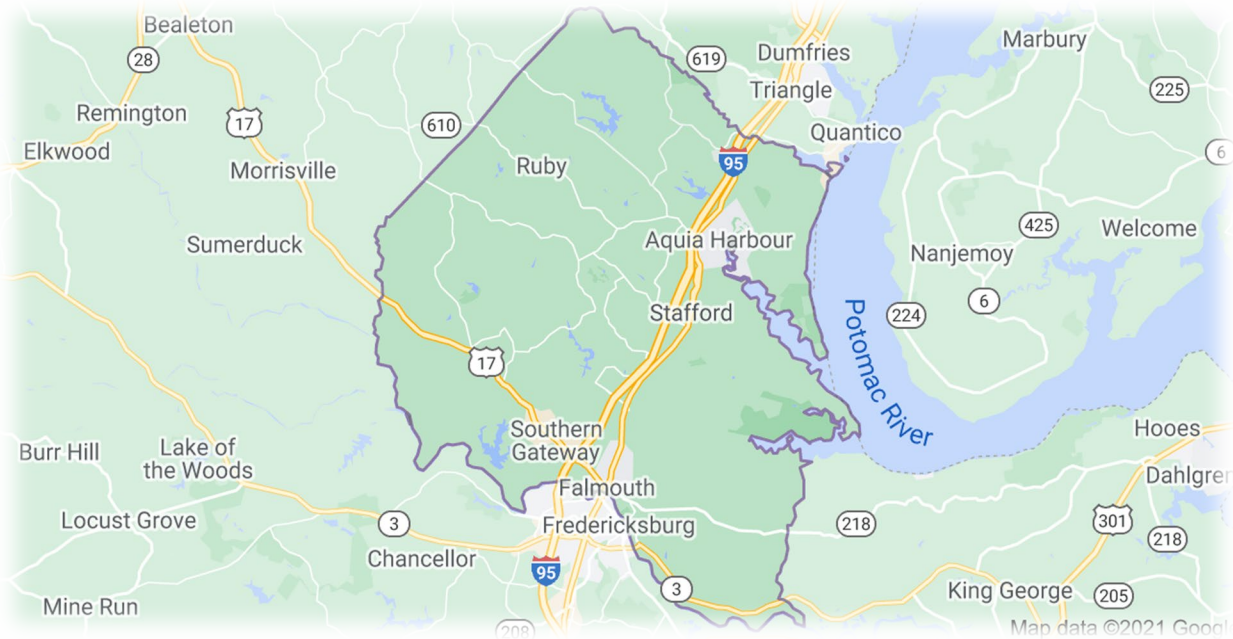


STAFFORD COUNTY PUBLIC SCHOOLS



INDOOR AIR QUALITY MANAGEMENT PLAN

August 2021



Stafford County Public Schools

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SCPS INDOOR AIR QUALITY MANAGEMENT PLAN

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1. **Introduction**

The Stafford County Public School (SCPS) 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. Working with the Environmental Protection Agency (EPA) and their *IAQ Tools for Schools* program, we developed an IAQ Management Plan that will assist in monitoring and improving the quality of air in school buildings.

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. These combine to assist a school and our other facilities in its core mission, educating children.

2. **Program History**

SCPS has implemented sound and responsible IAQ practices at its schools and facilities for over 30 years. Recently and in response to several IAQ issues at existing schools, the Division felt it important to formalize its IAQ practices, procedures, and responsibilities into a comprehensive management plan. This formal plan was completed in February 2006. This is the second revision to this management plan.

3. **Why is IAQ Important?**

IAQ is a critical component of providing a health and comfortable learning environment. Indoor air pollutants may cause or contribute to short- and long-term health problems including asthma, respiratory tract infection and disease, allergic reactions, headaches, nasal congestion, eye and skin irritations, coughing, sneezing, fatigue, dizziness, and nausea. In addition, indoor air pollutants and extremes in temperature and humidity may cause discomfort; which, can affect students' ability to concentrate and learn.

IAQ problems can hasten building deterioration, contribute to the closing of schools, create liability problems and strain relationships among parents, teachers, school staff, unions, and the school administration.

4. **Goals & Objectives**

SCPS IAQ Management Plan goals and objectives:

- Reduce the levels of indoor air pollutants through preventive measures such as routine maintenance activities, periodic building evaluations and inspections and provide IAQ-specific policies.

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- 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.
- Educate facility occupants on IAQ, the SCPS IAQ Management Plan, and its IAQ reporting procedures.

5. Policy

- SCPS maintains two School Board policies that provide oversight and direction for the Division's IAQ program, Policy 8201, Facility Operation & Maintenance and Policy 8203, Indoor Air Quality. The School Board adopted both policies in June 2008 and the policies are reviewed annually by Facilities Services.

- Policy 8201 – Facility Operation & Maintenance: Establishes a Facility Operation & Maintenance program to include all buildings, equipment, and associated infrastructure supporting the Division's physical plant. The Facilities Operation & Maintenance Program includes but is not limited to preventive maintenance, repair, emergency facilities response, energy conservation, equipment replacement, protective coatings, custodial operations, snow and ice removal, roof and asphalt replacement, and indoor air quality.

- Policy 8203 - Indoor Air Quality: Establishes a program that manages the quality of air inside of new and existing facilities including pollution caused by smoke, dust, mold, mites, radon, gases, and chemicals from utilities and other sources. The policy also requires the development of an IAQ Management Plan that includes, but is not limited to, management and communication procedures, advisory committee duties and responsibilities, and program coordinator duties/responsibilities.

- SCPS IAQ Management Plan should also be used in conjunction with the SCPS's Integrated Pest Management Plan (IPMP) and the SCPS Asbestos Hazard Emergency Response Management Act (AHERA) program.

- Animals in the Classroom Policy: While many teachers and students have classroom pets, animals can be a source of allergens, asthma triggers, and microorganisms that may cause infectious diseases. Animals should be isolated to the extent possible and should be kept away from carpets, upholstered furniture, and stuffed toys. Specific types of animals may be restricted from the classroom if a concern is expressed by staff, students, or parents. The district also reserves the right to ban certain animals if they pose a threat to the safety or comfort of staff and students. Classroom pets should be placed away from the return air ducts and from students with known allergy or asthma problems.

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- Food in the Classroom Policy: Food should not be left in classrooms. When it is necessary to store food in classrooms, it must be kept in airtight, sealed containers to minimize the potential for pests, odors, and biological growth.
- Paint Policy: Schools 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 staff and students before a painting job begins.
- 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 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.
- Asbestos 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 schools must follow. Schools must update their periodic surveillance every 6 months, re-inspection of buildings for asbestos-containing materials every 3 years and response actions taken within the school.
- Integrated Pest Management Program: 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 district's IPM program aims to reduce the frequency and magnitude of both pesticide use and pest problems.
- Lead Policy: Lead can adversely affect the nervous system. Young children are particularly susceptible. If lead is present in existing school building paint coatings, renovation procedures must be employed that minimize the exposure of building occupants to airborne lead-based paint particles.
- Anti-Idling Policy: Delivery and bus pickup and drop off zones should be located away from building outdoor air intakes to ensure that exhaust fumes do not enter the facility. Buses and cars are prohibited 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.

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6. Coordinator

The IAQ coordinator will be responsible for the execution of the IAQ program and the implementation of the IAQ Management Plan. The IAQ coordinator's responsibilities include:

- Acting as the key contact person within the school district to respond and address IAQ issues and concerns.
- Coordinating and development and management of the district's IAQ Manage Plan. This includes establishing and overseeing an IAQ, coordinating building walkthrough inspections, coordinating building system evaluations, coordinating the investigations of reported IAQ issues and concerns, and modifying the IAQ Management Plan to fit the district's specific needs and objectives.
- Responding to IAQ concerns that are discussed or reported.
- Coordinating the IAQ Team's activities and meetings, including distribution of 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 system evaluations, and revising the Plan to include new information.
- The Operation & Maintenance Department of Facilities Services will be the lead School Division Department responsible for the implementation of the IAQ Management Plan. IAQ coordinator will be a member of the Operation & Maintenance Department.

7. Advisory Committee

The IAQ Advisory Committee will be comprised of representatives from the following Departments or functional areas:

- IAQ Coordinator (Committee Chair)
- Assistant Superintendent for Facilities
- Director, Operation & Maintenance Department
- Supervisor, Operation & Maintenance Department
- Supervisor of Physical Plants
- Energy Manager
- Representative from the SCPS Health Advisory Committee
- Coordinator of Custodial Services
- Head Nurse
- Assistant Superintendent for Instruction, Elementary or Secondary (only one representative required)

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The mission of the IAQ Advisory Committee is to:

- Oversee the IAQ Program.
- Educate division staff, administrators, teachers, and employees regarding IAQ.
- Review and approve all changes to the IAQ Management Plan.
- Promote IAQ practices throughout the Division
- Review all reported IAQ issues.

The IAQ committee will meet a minimum of annually or more frequently (if required) to address any IAQ issues. The meetings will be held in April and October. An agenda will be developed for each meeting and minutes produced and posted on the Division's Facilities Services web site by the IAQ Coordinator.

8. Facility Inspections

IAQ facility inspections are divided into two categories.

- Annual Inspection
- Semi-Annual Inspection

Annual Inspections will be led by the IAQ coordinator and include appropriate maintenance personnel as identified by the IAQ coordinator.

- Inspections will be performed during normal occupancy and operational times (classrooms occupied and the HVAC equipment running) and will include the following:
 - Inspection will include classrooms, hallways, offices, building entrances, roof, mechanical rooms, air intakes, etc. and focus on water intrusion problems (discoloration/bulging/cracks in ceiling tiles; plaster, wall covering, and carpeting), ventilation failures (such as stuffiness, high level of odors, windows open, high temperatures, lack of air movement, excess dust levels, and humidity) and building cleanliness (such as carpets clean, dustiness, presence of past days garbage, food/drink spills, and pest management).
 - Building occupants should be consulted to assist in determining potential IAQ concerns.
 - Inspections will utilize the *IAQ Inspection Checklist (Attachment #1)*.
 - Inspectors will evaluate critical building systems using the facilities preventative maintenance schedule (*Attachment #2*) prior to initiating the annual inspection. This will assist the inspectors with understanding facility issues that are not easily identifiable during the annual inspection.
 - Inspection reports shall be completed, and a copy will be maintained at the facility as well as the Operation & Maintenance Department

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- Semi-Annual Inspection will be performed by a school administrator or department level directors (non-schools) with assistance from on-site maintenance personnel or assigned Operation & Maintenance Department personnel
 - Inspections can be accomplished at any time of the day/night and should be accomplished in March and October each year to coincide with the start-up of cooling and heating seasons.
 - Inspection shall follow the same criteria set forth in annual inspections.
 - Inspection reports shall be completed and maintained at the facility.

9. Radon

Radon is a natural occurring gas that can be found in facilities and homes throughout the United States including Virginia. Radon can enter school buildings from the underlying soils and build-up to levels that increase occupants' risk for developing lung cancer. An individual's risk of developing lung cancer from radon increases with the level of radon, the duration of exposure, and the individual's smoking habits. The following are key points when testing radon in their buildings.

Radon Testing Guidelines:

- In 1993, the Virginia General Assembly passed legislation that requires all schools in the commonwealth to be tested for radon and includes any new school buildings and additions built after that date. SCPS tests all new schools when constructed and when existing schools undertake any major renovation. SCPS also tests schools periodically and at a minimum every 5 years. Results of Radon test in Stafford County Public Schools can be found on the Stafford County Public Schools website <http://stafford.schoolfusion.us/>
- Trained school personnel or a measurement service provider (e.g., environmental consultant) should supervise and/or conduct radon-testing.
- Test in all frequently occupied rooms that contact with the ground. This includes each room or area that has floor(s) and/or wall(s) in contact with the ground or is over un-occupiable basements, crawl spaces and utility tunnels. Testing should also be performed in unoccupied ground-contact rooms or areas that are occupiable with little or no modification. On the upper floors testing should also be performed as follows;
 - In at least one room on each floor.
 - In at least 10% of the rooms on the 2nd and 3rd floor above ground contact areas.
 - In any rooms or areas that are above untested ground contact air spaces.
 - Note: Upper floor testing locations should not be above or below rooms being tested on other floors.
- Testing should be conducted during colder months when the outdoor temperature averages $\leq 65^{\circ}\text{F}$, when the ventilation system is operating normally, and windows and doors are closed (except for normal exit/entry).
- Re-testing should be performed when any of the following circumstances occur:

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- A new addition is constructed, or significant revisions take place.
 - A ground contact area not previously tested is occupied or subsequent to taking occupancy of a building.
 - Heating or cooling systems are significantly altered resulting in changes to air pressures or distribution.
 - Ventilation is significantly altered by extensive weatherization, changes to mechanical systems or comparable procedures.
 - Significant openings to soil occur including groundwater or slab surface water control systems (e.g., sumps perimeter drain line, shower, tub retrofits, etc.) and natural settlement causing major cracks to develop.
 - Earthquakes, construction blasting or formation of sinkholes nearby.
 - A mitigation system is installed, or an installed mitigation system is altered, modified, or repaired.
- Test kits should be shipped to the laboratory overnight on the same day as they are retrieved. Test kits should meet NRPP or NRSB requirements.
 - A single test result should not be the basis for determining if mitigation needs to be taken to reduce radon levels.
 - If the initial testing results indicate the radon level in a room is 4 pCi/L or greater, follow-up testing should be performed at a minimum, in every testing location where initial Short-Term test results meet or exceeds the Action Level. Follow-up measurements should be initiated during the same time and placed in the same locations as the initial measurements.
 - **Short-Term Follow-Up Testing:** If the initial short-term measurement for a testing location is twice the action level or greater (≥ 8 pCi/L), a short-term follow-up measurement should be taken immediately. The average of the two (2) short-term test results can be used to determine if the location needs mitigation. If results are ≥ 4 pCi/L, mitigation is recommended.
 - **Long-Term Follow-Up Testing:** When an initial test is less than twice the action level (4 pCi/L to 8 pCi/L), long-term testing can be considered. The benefit is it provides a better understanding of the year-round average radon level. Long-term should not be used for buildings using “HVAC setback”. The results of the long-term test can be used to determine if location needs mitigation. If results are ≥ 4 pCi/L, mitigation is recommended.
 - Rooms with elevated radon during occupied times should be mitigated following Environmental Protection Agency (EPA) guidelines described in “Reducing Radon in Schools: A Team Approach” and the EPA “Managing Radon in Schools” document.
 - Radon can usually be reduced (mitigated) by adjusting the existing Heating, Ventilation and Air Conditioning (HVAC) system, by increasing fresh air ventilation rate and/or balancing air flow to rooms.
 - Testing should be done after mitigation, to verify reduction and if the system is altered, modified, or repaired.

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10. Volatile Organic Compounds

“Volatile Organic Compound” or VOC is the name given to a substance that contains carbon and evaporates (becomes a vapor) or “off-gases” at room temperature. Some examples of VOCs include benzene, methylene chloride, hexane, toluene, trichloroethane, styrene, heptane, and perchloroethylene.

VOCs are widely used in commercial products including cleansers, disinfectants, waxes, glues, paints, and varnishes. Gasoline, kerosene and other fuels also contain VOCs. VOCs are also found in cigarette smoke and pesticides. A number of building materials may be sources of VOCs including carpeting (backing, and adhesives), draperies, wood products that use certain glues, finishes and waxes in the manufacturing process, vinyl flooring and wall coverings.

The ability of VOCs to cause health effects varies greatly. As with other chemicals, the effects of VOC exposure depends on several factors including the type of VOC, the amount of VOC and the length of time a person is exposed.

Exposure to elevated levels of VOCs may cause irritation to the eyes, nose, and throat. Headaches, nausea, and nerve problems can also occur. Although VOCs can be found in both outdoor and indoor settings, the levels of VOCs found indoors can be much higher than those found outdoors due mainly because buildings do not have enough ventilation to allow potential indoor pollutants to escape. Generally, the air outside naturally dilutes VOCs. Outside exposure to VOCs tends to be more common in urban settings from sources like bus or automobile exhaust.

Steps to reduce exposure to VOCs:

- Ensuring properly maintained Heating, Ventilation and Air Conditioning Systems through a strong Preventive Maintenance Inspection Program (PMI).
- Use cleaning products that have low or no VOCs.
- If required, use products that contain VOCs for exterior use only.
- Read and follow the directions for use on the label. The manufacture of the product supplies MSDS (Material Safety Data Sheet) which contains more information about safe use of the product. Keep products in original containers so that safety information is not lost. Do not mix products, even for disposal, unless specified in directions.
- Store chemical products per the manufacture. Examples of these products include paints, pesticides and herbicides, glues, contact cement and solvents.
- Safely and legally discard unused chemical products at a hazardous materials collection site.

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Is there anything that can be done for VOCs in new building materials or carpeting?

- Use materials that do not contain VOCs
- Obtain LEED Certification Rating and include IAQ as required scoring.
- For buildings with material that contain some VOCs; running the ventilation system on full is recommended for at least one to two weeks. That means setting the system for 100 percent fresh air supply and 100 percent air exhaust. Keeping the system on full ventilation for a full month is even better.

Depending on several factors, VOCs can give off gas for days, weeks, months, or even years. At the present time, there are no national or state standards that are specific for school, office, or home settings. In addition, there are many opinions in the science and medical communities about the degree of risk posed by various amounts of VOCs.

Custodial Procedures

Stafford County Public Schools will procure custodial supplies with no possible VOC content. Storage of these supplies will be stored in the accordance with the manufacturers' recommendations.

Floor Coverings

Stafford County Public Schools will procure floor covering with no possible VOC content possible.

Coating Procedures

Stafford County Public Schools will procure interior coatings with no possible VOC content possible. Products will be applied and stored in accordance with the manufacturers' recommendations.

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11. Procedures

Cleaning and Chemicals

Regular and thorough cleaning is an important means for the removal of 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 material safety data sheets must be 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.
- Rooms must be kept clean. Slightly damp clothes 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, waxing of floor.
- Areas of frequent use should be cleaned more often than areas of infrequent use.
- Large walk-off mats must be used to trap dirt and moisture and 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 any cleaning products, pesticides, air fresheners or other chemicals into the school.
- Cleaning standards and checklist have been developed to define minimum requirements and procedures (*attachment #3, #4 and #5*).

See Attachment #3 Cleaning Standards for Areas (classrooms) with Unit-Ventilators

See Attachment #4 Cleaning Standards for Areas (classrooms) without Unit Ventilators

See Attachment #5 Staff/Teacher Area (classroom) Checklist

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 and anywhere liquid spills are likely.

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. Carpet may not be cleaned during summer months unless it can be dried within 24 hours.

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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 ventilator; local exhaust; fresh air intakes; 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. Additionally, it helps to maintain comfortable temperatures and humidity in occupied spaces.

A preventive maintenance schedule should be used to describe the times and intervals and locations of building and ventilation components that are inspected and maintained on a routine basis. All records of preventive maintenance should be kept attached to the relevant operating system for easy evaluation.

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 district staff makes ventilation adjustment that provide fresh air, temperature, and humidity levels that are as close to the ASHRAE parameters as possible.

Construction and Renovation

IAQ should be considered when planning construction and renovation projects. The IAQ Coordinator, IAQ team, superintendent and school board discuss major structural changes that may impact IAQ. The findings from walkthrough inspections and building systems evaluations should be considered when planning renovations. *IAQ Design Tools for Schools (DTIS)*, a web-based guide for establishing good IAQ practices into the design, construction, renovation, operation, and maintenance of K-12 school facilities (www.epa.gov/iaq/schooldesign) can be utilized.

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.

Staff Education

All district employees play an important role in maintaining and improving air quality since their behavior can affect the quality of the air present in school buildings. For example, placing objects on unit ventilators, adjusting room thermostats, or turning off unit ventilators can worsen the quality of air in a room. An educated employee is more likely to take steps to maintain good air quality. In addition, an employee with an understanding of IAQ is more likely to report IAQ concerns quickly and accurately.

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The EPA's *IAQ Tools for Schools* Backgrounder and checklists are educational tools. Staff should complete all the checklists. At a minimum, each year the Teacher's Ventilation, and Building and Grounds Maintenance Checklists should be completed.

Communication

Communication is a critical element to successful IAQ management. The IAQ Coordinator and other district authorities try to limit misinformation and confusion through the use of effective communication. In order to develop and maintain the trust of the community and staff, the IAQ Coordinator and other designated district employees should communicate with relevant parties in a prompt, honest and courteous manner until the issue is resolved. Every time an IAQ concern is addressed or resolved, the IAQ Coordinator should report the measures taken and the resolution of the identified concern with the appropriate parties.

In the unlikely even of an IAQ Emergency, the district will accommodate the needs of students, parents, and staff. One or more contacts shall be selected to handle the media and update the community during a crisis. No one other than the districts representative(s) should discuss IAQ-related issues with the press. The media will be alerted by the district representative(s) 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.

The IAQ Team and Coordinator will inform parents and staff about:

- The IAQ Management Plan and ongoing efforts, how to view the Plan upon request, and how to obtain an IAQ Concern Reporting Form.
- How to contact the IAQ Coordinator about IAQ issues.
- Where to find self-help information on how to evaluate IAQ in the school and to learn about structure features and operational practices of the school buildings.

12. 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. Molds need both food and water to survive; since molds can digest most things, water is the factor that limits mold growth. Molds will often grow in damp or wet areas indoors. Common sites for indoor mold growth include bathroom tile, basement walls, areas around windows where moisture condenses and near leaky water fountains or sinks.

Common sources or causes of water or moisture problems include roof leaks, deferred maintenance, condensation associated with high humidity or cold spots in the building, localized flooding due to plumbing failures or heavy rains, slow leaks in plumbing fixtures, and malfunction or poor design of humidification systems. Uncontrolled humidity can also be a source of moisture leading to mold growth, particularly in hot, humid climates.

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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 building systems and components that cause water leaks and water condensation. School staff must make the necessary repairs and adjustments in a prompt manner. Materials damaged by water should be replaced when possible. Damp or wet materials must be dried within 48 hours (preferably within 24 hours).

Materials contaminated with microbials should be promptly cleaned or replaced. Mold growth should be removed from non-porous surfaces with a strong brush and non-ammonia containing detergent and thorough drying. 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. For additional information on mold remediation, refer to EPA's guide, "Mold Remediation in Schools and Commercial Buildings" and EPA's website: www.epa.gov/mold.

SCPS's remediation guidelines are based on the size of the mold contaminated area. This allows the remediators to select the appropriate techniques to apply to the contaminated area. Professional judgment and an extra measure of caution will be utilized when applying these guidelines to specific remediation efforts.

For the purpose of developing a remediation plan, the following square feet criteria, as recommended by the EPA, shall be utilized:

- Small – Total surface area affected less than 10 square feet (ft²)
- Medium – Total surface area affected between 10 and 100 feet (ft²)
- Large – Total surface area affected greater than 100 feet (ft²)

See Attachment #6 Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water

See Attachment #7 Water Damage – Cleanup and Mold Prevention

13. IAQ Reporting and Response Policy

Reporting form should be used to report concerns related to any IAQ issue. IAQ issues/problems include concerns with temperature control, ventilation, air pollutants, suspected mold, and the use of pesticides or VOC containing material. It may be important to record specific occasions when experiencing a symptom of ill health or discomfort that may or may not be linked to an environmental condition in the building. Reporting forms are to be made available to any building occupant or staff member, to report any IAQ concern.

The district encourages the reporting of IAQ concerns, regardless of how trivial the issue may seem. The prompt reporting and resolution of IAQ issues has the potential to prevent serious problems from developing, which will help to prevent potential health effects, discomfort, and unnecessary costs.

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The IAQ Coordinator should request concerned staff, students, and parents to report their IAQ concerns in writing. A written description of the concerns reduces misunderstanding and creates a history that can be referred to at a future date. All written concerns should be sent to the IAQ coordinator to initiate an official IAQ concern reporting process. The resolution of the issue needs to be documented and the affected parties should be informed in writing about the measures taken.

See Attachment #8 Indoor Air Quality Concern Form

See Attachment #9 Occupant Diary

14. **Sampling**

For mold, in most instances if visible mold or bacteria growth is present, sampling is unnecessary. In specific instances when the source(s) of suspected mold or other material contamination is unclear and/or health concerns are a problem, sampling may be included as part of the site evaluation. Surface sampling may also be useful in order to determine if an area has been adequately cleaned or remediated.

The results of microbial sampling may have limited use or application. Sampling may help locate the source of mold/bacteria contamination, identify some of the mold/bacteria species present, and differentiate between mold, bacteria and soot or dirt. Pre and post remediation microbial sampling may also be useful in determining whether remediation efforts have been effective. After remediation, the airborne concentration of mold spores in the work area should be less than the exterior comparison samples and similar in species and distribution. Sample analysis should follow analytical methods recommended by the American Industrial Hygiene Association (AIHA).

Air sampling provides information only for the moment in time in which the sampling occurred, much like a snapshot. 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.

Other potential sampling needs will be determined based on the review IAQ concern reporting forms. Sampling could include IAQ comfort parameters (temperature, humidity, carbon monoxide, carbon dioxide), VOCs, chemical analytes from a spill, airborne particulates, and gas measurements. If staff are unclear based on a complaint what sampling if any is necessary, a experienced professional should be consulted.

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15. Staff Responsibilities

All staff members are responsible for improving and maintaining good IAQ.

- **Teachers** should refrain from interfering with airflow from ventilators (e.g., do not stack books or other items on ventilators, cover vents with posters, or turn off the fan due to noise), remove clutter in their classrooms, properly dispose of hazardous waste, and enforce the school's various IAQ policies in their classrooms.
- **Administrators** should communicate the school's activities to the school board, staff, students, and community. They also need to ensure that the school is implementing IAQ policies appropriately.
- **Facility Operators** must ensure that HVAC systems are operating properly and that buildings are maintained adequately and cleaned regularly.
- **Custodians** need to follow all policies regarding cleaning chemicals, ensure that the school is regularly vacuumed and swept, clean drain pans, empty trash cans, and check drainpipes regularly.
- **Health Officers/School Nurses** should track illnesses, such as asthma, that may provide an early warning of IAQ problems.
- **The School Board** needs to approve the IAQ Management Plan. This approval shall include the date, a copy of the minutes from the meeting, and how often the Plan must be updated or reapproved (e.g., after every major change to the Plan, or every year, whichever comes first).

16. Emergency Response

Emergency Response Policy

An emergency is defined as an unforeseen circumstance that requires immediate action, assistance, or relief. This includes situations that are potentially life threatening, such as:

- Spills of hazardous materials.
- Complaints of severe headaches, nausea, and combustion odors.
- Diagnosed Legionnaire's disease or tuberculosis.

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

It is up to the discretions of the school administrators to identify and react to emergencies 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 Reporting and Response Policy.

District officials must respond to emergencies immediately. If the problem cannot be resolved within in-house resources, external help should be acquired (e.g., local health agency, IAQ professionals). If a hazard poses and immediate health threat to students and

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staff, the affected building areas must be evacuated. All avenues of communication need to be utilized to warn and inform affected or interested parties in a prompt manner.

17. Steps for Prevention

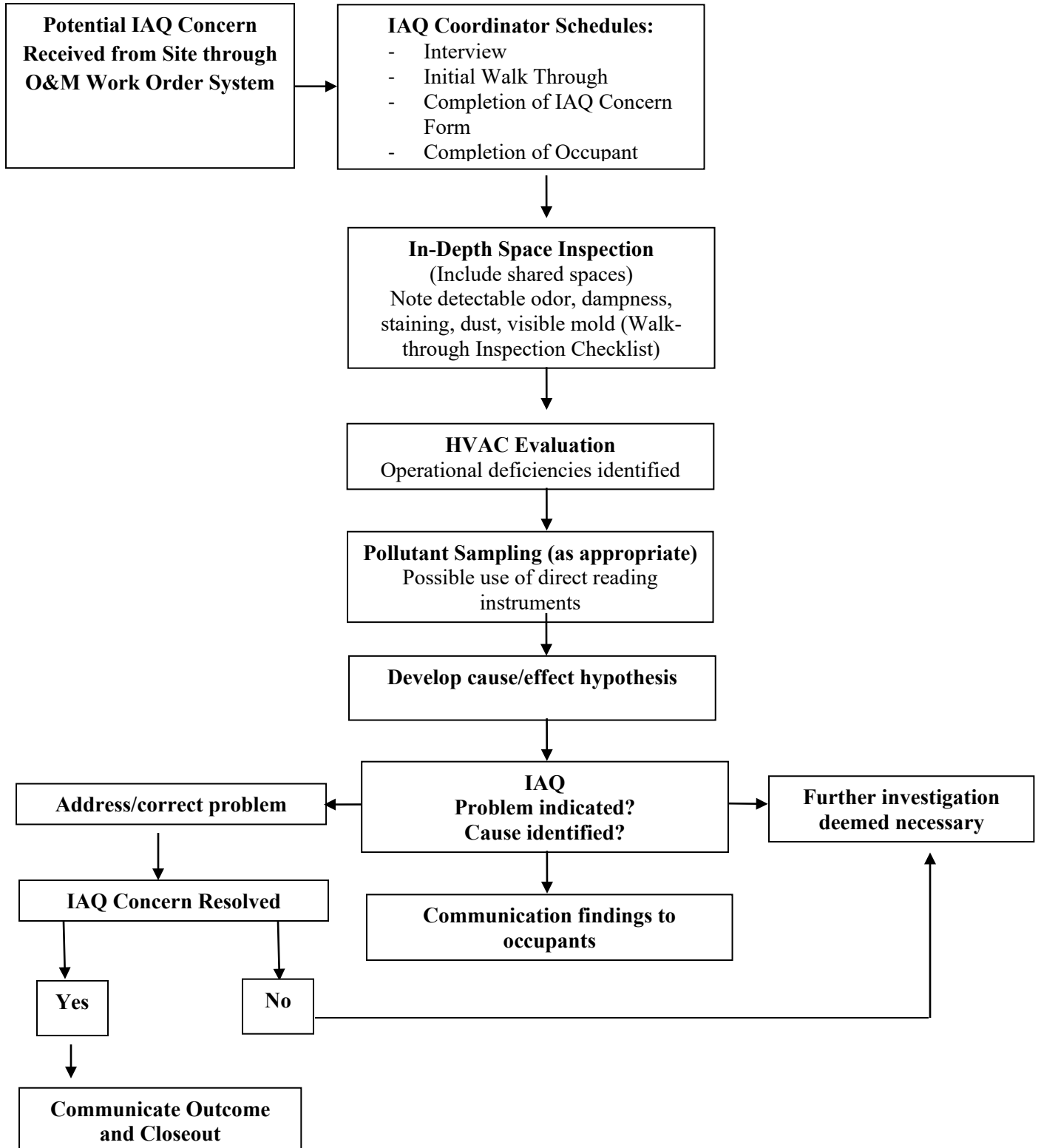
SCPS is committed to preventing IAQ problems. To reach this goal, the district will complete the following activities:

- Every school must designate an IAQ contact, distribute and collect checklists, and report results to the IAQ Coordinator.
- The IAQ Coordinator should ensure that all IAQ efforts are coordinated and completed in a timely manner.
- All IAQ policies and programs (for radon, IPM, anti-idling, non-smoking, etc.) must be maintained.
- The school board, community, staff, unions and students need to be updated on the district's IAQ efforts and carry out their responsibilities for maintaining good IAQ.
- Every school must complete an annual review to make changes to the IAQ Management Plan. The annual review is necessary because changes may occur in building systems, components, occupants, and the administrations attitudes and priorities. The annual review involves:
 - Building systems evaluations.
 - Walkthrough inspections;
 - Reviewing IAQ concerns and other information;
 - Discussing new issues with the IAQ team.
 - Updating the IAQ Management Plan as needed.

A brief description of the changes to the Plan should be summarized and included in all future versions of the Plan. This documentation should reduce the likelihood of repeating policies and procedures that were ineffective or inefficient and ensure the success of the IAQ program.

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18. Basic Response Sequence



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Attachment#2: IAQ Preventative Maintenance Schedule

	Every 3 months	Every 6 months	Annually	As Needed
HVAC Systems				
Filters replaced	X			
Fan/air flow direction	X			
Belt tension		X		
Drain pans intact not leaking		X		
Drain pans clean		X		
Insulation at or near unit clean no deterioration	X			
Overall cleanliness of ductwork			X	
Min. outdoor air set for 15-20 percent		X		
Calibration of system				X
All thermostats functional			X	
No pollution sources within 25ft of intakes		X		
Outdoor air intakes secure			X	
Rodent wire secure and in place			X	
All doors and covers secure	X			
Dampers operation properly		X		
Plenum insulation in place no deterioration		X		
No condensation leaks	X			
No HW/CW leaks	X			
Univents				
No objects on univent diffusers	X			
Filters replaced	X			
Insulation at or near unit clean no deterioration	X			
No condensation leaks	X			
No HW/CW leaks present	X			
Calibration of system				X
All thermostats functional			X	
No pollution sources within 25ft of intakes		X		
No obstruction of air intakes		X		
Outdoor air intakes secure			X	
Rodent wire secure and in place			X	
All doors and covers secure	X			
Dampers operation properly			X	
Drain pans intact not leaking		X		
Drain pans clean		X		

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Attachment#2: IAQ Preventative Maintenance Schedule (continued)

	Every 3 months	Every 6 months	Annually	As Needed
Cleaning Schedule				
Clean heating coils		X		
Clean cooling coils		X		
Clean drain pans		X		
Clean ductwork				X
Clean condenser coils			X	
Exhaust System				
Proper exhaust		X		
Air direction correct		X		
No obstruction of exhaust		X		
Belt tension		X		
Outdoor vent cleaned				X
Exhaust system operating at correct time		X		
All doors and covers secure		X		
Roof plumbing vent stacks are un-occluded	Monthly			
Housekeeping				
Ceiling tile in good condition, no stains	X			
Sewage traps filled with water	Monthly			
All leaks reported	Immediately			
Spills or water intrusion reported	Immediately			

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Attachment #3: Cleaning Standards for Areas (Classrooms) with Unit-ventilators

Carpet Cleaning:

Usage of Pro Team backpack vac with Four-Level Filtration system combines “Intercept Micro Filters, micro filters, and High Filtration Media Disks that are up to 99.79% efficient in filtering particles down to a .3 micron size.”

Tile Cleaning:

- Usage of Pro Team backpack vac as described above for daily maintenance.
- Scrub floors at least twice a year with Auto Scrubber and recoat. (Remove furniture from middle of floor)
- Strip and recoat floors yearly with Auto Scrubber and recoat with at least 7 coats of floor finish. (Remove all furniture)
- Run air conditioner and dehumidifiers when stripping.

General:

- Window sills wiped monthly with non-acid biological disinfectant.
- Spills or leaks immediately removed from carpet or tile.
- Entrance mats that account for 3 steps. (minimum 1 yard)

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Attachment #4: Staff/Teacher Area (Classroom) Checklist

The classroom teacher is encouraged to inspect the classroom on a daily basis and take the necessary steps to promote and maintain classroom cleanliness. Any and all concerns are to immediately be brought to the attention of the Principal and or Custodian.

General:

- ___ Trash removed daily
- ___ Food not kept in classroom overnight
- ___ Classroom free from clutter. No area rugs over existing carpet
- ___ Classroom is dusted and cleaned regularly
- ___ No animals at any time (Exception: See guidelines for service pets)
- ___ All spills or leaks immediately removed
- ___ Water run in sinks at least once per week
- ___ Classroom toilets flushed once per week
- ___ Indoor surfaces of exterior walls free of condensate
- ___ Area around and under classroom sinks free from clutter and no apparent leaks
- ___ Ceiling tiles not stained or discolored
- ___ Temperature generally between 68-74 degrees F
- ___ Humidity is acceptable 30%-58% relative humidity
- ___ Air is flowing unobstructed from air supply (No books, papers, and furniture)
- ___ No unexplained odors (No need for scented air fresheners)
- ___ Chairs stored daily on top of desks
- ___ At end of school day, large pieces of paper, pencils, and paper clips removed from floor
- ___ Furniture arranged so electrical outlets are accessible

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Attachment #5: Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water*

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 judgement, consider potential for remediator exposure and size of contaminated area	Limited. Use professional judgement, 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 judgement, consider potential for remediator/ occupant exposure and size of contaminated area	Full. Use professional judgement, consider potential for remediator 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, 2, 4		
Wallboard (drywall and gypsum board)	3, 4		
Wood surfaces	1, 2, 3, 4		

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Attachment #5: Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water* (Continued)

† 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.

Select method most appropriate to situation. 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, consult a restoration/water damage/ remediation expert. Please note that these are guidelines; other cleaning methods may be preferred by some professionals.

** 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, full-face respirator with HEPA filter

*** 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.

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Attachment #6: Water Damage – Cleanup and Mold Prevention

Guidelines for Response to Clean Water Damage within 24-48 Hours to Prevent Mold Growth*	
Water-Damaged Material	Action
Books and papers	<ul style="list-style-type: none"> - For non-valuable items, discard books and papers. - Photocopy valuable/ important items, discard originals. - Freeze (in frost-free freezer or meat locker) or freeze dry.
Carpet and backing - dry within 24-48 hours	<ul style="list-style-type: none"> -Remove water with water extraction vacuum. -Reduce ambient humidity levels with dehumidifier -Accelerate drying process with fans.
Ceiling tiles	-Discard and replace.
Cellulose insulation	-Discard and replace.
Concrete or cinder block surfaces	<ul style="list-style-type: none"> -Remove water with water extraction vacuum. -Accelerate drying process with dehumidifiers, fans, and/or heaters.
Fiberglass insulation	-Discard and replace.
Hard surface, porous flooring (Linoleum, ceramic tile, vinyl)	<ul style="list-style-type: none"> -Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary. -Check to make sure underflooring is dry; dry underflooring if necessary.
Non-porous, hard surfaces (Plastic, metals)	-Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary.
Upholstered Furniture	<ul style="list-style-type: none"> -Remove water with water extraction vacuum. -Accelerate drying process with dehumidifiers, fans, and/or heaters. -May be difficult to completely dry within 48 hours. If the piece is valuable, consult a restoration/water damage professional who specializes in furniture.
Wallboard (Drywall and gypsum board)	<ul style="list-style-type: none"> -May be dried in place if there is no obvious swelling and the seams are intact. If not, remove, discard, and replace. -Ventilate the wall cavity, if possible.
Window Drapes	-Follow laundering or cleaning instructions recommended by the manufacturer.
Wood Surfaces	<ul style="list-style-type: none"> -Remove moisture immediately and use dehumidifiers, gentle heat, and fans for drying. (Use caution when applying heat to hardwood floors.) -Treated or finished wood surfaces may be cleaned with mild detergent and clean water and allowed to dry. -Wet paneling should be pried away from wall for drying.

*If mold growth has occurred or materials have been wet for more than 48 hours, consult Attachment #5 Guidelines.

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Attachment #7: Indoor Air Quality Concern Form (Continued)

TIMING PATTERNS:

When did your symptoms start?

When do they generally intensify?

Do they go away? If so, when?

Have you noticed any other events (such as weather events, temperature or humidity changes, or activities in the building) that tend to occur around the same time as your symptoms?

SPATIAL PATTERNS:

Where are you when you experience symptoms or discomfort?

Where do you spend most of your time in the building?

ADDITIONAL INFORMATION:

Do you have any observations about building conditions that might need attention or might help explain your symptoms (e.g., temperature, humidity, drafts, stagnant air, and odors)?

Have you sought medical attention for your symptoms? Findings you would feel comfortable sharing?

Do you have any other comments?

We may need to contact you to discuss your complaint. What is the best time to reach you?

So that we can respond promptly, please return this form to:

IAQ Coordinator

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REFERENCES

- Minnesota Department of Health, Indoor Air Quality Management Plan Development Package 2002
- EPA Indoor Air Quality, Tools for Schools
- Adverse Human Health Effects Associates with Molds in the Indoor Environment, American College of Occupational and Environmental Medicine, October 27, 2002
- www.epa.gov/iaq/molds/mold_remediation.html
- Nyc.gov/html/doh/html/epi/epimold.html
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- EPA, “Mold Remediation in Schools and Commercial Buildings”, March 2001