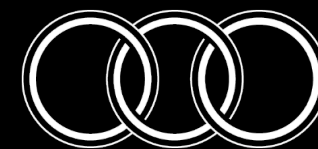




San Mateo County Community College  
District Town Hall  
July 1, 2021



SAN MATEO COUNTY  
**COMMUNITY**  
COLLEGE DISTRICT

# Agenda

## Section

## Presenter

**Introduction**

Mike Claire

**SMCCCD COVID-19 Emergency Management & Training**

Ben'Zara Minkin

**COVID-19 Landscape**

Ray Hernandez

**Cal/OSHA Update**

Ben'Zara Minkin

**HVAC/Ventilation**

Michele Rudovsky

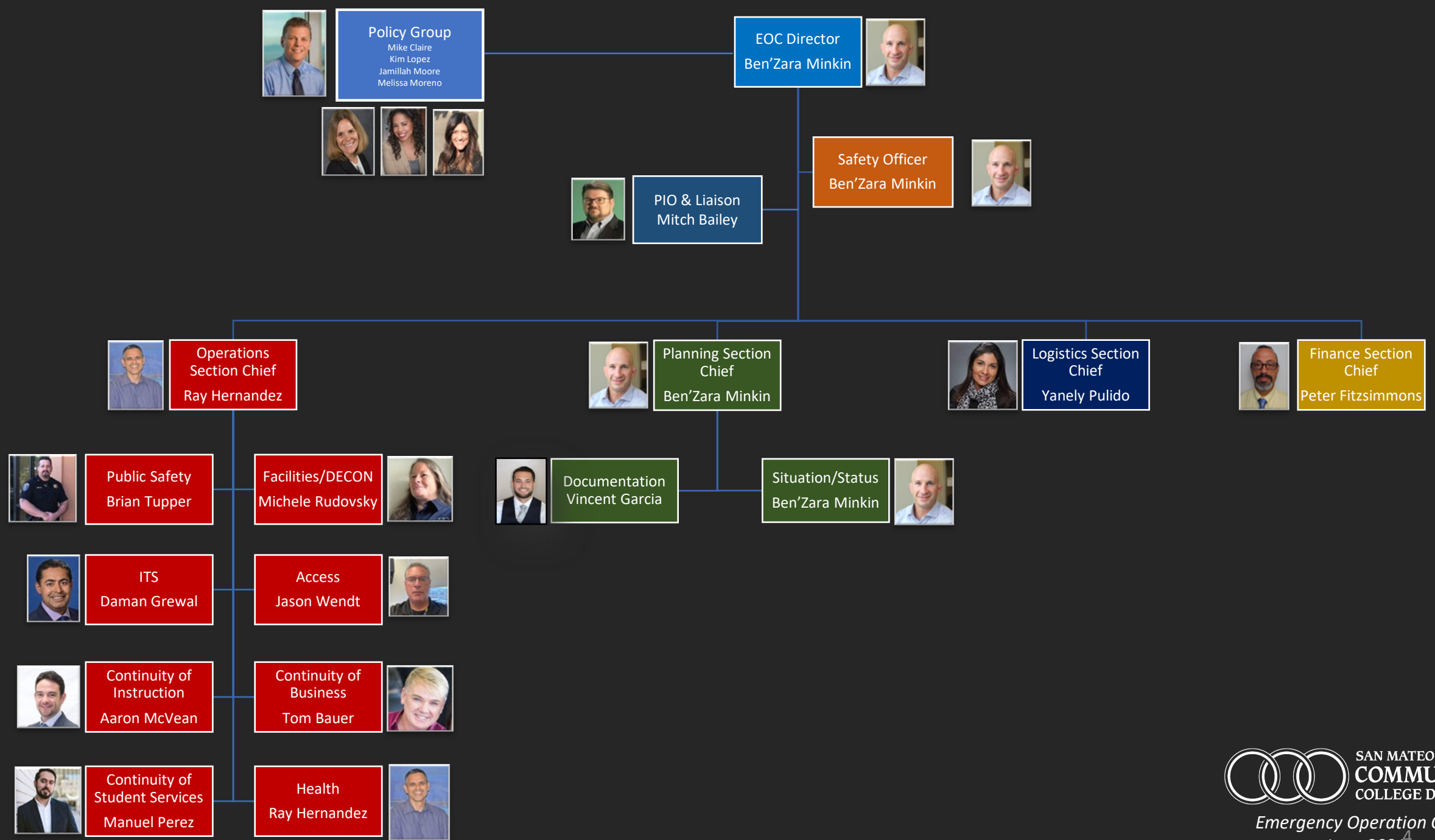
**Closing**

Mike Claire

# BEN'ZARA MINKIN



- District Emergency Manager/Safety Officer
- EOC Director/Planning Section Chief



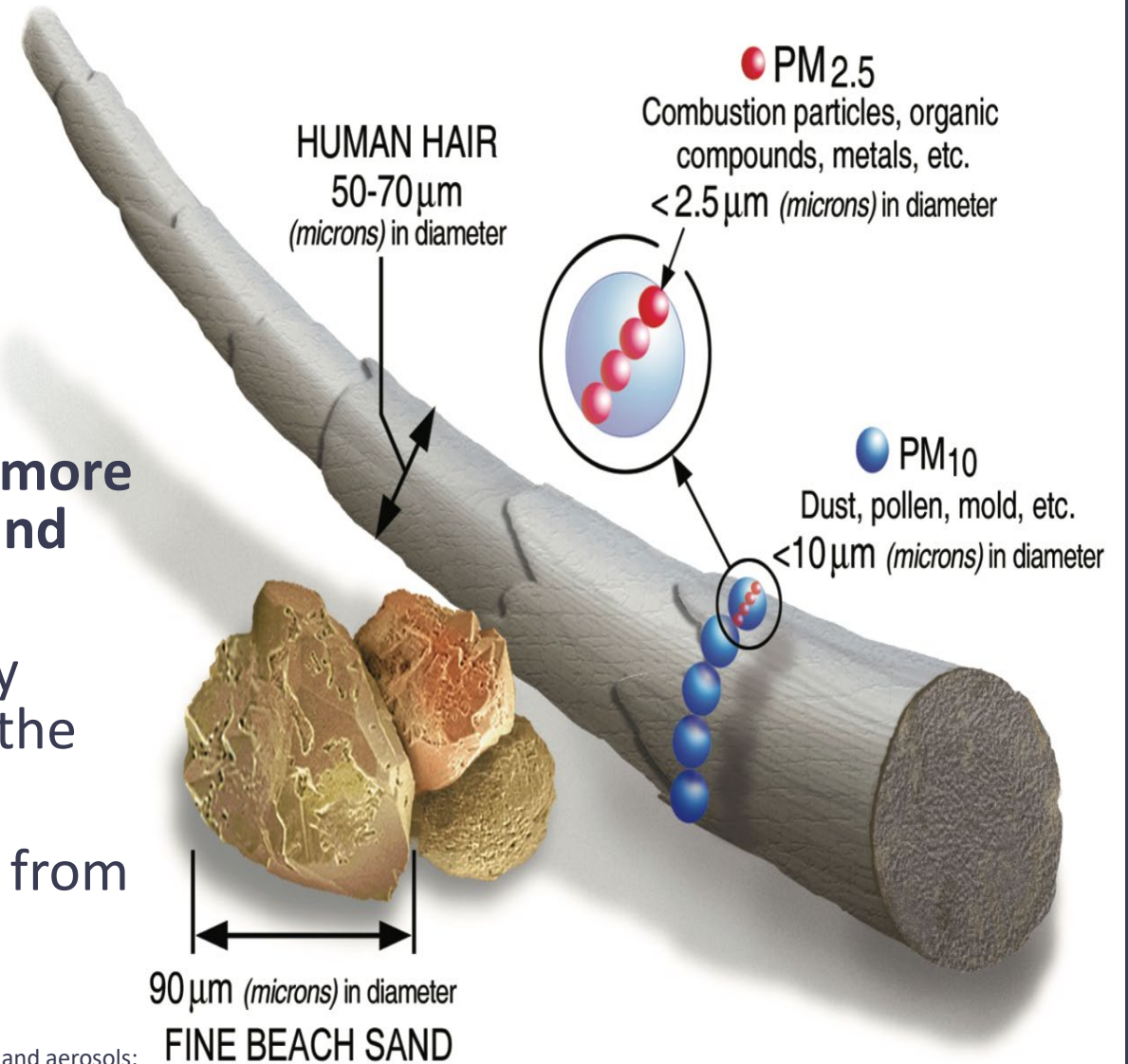
# RAY HERNANDEZ



Provide health expertise and support for SMCCD in delivering current, sound, evidence-informed practices during COVID-19 recovery.

# Characteristics of COVID-19 Virus

- COVID-19 virus  $\sim .125 \mu\text{m}$  (microns)
- Virus attaches to  $\text{H}_2\text{O}$  droplets
- **Particles  $0.5\text{--}20.0 \mu\text{m}$  lingering in the air are more likely to be retained in the respiratory tract and produce infection**
- Transmission occurs through larger respiratory droplets between 3 to 6 feet before falling to the ground
- Droplets tend to fall on the floor or disappear from the surroundings in about 15 or 20 minutes



Jayaweera, M., Perera, H., Gunawardana, B., & Manatunge, J. (2020). Transmission of COVID-19 virus by droplets and aerosols: A critical review on the unresolved dichotomy. *Environmental research*, 188, 109819. <https://doi.org/10.1016/j.envres.2020.109819>

# COVID-19 San Mateo County

## POSITIVE CASES

1.6 per 100,000 (7 day average)

## HOSPITALIZATIONS

6 (3 day average)

## LAST REPORTED DEATH

5/12/2021

### Cases (San Mateo County)

**42,927**

Total Confirmed Cases

**+2 (+0%)**  
Reported 6/28

**1.6** Cases per 100K  
(7-day average)

US Total Cases:  
33,451,748

### Deaths (San Mateo County)

**540**

Total Confirmed Deaths

**+1 (+0.2%)**  
Reported 6/28

**0.00** Deaths per 100K  
(7-day average)

US Total Deaths:  
601,506

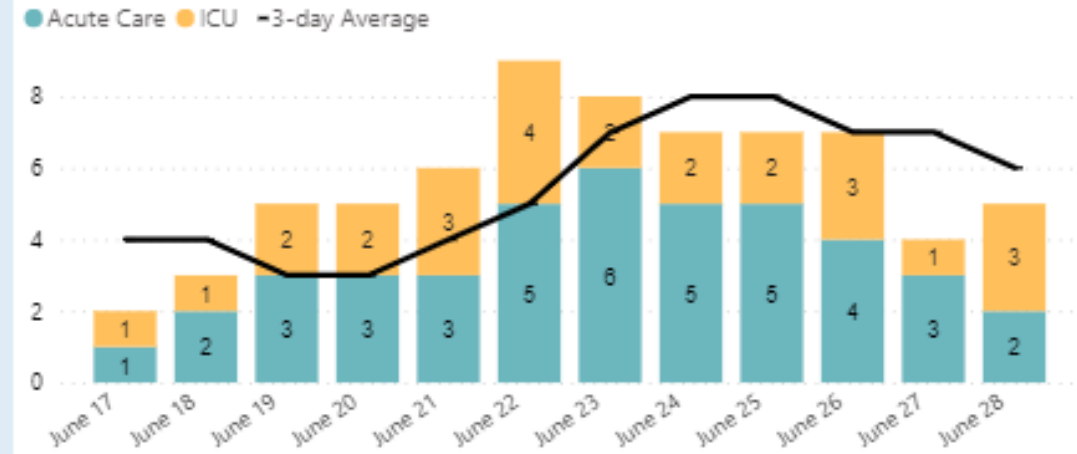
### Cases by Episode Date San Mateo County



## CONFIRMED CASES ONLY

Notes: The 3-day average is calculated using the previous three days. Out of County means the patient was transferred from an out of county facility.

### Hospitalized COVID-19 Patients (Confirmed cases only)



# San Mateo County Vaccinations

Total Individuals Vaccinated  
**575,114**  
 as of  
**6/28/2021**

County Population: **774,990**  
 County Population 16+ years: **626,100**  
 %16+ years Vaccinated: **87.9%**  
 County Population 12+ years: **666,252**  
 %12+ years Vaccinated: **86.3%**

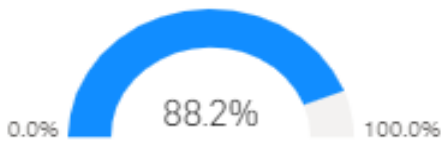
Date Administered  
 from

1/1/2020 6/28/2021



Individuals Who Completed  
 Vaccination Series  
**507,111**

% Completed Vaccination Series



Total Vaccine Doses Administered  
**1,045,356**

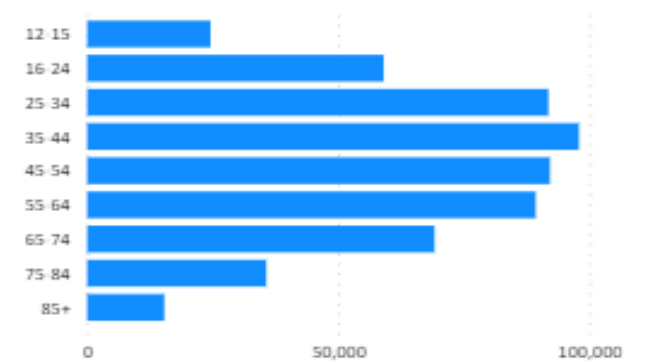
## COVID 19 Vaccinations of San Mateo County Residents

Age	Number with at least 1 dose	**Population	Percent population reached	Number with series completed	Percent population with series completed
12-15	24,562	40,152	61.2%	19,399	48.3%
16-24	59,046	75,394	78.3%	49,743	66.0%
25-34	91,713	81,877	112.2%	78,639	96.0%
35-44	97,942	102,798	95.3%	86,242	83.9%
45-54	92,169	106,284	86.7%	82,901	78.0%
55-64	89,331	104,592	85.4%	81,403	77.8%
65-74	69,177	85,260	81.1%	61,919	72.6%
75-84	35,629	45,125	79.0%	32,810	72.7%
85+	15,345	24,770	61.9%	14,055	56.7%
<b>Total</b>	<b>575,114</b>	<b>666,252</b>	<b>86.3%</b>	<b>507,111</b>	<b>76.1%</b>
Gender	Number with at least 1 dose	**Population 12+	Percent population 12+ reached	Number 12+ with series completed	Percent population 12+ with series completed
Female	298,764	338,793	88.2%	264,531	78.1%
Male	275,675	327,459	84.2%	242,082	73.9%
Unknown	675	-	-	498	-
<b>Total</b>	<b>575,114</b>	<b>666,252</b>	<b>86.3%</b>	<b>507,111</b>	<b>76.1%</b>
Race/Ethnicity	Number with at least 1 dose	**Population 12+	Percent population 12+ reached	Number 12+ with series completed	Percent population 12+ with series completed
American Indian / Alaska Native	1,272	1,133	112.3%	1,043	92.1%
Asian	165,253	168,473	98.1%	150,616	89.4%
Black / African American	9,640	17,006	56.7%	8,561	50.3%
Hispanic	86,464	175,218	49.3%	72,463	41.4%
Multiracial*	10,004	24,201	41.3%	9,377	38.7%
Native Hawaiian / Pacific Islander	5,433	9,581	56.7%	4,800	50.1%
Other Race	52,057	-	-	44,729	-
White	213,874	270,640	79.0%	195,276	72.2%
Unknown	31,117	-	-	20,246	-
<b>Total</b>	<b>575,114</b>	<b>666,252</b>	<b>86.3%</b>	<b>507,111</b>	<b>76.1%</b>

\*Due to issues with CAIR2, the methodology used for race/ethnicity of individuals who have been vaccinated has been updated as of 4/19/2021. The updates are intended to correct a specific data issue in the CAIR2 state system for the reporting of race/ethnicity and specifically in the overcount of individuals who identify as multiracial.

\*\*Population source: California Department of State Services, Report 2: Population Estimates, California, 2019, 2020 as of April 2021.

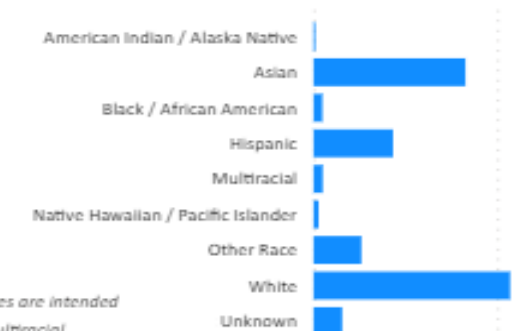
### Vaccinated Individuals by Age



### Vaccinated Individuals by Gender

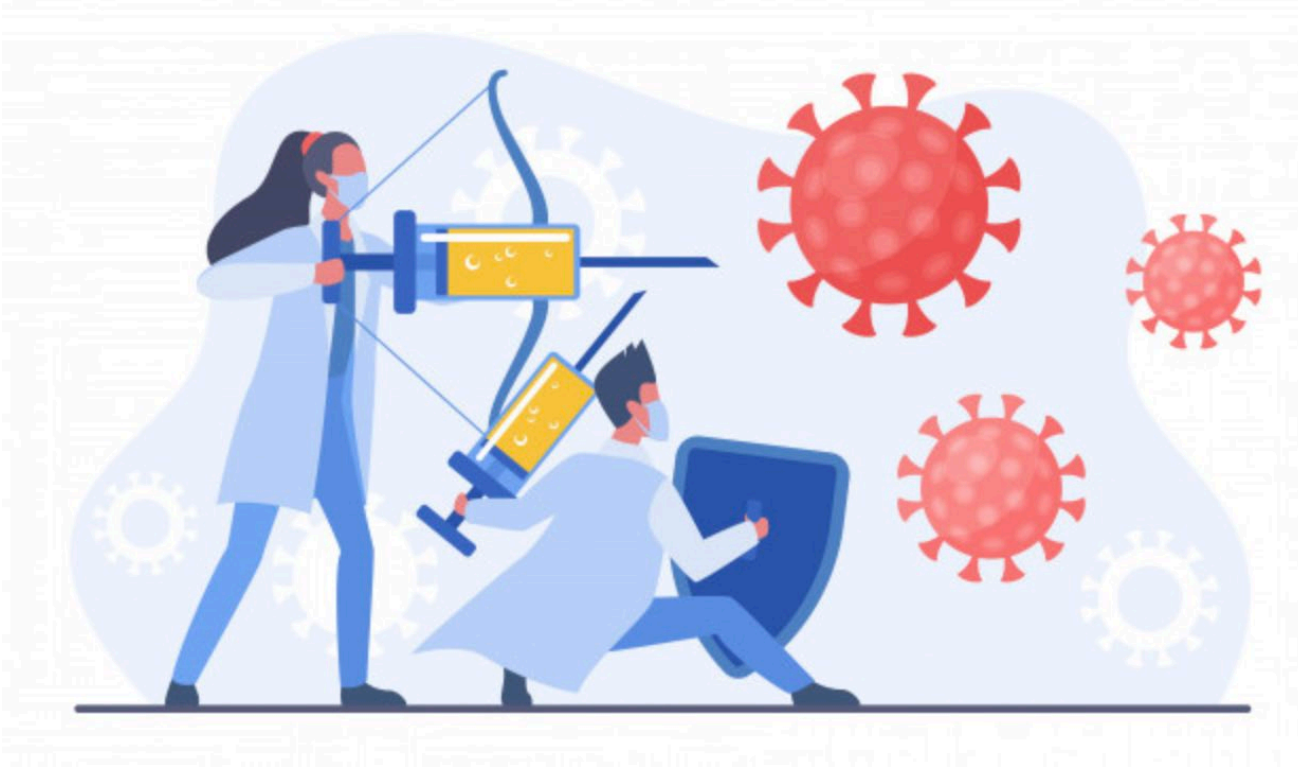


### Vaccinated Individuals by Race/Ethnicity





# Vaccination Effectiveness



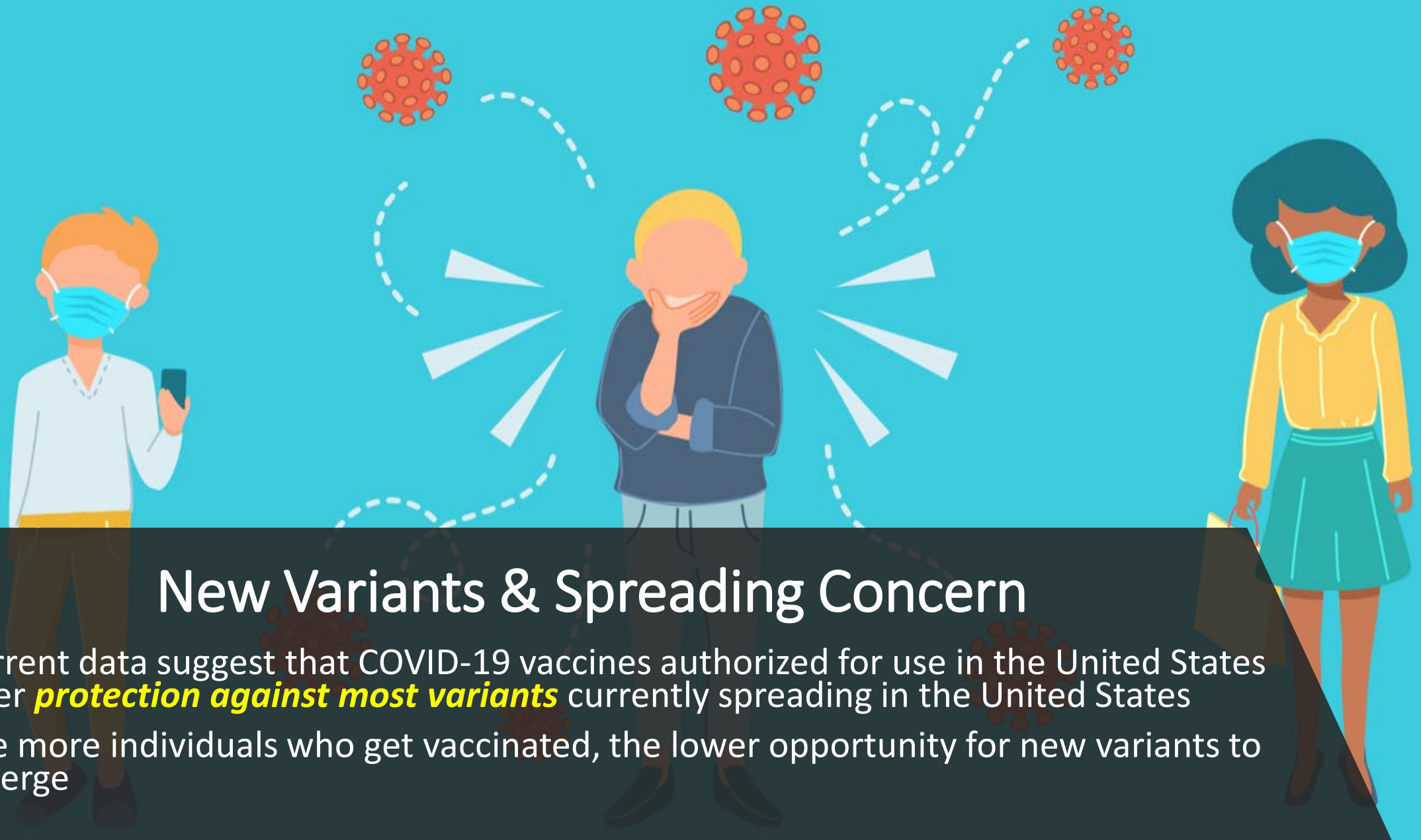
- The Center for Disease Control and Prevention (CDC), confirmed that COVID-19 Vaccines (Moderna and Pfizer) **reduce the risk** of contracting COVID-19, including severe illness, for fully vaccinated people by **90% or more**.

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/effectiveness/work.html>

# Vaccination Benefits

- Recent studies provide increasing evidence that COVID-19 vaccines also provide **protection against COVID-19 infections without symptoms** (asymptomatic infections).
- COVID-19 vaccination can reduce the spread of disease overall by **decreasing transmission and spread to the greater community**.





## New Variants & Spreading Concern

- Current data suggest that COVID-19 vaccines authorized for use in the United States offer **protection against most variants** currently spreading in the United States
- The more individuals who get vaccinated, the lower opportunity for new variants to emerge



# Cal/OSHA Revisions

## *June 17, 2021*

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# Overview

Background

What Changed

Physical Distancing

Respirators

Face Coverings

Vaccines

Testing

Outbreaks

# Background

Cal/OSHA proposed revisions to the COVID-19 emergency temporary standards (ETS) to reflect the availability of vaccinations to limit workplace transmission, to revise requirements in light of updated Centers for Disease Control and California Department of Public Health (CDPH) face covering guidance, and to provide options for employers to make a safe transition from physical distancing and face covering mandates to more normal operations.



# What are the Important Changes in the June 17 revised Emergency Temporary Standards (ETS)

# What Changed

- Fully vaccinated employees without symptoms do not need to be tested or quarantined after close contacts with COVID-19 cases unless they have symptoms.
- No face covering requirements outdoors (except during outbreaks), regardless of vaccination status, though workers must be trained on CDPH recommendations for outdoor use of face coverings.
- Employers may allow fully vaccinated employees not to wear face coverings indoors, but must document their vaccination status.
- Employers must provide unvaccinated employees with approved respirators for voluntary use when working indoors or in a vehicle with others, **upon request**.
- Employers may not retaliate against employees for wearing face coverings.





# What Changed Continued...

- No physical distancing or barrier requirements regardless of employee vaccination status with the following exceptions:
  - Employers must evaluate whether it is necessary to implement physical distancing and barriers during an outbreak (3 or more cases in an exposed group of employees)
  - Employers must implement physical distancing and barriers during a major outbreak (20 or more cases in an exposed group of employees)
- No physical distancing requirements whatsoever in the employer-provided housing and transportation regulations.
- Where all employees are vaccinated in employer-provided housing and transportation, employers are exempt from those regulations
- Employers must evaluate ventilation systems to maximize outdoor air and increase filtrations efficiency, and evaluate the use of additional air cleaning systems



A diagram illustrating physical distancing. Two stylized human figures, one red and one teal, are walking away from each other on a path. A horizontal dashed line with arrows at both ends connects the two figures, representing the distance between them. The background shows a simple building with windows and two tall poles on either side of the path. The text "Physical Distancing" is overlaid in the center.

# Physical Distancing



## Updated Physical Distancing Requirements in the revised ETS

- The revised ETS eliminates physical distancing and barrier requirements regardless of vaccination status.

# Physical Distancing Exemptions



Nothing in the revised ETS prevents employers from implementing additional protective measures than are required, including the use of physical distancing and barriers.

Employers are under an ongoing requirement to assess workplace hazards and implement controls to prevent transmission of disease. There may be circumstances in which employers determine that physical distancing is necessary in their workplace.

During an outbreak (3 or more employees in an exposed group), employers are required to evaluate whether physical distancing or barriers are necessary to control the transmission of COVID-19.

Physical distancing and barriers must be used in a major outbreak (20 or more employees in an exposed group) for all employees, regardless of vaccination status.

# Respirators





# District's Obligation to Provide Respirators

- SMCCCD shall provide respirators when:
  1. Any unvaccinated employee who works with others indoors or in a vehicle and who requests one
  2. There is a major outbreak, to any employees in the exposed group for voluntary use
- The respirator must be the right size, and the employee must receive basic instruction on how to get a good “seal,” or fit
- Respirators shall be provided to unvaccinated employees as soon as possible

# Cal/OSHA Respirator Requirements for Unvaccinated Personnel

- Under CDC and federal OSHA guidance, unvaccinated persons are to wear face coverings and physically distance indoors
- Cal/OSHA is requiring voluntary respirators because California is:
  - phasing out physical distancing
  - well-fitting respirator reduces the risk of infection better than physical distancing alone
  - respirators are readily available
- The ETS provides this as an alternative protection for unvaccinated employees



# How often must an employer provide an employee with a new respirator?

- For voluntary use, the need to replace a respirator varies with use and environment.
- Filtering facepiece respirators are disposable respirators that cannot be cleaned or disinfected. They must be replaced if the facepiece is:
  - Damaged
  - Deformed
  - Dirty
  - Difficult to breathe through
- CDC recommends replacing a disposable filtering facepiece respirator, such as an N95, after it has been taken on and off five times. Filtering facepiece respirators may not fit correctly after repeated use.







# Face Coverings



# Face Covering Requirements

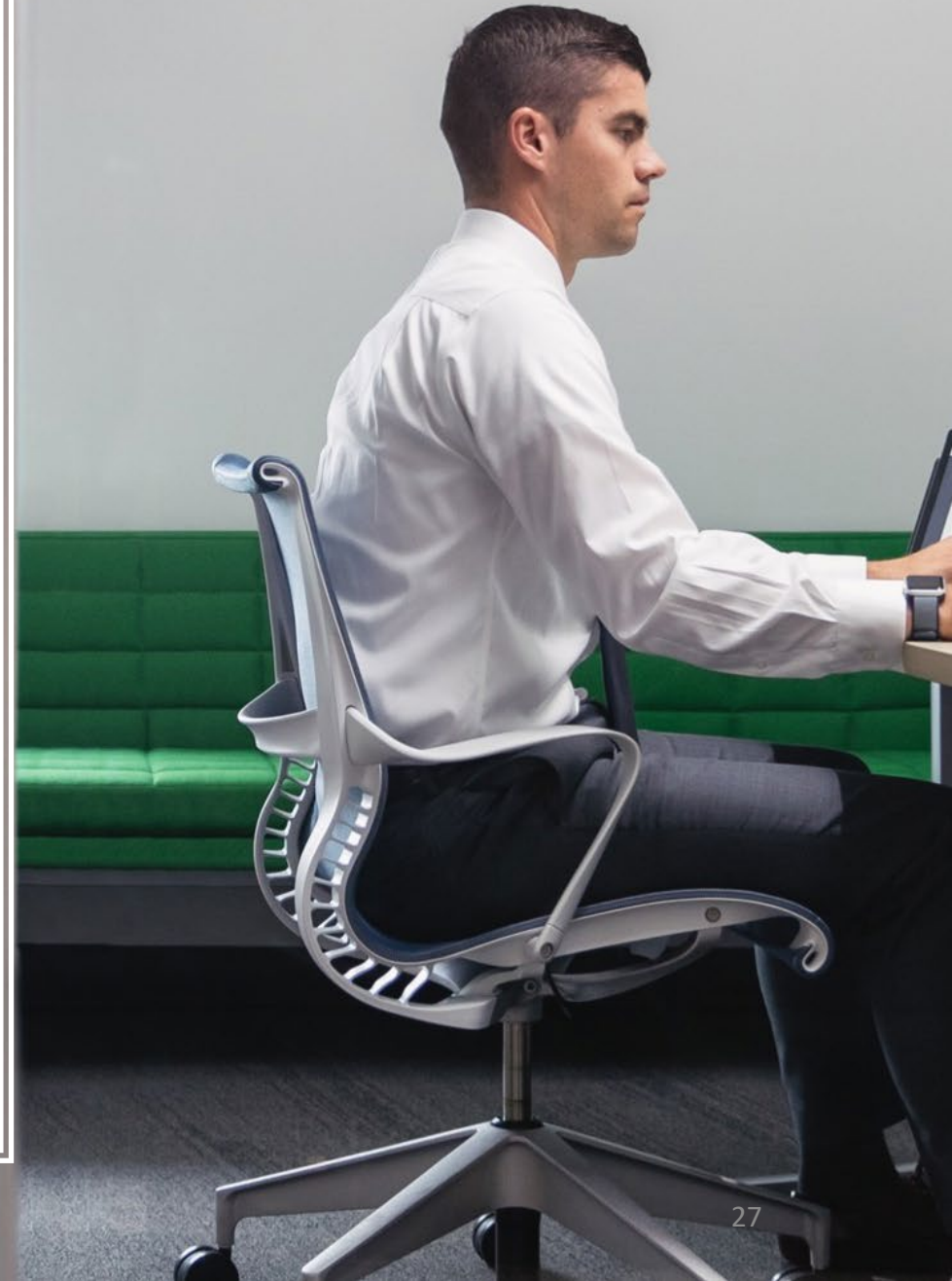
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- Face coverings are required indoors and in vehicles for unvaccinated employees.
- Employees in certain indoor settings must wear a face covering regardless of vaccination status if required by CDPH order.
  - Public Transit
  - Childcare centers (This includes the CDCs)
  - K-12 Educational Facilities
  - Shelters
- Face coverings are recommended for unvaccinated persons outdoors where six feet of physical distancing cannot be maintained

# Exemptions for Indoor Face Coverings

The most common exceptions for unvaccinated persons are:

- When alone in a room or vehicle
- When eating and drinking
- When an accommodation is required
- When job duties make a face covering infeasible or create a hazard





## Protections for Employees

- Employers cannot retaliate against workers for wearing face coverings, including when the worker is wearing a face covering voluntarily.

# COVID-19 Vaccination Record Card

Please keep this record card, which includes medical information about the vaccines you have received.

Full Name

First Name

Date of birth

Patient number

Vaccine	Product Name/Manufacturer Lot Number	Date mm / dd / yy	Healthcare Prof. or Clinic Site
1 <sup>st</sup> Dose COVID-19		mm / dd / yy	
2 <sup>nd</sup> Dose COVID-19		mm / dd / yy	
Other		mm / dd / yy	

# Vaccines

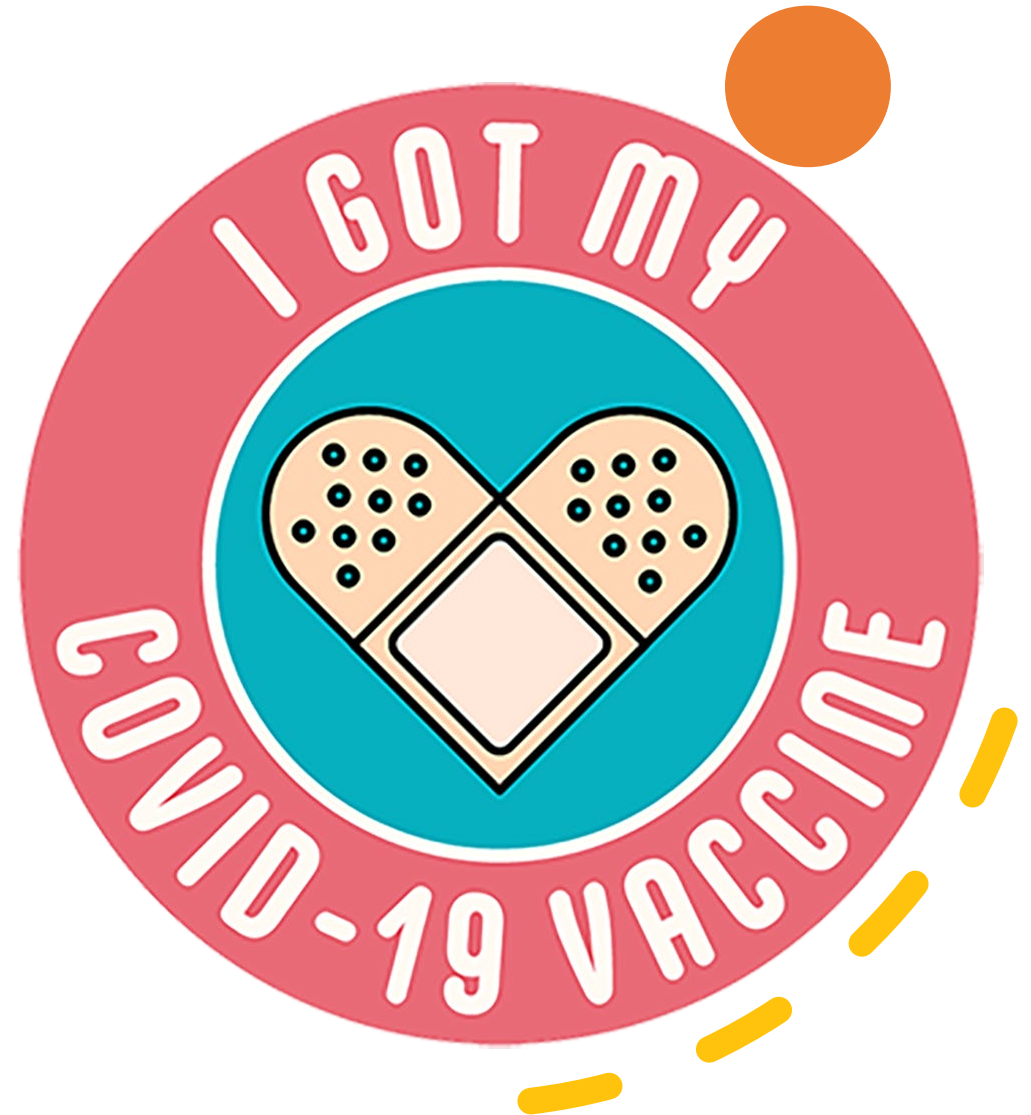


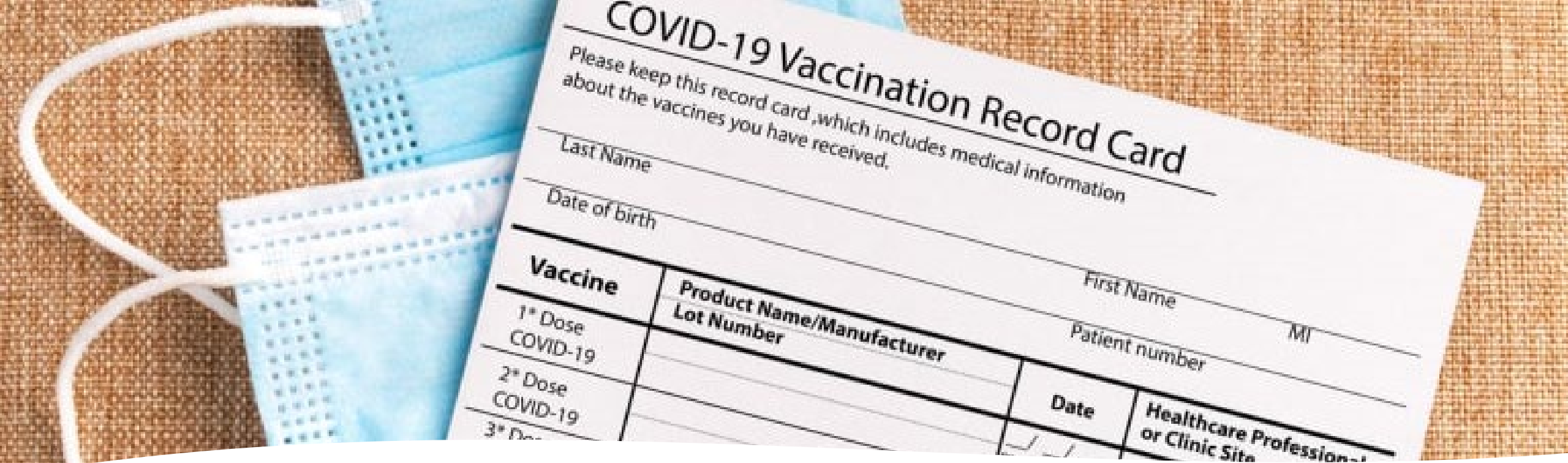
# Is documentation required for a fully vaccinated employee to work without a face covering indoors?

Yes. Vaccination status must be documented.

The employer must record the vaccination status for any employee not wearing a face covering indoors and this record must be kept confidential.

- Employees provide proof of vaccination (vaccine card, image of vaccine card or health care document showing vaccination status) and employer maintains a copy.
- Employees provide proof of vaccination. The employer maintains a record of the employees who presented proof, but not the vaccine record itself.
- Employees self-attest to vaccination status and employer maintains a record of who self-attests.





What if the employee declines to state their vaccination status?

- Under the ETS, an employer is **not obligated** to require employees to submit proof of being fully vaccinated.
- An employee has the right to decline to state if they are vaccinated or not.
  - The employer must treat the employee as **unvaccinated** and **must not take disciplinary or discriminatory action against the employee**



# Testing





# Testing Requirements of the Revised ETS

---

- Employers must offer testing at no cost to employees during paid time to:
  - Symptomatic unvaccinated employees, regardless of whether there is a known exposure. *This is a new requirement.*
  - Unvaccinated employees after an exposure.
  - Vaccinated employees after an exposure if they develop symptoms.
  - Unvaccinated employees in an outbreak.
  - All employees in a major outbreak.



# Outbreaks

How will Cal/OSHA ensure employees are adequately protected if there is a surge in COVID-19 cases?

- The revised ETS requires employers to implement more protective requirements if an outbreak or major outbreak occurs in a workplace. Cal/OSHA also has the option of proposing changes to the ETS one additional time, if necessary.



# HVAC/Ventilation



SAN MATEO COUNTY  
**COMMUNITY**  
COLLEGE DISTRICT

*Facilities Excellence*

*Professionalism \* Communication \* Customer Service \* Teamwork*

# MICHELE RUDOVSKY



Provide “*Facilities Excellence*” to the SMCCCD community.

- Custodial Operations
- Grounds Keeping
- Maintenance Engineering
- Systems Management
- Energy and Sustainability

# Goals & Guidance

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The following slide deck presentation delineates safety measures SMCCCD Facilities have made to potentially reduce the spread of COVID-19 based upon direction and recommendations



# Goals

1

**Increase  
outside air**

2

**Improve air  
filtration**

3

**Improve air  
movement**

4

**Instill  
confidence**

**Required by CalOSHA: Making changes where possible.**

# Guidance

- **Cal-OSHA** [the Law]: California Occupational Safety and Health Administration
- **CDPH** [Authority Having Jurisdiction]: California Department of Public Health
- **SMCHD** [Authority Having Jurisdiction]: San Mateo County Health Department
- **CDC** [Guidance & Recommendations]: United States Center for Disease Control
- **ASHRAE** [Design Standards & Recommendations]: American Society of Heating, Refrigerating and Air-Conditioning Engineers

**HVAC:** Heating, Ventilation, and Air Conditioning

**Ventilation:** The provision of fresh air into a room

**Filtration:** Mechanical removal of airborne particulate matter.

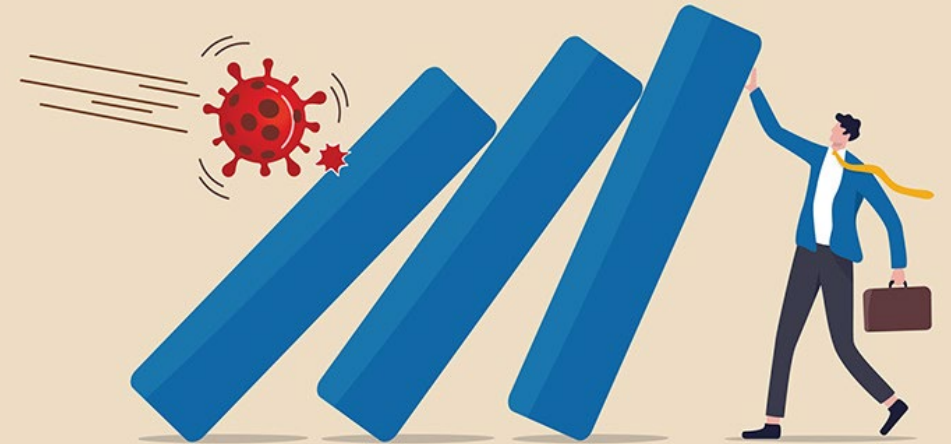
**Air Flow:** The movement of air either mechanically (HVAC or fans) or passively via pressure differentials



# CDC Layered Approach to Mitigate COVID including:

- Vaccination
  - **Vaccination is the most critical factor for preventing the spread of COVID-19: None of the modifications to the HVAC systems , filtration, or ventilation are a replacement for vaccination.**
- Surveillance testing
- Staying home when sick
- Social distancing
- Effective sanitization
- Wearing face covering
- Hand hygiene

**Ventilation is one part of the strategy to mitigating the spread of COVID-19**



# Filtration

## Minimum Efficiency Reporting Value (MERV)

The District has **increased central air filtration** from MERV 8 filters to **MERV 13** filters where achievable and without significantly reducing design airflow.

- MERV rating informs how effectively a filter traps small particles.
- Average Particle Size Efficiency in Microns for **MERV 13 Filters:**  
**1.0 - 3.0  $\mu\text{m}$  85% - 89.9%, 3.0 - 10.0  $\mu\text{m}$  90% -98%**
- HEPA style filters will not function in the District's HVAC units as they were not designed for this level of air restriction.
- Workspace Assessment Process: On a case-by-case basis, individual spaces may be evaluated and provided with HEPA air filtration devices where:
  - There is no existing air-exchange or ability to introduce increased ventilation or;
  - It is known that individuals experiencing illness are more likely to be (i.e., Health Centers)



**Skyline B3  
Filter Bank**

# Heating, Ventilation and Air Conditioning

## Every Building HVAC System is Different

- Central Air Handlers
- Central heating and cooling plants
- Local heating and cooling
- Some buildings have no cooling
- Some buildings have natural ventilation—operable windows

## Designed by Professionals

- Licensed Mechanical Engineers

## Investments in Renewal: Capital Improvement Programs 1, 2, & 3

- New Buildings-LEED Certified
- Modernized Buildings
- District legacy buildings
  - Cañada Building 3
  - CSM Buildings 1, 3, 8, 19
  - Skyline Buildings 1, 2, 5, 19



B14 and B19 have local Furnace units that provides filtered outside / indoor air that can also provide heat when called upon.



SKY B3 Portables and B21 have local Air Conditioning Units



Cañada College Building 9 AHU-1

# Heating, Ventilation and Air Conditioning

## Digital Controls and Monitoring

- Schneider Building Management Systems
- Some buildings have local controls

## Preventative Maintenance Program

## Reactive Maintenance as Needed

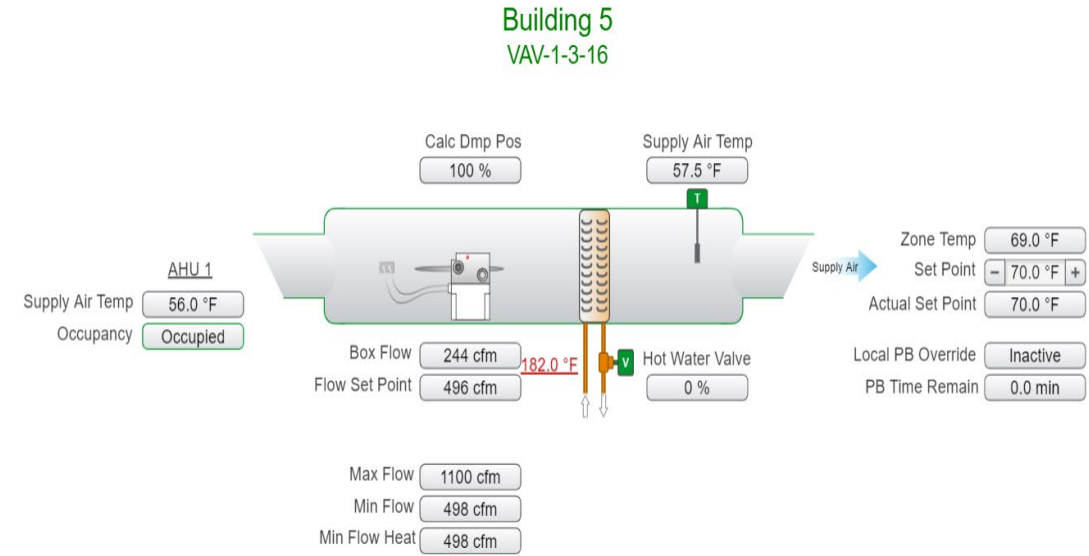
## System Mapping

- Record mechanical drawings
- Building Management System

## COVID-19 SMCCCD Workspace Assessment Process

Every morning the Facilities team reviews the status of the building systems, and addresses issues.

## Example of Digital Controls



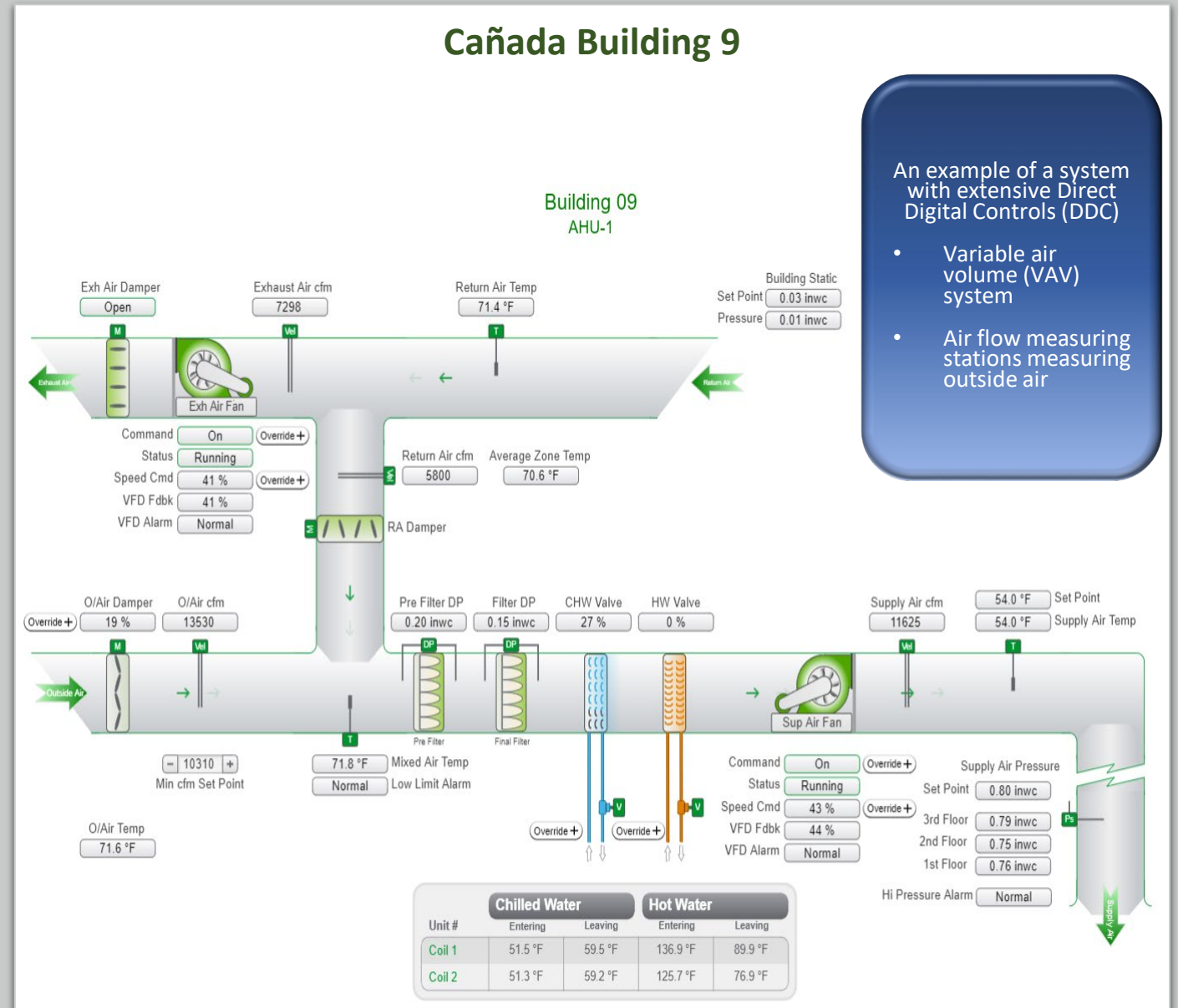
Building 5  
Third Floor VAV Units

Fed from AHU 1													
Unit #	Room #	Air Source	Inc in Temp Reset	Room Temp	Ctg Set Point	Htg SP DB	Supply Air Temp	Hw Valve	Damper Pos	Box Flow	Flow Set Point	Pb State	Pb Time Remain
VAV-1-3-16	Assisting Treatment 5-314	AHU 1	NA	69.0 °F	70.0 °F	2.0 °F	57.5 °F	0.0 %	100.0 %	244.0 cfm	495.9 cfm	Inactive	0.0 min
VAV-1-3-17	Hygiene Treatment 5-312	AHU 1	NA	66.8 °F	70.0 °F	2.0 °F	57.4 °F	39.3 %	100.0 %	242.0 cfm	495.9 cfm	Inactive	0.0 min
VAV-1-3-18	3rd Floor Offices 5-(325-335)	AHU 1	NA	72.2 °F	68.7 °F	2.0 °F	56.8 °F	0.0 %	88.5 %	263.0 cfm	546.5 cfm	Inactive	0.0 min
VAV-1-3-19	Radiology 5-305	AHU 1	NA	69.2 °F	70.0 °F	2.0 °F	57.4 °F	0.0 %	48.0 %	154.0 cfm	322.8 cfm	Inactive	0.0 min
VAV-1-3-20	Sterilization 5-316	AHU 1	NA	69.0 °F	68.6 °F	2.0 °F	57.7 °F	0.0 %	73.3 %	143.0 cfm	299.6 cfm	Inactive	0.0 min
VAV-1-3-21	Student Lounge 5-323	AHU 1	NA	68.7 °F	66.2 °F	2.0 °F	63.3 °F	0.0 %	79.9 %	460.0 cfm	970.6 cfm	Inactive	0.0 min
VAV-1-3-22	Faculty Room 5-334	AHU 1	NA	66.8 °F	68.0 °F	2.0 °F	57.2 °F	0.0 %	82.8 %	190.0 cfm	411.4 cfm	Inactive	0.0 min
VAV-1-3-23	Offices 5-(363-373)	AHU 1	NA	66.7 °F	68.0 °F	2.0 °F	57.7 °F	0.0 %	100.0 %	108.0 cfm	227.9 cfm	Inactive	0.0 min
VAV-1-3-24	Meeting Room 5-339	AHU 1	NA	65.5 °F	68.0 °F	2.0 °F	57.0 °F	16.3 %	89.1 %	273.0 cfm	605.6 cfm	Inactive	0.0 min
VAV-1-3-25	Meeting Room 5-337	AHU 1	NA	75.9 °F	68.0 °F	2.0 °F	76.3 °F	0.0 %	85.3 %	435.0 cfm	894.6 cfm	Inactive	0.0 min
VAV-1-3-26	Offices 5-(331-335)	AHU 1	NA	67.0 °F	70.0 °F	2.0 °F	57.6 °F	32.2 %	69.1 %	145.0 cfm	299.6 cfm	Inactive	0.0 min
VAV-1-3-27	Offices 5-(363-373)	AHU 1	NA	70.5 °F	70.0 °F	2.0 °F	60.5 °F	0.0 %	100.0 %	138.0 cfm	287.0 cfm	Inactive	0.0 min
VAV-1-3-28	3rd Floor Lobby 5-307	AHU 1	NA	68.8 °F	68.1 °F	2.0 °F	56.5 °F	0.0 %	92.1 %	453.0 cfm	896.8 cfm	Inactive	0.0 min
VAV-1-3-29	Restrooms 5-350	AHU 1	NA	71.2 °F	67.0 °F	2.0 °F	83.7 °F	0.0 %	100.0 %	383.0 cfm	795.5 cfm	Inactive	0.0 min
VAV-1-3-30	Dental Lab 5-330	AHU 1	NA	71.2 °F	70.0 °F	2.0 °F	83.7 °F	0.0 %	100.0 %	383.0 cfm	795.5 cfm	Inactive	0.0 min
VAV-1-3-31	Dental Waitin 5-302	AHU 1	NA	71.7 °F	70.0 °F	2.0 °F	56.5 °F	0.0 %	100.0 %	189.0 cfm	388.2 cfm	Inactive	0.0 min
VAV-1-3-32	Hygiene 5-310	AHU 1	NA	67.4 °F	70.0 °F	2.0 °F	58.2 °F	20.8 %	100.0 %	241.0 cfm	495.9 cfm	Inactive	0.0 min

# COVID-19 Ventilation Response to Date

- Performed comprehensive equipment condition data collection on all mechanical systems
  - Cataloged individual pieces of equipment in mechanical rooms
  - General mechanical system condition assessment
- Ensured systems are operational
- Purchased Portable air scrubbers
- Purchased MERV 13 filters
- Ordered Fans
- Ordered N95 respirators

**Facilities has enhanced airflow and ventilation to all spaces on campus.**



An example of a system with extensive Direct Digital Controls (DDC)

- Variable air volume (VAV) system
- Air flow measuring stations measuring outside air

# COVID-19 Ventilation Response to Date

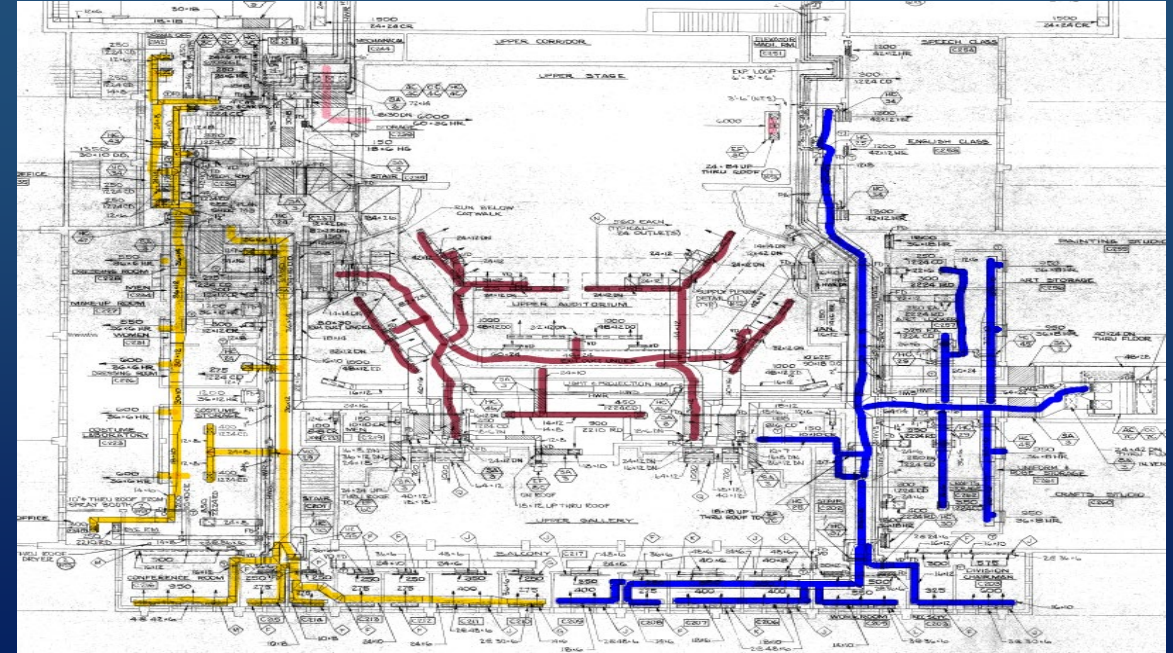
## Where achievable, the District has

- Increased Outside Air
  - Closed central fan recirculation dampers to allow for increased intake of outside air when ventilating the buildings—**adjusted economizers**
  - Rebalance or **adjusted HVAC systems** to increase total airflow to occupied spaces and increased central fan supply air flow volumes for maximum output
  - Started HVAC systems at maximum outside airflow for **2 hours before** and after standard building occupancy hours. Air handlers generally run from 6am-midnight
  - Encouraged the use of **operable windows** and doors; made repairs to windows to improve operability
- Improved Filtration
  - Increased central air filtration from MERV 8 filters to MERV 13 filters without significantly reducing design airflow
    - MERV 13: 1.0 - 3.0 $\mu$ m 85% - 89.9%, 3.0 - 10.0 m 90% -98%
- Inspected and confirmed functional all restroom exhaust fans



# Ongoing Efforts

- The Facilities team continues to stay abreast of CDC, OSHA, ASHRAE, State and local government requirements and recommendations
- Developing scopes of work for ongoing HVAC testing and balancing
- Measuring specific cubic feet per minute (CFM) of air flow in select rooms to confirm adequate air flow
- Assessing and confirming Air Changes per Hour
- Purchased and installed portable HEPA air cleaners in the campus health centers
- Identifying and funding Capital projects that address HVAC concerns



AHU Zone	Type	OA Required (cfm)	Supply air	Return/Exh aust air	Outside air (per design)	Outside air (Measured)	Average ACH
AC-1C	Return/OA	2,129	21,340	17,900	3,440	To be measured by an air balancer	1.6
AC-2C	Return/OA	1,843	14,025	12,100	1,925		2.0
AC-3C/EF-2C	100% OA	311	3,750	3,950	3,750		8.2
AC-4C/EF-3C	100% OA	380	6,000	6,000	6,000		6.0
AC-5C/EF-4C	100% OA	365	3,000	3,000	3,000		9.4
AC-6C/EF-5C	100% OA	330	3,000	3,000	3,000		13.5
AC-7C	Return/OA	3,778	19,400	17,000	2,400		1.5

- ASHRAE 62.1 provides guidelines
- Mechanical drawings are used to track the air handling unit (AHU) serving each space
- Outside air required is calculated based on these parameters

# Skyline College Building 1

- Ventilation system reviewed by licensed Mechanical Engineers
  - The system design meets current California Building Codes for ventilation
  - California Building Code is more stringent than ASHRAE
  - Typical air exchange is reported as 6-7 times per hour
- All ventilation system equipment have been verified as functional and supplying 100% outside air
- MERV 13 filters installed
  - Main Air Handling Units
  - At direct locations (in process)
- Operable windows
- Project in process to replace air handling unit and exhaust fans
- Mild climate





# Facilities Engineering and Support Team

As stewards of the physical plant, the District's Facilities team is working diligently to enhance ventilation, airflow, filtration, to all spaces on the three campuses. Our professional team consists of



Chief and Senior Engineers = Journey level mechanical system operation and maintenance



Maintenance Engineers = Building Operator Certified Levels 1 & 2



Facilities Managers = knowledgeable in providing resources for maintaining HVAC systems



Systems Manager = versed in mechanical engineering and HVAC system design and performance



Energy and Sustainability Manager = HVAC system design and performance; energy efficiency



Commissioning Agent = Professional Mechanical Engineer responsible to verify and validate performance of all new or modified HVAC systems



Professional Mechanical Engineers, consultants, contractors, and HVAC technicians.

## *Facilities Excellence*

*Professionalism \* Communication \* Customer Service \* Teamwork*





**TEAMWORK**

"Facilities Excellence"

# *Facilities Excellence*

*Professionalism \* Communication \* Customer Service \* Teamwork*

Questions?