

Note: This handout is current as of the revision date. Since the COVID-19 pandemic is evolving rapidly, extra diligence should be used in watching for updates to these practices.

What is the hazard?

COVID-19 is the respiratory illness caused by the SARS-CoV-2 virus (a.k.a., novel coronavirus). The possibility exists that the virus may be spread through aerosol transmission – that is small particles expelled from infected individuals that remain in the air for an extended period of time (minutes or hours). Currently, research has not conclusively demonstrated that this mode of transmission can occur nor has it been determined how much risk of infection would result from exposure to COVID-19 aerosols. However, the Heating, Ventilation, and Air Conditioning (HVAC) systems in buildings theoretically may be configured to reduce the potential risk. This document discusses the HVAC modifications being implemented to mitigate potential risks from aerosol transmission of COVID-19 and is based on guidance from the CDC, Cal/OSHA, LA County Department of Public Health, and ASHRAE, and the EPA.

What safe work practices should be followed?

The following general safe practices have been implemented by the Facilities Department:

1. Maximizing ventilation: Facilities has set the HVAC systems to operate at the maximum feasible ventilation rates within the limits of the system and prevailing weather conditions.
2. Maximizing outdoor air intake: HVAC systems have been set to draw as much fresh outside air into each school as feasible, within the limits of system design and prevailing weather conditions.
3. Improving filtration: Facilities has upgraded the filters installed in the building HVAC systems to the maximum level the system can support, at minimum MERV 11 and MERV 13 where possible.
4. Increasing operating times: HVAC systems have been programmed to operate for extended periods of time up to 24 hours per day depending on the limits of the system.
5. Ionization systems have been added to most HVAC systems. Ionizers increase the capture of viruses, bacteria, mold and smoke in the filtration system.
6. Where ionization was not feasible, HEPA filters and Air Scrubbers have been deployed.

In combination, these adjustments result in increased delivery of conditioned air to each room with a higher filtration rate and an increase in fresh, outside air. If a person with COVID-19 were to be present at a SMMUSD school, these changes are expected to dilute any COVID-19 aerosols they may expel and reduce the time the aerosols remain. This decreases the risk that another building occupant may breathe in potential viral aerosols.

To ensure HVAC systems are operating as intended, District staff should perform a quick checkup when they first arrive at their work area each morning. HVAC systems may vary between wings or sections of a building, so not all the listed checks will apply to your situation. Follow the guidance below as applicable to your individual work area.

- Windows and doors: When there are operable windows or exterior doors in your classroom, they should be kept open as often as weather permits. When weather conditions allow, open windows and doors to increase fresh air supply into your classroom. Close windows and doors before you leave at the end of the day to secure the classroom.
- Central HVAC: Air is conditioned by a central system often serving multiple rooms. Each room will be equipped with ceiling mounted supply registers and air returns. Verify operation by feeling for airflow from ceiling or wall mounted registers, and checking in-room controls (e.g. thermostats or dials) are in the on position (e.g. “ON” or “ACTIVE,” not “AUTO”).

- Unit Ventilators: Unit ventilators are generally floor mounted along one or more walls of a classroom with a vent on the top facing into the room. Intake vents may or may not be visible around the base of the unit. Verify operation by feeling for airflow from the vent and checking the controls are in the on position.
- Portable Air Filters: Portable air filters may be installed in some classrooms or work areas. They will be compact appliances with intake and exhaust vents. They should be operating with visible lights or controls in the on/active positions. Check for air flowing out of the vents to confirm operation.
- Room Fans: Fans may be installed in operable windows to draw air out of the room and exhaust it outdoors. This will result in fresh make-up air being drawn into the room. Open windows and turn fans on as often as weather conditions allow.
- Personal or Zonal Fans: Personal or zonal fans are those that blow air to cool individual work areas or circulate air within a room. Use of personal or zonal fans is not recommended as they may increase circulation of airborne viral particles within a room.
- HEPA Filters or Air Scrubbers: Where filtration systems have been deployed, these units should be on at the highest level possible while the room is occupied. The filters and scrubbers should be left running when teachers and staff finish work and leave the room. Custodial staff will shut off the units in the evening after additional time for further air cleaning.