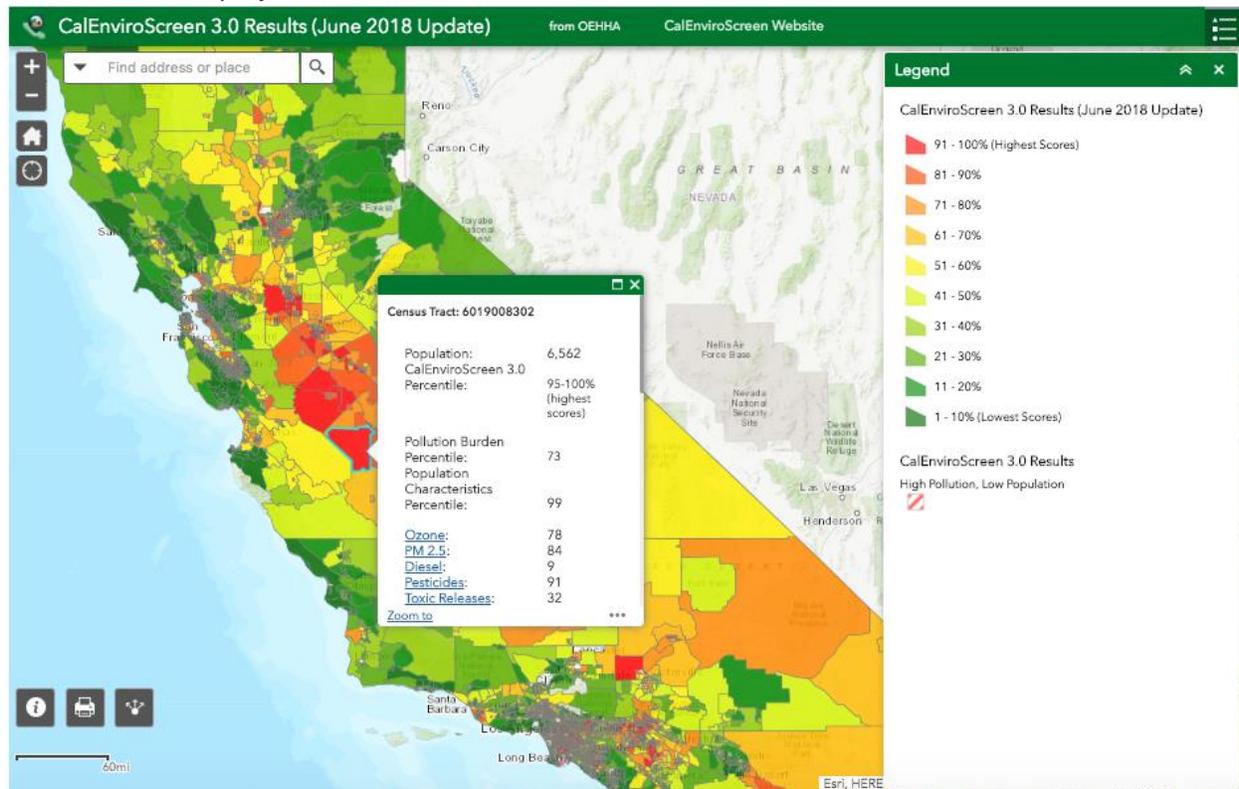


AHSC Tips: Community Air Pollution Exposure Mitigation

Many communities, especially those that are disadvantaged, deal with air pollution from freeways, heavily used traffic corridors, and nearby industry. Historical land use decisions have sited residential communities near these pollution sources without consideration of the major health impacts, such as worsening of asthma and respiratory diseases. AHSC presents an opportunity to reduce local air pollution and its harmful effects through design of buildings and transit corridors.

STEP 1 - USE CALENVIROSCREEN: Use [CalEnviroScreen 3.0 mapping tool](#) to identify pollutants of concern and/or known sources of pollution affecting the project area. Report the PM_{2.5}, Diesel PM, Toxic Releases to Air, and Traffic Density percentiles as described in CalEnviroScreen 3.0 for the census tract in which the project will be sited.



Note, a geographic area's percentile for a given indicator simply tells the percentage of areas with lower values of that indicator. A percentile does not describe the magnitude of the difference between two or more areas. For example, an area ranked in the 30th percentile is not necessarily three times more impacted than an area ranked in the 10th percentile. A [spreadsheet](#) showing raw data and calculated percentiles for individual indicators for individual census tracts can be downloaded [here](#).

STEP 2 - DESCRIBE DESIGN STRATEGIES TO ADDRESS AIR POLLUTION: Describe how air pollution mitigation strategies are utilized in the design of the project, how they were selected, and how they

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address pollution sources. The table below provides resources on example strategies. Note, these strategies are limited by the many factors that may influence their effectiveness, ranging from local meteorology, topography, human use, maintenance, etc.

Potential designs to address air pollution	How does it address air pollution?	Resources
<p>Speed reduction mechanisms: Roundabouts, curb extensions, and crossing improvements</p>	<p>These features can reduce stop-and-go driving and hard accelerations and thereby reduce air pollution emissions rates. Studies show that roundabouts can reduce localized pollutant concentrations compared to intersections with stop and signal control by 20 percent or more.</p>	<p>California Air Resources Board, “Strategies to Reduce Air Pollution Exposure near High Volume Roadways: Technical Advisory”</p>
<p>Speed limit reductions on high-speed roadways to <55 mph: Speed limit signage</p>	<p>Generally, speed limit reductions on high-speed roadways can reduce tailpipe emission rates up to 30 percent, depending on the change in speed, the pollutant measured or modeled, and roadway characteristics.</p>	<p>California Air Resources Board, “Strategies to Reduce Air Pollution Exposure near High Volume Roadways: Technical Advisory”</p>
<p>Building and street design along corridors: Street frontage design elements like edges and corners, as well as open and wider spaces, that help break up building mass</p>	<p>Street corridors characterized by buildings with varying shapes, heights, and open spaces encourage air flow and benefit from better pollutant dispersion and air quality. Additionally, wider sidewalks, bicycle lanes, and dedicated transit lanes can have similar benefits.</p>	<p>California Air Resources Board, “Strategies to Reduce Air Pollution Exposure near High Volume Roadways: Technical Advisory”</p>
<p>Solid barriers separating housing and other sensitive land uses: Sound walls near a freeway or high-volume corridor</p>	<p>Studies have found that solid barriers reduce pollution concentrations between 10 percent to 50 percent compared to no barrier being juxtaposed to a freeway or high-volume roadways.</p>	<p>California Air Resources Board, “Strategies to Reduce Air Pollution Exposure near High Volume Roadways: Technical Advisory”</p>
<p>Trees and Vegetation: Plantings and landscaping to create a pollutant barrier between sensitive land uses and emission source</p>	<p>Studies show trees and vegetation assist in turbulence and dispersion of up to 22 percent of near-roadway pollution when strategically planted to mimic a solid barrier. Reduction in pollution is greater when vegetation barriers are thick, with full coverage from the ground to the top of the</p>	<p>US EPA, “Recommendations for Constructing Roadside Vegetation Barriers to Improve Near-Road Air Quality” i-Tree planting calculator to quantify the amount of O₃, NO₂, SO₂, VOC, and PM 2.5 reduction by</p>

	canopy. Maximum benefits have been shown to occur when trees and vegetation are combined with solid barriers as pollutants can escape through gaps in foliage or travel around edges.	planting different species of trees and number of trees planted.
Air filtration system: MERV 14 or higher	MERV-14 air filtration devices installed on an HVAC air intake system can remove 80-90% of indoor particulate matter. An important component is also maintenance so identifying who will replace the MERV filters ensures that personnel can be trained and will conduct regular inspections.	Bay Area Air Quality Management District “Planning Healthy Places: A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning”

STEP 3 - PROVIDING OUTREACH AND EDUCATION: In addition to adopting community air pollution exposure mitigation strategies, one AHSC threshold requirement in the program guidelines (Section 106) is a commitment to provide outreach and education to all residents of the affordable housing developments on reducing potential health impacts of air pollution. Local health departments, air districts, and nonprofit organizations may provide useful resources for this requirement. A few places to start are below:

- CA Department of Public Health, [Indoor Air Quality \(IAQ\) program](#)
- CA Department of Public Health, [Climate Change and Health Equity Program](#)
- California Air Resources Board, [Indoor Air Quality & Personal Exposure Assessment Program](#)
- California Air Resources Board, [CA Air Districts List](#)
- Coalition for Clean Air, [Community Learning Enhances Air Resources \(CLEAR\) Program](#)
- EPA, [Air Quality Index](#)

CONCLUSION: Using CalEnviroScreen, describing design strategies to address air pollution, and providing outreach and education, can help the AHSC project support public health goals as well as reduce GHG emissions. As a reminder from the Narrative Rubric, full points are awarded to projects that: identify pollutants of concern indicated in CalEnviroScreen 3.0 or other reliable data source; identify local pollution source(s); and use appropriate measures to mitigate exposure to source(s) in a significant way.