



# VENTILATION ENHANCEMENTS IN DISTRICT 97 SCHOOLS

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District 97 has implemented layers of mitigation strategies to reduce the spread of COVID-19 in its schools, including universal masking, physical distancing, weekly testing, frequent handwashing, cleaning and disinfection, contract tracing and quarantines. We have also made several enhancements to our schools' ventilation systems.

The district follows industry standards that meet International Mechanical Code, following ASHRAE standards, for indoor air quality. We will remain diligent with regular maintenance to ensure that all systems are performing at optimum levels. To further enhance ventilation and increase air circulation, we are utilizing the following CDC recommendations:

## **Increase the number of air changes per hour**

**Our ventilation system is designed to have three air changes per hour of clean air.**

- The systems were designed per code required minimum ventilation rate as required by the International Mechanical Code. The requirements are calculated using a formula based on occupancy classification, occupant density, and floor area, and follows ASHRAE Standard 62.1.

**We have increased this amount to five air changes by opening the HVAC dampers and allowing 100% outside air into the spaces as weather allows.** This increase in the introduction of outdoor air by opening outdoor air dampers beyond minimum settings reduces or eliminates HVAC air recirculation, which keeps our air changes above what the system was designed to have.

We are also continuing to run the HVAC system at maximum outside airflow for two hours before and after the building is occupied.

## **Open windows and have outdoor breaks, weather permitting**

All staff have the option to open classroom windows when weather conditions allow to further increase air changes per hour. We also hold certain activities, including recess and snack breaks outdoors, when circumstances allow.

## **Provide HEPA air purifiers for high-risk areas**

Based on careful consideration by the District 97 Facilities Advisory Committee, we are currently using portable HEPA air purifiers to enhance air cleaning in higher risk areas, such as lunchrooms, windowless classrooms, nurses' offices, and isolation rooms.

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District 97 ventilation enhancements and maintenance work (continued):

## **Regular maintenance and inspections on HVAC systems**

The District 97 Buildings and Grounds Department conducts regular maintenance on the district's systems to ensure that they are running at optimum levels.

- We inspected, rebalanced and adjusted our schools' HVAC systems to increase total airflow to occupied spaces.
- We turned off the demand ventilation controls that reduce air supply, based on occupancy or temperature during occupied hours.
- Air filters are checked regularly to be properly sized and changed within their recommended service life. This work is noted in the district's preventative maintenance records database, School Dude.
- We increased air filter ratings to the highest they can be without significantly reducing the design of airflow.
- We ensured that the restroom exhaust fans are functional and operating at full capacity when the building is occupied.

## **Conduct air quality surveys at all District 97 buildings**

In January 2021, District 97 contracted with Jacob & Hefner Associates, Inc. (JHA) to perform a limited Indoor Air Quality (IAQ) survey throughout the district's schools and the Administration Building. Testing measured Carbon Monoxide (CO), Particulate Matter 10 (PM10), Temperature, and Relative Humidity (RH) within 50% of classrooms and other generally occupied areas (gymnasium, lunchroom, main offices etc.). Relative Humidity, Carbon Monoxide and PM10 readings in these surveys all fell within recommended levels or ranges established by ASHRAE and were considered "normal" for occupied buildings. Temperature readings were found to be elevated in some locations. The district has since worked on these areas to ensure the classrooms or other areas are all within acceptable ranges.

JHA performed another IAQ survey in December 2021. Carbon Monoxide (CO), Carbon Dioxide (CO2), Particulate Matter 2.5 microns and below (PM 2.5) and Temperature all fell within ASHRAE ranges. Relative humidity readings were found to be elevated in some locations, however, the district has since addressed the areas to ensure that they are within acceptable ranges. Additional IAQ surveys were conducted in all lunchrooms in May 2022. Readings all fell within ASHRAE recommended levels. Testing will be conducted again in August/September 2022, once students return to school.

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