



**CALIFORNIA
ENERGY COMMISSION**



California Energy Commission

STAFF REPORT

Localized Health Impacts Report

Addendum 5 for Selected Projects Awarded Funding Through the Clean Transportation Program Under Solicitation GFO-17-607 School Bus Replacement for California Public School Districts, County Offices of Education, and Joint Power Authorities

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ADDENDUM 5

On February 6, 2019, the California Energy Commission (CEC) published a notice of proposed award (NOPA)¹ announcing the schools, school districts, and other educational agencies selected to receive grant funding under Solicitation GFO-17-607. The Localized Health Impacts (LHI) Report for Solicitation GFO-17-607 (Publication: CEC-600-2019-008)² was published and made available for public comment March 6, 2019. This addendum uses the same approach to assess the LHI information for new project locations as in the original LHI report.

On March 25, 2021, the CEC published a revised NOPA³ where the project applicants Chowchilla Elementary School District and Soledad School District were added to the list of projects recommended by CEC staff for a funding award. Table 1 lists the proposed awardees along with their project details and environmental justice (EJ) indicators⁴ corresponding to their project site locations. See Appendix A of this LHI report for EJ indicator definitions.

Table 1: Project Details Along With EJ Indicators

Awardee	EV Buses Awarded Funding	Awardee Location	EV Infrastructure Project Site	EJ Indicators
Chowchilla Elementary School District	1	355 North Fifth St, Chowchilla, CA 93610	335 Market St, Soledad, CA 93960	Poverty, Minority, Unemployment
Soledad Unified School District	1	1261 Metz Rd, Soledad, CA 93960	300 North 13th St, Chowchilla, CA 93610	Poverty, Minority, Unemployment

Source: California Energy Commission staff

Air Quality and EJ Indicators

Toxic air pollutants such as nitrogen oxides (NO_x),⁵ particulate matter (PM)⁶ 2.5 microns in diameter or less (PM_{2.5}), and PM 10 microns in diameter (PM₁₀) are known to cause harmful

1 CEC [funding page for GFO-17-607](#). Available at www.energy.ca.gov/solicitations/2018-05/gfo-17-607-school-bus-replacement-california-public-school-districts-county.

2 Bobadilla, Jonathan. 2019. [Localized Health Impacts Report Under Solicitation GFO-17-607-School Bus Replacement](#). California Energy Commission, Fuels and Transportation Division. Publication Number: CEC-600-2019-008. Available at <https://ww2.energy.ca.gov/publications/displayOneReport cms.php?pubNum=CEC-600-2019-008>.

3 CEC [Revised NOPA 12 for GFO-17-607](#). Available at https://www.energy.ca.gov/sites/default/files/2021-03/GFO-17-607_NOPA12_Revised_3-25-2021_ADA.pdf.

4 [EJ indicators](#) developed by the United States Environmental Protection Agency (U.S. EPA), Office of Policy. Available at www.epa.gov/ejscreen/environmental-justice-indexes-ejscreen.

5 Nitrogen oxides are a chief component of air pollution that can be produced by the burning of fossil fuels. Also called "oxides of nitrogen."

6 *Particulate matter* is unburned fuel particles that form smoke or soot and stick to lung tissue when inhaled. The number following "PM" represents particle size in microns.

effects to the heart and lungs in humans.⁷ Children, the elderly, and people suffering from heart or lung disease, asthma, or chronic illness are most sensitive to the effects of these pollutants. Replacing old diesel school buses with new electric school buses will benefit local communities by reducing the amount of NO_x and PM typically emitted by older diesel school buses.

CEC staff analyzed potential emissions reductions by using an emission factor model (EMFAC)⁸ developed by California Air Resource Board (CARB) to assess mobile source vehicle emissions from on-road vehicles, including school buses. EMFAC per-mile emission rates of a Model Year 2005 diesel-powered bus are compared to the emission rates of a Model Year 2019 battery-powered electric bus to provide a baseline for the emissions analysis done in this LHI report. Table 2 lists the expected annual reduction in vehicle emissions from replacing a diesel-powered bus with an electric bus.

Table 2: Expected Annual Emissions Reductions*

Awardee	Estimated Annual Miles**	NO_x Reductions (Pounds per Year)	PM_{2.5} Reductions (Pounds per Year)	PM₁₀ Reductions (Pounds per Year)
Chowchilla Elementary School District	18,500	276.7	2.7	2.1
Soledad Unified School District	6,172	92.3	0.9	0.7

Source: California Energy Commission staff. *Figures based on the EMFAC emissions difference between a 2005 diesel school bus and a 2019 electric school bus, when both are driven the same number of estimated annual miles. **Miles estimate provided by awardee staff.

Air Quality and EJ Indicators

The newly proposed station locations (electric vehicle charging stations) are in a nonattainment zone for ozone, particulate matter (PM) 2.5, and PM 10. If a project site is in a nonattainment zone and has more than one EJ indicator, as shown in Table 1, with further detail in Table 3, it is considered a high-risk community, according to the Environmental Justice Screening Method.⁹

7 CARB [list of common air pollutants](http://ww2.arb.ca.gov/resources/common-air-pollutants) and effects on health and environment. Available at ww2.arb.ca.gov/resources/common-air-pollutants.

8 CARB [EMFAC](http://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools) modeling tool webpage. Available at ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools.

9 California Air Resources Board (CARB), *Air Pollution and Environmental Justice, Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability Into Regulatory Decision-Making, 2010*. (Sacramento, California) Contract authors: Manuel Pastor Jr., Ph.D., Rachel Morello-Frosch, Ph.D., and James Sadd, Ph.D.

Table 3: EJ Indicators by Project Location City Demographic

	Below Poverty (2019)	Black or African American (2019)	American Indian and Alaska Native (2019)	Asian and Native Hawaiian and Pacific Islander (2019)	Hispanic or Latino Race (2019)	Persons Under 5 Years of Age (2019)	Persons Over 65 Years of Age (2019)	Unemployment (2020)
California	11.8%	6.5%	1.6%	16.0%	39.4%	6.0%	14.8%	7.9%
EJ Indicator Threshold	11.8%	30%	30%	30%	30%	26.0%	34.8%	7.9%
Chowchilla	20.2%*	8.2%	3.1%	4.1%	46.8%*	5.0%	7.4%	9.7%*
Soledad	13.5%*	9.6%	1.0%	2.1%	72.5%*	6.3%	6.0%	10.4%*

Sources: CEC staff, Employment Development Department, and U.S. Census Bureau. *The city/county names in **bold** indicate a high-risk community, while the asterisk (*) next to the percentages indicate which categories exceed the EJ indicator threshold.

Location Analysis Summary

The newly proposed project locations are assessed according to the original LHI. According to staff’s assessment, both cities are considered high-risk communities; however, the anticipated impacts to the communities where the electric vehicle buses and infrastructure will be located remains positive from cleaner air and anticipated greenhouse gas reductions. If approved, these projects will provide an improved quality of life by reducing unhealthy diesel school bus-generated emissions, bringing cleaner air to schoolchildren, and providing new jobs to the communities the awardees serve.

Public Comment

As provided by Title 13 CCR Section 2343 of the California Code of Regulations, a 30-day public review period applies to this LHI report from the date it is posted on the CEC website. The [original posting date for this report](http://www.energy.ca.gov/altfuels/documents/) is listed at www.energy.ca.gov/altfuels/documents/.

The CEC encourages comments by email. Please include your name or organization’s name in the name of the file. Send comments in either Microsoft® Word format (.doc) or Adobe® Acrobat® format (.pdf) to FTD@energy.ca.gov.

The public can email comments to FTD@energy.ca.gov or send them to:

California Energy Commission
 Fuels and Transportation Division
 1516 Ninth Street, MS-44
 Sacramento, CA 95814-5512

All written comments will become part of the public record and may be posted to the internet.

News media should direct inquiries to the Media and Public Communications Office at (916) 654-4989 or by email at mediaoffice@energy.ca.gov.

APPENDIX A:

Localized Health Impacts Report Method

This LHI report assesses the potential health impacts on communities from projects proposed to receive Clean Transportation Program funding. This LHI report is prepared under the *California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1 (CCR Section 2343)*:

“(6) Localized health impacts must be considered when selecting projects for funding. The funding agency must consider EJ consistent with state law and complete the following:

(A) For each fiscal year, the funding agency must publish a staff report for review and comment by the public at least 30 calendar days prior to the approval of projects. The report must analyze the aggregate locations of the funded projects, analyze the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations, and identify agency outreach to community groups and other affected stakeholders.

(B) Projects must be selected and approved for funding in a publicly noticed meeting.”

This LHI report is not intended to be a detailed pollution analysis of proposed projects nor is it intended to substitute for the environmental review conducted during CEQA. This LHI report includes staff’s application of the EJSM developed by the U.S. EPA to help identify projects in areas where social vulnerability indicators, high exposure to pollution, and greater health-risks are present.

CEC staff identifies high-risk community project locations using data from CARB, the U.S. Census Bureau, and other public agencies. Staff analyzes these data to assign EJ indicators for each project location specified in the LHI report. The proposed project location must meet a two-part standard as follows:

Part 1 – Environmental Standard:

- Communities located within an air quality nonattainment zone for ozone, PM 2.5, or PM 10, as designated by CARB for criteria pollutants.

Part 2 – Demographic Standard:

- Communities having more than one of the following EJ indicators for (1) minority, (2) poverty, (3) unemployment, and (4) age. The EJ indicator thresholds is defined by staff as:
 - 1) A minority subset represents more than 30 percent of a given city’s population.
 - 2) A city’s poverty level exceeds the state average poverty level.
 - 3) The city (or county if city data is unavailable) unemployment rate exceeds the state average unemployment rate.

- 4) The percentage of people living in a city who are younger than 5 years of age or older than 65 years of age is 20 percent higher than the state average for persons under 5 years of age or over 65 years of age.