IAQ when planning construction and renovation projects. The IAQ Coordinator, IAQ Team, Director of Capital Programs, Planning and Design and the Director of Educational Facilities discuss major structural changes that may impact IAQ. The findings from walkthrough inspections and building systems evaluations are considered when planning renovations.

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To the extent possible, major renovations should be 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 should be isolated from the main ventilation system. Engineering controls should be used to contain and minimize the distribution of dust and other contaminants produced by construction activities. Cleaning operations should be more frequent during and after renovation.

### Microbial Management

Microbials, such as mold, bacteria and viruses, are a significant cause of illness, health symptoms and discomfort. School staff should be aware that the easiest way to control microbial growth is to control moisture.

Signs of water intrusion and microbial growth should be investigated during the walkthrough inspections, building system evaluations and other efforts. The maintenance staff should be informed about damaged buildings systems and components that cause water leaks and water condensation. School staff (i.e. administrators, teachers, custodians, building engineers, etc.) should ensure that work orders are submitted for any areas of moisture/leaks that they notice. Once notified via the work order system, the appropriate maintenance staff personnel must make the necessary repairs and adjustments in a prompt manner. Materials damaged by water should be replaced as soon as possible to prevent mold growth. Damp or wet materials must be dried within 48 hours (preferably within 24 hours). *Attachment 3, "Water Damage- Clean Up and Mold Prevention"* provides staff with guidance on how to handle water damaged materials.

Remediation projects that cannot be handled by district staff should be contracted to a professional. Large-scale remediation projects may require specific control and protection measures.

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## 6. Stakeholder/Facility Occupant Participation in IAQ Management

Stakeholders and facility occupants (such as Principals, teachers, instructional staff and students) all play an important role in maintaining acceptable IAQ within our facilities. Stakeholders can contribute to positive outcomes with IAQ in the following ways:

- Keep materials off of ventilation grids in classrooms, as this blocks air circulation from occurring in classroom spaces

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- Refrain from storing food in classrooms, as it can lead to microbial growth if not properly stored as well as rampant pest issues
- Avoid bringing cleaning chemicals into facilities, as all cleaning chemicals used within our facilities are purchased and vetted for safety through the Maintenance and Custodial Services (MCS) office
- Forgo using items such as candles or air fresheners within classroom spaces as others may be sensitive to certain smells/fragrances. If there is a concern with unpleasant odor in a space, coordinate with our maintenance team through the submission of a work order
- Refrain from bringing upholstered furniture/supplies into classrooms, as it traps odor, dust, moisture and other contaminants. Also upholstered furniture may be a fire hazard if not properly fire-rated.
- Actively report instances of obnoxious odors, possible mold, temperature or humidity concerns to the Maintenance and Custodial Services (MCS) office through the work order system
- In general, aim to keep classroom spaces neat and orderly and free from unnecessary clutter. Clutter is attractive to rodents and pests, and can also create a fire hazard within a space

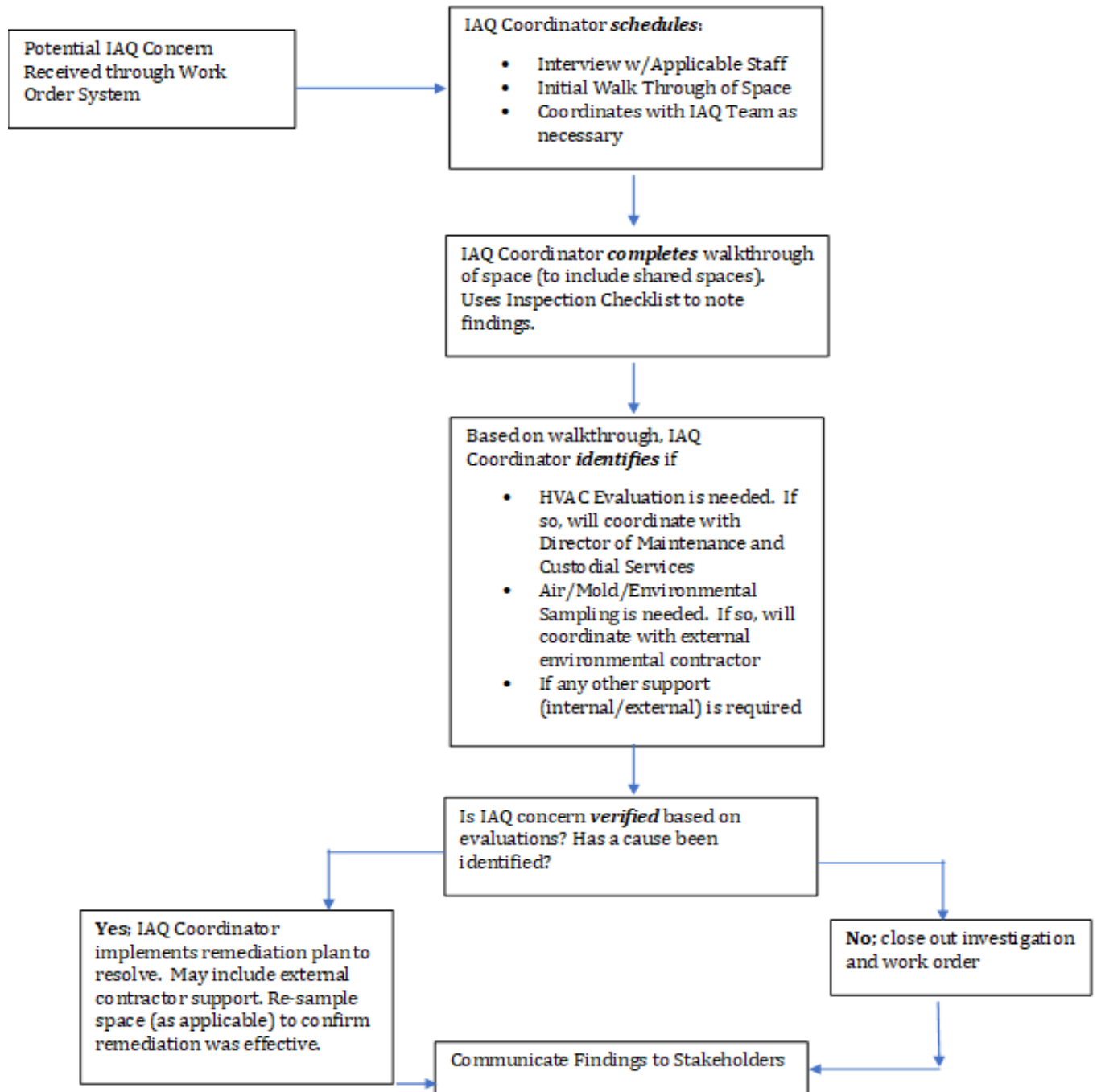
Everyone within the school division plays a part in maintaining optimal indoor air quality within our facilities. The Department of Facilities and Operations will work to implement a general education program regarding indoor air quality that can be shared with all students, staff and visitors.





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## Attachment 2: Basic Response Sequence



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### Attachment 3: Water Damage- Clean Up and Mold Prevention Guidance Table

\*Guidance for Response to Clean Water Damage w/i 24-48 Hours to Prevent Mold Growth

Water-Damaged Material	Action
<b>Books and Papers</b>	If proper drying isn't feasible, discard
<b>Carpet and Backing (dry within 24-48 hours)</b>	<ul style="list-style-type: none"> <li>● Remove water with extraction vacuum</li> <li>● Reduce humidity in space with dehumidifier</li> <li>● Accelerate drying process with fans</li> <li>● Replace carpet as feasible</li> </ul>
<b>Ceiling Tiles</b>	Discard and replace
<b>Cellulose Insulation</b>	Discard and replace
<b>Concrete or Cinder Block Surfaces</b>	<ul style="list-style-type: none"> <li>● Remove water with extraction vacuum</li> <li>● Accelerate drying process with fans, dehumidifier and/or heaters</li> </ul>
<b>Fiberglass Insulation</b>	Discard and replace
<b>Hard surface, porous flooring (i.e. linoleum, ceramic tile, vinyl tile)</b>	<ul style="list-style-type: none"> <li>● Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary</li> <li>● Check to make sure underflooring is dry; dry underflooring if necessary</li> </ul>
<b>Non-porous, hard surfaces (Plastic, metals)</b>	Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary
<b>Upholstered Furniture</b>	<ul style="list-style-type: none"> <li>● Remove water with water extraction vacuum</li> <li>● Accelerate drying process with dehumidifiers, fans, and/or heaters</li> <li>● May be difficult to completely dry within 48 hours. If unable to properly dry, furniture will be discarded</li> </ul>
<b>Wallboard (Drywall and gypsum board)</b>	<ul style="list-style-type: none"> <li>● May be dried in place if there is no obvious swelling and the seams are intact. If not, remove, discard, and replace</li> <li>● Ventilate the wall cavity, if possible</li> </ul>
<b>Window Drapes</b>	Follow laundering or cleaning instructions recommended by the manufacturer
<b>Wood Surfaces</b>	<ul style="list-style-type: none"> <li>● Remove moisture immediately and use dehumidifiers, gentle heat, and fans for drying</li> <li>● Treated or finished wood surfaces may be cleaned with mild detergent and clean water and allowed to dry</li> <li>● Wet paneling should be pried away from wall for drying</li> </ul>