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ENERGY COMMISSION**



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natural  
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California Energy Commission

## **STAFF REPORT**

# **Localized Health Impacts Report**

For Selected Projects Awarded Funding Through the Clean  
Transportation Program Under Solicitation GFO-20-604  
Hydrogen Fuel Cell Demonstrations in Rail and Marine  
Applications at Ports (H2RAM)

**Gavin Newsom, Governor**  
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# California Energy Commission

Michael Comiter

**Primary Author**

Madison Jarvis

**Commission Agreement Manager**

Charles Smith

**Office Manager**

**TRANSPORTATION POLICY AND ANALYSIS OFFICE**

Hannon Rasool

**Deputy Director**

**FUELS AND TRANSPORTATION DIVISION**

Drew Bohan

**Executive Director**

## **DISCLAIMER**

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## ABSTRACT

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) created the Clean Transportation Program (formerly known as the Alternative and Renewable Fuel and Vehicle Technology Program). This statute, amended by Assembly Bill 109 (Núñez, Chapter 313, Statutes of 2008), authorizes the California Energy Commission to “develop and deploy innovative technologies that transform California’s fuel and vehicle types to help attain the state’s climate change policies.” Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013) reauthorizes the Clean Transportation Program through January 1, 2024.

AB 118 also directs the California Air Resources Board to develop guidelines to ensure air quality improvements. The CARB’s Air Quality Improvement Program Guidelines, approved in 2008, are published in the *California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1, AB 118 Air Quality Guidelines for the Clean Transportation Program*. The guidelines require the California Energy Commission, as the funding agency, to analyze the localized health impacts of Clean Transportation Program-funded projects that require a permit (California Code of Regulations Section 2343).

This Localized Health Impacts Report analyzes and reports on the potential health impacts to communities from projects seeking California Energy Commission funding. Information submitted by project funding applicant(s) is used in this report to help identify communities at a higher risk of adverse health effects from pollution. As provided by California Code of Regulations Section 2343, this Localized Health Impacts Report is available for public comment for 30 days prior to the approval of projects at a publicly noticed business meeting.

**Keywords:** Air pollution, air quality improvement program (AQIP), California Air Resources Board (CARB), Assembly Bill (AB) 118, California Environmental Quality Act (CEQA), environmental justice (EJ) indicators, Environmental Justice Screening Method (EJSM), fuel cell electric vehicle (FCEV), hydrogen, localized health impacts (LHI), zero-emission vehicle (ZEV)

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# EXECUTIVE SUMMARY

Under the California Code of Regulations Title 13, (California Code of Regulations Section 2343), this Localized Health Impacts report describes the shared hydrogen fueling infrastructure project proposed for Clean Transportation Program funding that may require a conditional or discretionary permit or environmental review such as conditional use permits, air quality permits, wastewater permits, hazardous waste disposal permits, and other land-use entitlements. Since ministerial-level permits do not assess public health-related pollutants, California Energy Commission staff does not assess projects requiring only ministerial-level permits in this report.

The California Energy Commission is required to assess the local health impacts of projects proposed for Clean Transportation Program funding. This report focuses on the potential health impacts to communities from project-related emissions or pollution. A project location where communities potentially have a higher risk of adverse health impacts from pollution are identified as high-risk community project locations. High-risk communities are identified using demographic data with environmental data for air quality from the California Air Resources Board.

Environmental justice communities, low-income communities, and minority communities are considered the most impacted by any project that could result in increased criteria and toxic air pollutants within an area. Preventing or minimizing health-risks from pollution is vital in any community, but it is especially important for communities already considered to be at high risk due to preexisting poor air quality and other prevalent factors.

Energy Commission staff is proposing one project for Clean Transportation Program grant funding awards. Localized health impact information submitted by the project awardee are analyzed by staff. Based on the project site information provided by the awardees, the proposed project location of West Sacramento is in a high-risk community. Community members near the proposed project site location may be at a higher risk to adverse health impacts from pollution. Energy Commission staff does not anticipate a net increase in the pollution burden for the communities where this project is located.





# CHAPTER 1:

## Project Proposed for Funding

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### Background

On July 16, 2020, the California Energy Commission (CEC) released a competitive grant solicitation titled “Hydrogen Fuel Cell Demonstrations in Rail and Marine Applications at Ports (H2RAM)” (GFO-20-604). GFO-20-604 offered three groups of project funding. Of the three, only Group Two, titled “Shared Hydrogen Fueling Infrastructure,” received grant funding through the Clean Transportation Program. This project seeks to build publicly accessible hydrogen refueling station to serve California’s light-duty and commercial fuel cell electric vehicles (FCEVs) in California. As required by California Code of Regulations (CCR) Section 2343, this Localized Health Impacts Report (LHI report) analyzes the potential community health impacts near the Clean Transportation Program funded project 30 days before approval in a publicly noticed meeting.

### Project Selected

On December 10, 2020, the CEC posted a notice of proposed award (NOPA)<sup>1</sup> identifying the project selected by CEC staff for Clean Transportation Program grant funding awards. This LHI report assesses the project location chosen by the Group Two GFO-20-604 applicant (awardee) identified in the NOPA. Table 1 lists the proposed project location and corresponding environmental justice (EJ) indicators.<sup>2</sup> EJ indicator definitions are in Appendix A of this LHI report.

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1 See [notice of proposed award](https://www.energy.ca.gov/sites/default/files/2020-12/GFO-20-604_Notice_Of_Proposed_Award_ada_2.docx), [https://www.energy.ca.gov/sites/default/files/2020-12/GFO-20-604\\_Notice\\_Of\\_Proposed\\_Award\\_ada\\_2.docx](https://www.energy.ca.gov/sites/default/files/2020-12/GFO-20-604_Notice_Of_Proposed_Award_ada_2.docx)

2 [EJ indicators](https://www.epa.gov/ejscreen/environmental-justice-indexes-ejscreen) developed by the U.S. EPA, Office of Policy. Available at <https://www.epa.gov/ejscreen/environmental-justice-indexes-ejscreen>. See Appendix A for staff definitions.

**Table 1: Equilon Enterprises, LLC (DBA Shell Oil Products U.S.)  
Project Details Along With EJ Indicators**

Project Location	EJ Indicator(s)
5164 West Washington Boulevard, Los Angeles, CA 90016	Poverty and Minority

Source: California Energy Commission staff

Funding for this project is contingent upon approval at a publicly noticed CEC business meeting and execution of a grant agreement.

## Public Comment

As provided by Title 13 CCR Section 2343, 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](https://www.energy.ca.gov/altfuels/documents/) is at <https://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](mailto:FTD@energy.ca.gov).

The public can email comments to [FTD@energy.ca.gov](mailto: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](mailto:mediaoffice@energy.ca.gov).

# CHAPTER 2:

## Project Description

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As part of the GFO-20-604 process for selecting projects, applicants must provide LHI information for their proposed project and location. This chapter summarizes the LHI information submitted by the awardee regarding the expected impact of their project on local communities and the outreach efforts they have made to engage disadvantaged communities<sup>3</sup> or other local communities. Disadvantaged communities are identified by the awardee using the CalEnviroScreen<sup>4</sup> screening tool developed by the Office of Environmental Health Hazard Assessment (OEHHA) to identify communities facing the burdens of pollution and socioeconomic disadvantage.

### Equilon Enterprises, LLC (DBA Shell Oil Products U.S.)

Shell Oil Products U.S. (Shell) proposes a shared hydrogen fueling station installation on an underdeveloped parcel of land and situated between 3263 and 3235 Industrial Blvd, West Sacramento, CA 95691, with no noted businesses or buildings serving sensitive individuals within a quarter-mile of the project site. This station would offer FCEV drivers the equivalent service to that of conventional vehicles. Over 5- and 10-year periods, Shell estimates that this station would provide an overall savings for criteria air pollutant emissions compared to conventional gasoline fueling (Table 2). The overall savings also account for added criteria pollutants associated with hydrogen fuel truck deliveries and hydrogen production. Moreover, Shell does not anticipate significant community impacts from station installation, as criteria pollutant emissions are expected to be negligible.

If awarded funding, Shell will use a combination of digital and physical forms of outreach to notify and collaborate with communities about the project. This outreach includes social media and website posts, electronic mailing lists, local news advertisements, and city meetings.

**Table 2: Shell Predicted Project-Generated Net Emissions Reductions**

	<b>Five-Year Operations Net Emissions Reductions</b>	<b>Ten-Year Operations Net Emissions Reductions</b>
<b>NOx Average per Station (tonne*)</b>	7,837 <b>157</b>	21,726 <b>433</b>
<b>PM2.5 Average per Station (tonne)</b>	392 <b>9</b>	1,082 <b>26</b>
<b>HC Average per Station (tonne)</b>	945 <b>11</b>	2,524 <b>30</b>
<b>CO Average per Station (tonne)</b>	2,593 <b>38</b>	6,377 <b>107</b>

Source: Shell. \*Reductions are measured in "tonnes" (or metric tons) which is equal to 1000 kilograms.

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<sup>3</sup> Disadvantaged communities are identified using the CalEnviroScreen tool, which ranks U.S. Census tracts based

on geographic, socioeconomic, public health and environmental hazard criteria.

4 See [Office of Environmental Health Hazard Assessment website](https://oehha.ca.gov/calenviroscreen), <https://oehha.ca.gov/calenviroscreen>.

# CHAPTER 3:

## Location Analysis

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Under CCR Title 13, (CCR Section 2343), this LHI report describes a project proposed for Clean Transportation Program funding that may require a conditional use permit, discretionary permit, or California Environmental Quality Act (CEQA) review. The CEC interprets “permits” to suggest discretionary and conditional use permits because they require a review of potential impacts to communities and the environment before issuance. Since ministerial-level permits do not assess public health-related pollutants, CEC staff does not assess projects requiring only ministerial-level permits in this report.

This LHI report analyzes the project location by applying staff’s application of the Environmental Justice Screening Method (EJSM).<sup>5</sup> A proposed project location must meet a two-part environmental and demographic standard for staff to identify it as a high-risk community project location. The environmental standard uses California Air Resources Board (CARB) air quality monitoring data on nonattainment<sup>6</sup> status for areas with a high concentration of air pollutants. The demographic standard uses data from the California Employment Development Department’s *Monthly Labor Force Data*<sup>7</sup> and the U.S. Census Bureau’s *American Community Survey*<sup>8</sup> data on age, poverty, race, and unemployment.

### Environmental Standard

Based on CARB air quality monitoring data,<sup>9</sup> the project location is within a nonattainment zone for either ozone, particulate matter<sup>10</sup> 2.5 microns in diameter or less (PM<sub>2.5</sub>), or particulate matter 10 microns in diameter (PM<sub>10</sub>). This finding indicates that there may be existing poor air quality where the proposed projects are located.

### Demographic Standard

A project city location must meet a two-part environmental and demographic standard for staff to identify it as a high-risk community project location. (See Appendix A.) Staff finds that the proposed project located of West Sacramento meets the criteria for a high-risk community

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5 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.

6 [Nonattainment area](https://ww3.arb.ca.gov/desig/adm/adm.htm) is a geographic area identified by the U.S. EPA or CARB or both as not meeting either National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards CAAQS standards for a given pollutant. See <https://ww3.arb.ca.gov/desig/adm/adm.htm>.

7 Employment Development Department [Labor Force Data](https://www.labormarketinfo.edd.ca.gov/file/lfmonth/countyur-400c.pdf), <https://www.labormarketinfo.edd.ca.gov/file/lfmonth/countyur-400c.pdf>.

8 U.S. Census Bureau [American Community Survey](https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml), [https://factfinder.census.gov/faces/nav/jsf/pages/community\\_facts.xhtml](https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml).

9 See [CARB air quality monitoring data](https://ww3.arb.ca.gov/desig/adm/adm.htm), <https://ww3.arb.ca.gov/desig/adm/adm.htm>.

10 *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 micrometers.

project location as it meets the demographic standard of having more than one EJ indicator threshold exceeded (Table 3). The project location also meets the environmental standard due to existing poor air quality.

**Table 3: EJ Indicators by Project Location City Demographic**

	<b>Below Poverty (2019)</b>	<b>Black or African American (2019)</b>	<b>American Indian and Alaska Native (2019)</b>	<b>Asian and Native Hawaiian and Pacific Islander (2019)</b>	<b>Hispanic or Latino Race (2019)</b>	<b>Persons Under 5 Years of Age (2019)</b>	<b>Persons Over 65 Years of Age (2019)</b>	<b>Unemployment (2019)</b>
<b>California</b>	<b>11.8%</b>	<b>6.5%</b>	<b>1.6%</b>	<b>16.0%</b>	<b>39.4%</b>	<b>6.0%</b>	<b>14.8%</b>	<b>4.2%</b>
<b>EJ Indicator Threshold</b>	<b>11.8%</b>	<b>30%</b>	<b>30%</b>	<b>30%</b>	<b>30%</b>	<b>26.0%†</b>	<b>34.8%†</b>	<b>4.2%</b>
<b>West Sacramento</b>	15.2%*	5.3%	0.4%	11.8%	30.1%*	7.7%	11.5%	3.7%

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. Threshold percentages with a dagger (†) indicate the threshold is met when greater than or equal to this value.

## Summary

If funded, the proposed project would result in one site for shared hydrogen refueling. The new hydrogen refueling site will increase the use of hydrogen fuel cell vehicles. As more hydrogen fuel cell vehicles enter the market and begin to displace gasoline and diesel vehicles, tailpipe pollutants will decrease significantly.

Based on EJSM standards, staff has identified the West Sacramento project as a high-risk community project location. This finding indicates that the community near the proposed project location is at a higher risk of adverse health effects from pollution. However, staff does not anticipate a significant increase in local pollutants, and the project awardee identified no major construction that would generate criteria emissions or pollutants. Staff’s analysis found no indication that there would be adverse community health impacts associated with the identified project in this LHI report as selected for Clean Transportation Program grant funding. Moreover, a net benefit from these proposed projects may be realized for the surrounding communities by reducing harmful criteria pollutants from refueling FCEVs and replacing gasoline vehicles in the area.

# GLOSSARY

**AIR QUALITY IMPROVEMENT PROGRAM** — Established by the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007 (AB 118, Statutes of 2007, Chapter 750), is a voluntary incentive program administered by CARB to fund clean vehicle and equipment projects, research of biofuels production.

**CALIFORNIA CODE OF REGULATIONS** — The official compilation and publication of the regulations adopted, amended or repealed by state agencies under the Administrative Procedure Act (APA). Properly adopted regulations that have been filed with the Secretary of State have the force of law.

**CALIFORNIA ENVIRONMENTAL QUALITY ACT** — A statute that requires state and local agencies to identify the significant environmental impacts of their actions and avoid or reduce those impacts, if feasible.

**CALENVIROSCREEN** — A screening tool that evaluates and ranks census tracts in California based on potential exposures to pollutants, adverse environmental conditions, socioeconomic factors, and prevalence of certain health conditions.

**CRITERIA AIR POLLUTANT** — An air pollutant for which acceptable levels of exposure can be determined and for which the U.S. Environmental Protection Agency has set an ambient air quality standard. Examples include ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>), and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>).

**DISADVANTAGED COMMUNITIES** — A designation by the California Environmental Protection Agency used to identify areas disproportionately affected by environmental pollution or hazards due to geographic, socioeconomic, public health, and environmental hazard present.

**ENVIRONMENTAL JUSTICE** — The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

**ENVIRONMENTAL JUSTICE SCREENING METHOD** — A screening approach for combining environmental and demographic indicators to inform agency outreach and engagement practices regarding environmental justice.

**FUEL CELL ELECTRIC VEHICLE (FCEV)** — A zero-emission vehicle that runs on compressed hydrogen fed into a fuel cell "stack" that produces electricity to power the vehicle.

**GRANT FUNDING OPPORTUNITY** — Where the California Energy Commission offers applicants an opportunity to receive grant funding for projects meeting the solicitation requirements.

**LOCALIZED HEALTH IMPACTS** — Potential health impacts to communities.

**PARTICULATE MATTER** — Any material besides pure water that exists in a solid or liquid state in the atmosphere. The size of particulate matter can vary from coarse, wind-blown dust particles to fine particle combustion products.

**ZERO-EMISSION VEHICLE** — A vehicle that produces no pollutant emissions from the onboard source of power.

# LIST OF ACRONYMS

AB	Assembly Bill
AQIP	Air Quality Improvement Program
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CO	carbon monoxide
EJ	environmental justice
EJSM	Environmental Justice Screening Method
FCEV	fuel cell electric vehicle
GFO	grant funding opportunity
HC	hydrocarbons
LHI	Localized Health Impact
NOPA	notice of proposed award
NOx	nitrogen oxide
OEHHA	Office of Environmental Health Hazard Assessment
PM <sub>2.5</sub>	particulate matter; 2.5 microns or smaller in diameter
PM <sub>10</sub>	particulate matter; 10 microns in diameter
SB	Senate Bill
SOx	sulfur oxide
U.S. EPA	United States Environmental Protection Agency
VOC	volatile organic compound
ZEV	zero-emission vehicle



# APPENDIX A:

## Localized Health Impacts Report Method

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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.