CALIFORNIA ENERGY COMMISSION

California Energy Commission

STAFF REPORT

Localized Health Impacts Report

For Selected Projects Awarded Funding Through the Clean Transportation Program Under Solicitation GFO-20-606 Zero-Emission Drayage Truck and Infrastructure Pilot Project

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California Energy Commission

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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 (CARB) to develop guidelines to ensure air quality improvements. 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 under Grant Solicitation GFO-20-606. This initiative will support the large-scale deployment of on-road, zero-emission drayage and regional haul trucks in California. These projects will accomplish this goal by deploying zero-emission trucks and electric vehicle charging or hydrogen refueling infrastructure. Information submitted by awardees 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 report is available for public comment for 30 days before the approval of projects at a publicly noticed business meeting.

Keywords: Air pollution, air quality improvement program (AQIP), battery-electric truck (BET), 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 truck (FCET), hydrogen, localized health impacts (LHI), zero-emission vehicle (ZEV)

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EXECUTIVE SUMMARY

The California Energy Commission's (CEC) Clean Transportation Program (CTP) provides funding to support innovation and accelerate the development and deployment of advanced transportation and fuel technologies. Under the California Code of Regulations Title 13, (California Code of Regulations section 2343), this Localized Health Impacts Report describes the deployment of drayage zero-emission trucks and infrastructure proposed for 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, staff does not assess projects requiring only ministerial-level permits in this report.

The CEC is required to assess the local health impacts of projects proposed for CTP funding. This report focuses on the potential health impacts to communities from project related emissions or pollution. Project locations 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 considered to be at high risk due to preexisting poor air quality and other prevalent factors.

Staff proposes two projects for CTP grant funding awards under Solicitation GFO-20-606, titled "Zero-Emission Drayage Truck and Infrastructure Pilot Project." This initiative will support the large-scale deployments of on-road, zero-emission Class 8 drayage and regional haul trucks, as well as the necessary zero-emission vehicle fueling infrastructure needed for service operation. Class 8 trucks are defined as trucks with a maximum operating weight above 33,000 pounds. Staff analyzes localized health impact information submitted by the project awardees. Based on project site information provided by the awardees, the proposed project locations of El Monte, Ontario, and Paramount are all in high-risk communities. Community members near the proposed project sites may be at a higher risk to adverse health impacts from pollution. Staff does not anticipate a net increase in the pollution burden for the communities where these projects are located.

CHAPTER 1:
Project Proposed for Funding

Background

On November 19, 2020, the California Energy Commission (CEC) released a competitive grant solicitation titled "Zero-Emission Drayage Truck and Infrastructure Pilot Project" (GFO-20-606). GFO-20-606 offered Clean Transportation Program grant funding for projects that support the large-scale deployment of on-road, zero-emission Class 8[1] drayage and regional haul trucks in California. These projects will accomplish this goal by deploying zero-emission trucks and electric vehicle charging or hydrogen refueling infrastructure. For this solicitation, drayage trucks are defined as on-road heavy-duty trucks that transport containers and bulk to and from the ports and intermodal railyards, as well as many other locations. Regional haul trucks, for this solicitation, have daily ranges of 200 to 400 miles on a single charge or refueling event and are designed for day use and typically return to a home base each night. 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 (CTP) funded projects 30 days before approval at a publicly noticed meeting.

Projects Selected

On April 5, 2021, the CEC posted a notice of proposed award (NOPA)[2] identifying the projects selected by CEC staff for CTP grant funding awards. This LHI Report assesses the project locations chosen by both GFO-20-606 applicants (awardees) identified in the NOPA. Table 1 lists the proposed project locations for each of the awardees and the corresponding environmental justice (EJ) indicators.[3] EJ indicator definitions are in Appendix A of this LHI Report.

Table 1: Project Details Along With EJ Indicators

Proposed Awardee	Project Title	Project Location	EJ Indicator(s)
Center for Transportation and the Environment	NorCAL Drayage	Engineer Road and Wake Avenue, Oakland, CA 94607	Poverty
South Coast Air Quality Management District	California Joint Electric Truck Scaling Imitative (JETSI)	1991 South Cucamonga Avenue, Ontario, CA 91761	Poverty and Minority
South Coast Air Quality Management District	California Joint Electric Truck Scaling Imitative (JETSI)	2009-2011 South Cucamonga Avenue, Ontario, CA 91761	Poverty and Minority

1 Class 8 trucks are defined as trucks with a maximum operating weight above 33,000 pounds

2 See notice of proposed award, https://www.energy.ca.gov/sites/default/files/2021-04/GFO-20-606_NOPA_Cover_Letter-Results_Table_2021-04-05.docx.

3 EJ indicators 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.

Proposed Awardee	Project Title	Project Location	EJ Indicator(s)
South Coast Air Quality Management District	California Joint Electric Truck Scaling Imitative (JETSI)	329 Durfee Avenue, South El Monte, CA 90405	Poverty, Minority, Unemployment
South Coast Air Quality Management District	California Joint Electric Truck Scaling Imitative (JETSI)	*201 Rosecrans Avenue, Paramount, CA 90723	Poverty, Minority, Unemployment

Source: California Energy Commission staff. *This project location serves as a secondary site.

Funding for these projects 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 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.

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.

CHAPTER 2:
Project Description

As part of the GFO-20-606 process for selecting projects, applicants must provide LHI information for their proposed project and location(s). This chapter summarizes the LHI information submitted by the awardees regarding the expected impact of their project on local communities and the outreach efforts they have made to engage disadvantaged communities[4] or other local communities. Disadvantaged communities are identified by the awardee using the CalEnviroScreen[5] screening tool developed by the Office of Environmental Health Hazard Assessment (OEHHA) to identify communities facing the burdens of pollution and socioeconomic disadvantage.

Center for Transportation and the Environment

Center for Transportation and the Environment's (CTE) proposed "NorCAL Drayage" project will deploy 30 Hyundai XCIENT Class 8 fuel cell electric trucks (FCETs) across Northern California and establish new hydrogen refueling infrastructure in West Oakland (Alameda County). This project will support the transition to FCETs, which reduce harmful diesel emissions from conventionally fueled trucks to the West Oakland community. CTE estimates that the deployment of FCETs will lead to an overall 4,060 metric tons[6] of carbon dioxide equivalent (CO_2e) GHG reductions and 2.19 short tons weighted surplus emissions reductions[7] every year. CTE expects the refueling station will have associated annual emissions resulting from hydrogen deliveries, production, and operation. Table 2 shows the anticipated criteria pollutants related to hydrogen production with the assumption of 1.1 million kilograms of hydrogen per station each year. As demand for hydrogen increases, onsite biogas[8] is expected to be used to produce hydrogen, eliminating daily fuel deliveries.

If awarded funding, CTE will use a combination of digital and physical forms of outreach to notify communities about the project and promote public input and discussion and help manage relationships with the Port of Oakland. UC Berkeley's Goldman School of Public Policy and Transportation Sustainability Research Center will collaborate with the West Oakland Environmental Indicators Project to assist in developing a community outreach and engagement plan. This outreach may include a public awareness campaign, multiple outreach events, at least one event focused on environmental justice education.

4 Disadvantaged communities are identified using the CalEnviroScreen tool, which ranks U.S. Census tracts based on geographic, socioeconomic, public health and environmental hazard criteria.

5 See Office of Environmental Health Hazard Assessment website, https://oehha.ca.gov/calenviroscreen.

6 A metric ton is a unit of weight equal to 1,000 kilograms or 2,205 pounds.

7 WER is a weighted calculation for project emissions reductions of criteria and toxic pollutants, https://ww2.arb.ca.gov/sites/default/files/classic/msprog/mailouts/msc1810/zanzeff_appendix_d.pdf.

8 Biogas refers to gaseous fuel that is produced from the fermentation of organic matter. Biogas, especially biomethane, is used to produce green hydrogen.

Table 2: Center for Transportation and the Environment Predicted Five-Year Project-Generated Net Emissions From Hydrogen Production

Emission	Project Net Annual Emissions (metric tons/year)
NOx	2,532.2
SOx	915.2
VOC	772.2
CO	1,419
$PM_{2.5}$	462
PM_{10}	418

Source: Center for Transportation and the Environment

South Coast Air Quality Management District

South Coast Air Quality Management District's (SCAQMD) proposed "California Joint Electric Truck Scaling Imitative (JETSI)" will dispatch 100 Class 8 battery-electric trucks (BETs) that will be based in disadvantaged communities in Southern California. These BETs will be supported by the installation of 50 chargers across two sites with accompanying battery storage systems. This project will support the transition to BETs, which reduce harmful diesel emissions from diesel-powered trucks in the region. SCAQMD estimates that the project will create 420 indirect and induced jobs for construction and 239 direct jobs related to maintenance and operation. The use of BETs and related infrastructure will support the transition away from diesel truck and reduce in local air pollutants. SCAQMD estimates that the use of BETs will lead to an overall 65,980 metric tons of CO_2e GHG reductions and 40 short tons of weighted criteria emissions reductions over an eight-year period.

If awarded funding, the outreach efforts of the project will be spearheaded by the Coalition for Clean Air (CCA), a community-based organization dedicated to addressing air quality issues in California communities through education, awareness-building, and community action. CCA will engage with local and regional stakeholders, including the disadvantaged communities around the fleet depots in South El Monte and Ontario, as well as those along the Interstate 710 corridor and adjacent to the San Pedro Bay Ports. The coalition will also coordinate working group meetings with stakeholders to collect input around the BET deployment. Additional methods of outreach will be used, including tabling local events, mailers, and the distribution of multilingual materials to communicate the benefits and technical details of the project.

CHAPTER 3:
Reductions in Local Air Pollutants

Location Analysis

Under CCR Title 13 (CCR section 2343), this LHI Report describes projects proposed for CTP 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 locations by application of the Environmental Justice Screening Method (EJSM).[9] 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[10] 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*[11] and the U.S. Census Bureau's *American Community Survey*[12] data on age, poverty, race, and unemployment.

Environmental Standard

Based on CARB air quality monitoring data,[13] each project location is within a nonattainment zone for either ozone, particulate matter[14] 2.5 microns in diameter or less ($PM_{2.5}$), or particulate matter 10 microns in diameter (PM_{10}). This finding indicates that there may be existing poor air quality where the proposed projects are located.

Demographic Standard

9 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.

10 Nonattainment area 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.

11 Employment Development Department Labor Force Data, https://www.labormarketinfo.edd.ca.gov/file/lfmonth/countyur-400c.pdf.

12 U.S Census Bureau American Community Survey, https://data.census.gov/cedsci/.

13 See CARB air quality monitoring data, https://ww3.arb.ca.gov/desig/adm/adm.htm.

14 *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.

Staff finds that the proposed project located in El Monte, Ontario, and Paramount meet the criteria for a high-risk community project location, as each exceeds the demographic standard threshold for more than one EJ indicator (as shown in Table 3). These project locations also meet the environmental standard due to existing poor air quality.

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 (2021)
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%**
El Monte	19.5%*	0.6%	0.9%	29.6%	65.7%*	5.8%	13.5%	10.9%*
Oakland	16.7%*	23.8%	0.9%	16.1%	27.0%	6.3%	13.1%	6.5%
Ontario	13.6%*	5.5%	1.0%	7.0%	70.0%*	6.9%	9.2%	7.8%
Paramount	16.7%*	9.1%	0.4%	3.8%	81.0%*	6.7%	8.6%	10.9%*

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.

Summary

If funded, the proposed projects would result in greater charging and hydrogen refueling infrastructure to expand zero-emission drayage and regional haul trucks. The new infrastructure will support the conversion of diesel drayage and regional haul trucks to ZEVs. As more battery-electric and hydrogen trucks replace diesel trucks, tailpipe pollutants will decrease significantly and reduce related GHG emissions.

Based on EJSM standards, staff has identified the El Monte, Ontario, and Paramount projects as high-risk community locations. This finding indicates that the communities near the proposed project location are at a higher risk of adverse health effects from pollution. However, staff does not anticipate a significant increase in local pollutants, and the project awardees identify 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 projects in this LHI Report as selected for CTP grant funding. Moreover, a net benefit from these proposed projects may be realized for the surrounding communities by reducing harmful criteria pollutants and supporting infrastructure to replace fossil fuel-powered drayage fleets.

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), AQIP is a voluntary incentive program administered by CARB to fund clean vehicle and equipment projects, research of biofuels production.

BATTERY-ELECTRIC TRUCKS (BET) — BETs use energy that is stored in rechargeable battery packs. BETs sustain power through the batteries and therefore must be plugged into an external electricity source in order to recharge.

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_3), carbon monoxide (CO), nitrogen oxides (NO_X), sulfur oxides (SO_X), and particulate matter (PM_{10} and $PM_{2.5}$).

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 TRUCK (FCET) — A zero-emission truck 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.

VOLATILE ORGANIC COMPOUNDS (VOCs) — Carbon-containing compounds that evaporate into the air (with a few exceptions). VOCs contribute to the formation of smog and/or may themselves be toxic. VOCs often have an odor and some examples include gasoline, alcohol and the solvents used in paints.

WEIGHTED SURPLUS EMISSION REDUCTIONS — A weighted calculation of additional emissions reductions as a result of converting to an advanced technology to a baseline technology. Nitrogen oxides (NOx), volatile organic compounds (VOCs), and particulate matter (PM) are components of this calculations.

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
BET	battery-electric truck
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CNG	compressed natural gas
CO	carbon monoxide
CO2	carbon dioxide
EJ	environmental justice
EJSM	Environmental Justice Screening Method
FCET	fuel cell electric truck
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
$PM_{2.5}$	particulate matter; 2.5 microns or smaller in diameter
PM_{10}	particulate matter; 10 microns in diameter
SB	Senate Bill
SOx	sulfur oxide
U.S. EPA	United States Environmental Protection Agency
VOC	volatile organic compound
WER	means weighted surplus emissions reductions
ZEV	zero-emission vehicle

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. The data are analyzed to assign EJ indicators for each project location specified in the LHI Report. The proposed project location must meet a two-part standard:

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.