



SANTA MONICA-MALIBU UNIFIED SCHOOL DISTRICT

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March 23, 2021

TO: Sarah Braff  
FROM: Carey Upton  
RE: SMMCTA Questions regarding Ventilation

SMMCTA has provided the following questions regarding the ventilation upgrades completed to reduce risk of airborne disease transmission during the COVID-19 pandemic.

Initially it is important to review the LA County Department of Health (LAC DPH) ventilation requirements in the Reopening Protocols for K-12 Schools: Appendix T1 effective March 21, 2021.

Measures are in place to promote optimal ventilation in the school. These may include (check all that apply):

- o At least 50% of classroom learning, meals, and activities have been moved to outdoor space whenever feasible and weather permitting. [This is being done at schools where feasible.](#)
- o The school HVAC system is in good, working order. Prior to school reopening, the HVAC system should be evaluated by an appropriate engineer familiar with the Guidance for Reopening Schools as developed by the American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE). [Completed](#)
- o HVAC systems are set to maximize indoor/outdoor air exchange unless outdoor conditions (recent fire, very high outside temperature, high pollen count, etc.) make this inappropriate. [Completed](#)
- o Portable, high-efficiency air cleaners have been installed if feasible. [Completed](#), as analyzed by Mechanical Engineer. Each classroom space received an ionization device incorporated into the central HVAC system wherever the configuration of the HVAC system allowed or a portable HEPA filtration where it did not.

- o Doors and windows are kept open during the school day if feasible and if outdoor conditions make this appropriate. Existing fire codes requiring closure of fire-rated doors must be respected. Faculty and Staff have been directed to do this.
- o Air filters have been upgraded to the highest efficiency possible. Completed

#### Questions from SMMCTA:

1. What checks and upgrades have been done for bathrooms (staff and student)? By whom? Restrooms have not been a focus due to the limited time exposure per person in the restrooms. Due to the union's request last week, Pardess Air is being contracted to inspect all restrooms to insure the ventilation systems are working properly. These inspections will be completed by April 12 when students return to school.

The Operations department will also instruct all custodians to open windows in all restrooms daily to increase exchange air.

2. Do all bathrooms have working vents (required by code)? If not, what is done to identify and compensate? All restrooms are required to have working ventilation by code. Pardess Air will inspect and, if needed, repair the ventilation in all restrooms to insure they are working properly. Where they are not, Pardess Air will be directed to repair the systems and put them in working order.

3. Will restrooms that have been identified as having non-functioning ventilation be labeled as "Do Not Use" until repairs are completed? Yes.

4. Upon what basis do some rooms receive portable HEPA 200 and others 300? Ventilation systems were analyzed to determine if there was appropriate filtration of return air (interior air). Where the ventilation is not sufficient, a standalone air filtration system has been added to the room. The appropriate unit is based on square footage. The HPA 300 has about 50% greater capacity as compared to the HPA 200. The size selected was based upon the size of the room. For classrooms, which are around 1000 sf, the larger Opticlean air scrubbers have been deployed.

5. Regarding ionization — is that in addition to MERV-11/13 or instead of? Yes. Where ionization was installed, it was done in addition to filter upgrades to MERV 11 or 13.

6. What is manufacturer information and upon what basis were ionization units/filters chosen for purchase? All systems were upgraded with the maximum feasible filtration and outside air ventilation in accordance with CDC/CDPH and ASHRAE guidance. SMMUSD decided to take additional steps to protect staff and students and install supplemental air cleaning systems. After evaluation of the ventilation at each campus and room, needlepoint ionization systems were selected and installed for additional air cleaning where compatible with the existing ventilation systems. In locations where

installation of the needlepoint ionization systems was not feasible, appropriately sized HEPA filtered air scrubbers were installed.

Installed ionizers were the GPS-FC24-AC or GPS-FC48-AC manufactured by Global Plasma Solutions. We selected these devices because they met the specification provided to the installing contractor. The specification required the devices to be compliant with UL-2998.

7. Do they meet UL 2998 standard certification (no ozone emissions)? The devices were specified to be consistent with the requirements of UL-2998, and now we can verify that they are certified to be compliant with UL-2998.

8. How were units matched to spaces? The units were determined based on the size and specs of the systems. CDC says: *“consumers should request efficacy performance data that quantitatively demonstrates a clear protective benefit under conditions consistent with those for which the consumer is intending to apply the technology. Preferably, the documented performance data under as-used conditions should be available from multiple sources, some of which should be independent, third party sources.”* Has this been done? This information was reviewed as part of the decision making and procurement process.

9. What is best position/physical placement of air scrubbers or other portable units in classrooms? In most cases, the units have been placed in the best location in the room. It is recommended that the standalone filtration units be placed away from the built in HVAC system and away from the open windows and doors.

10. Are air exchange rates dependent on room size? How many air changes are happening in classrooms at minimum? To provide a particular air exchange rate a ventilation system must be sized in proportion to the room or zone it serves. The District has evaluated the existing ventilation systems to ensure they are providing at least the ASHRAE recommended four air exchanges per hour to be health protective during the pandemic. Where existing ventilation systems did not meet that standard, the District has installed upgrades or supplemental ventilation systems. We estimate that rooms will get a minimum number of six air exchanges an hour with the existing and temporary systems that are currently installed. Along with opening windows and doors, we might get as many as ten air exchanges an hour in many spaces.

11. Who did HVAC physical inspections and what was the process? What licenses do they hold? SMMUSD contracted Gafcon to manage the district's HVAC improvement project. This work is being led by Jonathan Lundstrom who holds a PE license [Jonathan L Lundstrom, State of California, M27001]. Pardess Air, who holds both a B and C20 license, has been contracted to inspect the HVAC systems, install the ionization units, and upgrade the filters.

12. Which rooms had non-functioning ACs in or around March, 2020, and what repairs and inspections have occurred for those specific rooms? The exposure concern is not

regarding Air Conditioning (AC). It is regarding ventilation. Many spaces in the district do not have air conditioning yet. At this time, the district is not aware of any classrooms in the District that do not have working ventilation.

13. What has been done for HVACs that could not accommodate MERV 13 upgrades. For example, where only MERV 11, what has been done to supplement? The guidance is to place the highest level of filter available. This has been completed. In most cases, the reason that the systems could not fit or support MERV-13 filters was due to the age of the systems. In all classrooms and offices, the district has supplemented with ionization units or standalone HEPA filtration units.

14. ASHRAE recommends that systems be in occupied mode for 1 week prior to occupancy. Will that occur prior to April 19th? Yes

15. What additional actions have been taken for nurse's office and isolation rooms? Which ASHRAE recommendations for these spaces have you followed? Do the nurse's offices follow ASHRAE recommendations for HVAC, and if not, why not? Nurse's offices are not being used as COVID-19 isolation rooms. They have been treated similarly to classrooms and offices. Many of the designated COVID-19 isolation areas at schools are being placed outdoors. For indoors locations the District has increased outdoor air supply, increased the ventilation run time, upgraded the filter, and installed ionization or HEPA filter systems. Where at all possible, they have dedicated restrooms. Working with the campus nurses, there will be more development of these isolation areas as we prepare for all students to return.

16. What is the schedule for replacing filters? Checking and maintaining systems on ongoing basis? Maintenance has been directed to begin spot checking the filters monthly to insure the filters are still functional. The industry standard is that the MERV-13 filters will need to be replaced every six months. The district will supplement maintenance crews with outside contractors, as needed.

17. What is the process for checking, repairing, replacing broken units or systems? Maintenance staff will continue to inspect and check on systems. Also, the faculty and staff should put in a work order if they notice that the systems are not functioning. As soon as we are alerted to a problem, we will expedite repair or replacement as needed. During this pandemic, health protective ventilation is the Maintenance departments highest priority.

18. What is the status with locker rooms? Are they in compliance with ASHRAE guidance? Currently, the LAC DPH does not allow the use of locker rooms. We are investigating the ASHRAE guidance and preparing for when they might be reopened.

19. A small number of workspaces across the district do not have ventilation and should not be occupied during COVID-19. Have they been identified, and has that information been shared with site administration and SMMCTA? There is only a handful (less than ten know at this time). We will share this information with SMMCTA.

20. Where HVAC systems require that staff manually set a thermostat to ON or FAN, will an instruction placard be placed near the controls/thermostat with instructions? We are finalizing the signs and will have them printed up in time for the April 12 return from spring break. Some thermostats do not need to be adjusted. We will also be placing signs to communicate this.

21. Will the current ventilation upgrades be sufficient if increased occupancy is permitted in rooms? Yes, they are sized for normal occupancy of the rooms.

Health protective ventilation is provided through a combination of systems and activities. These are specific, or at least typical, for the various spaces in the district. The FIP and M&O teams working with outside experts and contractors, have improved the systems to be more health protective. For it to fully work will require staff and faculty to also follow the directions provided.