



Project Plan

Reducing Air Pollution Exposure in Schools and Other Facilities

March 2022

Background

The adverse impact of particulate matter (PM) on human health is well-documented. Studies have shown that air filtration technologies can reduce exposure to indoor PM and provide some health benefits. Children are among the population that is at a higher risk of negative health outcomes due to exposure to air pollution; as such, schools and daycare centers are considered sensitive receptors that need prominent attention, specifically in highly polluted areas such as proximity to freeways, rail yards, and other toxic emissions sources. As described in Chapter 5 of the Community Air Protection (CAP) Incentives 2019 Guidelines¹ (CAP Guidelines), reducing air pollution inside schools is designed to decrease exposure and address a range of outdoor and indoor air emissions sources that may affect the health of school children.

South Coast AQMD has implemented school air filtration projects for over a decade to decrease the air pollution burden in disadvantaged and low-income communities. Air filtration systems have been installed in 97 schools and Early Education Centers (EECs) through Supplemental Environmental Projects (SEPs) and penalty settlement funds from U.S. EPA, CARB, and South Coast AQMD. The CAP incentives will provide additional funding for schools in South Coast AQMD jurisdiction to install and maintain air filtration systems, including panel filters and standalone units. These systems provide a reduction of indoor PM, as shown in the South Coast AQMD pilot study², and provide public health benefits.

The CAP Guidelines establish a set of requirements to use the incentive funds to reduce air pollution at schools by air filtration. For instance, the CAP Guidelines currently outline a 10% cost-share for schools when purchasing standalone units and limit the eligibility to public schools that serve students in any grade from kindergarten through 12th grade. The intent of this project plan is to revise some of these requirements to address the concerns that AB617 communities have raised during the Community Steering Committee (CSC) meetings and Community Emissions Reduction Plans (CERPs) development, and provide more flexibility to encourage schools and other facilities that are prioritized by the CSC members to participate in the air filtration program. Some of these revisions include expanding the eligibility to include daycare or childcare centers, preschools, community centers, and libraries, and to allow participants to purchase standalone units using 100% of the funds (no-cost share requirement). These revisions are aligned with the community-recommended actions in the CERPs to include the most vulnerable populations—regardless of race, ethnic background, religion, sex, economic status, citizen or non-citizen—to benefit from air filtration technologies. Also, given South Coast AQMD’s experience in implementing these types of projects, staff believes these revisions improve

¹ CARB CAP Incentives 2019 Guidelines

<https://ww2.arb.ca.gov/resources/documents/community-air-protection-incentives-guidelines>

² Pilot Study of High-Performance Air Filtration for Classroom Applications

<http://www.aqmd.gov/docs/default-source/ceqa/handbook/aqmdpilotstudyfinalreport.pdf?sfvrsn=0>

the overall success of the South Coast AQMD school air filtration program in AB617 communities.

The requirements of this project plan are applicable to all schools and other facilities (as defined under program eligibility) that apply for CAP incentive funds in the South Coast AQMD AB617 communities that prioritize air filtration projects in their incentive budget.

Project Identification

The purpose of this project plan is to expand the eligibility criteria described in Chapter 5 of the CAP Guidelines for reducing air pollution at schools to include daycare or childcare centers, preschools, community centers, and libraries that are prioritized by CSC members in AB617 communities within South Coast Air Basin or prioritized by South Coast AQMD to be eligible for CAP funding for up to 100% of the eligible costs of the air filtration systems including costs associated with site assessments.

This stationary source project type was prioritized by CARB as listed in Chapter 5 of the CAP Guidelines. This project plan will provide incentives to schools, preschools, daycare or childcare centers, community centers, and libraries that are prioritized by CSC members or South Coast AQMD due to their proximity to stationary and mobile source emission sources to install air filtration systems that reduce the concentration of particulate contaminants from indoor air. The CSC members in each community developed a prioritization school or other facilities list based on their proximity to several emission sources including freeways, railyards, warehouses, refineries, etc. to install air filtration systems.³

Community Support

Community Outreach for Projects Located within AB 617 Communities with a CERP that Identifies Exposure Reduction at Schools

Installing air filters in schools to reduce community exposure to diesel PM and other pollutants is a priority for AB 617 communities in the South Coast AQMD. AB617 communities identified exposure reduction to particulate matter emissions from different sources such as freeways, traffic, fugitive dust, railyards, etc. as a community air quality priority. Further, the East Los Angeles, Boyle Heights, West Commerce (ELABHWC), Eastern Coachella Valley (ECV), Southeast Los Angeles (SELA), San Bernardino, Muscovy (SBM), and West Commerce and West Long Beach (WCWLB) communities prioritized funding for school air filtration systems through a participatory budgeting

³ Example of Prioritization efforts in WCWLB, SBM, and ELABHWC communities

<http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/east-la/cerp-camp-update-may-28-2020.pdf?sfvrsn=8>

<http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/san-bernardino/presentation-may-21-2020.pdf?sfvrsn=8>

<http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/presentation-may-13-2020.pdf?sfvrsn=8>

process led by South Coast AQMD staff. Table 1 – AB 617 Communities that Prioritized School Air Filtration. During CSC meetings in these communities, a prioritization list⁴ of schools was also developed.

The recommended actions to use the incentive funds to address different communities' concerns about reduction of exposure to airborne particulate matters by using air filtration systems at schools are summarized in Table 2.

South Coast AQMD staff attended the incentive budget planning CSC meetings and provided additional information about school air filtration program goals. At the conclusion of the meetings, CSC members provided the top three categories for emission reduction projects in their communities. Results of the polling confirmed the CSC members' support to implement school air filtration program in these communities.⁵

South Coast AQMD staff commits to provide future briefings to CSC meetings if additional projects within the CERP are intended to be funded under this program. CSC members and the public would be notified of the incentive program update through current meeting announcement procedures and staff will provide an oral report to describe additional projects that could be funded in the CERP. As with the previous CSC meeting update, staff would seek input using a survey or poll to identify community support if there were competing priorities. In addition, the solicitation for the AB617 school air filtration program and any updates will be announced through a South Coast AQMD dedicated website for AB617 incentive programs.

⁴ School Prioritizations Lists for WCWLB, SBM, and ELABHWC communities

<http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/school-prioritization-list.pdf?sfvrsn=14>

<http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/san-bernardino/school-prioritization-results-may-21-2020.pdf?sfvrsn=8>

<http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/east-la/school-prioritization-list.pdf?sfvrsn=8>

⁵ Poll Results for WCWLB, SBM, SELA, and ELABHWC communities

<http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/east-la/presentation-apr8-2021.pdf?sfvrsn=15>

<http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/san-bernardino/presentation-apr14-2021.pdf?sfvrsn=8>

<http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/southeast-los-angeles/presentation-apr15-2021.pdf?sfvrsn=14>

<http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/presentation-apr8-2021.pdf?sfvrsn=20>

Table 1. AB 617 Communities that Prioritized School Air Filtration

Name of the community group	Purpose of the community group	Total number of members in the community group (including alternate members)	Date of formation/establishment	A description of the decision-making process
ELABHWC	Community Engagement and Public Input	32	November 2018	CSC Charter ⁶
WCWLB	Community Engagement and Public Input	38	October 2018	CSC Charter ⁷
SBM	Community Engagement and Public Input	28	October 2018	CSC Charter ⁸
SELA	Community Engagement and Public Input	40	February 2020	CSC Charter ⁹

⁶ Available at South Coast AQMD’s website at: <http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/east-la/charter-english.pdf?sfvrsn=8>

⁷ Available at South Coast AQMD’s website at: <http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/charter-english.pdf?sfvrsn=8>

⁸ Available at South Coast AQMD’s website at: <http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/san-bernardino/charter-english.pdf?sfvrsn=8>

⁹ Available at South Coast AQMD’s website at: <https://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/southeast-los-angeles/charter-feb-2020.pdf?sfvrsn=8>

Table 2. CERP Recommended Actions to Use Incentive Funds to Address AB617 Communities Top Concerns

Community	CERP Chapter	Action
WCWLB	5g- Schools, Childcare Centers, and Homes	Begin installation of air filtration systems in schools, and extend replacement filters at schools with existing high efficiency replacement systems
ELABHWC	5g- Schools, Childcare Centers, Libraries, and Public Housing Projects	Install air filtration systems at schools, childcare centers, libraries, and community centers
SBM	5g- Exposure Reduction for Sensitive Populations in Schools, Childcare Centers, and Homes	Work with appropriate entities to implement the installation of high efficiency air filtration systems in schools and homes and replace filters at schools
ECV	5b- Salton Sea	Identify funding to install and maintain air filtration systems at schools and homes located near the Salton Sea to reduce exposure to dust emissions
ECV	5c- Pesticides	Identify funding for exposure reduction projects (e.g., air filtration systems and weatherization projects)
ECV	5d- Fugitive Road Dust	Identify funding to install and maintain air filtration systems at schools, community centers and homes to reduce exposure to dust emissions
ECV	5e- Open Burning	Identify funding to implement weatherization projects and to install and maintain air filtration systems at schools and homes located near frequent burn sites
ECV	5f- Diesel Mobile Sources	Identify funding to implement weatherization projects and to install and maintain air filtration systems at South Coast AQMD
ECV	5g- Greenleaf	Identify funding to implement weatherization projects and to install and maintain air filtration systems at schools, community centers and homes to reduce exposure to industrial, commercial and other sources
SELA	5b- Truck Traffic and Freeways	Work with local school districts and CSC members to identify and prioritize schools exposed to truck emissions that may benefit from installation of air filtration systems

Program Eligibility

Public schools (or school districts), public daycare or childcare centers, public preschools, public community centers, and public libraries (collectively referred to as “Facilities” in this project plan), that are within AB617 communities and prioritized by CSC members to receive air filtration systems are eligible to apply.

Participants will be required to submit an online application by the deadline set by the South Coast AQMD. At time of application, participants must:

- A. Meet Federal, State, and local requirements
- B. Have authority to make any necessary modifications to the Facilities eligible under this program, and existing air filtration technologies and heating, ventilation and air conditioning (HVAC) system
- C. Show proof of regulatory compliance and operating permit if any
- D. Submit an HVAC assessment including the proposed air filtration system and cost from a licensed HVAC consultant. The assessment from the selected contractor does not have to match the final invoice submitted for reimbursement if additional work is required for the installation, but panel filter, standalone unit costs and labor costs that comprise the major components of the technology should match the initial quote.

Participant Requirements

After the contract execution, participants must meet the following requirements:

- A. Maintain the air filtration system to manufacturer's specifications during project lifetime
- B. Comply with the South Coast AQMD school air filtration program requirements
- C. Maintain compliance with all Federal, State, and local rules and regulations.
- D. Make the program funded air filtration system available for inspection if requested by South Coast AQMD and/or CARB staff during the project lifetime
- E. Comply with CARB CAP Incentives 2019 Guidelines
- F. Notify the South Coast AQMD, of any intent to change ownership of any funded material or equipment. The new owner must comply with the terms and conditions of the project contract. Furthermore, South Coast AQMD must approve the change in ownership before the transfer
- G. In the case of a force majeure event (such as a fire) drastically affecting use of the project equipment, the participant in this program shall alert the South Coast AQMD within 14 calendar days of the incident, in addition to the following:
 - a. The participating Facility must provide the police or fire report, a letter from the insurance company regarding the incident, and other information requested by the South Coast AQMD. The participant must repair the equipment or replace it with a substitute that can take over the terms of the contract or voucher. The substitute technology must be similar to the initially funded technology.

- b. Notify the South Coast AQMD of change of mailing address within 20 calendar days.
- c. Repay the funded amount if the participant does not follow one or more terms as specified in the contract and application. CARB and/or the South Coast AQMD will specify repayment terms.

Contract Period

The contract period will be based on two phases: Project Completion and Project Life. Project Completion is the period after the contract is executed and until a post-installation inspection is made to document that the air filtration system is installed and operational. Project Life is the time the applicant is required to operate and maintain the grant-funded equipment. Project Completion will be based on the schedule included in the executed contract, and the Project Life is five years.

Funding Amounts

Project funding is limited to the initial cost of equipment as summarized in table below, and any initial cost of installation, including material and labor. In addition to this cost, the applicant may also request for funds for replacement filters during the Project Life. During the Project Life, the applicant (or its contractor, as applicable) will be responsible for ongoing operation and maintenance, replacement filters storage costs and reporting.

Table 3. Funding Amounts for Air Filtration Systems

Type of Equipment	Funding Amount
Panel Filters	Up to 100%
Standalone Systems	Up to 100%

Eligible Costs

Program funds may only pay for items essential to the installation and maintenance of air filtration systems at eligible Facilities. These costs include:

- A. Performing impact assessment as described under Project Eligibility Criteria, General Requirements¹⁰
- B. Panel filters
- C. Standalone units
- D. Material and labor to install air filtration system
- E. Indoor and outdoor monitoring unit to collect usage data

¹⁰ CARB CAP Incentives 2019 Guidelines
<https://ww2.arb.ca.gov/resources/documents/community-air-protection-incentives-guidelines>

- F. Filter replacements during Project Life
- G. Shipping and delivery costs

The cost assessment (either included in the HVAC assessment or prepared separately) should be provided to South Coast AQMD for review and approval. Any additional initial installation cost not included in the above list (and not under Ineligible Costs) should be submitted to South Coast AQMD staff to approve and subject to South Coast AQMD discretion for approval.

Ineligible Costs

Program funds may not be used for ongoing operation and maintenance of the equipment, except those costs identified as eligible costs. Ineligible costs include:

- A. Utilities
- B. Labor for device operation, maintenance, or monitoring
- C. Extensive HVAC system upgrades that require replacing the HVAC system, new ducting, and/or other extensive upgrades will be subject to South Coast AQMD discretion for approval

Project Requirements

- A. Eligible New Equipment
 - a) Panel filters with at least a Minimum Efficiency Reporting Value (MERV) of 13 or the best available applicable filter as determined by a current HVAC assessment. Replacement filters must have a higher MERV rating than the current in-use filters.
 - b) Standalone air ventilation unit with a MERV of 14 or greater and with a noise threshold at or below 45 decibels. Portable air cleaning units must have a clean air delivery rate (CADR) for tobacco smoke (0.09-1.0 μM) or CADR equivalent manufacturer's rating for filtration that is appropriate for the classroom size.

The minimum requirements for projects are listed below.

- B. Project Criteria
 - a. An impact assessment must be conducted by the equipment owner or an HVAC engineer (or Contractor) to ensure the new filtration will not adversely affect the existing HVAC system(s). The assessment must include the following:
 - 1.HVAC information such as type of system and associated MERV rating filter.
 - 2.Estimated hours of use (based on normal duty-cycle) and maintenance downtime.
 - 3.Number of classrooms and students per classroom where air filtration is to be upgraded.
 - 4.Size (length, width, and height) of each room to be upgraded.

5. Potential increase in energy costs for the new air filtration system (annual kilowatt-hr * dollars / kW-hr = annual cost).
 6. If available, the total ventilation (m³/hr) for old and new air filtration systems.
- b. Applicant must maintain equipment in a manner suitable for the type of air filtration equipment selected.
 - c. The maximum project life is five years. In the case of air filtration system projects, the project life represents the number of years that the project will support the purchase of new filters, in addition to the span of time that participants must submit normal annual reporting requirements to the South Coast AQMD
 - d. Participants can re-apply for funding, if available, and use the prior HVAC assessment at the discretion of the South Coast AQMD if the prior assessment is still applicable.
 - e. Maintenance in accordance with requirements of air filtration equipment selected.

C. Applicant Information

The applicant must provide to the South Coast AQMD the following information for its current air filtration system and details about the equipment option it is proposing to upgrade:

- a) Current in-use air filter information:
 1. Manufacturer.
 2. Model.
 3. Old equipment MERV rating and PM removal efficiency (percentage), if available.
 4. Filter life (number of filters changed annually).
 5. Size of filter: Length x Width x Height.
 6. Filter material, if known.
 7. Frequency of filter change outs, if applicable.
- b) Current in-use air filtration system, if applicable
 1. Annual hour usage (e.g., kilowatt-hour)
 2. Manufacturer.
 3. Model number.
 4. MERV rating.
 5. Pollutant removal efficiency (percentage).
 6. Type of system.
 7. Any unscheduled downtime, including duration of downtime and causes of downtime (one year before application date)
 8. Service/maintenance (one year before application date).
 9. Warranty.
- c) HVAC system assessment.

D. New Equipment Information.

A post-installation inspection will be conducted and submitted to the South Coast AQMD with the invoice to receive the payment of grant funds. The information below must be submitted in a post-installation report format to be approved by the South Coast AQMD. The inspection report may include photographs, copies of invoices that contain the new filter rating, and contractor's and/or installer's contact information (including installation date, inspector's name, and school name).

- a. Air Filters:
 - 1.Manufacturer.
 - 2.Model.
 - 3.New equipment ASHRAE MERV rating and PM removal efficiency (percentage), if available.
 - 4.Annual usage/filter life (number of filters changed annually).
 - 5.Size.
 - 6.Filter material.
 - 7.Duration of filters being changed, if applicable.

- b. Standalone Air Filtration System:
 - 1.Manufacturer.
 - 2.Model number.
 3. ASHRAE MERV rating (or certified HEPA (High Efficiency Particulate Air) if portable air cleaner).
 - 4.Clean air delivery rate (CADR).
 - 5.Pollutant removal efficiency (percentage).
 - 6.Type of system.
 - 7.Ventilation rate.
 - 8.Any unscheduled downtime, including duration of downtime and causes of downtime after installation date.
 - 9.Service/maintenance after installation date.
 10. Warranty.
 11. Reporting. Participants must report the following information annually:
 - a. Estimated number of hours of use, and people in the room during use.
 - b. Statement of any performance issues that occurred with the funded equipment as well as maintenance issues.

Estimate of Exposure Reduction

Air filtration technologies including panel filters, stand-alone units, and a combination of both have shown to reduce exposure to indoor PM. Applicants must provide all the project related information and an estimate of exposure reduction based on the methodology provided in Chapter E of Quantitative Methodologies to the Community Air Protection

Incentives 2019 Guidelines¹¹. South Coast AQMD will collect and verify this information for each application and report to CARB as described in the Reporting Requirements of this project plan.

South Coast AQMD will also evaluate, verify, and approve the applications based on the exposure reduction estimate and overall project cost provided in the impact assessment report that eligible participants submit to South Coast AQMD for each round of funding opportunity as described in this project plan, CARB 2019 CAP incentive guidance document, and CSC budget workshop presentations.

Qualitative Benefits

The California Climate Investments Funding Guidelines do not identify a qualitative benefit for this measure. However, South Coast AQMD will collect information (e.g., filter efficiency) available for each air filtration project to estimate the indoor PM2.5 reduction levels. Estimated PM2.5 reduction levels will be based on the air filtration methodology in Chapter E of Quantitative Methodologies to the CAP 2019 Guidelines

Air filtration systems are proven to reduce students' exposure to indoor and outdoor PM2.5 emission sources. Several schools in AB617 communities are near emission sources and implementing air filtration projects in the South Coast Air Basin reduces students' exposure to PM2.5 and improves public health.

Response Process

South Coast AQMD will release Program Opportunity Notices (PONs) and/or reach out to Facilities identified by the CSC. Facilities meeting the criteria identified in this Project Plan can respond to the PON so that their proposal is reviewed by the South Coast AQMD staff or selected contractor.

Response Submittal and Evaluation

Applicants must respond to the PONs by the due date specified in the solicitation. To initiate the PON period, South Coast AQMD will issue a public notification to advertise the availability of grant funds for this project type. Once the PON period has ended, South Coast AQMD will evaluate the responses received and contact entities as necessary to gather additional information. Based upon this initial evaluation, possible next steps include:

- A request for more detailed information which would be used to further evaluate the response.
- An offer from South Coast AQMD to enter into contract development based on information submitted.
- Notification that the response has been declined from further consideration.

¹¹ CARB Quantitative Methodologies to the Community Air Protection Incentives 2019 Guidelines

<https://ww2.arb.ca.gov/resources/documents/quantitative-methodologies-community-air-protection-incentives-2019-guidelines>

Reporting Requirements

All projects that receive funding under this program must comply with the reporting requirements described in Chapter 3, Section H of the CAP Guidelines. Participants must ensure that project-related information is complete, correct, and supported by documentation and provided to South Coast AQMD upon request. South Coast AQMD will compile this information and prepare mid-cycle and annual reports and provide information to CARB.

At the conclusion of the project, South Coast AQMD staff will utilize project information to report the overall exposure reduction benefits of this program.