DOCKETED	
Docket Number:	21-ALT-01
Project Title:	2021-2022 Investment Plan Update for the Clean Transportation Program
TN #:	237591
Document Title:	Presentation - 2021-2023 IPU 1st AC Meeting
Description:	N/A
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Submitter Role:	Commission Staff
Submission Date:	4/29/2021 8:42:07 AM
Docketed Date:	4/29/2021

California Energy Commission

1st Advisory Committee Meeting for the Clean Transportation Program

April 29, 2021

Housekeeping

- This workshop is being recorded.
- Virtual participation will be possible Zoom or telephone during the public comment period.
- Workshop event webpage https://www.energy.ca.gov/event/meeting/2021-04/clean-transportation-program-investment-plan-advisory-committee-meeting
- Written comments should be submitted to Docket 21-ALT-01 https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=21-ALT-01

Deadline for comments is Friday, May 14, 2021 by 5:00 P.M.

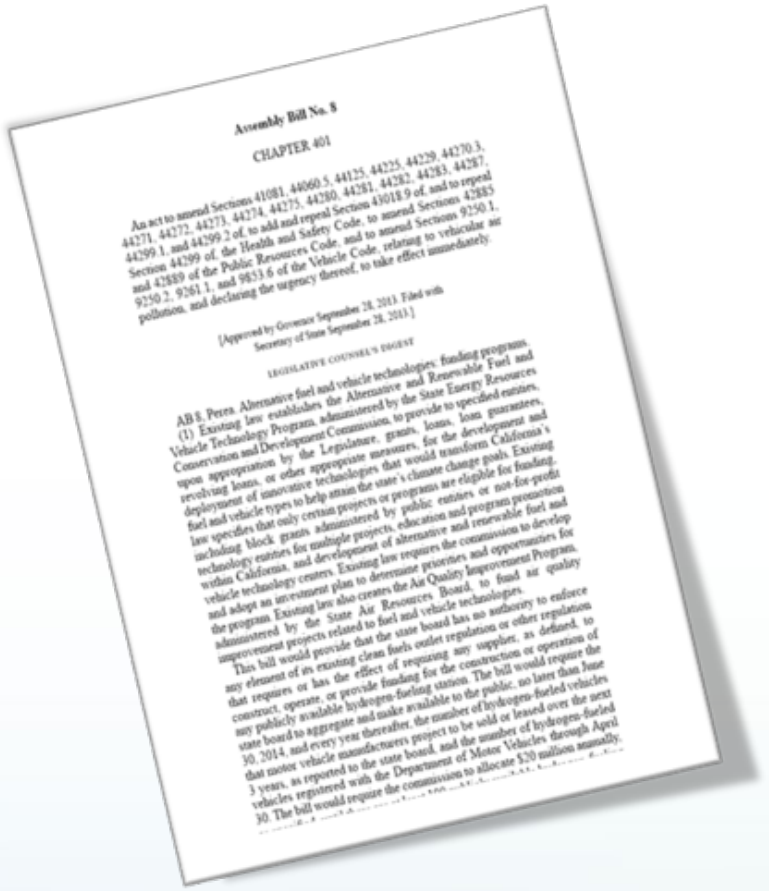
Meeting Agenda

- Opening remarks and introductions.
- Presentations by CEC staff on the Clean Transportation Program funding activities and related work.
- Development and contents of the staff draft report version of the *2021-2023 Investment Plan Update.*
- Advisory Committee discussion on the *2021-2023 Investment Plan Update.*
- Public comment.
- Closing remarks.

Update on Clean Transportation Program

Charles Smith
Office Manager
Transportation Policy and Analysis Office

Clean Transportation Program Origins in Statute



Assembly Bill No. 8

CHAPTER 401

An act to amend Sections 41081, 44060.5, 44125, 44225, 44229, 44270.3, 44271, 44272, 44273, 44274, 44275, 44280, 44281, 44282, 44283, 44287, 44299.1, and 44299.2 of, to add and repeal Section 43018.9 of, and to repeal Section 44299 of, the Health and Safety Code, to amend Sections 25853 and 42889 of the Public Resources Code, and to amend Sections 9250.1, 9250.2, 9261.1, and 9853.6 of the Vehicle Code, relating to vehicular air pollution, and declaring the urgency thereof, to take effect immediately.

[Approved by Governor September 28, 2013. Filed with Secretary of State September 28, 2013.]

LEGISLATIVE COUNSEL'S DIGEST

AB 8, Perea. Alternative fuel and vehicle technologies: funding programs.

(1) Existing law establishes the Alternative and Renewable Fuel and Vehicle Technology Program, administered by the State Energy Resources Conservation and Development Commission, to provide to specified entities, upon appropriation by the Legislature, grants, loans, loan guarantees, revolving loans, or other appropriate measures, for the development and deployment of innovative technologies that would transform California's fuel and vehicle types to help attain the state's climate change goals. Existing law specifies that only certain projects or programs are eligible for funding, including block grants administered by public entities or not-for-profit technology entities for multiple projects, education and program promotion within California, and development of alternative and renewable fuel and vehicle technology centers. Existing law requires the commission to develop and adopt an investment plan to determine priorities and opportunities for the program. Existing law also creates the Air Quality Improvement Program, administered by the State Air Resources Board, to fund air quality improvement projects related to fuel and vehicle technologies.

This bill would provide that the state board has no authority to enforce any element of its existing clean fuels outlet regulation or other regulation that requires or has the effect of requiring any supplier, as defined, to construct, operate, or provide funding for the construction or operation of any publicly available hydrogen-fueling station. The bill would require the state board to aggregate and make available to the public, no later than June 30, 2014, and every year thereafter, the number of hydrogen-fueled vehicles that motor vehicle manufacturers project to be sold or leased over the next 3 years, as reported to the state board, and the number of hydrogen-fueled vehicles registered with the Department of Motor Vehicles through April 30. The bill would require the commission to allocate $20 million annually

- Established by Assembly Bill 118 (Nunez, 2007)
- Provides approximately $95.2 million per year
- Extended to January 1, 2024 by Assembly Bill 8 (Perea, 2013)

Highlights of Investments 2009-2021

- 13,000+ Installed or Planned Chargers
- Creation of Efficient Block Grants for ZEV Infrastructure
- 83 New or Upgraded Publicly Available Hydrogen Refueling Stations
- 27 ZEV or ZEV Infrastructure Manufacturing Projects
- Workforce Training for More than 22,000 Trainees and 277 Businesses
- 71 Low-Carbon, Sustainable Fuel Production Projects within California
- Leveraged over $734 Million in Private and Other Public Funds

Medium- and Heavy-Duty (MD/HD) ZEV Infrastructure Investments

Blueprints for MD/HD ZEV Infrastructure (GFO-20-601)	***Closed*** $5.6 million proposed for award	- 28 awardees - 19 public agencies - 9 private entities
Zero-Emission Transit Fleet Infrastructure Deployment (GFO-20-602)	***Closed*** $20 million proposed for award	- Four awardees - Two fleet electrification and microgrid projects - Two hydrogen refueling projects
Block Grant for MD/HD ZEV Infrastructure Incentive Projects (GFO-20-603)	***Closed*** ≥$50 million proposed for award, $17 million at start	- One awardee - EnergIIZE Commercial Vehicles - Concierge-like model, working directly with eligible applicants to plan and fund infrastructure
Zero-Emission Drayage Truck and Infrastructure Pilot Project (GFO-20-606)	***Closed*** $23.4 million CEC, $24 million CARB proposed for award	- Two awardees - One battery electric project in southern CA - One hydrogen project in northern CA

Light-Duty Charging Infrastructure Block Grants

CALeVIP Projects to Date (as of March 2021)

- $159 million allocated to 9 launched projects
  - Plus $34 million committed from funding partners
- >$250 million in oversubscribed requests (mostly DC fast chargers)
- $84 million reserved (4,000 Level 2 connectors, 1,000 DC fast chargers)
- $14.6 million paid/installed (534 Level 2 connectors, 206 DC fast chargers)

New CALeVIP projects launched since June 2020

	Launch Date	Counties	Funding*	Technologies
Sonoma Coast	July 8, 2020	Mendocino Sonoma	$6.75 million	Level 2 & DC fast chargers
San Diego County	October 27, 2020	San Diego	$21.7 million	Level 2 & DC fast chargers
Peninsula-Silicon Valley	December 16, 2020	San Mateo Santa Clara	$55.23 million	Level 2 & DC fast chargers

*Includes partner funding

Light-Duty Charging Infrastructure Block Grants, cont.

Upcoming CALeVIP Projects

	Tentative Launch	Counties	CEC Funding
Inland Counties	May 12, 2021	Butte, El Dorado, Imperial, Kings, Merced, Napa, Nevada, Placer, Solano, Stanislaus, Sutter, Tulare, Yolo	$17.5 million
South Central Coast	Q3 2021	San Luis Obispo, Santa Barbara, Ventura	$7.1 million
Alameda County	Q4 2021	Alameda	$14 million
Southern California Level 2	Q1 2022	Los Angeles, Orange, Riverside, San Bernardino	$22 million

Second Block Grant Solicitation (GFO-20-607)

- Open, with proposals currently due June 2021

Increased Rebates for Low-Income or Disadvantaged Communities

- Level 2: +$500
- 50 kW-99 kW: +$10,000 (or 75% of total cost)
- 100+ kW: +$20,000 (or 75% of total cost)

Increased Rebates for Multi-Unit Dwellings

- Level 2: +$2,000

Other Light-Duty Charging Infrastructure Investments

EV Ready Communities Phase II – Blueprint Implementation (GFO-19-603)	***Closed*** $7.5 million proposed for award	- Three proposed awards - Bay area; Central Valley; Southern CA
BESTFIT Innovative Charging Solutions (GFO-20-605) (Also includes MD/HD funding)	***Closed*** $8.4 million proposed for award	- Five proposed light-duty charging awards - Three proposed MD/HD charging awards

Electric Vehicle Infrastructure Training Program (EVITP)

- Codified by AB 841 (2020)
- Requires EVITP certification for installation of publicly funded chargers
- CEC-CPUC workshop on April 16, 2021

Fuel Production

Ultra-Low Carbon Fuel: Commercial-Scale Production Facilities & Blending Infrastructure (GFO-20-608)	***Open*** Up to $8 million available	- Released April 12, 2021 - Pre-Application Abstract due June 11, 2021 - Full Application due September 22, 2021 - Must include: "*Evaluation Criteria for Providing Benefits to Priority Populations*"
Renewable Hydrogen Transportation Fuel Production (GFO-20-609)	***Open*** Up to $7 million available	- Released April 9, 2021 - Pre-Application Abstract due June 11, 2021 - Full Applications due September 22, 2021 - Must include: "*Evaluation Criteria for Providing Benefits to Priority Populations*"

All dates and details are as of April 27, 2021, and are subject to change. See each solicitation's website for updates or further details.

Other Investments

Hydrogen Fuel Cell Demonstrations in Rail and Marine Applications at Ports (GFO-20-604)	***Closed*** $10.5 million proposed for award	- Co-funded with CEC's Natural Gas Research Program - Includes fuel cell demonstrations; shared fueling infrastructure; and design and feasibility of fuel cell-powered harbor craft
Augmentation of Clean Fuels Transportation Pilot Career Opportunity Training Plan	***Direct Agreement*** $1.5 million	- Partnership with CA Community Colleges' Advanced Transportation and Logistics initiative - Adds ≥10 high schools to receive support for advanced automotive programs.
Recovery and Reinvestment Funding	***Approach TBD*** $10 million available	- Workshop held - Public comments due May 3, 2021

More Information

Please visit our CEC Solicitations page for more information and updates on any solicitation

https://www.energy.ca.gov/funding-opportunities/solicitations

Clean Transportation Program Low-Income and Disadvantaged Community Investments

Presenter: Jonathan Bobadilla, Energy Commission Specialist

Date: 04/29/2021

Introduction

Context

- Track progress for advancing the recommendations from Advisory Committee, and S*B 350 Low-Income Barriers Study*.
- CEC commitment to investing in Low-Income Communities (LIC) & Disadvantaged Communities (DAC)

Update for 2021

- Newer data sources
- More precise locations of LIC/DAC census tracts
- Leveraging new ArcGIS mapping software features

Low-Income and Disadvantaged Communities Identified

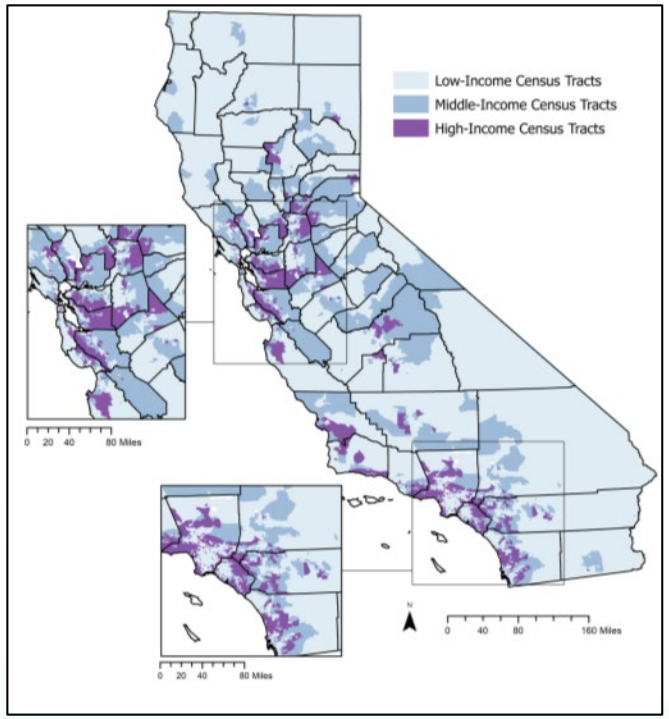
Clean Transportation Program' Low-Income and Disadvantaged Community investments:

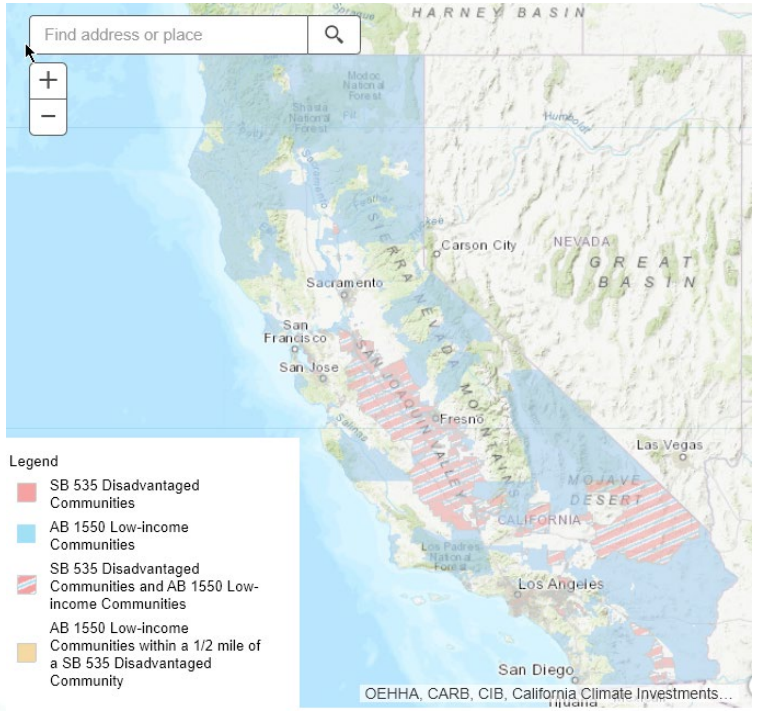
Low-Income Community

- Median household incomes at or below 80 percent of the statewide median income
- At or below the low-income threshold according to The **California Department of Housing and Community Development** and **U.S. Census Bureau**

Disadvantaged Community

- SB 535 Disadvantaged Communities de-signated areas identified in **California Air Resources Board** Priority Population Webmap and CalEnviroScreen 3.0



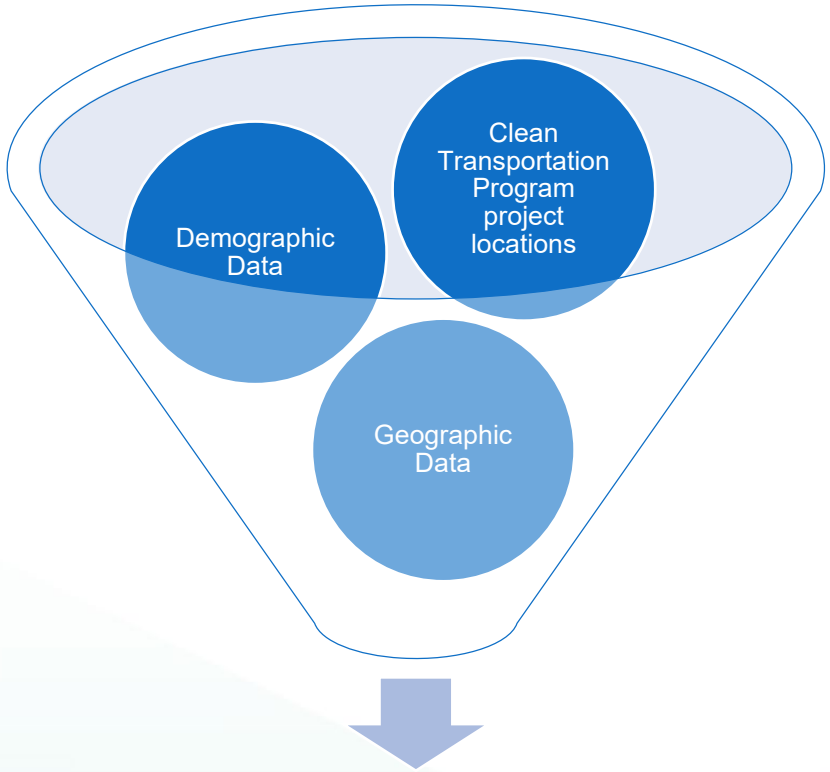


Sources: U.S. Census Bureau 2014 – 2018 American Community Survey Median Household Income 5-Year Estimates and HCD 2020 State Income Limits, and California Air Resources Board' Priority Population Investments webmap

Model for Designating Projects

ESRI ArcGIS Pro mapping tool:

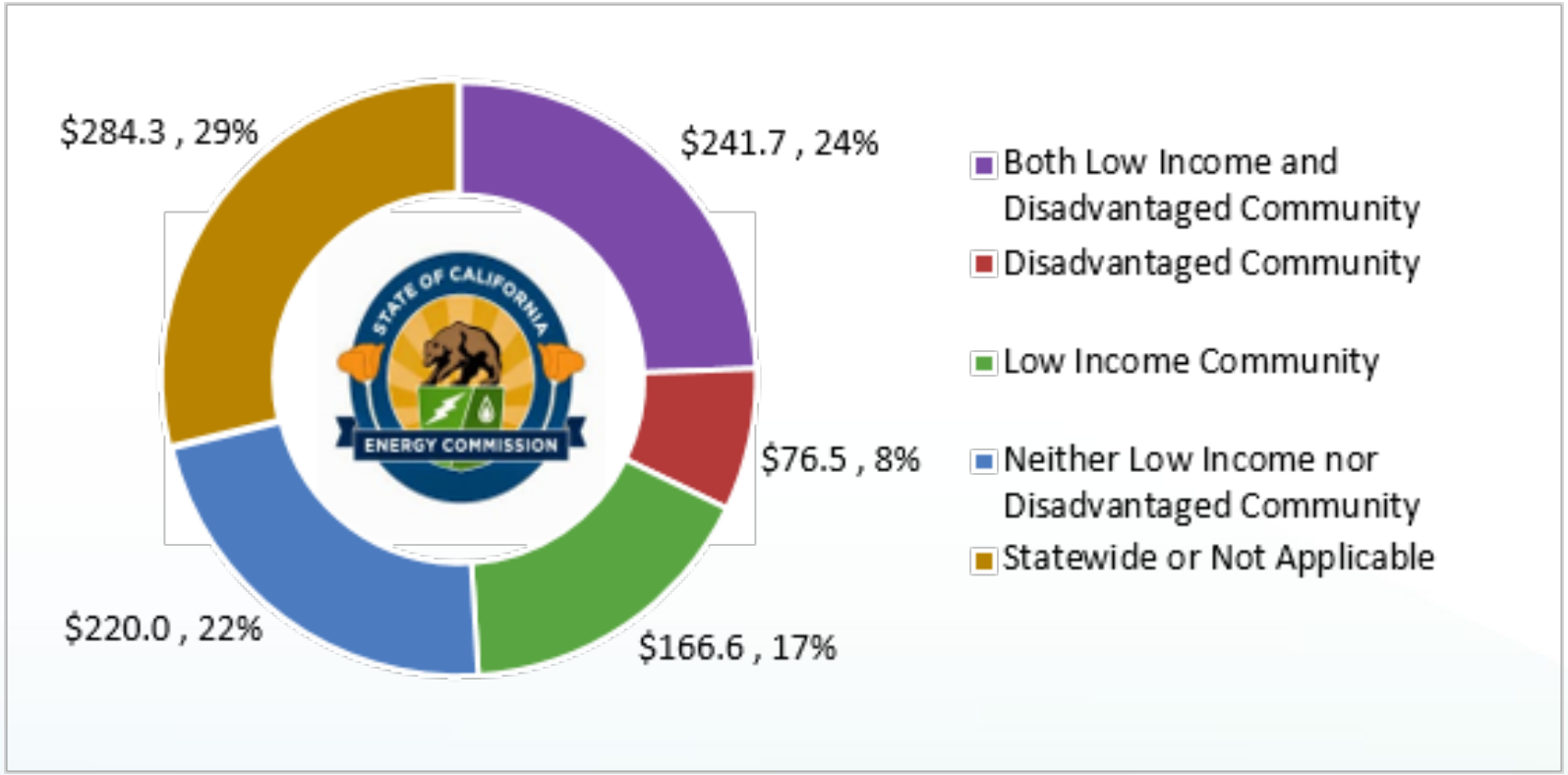
- **Input:** Clean Transportation Program investments
- **Geoprocessing Model:** ArcGIS Model Builder using Python script blocks
- **Output:** Clean Transportation Program Investments with project location attributes (DAC, LIC, legislative district, etc.)



Clean Transportation Program Investment Map

Investment Results as of April 2021

Clean Transportation Program Funding as of April 2021*



Source: CEC Fuels and Transportation Division staff

49%

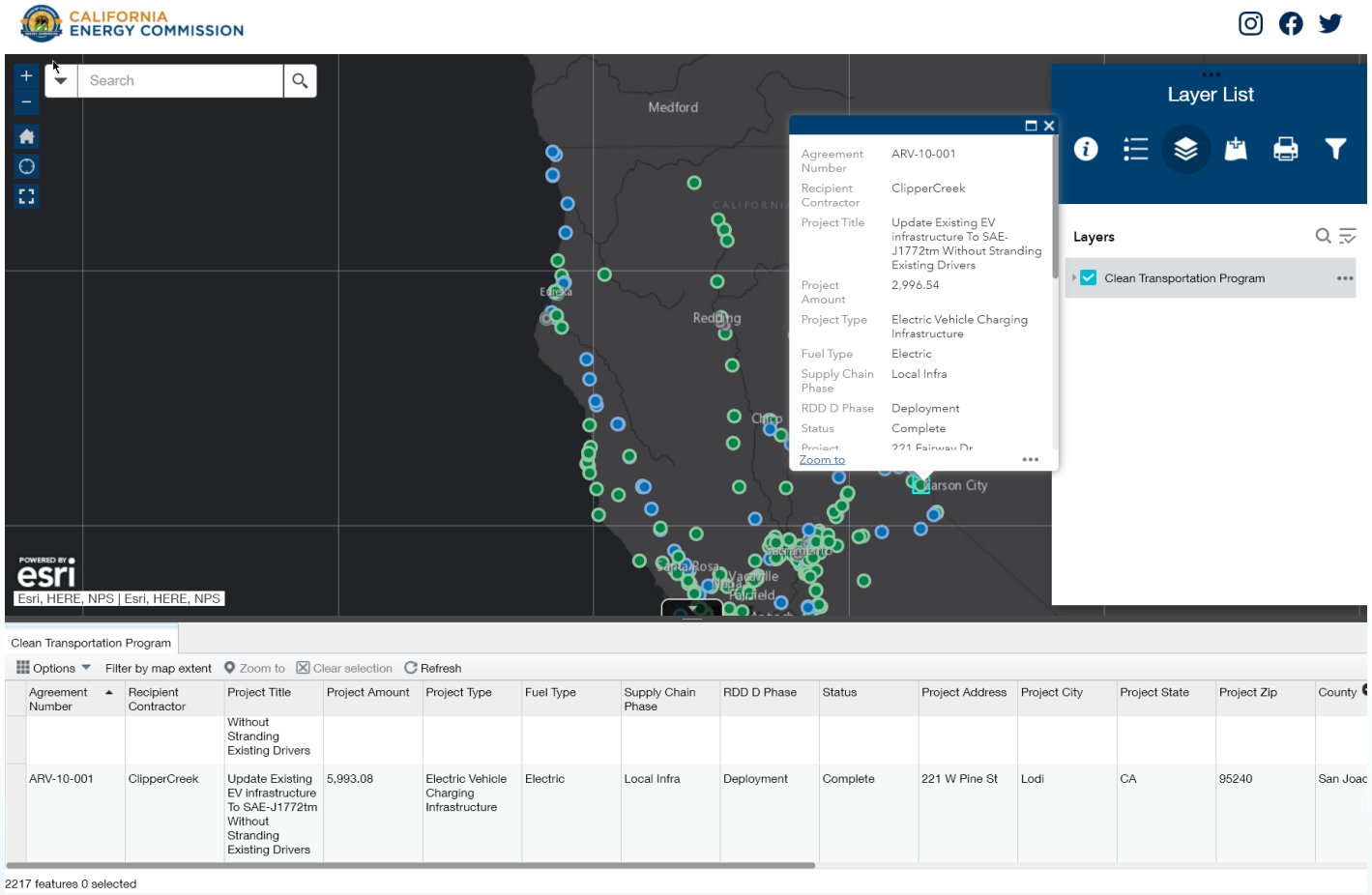
Funding in LIC/DACs

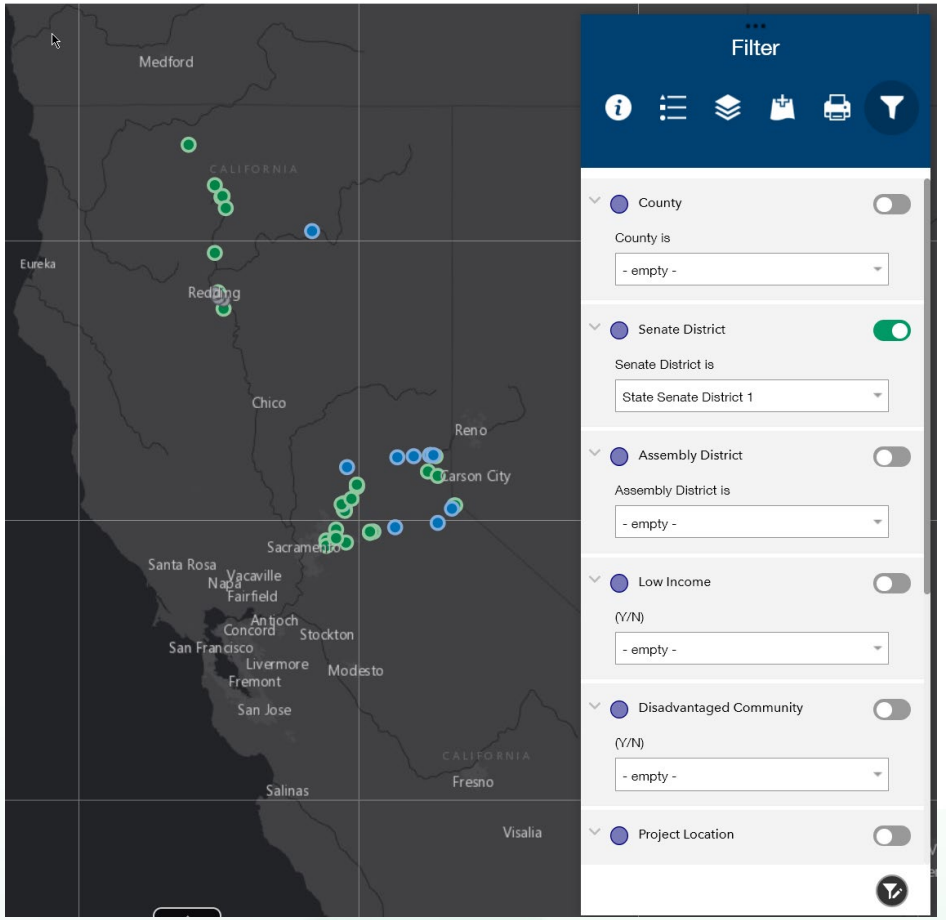
69%

…if excluding "Statewide or N/A" investments

*Results subject to change with CES 4.0 update, adding Tribal areas.

Clean Transportation Program Investment Map GIS Webmap





Source: CEC Cartography staff using ESRI ArcGIS Pro; Available at: https://caenergy.maps.arcgis.com/apps/webappviewer/index.html?id=df6221d9f3e147b1a480707cac979a6c

Thank You!

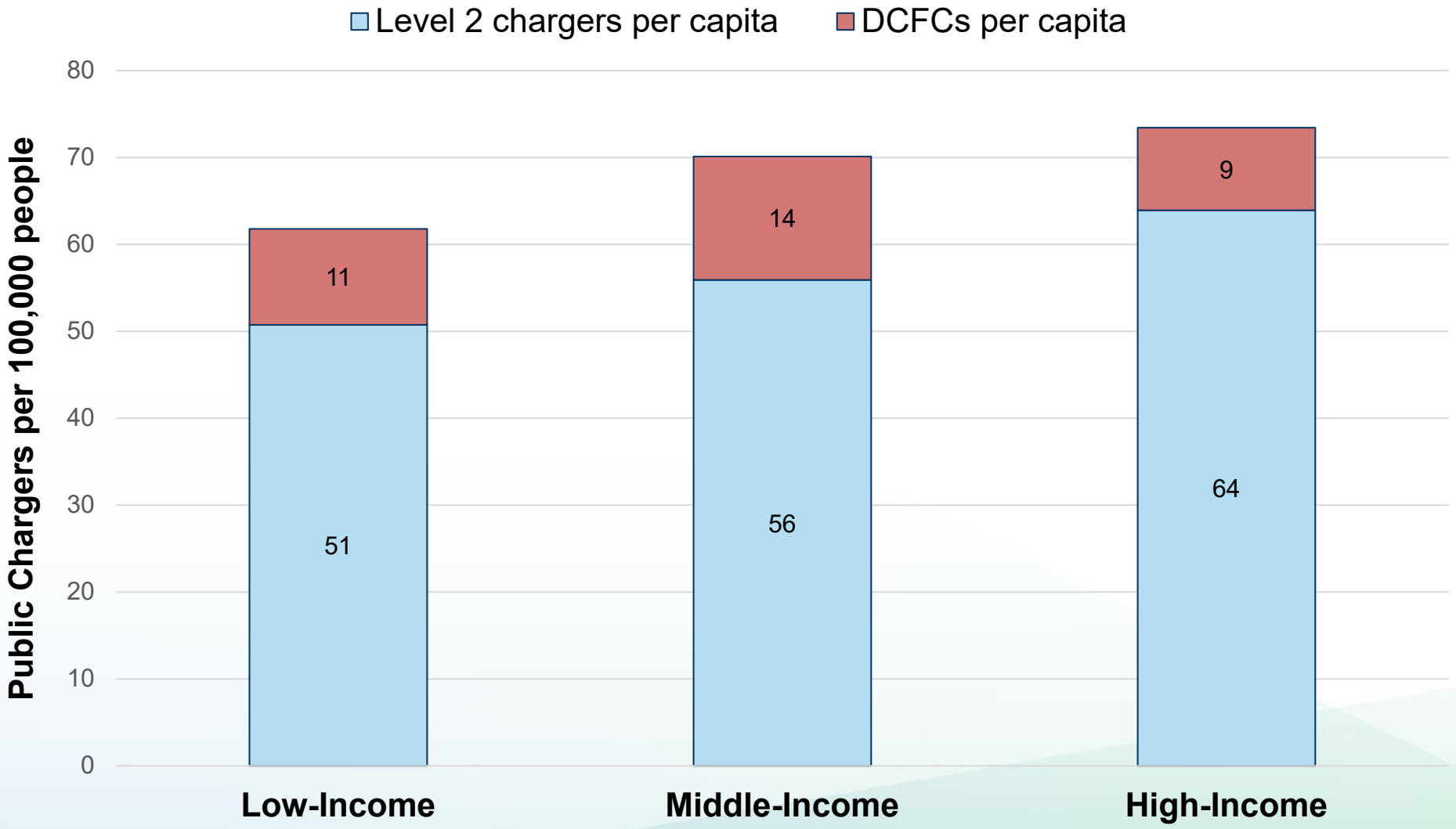
Contact: Jonathan.Bobadilla@energy.ca.gov

SB 1000: California Electric Vehicle Infrastructure Deployment Assessment

Increasing Access to Electric Vehicle Infrastructure for All

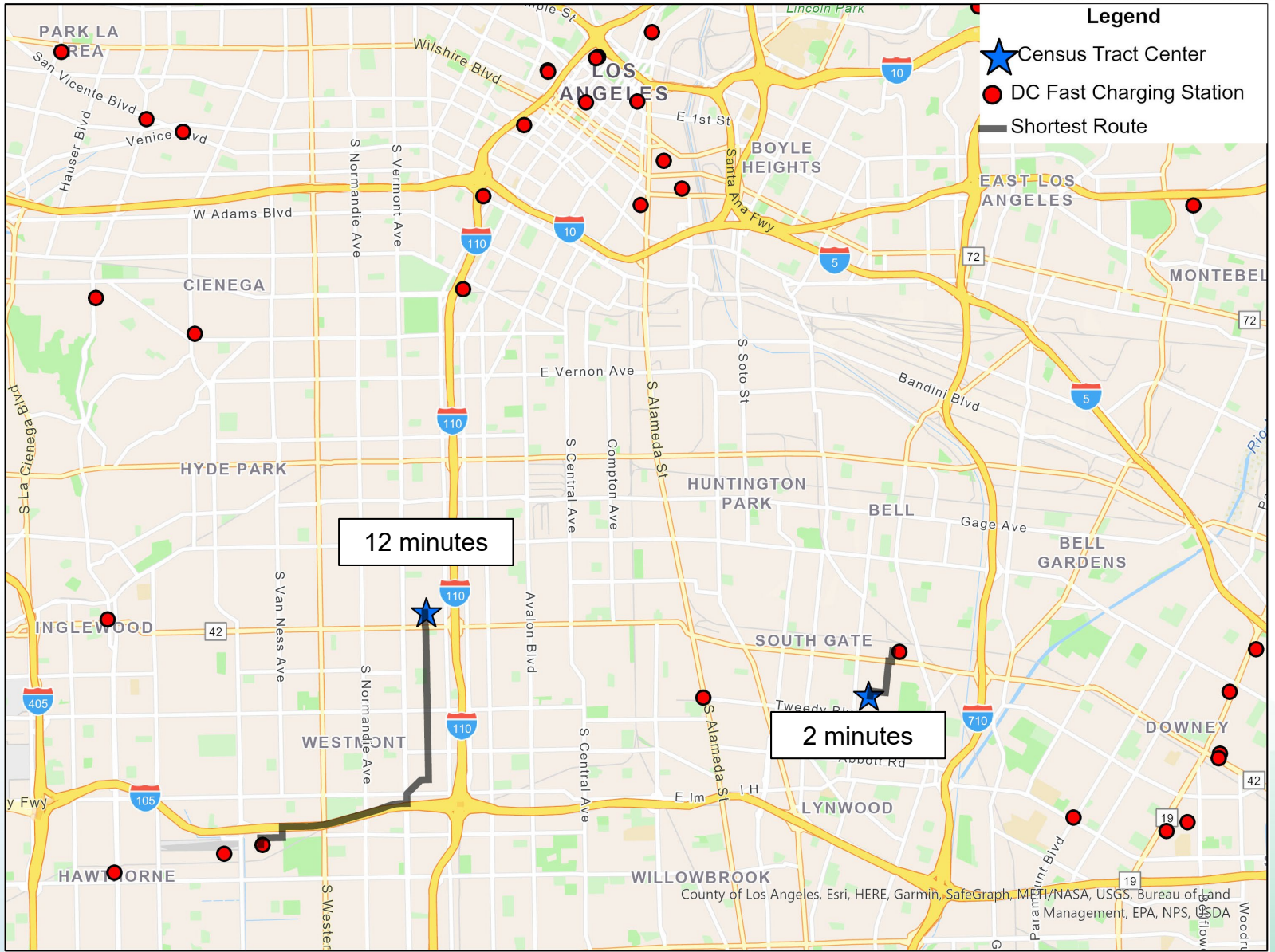
Tiffany Hoang, Air Pollution Specialist
Fuels and Transportation Division
April 29, 2021

Low-Income Communities Have Fewer Chargers

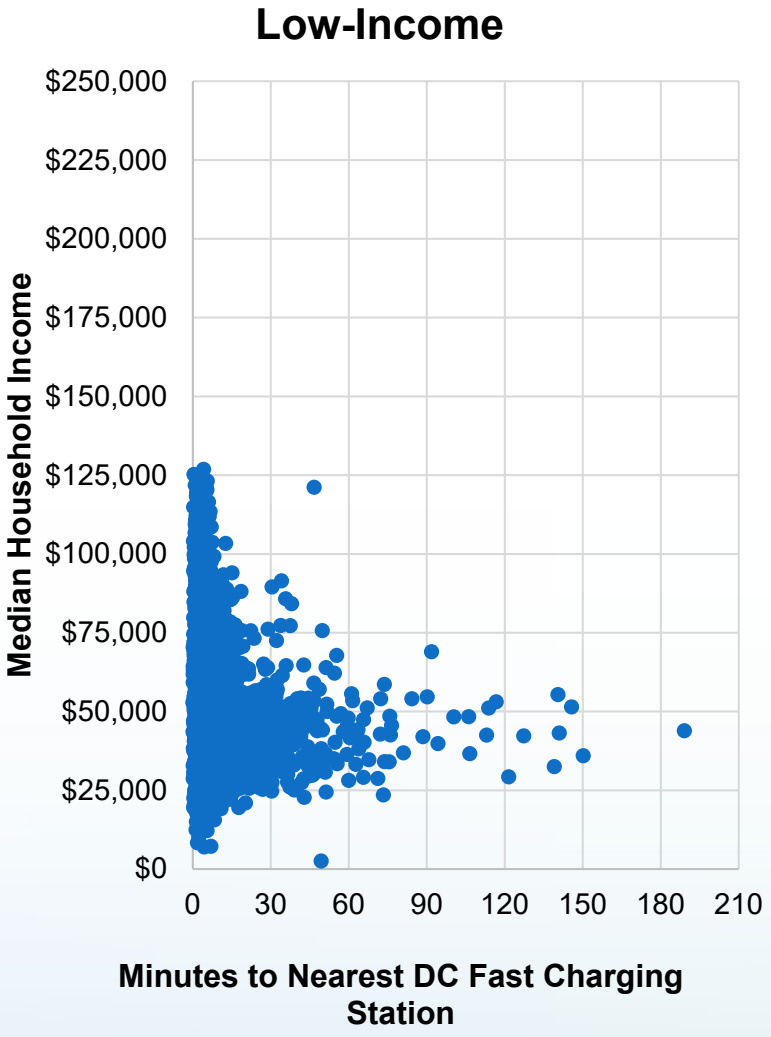


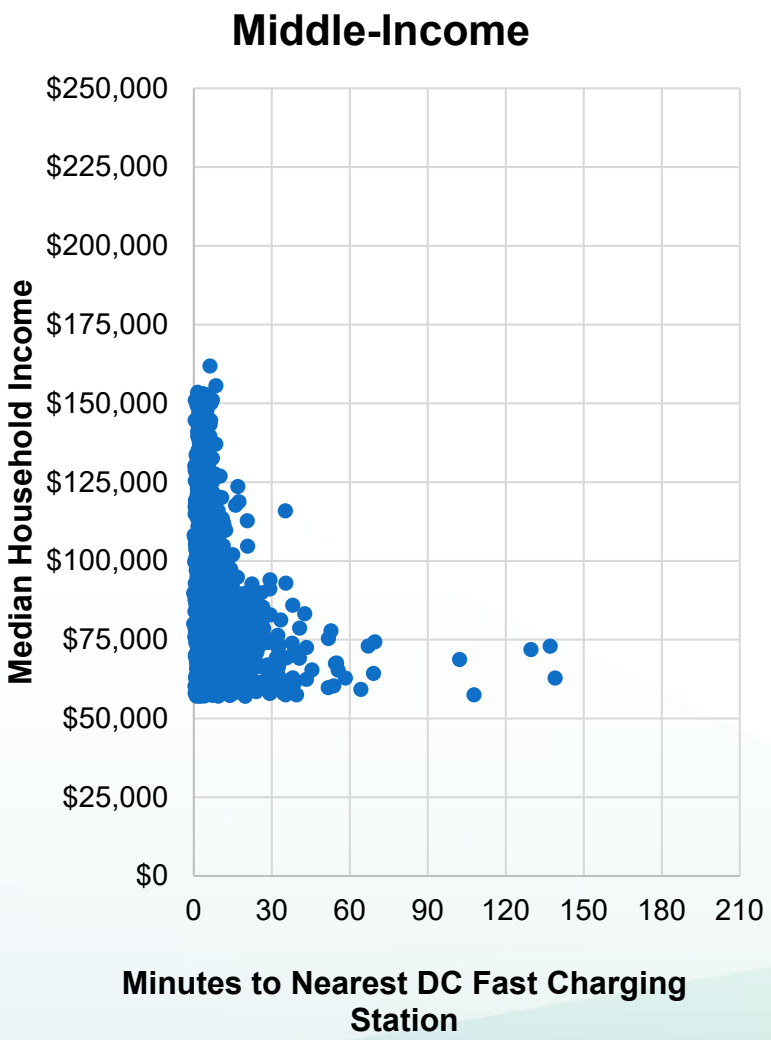
Sources: U.S. Census Bureau 2014 – 2018 American Community Survey Median Household Income 5-Year Estimates and U.S. Department of Energy's Alternative Fuels Data Center Station Locator data as of July 2020.

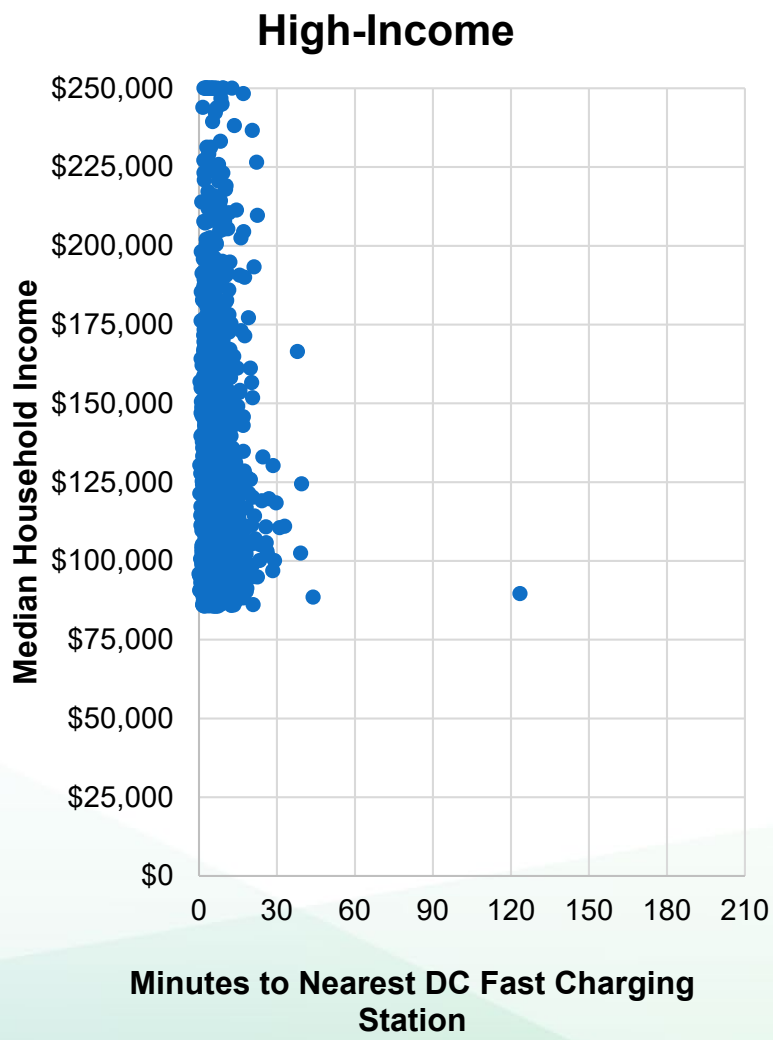
Measuring Access to Fast Charging with New Drive Time Analysis



More Variation in Drive Times Across Low-Income Communities

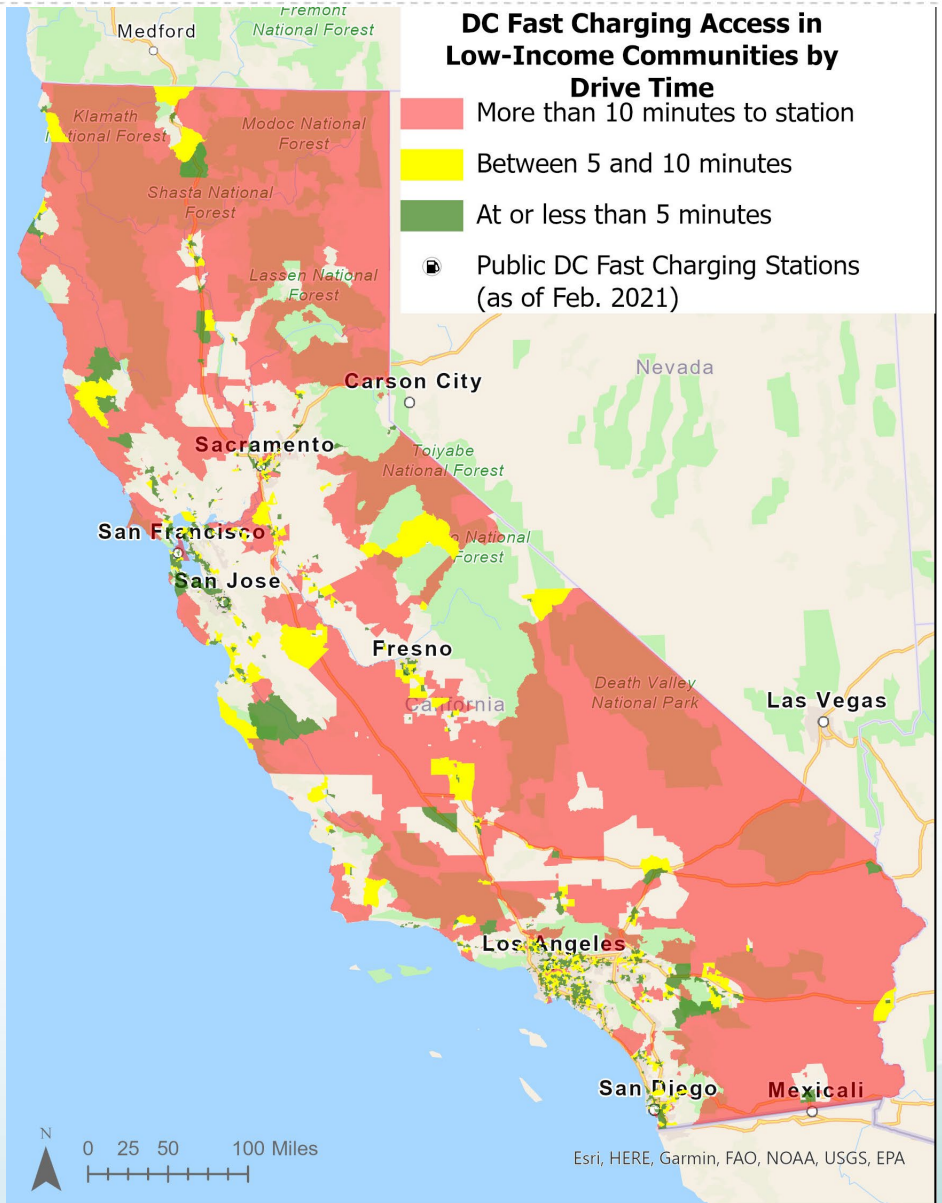


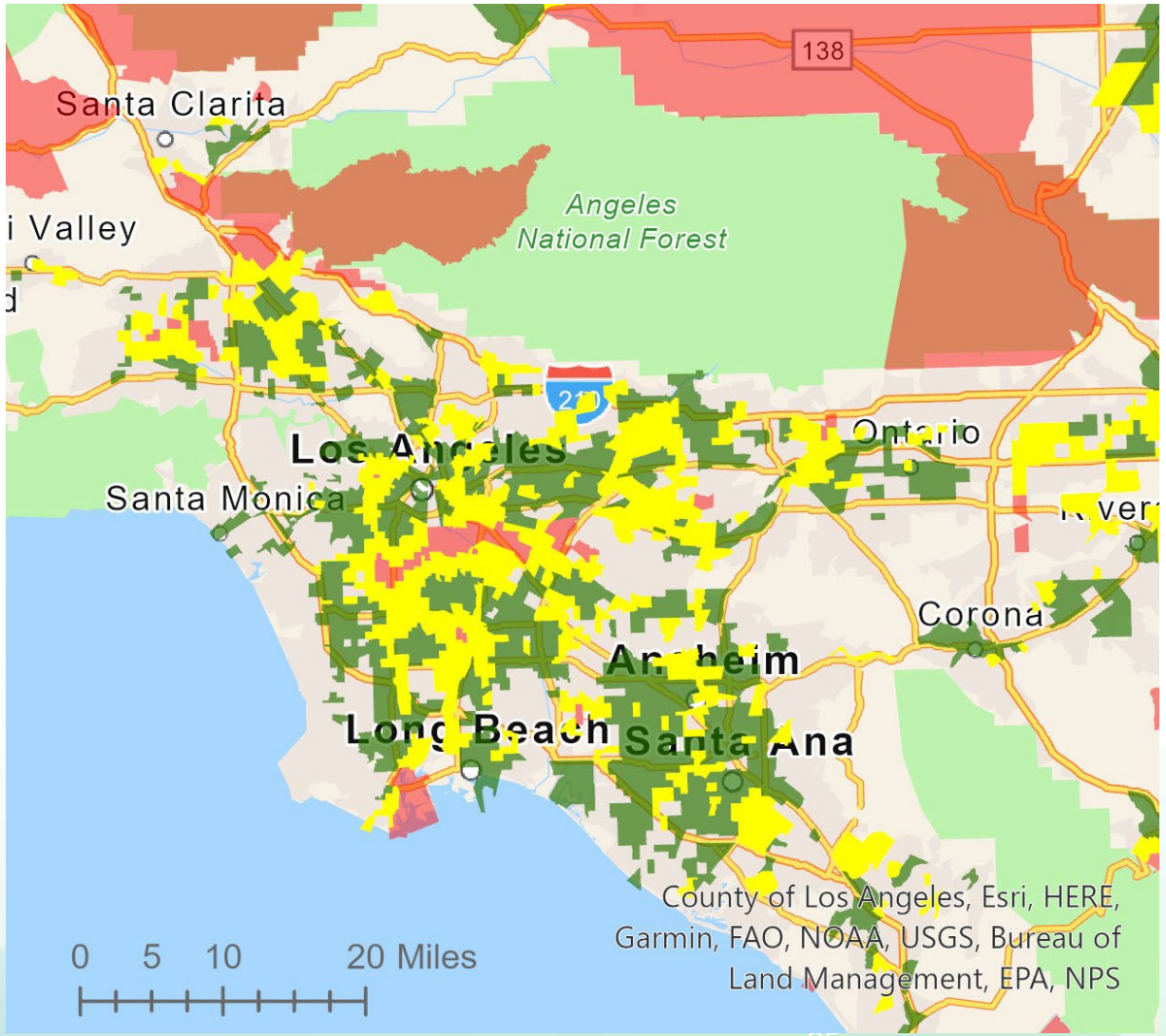




Sources: U.S. Census Bureau 2014 – 2018 American Community Survey Total Population 5-Year Estimates, U.S. Department of Energy's Alternative Fuels Data Center Station Locator data as of February 2021, and California Air Resources Board Integrated Transportation Network data.

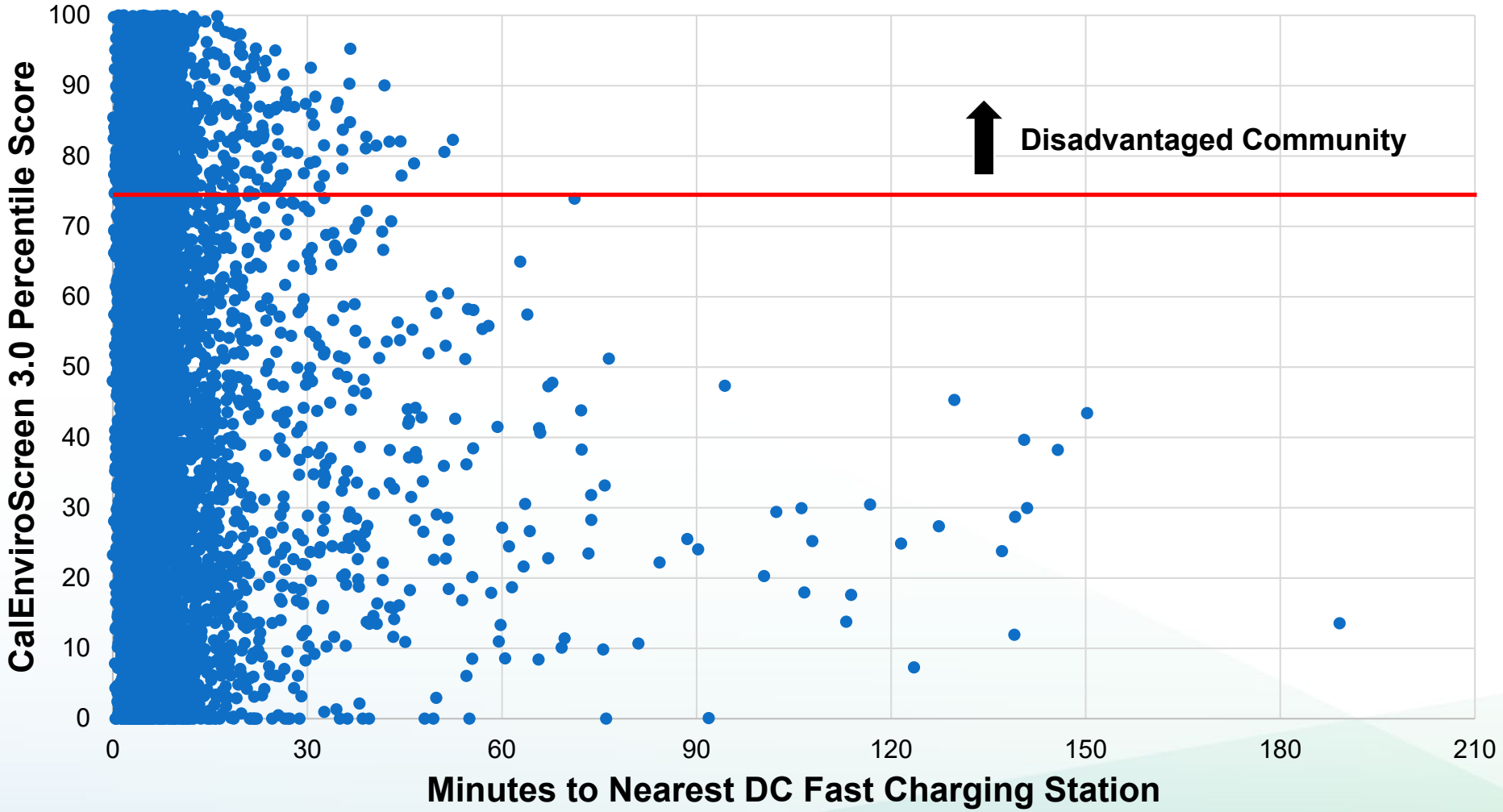
Some Low-Income Communities Have Long Drive Times



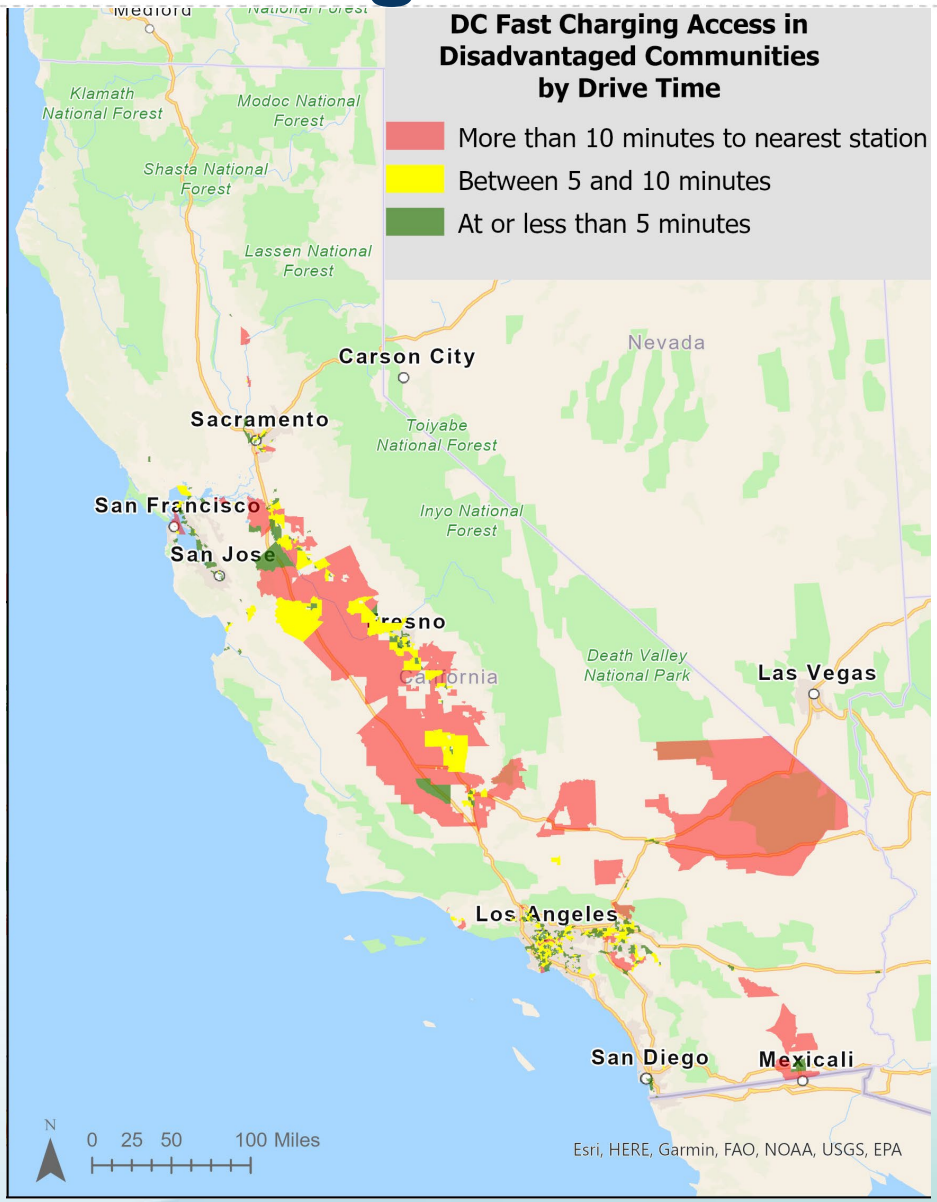


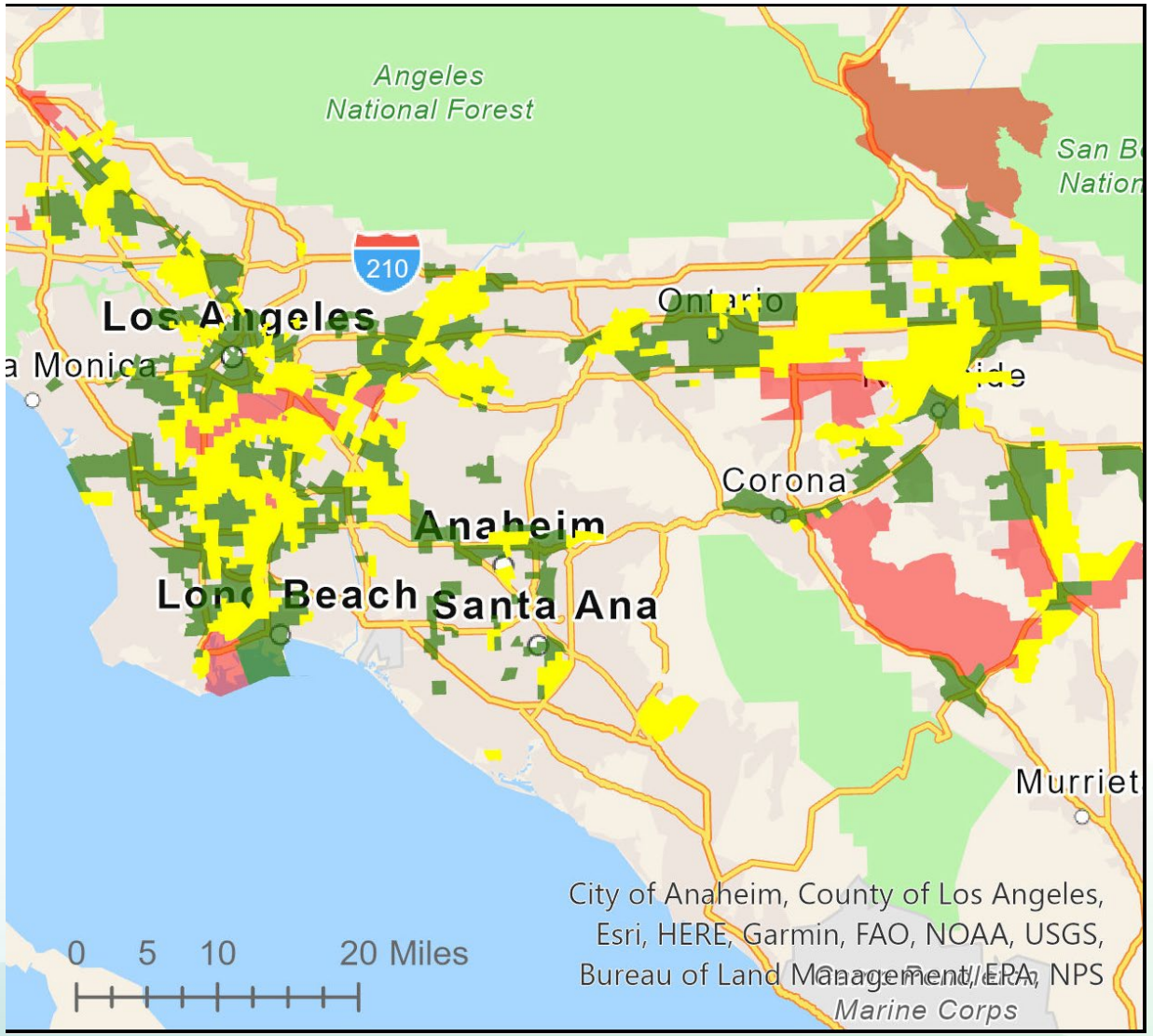
Sources:
AFDC (February 2021)
ACS (2014-2018)
HCD 2020

Variation in Drive Times Across Disadvantaged Communities



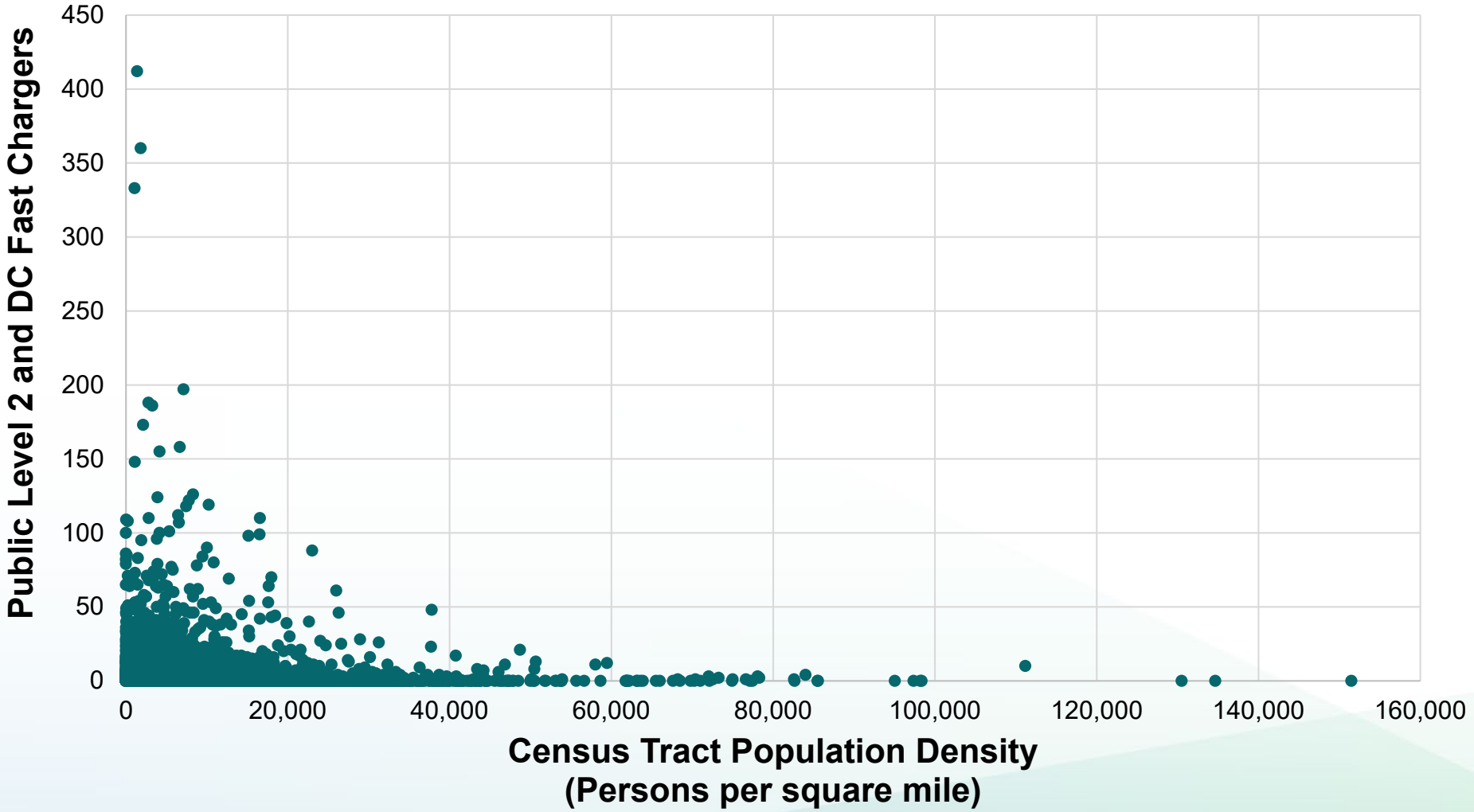
Potential to Serve Disadvantaged Communities with Long Drive Times





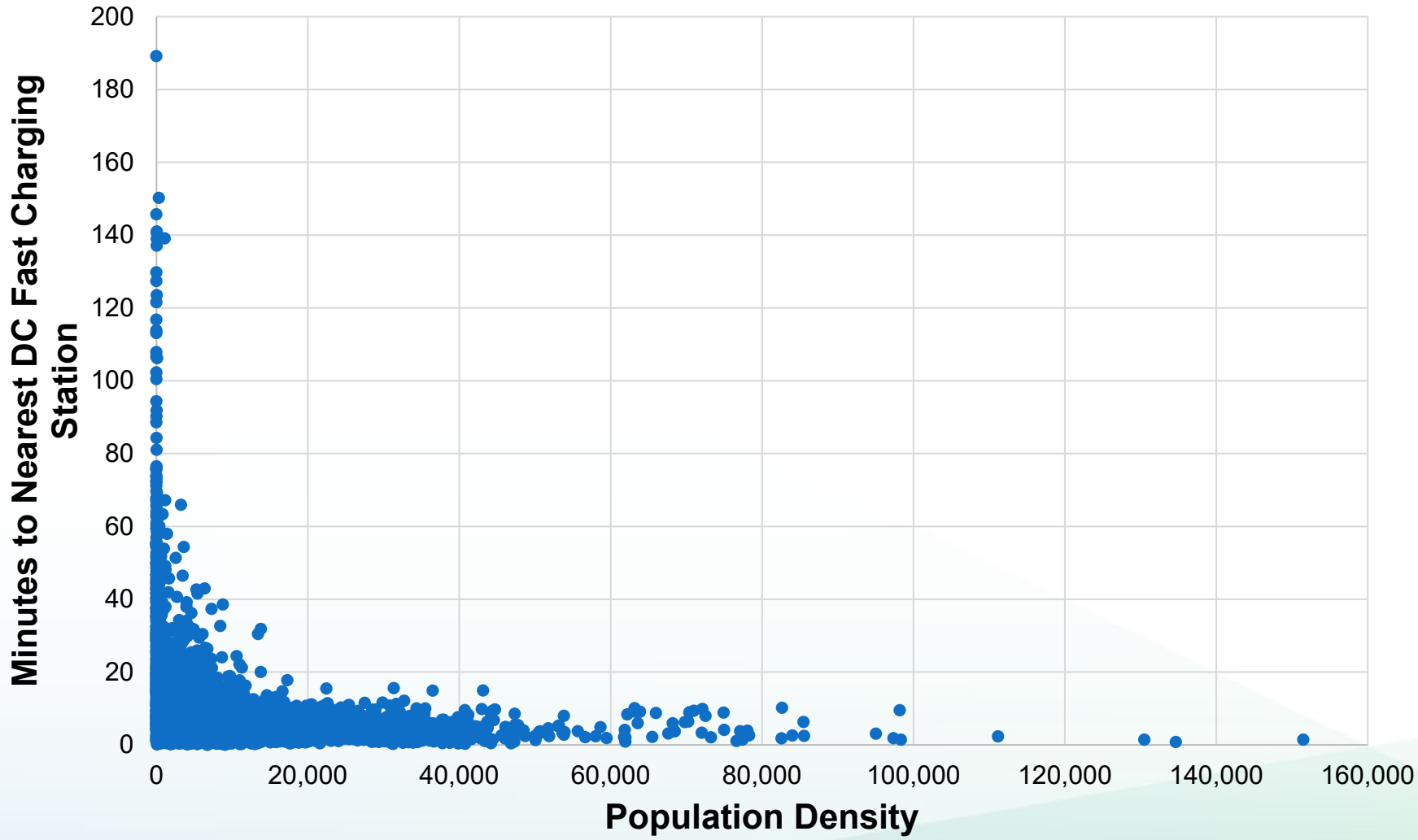
Sources:
AFDC (February 2021)
CES 3.0

Fewer Chargers within High Population Density Areas



Sources: U.S. Census Bureau 2014 – 2018 American Community Survey Total Population 5-Year Estimates and U.S. Department of Energy's Alternative Fuels Data Center Station Locator data as of July 2020.

High Population Density Areas Have Shorter Drive Times



Sources: U.S. Census Bureau 2014 – 2018 American Community Survey Total Population 5-Year Estimates, U.S. Department of Energy's Alternative Fuels Data Center Station Locator data as of February 2021, and California Air Resources Board Integrated Transportation Network data.

Thank You!

Tiffany.Hoang@energy.ca.gov

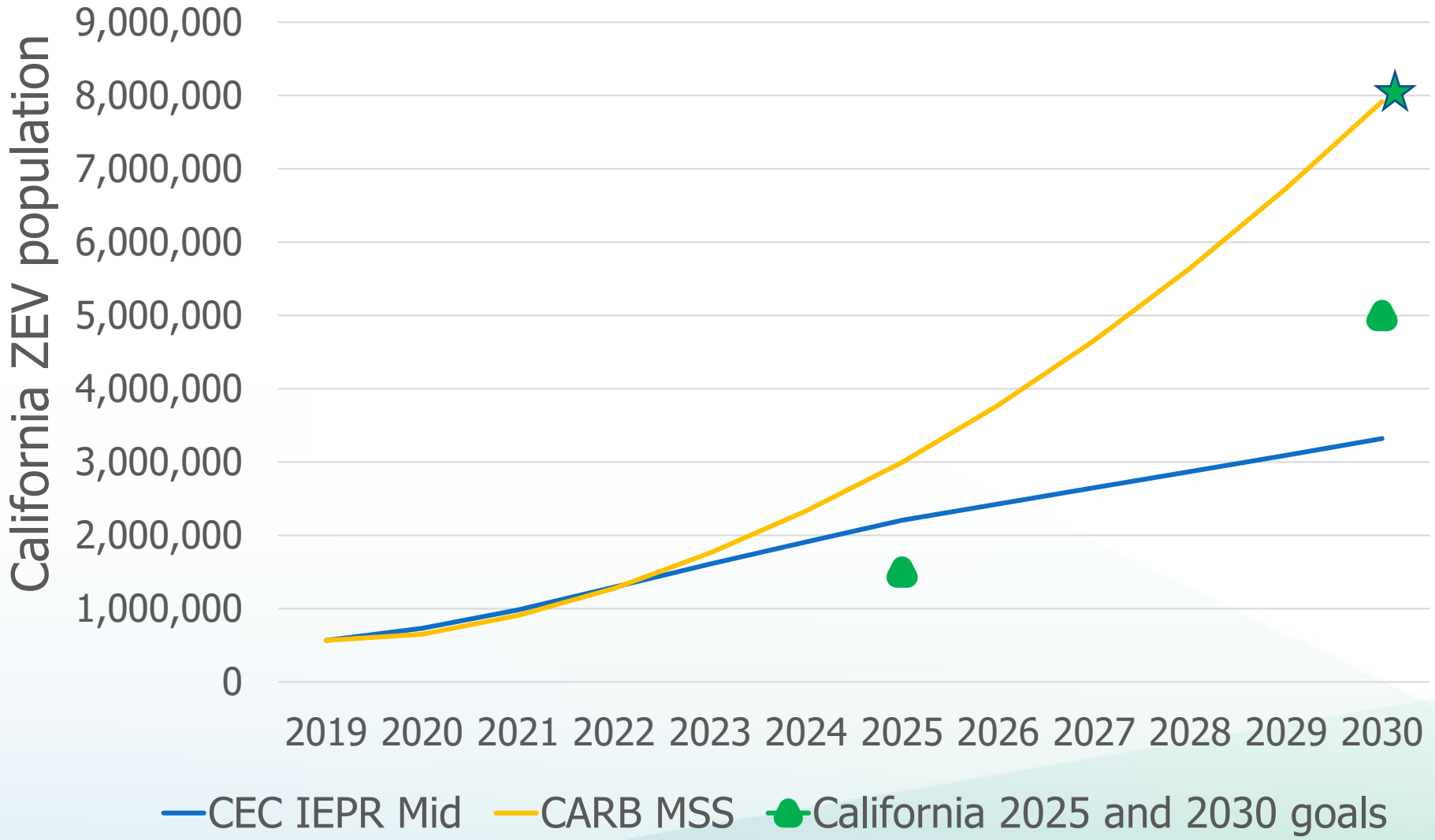
AB 2127 Charging Infrastructure Assessment - Staff Draft

Raja Ramesh
Air Pollution Specialist

AB 2127 and N-79-20

- "…a statewide assessment of the electric vehicle charging infrastructure needed … [for] at least five million zero-emission vehicles on California roads by 2030, and of reducing emissions of greenhouse gases to 40 percent below 1990 levels by 2030." (AB 2127)
- "…shall update the biennial statewide assessment of zero-emission vehicle infrastructure required by Assembly Bill 2127 (Chapter 365, Statues of 2018) to support the levels of electric vehicle adoption required by this Order." (Executive Order N-79-20)

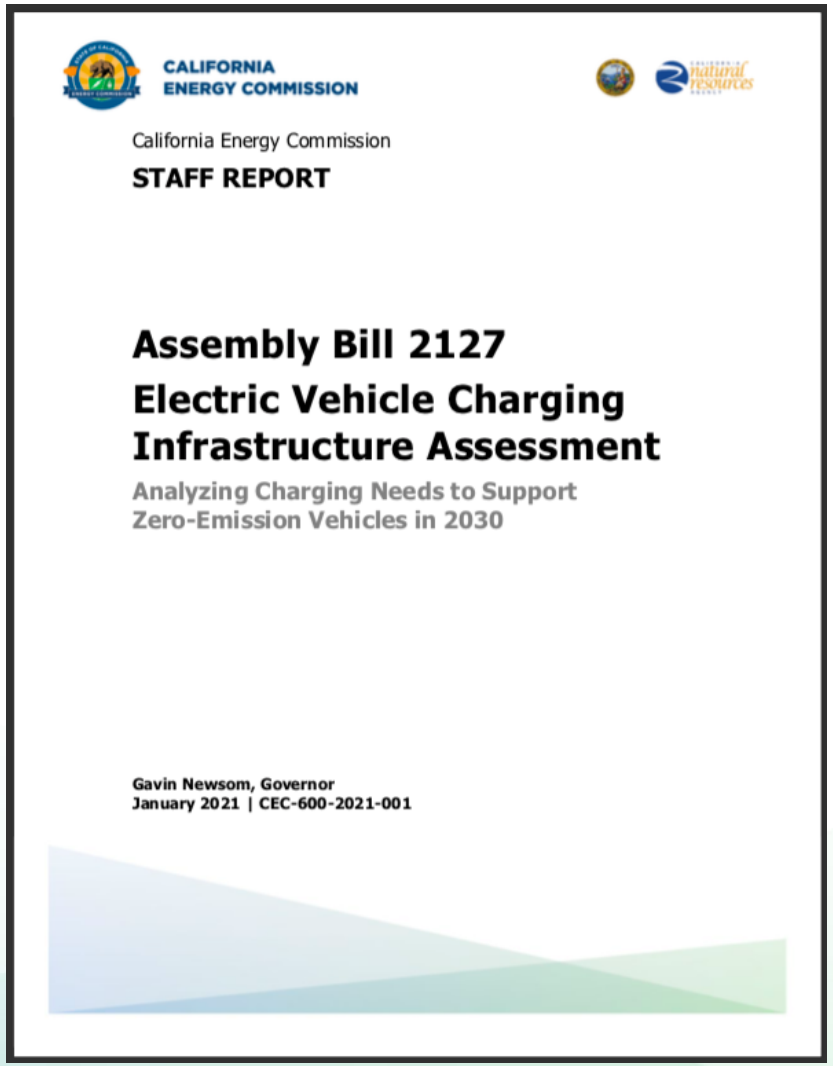
ZEV Trajectories



Development Process

- January 2021: Inaugural Staff Report version published
- February 2021: Two-day workshop held
- May 2021: Revised Staff Report expected
- June 2021: Anticipated Business Meeting adoption
- 2022: Creation of the next biennial assessment

  Docket of comments on report development: https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=19-AB-2127



Charger Deployment Lagging Behind Vehicle Sales

- Widespread, accessible, and convenient charging infrastructure is critical to transportation electrification

- Charging infrastructure deployment is lagging vehicle sales, and this gap may stymie progress toward 5 and 8 million ZEVs by 2030

Modeling Approach

Inputs

(not exhaustive)

- ✓ ZEV population
- ✓ BEV/PHEV split
- ✓ Vehicle attributes by class
- ✓ Charger utilization

Outputs

- ✓ Number of chargers needed at statewide and countywide level
- ✓ Broken down by charger type and location type
- ✓ Statewide load profiles

Thank You!

2021-2023 Investment Plan Update for the Clean Transportation Program

Patrick Brecht

Project Manager

Purpose of the Investment Plan

- Guides the Clean Transportation Program's investments toward meeting the state's clean transportation goals
- Takes into consideration state regulations and other funding programs to promote coordination across agencies
- Allocates funding for multiple fuel and vehicle technologies, transportation sectors, and supporting activities (e.g. workforce development)
- Since 2020, sets multi-year funding allocations to improve consistency and transparency for potential funding partners

Commitment to Inclusion, Diversity, Equity and Access

- Collaboration with the Disadvantaged Communities Advisory Group
- Prioritize and invest in proper community outreach and engagement
- Partner with local community-based organizations
- Develop metrics that go beyond funding locations
- **Seeking to provide 50% of Investment Plan funds to benefit low-income and disadvantaged communities**

Context Setting

Legislation & Executive Orders are steering the state towards near- and zero-emission transportation

Climate	• 2030: 40% GHG reduction in economy • 2030: 20% GHG reduction in transportation fuels • 2045: Net zero carbon economy
Air Quality	• 2031: 80% reduction in smog-forming NOx

Zero Emission Vehicles (ZEVs) are an essential part of achieving these goals!

Context Setting- ZEV Goals

Light Duty Vehicles

- 2025: 1.5M ZEVs
- 2030: 5M ZEVs
- 2035: 100% of New Sales are ZEVs **(E.O. N-79-20)**

Charging and Refueling Infrastructure

- 2025: 250,000 Chargers (inc. 10,000 DC Fast Chargers)
- 2025: 200 Hydrogen Refueling Stations

Medium- and Heavy-Duty Vehicles

- 2029: 100% of New Transit Bus Purchases are ZEVs
- 2035: 100% of All Off-Road Vehicles and Equipment are ZEVs **(E.O. N-79-20)**
- 2035: 100% of All Drayage Trucks are ZEVs **(E.O. N-79-20)**
- 2045: 100% of All Trucks and Buses are ZEVs **(E.O. N-79-20)**

Informing the Investment Plan

- *SB 1000 Electric Vehicle Charging Infrastructure Deployment Assessment* (published December 2020).
- *AB 2127 Electric Vehicle Charging Infrastructure Assessment-Analyzing Charging Needs to Support Zero-Emission Vehicles in 2030* (published January 2021).
- Consulting with the Disadvantaged Communities Advisory Group
- Consulting with the CEC's Tribal Program and the Tribal Lead Commissioner for assistance with outreach and promotion of transportation-related funding opportunities to tribes.
- Development of a loan-funding working group.

Progress Report

250,000 Chargers by 2025

183,031
TOTAL LEVEL 2 CHARGERS

240,000
LEVEL 2 CHARGER GOAL

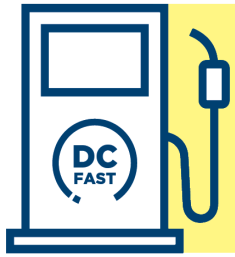
9,570
TOTAL DC FAST CHARGERS

10,000
DC FAST CHARGER GOAL

64,081
EXISTING
LEVEL 2 CHARGERS
(ESTIMATED)

118,950
WITH FUNDING ALLOCATED
LEVEL 2 CHARGERS (INCLUDING CTP, UTILITIES, AND OTHER SOURCES)

56,969
GAP FROM 2025 GOAL



5,963
EXISTING
DC FAST CHARGERS
(ESTIMATED)

3,607
WITH FUNDING ALLOCATED
DC FAST CHARGERS (INCLUDING CTP, UTILITIES, AND OTHER SOURCES)

430
GAP FROM 2025 GOAL

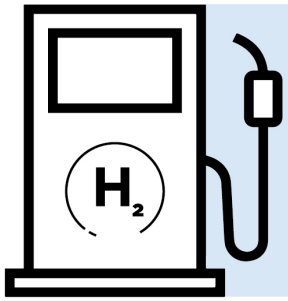
Progress Report

200 Hydrogen Fueling Stations by 2025

179
PUBLIC STATIONS

200
STATION GOAL

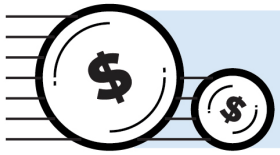
2020 2025



47
OPEN
RETAIL HYDROGEN FUELING STATIONS

132
IN DEVELOPMENT
HYDROGEN FUELING STATIONS

21
GAP FROM 2025 GOAL



HYDROGEN FUNDING ALLOCATED TO DATE

$166 million

Key Priorities in the Staff Draft Report Version of the 2021-2023 Investment Plan Update

- Continue with multiyear funding plan format.
- $95.2 million/year as baseline funding.
- Support the near-term ZEV infrastructure needs of light-duty passenger vehicles, while ramping up investments in medium- and heavy-duty ZEVs in later years.
- Encourage a focus on high-quality job opportunities and benefits to underserved communities across all funding categories.
- Promote consideration of alternative project financing strategies.

Staff Draft Report
Proposed Funding Allocations

Category	Funded Activity	2021-2022	Next 1½ FYs
Zero-Emission Vehicles and Infrastructure	Light-Duty Electric Vehicle Charging Infrastructure and eMobility	$30.2	$10
	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure	$30	$79.8
	Hydrogen Refueling Infrastructure	$20	$30*
Alternative Fuel Production and Supply	Zero- and Near Zero-Carbon Fuel Production and Supply	$10	$15
Related Needs and Opportunities	Manufacturing	$3	$4
	Workforce Training and Development	$2	$4
	Total	$95.2	$142.8

*In the final half year of funding, the CEC is planning to split funding for hydrogen infrastructure between light-duty and medium- and heavy-duty hydrogen infrastructure.

2021-2023 Investment Plan Schedule and Next Steps

Milestones	Scheduled Date
Release Draft Staff Report	April 26, 2021
1st Advisory Committee Meeting	April 29, 2021
Release Revised Staff Draft	Mid-June 2021
2nd Advisory Committee Meeting	Mid-July 2021
Release of Lead Commissioner Report	September 2021
Seeking Business Meeting Approval	October 2021

More information:
https://www.energy.ca.gov/programs-and-topics/topics/transportation

Submit e-comments by May 14, 2021
at: https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=21-ALT-01

Contact:
Patrick.Brecht@energy.ca.gov

Staff Draft Report
Proposed Funding Allocations

Category	Funded Activity	2021-2022	Next 1½ FYs
Zero-Emission Vehicles and Infrastructure	Light-Duty Electric Vehicle Charging Infrastructure and eMobility	$30.2	$10
	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure	$30	$79.8
	Hydrogen Refueling Infrastructure	$20	$30*
Alternative Fuel Production and Supply	Zero- and Near Zero-Carbon Fuel Production and Supply	$10	$15
Related Needs and Opportunities	Manufacturing	$3	$4
	Workforce Training and Development	$2	$4
	Total	$95.2	$142.8

*In the final half year of funding, the CEC is planning to split funding for hydrogen infrastructure between light-duty and medium- and heavy-duty hydrogen infrastructure.