CM-010

ATTORNEY OR PARTY WITHOUT ATTORNEY (Name, State Bar number, and address):
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FOR COURT USE ONLY

SUPERIOR COURT OF CALIFORNIA, COUNTY OF Los Angeles
STREET ADDRESS: 825 Maple Avenue
MAILING ADDRESS:
CITY AND ZIP CODE: Torrance 90503
BRANCH NAME: South West District

CASE NAME:
Save PV Schools LLC v. California Department of Public Health et al

CIVIL CASE COVER SHEET

[✓] **Unlimited** (Amount demanded exceeds $25,000)
[ ] **Limited** (Amount demanded is $25,000 or less)

Complex Case Designation
[ ] Counter [ ] Joinder
Filed with first appearance by defendant (Cal. Rules of Court, rule 3.402)

CASE NUMBER:
JUDGE:
DEPT:

Items 1–6 below must be completed (see instructions on page 2).

1. Check **one** box below for the case type that best describes this case:

Auto Tort
- [ ] Auto (22)
- [ ] Uninsured motorist (46)

Other PI/PD/WD (Personal Injury/Property Damage/Wrongful Death) Tort
- [ ] Asbestos (04)
- [ ] Product liability (24)
- [ ] Medical malpractice (45)
- [ ] Other PI/PD/WD (23)

Non-PI/PD/WD (Other) Tort
- [ ] Business tort/unfair business practice (07)
- [ ] Civil rights (08)
- [ ] Defamation (13)
- [ ] Fraud (16)
- [ ] Intellectual property (19)
- [ ] Professional negligence (25)
- [ ] Other non-PI/PD/WD tort (35)

Employment
- [ ] Wrongful termination (36)
- [ ] Other employment (15)

Contract
- [ ] Breach of contract/warranty (06)
- [ ] Rule 3.740 collections (09)
- [ ] Other collections (09)
- [ ] Insurance coverage (18)
- [ ] Other contract (37)

Real Property
- [ ] Eminent domain/Inverse condemnation (14)
- [ ] Wrongful eviction (33)
- [ ] Other real property (26)

Unlawful Detainer
- [ ] Commercial (31)
- [ ] Residential (32)
- [ ] Drugs (38)

Judicial Review
- [ ] Asset forfeiture (05)
- [ ] Petition re: arbitration award (11)
- [ ] Writ of mandate (02)
- [ ] Other judicial review (39)

Provisionally Complex Civil Litigation (Cal. Rules of Court, rules 3.400–3.403)
- [ ] Antitrust/Trade regulation (03)
- [ ] Construction defect (10)
- [ ] Mass tort (40)
- [ ] Securities litigation (28)
- [ ] Environmental/Toxic tort (30)
- [ ] Insurance coverage claims arising from the above listed provisionally complex case types (41)

Enforcement of Judgment
- [ ] Enforcement of judgment (20)

Miscellaneous Civil Complaint
- [ ] RICO (27)
- [✓] Other complaint *(not specified above)* (42)

Miscellaneous Civil Petition
- [ ] Partnership and corporate governance (21)
- [ ] Other petition *(not specified above)* (43)

2. This case [ ] is [✓] is not complex under rule 3.400 of the California Rules of Court. If the case is complex, mark the factors requiring exceptional judicial management:
   a. [ ] Large number of separately represented parties
   b. [ ] Extensive motion practice raising difficult or novel issues that will be time-consuming to resolve
   c. [ ] Substantial amount of documentary evidence
   d. [ ] Large number of witnesses
   e. [ ] Coordination with related actions pending in one or more courts in other counties, states, or countries, or in a federal court
   f. [ ] Substantial postjudgment judicial supervision
3. Remedies sought *(check all that apply)*: a. [ ] monetary b. [✓] nonmonetary; declaratory or injunctive relief c. [ ] punitive
4. Number of causes of action *(specify)*: 6
5. This case [ ] is [✓] is not a class action suit.
6. If there are any known related cases, file and serve a notice of related case. *(You may use form CM-015.)*

Date: 11/29/2021
Matthew Sean Harrison
(TYPE OR PRINT NAME)

▶ [signature]
(SIGNATURE OF PARTY OR ATTORNEY FOR PARTY)

NOTICE

- Plaintiff must file this cover sheet with the first paper filed in the action or proceeding (except small claims cases or cases filed under the Probate Code, Family Code, or Welfare and Institutions Code). (Cal. Rules of Court, rule 3.220.) Failure to file may result in sanctions.
- File this cover sheet in addition to any cover sheet required by local court rule.
- If this case is complex under rule 3.400 et seq. of the California Rules of Court, you must serve a copy of this cover sheet on all other parties to the action or proceeding.
- Unless this is a collections case under rule 3.740 or a complex case, this cover sheet will be used for statistical purposes only.

Form Adopted for Mandatory Use
Judicial Council of California
CM-010 [Rev. July 1, 2007]

Cal. Rules of Court, rules 2.30, 3.220, 3.400–3.403, 3.740;
Cal. Standards of Judicial Administration, std. 3.10
www.courtinfo.ca.gov

American LegalNet, Inc.

SHORT TITLE: Save PV Schools LLC v. California Department of Public Health et al	CASE NUMBER

	A Civil Case Cover Sheet Category No.	B Type of Action (Check only one)	C Applicable Reasons - See Step 3 Above
Judicial Review	Asset Forfeiture (05)	☐ A6108 Asset Forfeiture Case	2, 3, 6
	Petition re Arbitration (11)	☐ A6115 Petition to Compel/Confirm/Vacate Arbitration	2, 5
	Writ of Mandate (02)	☐ A6151 Writ - Administrative Mandamus ☐ A6152 Writ - Mandamus on Limited Court Case Matter ☐ A6153 Writ - Other Limited Court Case Review	2, 8 2 2
	Other Judicial Review (39)	☐ A6150 Other Writ /Judicial Review	2, 8
Provisionally Complex Litigation	Antitrust/Trade Regulation (03)	☐ A6003 Antitrust/Trade Regulation	1, 2, 8
	Construction Defect (10)	☐ A6007 Construction Defect	1, 2, 3
	Claims Involving Mass Tort (40)	☐ A6006 Claims Involving Mass Tort	1, 2, 8
	Securities Litigation (28)	☐ A6035 Securities Litigation Case	1, 2, 8
	Toxic Tort Environmental (30)	☐ A6036 Toxic Tort/Environmental	1, 2, 3, 8
	Insurance Coverage Claims from Complex Case (41)	☐ A6014 Insurance Coverage/Subrogation (complex case only)	1, 2, 5, 8
Enforcement of Judgment	Enforcement of Judgment (20)	☐ A6141 Sister State Judgment ☐ A6160 Abstract of Judgment ☐ A6107 Confession of Judgment (non-domestic relations) ☐ A6140 Administrative Agency Award (not unpaid taxes) ☐ A6114 Petition/Certificate for Entry of Judgment on Unpaid Tax ☐ A6112 Other Enforcement of Judgment Case	2, 5, 11 2, 6 2, 9 2, 8 2, 8 2, 8, 9
Miscellaneous Civil Complaints	RICO (27)	☐ A6033 Racketeering (RICO) Case	1, 2, 8
	Other Complaints (Not Specified Above) (42)	☐ A6030 Declaratory Relief Only ☐ A6040 Injunctive Relief Only (not domestic/harassment) ☐ A6011 Other Commercial Complaint Case (non-tort/non-complex) ☑ A6000 Other Civil Complaint (non-tort/non-complex)	1, 2, 8 2, 8 1, 2, 8 1, 2, 8
Miscellaneous Civil Petitions	Partnership Corporation Governance (21)	☐ A6113 Partnership and Corporate Governance Case	2, 8
	Other Petitions (Not Specified Above) (43)	☐ A6121 Civil Harassment With Damages ☐ A6123 Workplace Harassment With Damages ☐ A6124 Elder/Dependent Adult Abuse Case With Damages ☐ A6190 Election Contest ☐ A6110 Petition for Change of Name/Change of Gender ☐ A6170 Petition for Relief from Late Claim Law ☐ A6100 Other Civil Petition	2, 3, 9 2, 3, 9 2, 3, 9 2 2, 7 2, 3, 8 2, 9

SHORT TITLE: Save PV Schools LLC v. California Department of Public Health et al	CASE NUMBER

Step 4: Statement of Reason and Address: Check the appropriate boxes for the numbers shown under Column C for the type of action that you have selected. Enter the address which is the basis for the filing location, including zip code. (No address required for class action cases).

REASON:	ADDRESS:
☐ 1. ☑ 2. ☐ 3. ☐ 4. ☐ 5. ☐ 6. ☐ 7. ☑ 8. ☐ 9. ☐ 10. ☐ 11.	375 Via Almar Palos Verdes Estates, CA

CITY:	STATE:	ZIP CODE:
Palos Verdes Estates	CA	90274

Step 5: Certification of Assignment: I certify that this case is properly filed in the Torrance District of the Superior Court of California, County of Los Angeles [Code Civ. Proc., §392 et seq., and Local Rule 2.3(a)(1)(E)].

Dated: 11/29/2021

(SIGNATURE OF ATTORNEY/FILING PARTY)

PLEASE HAVE THE FOLLOWING ITEMS COMPLETED AND READY TO BE FILED IN ORDER TO PROPERLY COMMENCE YOUR NEW COURT CASE:

1. Original Complaint or Petition.
2. If filing a Complaint, a completed Summons form for issuance by the Clerk.
3. Civil Case Cover Sheet, Judicial Council form CM-010.
4. Civil Case Cover Sheet Addendum and Statement of Location form, LACIV 109, LASC Approved 03-04 (Rev. 02/16).
5. Payment in full of the filing fee, unless there is court order for waiver, partial or scheduled payments.
6. A signed order appointing the Guardian ad Litem, Judicial Council form CIV-010, if the plaintiff or petitioner is a minor under 18 years of age will be required by Court in order to issue a summons.
7. Additional copies of documents to be conformed by the Clerk. Copies of the cover sheet and this addendum must be served along with the summons and complaint, or other initiating pleading in the case.

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Attorney for Petitioner Save PV Schools, LLC

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

SAVE PV SCHOOLS, LLC, an organization.

Plaintiff/Petitioner.

vs.

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH; CALIFORNIA DEPARTMENT OF EDUCATION; LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH; ALEX CHERNISS; PALOS VERDES PENINSULA

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Case No.:

)
UNIFIED SCHOOL DISTRICT; DOES 1-20. 17

VERIFIED PETITION FOR WRIT OF MANDATE AND PROHIBITION - PEREMPTORY OR ALTERNATIVE; MEMORANDUM OF POINTS AND AUTHORITIES

Judge:
Dept: Torrance
Action Filed: December 3, 2021 Hearing Date: Not Set

)
)
18
Defendants/Respondents.

)

SUMMARY OF ACTION

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With the concerning emergence of the new Omicron variant, the ongoing impact of the COVID-19 pandemic continues to threaten the lives and livelihoods of Californians and their families. These continuing challenges raise difficult questions and fundamental policy issues for the State relating to how best to balance public health concerns with the need to ensure that

Californians can continue to access necessary public services and resources, including, but not limited to, public education and other essential social infrastructure. While California law vests agency officials with substantial authority to resolve these issues, including the issuance of binding public health regulations, such official orders may only be enforced in a punitive capacity if officials comply with certain legal requirements of statutory compliance and due process, as applicable to the specific circumstances under the state of emergency. In the Administrative Procedure Act (APA), the California Legislature has set forth clear statutory requirements for such orders to be implemented "with the force of law" in the most serious states of public peril, calamity war or emergency. Already, agencies such as the California Division of Occupational Safety and Health (CalOSHA) have used APA rulemaking, on an emergency and permanent basis, establishing ministerial duties regarding the most effective known ways to prevent against COVID-19 in such settings. Namely, proper ventilation controls consistent with CDC guidelines and standards established by the National Institute for Occupational Safety and Health (NIOSH), (8 Cal. Code Regs §§ 3205(c)(2)(F), 5142-5144.) Unfortunately, Respondent agencies and officials have followed none of the required procedures relevant to this proceeding, and as a result their attempted enforcement of the challenged guidance is void as a matter of law.

SAVE PV SCHOOLS, LLC (herein, "Petitioner") and its members have suffered discrete injury and damages proximately caused by Respondents CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, CALIFORNIA DEPARTMENT OF EDUCATION, LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH, and PALOS VERDES PENINSULA UNIFIED SCHOOL DISTRICT and DOES 1-100's failure to comply with these ministerial duties. Despite the Legislature's clear mandates regarding the issuance and enforcement of binding

"guidance" and other orders and regulations, Respondents' blatant and continuing disregard of these requirements and resulting *ultra vires* enforcement have created the necessity of this action. These violations not only deprive Petitioner and its members of due process and other rights to which they are entitled, but ironically put the public health of Petitioners (and all Californians) at greater risk.

By this Petition for Writ of Mandate, Petitioner seeks an order to restore the proper lines of accountability and due process to the pandemic response as enforced in their local school district.

As part of such accountability, Petitioner specifically requests Respondents follow the applicable, law, regulation, guidance and scientific data recommending comprehensive ventilation modifications and other engineering controls, as required and recommended by agencies and experts including (but not limited to) the Centers for Disease Control (CDC), The National Institute for Occupational Safety and Health (NIOSH), the American Industrial Hygiene Association (AIHA), the U.S. Occupational Standards and Health Agency (OSHA), and the state Department of Industrial Relations (CalOSHA), as explained further herein.

JURISDICTION AND VENUE

1. This Court has jurisdiction as a Court of general jurisdiction over this matter since all Defendants reside in California. (Cal. Code of Civ. Proc. § 410.10.) This case is not classified as a limited civil case because the type of relief being sought (declaratory relief) is not available in a limited civil case. (Cal. Code of Civ. Proc. § 580(b)(2), (4); Cal. Code of Civ. Proc. §§ 85, 86.)

2. Venue is proper in the county in which "the cause, or some part of the cause, arose,"

for a suit against a public officer's act. (Cal. Code of Civ. Proc. § 393(b).) A cause arises where the petitioner is injured by the official action of which is being complained.

3. Venue and jurisdiction is proper in the Superior Court of Los Angeles County, as all the events occurred within the County jurisdiction, and Superior Courts have primary jurisdiction for writs of mandate and the other causes action herein alleged.

PARTIES

4. Petitioner SAVE PV SCHOOLS, LLC is a community organization based in Palos Verdes Peninsula, CA, formed by, and wholly comprised of, parents and families of students attending Palos Verdes Peninsula Unified School District during the 2021-2022 school year and who thereby have been directly harmed as a direct and proximate result of Respondents' mandatory enforcement of the challenged guidance in such schools. Petitioner and its members satisfy the requirements of organizational standing sufficient to bring this action.

5. Respondent PALOS VERDES PENINSULA UNIFIED SCHOOL DISTRICT (the "School Board" or the "Board") is a public entity which, acting under color of law, is responsible

for the formulation and implementation of all official governmental laws, policies, regulations and procedures in effect for the Palos Verdes Peninsula Unified School District, including the challenged guidance.

6. Respondent DR. ALEX CHERNISS was at all relevant times the Superintendent of the Palos Verdes Peninsula Unified School District; in that capacity, acting under color of law, he is responsible for the implementation of all official governmental laws, policies, regulations and procedures governing the Palos Verdes Peninsula Unified School District, including the challenged guidance. He is sued in his official capacity.

7. Respondent CALIFORNIA DEPARTMENT OF PUBLIC HEALTH is the state agency responsible for statewide implementation of the challenged public health guidance, including the K-12 guidance, which are intended or allowed to have the same force and effect as regulations, and for the enforcement at issue herein.

8. Respondent CALIFORNIA DEPARTMENT OF EDUCATION is the state agency responsible for education policy and the oversight of the Respondent School Districts, including the official adoption of "nonbinding guidance" regarding program implementation, as well as formal APA regulations.

9. Respondent LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH is the local county agency responsible for the issuance and enforcement of the challenged guidance.

10. Respondent PALOS VERDES PENINSULA UNIFIED SCHOOL DISTRICT is the local educational agency (LEA) responsible for the implementation and enforcement of related school policies, including the challenged guidance herein.

11. Respondents DOES 1-10 are responsible for the acts and omissions alleged, but are presently unknown to Petitioner and therefore are sued in their fictitious official capacities.

FACTUAL ALLEGATIONS

12. In 2003, the Centers for Disease Control (CDC) issued Guidelines for Environmental Control in Health-Care Facilities, which provided a comprehensive formula for airborne contaminant removal. (https://www.cdc.gov/infectioncontrol/guidelines/environmental/index.html)

13. In November 2010, the National Institute for Occupational Safety and Health (NIOSH), a division of the CDC, announced its nationwide "Prevention Through Design" (PtD) initiative. The purpose of the PtD initiative is to "prevent or reduce occupationally related injuries, illnesses, fatalities, and exposures by including prevention considerations in all designs that affect

individuals in the occupational environment." "Fundamental" to PtD is the effort to "accurately assess risk through the application of a hierarchy of controls." (https://www.cdc.gov/niosh/topics/hierarchy/default.html)

14. On March 4, 2020, in response to the novel coronavirus, COVID-19, Governor Newsom declared a state of emergency in California.

15. On September 9, 2020, the American Industrial Hygiene Association (AIHA) issued Version 4 of its "Guidance Reducing the Risk of COVID-19 using Engineering Controls," applying the CDC/NIOSH Hierarchy of Controls to COVID-19. Using the applicable CDC formula for airborne-contaminant removal, the AIHA Guidance found that HVAC systems enabling six (6) or more air changes per hour (ACH) "significantly reduce[d] the spread of infectious airborne diseases" such as COVID-19 a rate (99%+) superior to all other PPE controls, thereby representing the single most effective pandemic control measure known to science, and fully consistent with CDC recommendations and the NIOSH PtD national initiative (Exhibit A).

16. On November 30, 2020, the California Department of Industrial Relations (CalOSHA) published emergency regulations requiring all workplaces "evaluate how to maximize the quantity of outdoor air and whether it is possible to increase filtration efficiency to the highest level compatible with the existing ventilation system." (Available at: https://www.dir.ca.gov/dosh/.archive/title8/3205-Nov.30.2020.html). These emergency regulations supplemented the existing permanent mandates contained in Title 8, Subchapter 7, Group 16, Article 107 (commencing with §5142) of the California Code of Regulations.

17. On March 8, 2021, Respondent Palos Verdes Peninsula USD issued its School Guidance Checklist, on the form established by Respondent CDPH. While the Checklist contains a number of details about COVID-19 response and mitigation plans, it makes no mention of

ventilation protocols, other Engineering Controls, or any applicable issues applying the Hierarchy of Controls to school buildings, or the public health impact thereof. (Exhibit B)

18. On April 6, 2021, Governor Newsom announced that on June 15, 2021, "all sectors" may return to "usual operations in compliance with CalOSHA requirements and with common sense public health policies in place." (Available at: https://www.gov.ca.gov/2021/04/06/governor newsom-outlines-the-states-next-step-in-the-covid-19-pandemic-recovery-moving-beyond-the blueprint/.)

19. On June 17, 2021, CalOSHA issued revised regulations applicable to all workplaces, expanding the required ventilation evaluation to specifically include "whether the use of portable or mounted High Efficiency Particulate Air (HEPA) filtration units, or other air cleaning systems, would reduce the risk of COVID-19 transmission." (Available at: https://www.dir.ca.gov/title8/3205.html)

20. On July 11, 2021, Respondent California Department of Public Health issued COVID-19 Public Health Guidance for K-12 Schools in California" for the 2021-2022 school year. This guidance made no mention of ventilation, or other Engineering Control Hierarchy, but mandated other PPE measures such as masking and social distancing. (herein, "Challenged Guidance."

21. On August 11, 2021, a founding member of Petitioner organization addressed the Palos Verdes Peninsula Unified School Board regarding the injuries the member's minor child suffered, including but not limited, to a bacterial infection, headaches, dizziness, and fatigue, as a direct and proximate result of wearing a mask 6-8 hours per day at school as mandated by Respondents in the challenged guidance. Respondents refused to acknowledge or address these concerns or provide any meaningful accommodation.

22. On August 19, 2021, Respondent PVPUSD, through Respondent Cherniss, issued a 25 mask requirement for all district campuses that required "masking at all times with the exception of 26 eating, drinking or carrying out activities that preclude use of facemasks." (herein, "mask 27 guidance", and with the K-12 Guidance and implemented documentation, "Challenged Guidance")28

1 23. On October 7, 2021, Respondent CDPH issued "Interim Guidance for Ventilation, 2 Filtration, and Air Quality in Indoor Environments", intended to "supplement" the Cal/OSHA ETS 3 by "recommending practical steps building operators can take to promote better ventilation, 4 filtration, and air quality in indoor environments for the purpose of reducing the spread of COVID 5 19." The guidance provides an array of practical tools and references for improving ventilation, 6 including several of the aforementioned resources such as the CalOSHA ETS and the AIHA 7 Guidance. (https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/Interim-Guidance 8 for-Ventilation-Filtration-and-Air-Quality-in-Indoor-Environments.aspx#) 9

24. On October 20, 2021, Respondent CDPH affirmed its prior K-12 guidance and 10 masking requirements. As part of the "revised" guidance thereby issued, Respondent CDPH also 11 recommended indoor "ventilation should be optimized" following the applicable Interim Guidance. 12

25. On November 28, 2021, the CDC and other public health agencies announced the 13 rapid emergence of the new Omicron variant of COVID-19, which contained a uniquely. While the 14 relevant data still is being gathered, it is estimated that these mutations render the Omicron variant 15 more resistant to vaccines, antibodies, and other lower-level controls on the applicable Hierarchy of 16 Controls. However, because Omicron, like all COVID variants, is an airborn pathogen, it remains 17 best controlled with the same ventilation measures, and its dozens of known mutations are equally 18

thwarted by effective ventilation protocols including 6+ ACH and the other requested engineering measures.

26. Based on information and belief, California schools (including, but not limited, to the schools of Palos Verdes Peninsula USD) have failed to comply with the Interim Guidance for Ventilation, the applicable ETS and other CalOSHA regulations, and as a consequence of such failure, there has been no comprehensive evaluation of California school buildings to evaluate potential ventilation control measures, let alone their relative impact on the corresponding necessity for lower-level control measures. This failure to perform required ministerial duties additionally contradicts the applicable Hierarchy of Control principles recommended by CDC guidance and outlined in detail in the AIHA Guidance, and also poses grave harm to Petitioner, its members and all public school students, families, and staff.

27. Because of Respondents' failure to provide the requisite regulatory and legal clarity to enable effective compliance and a science-based pandemic response, the public has no information on how seemingly conflicting "guidance" recommendations should be addressed.

28. Because the challenged Guidance has not been published pursuant to the Administrative Procedure Act (APA), Petitioner has no plain, speedy or adequate remedy at law, such as the traditional APA rulemaking petition under Government Code Sections 11340.6 and 11340.7.

29. By its failure of APA compliance, the challenged guidance constitutes a prohibited "underground regulation" and its enforcement is void as a matter of law.

30. While the Uniform Complaint Procedures (UCPs) allow for filing of complaints related to this issue, it is unclear whether such complaints should be issued at the district or school level, or whether in fact the procedures should properly be issued through emergency rulemaking by

Respondent California Department of Education or other agenc(ies).

FIRST CAUSE OF ACTION – Writ of Prohibition

(Cal. Civ. Proc. Code §§ 1102-1103)

31. Petitioner incorporates by reference as if fully set forth all of the allegations in the preceding paragraphs.

32. This court has the legal authority to issue a Writ of Prohibition to order Respondents to cease the unlawful interpretation and enforcement of the challenged guidance in a mandatory capacity against Petitioner and its members.

33. Based on the applicable law and guidance, including but not limited to the CDC Hierarchy of Controls and the OSHA ETS, Respondents must evaluate the availability of engineering controls, including, but not limited to, temporary ventilation measures to combat the spread of COVID-19 in Respondents' workplaces, namely Palos Verdes Peninsula Unified schools and every classroom and occupied building therein.

34. Under applicable public health guidance, access to outdoor or clean air is the single most significant variable impacting public safety, and has a demonstrated effectiveness exceeding

all other control measures in the applicable Guidance. (AIHA Guidance, *supra*, p. 4.) *See also* American Conference of Government Industrial Hygienists (ACGIH), Industrial Ventilation Committee, "White Paper on Ventilation for Industrial Settings During the COVID-19 Pandemic", August 2020 (Exhibit C)

35. Based on information and belief, Respondents have failed to discharge their threshold ministerial duties regarding the investigation and implementation of ventilation-based protocols and other applicable engineering controls consistent with the PtD Hierarchy of Controls.

36. Because the mask guidance and other challenged orders were not issued in

compliance with the Administrative Procedure Act (APA), their enforcement or attempted enforcement of the challenged guidance is void as a matter of law.

37. Based on the applicable law, including but not limited to the APA, Respondents may not enforce the challenged guidance in a mandatory capacity, but only as a nonbinding "performance standard," and if such guidance allows for modification or alternatives.

38. Respondents have enforced the challenged guidance in a mandatory capacity as a "prescriptive standard" against Petitioner and its members, contrary to law.

39. Based on applicable law, Respondents may not enforce the challenged guidance in a mandatory capacity unless it references the "study or other empirical data" demonstrating the necessity for the binding order "by substantial evidence."

40. Respondents have failed to reference any "study or other empirical data" demonstrating the necessity of enforcing the challenged guidance against Petitioner, let alone demonstrating the necessity "by substantial evidence."

41. Petitioner and its members have no other plain, speedy, or adequate remedy at law.

42. Petitioner and its members have satisfied their burden for a writ of prohibition to arrest the mandatory enforcement of the challenged guidance by Respondents.

SECOND CAUSE OF ACTION – Writ of Mandate

(Cal. Civ. Proc. Code § 1085)

43. Petitioner incorporates by reference as if fully set forth all of the allegations in the preceding paragraphs.

44. Respondents have a clear legal obligation and ministerial duty to comply with the requirements of state law, namely the Administrative Procedure Act (APA), as well as the statutory

and constitutional principles of due process, prior to the pending and threatened enforcement of the challenged guidance against Petitioner and its members.

45. The relevant ministerial duties under the APA, but are not limited to, the requirement to provide due process, to provide the "empirical study or other data" on which the agency relies, and to enforce the rule as a "performance standard" establishing flexible means of compliance, when, as present, such flexible enforcement would achieve the same or better result.

46. Additional relevant ministerial duties imposed on Respondents by regulations issued in compliance with the APA include, but are not limited to, the CalOSHA ETS and related mandates to take "all available measures" to improve ventilation in buildings, which is known to be one of the most effective means of preventing the spread of COVID-19.

47. This court has jurisdiction and the legal authority to issue a writ of mandamus to compel any "person or office" to perform a ministerial duty required by law.

48. To date, as stated in above, Respondents have failed or refused to perform their required ministerial duties as stated above, and thereby have directly caused harm and damages to Petitioner as a proximate result of such failure.

49. Petitioner and its members have a beneficial right to Respondents' performance of such ministerial duties, and have no other plain, speedy, or adequate remedy at law.

THIRD CAUSE OF ACTION – Alternative Writ

(Cal. Civ. Proc. Code §§ 1087, 1104)

50. Petitioner incorporates by reference as if fully set forth all of the allegations in the preceding paragraphs.

51. Petitioner specifically requests a peremptory writ of mandate in the first instance, or as otherwise authorized by the Court.

52. Additionally or in the alternative, Petitioner has satisfied the burden for an alternative writ and order to show cause why Petitioner should not be awarded the requested writ relief.

FOURTH CAUSE OF ACTION - Injunctive Relief

(Cal. Civ. Proc. Code § 526)

53. Petitioner alleges and re-incorporates each and every allegation contained in their Complaint as though fully set forth herein.

54. Petitioner has no plain, speedy, and adequate remedy at law to address the violations of their constitutional and statutory rights under color of law.

55. Given the *prima facie* deficiencies as stated, and indisputable by judicially noticeable facts and applicable law, Petitioner has a substantial likelihood of succeeding on the merits of its claims.

56. Petitioner and its members face irreparable harm as a result of Respondent's refusal to follow the clear procedures codified in the applicable regulations and statutory provisions.

57. An injunction restraining Respondents from enforcing challenged guidance and all related actions against Petitioner and its members in excess of statutory authority will clearly serve the public interest and the interests of justice.

FIFTH CAUSE OF ACTION – Declaratory Judgment

Respondents' Enforcement of the Challenged Guidance Exceeds Statutory Authority

(Cal. Gov. Code § 11350; Civ. Proc. Code § 1060)

58. Petitioner hereby alleges and re-incorporates each and every allegation contained in the Complaint as though fully set forth herein.

59. Respondents lacked the statutory authority to enforce, or threaten to enforce, the challenged guidance in a mandatory capacity against Petitioner and its members.

SIXTH CAUSE OF ACTION – Due Process
(Cal. Const. Art. I, Sect. 7; U.S. Const., Amends. V, XIV)

60. By their failure to perform the ministerial duties required by regulation and law, to which Petitioner and its members have a clear and beneficial right, Respondents have failed to provide due process of law.

61. Furthermore, and for like reasons, the challenged guidance is also void for vagueness as applied.

62. The ambiguity regarding whether "guidance" is "recommended" or "mandatory" is pervasive and has been exploited by the actions and public statements of Respondents.

63. Because of these ambiguities, Petitioner and its members are unable to reasonably determine what conduct is allowed and prohibited. Additionally, Petitioner and its members are unable to identify the proper procedural mechanism, if any exists, to lodge such requests for guidance modification on behalf of themselves.

PRAYER

WHEREFORE, Petitioner prays for judgment against all Respondents as follows:

1. An order staying Respondents' attempted enforcement of the challenged Guidance in a mandatory capacity, and directing Respondents to evaluate the relevant factors including the Hierarchy of Controls, CDPH Interim Ventilation Guidance, and mandatory CalOSHA regulations, in a manner and procedure required by applicable law and regulation, and the ministerial duties thereby imposed;

2. A Declaration and finding that Respondents have exceeded lawful authority in pursuing and continuing enforcement of the challenged Guidance without considering the factors and performing the minimum duties as required, including, but not limited to, applicable ventilation

protection under the Hierarchy of Controls and applicable regulations and law;

3. For issuance of a writ of prohibition directing Respondents to suspend any and all activities pursuant to, or in furtherance of, the enforcement of the challenged Guidance, until Respondents have taken all actions necessary to make the findings, determinations, and/or decision processes as requested by Petitioner and required by applicable regulation and law;

4. For issuance of a writ of mandate directing Respondents to perform the necessary findings, determinations, and/or decision processes as requested by Petitioner and required by applicable regulation and law, including, but not limited to, the establishment of all available ventilation changes and other engineering controls;

5. For issuance of a peremptory or alternative writ of mandate directing Respondents to provide the relief requested by Petitioner and as required by regulation and law;

6. Awarding Petitioner costs and attorneys fees;

7. For such other and further relief as the court may deem just and proper.

Respectfully Submitted,

Dated: December3, 2021 /*s/ Matthew Harrison*

MATTHEW SEAN HARRISON, ESQ.

Attorney for Petitioner
Save PV Schools LLC

VERIFICATION

I am the attorney and authorized agent for the above named Petitioner in this proceeding. The facts alleged in the above petition are true based on facts within my own knowledge.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

DATED: December 3, 2021

MATTHEW SEAN HARRISON

Attorney for Petitioner

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II. ARGUMENT

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A. Due to Failure to Perform Required Duties Under the Administrative Procedure 3 Act (APA), Respondents May Not Enforce the Challenged Guidance in a 4 Mandatory Capacity

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The Administrative Procedure Act (APA), first passed by the California Legislature in 1945

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and as amended, provides that no state agency "shall issue, utilize, enforce, or attempt to enforce" 7 any "guideline", "instruction", or other rule subject to the APA, unless it "has been adopted as a 8 regulation and filed with the Secretary of State pursuant to [the APA]". (Cal. Gov. Code § 9 11340.5(a).) The APA defines such orders very broadly to include "every rule, regulation, order, or

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[other] standard to implement, interpret, or make specific the law [or] govern [agency] procedure."

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(Cal. Gov. Code § 11342.600.) In repeatedly amending the APA multiple times over the decades, 12 our Legislature has found that the "imposition of prescriptive standards upon private persons and 13 entities through regulations where the establishment of performance standards could reasonably be

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expected to produce the same result has placed an unnecessary burden on California citizens and 15 discouraged innovation, research, and development of improved means of achieving desirable

social 16

goals." (Cal. Gov. Code § 11340(d).)

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When issuing rules under the APA, agencies shall "actively seek" to avoid enforcing 18 "prescriptive standards" when "performance standards" would suffice to achieve the same 19 objective. (Cal. Gov. Code § 11340.1.) "Performance standard" means a regulation that describes 20 an objective with the criteria stated for achieving the objective." (Cal. Gov. Code § 11342.570.) 21 "Prescriptive standard" means a regulation that specifies the sole means of compliance with 22 a performance standard by specific actions, measurements, or other quantifiable means." (Cal. Gov.

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Code § 11342.590.) "Each regulation adopted, to be effective, shall be within the scope of authority

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conferred and in accordance with standards prescribed by other provisions of law." (Cal. Gov. Code

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§ 11342.1.) Each regulation must also be "reasonably necessary to effectuate the purpose of the 26 statute." (Cal. Gov. Code § 11342.2.)

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The APA establishes "streamlined" requirements for "emergency regulations," issued during

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a "situation that calls for immediate action to avoid serious harm to the public peace, health, safety,

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or general welfare." (Stats 1957, Ch. 1919; *County of San Diego* v. *Bowen*, 166 Cal.App.4th at 518;

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Gov. Code § 11342.545.) Emergency regulations must be filed with a public "statement of 3 emergency justification" demonstrating, by substantial evidence, the "need for the regulation [to] 4 address only the demonstrated emergency" and identifying "each technical [or] empirical study [or]

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report [upon which] the agency relies." (Gov. Code § 11346.1(b)(2).)

6

The APA establishes the "minimum procedural requirements" for the "exercise of 7 [regulatory] power conferred by any statute heretofore or hereafter enacted." (Gov. Code 8 §§11371(b); *Armistead v. State Personnel Board* (1978), 22 Cal. 3d 198.) "Any regulation not 9 properly adopted under the APA is considered invalid." (*Reilly v. Superior Court* (2013) 57 Cal.4th

641, 649.). Courts will only uphold APA-exempt rulemaking if the process provide "public protection and participation substantially equivalent" to the APA. (*Voss v. Superior Court* (1996), 46 Cal.App.4th 900, 915.) Examples include "disclosure of pertinent information" by agencies relating to the rulemaking process, such as the studies and data required by the APA. (*Ibid* at 916.)

The Education Code directs Respondent Board of Education to "adopt rules and regulations not inconsistent with the laws of this state." (Ed. Code § 33031.) It is uncontested that the challenged K-12 Guidance, Guidance on Face Coverings, and other orders of Respondents were not issued as APA-compliant "regulations", whether on an emergency basis or otherwise.

Here, the lack of such procedures (or equivalent) has proximately caused the deprivations as alleged. If Respondents simply had issued the "guidance" with the requisite clarity regarding its nonbinding nature (and availability of performance standard-based alternative compliance), with the due reference to the empirical studies and data on which it relied, Petitioner and members would have been able to obtain their requested relief prior to the start of the school year, making this action unnecessary. (*Cf.*, *e.g.* Gov. Code §§ 11340, 11346.1(b)(2)).

In order to obtain a writ of mandate, a petitioner must plead and prove (1) a clear, present and usually ministerial duty upon the part of the respondent and (2) a clear, present and beneficial right of the petitioner to a performance of that duty. (*California Corrections Supervisors Org., Inc. v. Department of Corrections* (2002) 96 Cal.App.4th 824, 825.) "[I]t is not by the office of the person to whom the writ is directed, but the nature of the thing to be done, that the propriety or

impropriety of issuing a writ of [mandate] is determined." (*Harpending v. Haight* (1870) 39 Cal. 2

189, 210, quoting *Marbury v. Madison* (1803), 5 U.S. 137.)

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1. The Challenged Guidance is Non-Mandatory and Cannot be Enforced Against 5

Petitioner and its Members

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It is well-settled in administrative law that while the "issuance" of agency guidance can be 7 APA-exempt, no guidance may be "enforced" in a binding capacity. (R. A. Anthony, "Interpretive 8 Rules, Policy Statements, Guidances, Manuals, and the Like— Should Federal Agencies Use Them

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to Bind the Public?", 41 *Duke L.J.* 1311, 1312, (1992) ("the answer...is no"); R. Levin, "Rulemaking

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and the Guidance Exemption," 70 *Admin. L. Rev* 263 (2017) (guidance lacks force of law but 11 misuse is "continu[ing] challenge...requiring judicial attention"); California Law Revision 12 Commission, "Advisory Interpretations", 28 *Cal. L. Revision Comm'n Reports* 657, 669 (1998). 13 (guidance has "no legal effect", "cannot prescribe a penalty [or] obligation" and cannot "in any way

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bind or compel").)

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The *Oxford English Dictionary* defines "guidance" as "advice or information aimed at 16 resolving a problem or difficulty...the directing of the motion or position of something." 17 "Guidance" and related words, used throughout applicable statutes and the California Code of 18 Regulations, invariably designate a lesser standard of enforceability. (See, e.g., Cal. Code Regs. tit.

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5 § 611 (California Department of Education "may issue [an] advisory providing non-binding 20 guidance [if includes disclaimer that] compliance with the guideline is not mandatory."); Ed. Code

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§ 33308.5 (guidelines issued by Department "shall not be prescriptive" and, if formally adopted, 22 "shall include written notification [that] compliance with the guidelines is not mandatory").) 23

"If an agency acts as if [a guidance document] [is] controlling in the field...[or] if it bases 24 enforcement actions on the document, if it leads private parties or State permitting authorities to 25 believe that it will declare permits invalid unless they comply with the terms of the document, then

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[the guidance] is for all practical purposes 'binding'." (*Appalachian Power Co. v. E.P.A* (2000), 27 208 F.3d 1015, 1021.)

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1 Our Supreme Court has identified "two distinguishing characteristics" of regulations subject

2 to the APA, *viz*. (1) they are "intended to apply generally"; and (2) function to 'implement, 3 interpret, or make specific the law enforced or administered by [the agency]." (*Tidewater Marine* 4 *Western, Inc. v. Bradshaw*, 14 Cal.4th 557. 571; *Missionary Guadalupanas of Holy Spirit Inc. v.* 5 *Rouillard* (2019) 38 Cal.App.5th 421, 432.) "Guidance" is subject to the APA if its "applied 6 practical effect" satisfies both prongs of the *Tidewater* standard. (*Vasquez v. Dep't of Pesticide* 7 *Regulation* (2021), A154922 at *15, 22.)

8 A rule is subject to the rulemaking procedures of the APA whenever the interpretation "is 9 required to resolve an ambiguity in the law to be enforced." (*Capen v. Shewry*, 155 Cal.App.4th at

10 387.) "An ambiguity arises when language is reasonably susceptible of more than one application to

11 material facts [or if] no one reading of consequence to the action is 'patently compelled ....' 12 (*Morning Star Co.*, 38 Cal.4th at 336-337; *See also* Cal. Gov. Code §§ 11415.20, 11425.10 ("[APA]

13 will prevail [over] conflicting or inconsistent provision[s]...").) Otherwise, courts "invade the 14 province of the Legislature by redefining the elements" of statutory provisions. (*In re James M* 15 (1973), 9 Cal.3d 517, 522.)

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17 **2. Applicable Regulations and Science-Based Guidance, Including But Not Limited to**

18 **the AIHA Guidance, Interim Ventilation Guidance and Other CDC Guidelines and** 19 **Methodology, Require Complete Investigation of Available Ventilation Controls and** 20 **Engineering Protocols, Prior to Enforcement of the Challenged Guidance**

21 The emergency regulations adopted by CalOSHA in November 2020, and revised on June

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17 2021, clearly establish a ministerial duty for Respondents to investigate ventilation 23 improvements and other engineering protocols prior to any enforcement of other non-binding (and

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less applicable) public health recommendations, including the mask guidance. "For indoor 25 locations, [all employers] shall evaluate how to maximize ventilation with outdoor air [to achieve]

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the highest level of filtration efficiency compatible with the existing ventilation system [and 27 specifically] whether the use of portable or mounted High Efficiency Particulate Air (HEPA) 28 filtration units, or other air cleaning systems, would reduce the risk of COVID-19 transmission." (8

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Cal. Code Regs §3205(c)(2)(E).) More importantly, applicable permanent regulations by 2 CalOSHA are equally (and additionally) applicable to Respondents. (8 Cal. Code Regs §5144 3 (respiratory protection against airborne pathogens "shall be accomplished as far as feasible by 4 accepted engineering control measures [such as] general and local ventilation", and defining 5 applicable protection factors of various measures); *See also* 8 Cal. Code Regs §5142-5143.) 6

Additionally, all employers "shall review applicable orders and guidance including [CDPH]

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guidance for Ventilation, Filtration, and Air Quality in Indoor Environments [as well as] 8 information specific to the employer's industry, location, and operations." (8 Cal. Code Regs 9 3205(c)(2)(F), 5142-5144; ASHRAE Standard 62.1-2019 (Available at:

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https://ashrae.iwrapper.com/ASHRAE_PREVIEW_ONLY_STANDARDS/STD_62.1_2019).)

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Importantly, these generally applicable regulations regarding building ventilation control measures

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likewise provide ample legal authority – and ministerial duties – for Respondents to implement the

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requested control measures.

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Applying the formula published by the Centers for Disease Control (CDC) in 2003, the 15

American Industrial Hygiene Association (AIHA) found that indoor ventilation systems which 16 achieve an effective air circulation rate per hour (ACH) of at least six (6) ACH (meaning the air is

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fully circulated at least six times per hour), "significantly reduce[d] the spread of infectious airborne

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diseases" at a rate superior to all other known comparative prevention methods, including (but not

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limited to) masks and N-95 ventilators. (Available at: https://aiha 20

assets.sfo2.digitaloceanspaces.com/AIHA/resources/Guidance-Documents/Reducing-the-Risk-of

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COVID-19-using-Engineering-Controls-Guidance-Document.pdf). Most encouragingly and 22 relevant for the instant action (and the pandemic response generally), the AIHA noted that many (if

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not most) building systems can be achieve such controls through existing available HVAC 24 technologies. *Ibid*. ("Standalone high efficiency particulate arrestance (HEPA) air filtering devices

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(AFDs) can be used to supplement outdoor air ventilation supplied through HVAC systems in order

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to achieve equivalent air ex- change rates (AERs) capable of significantly reducing infectious 27 aerosol concentrations in workplaces and offices.") (*See also* CDC Guidelines for Environmental 28 Control, Appendix Table B-1, Available at:

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https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html#tableb1)

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Under the applicable Hierarchy of Controls, and binding regulations applicable to 3 Respondents, these Engineering Control approaches are plainly superior to, and should be pursued 4 prior to, lower-level controls with reduced effectiveness, such as PPE. (Available at: 5 https://www.cdc.gov/niosh/topics/hierarchy/) (*See also* 8 Cal. Code Regs §5144.) In 2010, the 6 National Institute for Occupational Safety and Health (NIOSH), a division of the CDC, announced 7 its nationwide "Prevention Through Design" initiative. NIOSH, whose statutory mandate is to 8 ensure "every man and woman in the Nation safe and healthful working conditions and to preserve

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our human resources," to new knowledge in the field of occupational safety and health, and to 10 transfer that knowledge into practice. (Available at: 11 https://www.cdc.gov/niosh/topics/ptd/default.html)

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It is important that these recommendations are consistent with nearly every relevant 13 "guidance" standard, including (but not limited to) binding APA-compliant regulations, not to 14 mention the comprehensive national standard implemented by NIOSH and CDC. Respondents had

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a clear ministerial duty (arguably, *multiple* ministerial duties) to investigate these protections in 16 order to protect Petitioner, its members and the general public. (8 Cal. Code Regs §§ 3205(c)(2)(F),

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5142-5144.) In its risk classifications for workplaces under COVID-19, Federal OSHA specifically

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lists **outdoor vs. indoor** workplace environments as one of the primary factors distinguishing 19 moderate (outdoor) from high (indoor) workplace risks for COVID. 20 (https://www.osha.gov/coronavirus/hazards#risk_classification) Similarly, the applicable Public 21 Health Guidance for Los Angeles County schools similarly notes that outdoor air is generally 22 sufficient to remove the mask requirements.

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Moreover, the state of California was given $22,199,325,901 ($22.2 billion) pursuant to the

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American Rescue Plan ("ARP") Act of 2021 by agreeing to implement the federal guidelines set

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forth by the CDC for COVID-19 mitigation efforts. Thus, Petitioner has satisfied their burden for

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writ of mandate to issue, ordering Respondents to perform the required investigation, including, but 27

not limited to, the applicable ACH capacity of existing buildings, under existing HVAC operations28

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in maximum capacity or as supplemented with HEPA filters and other control measures, and how

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such results compare to existing benchmarks for safe indoor and outdoor air quality.

When required disclosures demonstrate "absence of evidence," as here, the rule is void, because courts will not find that APA requirements simply "equat[e] with hypothetical estimates and projections". (*W. States Petroleum Ass'n v. State Bd. of Equal.* (2012), 137 Cal. Rptr. 3d 272, 292; *W. States Petroleum Ass'n v. Bd. of Equalization* (2013) 57 Cal.4th 40 (*affirming judgment*).) "[An] agency must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made." (*Motor Vehicle Manufacturers Assoc. of the United States, Inc. v. State Farm Mutual Auto. Ins. Co*., 463 U.S. 29, 43 (1983), quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962).) "Normally, an agency rule [is] arbitrary and capricious if [an] agency," as Respondents have, "entirely failed to consider an important aspect of the [issue before it, or] offered an explanation for its decision that runs counter to the evidence." (*Motor Vehicle Manufacturers Assoc. of the United States, Inc. v. State Farm Mutual Auto. Ins. Co*., 463 U.S. 29, 43 (1983). *Cf*. Gov. Code § 11346.1(b)(2). (requiring all emergency regulations reference "each technical [or] empirical study [or] report [upon which] the agency relies", and demonstrate necessity for regulation "by substantial evidence").)

3. While Several Existing Procedures Could Theoretically Apply to Petitioner's Members' Circumstances, the Unique Circumstances, Including Respondents' Continued Failure to Perform Required Duties Makes Such Existing Remedies Inadequate, Requiring Writ Relief

Because it is unclear whether the applicable "employer" or other responsible party for the implementation of the mandatory ventilation measures is Respondent Department of Education, or another agency (or official(s)) presently unknown to Petitioner, the blurred lines of agency

accountability demonstrate why the writ of mandamus is necessary as a matter of law. Aside from

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the deficiencies in the above-mentioned forms, and the required procedures and ministerial duties

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reflected therein, the basic architecture of governmental accountability has been obfuscated by

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Respondents' actions. (*Cf.* 8 Cal. Code Regs §5144 (requiring efforts to prevent airborne diseases 2 "shall be accomplished as far as feasible by accepted engineering control measures" such as 3 "general and local ventilation").)

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Further vexing ambiguities arise with respect with potential administrative remedies 5 putatively available to Petitioner and its members. Namely, the Legislature has established "a 6 system of complaint processing, known as the Uniform Complaint Procedures." (Ed. Code § 7 33315(a).) With a broad scope, including particular complaints relating to the "conditions of school

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facilities," the Uniform Complaint Procedures (UCPs) on first blush might appear to ostensibly 9 encompass some of Petitioner's requests. However, the UCP procedures provide the option of 10 providing complaints to both the local school principal and the governing superintendent, and it is

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unclear that either method, on its own, or even both, would suffice to achieve the requested relief.

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Additionally, the Legislature has established a number of statutory limits on all school 13 officials that would likewise be applicable to some degree, providing important statutory guardrails

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in support of Petitioner's request, and thus necessitating this writ of mandate. "Restraint and 15 seclusion should only be used as a safety measure of last resort, and should never be used as 16 punishment or discipline or for staff convenience." (Ed. Code § 49005(c).) Additional provisions 17 prohibit schools' use of "behavioral restraint technique that restricts breathing" (Ed. Code § 18 49005.8.). "All pupils have the right to participate fully in the educational process." (Ed. Code § 19 201 (a).). To secure this right for all pupils, "California's public schools have an affirmative 20 obligation [to] provide equal educational opportunity." (Ed. Code § 201(b).)

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In the end, it remains plainly unclear (a problem exacerbated by Respondents' continuing flagrant disregard for APA standards) who the responsible agenc(ies) or official(s) are for the deprivation at issue, let alone any remedy or relief. When a problem of this magnitude exists, and even when a cause of action is not specifically authorized by statute, a writ of mandate will issue to restrain the *ultra vires* conduct of an "administrative department of the government" whether by its "head [or] subordinate officials." (*School of Magnetic Healing v. McAnnulty* (1902), 187 U.S. 94, 108.)

C. By Exploiting the Ambiguity Between Binding "Orders" and Non-binding "Guidance", Respondents' Actions Against Violated Due Process

A basic requirement of due process is "explicit standards for [officials] who apply [the law]" to prevent "arbitrary enforcement." (*People ex Rel. Gallo v. Acuna* (1997), 14 Cal.4th 1090, 1140.) By allowing "guidance" to be enforced as binding law, throughout the state and its school districts, Respondents "impermissibly delegate[s] basic policy matters to policemen, judges, and juries for resolution on an ad hoc and subjective basis, [risking] arbitrary and discriminatory application," in violation of due process. (*Ibid.*) "No one may be required at peril of life, liberty or property to speculate as to the meaning of [the law]... [a]ll are entitled to be informed as to what the State commands or forbids." (*Ibid.* at 1115.) Sufficient clarity under due process requires "(1) a standard of conduct for those whose activities are proscribed and (2) a standard for [punitive] enforcement and [the] ascertainment of guilt." (*Burg v. Municipal Court* (1983) 35 Cal.3d 257, 269.) The U.S. Supreme Court has held that a government define an offense with "sufficient definiteness that 'ordinary people can understand what conduct is prohibited' and "in a manner that does not

encourage arbitrary and discriminatory enforcement." (*Kolender v. Lawson* (1983) 461 U.S. 352.)

By perpetuating the ongoing ambiguity whereby "guidance" is interpreted as mandatory, by intentionally reaping the compliance benefits from such overreach (and chilling of otherwise permissible conduct, while inhibiting necessary pandemic control measures) and furthermore by failing to specifically clarify the manner and extent to which it is actually nonbinding and available for flexible modification, Respondents have facilitated, perpetuated, allowed and carried out an ongoing due process violation against Petitioner and its members.

D. By Failing to Provide Due Process or Allowing Performance Standards, Respondents' Attempted Enforcement of the Challenged Guidance Is Void as a Matter of Law

Because the APA enforces the "basic procedural requirements" for agency rulemaking, denial of its protections constitutes a *per se* violation of due process as a matter of law. (Cal. Const. Art. I, Sect. 7; U.S. Const., Amends. V, XIV; Cal. Gov. Code § 11445.10 (APA "procedure[s] are

intended to satisfy due process"); *Halverson v. Skagit County* (1994), 42 F.3d 1257, 1261 (due process satisfied "when [agency] officials discharg[e] [statutory] responsibilities [as] prescribed by law"), quoting *Sierra Lake Reserve v. City of Rocklin* (1991), 938 F.2d 951, 957.)

"The fundamental requisite of due process of law is the opportunity to be heard." (*Grannis* v. *Ordean*, 234 U.S. 385, 394 (1914).) "It is an opportunity which must be granted at a meaningful time and in a meaningful manner." (*Armstrong v. Manzo*, 380 U.S. 545, 552 (1965).) Due process requires procedures "be tailored, in light of the decision to be made, to the capacities and circumstances of those who are to be heard, to insure that they are given a

meaningful opportunity to present their case." (*Mathews v. Eldridge*, 424 U.S. 319, 348-49 (1976), quoting *Goldberg v. Kelly*, 397 U.S. 254 (1970), at 268-269 (footnote omitted).) "Only that would have restored the petitioner to the position [they] would have occupied had due process of law been accorded to [them] in the first place" (*Armstrong v. Manzo*, 380 U.S. 545, 552 (1965).)

"[Our] Legislature wisely perceived that the party subject to regulation is often in the best position, and has the greatest incentive, to inform [an] agency about possible unintended consequences of a proposed regulation [by] direct[ing] the attention of agency [officials] to [those] they serve, thus providing some security against bureaucratic tyranny. (*Tidewater Marine Western, Inc. v. Bradshaw*, 14 Cal.4th 557, 569 (1996), quoting *San Diego Nursery Co*. v. *Agricultural Labor Relations Bd*. (1979) 100 Cal.App.3d 128, 142-143.)

"The requirement of due process is not a fair-weather or timid assurance [but] must be respected in periods of calm and in times of trouble." *(Joint Anti-Fascist Committee v. McGrath* (1951), 341 U.S. 123, 162.) Due process principles "should be particularly heeded at times of agitation and anxiety, when fear and suspicion impregnate the air we breathe." (*Ibid* at 170-71.)

II. CONCLUSION

Respondents have failed to perform so many different required ministerial duties and mandatory functions that this Honorable Court ultimately has its pick among several legal, regulatory and other bases for its decision. However, all these roads ultimately lead to the same substantive place – granting Petitioner's writ and request for relief.

Respectfully Submitted,

Dated: November 23, 2021 /*s/ Matthew Harrison* MATTHEW SEAN HARRISON, ESQ.

Attorney for Petitioner

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PROOF OF SERVICE

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[CCP 1013A (3) and 2015.5]

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I, the undersigned, am employed in the county of Orange, State of California. I am over the age of 18 and not a party to the within action; my business address is 65 Enterprise, Suite 300, Aliso Viejo,

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California, 92656.

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On November 24, 2021, I caused to be served the following document(s) described as follows:

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PETITIONER'S VERIFIED WRIT OF MANDATE

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on the parties in this action by placing a true copy in a sealed envelope addressed as follows:

11

SEE ATTACHED SERVICE LIST

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PERSONAL SERVICE - I served the documents by placing them in an envelope or package addressed to the persons at the addresses listed below, and providing them to a 14 professional messenger service for service. (A confirmation by the messenger will be provided to our office after the documents have been delivered.)

15

BY MAIL - As follows: I am "readily familiar" with the firm's practice of collection and processing correspondence for mailing. Under that practice it would be deposited with the

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U.S. Postal Service on that same day with postage thereon fully prepaid at Aliso Viejo,

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California in the ordinary course of business. The envelope was sealed and placed for collection and mailing on this date following our ordinary practices. I am aware that on 18 motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

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BY FAX - As follows: I personally sent to the addressee's telecopier number a true copy of the above-described documents. Thereafter I sent a true copy in a sealed envelope addressed

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and mailed as indicated below.

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OVERNIGHT MAIL - As follows: I am "readily familiar" with the firm's practice of processing correspondence for mailing overnight via Federal Express. Under that practice it 22 would be deposited in a Federal Express drop box, indicating overnight delivery, with delivery fees provided for, on that same day, at Aliso Viejo, California.

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BY E-MAIL OR ELECTRONIC TRANSMISSION - I caused the documents to be sent 24 to the persons at the e-mail addresses listed below as agreed upon with counsel to constitute personal service.

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Executed on November 24, 2021, at Aliso Viejo, California. I declare under penalty of perjury

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under the laws of the State of California, that the above is true and correct.

Matt Harrison

Save PV Schools, LLC vs. *California Department of Public Health, et al.*

Los Angeles County Superior Court Case No.

PROOF OF SERVICE
[CCP 1013A (3) and 2015.5]

SERVICE LIST

Attorneys for Respondent California Department of Public Health, California Department of Education	**Attorneys for Respondent Los Angeles County Public Health Department, Palos Verdes Peninsula Unified School District**
Attorney for Petitioner Save PV Schools, LLC Matthew Harrison Prometheus Civic Law, P.C. 65 Enterprise, Suite 300 Aliso Viejo CA 92656	

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EXHIBIT A

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Reducing the Risk of COVID-19 using Engineering Controls

Sponsored by the AIHA® Indoor Environmental Quality Committee

Early case reports and epidemiological studies of groups where SARS-CoV-2 has led to outbreaks of COVID-19 indicates that the primary means of disease transmis sion is the indoor spread of exhaled droplet aerosols. Armed with this knowledge, industrial hygiene pro fessionals may limit SARS-CoV-2 transmission using the hierarchy of controls. Engineering controls that can keep infectious aerosols at very low levels indoors offer the greatest promise to protect non-healthcare work ers and other vulnerable populations as we reopen our businesses and workplaces.

Relying upon individuals to maintain social distanc ing, perform perpetual hand washing, and, when available, wear the lowest form of personal protec tive equipment (PPE) on the market can only achieve so much in preventing the spread of COVID-19. And because infected people transmitting the disease can be asymptomatic or presymptomatic, it is im practical to “eliminate” all sources of infection. With this in mind, the industrial hygiene profession has long recognized that engineered solutions to reduce exposure to hazardous agents offer much great er protection than PPE or administrative controls in most workplace settings. (NIOSH) (See Figure 1)

Many employers and the public incorrectly assume that wearing face coverings or a respirator is the only way to reduce their risk of exposure. Invariably this is not the case—the reality is that wearing a res pirator properly every day, all day, is uncomfortable and rarely done properly. Engineering controls have historically proven to be more reliable because they are less prone to human error.

Most Effective Least Effective

Elimination
Social Isolation

Substitution
Not applicable

Engineering Controls Ventilation, physical barriers

Administration Controls Work from home, stagger schedules, hand hygiene

PPE
Goggles,
respirators,
gloves
Adapted from NIOSH

Figure 1: Applying the Hierarchy of Controls for COVID-19.

Reducing the Risk of COVID-19 using Engineering Controls

Accordingly, while federal and state OSHA plans require employers to ensure workers can use a se lected respirator, OSHA also requires employers to consider feasible engineering and administrative

options before resorting to their use or that of other PPE. Employers should select off-the-shelf, reliable, and effective engineering controls to reduce the risk of workplace disease spread.

The cost of PPE is also higher than most employers realize. Because OSHA requires medical evaluation, fit testing, and training, respiratory PPE is not a rec ommended long-term solution to prevent disease transmission outside of healthcare settings. Respi ratory PPE is best used for short-term protection un til engineering controls can be implemented. Costs to implement engineered solutions in a workplace can vary, depending upon the size of the facility and number of occupants, including employees and transient customers. Once engineering controls are installed, concerns of shortages and supply interrup tions that have plagued PPE supplies are not likely to be an issue.

The American Industrial Hygiene Association (AIHA) and its volunteer committees of industrial hygienists recommend the use of engineering controls in all in door workplaces, even those outside of the health care industry, to reduce the spread of COVID-19. The broad category of engineering controls that may be effective against the SARS-CoV-2 virus includes the following:

- Physical barriers, enclosures, and guards
- Automatic door openers and sensors
- Local exhaust ventilation
- Enhanced filtration to capture infectious aerosols
- Devices that inactivate or "kill" infectious organisms
- Dilution ventilation and increasing outside air delivery

Dilution Ventilation and COVID-19

Exemplifying one kind of engineered control, ASHRAE, a professional association of engineers, has issued position statements maintaining that changes to building and HVAC operation can reduce the airborne concentration of SARS-CoV-2 and the risk of it spreading through indoor air.

Increasing the number of effective air changes per hour—essentially, increasing the amount of "clean" or outdoor air delivered to the room—lowers the oc cupant's level of exposure to airborne viruses and therefore his or her relative risk of contracting the disease. Diluting indoor airborne virus concentra tions can lower the risk of contracting the disease for the same reason that outdoor environments pose less risk of disease transmission.

This suggests that the risk of contracting COVID-19 can be significantly reduced by increasing indoor dilution ventilation rates and improving room air mixing—a principle recommended by the CDC and healthcare licensing bodies for hospitals and infec tious disease wards. Indoor environments pose a much greater risk of exposure and spread of dis ease than outdoor environments. Outdoor environ ments offer "infinite dilution" of infectious aerosols, which strongly suggests that the risk of contracting COVID-19 can be significantly reduced by increas ing dilution ventilation rates and improving room air mixing. To reduce the risk of disease transmission, maintain aerosol concentrations at very low levels, keep occupancy density low, and maintain physical distance. Accordingly, fundamental principles and equipment to capture and dilute aerosols can be ap plied to non-industrial workplaces to achieve more effective and reliable control of SARS-CoV-2 than face coverings and social distancing.

Effectively increasing the number of air changes in a room or building can be achieved by one or more of the following approaches. Using stand

Reducing the Risk of COVID-19 using Engineering Controls

alone "off-the-shelf" HEPA filtered air cleaners , installing enhanced filtration in central HVAC sys tems, and increasing the volume of outside air in troduction are practical and immediate measures that can be implemented by building operators and employers.

Properly selected and installed, standalone sin gle-space HEPA filtration units that are ceiling mounted or portable can effectively reduce infec tious aerosol concentrations in a single space room or zone, such as a classroom, elevator, lobby, or of fice area. While in-room filtering units cannot elimi

Choosing and Implementing

Engineered Controls

Compared to solutions relying mostly or exclusively on PPE, engineered solutions removes the onus from individuals and their personal habits or attentive ness. Machines do not get tired, sloppy, or distracted.

However, when selecting engineering controls, such as increasing the number of air changes per hour (ACH), the minimum level of protection offered by the new control should exceed the protection offered by PPE alone. In Figure 2, the expected relative risk

nate all risk of disease transmission because many factors besides virus aerosol concentration contrib

reduction offered by an N95 respirator is 90 percent, therefore only engineering controls that offer great

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are no better than commercially available respiratory protection.

infectious dose. (ASHRAE Position Statement on In fectious Aerosols, 2020)

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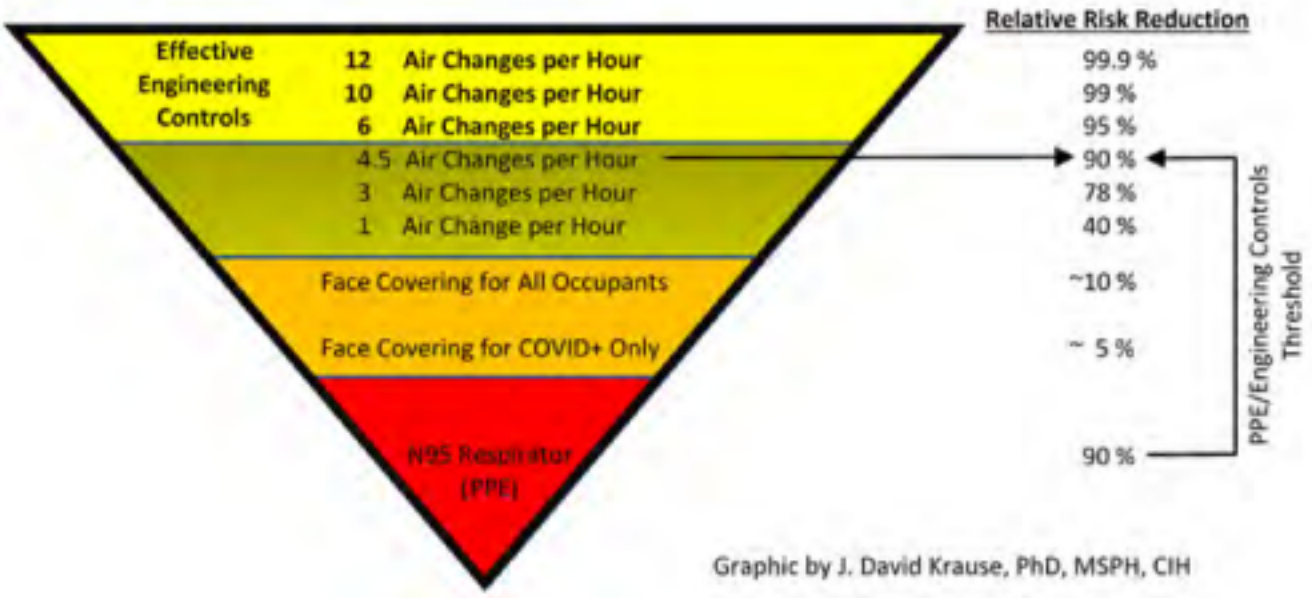
Figure 2



In hospitals and other indoor environments where infectious people are likely present, delivering between

Figure 2*

6 and 12 air changes per hour of outside or clean air significantly reducesthe spread of infectious airborne diseases. (See Figure 3) In non-healthcare facilities where occupant density cannot be li~~mited to fewer~~

**To learn how the relative risk reduction estimates were derived for Figure 2, download the SUPPLEMENT for Reducing the Risk of COVID-19 using Engineering Controls.*

than 1 person per 115 ft^2(i.e. 6-foot radius), or there is likelihood that infected persons are present, delivering higher air change rates than 6 ACH may be necessary.

Figure 3

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therefore only engineering controls that offer greater than 90 percent relative risk reduction should be

considered. In this instance, engineering controls that offer fewer than 4.5 effective air changes per hour are no better than commercially available respiratory protection.

Figure 2

In hospitals and other indoor environments where in fectious people are likely present, delivering between 6 and 12 air changes per hour of outside or clean air significantly reduces the spread of infectious air borne diseases. (See Figure 3) In non-healthcare fa cilities where occupant density cannot be limited to fewer than 1 person per ~30 ft^2 (i.e. 6-foot radius), or there is likelihood that infected persons are present, delivering higher air change rates than 6 ACH may be necessary.

Additional factors must be considered for site-spe cific engineering controls, such as in-room air mixing, the number of occupants per square foot of office space, and the air flow dynamics already in place. A knowledgeable mechanical engineer and industrial hygienist familiar with ventilation controls and infec tion prevention should be consulted when selecting, installing, and evaluating engineering controls for a workplace.

In most office buildings and small retail settings, us ing a computational fluid dynamics (CFD) model is not necessary to achieve intended effects. However, in complex buildings with existing mechanical and exhaust systems, CFD modeling may be needed to design and implement a robust and reliable system.

Standalone high efficiency particulate arrestance (HEPA) air filtering devices (AFDs) can be used to supplement outdoor air ventilation supplied through HVAC systems in order to achieve equivalent air ex change rates (AERs) capable of significantly reduc ing infectious aerosol concentrations in workplaces and offices. The CDC's *Guidelines for Environmental Infection Control in Health-Care Facilities*, published in 2003 recommends using recirculation HEPA filters to "increase the equivalent room air exchanges." The guidelines further suggest that "recirculating devices with HEPA filters may have potential uses in exist ing facilities as interim, supplemental environmen

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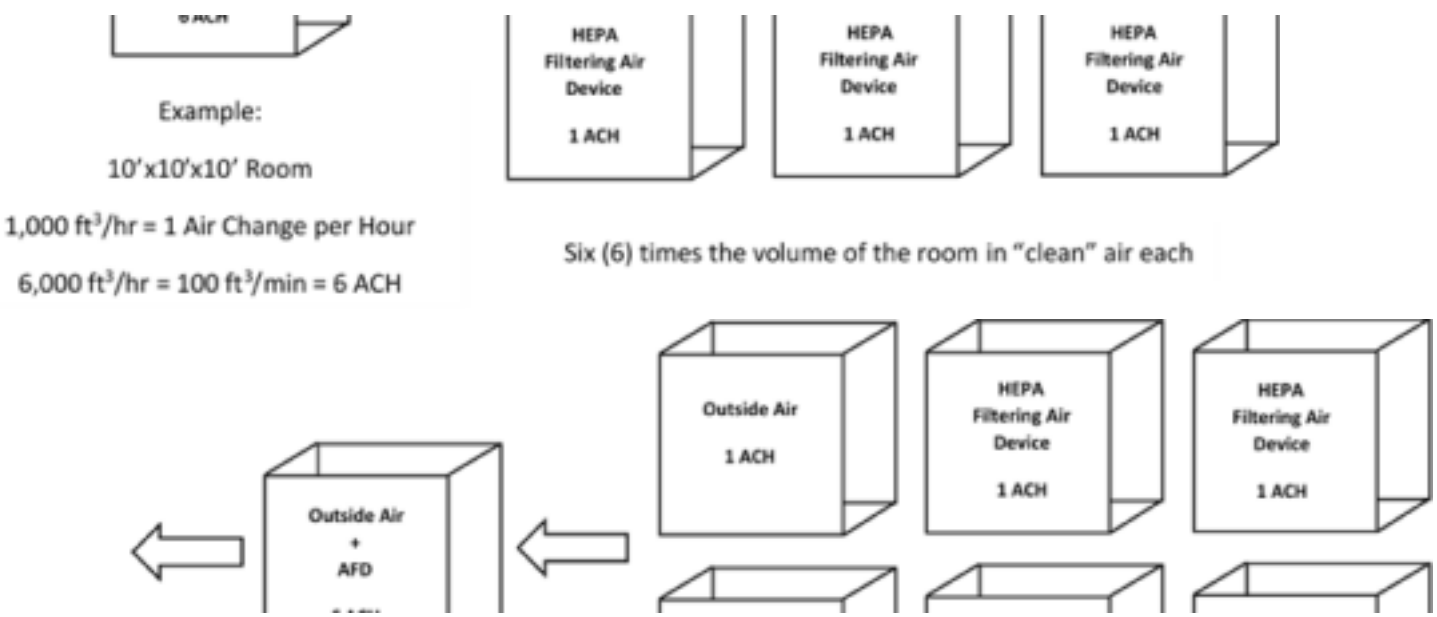


Figure 3

Reducing the Risk of COVID-19 using Engineering Controls

tal controls to meet requirements for the control of airborne infectious agents.” (https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html#tableb1)

But HEPA rated filters are not necessary to achieve meaningful reductions in airborne concentrations. Enhanced filtration using filters with MERV (min imum efficiency reporting value) ratings between 13 and 15 can also be used, but higher flow rates may be necessary to achieve similar effects. Install ing improved filtration (MERV 13 or higher) in central HVAC systems can serve to supplement air change rates by further reducing infectious aerosol concen trations in recirculated air. Increasing filtration of an HVAC system should be evaluated by a mechanical engineer to ensure the fan can handle the increased pressure load and that air does not bypass the fil ters. Increased maintenance and filter changes will likely be needed.

While ultraviolet germicidal irradiation (UVGI) and other technologies to inactivate, but not capture, viruses may be capable of reducing airborne con centrations of infectious aerosols, many factors can reduce their effectiveness without being readily rec ognized by users. Such technologies and equipment can often require significant modification to existing mechanical equipment and ongoing service.

Engineering Precautions

When increasing outside air delivery through HVAC systems, engineers must take precautions to avoid exceeding the mechanical system’s design and oper ational capabilities. Too much outdoor air can intro duce high levels of humidity, causing mold and bac terial growth within the HVAC system, its ducts, and the occupied areas of the building. When outdoor air pollution from wildfires, nearby excavation, or demo lition activities threatens the area, outside air damp ers may have to be temporarily closed.

When installing AFDs it is important to avoid air flows that interfere with existing HVAC systems, or that directs potentially contaminated air into a clean area. This often requires the expertise of an engi neer, industrial hygienist, or experienced contractor to properly site each device.

Ongoing maintenance and cleaning of AFDs, includ ing changing pre-filters and HEPA filters, is neces sary to ensure effective operation. Precautions must be taken to prevent worker exposures to accumu lated infectious viruses on the filters or the AFD ex terior during filter changes and maintenance. PPE recommended for maintenance activities such as filter changes and periodic cleaning include gog gles, gloves, apron, and N95 respirator. This should be performed when unprotected individuals are not nearby.

Any modifications made to central HVAC systems, either to accommodate a new use of the space, changes in occupant density, or to improve filtration should be specified and reviewed by a mechanical engineer.

Conclusions

As the nation moves to restart the economy and in-person education, we must seriously consider and adopt effective engineering controls in public build ings in order to protect the health of employees and occupant. Using “off-the-shelf” technologies, equip ment, and time-tested methods to control infectious

aerosols is the most reliable way to reduce the risk of disease spread. Relying upon control measures that only offer marginal protection against the spread of disease could extend this pandemic until a vaccine is developed, produced, and distributed. Scientifical ly proven methods to control the spread of airborne diseases that include enhanced ventilation with out door air, and high efficiency filtration, have not been widely implemented outside of healthcare facilities.

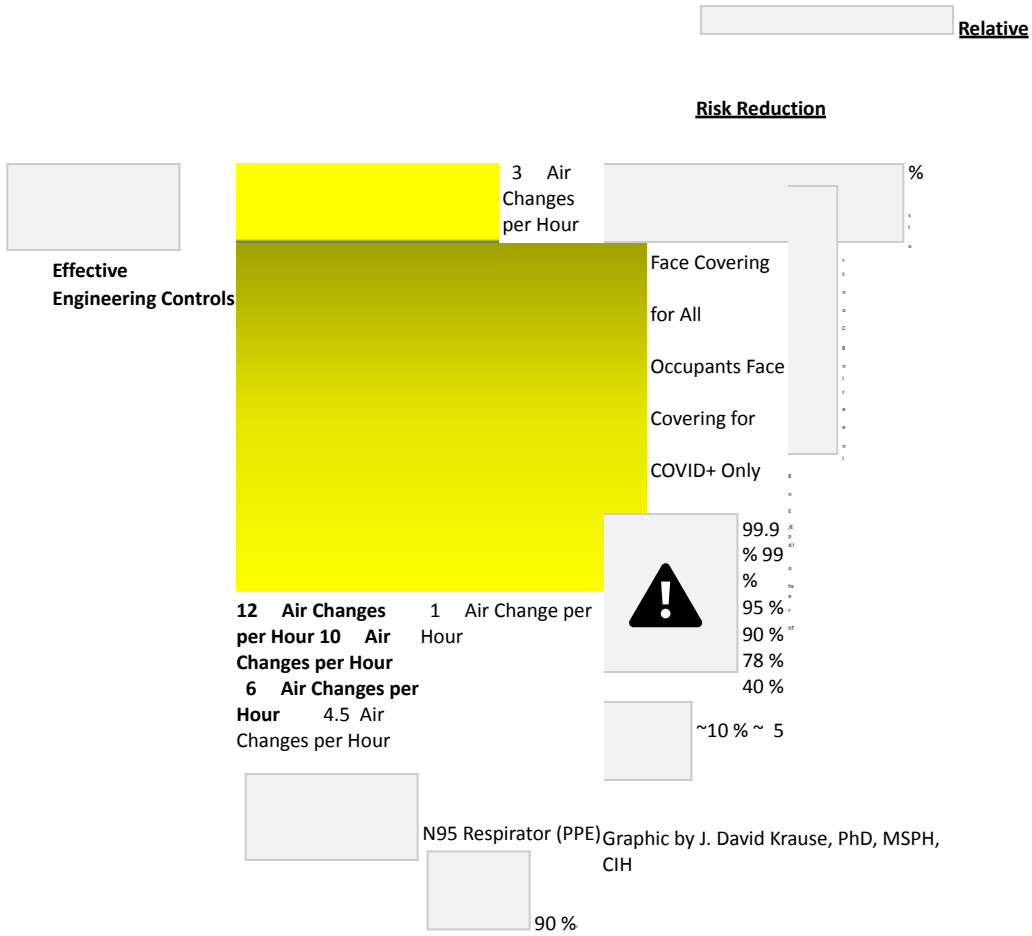
Reducing the Risk of COVID-19 using Engineering Controls

Industrial hygienists and mechanical engineers can design, install, and evaluate engineering controls that are capable of keeping infectious aerosols at very low levels indoors and offer more reliable pro tection. Together, we can help reduce the risk of dis ease transmission among workers and members of the community in properly designed and maintained buildings through the use of engineering controls.

Reducing the Risk of COVID-19 using Engineering Controls

Appendix

Supplement to *Reducing the Risk of COVID-19 using Engineering Controls*, Version 1, August 11, 2020



Derivation of estimated relative risk reduction offered by different control measures described in Figure 2

This supplement is provided to explain how estimates of relative risk reduction were derived for face coverings and **Derivation of estimated relative risk reduction offered by different control measures described in Figure 2** engineering controls in Figure 2 of the AIHA guidance document *Reducing the Risk of COVID-19 using Engineering Controls*, Version 1, August 11, 2020. Citations of published studies and available CDC guidance are provided by reference and the considerations made by authors and contributors to the guideline are discussed.

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Rengasamy et al reported that fabric materials commonly used to construct face coverings may only provide marginal protection against particles in the size range of virus-containing particles in exhaled breath. Average penetration levels for the three different cloth masks were between 74% and 90% (meaning they captured between 10% and 26% of aerosols), while N95 filter media controls showed penetration of only 0.12% at 5.5 cm/sec face velocity. [1]

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Petitioner's Writ p.39

MacIntyre et al reported that laboratory tests showed the penetration of particles through cloth masks to be very high (97%) when compared to medical masks (44%) that were tested, and when compared to N95 3M model 9320

(<0.01%), and the 3M Vflex 9105 N95 (0.1%). In other words, the cloth masks tested in this study only captured 3% of the exhaled aerosols. [2]

Reducing the Risk of COVID-19 using Engineering Controls

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While not evaluated in this study, face seal leakage is known to further decrease the respiratory protection offered by fabric materials. Aerosol penetration for face masks made with loosely held fabric materials occurs in both directions (inhaled and exhaled). Due to their lose fitting nature and the leakage that occurs even when a face mask is properly worn, a modifying factor of 25% was applied.

Finally, compliance with the proper wearing of face coverings when people generate the most aerosols (i.e. speaking, exercising, etc.) significantly impacts the anticipated risk reduction they can offer. Due to observed lapses in proper wearing of cloth face coverings (i.e. covering only the mouth or wearing them below the chin) and when people pull the mask down when speaking to someone, a modifying factor of 50% was applied. A face covering only worn half the time or covering only the mouth offers less risk reduction.

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This study also evaluated compliance of healthcare workers wearing cloth masks and medical masks. They found that healthcare workers complied only 56.5% of the time for cloth masks and 56.8% of the time for medical masks.[2]

The high levels of initial penetration reported in the studies cited above, ranging from 40-97% equates to capture efficiencies of 3-60%. The impact of typical leakage and frequent non-compliance with proper use and wear, is the basis for a generous estimate of 5-10% relative risk reduction for face masks and cloth

face coverings. Studies do suggest that surgical and medical masks, when worn properly and with full compliance could offer greater protection, for both the wearer and for those nearby. However, their availabil ity and proper use is not currently required and was not the basis for the relative risk reduction estimated for reusable facial coverings and masks.

This supplement is not intended to suggest that face coverings and masks not be used, but rather to ob jectively examine and recognize their contribution to risk reduction. In light of the limited level of relative risk reduction offered by face coverings and masks the AIHA has recommended engineering controls be used to reduce the risk of exposure in indoor environ ments, which is anticipated to reduce the transmis sion of disease, even in nonhealthcare settings.

Estimates of relative risk reduction presented in the figure above that can be offered by outside air venti lation and/or enhanced filtration (i.e. HEPA or MERV 17) were derived using the model presented below. Initial and ending concentrations of respirable aero sols were modeled at various air change rates in a room over a 30-minute period. Similarly, the steady state concentration of aerosols given equal source strength (i.e. virus-containing aerosols exhaled by a person) can be estimated using this model. The for mula and its applicability to infectious disease con trol are described in detail in the CDC Guidelines for Environmental Infection Control in Health-Care Fa cilities (2003).[3]

t2 – t1 = – [ln (C2 / C1) / (Q / V)] x 60, with t1 = 0

where

t1 = initial timepoint in minutes

t2 = final timepoint in minutes

C1 = initial concentration of contaminant

C2 = final concentration of contaminant

C2 / C1 = 1 – (removal efficiency / 100)

Q = air flow rate in cubic feet/hour

V = room volume in cubic feet

Q / V = ACH

1. Rengasamy, S., Eimer, B., and Shaffer, R. E. Sim ple Respiratory Protection—Evaluation of the Filtration Performance of Cloth Masks and Com mon Fabric Materials Against 20–1000 nm Size Particles. Ann. Occup. Hyg., Vol. 54, No. 7, pp. 789–798, 2010
2. MacIntyre CR, Seale, H., Dung, , TC, et al. A clus ter randomised trial of cloth masks compared with medical masks in healthcare workers. BMJ Open 2015;5:e006577. doi:10.1136/bmjop en-2014-006577
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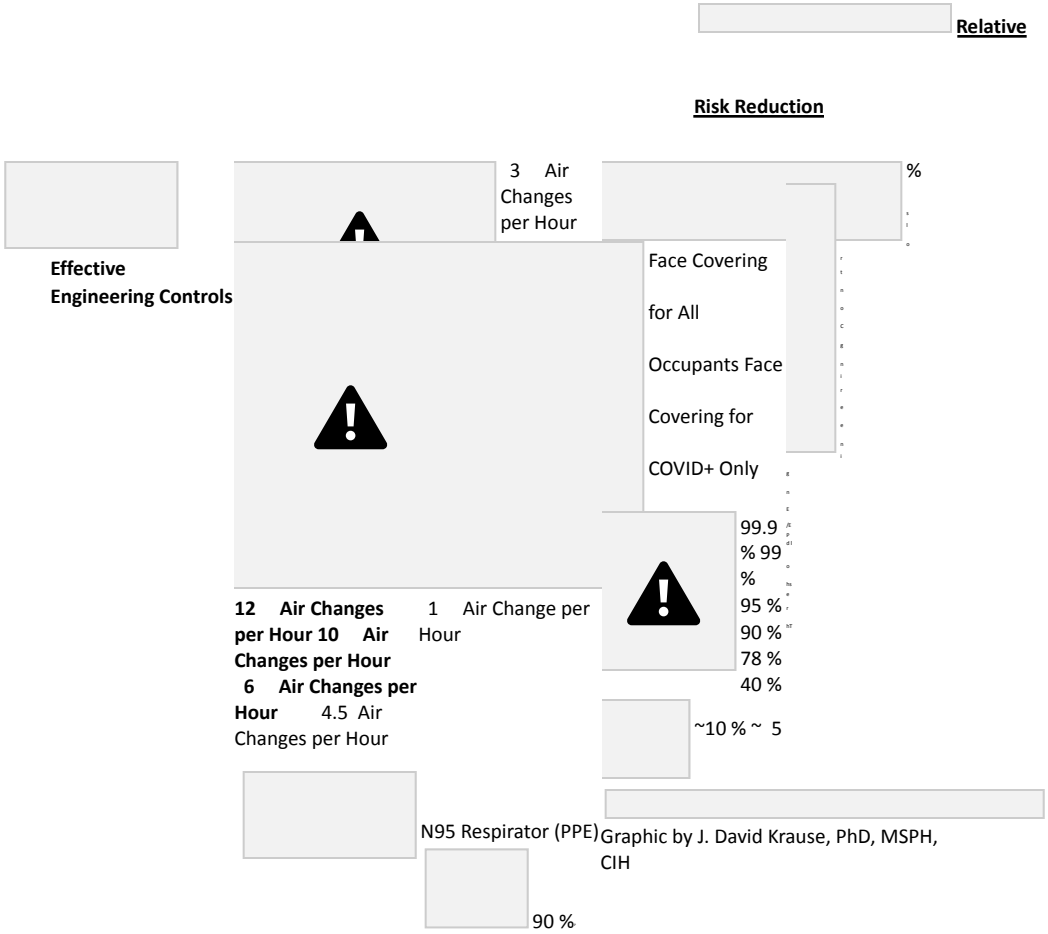
SUPPLEMENT to Reducing the Risk of COVID-19 Using Engineering Controls

Sponsored by the AIHA® Indoor Environmental Quality Committee

August 18, 2020

Supplement to *Reducing the Risk of COVID-19 using Engineering Controls*, Version 1, August 11, 2020



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SUPPLEMENT to Reducing the Risk of COVID-19 Using Engineering Controls

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ity and proper use is not currently required and was not the basis for the relative risk reduction estimated for reusable facial coverings and masks.

This supplement is not intended to suggest that face coverings and masks not be used, but rather to ob jectively examine and recognize their contribution to risk reduction. In light of the limited level of relative risk reduction offered by face coverings and masks the AIHA has recommended engineering controls be used to reduce the risk of exposure in indoor environ ments, which is anticipated to reduce the transmis sion of disease, even in nonhealthcare settings.

Estimates of relative risk reduction presented in the figure above that can be offered by outside air venti lation and/or enhanced filtration (i.e. HEPA or MERV 17) were derived using the model presented below. Initial and ending concentrations of respirable aero sols were modeled at various air change rates in a room over a 30-minute period. Similarly, the steady state concentration of aerosols given equal source strength (i.e. virus-containing aerosols exhaled by a person) can be estimated using this model. The for mula and its applicability to infectious disease con trol are described in detail in the CDC Guidelines for Environmental Infection Control in Health-Care Fa cilities (2003).[3]

t2 – t1 = – [ln (C2 / C1) / (Q / V)] x 60, with t1 = 0

where

t1 = initial timepoint in minutes

t2 = final timepoint in minutes

C1 = initial concentration of contaminant

C2 = final concentration of contaminant

C2 / C1 = 1 – (removal efficiency / 100)

Q = air flow rate in cubic feet/hour

V = room volume in cubic feet

Q / V = ACH

1. Rengasamy, S., Eimer, B., and Shaffer, R. E. Sim ple Respiratory Protection—Evaluation of the Filtration Performance of Cloth Masks and Com mon Fabric Materials Against 20–1000 nm Size Particles. Ann. Occup. Hyg., Vol. 54, No. 7, pp. 789–798, 2010

2. MacIntyre CR, Seale, H., Dung, , TC, et al. A clus ter randomised trial of cloth masks compared with medical masks in healthcare workers. BMJ Open 2015;5:e006577. doi:10.1136/bmjop en-2014-006577

3. CDC Guidelines for Environmental Infection Control in Health-Care Facilities (2003) https://www.cdc.gov/infectioncontrol/guidelines/envi ronmental/appendix/air.html#tableb1

©aiha 2020 Page 4 of 4

EXHIBIT B

Date: _____

2021 COVID-19 School Guidance Checklist

Name of Local Educational Agency or Equivalent: _____

Number of schools: _____

Enrollment _____ `

Superintendent (or equivalent) Name: _____

Address: _____

_____

Phone Number: _____

Email: _____

Date of proposed reopening:

_____

County: _____

Current Tier: _____
(please indicate Purple, Red, Orange or Yellow)

Type of LEA: _____

Grade Level (check all that apply)

☐ TK ☐ 2nd ☐ 5th ☐ 8th ☐ 11th ☐ K ☐ 3rd ☐ 6th ☐ 9th ☐ 12th ☐ 1st ☐ 4th ☐ 7th ☐ 10th

This form and any applicable attachments should be posted publicly on the website of the local educational agency (or equivalent) prior to reopening or if an LEA or equivalent has already opened for in-person instruction. For those in the Purple Tier and not yet open, materials must additionally be submitted to your local health officer (LHO) and the State School Safety Team prior to reopening, per the Guidance on Schools.

The email address for submission to the State School Safety for All Team for LEAs in Purple Tier is:
K12csp@cdph.ca.gov

LEAs or equivalent in Counties with a case rate >=25/100,000 individuals can submit materials but cannot re-open a school until the county is below 25 cases per 100,000 (adjusted rate).

For Local Educational Agencies (LEAs or equivalent) in ALL TIERS:

☐ I, _____, post to the website of the local educational agency (or equivalent) the COVID Safety Plan, which consists of two elements: the **COVID-19 Prevention Program (CPP),** pursuant to CalOSHA requirements,

and this **CDPH COVID-19 Guidance Checklist** and accompanying documents, which satisfies requirements for the safe reopening of schools per CDPH Guidance on Schools. For those seeking to open while in the Purple Tier, these plans have also been submitted to the local health officer (LHO) and the State School Safety Team.

I confirm that reopening plan(s) address the following, consistent with guidance from the California Department of Public Health and the local health department:

☐ **Stable group structures (where applicable):** How students and staff will be kept in stable groups with fixed membership that stay together for all activities (*e.g.*, instruction, lunch, recess) and minimize/avoid contact with other groups or individuals who are not part of the stablegroup.

Please provide specific information regarding:

How many students and staff will be in each planned stable, group structure? (If planning more than one type of group, what is the minimum and maximum number of students and staff in the groups?)

_____

If you have departmentalized classes, how will you organize staff and students in stable groups?

_____

If you have electives, how will you prevent or minimize in-person contact for members of different stable groups?

_____

☐ **Entrance, Egress, and Movement Within the School:** How movement of students, staff, and parents will be managed to avoid close contact and/or mixing of cohorts.

☐ **Face Coverings and Other Essential Protective Gear:** How CDPH's face covering requirements will be satisfied and enforced for staff and students.

☐ **Health Screenings for Students and Staff:** How students and staff will be screened for symptoms of COVID-19 and how ill students or staff will be separated from others and sent home immediately.

☐ **Healthy Hygiene Practices:** The availability of handwashing stations and hand sanitizer, and how their safe and appropriate use will be promoted and incorporated into routines for staff and students.

☐ **Identification and Tracing of Contacts:** Actions that staff will take when there is a confirmed case. Confirm that the school(s) have designated staff persons to support contact tracing, such as creation and submission of lists of exposed students and staff to the local health department and notification of exposed persons. Each school must designate a person for the local health department to contact about COVID-19.

☐ **Physical Distancing:** How space and routines will be arranged to allow for physical distancing of students and staff.

Please provide the planned maximum and minimum distance between students in classrooms.

Maximum _____ feet

Minimum _____ feet. If this is less than 6 feet, please explain why it is not possible to maintain a minimum of at least 6 feet.

_____

☐ **Staff Training and Family Education:** How staff will be trained and families will be educated on the application and enforcement ofthe plan.

☐ **Testing of Staff:** How school officials will ensure that students and staff who have symptoms of COVID-19 or have been exposed to someone with COVID-19 will be rapidly tested and what instructions they will be given while waiting for test results. Below, please describe any planned periodic asymptomatic staff testing cadence.

Staff asymptomatic testing cadence. Please note if testing cadence will differ by tier:

_____

☐ **Testing of Students:** How school officials will ensure that students who have symptoms of COVID-19 or have been exposed to someone with COVID-19 will be rapidly tested and what instructions they will be given while waiting for test results. Below, please describe any planned periodic asymptomatic student testing cadence.

Planned student testing cadence. Please note if testing cadence will differ by tier:

_____

☐ **Identification and Reporting of Cases:** At all times, reporting of confirmed positive and suspected cases in students, staff and employees will be consistent with Reporting Requirements.

☐ **Communication Plans:** How the superintendent will communicate with students, staff, and parents about cases and exposures at the school, consistent with privacy requirements such as FERPA and HIPAA.

☐ **Consultation: (For schools not previously open)** Please confirm consultation with the following groups

☐ Labor Organization

Name of Organization(s) and Date(s) Consulted:

Name: _____

Date: _____

☐ Parent and Community Organizations

Name of Organization(s) and Date(s) Consulted:

Name: _____

Date: _____

If no labor organization represents staff at the school, please describe the process for consultation with school staff:

_____

_____

_____

_____

_____

For Local Educational Agencies (LEAs or equivalent) in PURPLE:

☐ **Date of Submission to Local Health Department:** _____. Note: LEAs intending to re-open K-6 schools while in the Purple Tier are to submit the CSP to the LHD and theState Safe Schools for All Team concurrently.

Additional Resources:

Guidance on Schools

Safe Schools for All Hub

Note: This checklist was amended on January 29th to delete language regarding the need to submit this checklist to a County Office of Education. The CSP does not need to be submitted to the County Office of Education as part of the public health guidance, though the County Office of Education may request the CSP as part of other processes.

EXHIBIT C

White Paper
on

Ventilation for Industrial Settings during the COVID-19 Pandemic

by

American Conference of Governmental Industrial Hygienists
(ACGIH®) Industrial Ventilation Committee
August 2020

Preamble

This White Paper, developed by the Industrial Ventilation Committee of the American Conference of Governmental Industrial Hygienists (ACGIH®), originates from concern about the proper use of ventilation controls in industrial workplaces where SARS-CoV-2 (the Coronavirus responsible for COVID-19) is potentially present. This volunteer committee, with expertise in industrial ventilation, offers guidance on the topic of industrial ventilation to industrial/commercial facilities that are planning operational controls to reduce the impact of the COVID-19 pandemic for employees returning to work around the world. These

recommended practices are intended as guidance for Occupational and Environmental Health and Safety professionals and others including plant managers as they seek to mitigate exposures for their workforce during the COVID-19 pandemic.

Included within this paper are COVID-19 exposure control strategies that consider all of the traditional industrial hygiene Hierarchy of Controls. It will provide some practical suggestions about the use of ventilation principles and concepts that can help reduce worker exposure to droplets and aerosols that may contain Coronavirus-19. It will also communicate some simple guidelines and principles that can be used to select and design ventilation controls to limit the spread of Coronavirus disease. This White Paper will NOT opine on heating, ventilation and air-conditioning (HVAC) systems and other ventilation systems that are used in office situations, as they have been addressed by ASHRAE in recent documents (ASHRAE, 2020).

The design of an overall exposure control strategy in a facility within the context of Coronavirus-19 will likely require a combination of control strategies. Currently available information characterizes this biological hazard as:

- potentially severe in its effects,
- highly contagious,
- associated with a significant percentage of infectious, although asymptomatic, individuals,
- transmitted person-to-person,
- initiating respiratory infection through inhalation and contact with the eyes, nose, and mouth, and
- having an unknown infectious dose range at the time of this writing.

Therefore, these guidelines address possible courses of action regarding the use of industrial ventilation systems for local exhaust, dilution, and convective cooling purposes within the context of prevention of transmission of Coronavirus-19. The type of industry, worker occupation, exposure profile, climate, facility layout, and indoor environmental conditions will affect how these guidelines should be implemented.

Introduction and Background

Coronavirus Disease 2019 (COVID-19) is associated with a pathogenic novel coronavirus (SARS-CoV-2 or Coronavirus-19 for the purpose of this document) from the same family of viruses responsible for the Severe Acute Respiratory Syndrome (SARS) outbreak experienced between 2002 and 2004. COVID-19 is caused by a single-stranded RNA virus with a lipid envelope that has a diameter of approximately 120 nm (wetted particle size larger) (Zhu, 2020; CDCa, 2020).

Symptoms associated with COVID-19 vary by age and health status from mild flu-like symptoms to severe respiratory distress and death. According to the Centers for Disease Control and Prevention (CDC), individuals with increased susceptibility to more severe COVID 19 illness include those over 60 years of age and those with underlying health issues, such as serious cardiovascular conditions, moderate to severe lung disease or asthma, immune system deficiencies, obesity, and underlying medical conditions (such as diabetes, or renal or liver disease) (CDCa, 2020). In addition, a proportion (5%−80%) of infected individuals may not show symptoms (asymptomatic) (Oxford University, 2020; Oran and Topol, 2020).

Disease transmission has been demonstrated to occur person-to-person and is thought to occur through:

- propulsion of large droplets generated from coughing and sneezing directly into the face, nose, eyes, and mouth of someone nearby (droplet transmission),
- inhalation of infectious particles generated by breathing, talking, singing, coughing, and sneezing that remain suspended for lengthy periods or are distributed by indoor air currents (aerosol transmission) (Jones, 2015), and
- contaminated hand-to-mucus membrane contact (contact transmission) (CDCb, 2020).

Airborne transmission (inhalation of infectious particles at a long distance from the source, e.g., through a ventilation system) cannot be ruled out given the potential extended viability of Coronavirus-19 in air (van Doremalen et al., 2020) as shown in laboratory experiments (CDCd, 2019).

Currently, there is uncertainty as to how many virions (viruses) are required to achieve an infectious dose (i.e., how much virus is necessary to infect someone) and about the nature of droplet, aerosol and airborne transmissions including relevant particle sizes, particle behavior over time, and the amount of viable virus present in a given aerosol particle. Since aerosols are a potentially important route of exposure, their control must be considered in a larger, overarching strategy for minimizing Coronavirus-19 transmission in industrial settings. Ventilation, as a type of engineering control, can play an important role in controlling exposure to an infectious aerosol in an indoor industrial workplace.

Hierarchy of Controls

As part of the normal hazard assessment, experts such as Certified Industrial Hygienists (CIHs) should inspect and evaluate each area of the workplace through the Hierarchy of Controls lens to determine how best to protect workers. This assessment involves noting all processes and conditions that have the potential to harm employees through chemical/dust

exposures, hazardous energy, dangerous machinery, etc. During the current pandemic, it is necessary to look for instances that may increase the risk of worker exposure to the virus.

This worker exposure will primarily be through prolonged close proximity to other workers who are infected, but exposure could also include the use of shared tools, inadequate or poorly directed ventilation, and close contact associated with an excessive number of employees in common areas (such as cafeterias) at one time.

As shown in Figure 1, the methods of controlling a hazard generally become less effective moving down the hierarchy. **Elimination** requires source removal, which could involve removing infected individuals from the workplace through screening or testing, assigning remote work (where possible) or limiting the number of individuals in a space at one time (and enforcing social distancing) to lower airborne concentration. **Substitution**, replacing the source with something less hazardous, may not be relevant although automation (e.g., robots) may be useful in some instances. **Engineering controls, administrative controls and personal protective equipment (PPE)** all have a place in protecting workers during the pandemic. While engineering controls are generally most protective for workers, due to the nature of the virus and the limitations of most industrial ventilation systems, administrative controls or some form of personal protection may also be essential in combination with engineering controls, such as ventilation.

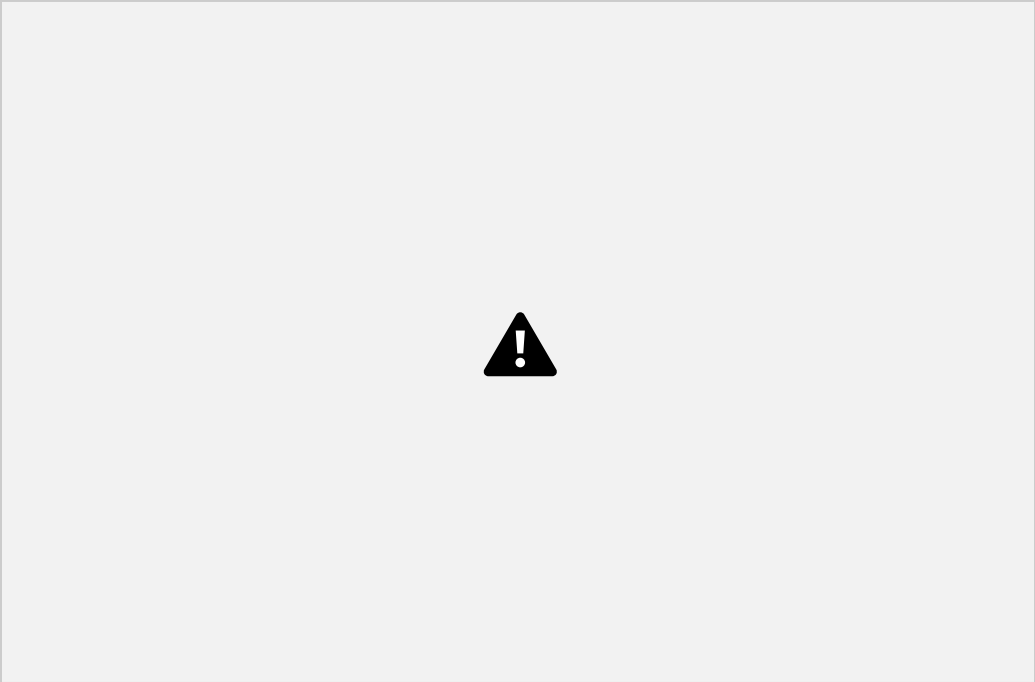

FIGURE 1. Hierarchy of Controls (NIOSH, 2015)

Engineering Controls

Basic Principles for COVID-19 Ventilation in an Industrial Setting

Ventilation, if designed and implemented properly plays a critical role in mitigating disease by reducing droplets and aerosols in air, and subsequent airborne transmission. The two types of ventilation that can impact concentration include general exhaust ventilation (GEV) in the form of dilution ventilation, and local exhaust ventilation (LEV). Dilution ventilation occurs when contaminants of concern within a space are reduced by removing contaminated air and replacing it with clean air. This may be accomplished either by 1) replacing room air parcels with clean ones (plug or laminar flow, 50−150 feet per minute) (see Figures 2 and 3), or 2) diluting existing contaminated air with cleaned, outside air using mixing (see Figure 4). Alternatively, LEV occurs when contaminants generated within a space are captured using exhaust capture devices (e.g., hoods) at or close to the source.

In order to fully understand how a ventilation system is working, an audit should be conducted to determine where and how air enters and exits from the space. Then a general idea about the overall airflow pattern can be estimated. For any air that is being recirculated, such as from LEV or from office spaces, the ability to remove as much of the virus load as possible before reintroducing the air is critical. (See section titled Filtration in this document and ASHRAE 2020 document.)

1. General Exhaust Ventilation

For typical industrial applications, the intent of dilution ventilation is to either replace parcels of contaminated air or dilute those parcels with clean, outside air (or filtered recirculated air) to reduce the contaminant level below some recommended level to avoid worker overexposures and adverse health effects. In the case of Coronavirus-19, where each worker is a potential contaminant source, the airflow pattern is the most critical issue to determine, modify, and control.

Dilution ventilation consists of exhaust fans that pull air through exhaust openings in the workspace and the makeup air and supply fans that replace the air that was removed. The makeup air may come from supply fans or openings in the building envelope such as windows, doors, or vents.

If open doors, windows, or vents are currently the only source of available replacement air, consideration should be given to installation of a ducted, powered air system, with airflow introduced at or near the floor level so the replacement air can move past a worker and up to the exhaust without passing other workers (combined with social distancing practice). If there is an existing supply air system, consider modifying the system to duct and deliver the air at or near floor level. Figure 2 illustrates an example of an appropriate supply/exhaust airflow arrangement.

FIGURE 2. Displacement Ventilation

Vertically directed dilution ventilation, taking advantage of thermal displacement (warmer air at the breathing zone rising up toward the exhaust source) should effectively reduce risk of worker exposure to potentially infectious aerosols exhaled or generated by other workers. To understand thermal rise for a human being, consider the fact that the air expelled from human lungs is significantly lighter and more buoyant than most air because of its inherent relative humidity and human body warmth (see Figure 3). In general, replacing air at low velocities is preferable to mixing air with high velocities when a high toxicity contaminant is present. In certain applications, turbulent mixing may increase the potential for employee exposure.

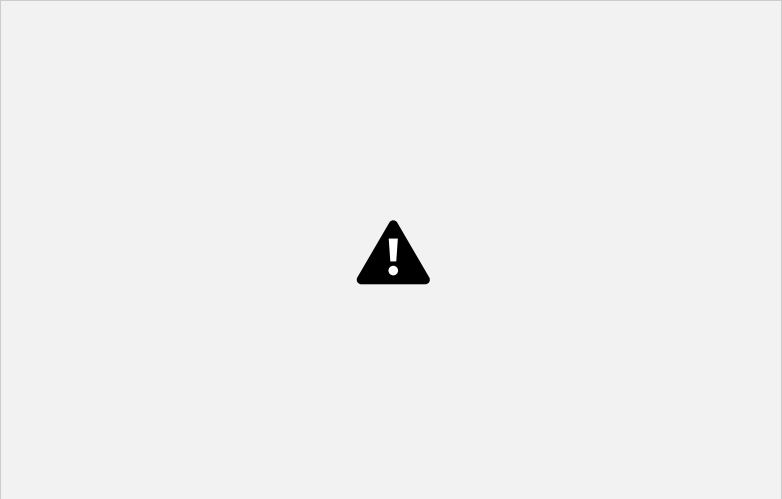

FIGURE 3. Thermal Plume in Displacement Ventilation (Courtesy of Price Industries)

2. Local Exhaust Ventilation

LEV utilizes dedicated exhaust fans and ducts to capture contaminants at their source, keeping them from creating potential exposures. See Chapters 5, 6, and 7 in *Industrial Ventilation: A Manual of Recommended Practice for Design,* 30th Edition (the "Design Manual") (American Conference of Governmental Industrial Hygienists, 2019). Examples of LEV in industrial settings include fixed or portable snorkels for capturing welding fumes or downdraft tables for capturing grinding particles in metal working applications. See VS-80-01 and VS-90-02 in the Design Manual (American Conference of Governmental Industrial Hygienists, 2019). LEV offers the advantage of much lower airflows and lower volume of make-up air. The major disadvantage of LEV is that the capture point is fixed and not always located at the point of contaminant generation (in the case of Coronavirus-19, the worker's face). To protect the worker from workplace contaminants, the worker should be located upstream of the contaminant when possible, not positioned downstream of another potentially infectious worker.

3. Fans

Large ceiling fans will cause downflow of air around workers and potentially return buoyant viral particles back towards worker breathing zones. Taking the large ceiling fans offline during a pandemic should be considered. Ideally, air replacement at or near the floor in the building with roof exhaust is preferred to promote displacement ventilation and establish the optimal

direction of airflow. However, where displacement ventilation cannot be established, mixing air using ceiling fans with dilution ventilation may be the only practical alternative (Figure 4).

Personal cooling fans are another source of air movement. Without the benefit of perspiration/evaporative cooling, many industrial workers could suffer harm from heat-stress related illnesses. Therefore, personal cooling fans should **NOT** be removed in industrial settings without regard for worker health. By ensuring that the air source moved by the cooling fan is originating from a cleaner area and not near another worker, these fans can provide safe cooling airflow. It is important to make sure that a fan does not blow air from one worker to another. The preferred airflow arrangement is vertical displacement with supply coming in above the floor baseboard level and being exhausted at or near the ceiling.

A study from a recent COVID-19 outbreak in a restaurant (Jianyun Lu, 2020) indicates that a high-velocity HVAC air current induced a countercurrent flow vector that appears to have effectively spread the virus to a number of other patrons who were in or very near the airflow pattern but still proximate to the primary infectious individual. Ventilation practitioners should keep in mind the potential for eddy currents and other airflow disturbances to avoid virus transmission.

4. Filtration

Filtration at the appropriate level may be capable of conditioning air to a contaminant level that is equal to or reasonably as clean as outside or “fresh” air. Replacing air is important, measured as air changes per hour (ACH) or the total air delivered to a space per hour divided by the volume of the space. Both mixing ventilation (turbulent flow) and displacement ventilation (streamline or plug flow) have application in dilution ventilation schemes as the application demands. See Figure 4 for both of these concepts. [The white box shown in the corner is a low-velocity non-turbulent supply diffuser.]

ACH = CADR (ACFM) × 60 (min/hr)/room volume (cu ft)

CADR = airflow rate (ACFM) × removal efficiency

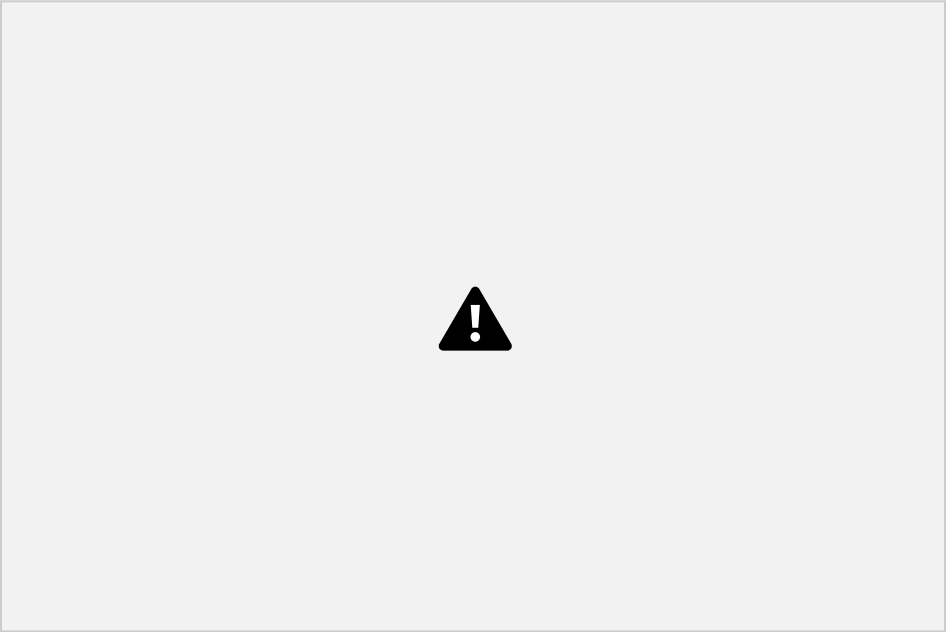

FIGURE 4. Mixing vs. Displacement Ventilation

Filtration of 99+% of particles requires high efficiency particulate air (filtration, HEPA) (ASHRAE MERV 17; MERV—Minimum Efficiency Reporting Value) or greater efficiencies,and existing make-up air and recirculating systems are not typically capable of handling true HEPA filtration due to the high pressure drop and size constraints of this type of filter. However, a recent ASHRAE study shows that *electret (electrostatic charged)* MERV 13 or 14 filters are capable of high filtration efficiencies on viral particles (89%−97%) with filter sizes similar to existing MERV 5−8 “throwaway” filters commonly used in HVAC applications (Zhang et al., 2020). Figure 5 shows the efficiencies of various MERV rated filters. The blue shaded areas indicate the size of particles created by humans while breathing normally (light blue), and with other respiratory activities (dark blue) (Parienta et al., 2011).

FIGURE 5. Filtration Efficiency at Different Particle Sizes for Different MERV Efficiencies (Figure adapted from ACGIH® 2019)

In addition, it should be known that air filtered through conventional fabric filter (baghouses, etc.) and electrostatic precipitators are capable of similar efficiencies and specifically that a “seasoned” fabric filter typically exhibits a similar efficiency to HEPA filtration. These dust collector style filters will also reduce the risk of Coronavirus-19 distribution and transmission as long as the air is reintroduced to the plant in a non-turbulent fashion and in a manner that establishes the preferred airflow direction (see Chapter 8 of the Design Manual)

Portable HEPA filtration units could be useful if placed in close proximity to workers who remain in place during their working day. These units have a limited area of influence and many units do not meet their stated efficiency, particularly the electrostatic units. These portable units should be considered carefully before purchase and use. Existing portable HEPA filtration should not be turned off, but one should consider the potential for exposure of

downstream individuals if an infected worker is located between the unit and other individuals in the same room.

Employers should investigate the use of improved filtering systems that may be available and either compatible or potentially fitted to their existing air handling systems. Good examples of this are ‘electret’ filters and electrostatic precipitators (ESPs). Both of these filtration technologies are robust, have been used effectively for many years, and remove fine and ultrafine particles with predictable success. Placed in series within an air handling system, they could be effective in the capture and reduction of Coronavirus-19 in air. Seek professional

design help before modifying any air handling system.

Paint-spray and other large exhaust booths are useful in reducing Coronavirus-19 exposure risks because they require the facility ventilation system to supply large amounts of outdoor (replacement) air. In addition, workers stationed in the booth have a low risk of Coronavirus-19 exposure due to the high air volume turnover rates.

Local exhaust hoods are typically not effective in capturing particles at more than one hood diameter away from the hood inlet. At three times the hood diameter, aerosols are significantly more influenced by room currents than by the LEV (see Chapter 6, Hood Design, of the Design Manual). This does **NOT** mean that LEV systems should be turned off during a viral pandemic. In fact, they are an important source of reducing local airborne virus concentrations. LEV systems evacuate air from the space creating a negative pressure gradient therefore encouraging air at higher pressure (outside the building) to infiltrate in an attempt to balance the pressure difference between inside and outside. Permit LEV systems to operate continuously while workers are present. In a general sense, LEV systems are designed to replace exhausted air with makeup air unless it is a recirculated system. As usual, maintain makeup air systems to reduce air sweeping into the workspace through open doorways and windows.

All established LEV systems should continue to be used for existing workplace hazards. The presence of a new hazard – infectious aerosols – does not negate or change the ongoing need for continued protection of workers from all other hazards. As with any new hazard, assessment of exposures and selection of controls must be done in the context of all hazards. Allow the GEV and LEV systems to operate continuously or long enough to allow for several complete air changes following the departure of all building occupants. If the system is shut down or set back overnight (i.e., between work shifts), return to full operating conditions prior to occupant return. Permit LEV systems to operate continuously. If variable air volume laboratory hoods are present, leave the hood sash in the up position to allow for maximum airflow and maximum air volume to be exhausted when not in use by workers.

If an industrial site has an HVAC system for the purposes of general dilution and comfort control, it may be appropriate to:

- Increase the amount of outdoor air supplied by the system to the maximum capacity permitted by the system. Additional considerations include climate and local air quality (e.g., humidity).
- If air is recirculated, a MERV 13 or better filter is recommended to improve the capture of infectious aerosols.Petitioner's Writ p.62
- Consult with a ventilation system engineer to ensure that the system is operating correctly, is well-maintained and can accommodate the added pressure drop caused by a MERV 13 or better filter.
- Depending on the actual air exchange rate and number of occupants, it may be appropriate to operate the HVAC system for an extended period of time after all occupants have departed, to ensure adequate clearance of infectiousparticles.

In restrooms, the following practices are recommended:

- Restroom fans should be operated continuously and should exhaust directly outdoors.
- To minimize aerosolization of infectious particles not removed by handwashing, disposable paper towels should be used for hand drying, rather than airdryers.

3. Room/Building Pressurization

An additional ventilation control technique is room pressurization. By adjusting the volumes of air entering and leaving a particular space, that space can be balanced to become positively,

negatively, or neutrally pressurized. Slightly positively pressurized spaces tend to keep air from coming in from outside to control contaminants from the adjoining space. Negatively pressurized spaces tend to limit the escape of contaminants generated within the space such as with airborne infection isolation rooms and autopsy rooms. These required conditions may have application to the ventilation schemes addressed above and should be considered. It is recommended that the ventilation professional at industrial facilities consider positive or negative room pressurization to potentially control the spread of COVID-19 in their facilities.

Additionally, an entire facility or large workspace can be positively pressurized, thereby eliminating indraft currents that may cause unpredicted airflow from one employee towards another. Bringing a facility under positive pressure (vs. atmospheric pressure) causes the area to have a mixing factor (m_i or K factor) of 1. This technique is discussed in Chapter 11, Supply Air Systems, of the Design Manual. Consult local codes for compliance.

4. Ultraviolet Germicidal Irradiation

Ultraviolet germicidal irradiation (UVGI) has been used for supplemental engineering control (ventilation being the primary control technique) of airborne microbial contamination in indoor spaces. It has been most commonly used in homeless shelters and hospitals. UVGI systems have been applied for disinfection and inactivation of fungal and bacterial microorganisms for sixty (60) years or more; they have been examined in remote applications including in ducts, inside filter banks, and also in point-of-use and upper room (ceiling return) applications. UVGI has been determined to provide a viable, supplemental control technology for Coronavirus-19 applications. However, a thorough treatment of this topic is beyond the scope of this paper; additional information can be found in ASHRAE Standard 62.1-2019 (ASHRAE, 2019). Note: The use of UVGI at typical wavelengths (i.e., ~254 nm, UVC) requires protection from the light emitted from the UV source for employees, maintenance personnel, and other room occupants, as UV exposure is harmful to human skin and eyes at relatively low sourcepower.

Before World War II, much research was conducted on the germ-destroying ability of UV light, which later diminished with the advent of antibiotics. Recently, however, due to the pandemic a resurgence of interest in the use of UVGI has brought this technology back as a valid viral inactivation treatment for large amounts of air that may be readily applied to the manufacturing workplace. One must do the research to determine whether the UVGI vendor truly understands the application and requirements for effective virus inactivation. UVGI effectiveness requires addressing the ability of the system design to meet the specific conditions while considering the light wavelength, the contact time and the distance from the source (intensity), which are the primary criteria for effective disinfection by UVGI.

Administrative Controls

Administrative controls are ways of changing how employees conduct their job that will tend to limit their risk of exposure to hazards. Some administrative controls may reduce the potential for worker exposure to infectious aerosols. A number of these are mentioned below.

- Inform all employees about the hazards and symptoms of COVID-19. Tell them to stay home or to leave work if they feel sick.
- Provide a station to screen employees entering the building using a standard questionnaire and non-contact temperature measurement device.
- Provide training for all employees about rules for social distancing, sanitation, handwashing, and sick leave policies. Have a plan to separate sick employees if someone fails the health check or becomes ill during the workday.

- Develop enhanced cleaning and sanitation plans for the entire facility. Use EPA registered disinfectants that are effective against Coronavirus-19. A link to this list may be found here (EPA, 2020).
- Remind employees to stay six (6) feet apart with signage and by placing marks on the floor or using stanchions. Workers should be reminded about maintaining social distancing during breaks, in restrooms, and when entering and leaving the facility.
- Supply additional handwashing stations to facilitate regular handwashing. No touch hand sanitizer dispensers should also be supplied for times when workers cannot wash their hands with soap and water.
- Remind employees to cover their coughs and sneezes with their elbow or a tissue. Dispose of the tissue and wash hands afterward. This can be accomplished with signage.
- Arrange workstations to allow for adequate physical distancing – at least six (6) feet – between workers. This may require rerouting aisles to keep workers from passing too close to one another. One-way (i.e., unidirectional) aisles are another way to avoid workers coming into close contact with one another (Figure 6).
- Supply paper towels, tissues, and no touch waste receptacles.

FIGURE 6. How to Align Manufacturing Workers (CDCc, 2020)

Personal Protective Equipment

PPE, particularly respiratory protective equipment (RPE), is usually the least favorable choice in the Hierarchy of Controls strategy. However, due to the uncertainties associated with COVID-19 transmission and the unknown infectious dose, most localities are requiring that individuals wear cloth face coverings or a form of respiratory protection. A cloth face covering helps protect others from respiratory droplets, but it does NOT protect the person wearing it or others from smaller particles. If everyone in the workplace wears a cloth face covering, it is

expected that the risk of exposure to Coronavirus-19 will be decreased by limiting droplet exposure. It is important to recognize that only NIOSH-certified respirators are true RPE that provide reliable protection for the wearer. Surgical and similar procedural masks (including cloth face coverings) are primarily for protecting others from contaminants exhaled or generated by the wearer. To protect the wearer from Coronavirus-19 exposure, current guidelines indicate that a NIOSH-certified N95 filtering facepiece respirator affords the minimum recommended protection. Such a respirator must be properly fitted and used on a clean shaven face. In locations such as meat packing facilities, where employees actively work within 6 feet of each other, engineering controls (such as ventilation and barriers, see Figure 6) alone should NOT be relied upon to provide the protection needed for continued worker health. PPE such as respirators may be required for control of potential exposure to Coronavirus-19 during this type of work.

CDC recommends wearing cloth face coverings as a protective measure in addition to social distancing (i.e., staying at least 6 feet away from others). Cloth face coverings may be especially important when social distancing is not possible or feasible based on working conditions. Cloth face coverings are not PPE or RPE. They are not appropriate substitutes for PPE such as respirators (like N95 respirators) or medical facemasks (like surgical masks) in workplaces where respirators or facemasks are recommended or required to protect the wearer (OSHA, 2011).

A cloth face covering may reduce the amount of large respiratory droplets that a person spreads when talking, sneezing, or coughing. Cloth face coverings may prevent people who do not know they have been infected with the Coronavirus-19 virus from spreading it to others. Cloth face coverings are intended to protect other people—not the wearer (CDCc, 2020). Employers who determine that cloth face coverings should be worn in the workplace, including to comply with state or local requirements for their use, should ensure the cloth face coverings are worn appropriately (CDCe, 2020)

Important Suggested Measures

- Increase the outdoor air supply to 100%, if possible, or to the maximum allowed by the capabilities of the ventilation system. Some additional considerations include the climate, air pollution, and system capacity, and making sure the outdoor air intakes are clear and not drawing air from a parking lot, traffic side of building, or near smoking areas or loading docks. Make sure the ventilation system is performing as designed and has been properly maintained per ASHRAE 62.1 (ANSI/ASHRAE, 2019).
- Maintain between 6 and 12 ACH, which will provide greater than 99% purge in 30−60 minutes (CDCd, 2019).
- Increase the filtration efficiency of the system to MERV 13 or as high as the filter racks and fan pressure drop will allow. System designers should attempt to accommodate Tier 1 MERV filters (MERV 13 and 14) in their current and future designs, as applicable, to ensure best airflow through the system with equipment that can withstand the added pressure drop.

- Provide additional dilution ventilation to disperse small airborne particles. Dilution ventilation should be introduced into the facility at low velocities at floor level whenever possible, with directed flow toward exhaust fans above, and spread over largeareas.
- Allow the ventilation system to operate continuously if the building is occupied or long enough to allow for several complete air changes following the departure of all building occupants. If the system is shut down or set back overnight, return to full operating conditions prior to occupant return.
- Make sure restroom fans operate continuously and are exhausted directly outdoors with exhausts away from facility ventilation supply intakes. Temporarily disable or discontinue use of hand dryers in restrooms and replace with disposable papertowels.
- Allow LEV systems to operate continuously while attended. If variable air volume laboratory hoods are present, leave the hood sash in the up position to allow maximum airflow and maximum air volume to be exhausted when not in use.
- General airflow direction should be from cleaner air to less clean air, and processes and workers should be placed on the cleaner side of the airflow pattern within this general airflow pattern to reduce their exposures. Avoid having personal or pedestal fans blow from one person to another. Remember they will blow 30−40 times the fan diameter very effectively.
- Typically, more outdoor air is better. However, high velocity currents passing through open doorways or from a pedestal fan can project viruses hundreds of feet in rapid fashion (although some dilution will also occur). Where inflow occurs at high velocity near workers, attempt to diffuse large air currents by directing or blocking the flow stream to avoid moving the air from person to person. Expanded metal and perforated or unperforated screens are very effective to diffuse large air masses at highvelocity.

Useful Resources for COVID-19 Related Information

CDC (Centers for Disease Control and Prevention). Coronavirus (COVID-19) (cdc.gov/coronavirus/2019-nCoV)

Businesses and Workplaces (https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/businesses-employers.html)

Cleaning and Disinfecting (https://www.cdc.gov/coronavirus/2019-ncov/community/cleandisinfect/index.html)

Guidance for Reopening Buildings after Prolonged Shutdown or Reduced Operation (https://www.cdc.gov/coronavirus/2019-ncov/php/building-water-system.html)

Worker Safety and Support (https://www.cdc.gov/coronavirus/2019-ncov/community/workersafety-support/index.html)

OSHA (Occupational Safety and Health Administration). COVID-19. (osha.gov/SLTC/covid-19)

National Safety Council. Guidance for Employers: COVID-19 and the Workplace. (https://www.nsc.org/work-safety/safety-topics/coronavirus)

EPA (Environmental Protection Agency). Coronavirus (COVID-19). (epa.gov/coronavirus)

AIHA (American Industrial Hygiene Association). Coronavirus Outbreak Resource Center.

(aiha.org/public-resources/consumer-resources/coronavirus_outbreak_resources)

National Association of Manufacturers. Covid-19 Resources (nam.org/coronavirus)

ACGIH. Industrial Ventilation: A Manual of Recommended Practice for Design, 30th Edition

ACGIH. Bioaerosols: Assessment and Control

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ASHRAE: ASHRAE Position Document on Infectious Aerosols. Atlanta, GA: ASHRAE (2020).

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CDCb: Coronavirus Disease 2019 (COVID-19)/How COVID-19 Spreads. Retrieved from https://www.cdc.gov/coronavirus/2019-ncov/faq.html July 10, 2020 (last updated August 4, 2020).

CDCc: Meat and Poultry Processing Workers and Employers. Retrieved from Coronavirus Disease 2019 (COVID-19): https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/meat-poultry-processing-workers employers.html#:~:text=%20Meat%20and%20Poultry%20Processing%20Workers%20and%20Employers,they%20can%20reduce%20the%20spread%20of...%20More%20 July 20, 2020 (updated July 9, 2020).

CDCd: Environmental Infection Control Guidelines. Appendix B. Air (2003). Retrieved from CDC: https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html (last reviewed July 22, 2019).

CDCe: Coronavirus Disease 2019 (COVID-19)/How to Wear Masks. Retrieved from How to Wear Masks: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-to-wear-cloth-face coverings.html (updated August 7, 2020).

EPA, U: List N: Disinfectants for Use Against Coronavirus-19. Retrieved from https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2-covid-19 July 11, 2020 (last updated August 13, 2020).

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NIOSH: Hierarchy of Controls. Retrieved from https://www.cdc.gov/niosh/topics/hierarchy/default.html July 10, 2020 (last reviewed January 13, 2015).

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Thank you for taking the time to review this important information. We look forward to receiving your comments at: acgih.org/white-paper-comments.