



# OPERATIONS and FACILITIES AIR QUALITY REPORT 2021

**Presentation to the Board of Education of the City of St. Louis**

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October 12, 2021



# A SYSTEM OF EXCELLENT SCHOOLS

## – AIR QUALITY REPORT



- ❑ USEPA, CDC and OSHA have established standards and guidance documents to schools to protect the public health.
- ❑ Ethics and accountability are our priority, along with being able to document all of our actions, in a manner that could be reviewed by the public.
- ❑ SLPS is committed to maintaining a healthy environment in which students can learn and teachers/staff can teach/work.
- ❑ The air our students and staff breathe, the water they drink and the bedrock of our buildings are regularly tested and any issues corrected or eliminated.

# WHAT MAKES A BUILDING UNHEALTHY?



## ❑ Lack of virus mitigation

- ❑ Not wearing masks/face coverings
- ❑ Not social distancing
- ❑ Not disinfecting/sanitizing
- ❑ Lack of administrative controls (i.e. quarantine, screening/testing, etc.)

## ❑ Poor ventilation

- ❑ Increases absenteeism
- ❑ Scholars become disengaged
- ❑ Linked to poor academic performance

# TYPES OF MECHANICAL SYSTEMS WITHIN SLPS



- ❑ **Supplied central air – Originally installed in the “Ittner” designed buildings to provide heating and ventilation to schools**
  - ❑ During Proposition S, these systems were upgraded to include air conditioning.
  - ❑ Schools with the central air system generally perform well and deliver high levels of indoor air quality.
  - ❑ Preferred mechanical system for schools by the USEPA
- ❑ **Heat pump systems – Energy-efficient alternatives to provide heating and cooling to rooms/spaces without ducts**
  - ❑ Heat pump schools (15): Adams, Columbia, Compton Drew, Froebel, Gateway Complex, Hodgen, Humboldt, Lexington, ETS @ Madison, Mason, Metro, Monroe, Stix, Vashon and Woerner
- ❑ **Unit ventilator systems – Simple units that provide heating and cooling to rooms/spaces without ducts**
  - ❑ Unit ventilator schools (8): Ames VPA, ICA @ Blewett, Gateway STEM, Hickey, Mitchell (KIPP), Peabody, Pruitt (KIPP) and Sumner Annex
- ❑ **Window units and fan coil units**
  - ❑ Window unit schools (7): Adult Basic Ed, Gateway STEM, Mann, Meda P, Mitchell (KIPP), Pruitt (KIPP) and Shenandoah
  - ❑ Fan coil schools (5): Meramec, Oak Hill, Walbridge, Wilkinson @ Roe and Yeatman





# WHAT HAVE WE DONE?

- ❑ In Spring 2021, SLPS recommended the professional service team of Environmental Consultants, LLC to evaluate the needs of each building to increase ventilation and manage mitigation.
- ❑ Environmental Consultants, LLC conducted site visits of every occupied building within the District and investigated the following factors for improving air quality and managing virus mitigation:
  - ❑ Condition and cleanliness of ductwork
  - ❑ MERV rating of HVAC filters
  - ❑ General indoor air quality conditions – temperatures, humidity, carbon dioxide, carbon monoxide
  - ❑ Air exchange rates
  - ❑ Classroom utilization rates
  - ❑ Disinfection and sanitizing equipment

# WHAT DOES THE DATA INDICATE?



## ❑ **Supplied Central Air**

- ❑ Findings indicate that the original ductwork servicing schools is impacted with debris and other hazardous materials

## ❑ **Heat Pump Systems and Unit Ventilator Systems**

- ❑ Findings indicate these systems provide less quality of air to our schools.
- ❑ Findings indicate high levels of carbon dioxide and uncontrolled humidity.
- ❑ Newer constructed schools issues consist of controlling humidity and/or providing proper ventilation as it impacts air quality

# RECOMMENDATIONS



## ❑ **Clean/sanitize/disinfect ductwork**

- ❑ Goal: Reduce airborne contaminants and remove environmental hazards (i.e. lead, asbestos, etc.) from out antiquated ductwork
- ❑ Recommendation: District-wide duct cleaning to improve ventilation; filtration

## ❑ **Control/reduce humidity levels**

- ❑ Goal: Humidity levels range between 50% and 60%
- ❑ Recommendation: Repair/replace/upgrade outdated systems; install dehumidifiers

## ❑ **Reduce carbon dioxide levels**

- ❑ Goal: Carbon dioxide levels should be below 750 parts per million
- ❑ Recommendation: Repair/replace/upgrade outdated systems; install energy recovery units/make-up air units

## ❑ **Improve air exchange rates**

- ❑ Goal: Air exchange rates should be at least six (6) air exchanges per hour
- ❑ Recommendation: Repair/replace/upgrade exhaust fans; install air purification devices

# PRIORITIES



## ❑ Short Term Priorities

- ❑ Continuous inspections, monitoring, and testing to ensure that levels (humidity, carbon monoxide, carbon dioxide) are maintained within our schools
- ❑ Filter changes
- ❑ Repair/replace/upgrade existing equipment that have not reached it's life cycle

## ❑ Long Term Priorities

- ❑ Replace obsolete equipment that can no longer maintain proper levels
- ❑ Improve building automation systems



# SUMMARY



- ❑ SLPS owns many beautiful and even historic buildings. However due to their age, we know that the air quality must be monitored and managed daily in all of our buildings.
- ❑ The protocols and procedures such as preventative maintenance plans established by the Operations Department are not specific to a particular point in time, but rather are intended to manage our schools for the safety of our children and staff over time.
- ❑ Many people have linked COVID-19 with air quality. Air quality is the dynamic part of the conversation to ensure we can provide circulated, clean and ventilated air throughout the district.
- ❑ At SLPS, reducing containments and protecting our assets/equipment in our schools remains the highest priority in humble service to the children and staff our district.



# QUESTIONS