

## Schools, Childcare Centers and Homes – Exposure Reduction

### Background

The Wilmington, Carson, West Long Beach community identified children’s exposure to harmful air pollutants while at school and childcare centers as a priority. A major pollutant of concern in this community is diesel particulate matter, which can cause health problems. Many environmental justice communities experience a disproportionately high level of exposure to these pollutants, especially when there are schools, homes, and other locations where people spend a lot of time that are close to air pollution sources. Children, seniors, and people with certain medical conditions are especially sensitive to the impacts for air pollution. However, proactive steps such as installing high performance air filtration systems in schools and notifying the public when air quality is unhealthy can reduce a child’s exposure to harmful air pollutants.

### Community Air Quality Priorities – Reducing Exposures at Schools, Senior Centers, or Where Sensitive Populations Spend Time

CSC members identified hospitals, senior centers, and schools as places where the South Coast AQMD should focus on reducing exposure to harmful air pollutants. The CSC provided examples, such as the idling of diesel trucks and locomotives near schools or parks that provide exposure to harmful air pollutants found in diesel exhaust. The CSC members also shared instances where students and other sensitive populations near sources of air pollution experienced health problems.

To address community concerns about the health impacts of air pollution, the CSC members prioritized community outreach and engagement as a way to reduce exposure to harmful air pollutants. This includes providing information to schools, childcare centers, and senior centers when outdoor air pollution levels are unhealthy, and what proactive steps can be taken to reduce exposure when air quality is unhealthy. Other input received includes increasing the amount of greenspace, such as planting trees around the community.

The CSC also identified school and residential air filtration as another effective way to reduce exposure to air pollution, particularly for residents who live in areas close to major sources of diesel emissions. The South Coast AQMD does not currently have a program to provide residential filtration systems; however, the agency will work with its partners to identify opportunities for residential filtration systems and share this information with the CSC.

### Ongoing Efforts

#### *School Air Filtration*

The installation of air filtration systems in schools can reduce exposure to air pollution inside school buildings. There are certain types of air filtration systems (“high efficiency air filters”) that are effective in filtering very small particles from diesel engines. These small particles can be inhaled deep into the lungs and cause health problems. These filtration systems may be beneficial

to schools located near freeways, truck routes, ports, rail yards, and other sources<sup>1</sup> of diesel emissions.

South Coast AQMD has administered the installation of air filtration systems at schools in the Los Angeles Unified School District since 2006. To date, these systems have been installed at 24 schools within the Wilmington, Carson, West Long Beach community. Figure 5-1 and Table 5-1 summarizes the location and list of schools that have air filtration systems installed within this community. The map and table only include schools that have had air filtration systems installed through programs administered by the South Coast AQMD. Other school districts may have installed high efficiency air filtration systems through other programs or funding sources. For example, Long Beach Unified School District received funding from the Port of Long Beach to install stand-alone air filtration systems. Table 5-2 lists the schools in West Long Beach that have had air filtration systems installed through funding from the Port of Long Beach.

### *Environmental Justice Community Partnership (EJCP)<sup>2</sup> Clean Air Ranger Education (CARE)<sup>3</sup>*

The EJCP is designed to build relationships with community members and organizations to achieve clean air and healthy, sustainable communities. The Clean Air Ranger Education (CARE) Pilot Program is a program designed for elementary school education and includes topics on air pollution and health, air quality flags, and zero-emission equipment demonstrations.

### *Kids Making Sense Program<sup>4</sup>*

Low-cost sensor technology allows the South Coast AQMD to implement a new program for high school teachers and students in environmental justice communities by combining science, technology, engineering, and math education with air quality coursework.

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<sup>1</sup> Polidori, A., et al. "Pilot Study of High-Performance Air Filtration for Classroom Applications." *Indoor Air*, vol. 23, no. 3, 2012, pp. 185–195., doi:10.1111/ina.12013

<sup>2</sup> South Coast AQMD, Environmental Justice Community Partnership, <http://www.aqmd.gov/ejcp>, Accessed June 6, 2019.

<sup>3</sup> South Coast AQMD, Environmental Justice Community Partnership Advisory Council, June 2019, <http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/2019-ejcp-agenda-june-5.pdf>, Accessed June 6, 2019.

<sup>4</sup> Sonoma Technology, Kids Making Sense, 2017, <https://kidsmakingsense.org/>, Accessed June 6, 2019.

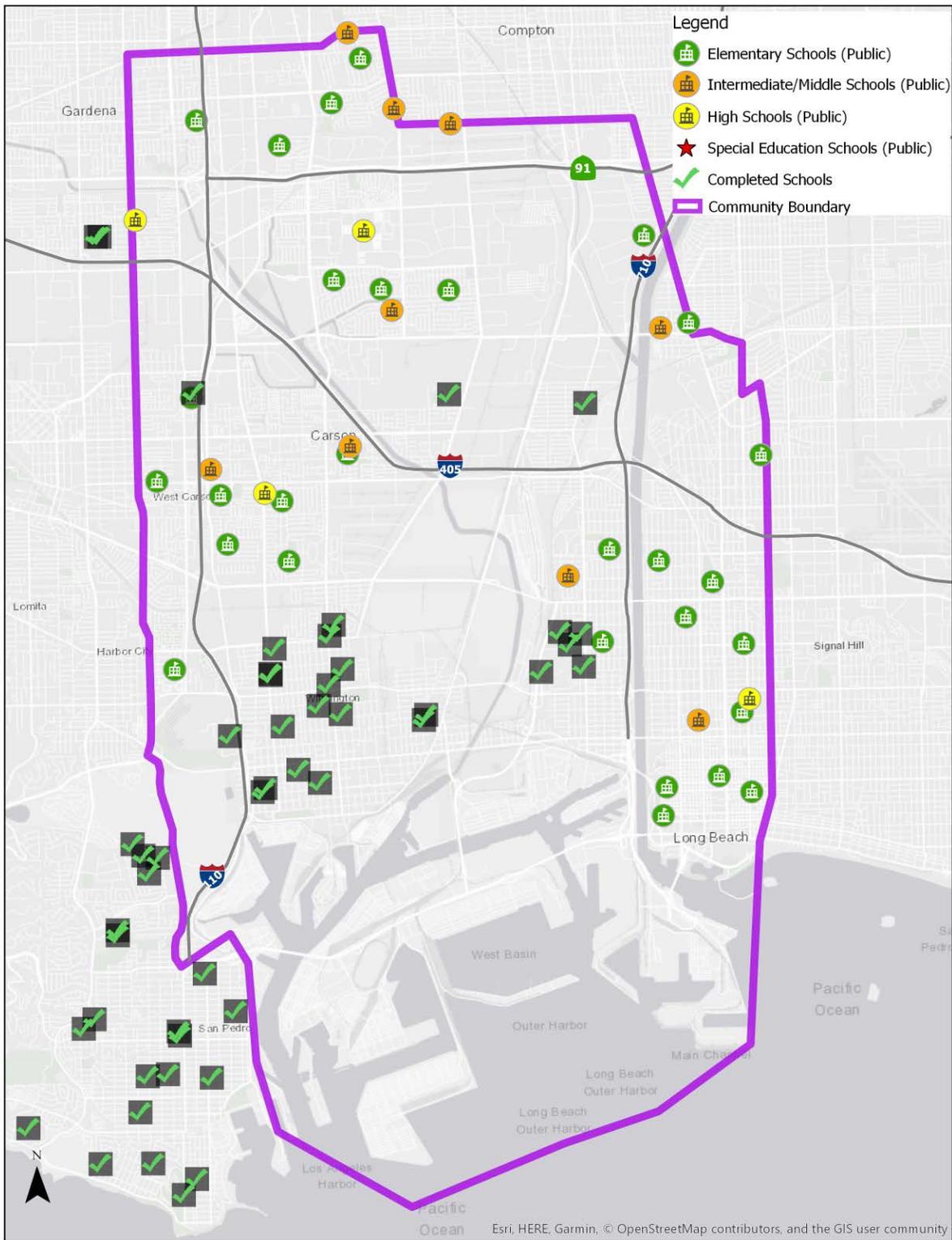


Figure 5-1. Map of schools in Wilmington, Carson, West Long Beach with air filtration systems installed through programs administered by the South Coast AQMD

Table 5-1. List of schools in Wilmington, Carson, West Long Beach with air filtration systems installed through programs administered by the South Coast AQMD

Name of School	
Avalon High School	Hawaiian Ave Early Education Center
Bethune Elementary School	Hawaiian Ave Elementary School
Broad Ave Elementary School	Hudson Elementary School
Cabrillo High School	Pacific Harbor Christian School K-12
Del Amo Elementary School	Phineas Banning High School
Dominguez Elementary School	Reid High School
Fries Ave Elementary School	Saints Peter and Paul K-8
George De La Torre Elementary School	Saint Lucy K-8
Gulf Ave Elementary School	Wilmington Christian School K-8
Happy Harbor Preschool	Wilmington Middle School
Harbor Teacher Preparatory High School	Wilmington Park Early Education Center
Harry Bridges Span K-8	Wilmington Park Elementary School

Table 5-2. List of schools in West Long Beach with stand-alone air filtration systems installed through funding from the Port of Long Beach

Name of School	
Birney Elementary School	Los Cerritos Elementary School
Edison Elementary School	Muir K-8
Garfield Elementary School	Robinson K-8
George Washington Middle School	Stephens Middle School
Lafayette Elementary School	Webster Elementary School

Opportunities for Action

In addition to filtration systems at schools, the CSC prioritized education and outreach as a way to reduce exposure to harmful air pollutants. Strategies to reduce the exposure to these pollutants are described below.

<b>Action 1: Reduce Exposure to Harmful Air Pollutants through Public Outreach to Schools and Childcare Centers</b>	
<b>Course of Action:</b>	<ul style="list-style-type: none"> <li>• Provide air quality related programs to schools, including the Environmental Justice Community Partnership (EJCP), Clean Air Ranger Education (CARE) program, and Kids Making Sense program</li> <li>• Partner with the Los Angeles County and City of Long Beach Departments of Public Health on providing information on how to receive air quality advisories, and how to reduce exposure to air pollution, particularly for sensitive populations. Work with the school districts to provide this information to local schools and childcare centers.</li> <li>• Partner with community-based organizations such as <i>[insert collaborating organization(s) here]</i> to share information or provide outreach to schools for asthma related programs</li> <li>• Partner with local school districts to provide information on programs such as Safe Routes to School or ridesharing</li> </ul>
<b>Strategies:</b>	<ul style="list-style-type: none"> <li>• Public Information and Outreach</li> <li>• Collaboration</li> </ul>
<b>Goals:</b>	<ul style="list-style-type: none"> <li>• Participate in <i>[fill in number]</i> public outreach events (e.g., health fairs, Earth week event) at schools or childcare centers on information relating to air quality and reducing exposure</li> <li>• Provide <i>[fill in number]</i> childcare centers with information relating to air quality effects on young children and reducing exposure, prioritizing centers based on CSC input</li> <li>• Implement EJCP CARE and Kids Making Sense programs at <i>[fill in number]</i> schools</li> <li>• Collaborate with community-based organizations to cohost outreach meetings</li> <li>• Encourage school districts to reduce the number of vehicle miles traveled and/or participate in programs such as Safe Routes to Schools</li> </ul>
<b>Estimated Timeline:</b>	<ul style="list-style-type: none"> <li>• Fourth quarter of 2019, begin working with health departments on developing outreach materials</li> <li>• Early 2020, begin outreach efforts with school districts and community-based organizations</li> </ul>

Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibility:
South Coast AQMD	<ul style="list-style-type: none"> <li>• Implement the EJCP CARE program and Kids Making Sense program to schools</li> <li>• Partner with community-based organizations and Departments of Public Health on asthma-based programs and air quality notifications that inform the community about proactive steps to reduce exposure to harmful air pollutants</li> <li>• Prepare flyer and/or infographic to provide to school districts (students and parents) about rideshare benefits and programs</li> </ul>
Los Angeles County Department of Public Health	Partner with South Coast AQMD on developing notifications to schools for air quality advisories
Long Beach Department of Public Health	Partner with South Coast AQMD on developing notifications to schools for air quality advisories
Community Based Organizations (with asthma related programs)	Partner with South Coast AQMD to share information and/or provide outreach to school districts for asthma-related programs
References:	
For more information on:	
<ul style="list-style-type: none"> <li>• Clean Air Ranger Education (CARE) Program: <a href="http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/2019-ejcp-agenda-june-5.pdf">http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/2019-ejcp-agenda-june-5.pdf</a></li> <li>• Kids Making Sense Program: <a href="https://kidsmakingsense.org/">https://kidsmakingsense.org/</a></li> </ul>	

## Action 2: Reduce Exposure to Harmful Air Pollutants at Schools

### Course of Action:

- Continue the installation of school air filtration systems with priority given to schools near truck routes, railyards, and/or major freeways
- Explore opportunities for additional schools and funding to provide filter replacements for schools already equipped with high efficiency filtration systems

### Strategy:

- Exposure Reduction

### Goal:

- Installation of air filtration systems in *[insert number of filtration systems to be discussed by CSC members]* schools with priority given to *[insert prioritizing filters to be discussed by CSC members]*

<ul style="list-style-type: none"> <li>• Provide filter replacements for <i>[insert number of schools]</i> for up to a five year period with priority given to <i>[insert prioritizing filters to be discussed by CSC members]</i></li> </ul>	
Estimated Timeline:	
<ul style="list-style-type: none"> <li>• Mid-2020, begin installation of air filtration systems in <i>[insert number of schools]</i> schools</li> </ul>	
Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibility:
South Coast AQMD	Installation of air filtration systems in schools
[School Districts]	Partner with South Coast AQMD on installation of school air filtration systems and/or filter replacement programs
References:	
For more information on air filtration in schools: <a href="https://www.aqmd.gov/docs/default-source/ceqa/handbook/aqmdpilotstudyfinalreport.pdf">https://www.aqmd.gov/docs/default-source/ceqa/handbook/aqmdpilotstudyfinalreport.pdf</a>	

Action 3: Reduce Exposure to Harmful Air Pollutants in Homes	
Course of Action(s):	
<ul style="list-style-type: none"> <li>• Identify new or existing technologies, programs, and funding sources that can provide the most effective air filtration systems in homes</li> </ul>	
Strategies:	
<ul style="list-style-type: none"> <li>• Exposure Reduction</li> <li>• Incentives</li> <li>• Public Information and Outreach</li> </ul>	
Goal(s):	
<ul style="list-style-type: none"> <li>• Partner with other entities <i>[insert collaborating entities]</i> to determine new or existing programs that can provide home filtration systems</li> <li>• If funding or programs become available, share information with CSC members</li> </ul>	
Estimated Timeline:	
<ul style="list-style-type: none"> <li>• Mid-2020, consult with CSC members and appropriate stakeholders to identify any new or existing air filtration programs in homes</li> </ul>	
Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibility:
South Coast AQMD	<ul style="list-style-type: none"> <li>• Identify new or existing sources or programs that can provide resources for air filtration in homes</li> <li>• Conduct outreach and share information with CSC members</li> </ul>
References:	

<b>Action 4: Increase Green Space in Areas Where People Spend Time</b>	
<b>Course of Action(s):</b>	
<ul style="list-style-type: none"> <li>Identify new or existing sources or programs that can provide funding for tree planting</li> </ul>	
<b>Strategies:</b>	
<ul style="list-style-type: none"> <li>Public Information and Outreach</li> </ul>	
<b>Goals:</b>	
<ul style="list-style-type: none"> <li>Partner with other entities (i.e. Los Angeles County Department of Public Health) to determine new or existing sources or programs that can provide funding to coordinate tree planting</li> <li>If funding or programs become available, share information with CSC members</li> </ul>	
<b>Estimated Timeline:</b>	
<ul style="list-style-type: none"> <li>Mid-2020, consult with CSC members and appropriate stakeholders to identify any existing funding sources for tree planting or increasing green space</li> </ul>	
<b>Implementing Agency, Organization, Business or Other Entity:</b>	
<b>Name:</b>	<b>Responsibility:</b>
South Coast AQMD	<ul style="list-style-type: none"> <li>Identify new or existing sources or programs that can provide funding for tree planting</li> <li>Conduct outreach and share information with CSC members, when opportunities are available</li> </ul>
<b>References:</b>	