DOCKETED	
Docket Number:	22-EVI-03
Project Title:	National Electric Vehicle Infrastructure Deployment Plan Development, 2022-26 for CEC and Caltrans
TN #:	252580
Document Title:	California's Deployment Plan for the National Electric Vehicle Infrastructure (NEVI) Program Annual Update
Description:	N/A
Filer:	Spencer Kelley
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	10/11/2023 4:26:28 PM
Docketed Date:	10/11/2023

STATE OF CALIFORNIA

AUGUST 2023

California's Deployment Plan for the National Electric Vehicle Infrastructure (NEVI) Program

ANNUAL UPDATE

PREPARED BY

Caltrans

CALIFORNIA ENERGY COMMISSION

California's Deployment Plan for the National Electric Vehicle Infrastructure Program

2023 Update

Primary Authors & Contributors

California Energy Commission

Brian Fauble
Tiffany Hoang
Madison Jarvis
Thanh Lopez
Jim McKinney
Michael Nicholas
Larry Rillera
Charles Smith
Jaron Weston

California Department of Transportation

Treasure Acevedo
Tarah Gatten
Riley Keller
Keri Robinson
Bella Romero

Project Manager

Jim McKinney
Senior Policy Analyst
Fuels and Transportation Division
California Energy Commission

Coordinating Lead Authors

Jimmy O'Dea
Assistant Deputy Director, Transportation Electrification
Director's Office of Equity, Sustainability, and Tribal Affairs
California Department of Transportation

Ben De Alba
Supervisor
Strategic Investment Unit, Fuels and Transportation Division
California Energy Commission

Eric Sundquist
Acting Deputy Director
Director's Office of Equity, Sustainability, and Tribal Affairs
California Department of Transportation

Hannon Rasool
Director
Fuels and Transportation Division
California Energy Commission

Table of Contents

Abbreviations & Terms 5
Introduction 6
Updates from Prior Plan 6
State Agency Coordination 7
Memoranda of Understanding with Other Agencies 7
Interagency Working Groups 8
California's State Funding Context 8
Build America, Buy America Requirement 9
Public Engagement 9
California NEVI Workshops 10
September 2022 Technical Workshop 10
April 2023 Tools Workshop 11
June 2023 NEVI Update Workshop 13
Community Engagement Outcomes Report 14
Outreach to Disadvantaged Communities 15
Tribal Engagement 15
Utility Engagement 16
Site-Specific Public Engagement 18
Plan Vision and Goals 18
Contracting 20
Contractor Engagement with Local Communities 24
Status of Contracting Process 25
Awarded Contracts 25
Scoring Methodologies Utilized 25
Plan for Compliance with Federal Requirements 26
Civil Rights 26
Existing and Future Conditions Analysis 27
California Geography and Terrain 27
California ZEV Sales Update 27
Market Conditions 27
Climate 28
Freight 28
California's Electric Grid 29
California's Electric Utilities 30

Known Risks and Challenges 30
Alternative Fuel Corridor Designations 31
Freight EV Corridors 37
Existing Charging Stations 39
Existing Locations of Charging Infrastructure Along AFCs 39
EV Charging Infrastructure Deployment 41
Planned Charging Stations 41
Infrastructure Deployments/Upgrades 42
Planning Towards a Fully Built Out Determination 45
Implementation 45
Strategies to Address Resilience, Emergency Evacuation, Snow Removal/Seasonal Needs 46
Equity Considerations 46
Identification and Outreach to Disadvantaged Communities (DACs) 47
Process to Identify, Quantify, and Measure Benefits to DACs 50
Labor and Workforce Considerations 54
Physical Security & Cybersecurity 56
Program Evaluation 57
Discretionary Exceptions 58

List of Figures

Figure 1: NEVI Matchmaking Tool 12
Figure 2: California's NEVI Corridor Map Showing All 21 Corridor Groups 22
Figure 3: Sample Corridor Group Map (Corridor Group 1) 23
Figure 4: Designated and Round 7 Nominated Alternative Fuel Corridors for Electric Vehicles 32
Figure 5: Designated and Round 7 Nominated Alternative Fuel Corridors for Electric Vehicles (Selected Zoom of Northern California) 33
Figure 6: Designated and Round 7 Nominated Alternative Fuel Corridors for Electric Vehicles (Selected Zoom of Southern California) 33
Figure 7: Proposed Freight EV Corridors 38
Figure 8: Alternative Fuel Corridors and Existing Public DC Fast Charging and Level 2 Charging Stations in California 39
Figure 9: Alternative Fuel Corridors and Existing Public DC Fast Charging and Level 2 Charging Stations in California (Selected Zoom of Northern California) 40

Figure 10: Alternative Fuel Corridors and Existing Public DC Fast Charging and Level 2 Charging Stations in California (Selected Zoom of Southern California) 40

Figure 11: Existing DC Fast Charging Stations Along Alternative Fuel Corridors in Northern and Southern California 43

Figure 12: Existing DC Fast Charging Stations Along Alternative Fuel Corridors (Selected Zoom of Northern California) 44

Figure 13: Existing DC Fast Charging Stations Along Alternative Fuel Corridors (Selected Zoom of Southern California) 44

Figure 14: Locations of Alternative Fuel Corridors and Disadvantaged or Low-income Communities 48

Figure 15: Locations of Alternative Fuel Corridors and Disadvantaged or Low-income Communities (Selected Zoom of Northern California) 49

Figure 16: Locations of Alternative Fuel Corridors and Disadvantaged or Low-income Communities (Selected Zoom of Southern California) 49

Figure 17: Ludlow to Fenner Along Interstate 40 58

Figure 18: Corridor With Potential NEVI-compliant and Upgradable EV Charging Stations 58

Figure 19: Ludlow to Fenner 59

Figure 20: Potential Charging Station Sites in Ludlow 59

Figure 21: Kelbaker Road at Interstate 40 60

Figure 22: Essex Road at Interstate 40 60

List of Tables

Table 1: The Top-Six Ranked Corridor Groups Eligible for Round 1 Solicitation 21

Table 2: Sample Corridor Group Segments (Corridor Group 1) 23

Table 3: Ranking Formula and Factors for California's First NEVI Solicitation 24

Table 4: Round 7 Alternative Fuel Corridor Nominations – EV Corridor Pending 34

Table 5: Round 7 Alternative Fuel Corridor Nominations – EV Corridor Ready 34

Table 6: Rounds 1 – 6 Alternative Fuel Corridor Designations – EV Corridor Pending 34

Table 7: Rounds 1 – 6 Alternative Fuel Corridor Designations – EV Corridor Ready 36

Table 8: Proposed Freight EV Corridors 37

Table 9: Status of Chargers Needed to Support 2030 Light-Duty ZEV Targets 41

Table 10: Measuring Benefits of NEVI Formula Program Investments 51

Abbreviations & Terms

Abbreviation	Term
AFC	Alternative Fuel Corridor
AFDC	Alternative Fuels Data Center
BIPOC	Black, Indigenous, People of Color
CalSTA	California State Transportation Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CEC	California Energy Commission
CFI	Charging and Fueling Infrastructure Discretionary Grant Program
CCS	Combined Charging System
CFMP	California Freight Mobility Plan
CPUC	California Public Utilities Commission
CTC	California Transportation Commission
CTP	Clean Transportation Program
CWDB	California Workforce Development Board
DAC	Disadvantaged community
DACAG	Disadvantaged Communities Advisory Group for CEC and CPUC
DCFC	Direct Current fast charger
Deployment Plan	California's National Electric Vehicle Infrastructure Deployment Plan
ETP	Employment Training Panel
EV	Electric vehicle
EVITP	Electric Vehicle Infrastructure Training Program
EVSE	Electric vehicle supply equipment
FHWA	Federal Highway Administration
GO-Biz	Governor's Office of Business and Economic Development
HRTP	High road training partnership
IEPR	Integrated Energy Policy Report
IOU	Investor-owned utility
Joint Office	US Joint Office of Energy and Transportation
LIC	Low-income community
NAAC	Native American Advisory Committee
NACS	North American Charging Standard
NEVI	National Electric Vehicle Infrastructure Formula Program
OEM	Original equipment manufacturer
US DOT	US Department of Transportation
US DOE	US Department of Energy
ZEV	Zero-emission vehicle
ZIP	ZEV Infrastructure Plan

Introduction

The California Department of Transportation (Caltrans) and the California Energy Commission (CEC) are pleased to present this first NEVI Deployment Plan Update to the Federal Highway Administration (FHWA) and Joint Office for Energy and Transportation (Joint Office). California's NEVI agencies (Caltrans and the CEC) have been active in NEVI planning and administration since the first plan was submitted in August 2022 and have advanced two major tasks. The first is the Interagency Agreement between Caltrans and the CEC, which delineates the two agencies' responsibilities for NEVI implementation. The Interagency Agreement was approved by the CEC on July 26, 2023. When the California Department of General Services completes its review, the Interagency Agreement will be finalized. The second major task is the preparation of the NEVI solicitation manual, which is the CEC's primary document explaining the scope, qualifications, and requirements for applications to California's NEVI Program. The first solicitation is expected to be released in Q3 2023. Caltrans and the CEC will report on the results of the first solicitation in the 2024 NEVI Plan Update.

Most of the material in this Update is new. In a few key sections where no changes have occurred since 2022, such as Civil Rights and Plan Vision and Goals, text has been imported from the 2022 NEVI Plan to provide continuity for these sections.

Updates from Prior Plan

These sections of California's NEVI Deployment Plan Update have been updated following the guidance and template issued by the Joint Office.

- **Public Engagement:** Caltrans and the CEC have been active with public engagement since the first plan was filed. Three major public workshops have been held since September 2022 and a fourth will be held after the first solicitation is released, sometime in Q3 2023. This public engagement includes outreach to disadvantaged communities, Native nations, and utilities.
- **Community Engagement Outcomes Report:** This new report summarizes California's public engagement philosophy, goals, and actions related to NEVI.
- **Plan Vision and Goals**: Brief updates on reliability measures.
- **Contracting:** Updates on California's contracting approach for NEVI.
- **Existing and Future Conditions Analysis:** Updates on the number of electric vehicles sold in California and the number of chargers installed for passenger vehicles since the first Plan was submitted in 2022.
- **Alternative Fuel Corridor (AFC) Update**: The Round 6 AFCs have been approved and the Round 7 nominations are pending with the FHWA. A complete description of corridors nominated in Round 7 is provided.

- **Freight Planning and Designated Corridors**: A new section describing California's nominations for Freight Electric Vehicle (EV) Corridors.
- **Equity Considerations and Process to Identify, Quantify, and Measure Benefits to Disadvantaged Communities (DACs):** Information on how California will assess and measure benefits.
- **Labor and Workforce:** Updated information on California's policies and actions to ensure meaningful engagement on NEVI-related workforce issues.

State Agency Coordination

Caltrans and the CEC have continued to collaborate closely since the first NEVI Plan was filed. The NEVI agencies collaborated on the preparation of an application to the United States Department of Transportation's (US DOT) Charging and Fueling Infrastructure Discretionary Grant Program (CFI), the *West Coast Truck Charging and Fueling Corridor Project*, in conjunction with the states of Oregon and Washington. The border-to-border truck charging corridor would follow Interstate 5 from Mexico to Canada and include 34 truck charging stations and five hydrogen fueling stations. Major West Coast Ports would be linked through spurs, helping to enable the electrification of many West Coast drayage fleets. The CEC and Caltrans have continued to collaborate on NEVI planning and outreach in advance of the first solicitation.

Please see the below subsections for specific details about coordination among state agencies.

Memoranda of Understanding with Other Agencies

Caltrans and the CEC have achieved a significant milestone in their efforts to implement California's NEVI Formula Program. The two agencies have officially joined forces by developing the Interagency Agreement, which establishes clear roles and responsibilities for administering the NEVI Formula Program. This agreement is crucial as it designates the CEC as the responsible state agency for administering and allocating California's share of NEVI formula funds. The Interagency Agreement establishes Caltrans as the state agency responsible and accountable to the FHWA for overseeing federal funds and the CEC, consistent with the Stewardship and Oversight Agreement between Caltrans and the FHWA.

The Interagency Agreement received approval from the CEC during its public meeting on July 26, 2023.The Interagency Agreement marks the formal beginning of a new partnership between Caltrans and the CEC, strengthening California's strategy for zero-emission vehicle infrastructure deployment. Its scope of work ensures close coordination between Caltrans and the CEC in areas such as the nomination of federally designated Alternative Fuel Corridors, development of annual NEVI Deployment Plans, and compliance with federal requirements associated with the NEVI Formula Program.

Interagency Working Groups

Caltrans and the CEC continue to collaborate with the California State Transportation Agency (CalSTA), the California Transportation Commission and its Senate Bill 671 Working Group,[1] the Governor's Office of Business Development (GO-Biz), the California Public Utilities Commission (CPUC), and the California Air Resources Board (CARB). CalSTA is California's lead policy agency for transportation. CARB is the lead California agency for zero-emission vehicle regulations and vehicle funding. CEC is the state's lead agency in zero-emission vehicle infrastructure, related policy and planning, and funding. GO-Biz plays a key convening role in zero-emission vehicle (ZEV) coordination through the development of California's ZEV Market Development Strategy,[2] to which several state agencies contribute.

The CEC and Caltrans continue to work closely with CARB on multiple issues germane to NEVI, including truck charging, heavy-duty vehicle demonstrations, charging infrastructure for California tribes, hydrogen station development, and zero-emission infrastructure policy issues. CARB is also responsible for new regulations like the Advanced Clean Cars II, Advanced Clean Trucks, and Advanced Clean Fleets Rules, which are helping drive demand for zero-emission charging and hydrogen fueling infrastructure. CARB also administers the state's light-duty vehicle subsidy program, the Clean Vehicle Rebate Project. The CEC and Caltrans also continue to work with the CPUC regarding utility and grid upgrades needed to support charging infrastructure through NEVI and other public investments.

Internationally, Caltrans is working with federal, state, and local partners in Mexico and the United States to update the 2021 California-Baja California Border Master Plan to address ZEV infrastructure needs for passenger vehicles at and near land ports of entry.

California's State Funding Context

For the 2023-2024 state fiscal year, the CEC's Clean Transportation Program (CTP) allocates funding to multiple zero-emission infrastructure categories.[3] These funding allocations are carry-overs from the state's fiscal year 2022-2023 allocations and do not represent funding increases for the current 2023-24 fiscal year. The zero-emission infrastructure categories include:

- Light-Duty Electric Vehicle Charging: $223 million
- Medium- and Heavy-Duty Truck Charging and Hydrogen Refueling: $198 million

[1] Senate Bill 671 (Gonzalez, Chapter 769, Statutes of 2022) requires that the California Transportation Commission (CTC) prepare a Clean Freight Corridor Efficiency Assessment to identify freight corridors, or segments of corridors, and the infrastructure needed to support the deployment of zero-emission medium- and heavy-duty vehicles. The Clean Freight Corridor Efficiency Assessment is due December 1, 2023.
[2] Governor's Office of Business Development. *Zero-Emission Vehicle Market Development Strategy*.
[3] Brecht, P. (2023). *2023-2024 Investment Plan Update for the Clean Transportation Program*. California Energy Commission.

- Drayage Truck Charging and Hydrogen Refueling: $185 million
- Off-Road Vehicle and Truck Infrastructure – electric and hydrogen: $315 million
- Port-Related ZEV Infrastructure – electric and hydrogen: $40 million
- Hydrogen Fueling Infrastructure Earmark: $30 million

California leads the nation in ZEV sales and uptake. However, the lack of infrastructure continues to be the major barrier to greater adoption and meeting state goals. Federal funds are essential to creating a broad and equitable charging network. The most recently available modeling shows that California will need about 37,500 DC fast chargers (DCFCs) to support the 8 million light-duty vehicles needed to meet the state's 2030 clean air goals.[4] The analysis, pursuant to Assembly Bill 2127 (Ting, Chapter 365, Statutes of 2018), will be updated by the end of 2023. California is making good progress in deploying DCFCs but needs additional investments to meet state goals. The federal NEVI Formula Program funding is an important addition to the state's allocations.

Build America, Buy America Requirement

With the FHWA's issuance in February 2023 of the *Build America, Buy America Implementation Plan to Enhance Buy America for EV Chargers*, California's funding solicitations will include a Build America, Buy America section within its requirements. The accompanying solicitation manual will briefly explain the federal requirements and provide a link to additional information. Applicants who receive NEVI funding must comply with the Build America, Buy America requirements and will be responsible for submitting documentation to verify compliance with the requirement.

Public Engagement

Since filing the initial NEVI Plan in August 2022, the CEC and Caltrans have hosted three workshops:

- September 2022: Pre-Solicitation Technical Workshop
- April 2023: NEVI Tools Workshop
- June 2023: NEVI Deployment Plan Update Workshop

[4] *Ibid.*

The CEC and Caltrans will host a fourth workshop after the initial NEVI solicitation is released in Q3 2023 entitled "Pre-Application Workshop." The purpose of this workshop will be to inform potential applicants of the specific technical, financial, experiential, and administrative requirements needed to develop an eligible application.

The California NEVI agencies hosted a two-day technical workshop in September 2022 detailing the proposed elements of the first solicitation. In the tools workshop in April 2023, the CEC and Caltrans introduced two new tools intended to improve partner participation in California's NEVI Program. The first was a digital interactive map with multiple layers of California-specific planning information intended to assist future applicants in developing their proposals. The second was a "matchmaking tool" designed to connect prospective NEVI applicants with other project partners, including site hosts.[5]

Following release of the NEVI Plan Update Guidance, the CEC and Caltrans held a public workshop in June 2023, to describe the new elements required in the Plan Update and to solicit partner recommendations for the Plan Update. Details regarding these public workshops are provided below.

California NEVI Workshops

September 2022 Technical Workshop

During the September 2022 two-day technical workshop, staff described in detail the approach that the CEC and Caltrans will use to implement the NEVI Formula Program.[6] The presentations included more than 100 slides. The major topics included:

- Creation of 21 corridor groups to geographically organize the 6,600 miles of Alternative Fuel Corridors in California.
- Creation of a ranking system to identify the first round of corridors to be offered in the Q3 2023 solicitation.
- Preference for experienced private contractors as prime applicants that can manage large numbers of new charging station projects across the state.
- Intent to offer multiple solicitations over the five-year program in order to keep the number of new grant agreements manageable.
- Presentation of the analysis of disadvantaged and low-income communities using the federal Justice40 system and the state's CalEnviroScreen tool.

---

[5] California Energy Commission. *NEVI Program*. The Interactive Map can be accessed through Resources the Data and Maps tab, and the Matchmaker Tool can be accessed through the Project Team tab.
[6] California Energy Commission. (2022, September 7). *National Electric Vehicle Infrastructure Pre-Solicitation Joint Workshop, Session 1*.
California Energy Commission. (2022, September 8). *National Electric Vehicle Infrastructure Pre-Solicitation Joint Workshop, Session 2*.

- Intent to use two-tiers of match requirements, with 50 percent non-federal match required in high-demand areas, and a 20 percent non-federal match requirement in more remote and rural settings where demand is expected to be lower.
- Technical standards and requirements for charging equipment and site amenities.
- Electric Vehicle Infrastructure Training Program (EVITP) compliance.
- Project readiness requirements: utility letter, site host letter, and preliminary site designs.

The two-day workshop was well attended with participants from the charging industry, vehicle original equipment manufacturers (OEMs), ports, government agencies, and community-based organizations.

April 2023 Tools Workshop

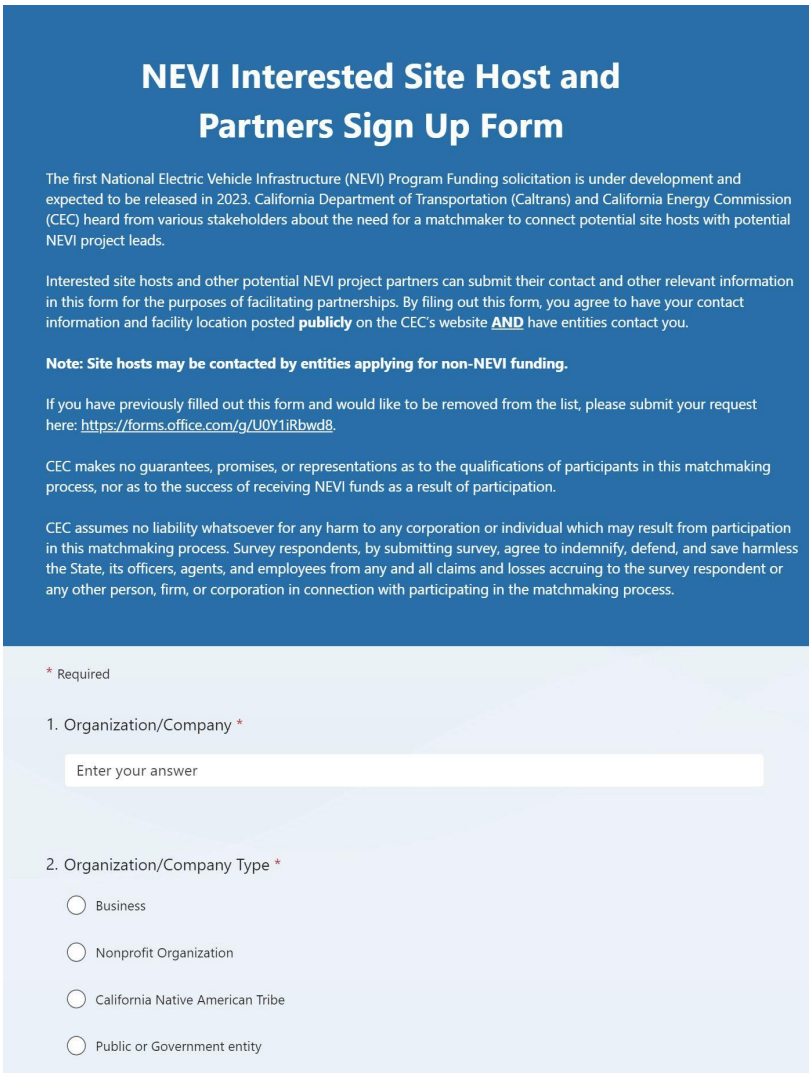
The CEC and Caltrans introduced two tools intended to assist potential project applicants to prepare their NEVI applications.[7] The first is the Interactive Map, which is a multi-layered, GIS-based mapping tool that integrates the 21 corridors eligible for NEVI funding with other California-specific data, such as:

- Justice40, CalEnviroScreen, low income, and Native nations and tribal regions;
- Existing DC fast charge stations, including those that met the initial NEVI-compliance standard, and non-compliant earlier generation stations; and
- Political boundaries for counties and metropolitan planning organizations (MPO)and service territory boundaries for Caltrans' districts and public and private utilities.

[7] California Energy Commission. (2023, April 13). *Joint Workshop to Introduce the Interactive Map and Matchmaker Tool in Support of California's National Electric Vehicle Infrastructure Program*.

Staff also introduced and demonstrated the new Matchmaking Tool, which is designed to facilitate contact information between potential site hosts, local contractors, and charging project developers (Figure 1).[8] One goal with the Matchmaking Tool is to allow local disadvantaged and Black, Indigenous, and People of Color (BIPOC)-owned contracting firms to advertise their skills and capacities to large companies working at the state and national level. Another goal of the tool is to enable local governments seeking to host a charging station to inform project developers of their interest and site potential. As of June 29, 2023, 74 interested partners and 17 site hosts have used the Matchmaking Tool.[9]

Figure 1: NEVI Matchmaking Tool



[8] California Energy Commission. *NEVI Interested Site Host and Partners Sign Up Form*.
[9] California Energy Commission. (2023, June 29). *NEVI Interested Site Host and Partners List*.

June 2023 NEVI Update Workshop

The workshop agenda included:

- Summary of the *West Coast Truck Charging and Fueling Corridor Project*, which was submitted to the FHWA's Charging and Fueling Infrastructure Discretionary Grant Program.
- Status of the initial NEVI solicitation.
- Overview of the updated requirements for the 2023 NEVI Plan Updates.
- Public comment and question and answer.[10]

Over 150 partners representing the charging industry, vehicle OEMs, utilities, ports, environmental groups, community-based organizations, and government agencies participated in the workshop. There was praise for the tri-state truck charging project application as it will help address the need for zero-emission truck charging and fueling in California and along the West Coast if funded. This echoed a major theme in comments on the 2022 NEVI Plan around the need for charging infrastructure for medium- and heavy-duty vehicles. Many partners continued to encourage Caltrans and the CEC to begin using NEVI funds for medium- and heavy-duty vehicle infrastructure projects before the initial rounds of light-duty charging solicitations have been released.

Several questions and concerns about the North American Charging Standard (NACS) were raised. Some partners urged adoption of the NACS as a replacement for the Combined Charging System (CCS) standard, while others asked about the specific technical requirements for chargers funded under the NEVI Formula Program. The NEVI team confirmed that the technical requirements for CCS connectors remain unchanged, which is consistent with recent guidance from the FHWA and the Joint Office. California continues to engage with vehicle manufacturers and charging station providers, monitor public announcements, and intends to take a measured near- and long-term approach with regards to NACS and CCS in compliance with federal requirements.

Caltrans and the CEC asked for comments on the level of satisfaction with the state's public outreach and engagement efforts for NEVI; no specific responses or critiques were provided.

[10] California Energy Commission. (2023, June 29). *Joint Workshop on the Development of the 2023 Update to California's Deployment Plan for the National Electric Vehicle Infrastructure Program*.

Community Engagement Outcomes Report

Public and community engagement is a core theme in Caltrans' and the CEC's approach to developing and implementing the NEVI Formula Program and NEVI Plan Updates. The CEC and Caltrans have designed the NEVI outreach efforts to ensure that all partners involved with and affected by the NEVI Formula Program have an equal opportunity to understand the state's intent, process, and goals for planning, designing, constructing, and operating the NEVI-funded DC fast charging stations. One goal is to ensure equitable access and competitiveness for partners seeking to bid on NEVI-funded projects. Another goal is to provide sufficient information to partners concerned about the location or configuration of specific station proposals and create an opportunity for such concerns to be voiced in a meaningful and effective manner. A third goal is to gather input to maximize community benefits of NEVI projects.

The methods for this notification and outreach include:

- Broadly advertised public workshops using the multi-thousand partner listservs developed for the CEC's CTP, which is the state's designated program for charging infrastructure funding and development.
- Communication about both agencies' policy positions and commitment to diversity and equity.
- Focused outreach to organizations representing disadvantaged communities.
- Leveraging the existing tribal outreach and consultation programs developed by Caltrans and the CEC.
- Targeted, direct outreach to specific partners on select topics.

Due to California's large size, public workshops are the primary tool used to communicate our agencies' intent and plans for the NEVI Formula Program. By state law, each public workshop must be publicly noticed 10 days in advance of a workshop. Each notice must include the workshop agenda, directions on how to access and participate in the workshop's virtual presentations, directions on how to file written comments, and instructions on how to contact the CEC Public Advisor's Office for any needed assistance.

As described above, the CEC and Caltrans have hosted three public workshops since the first NEVI Plan was filed in August 2022 and will host a fourth after the initial solicitation is released in Q3 2023.

Outreach to Disadvantaged Communities

For engagement and consultation with representatives of disadvantaged communities, the CEC obtains input from its Disadvantaged Communities Advisory Group (DACAG),[11] the legislatively created body that advises the CEC on energy issues in California. During the first NEVI Plan and during development of the tri-state Charging and Fueling Infrastructure (CFI) truck charging and hydrogen fueling application, the CEC and Caltrans staff worked directly with the DACAG Transportation Electrification Subcommittee to present NEVI Plan and CFI project concepts and to solicit feedback and recommendations. Thus far, the primary recommendation has been to allocate NEVI funding to truck charging as soon as possible.

CEC staff provided an update on the 2023 NEVI Plan to the full DACAG on July 21, 2023. The DACAG members expressed support for California's NEVI planning process and for the CFI truck charging project application. The DACAG members repeated their recommendation that NEVI formula funding be shifted to heavy-duty truck charging in order to relieve local residents of the emissions and pollution burden from diesel trucks.

The CEC and Caltrans continue to meet with partners in one-on-one meetings, which are generally at the request of partners. Over the next year, Caltrans will pursue engagement opportunities with members of the newly established Interagency Transportation Equity Advisory Committee, co-organized with CalSTA and the California Transportation Commission (CTC).

Tribal Engagement

California is home to 109 federally recognized Native nations with nearly 100 reservations and Rancherias. Caltrans and the CEC have a similar process for consultation with California tribes; Caltrans works through its Native American Advisory Committee (NAAC), and the CEC works through its Office of Public Advisor, Energy Equity, and Tribal Affairs.

In 1996, the NAAC was established at Caltrans to ensure the Department receives direct advice from tribal governments on issues pertaining to all modes of transportation within California. The NAAC meetings further government-to-government working relationships and provide an opportunity to share information. Members of the NAAC advocate for all Native Americans of California and are nominated by tribes and Native organizations.

As part of ongoing efforts to strengthen relations and collaboration with California tribes on energy issues, the CEC and the CPUC hosted the first-ever *en banc* meeting in early March 2023. The meeting participants included 10 Commissioners from the CEC and the CPUC, including the CEC's chair and the CPUC's president, and tribal leaders from

[11] The DACAG was established by Senate Bill 350 (de León, Chapter 547, Statutes of 2015), the Clean Energy and Pollution Reduction Act of 2015.

12 tribes including the Yurok, Hoopa, Blue Lake Rancheria, and Chemehuevi. An important outcome of the *en banc* meeting was adoption of a resolution to support California tribal sovereignty and independence.[12] Remarks from the meeting include:

> *"We're here because tribal energy sovereignty is a priority, tribal engagement is a priority, and tribal partnerships are a priority. We cannot build the future we need without first facing the past that we've shared." – CEC Chair David Hochschild*
>
> *"This is a historic moment. The California Energy Commission's support for tribal energy sovereignty and independence is good for us and it sets a strong precedent for all of Indian Country. I look forward to working with the CEC on the development of the tribal energy policy. The policy will empower and strengthen tribes across the state." – Chairman Joseph L. James, Yurok Tribe[13]*

On May 4, 2023, the CEC followed up from the *en banc* session and hosted a focused Tribal Listening Session to support the deployment of reliable, resilient ZEV infrastructure in tribal nations.[14] The CEC and Caltrans will require NEVI applicants to explain how their project impacts tribal nations.

Utility Engagement

The CEC works closely and regularly with California's public and investor-owned utilities (IOUs) on a wide range of energy and grid topics, often in collaboration with the CPUC. The CEC also works with trade organizations like the California Electric Transportation Coalition, a consortium of the state's major utilities and EV charging companies, and the West Coast Clean Transit Corridor Initiative, a consortium of the major West Coast utilities working on truck charging issues.

The CEC's Integrated Energy Policy Report (IEPR) is a legislatively required biennial report to the Governor and State Legislature on state energy topics. The 2023 IEPR focuses on utility interconnection, energization, and the distribution grid including, but not limited to, renewable energy projects and with EV charging stations. Interconnection and energization timelines for energy projects can exceed two years for larger projects and/or those on constrained circuits.

---

[12] California Energy Commission. (2023, March 6). *CEC Adopts Resolution Supporting California Tribal Energy Sovereignty*.
[13] *Ibid.*
[14] California Energy Commission. (2023, May 4). *Tribal Listening Session — Concepts for a Zero-Emission Vehicle Infrastructure Tribal Funding Opportunity*.

The 2023 IEPR Scoping Order focuses on:

> *"Accelerated Connection of Clean Energy: The focus of the 2023 Integrated Energy Policy Report (2023 IEPR) is to identify barriers and solutions to accelerate the connection (including interconnection, energization, and associated system upgrades) of clean energy technologies with the electric grid. The report will consider both transmission and distribution systems and the CEC will coordinate with ongoing proceedings at the CPUC and California Independent System Operator…Examples of clean energy technologies that will require rapid deployment and integration include but are not limited to:*
>
> - *Grid-scale low-carbon generation, storage, and community solar.*
> - *Zero-emission vehicle fueling infrastructure.*
> - *Distributed energy resources and microgrids.*
> - *Decarbonized buildings and widespread load flexibility."*[15]

Electrify America commented on the 2023 IEPR Scoping Order stating that the utility interconnection planning process requires nine months while the average time to energize a completed charger station is seven months. Volvo Group North America and ProLogis commented that timely utility interconnections for new truck charging projects will be essential for California trucking fleets to meet the electrification requirements established through the Advanced Clean Truck and Advanced Clean Freight rules adopted by CARB.[16]

The CPUC is working to support and direct California IOUs to keep pace with the growing number of new EV charging stations planned and being developed in California. CPUC Resolution E-5247, issued in December 2022, sets a 125-day target for site interconnection energizations under 2 megawatts.[17] CPUC staff have started a similar proceeding focused on truck charging requirements and challenges in order to facilitate transportation electrification in the truck sector.[18]

---

[15] California Energy Commission. *2023 Integrated Energy Policy Report*.
[16] *Ibid.*
[17] California Public Utilities Commission. *Distribution Infrastructure and Planning to Support EV Charging*.
[18] California Public Utilities Commission. *Freight Infrastructure Planning*.

Site-Specific Public Engagement

As of August 1, 2023, the CEC and Caltrans have not hosted site-specific public or private meetings for the state's NEVI Formula Program. All public engagement has occurred through virtual, state-level public workshops. Small group meetings with DACAG members and their constituents have been held virtually. The CEC generally conducts site-specific meetings after a grant award is issued. On-site meetings are often held to discuss and review planning, construction, interconnection, and commissioning issues.

Plan Vision and Goals

California is committed to reducing emissions from the transportation sector by increasing the adoption of ZEVs. Through legislation, regulatory action, and Executive Orders, California is making the transition across market segments ranging from passenger cars to heavy-duty trucks.

On September 23, 2020, Governor Gavin Newsom signed Executive Order N-79-20, setting the following zero-emission vehicle targets for California:

- 100 percent of in-state sales of new passenger cars and light-duty trucks will be zero-emission by 2035;
- 100 percent zero-emission medium- and heavy-duty vehicles operating in the state by 2045, where feasible, and by 2035 for drayage trucks, and;
- 100 percent zero-emission off-road vehicles and equipment operations by 2035.

To support widespread adoption of EVs, California is striving to deploy 250,000 public and shared-private electric vehicle chargers by 2025 and forecasts the need for 1.2 million chargers by 2030 for light-duty vehicles, including 37,500 DCFCs, and 157,000 chargers for medium- and heavy-duty vehicles.[19] The light-duty target includes public chargers, such as those at parks, shopping centers, hotels, public buildings, etc., and shared-private electric vehicle chargers, such as those at workplaces and multi-unit dwellings.

Public funding, electric utility investment, and private investment have contributed to California's ZEV charging infrastructure networks and all will continue to be essential to meeting future deployment goals. Funding through the NEVI Formula Program will be necessary to build out the state's EV corridors and will be complemented by state funding.

[19] California Energy Commission. (2021). *Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment*.

California's strategy to deploy an interconnected network of EV charging infrastructure will facilitate data collection and support the development of convenient, accessible, reliable, and equitable EV charging.

1. ***Data Collection:*** Operators of NEVI-funded stations will be required to collect and transmit all operational and maintenance data as defined in 23 CFR §680.112 and §680.116(c). Operational data will be collected and transmitted on a quarterly basis while maintenance data will be collected and transmitted annually. These requirements will be part of grant agreements' statement of work. All data will be transmitted to the FHWA according to federal guidelines.

2. ***Equitable Access:*** All NEVI-funded stations will be fully accessible and available to all users. All stations will be compliant with the Americans with Disabilities Act, have non-discriminatory payment options in line with federal requirements, and will feature safety lighting and accessible restrooms.

   California will continue to engage with communities, including disadvantaged, underserved, and rural communities, through workshops and outreach to ensure equitable and collective decision-making in solicitation design and program implementation. This will ensure charger installations are meeting the needs of the communities they serve while providing seamless statewide access. See the Equity Considerations Section of the Plan Update for an overview of how California will prioritize equity and track benefits to communities.

3. ***Network Reliability:*** NEVI-funded projects will conform to the reliability requirements of 23 CFR Part 680. The solicitation process will require funding recipients to report the data required to the CEC, who will then report it to the FHWA. In addition to meeting these minimum requirements, the CEC will include additional reliability requirements in the state's first NEVI solicitation. Funding recipients will be required to:

   - Collect and retain records of the following remote monitoring data:
     - Charger operative status using OCPP 2.0.1.
     - Each charge attempt.
     - Each failed charging session and reason for failure.
   - Generate and retain maintenance records for all preventive and corrective maintenance conducted on chargers.
   - Generate and retain records of inoperative charging ports.
   - Conduct annual preventive maintenance on all chargers and charging ports.
   - Conduct corrective maintenance within 10 business days.

   These additional requirements will further ensure that chargers installed and operated with NEVI funds will be well maintained and meet the requirements of 23 CFR Part 680. Applicants will be required to report data for a minimum of 6 years from when the charger is first operational.

Governor Newsom signed Assembly Bill 2061 (Ting, Chapter 345, Statutes of 2022) in September of 2022. This bill requires the CEC to establish uptime recordkeeping and reporting requirements for chargers funded through an incentive by a California state agency or an expense to ratepayers. The CEC is in the process of developing a regulation pursuant to Assembly Bill 2061.[20] The requirements of this regulation will align with, and add to, the uptime reporting requirements of 23 CFR Part 680 with minimal variances. There are provisions under consideration to allow chargers funded through the NEVI Formula Program to submit federal reporting requirements in lieu of requirements specific to Assembly Bill 2061.

Contracting

Through the CTP, the CEC has awarded over $1 billion in grant funding for ZEV infrastructure projects through competitive solicitations and first-come-first-served projects. In 2015 and 2016, the CEC funded its first large scale corridor charging program for passenger vehicles. California intends to utilize the CEC's grant solicitation experience to administer funding under the NEVI Formula Program.

California will continue to use the contracting method described in the original NEVI Plan. The NEVI agencies will use multiple competitive solicitations to award funding to install the necessary minimum number of charging stations and charging ports within the designated corridor groups. Awardees will be responsible for:

- Locating and securing access rights to charging station locations;
- Designing and engineering the charging stations; and
- Constructing, operating, and maintaining the charging stations.

Awardees may contract any aspect of their responsibilities but will remain the party responsible to the CEC for assuring all NEVI regulations and requirements are met during the design, construction, and operation phases.

Each application will be evaluated on multiple criteria including, but not limited to Project Readiness, Budget and Finances, Team Experience and Resources, Operations and Maintenance, and more. Applicants will be required to submit an Operations and Maintenance Plan as part of the application package, which will be evaluated in the scoring process.

CEC staff provided information on how the corridors would be ranked and how applications would be scored during the September 2022 technical workshop and the June 2023 NEVI Plan Update workshop. The next paragraphs summarize that information.

[20] California Energy Commission. *Electric Vehicle Charging Infrastructure Reliability and Data Standards*.

As described, the 6,600 miles of AFCs in California have been divided into 21 corridor groups, each with 4 to 8 stations. Each corridor was ranked using a series of metrics related to Justice40, tribal lands, and projected charger demand. Table 1 shows the top-six corridor groups that will be eligible for bids during the first solicitation. Figure 2 shows all 21 corridors groups on the interactive mapping tool described earlier. Figure 3 is a more detailed map for Corridor Group 1 and Table 2 provides details of the number of stations and chargers to be required for segments within Corridor Group 1. Similar maps and tables have been developed for all 21 corridor groups and were presented at the September 2022 technical workshop.

Table 3 shows the nine factors used to rank corridor groups for the first solicitation. One factor relates to whether the corridor group includes an Interstate. Another factor relates to demand for chargers in 2030, estimated using the CEC's EVI-RoadTrip Model.[21] Three factors relate to Justice40 and state-defined disadvantaged and low-income communities, while a fourth factor relates to the presence of tribal lands. Other factors address rural communities and areas with existing chargers spaced further than 50 miles apart. The criteria for ranking corridors were areas the CEC and Caltrans sought input from stakeholders at the September 2022 technical workshop.

Table 1: The Top-Six Ranked Corridor Groups Eligible for Round 1 Solicitation

Corridor Groups	Corridor Segments	Minimum New Stations	Total New Charging Ports
6A	I-5: South of Sacramento to Kettleman City	2	67
6B	I-5: South of Kettleman City to Santa Clarita	2	87
7	SR 58: Buttonwillow to Barstow	4	16
	I-15: Hesperia to Nevada	2	45
	I-40: Barstow to Needles	2	12
16	I-8: San Diego to El Centro	2	8
	I:15 San Diego to Murrieta	2	8
	I-805: San Diego to San Ysidro	1	4
19	I-210: Sylmar to Redlands	2	8
	I-215: Murrieta to San Bernardino	2	8
	I-405: Mission Hills to Irvine	1	4
20	I-110: Los Angeles to San Pedro	2	8
	I-710: Los Angeles to Long Beach	2	8
	I-605: Irwindale / Duarte to Seal Beach	1	4
	I-105: El Segundo to Norwalk	1	4

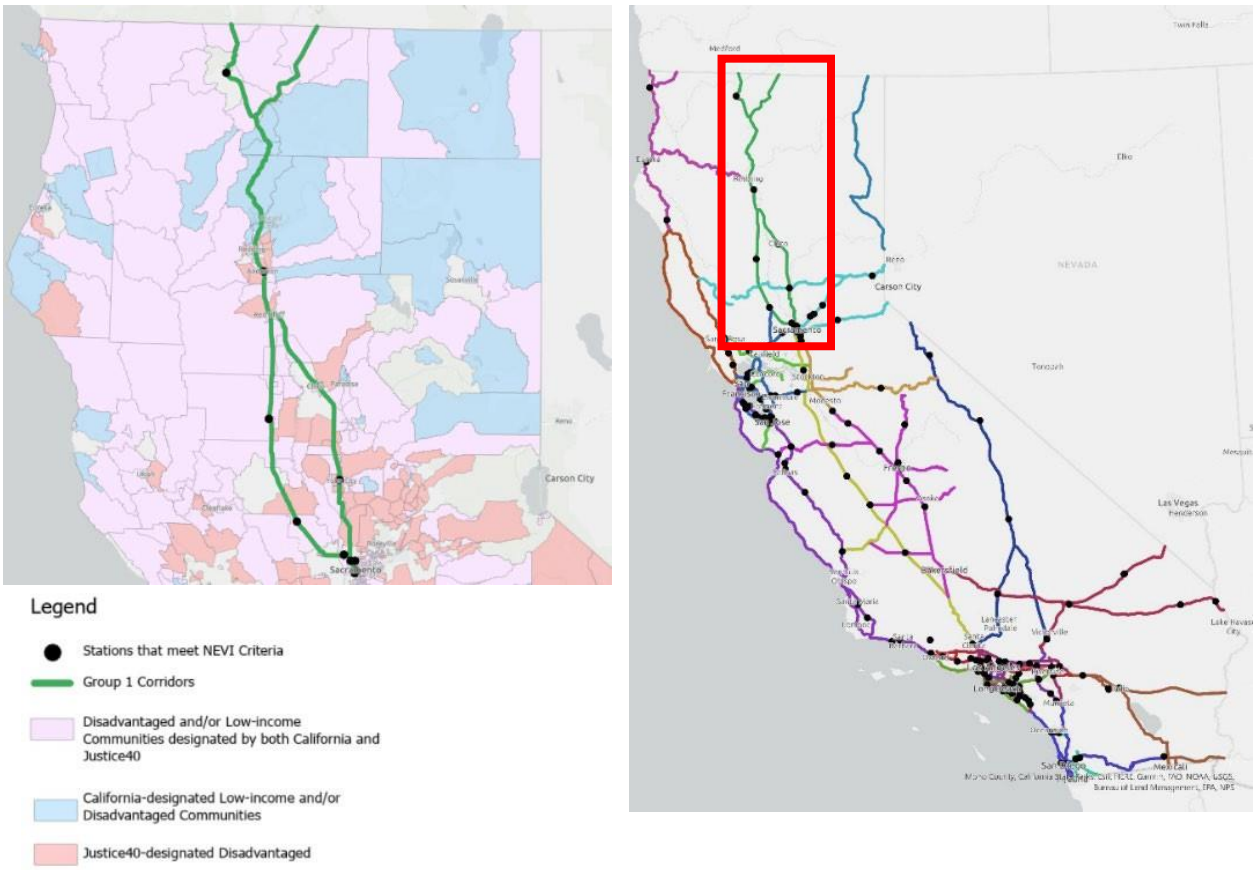
Source: CEC – Caltrans Joint NEVI Workshop, June 29, 2023

[21] California Energy Commission. (2021). *Electric Vehicle Charging Infrastructure Assessment – Assembly Bill 2127*.

Figure 2: California's NEVI Corridor Map Showing All 21 Corridor Groups

Source: California's National Electric Vehicle Infrastructure Funding Program Map

Figure 3: Sample Corridor Group Map (Corridor Group 1)



Source: CEC – Caltrans Joint Workshop, September 8, 2022

Table 2: Sample Corridor Group Segments (Corridor Group 1)

Group Corridor Segments	Min. # of New Charging Stations	Number of New Chargers	Required Sites
I-5: Oregon to Sacramento	3	36	-
SR 97: Weed to Dorris	2	8	I-5, SR 97 Split (Weed)
SR 99: Red Bluff to Sacramento	2	8	I-5, SR 99 Split (Red Bluff) and Chico
Group Total:	**7**	**52**	

Source: CEC – Caltrans Joint Workshop, September 8, 2022

Table 3: Ranking Formula and Factors for California's First NEVI Solicitation

Variable	Factor	Score
Corridor segment is an Interstate	Yes	25
	No	0
Percentage of the corridor segment that is in and within 1 mile of a Justice40 DAC	100%	10
	75% - 99%	8
	50% - 74%	6
	25% - 49%	4
	0% - 24%	0
Percentage of the corridor segment that is in and within 1 mile of a CA-designated DAC/LIC	100%	10
	75% - 99%	8
	50% - 74%	6
	25% - 49%	4
	0% - 24%	0
At least 50 percent of the corridor segment is in and within 1 mile of both Justice40 DAC and/or CA-designated DAC/LIC	Yes	5
	No	0
Number of 150 kW, or greater, DCFCs needed along the corridor segment (EVI-RoadTrip 2030)	40+	20
	20-39	10
	11-19	8
	6-10	6
	1-5	4
	≤ 0	0
Additional charging stations needed to comply with the maximum 50-mile distance between charging stations	7	7
	6	6
	5	5
	4	4
	3	3
	2	2
	1	1
	0	0
Percentage of the corridor segment that is in a community that is greater than 10 minutes away from an existing DCFC (SB 1000)	90-100%	4
	75% - 89%	3
	50% - 74%	2
	25% - 49%	1
	0% - 24%	0
Corridor segment has at least 1 tribal land or tribal property	Yes	1
	No	0
Corridor segment connects to neighboring State's AFC	Yes	1
	No	0
	Max points:	**83**

Source: CEC – Caltrans Joint Workshop, September 8, 2022

Contractor Engagement with Local Communities

Contractors' engagement with local communities may occur throughout a NEVI project, including during site selection and design that occur before an application is submitted. Engagement with local agencies will also occur during the permitting phases of NEVI projects. In addition to any needed local permits, each bid must also include a Signage Plan, which identifies how informational and locator signs could be installed for each project. As they develop their Signage Plans, prime contractors will be obligated to work with local agencies. The Matchmaking Tool is also intended to enable positive interactions between prime contractors, local contractors, local agencies, and communities.

Status of Contracting Process

At the time of writing, California is finalizing its first funding solicitation under the NEVI Formula Program, which builds off the CEC's work to fund DCFCs along highway corridors since 2016. The first funding solicitation is planned to be released by Q3 2023. Additional solicitations are expected to be released every six months. Awards from the first solicitation are expected to be executed in Q2 2024.

Awarded Contracts

There are currently no awarded contracts under California's NEVI Program. The first awards are expected to be made in Q2 2024. It is expected that awards will utilize the design-build-operate-maintain contracting mechanism. The funding solicitation details that the awardee is fully responsible for identifying, securing, designing, constructing, operating, and maintaining each charging station. The awardee may contract out certain aspects, but remains fully responsible for compliance with 23 U.S.C., 23 CFR Part 680 and all applicable requirements under 2 CFR Part 200.

Scoring Methodologies Utilized

Each funding solicitation will be scored competitively on multiple factors. Each evaluation criterion will have several questions and topics which the applicants will have to address in their application. The first funding solicitation's evaluation criteria will include categories on Charging Station Design, Project Readiness, Operations and Maintenance, Team Experience and Qualifications, Expected Project Benefits, Innovation and Sustainability, Project Budget and Finances, and Cost. Each evaluation criterion will have a set number of possible points and will be evaluated by an evaluation team comprised of multiple members, all with subject matter expertise.

Plan for Compliance with Federal Requirements

The funding solicitation manual will specify that the applicants who are issued awards will be responsible for documenting and proving compliance with 23 U.S.C., 23 CFR Part 680, and all applicable requirements under 2 CFR Part 200. Awardees that fail to document compliance will not be reimbursed for expenses incurred.

Civil Rights

In alignment with Title VI, California is dedicated to increasing the participation of Small Business, Disadvantaged Business Enterprise, and Disabled Veteran Business Enterprise firms. Disadvantaged Business Enterprises are for-profit, small businesses where socially and economically disadvantaged individuals own at least a 51 percent interest and also control management and daily business operations. African Americans, Hispanics, Native Americans, Asian-Pacific and Subcontinent Asian Americans, and women are considered socially and economically disadvantaged. Other individuals can also qualify as socially and economically disadvantaged on a case-by-case basis. The definition of a small business varies by industry.

The US DOT's Disadvantaged Business Enterprise Program's policy goal is to remedy ongoing discrimination and the continuing effects of past discrimination in federally-assisted transportation programs. The NEVI Program Guidance, however, indicates that states may not establish Disadvantaged Business Enterprise goals for NEVI-funded contracts, "…because the NEVI Formula Program concerns funding for a new contracting industry which Congress has not made a finding with respect to the existence of discrimination in the contracting markets associated with the work funded by such grants."[22]

EV chargers funded under California's NEVI Program will be available for use by the general public and must be accessible to individuals with disabilities. Compliance with the Americans with Disabilities Act regarding EV charging stations is primarily defined in Section 11-B of the California Building Code.[23] This code sets a minimum number of van and standard vehicle accessible spaces given the total number of chargers at a facility. The building code also specifies the requirements for an accessible path of travel to and from the charger, configurations for parking spaces, and EV charger requirements. All chargers and charging cords must comply with reach range and operable parts requirements.

---

[22] Federal Highway Administration. (2023, June 21). *National Electric Vehicle Infrastructure (NEVI) Formula Program Q&A*.

[23] CALeVIP. (2023). *Guide to California Regulations for Electric Vehicle Charging Stations*.

Existing and Future Conditions Analysis

California Geography and Terrain

No major changes have occurred to California's geography or terrain. Please see the 2022 NEVI Plan for a complete description.

California ZEV Sales Update

In the last year, California has made considerable progress towards the goal of transportation electrification. Over 343,000 electric vehicles were sold in 2022,[24] and over 1 million electric vehicles are on the road. Cumulative ZEV sales in California through Q1 2023 surpassed 1.5 million vehicles, achieving the Governor's 2025 policy goal of 1.5 million ZEV sales two years ahead of schedule.[25]

CARB adopted two major ZEV policies since the 2022 NEVI Plan that will increase ZEV sales in California: (1) the Advanced Clean Cars II Rule in August 2022, which sets ZEV sales standards for passenger vehicles, increasing from 35 percent for model year 2026 to 100 percent for model year 2035 and beyond, and (2) the Advanced Clean Fleets Rule in April 2023, which sets ZEV purchase standards for fleets operating medium- and heavy-duty vehicles in California as well as a 100 percent ZEV sales standard for medium- and heavy-duty vehicles beginning in model year 2036.

Market Conditions

California continues to have the most dynamic ZEV market in the country, accounting for 40 percent of all ZEV sales nationally.[26] In 2022, Tesla was the second highest selling brand overall in California with 11.2 percent market share. Toyota continued to be the state's highest selling brand with 17.3 percent market share while Honda was number three with 8.9 percent market share. In Q1 2023, ZEV sales reached 21 percent of all light-duty vehicle sales in California. The Tesla Model 3, Model Y, and Model S were the top selling vehicles in their class, outcompeting their fossil-fueled counterparts.[27] In Q2 2023, Tesla was the top-selling brand of all automakers in California, with 69,212 vehicles sold compared to Toyota's 67,482.[28] California's Clean Vehicle Rebate Project now lists 18 eligible automakers with 40 ZEV models.[29]

In terms of manufacturing, "Electric vehicles were the number one California export in 2020. California is also home to more than 360 companies with 70,000 employees that

---

[24] Veloz. (2023, April). *EV Market Report*.
[25] Office of Governor Newsom. (2023, April 21). *California Surpasses 1.5 Million ZEVs Goal Two Years Ahead of Schedule*.
[26] Office of Governor Gavin Newsom. (2023, January 20). *California ZEV Sales Near 19% of All New Car Sales in California in 2022*.
[27] California Energy Commission. *New ZEV Sales in California*.
[28] California New Car Dealers Association. (2023, July). *California Auto Outlook*.
[29] California Clean Vehicle Rebate Project. (2023, July 20). *Rebate Statistics*.

work on zero-emission transportation, including vehicles, components, infrastructure, and research. California has is home to 55 ZEV, ZEV component, and ZEV infrastructure companies, including 19 companies that manufacture ZEV infrastructure products."[30] There are also about 20 EV charging providers that operate in California.

Climate

Substantial rains in late 2022 and early 2023 ended three years of extreme drought for most of California[31] and most of the state's reservoirs were at or near capacity by the end of June 2023.[32] These storms resulted in more than $1 billion in damage to the state highway system. California remains vulnerable to future droughts as climate change is expected increase the variability of variable weather patterns, including longer and more severe droughts and floods.[33] Severe droughts have been a precursor to the state's recent and massive wildfires.

Freight

By the end of 2022, there were over 2,300 medium- and heavy-duty zero-emission vehicles registered in California, comprised of 1,700 transit and school buses and 600 trucks and delivery vans.[34] Approximately 2,200 of those were battery electric vehicles and 130 were fuel cell electric vehicles.

As described earlier, in April 2023, CARB adopted the Advanced Clean Fleets Rule, a zero-emission vehicle purchase standard for medium- and heavy-duty fleets. This policy is part of CARB's overall approach to accelerate a large-scale transition to zero-emission medium- and heavy-duty vehicles. The Advanced Clean Fleets policy focuses on public and high-priority private fleets with vehicles that are suitable for early electrification, their subhaulers, and the entities that hire them. The goal of this policy is to transition all medium- and heavy-duty vehicles on the road in California to zero-emission technologies, where feasible, by 2045. The Advanced Clean Fleets standard also includes a first-of-its-kind requirement that all sales of medium- and heavy-duty vehicles in California must be of zero-emission vehicles by 2036.

A CARB analysis of the impact of the Advanced Clean Trucks (adopted in June 2020) and Advanced Clean Fleets policies estimates that California will have at least 190,000 zero-emission medium-duty and heavy-duty trucks on the roadways by 2030.[35] In July 2023, Caltrans submitted its latest update of the California Freight Mobility Plan (CFMP) to the FHWA. The CFMP is a comprehensive plan that governs the immediate and long-range planning activities and capital investments by the state with respect to

---

[30] California Energy Commission. *Zero-Emission Vehicle Related Manufacturing*.
[31] Riganti, C. (2023, April 25). *U.S. Drought Monitor*.
[32] California Department of Water Resources. (2023). *Current Conditions: Major Water Supply Reservoirs*.
[33] California Department of Water Resources. *Climate Change and Water*.
[34] California Energy Commission. *Zero-Emission Vehicle and Infrastructure Statistics*.
[35] California Air Resources Board. (2023, May 17). *Advanced Clean Fleets Regulation Summary*.

freight movement. This includes an analysis of the needed infrastructure, projects, and operations for the deployment of zero-emission medium- and heavy-duty vehicles and the development of freight corridors. The CFMP includes strategies that the state is committed to employing to support infrastructure for zero-emission medium- and heavy-duty vehicles. Caltrans also continues to organize interagency meetings related to the implementation of the California Sustainable Freight Action Plan (adopted in 2016), including actions supporting zero-emission freight activities.[36]

In June 2023, Caltrans, the CEC, Oregon Department of Transportation, and Washington State Department of Transportation submitted an application to the US DOT's Charging and Fueling Discretionary Grant Program to support charging and hydrogen fueling infrastructure for trucks from Mexico to Canada along Interstate 5 and corridors connecting to key port and freight centers along the West Coast. The *West Coast Truck Charging and Fueling Corridor Project* proposes 34 charging stations and five hydrogen fueling stations for trucks in California, Washington, and Oregon. Currently, there are just four publicly accessible charging stations and three hydrogen fueling stations supporting zero-emission trucks on the West Coast.

Partners continue to express support for using NEVI Formula Program funds to build infrastructure for medium- and heavy-duty vehicles. Caltrans and the CEC are committed to supporting the significant need for ZEV infrastructure for these vehicles and will continue to evaluate opportunities to use NEVI Formula Program funds for this purpose with consideration given to the outcome of the tri-state CFI application and other investments from the CEC, CalSTA, the CTC, and Caltrans.

California's Electric Grid

California is undertaking grid and transmission planning to account for increasing electrification of the building and transportation sectors, with an eye towards policies that will encourage grid-friendly load growth. New electric load from ZEVs has steadily increased in recent years and will increase over the coming decades but is expected to add only a small amount of electricity demand to California's grid over the next decade.

[36] California Department of Transportation. (2016). *California Sustainable Freight Action Plan*.

A recent "Additional Transportation Electrification" scenario adopted in May 2022 by the CEC for planning, shows expected grid impacts from EVs. In 2030, the scenario's 5.3 million light-duty EVs and 187,000 medium- and heavy-duty electric vehicles will account for less than 5 percent of total system electric load during peak hours. Today's electric vehicle population accounts for less than 1 percent during the same peak period in 2022. California is actively bringing and keeping clean energy resources online and working to ensure our electric system continues to keep pace with growing EV loads. Ongoing analysis, planning, and investments will ensure our grid is prepared. This will include investing in new resources and strategies such as time-of-use rates, storage, and vehicle-to-grid integration.

California's Electric Utilities

California has over 80 electric utilities, including investor-owned utilities (IOUs), public utilities, community aggregators, and rural electric co-ops.[37] These utilities vary widely in their size and service territories. The six private utilities include three large IOUs, Pacific Gas and Electric, Southern California Edison, and San Diego Gas and Electric, and several community-sized companies like Bear Valley Electric Service. The 45 public utilities also vary in size, ranging from the large Los Angeles Department of Water and Power and the Sacramento Municipal Utility District to scores of small, community-based utilities. There are 25 community choice aggregators and four rural electric cooperatives.

Known Risks and Challenges

The multiple risks and challenges to deploying EV chargers at scale include risks with the business model used by electric vehicle service providers lack of consumer awareness, delays in supply chains, and utility interconnection timelines. Another major risk is the public's perception of poor charger reliability, which could impede widespread consumer adoption of ZEVs.

One set of challenges is associated with the business model for deploying infrastructure, especially in advance of vehicle adoption. Utilization rates, especially early on, may not be high enough to provide a return on investment for electric vehicle service providers. To mitigate this, public funding, including NEVI Formula Program funding, is essential to bridging this gap. California's NEVI Program is designed to encourage grant applicants to bring forward match share funding and to minimize the amount of public funding requested. This is achieved through applications' evaluation criteria.

[37] California Energy Commission. *Electric Load-Serving Entities in California*.

A second set of challenges is associated with elements of charger installation. These include supply chain challenges, permitting, utility interconnection, and a trained and available workforce. Anecdotal evidence suggests that supply chain challenges, common in many parts of the economy, are delaying delivery of electric vehicle supply equipment (EVSE). As installation of charging stations increases around the country, under NEVI and other programs, supply chain disruptions and shortages of EVSE and EVSE components could delay installation.

Lengthy utility interconnection and energization timelines is a known challenge. Electrify America has identified utility interconnection costs and timelines as a barrier to DCFC deployment, stating that as of the end of Q3 2021, the new service utility interconnections averaged nearly nine months in California.[38] East Bay Community Energy, a large community choice aggregator that serves multiple Bay Area cities, commented that, "Interconnection delays, ranging from months to years, harm residents, businesses, local job creation and economic development efforts, and state and local economies."[39] Measures by the CPUC to track and decrease interconnection timelines are described earlier.

Finally, reliability of the EVSE network and of stations has been identified as an increasing concern, especially as the vehicle market grows beyond early adopters to mainstream consumers. To mitigate this risk, the CEC is taking steps to track and measure the reliability of stations. As described earlier, policies being developed under the Assembly Bill 2061 rulemaking on charger reliability, in addition to requirements under the NEVI Formula Program, should greatly increase charger reliability and accountability.

Alternative Fuel Corridor Designations

California continues to make progress building critical infrastructure along interstates and State Routes. A total of 17 California corridors received "Corridor-Pending EV" designations in the Round 6 (2022) AFC process.

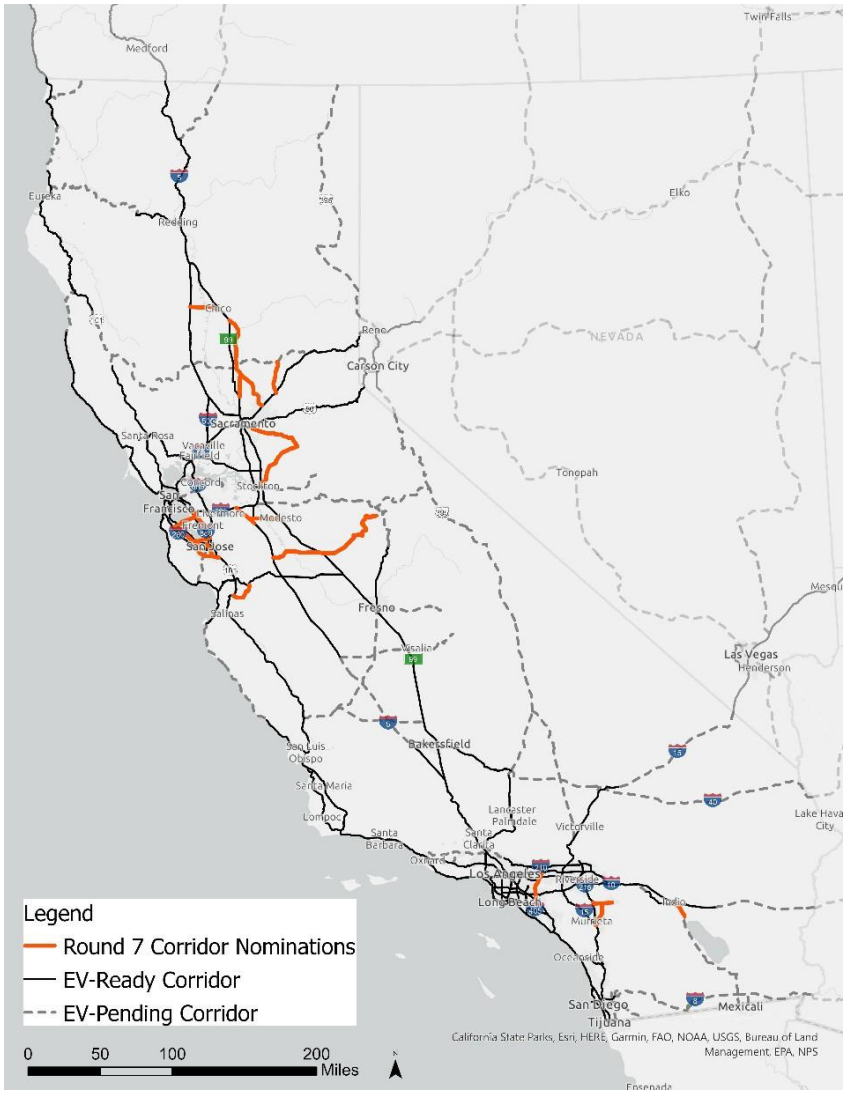
In the Round 7 Request for Nominations (2023), 21 highway segments were nominated for EV AFCs in California (Figures 4-6, and Tables 4 and 5) and 14 highway segments were nominated for Freight EV corridors to support medium- and heavy-duty EVs (see below). Designation of these routes will increase opportunities for clean transportation in California. Tables 6 and 7 summarize the EV Corridor Pending and EV Corridor Ready designations of Rounds 1-6 of the AFC process.

---

[38] California Energy Commission. (2023, March 17). Electrify America comments on *2023 IEPR Scoping Order*.
[39] California Energy Commission. (2023, March 24). East Bay Community Energy comments on *2023 IEPR Workshop on Distribution Grid Clean Energy Interconnections*.

The Round 7 nominations placed emphasis on rural, disadvantaged, and tribal regions within California. Nearly all the nominated AFC corridors are in or adjacent to disadvantaged communities as determined by CalEnviroScreen and the Justice40 Initiative.[40] An extensive intra- and inter-state network will increase the ability of consumers and businesses to charge their vehicles within and outside of their home and work communities.

Figure 4: Designated and Round 7 Nominated Alternative Fuel Corridors for Electric Vehicles



[40] CalEnviroScreen, an analytical tool created by the California Environmental Protection Agency, combines different types of census tract-specific information into a score to determine which communities are the most burdened or "disadvantaged." The Electric Vehicle Charging Justice40 Map displays federally designated Justice40 communities, Alternative Fuel Corridors, and existing public EV chargers.

Figure 5: Designated and Round 7 Nominated Alternative Fuel Corridors for Electric Vehicles (Selected Zoom of Northern California)

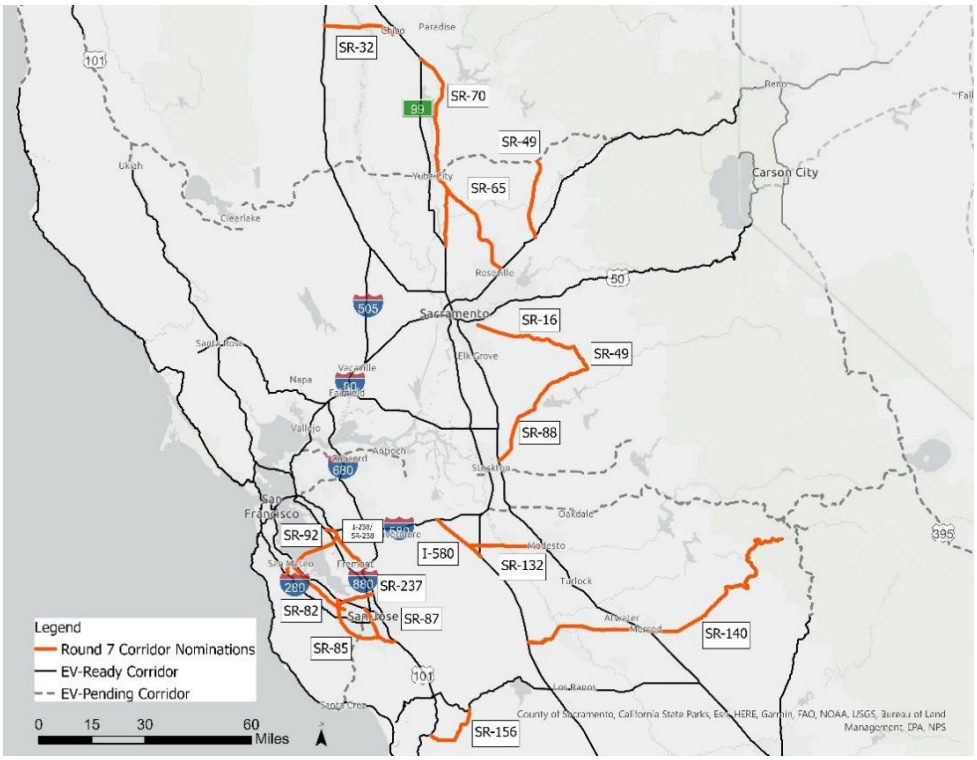


Figure 6: Designated and Round 7 Nominated Alternative Fuel Corridors for Electric Vehicles (Selected Zoom of Southern California)

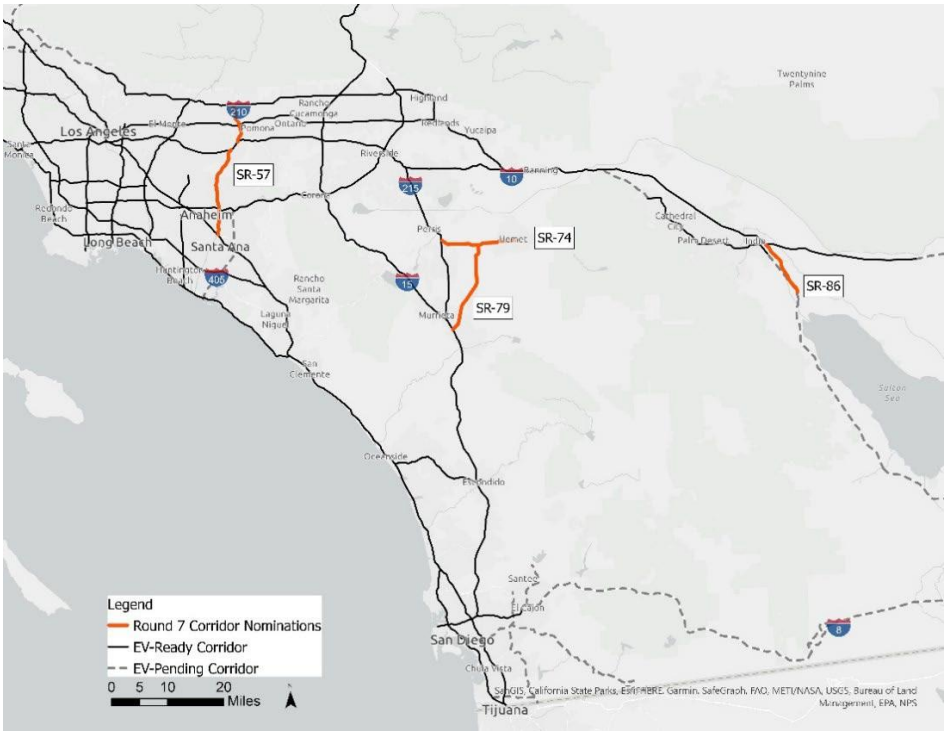


Table 4: Round 7 Alternative Fuel Corridor Nominations – EV Corridor Pending

Corridor	Miles	Start	End
I-238/SR-238	20	I-238/I-880	SR-238/I-680 (Fremont)
I-580	15	I-580/I-205	I-580/I-5
SR-16	29	SR-16 @ South Watt Ave	SR-16/SR-49
SR-32	22	SR-32/I-5 (Orland)	SR-32/SR-99
SR-49	8	SR-49/SR-16	SR-49/SR-88
SR-49	24	SR-49/I-80 (Auburn)	SR-49/SR-20
SR-65	32	SR-65/I-80 (Roseville)	SR-65/SR-70 (Olivehurst)
SR-70/SR-149	60	SR-70/SR-99	SR-149/SR-99
SR-74	14	SR-74/I-15	SR-74/SR-79 (Hemet)
SR-79	17	SR-79/I-15 ((Temecula)	SR-79/SR-74
SR-82	20	SR-82/SR-92	SR-85/Sunnyvale Ave & Sunnyvale Ave Saratoga Rd
SR-85	24	SR-85/US-101 (Mountain View)	SR-85/US-101 (San Jose)
SR-86	11	SR-86/I-10	SR-86/SR-111
SR-87		SR-87/US-101	SR-87/SR-85
SR-88	40	SR-88/SR-99	SR-132/SR-99
SR-92	20	SR-95/I-280	SR-92/I-238
SR-132	21	SR-132/SR-99	SR-132/I-580
SR-140	65	SR-140/I-5	SR-140 Terminus (El Portal)
SR-156	11	SR-156/US-101	SR-156/SR-152
SR-237	10	SR-237/SR-85	SR-237/I-680 (Milpitas)

Table 5: Round 7 Alternative Fuel Corridor Nominations – EV Corridor Ready

Corridor	Miles	Start	End
SR-57	28	I-5/SR-22	SR-57/I-210

Table 6: Rounds 1 – 6 Alternative Fuel Corridor Designations – EV Corridor Pending

Corridor	Miles	Start	End
I-10	100	Indio	CA/AZ Border
I-15	101	Yermo	CA/NV Border
I-210/SR-210	17	I-210/I-5 (Sylmar)	Glendale (Pennsylvania Ave exit 17)
I-40	144	Barstow	CA/AZ Border
I-5	67	Coalinga	Buttonwillow
I-8	154	El Cajon	CA/AZ Border
SR-1	294	Fort Bragg	Monterey

Corridor	Miles	Start	End
SR-1	315	I-5 (Camino Capistrano); Monterey	San Simeon
SR-111/ SR-78/SR-86	12	White Water	Palm Springs
SR-118	46	Saticoy (near Oxnard)	San Fernando
SR-120	162	I-5 (Lathrop)	US-395 (Lee Vining)
SR-125	22	SR-905 (Otay Mesa)	SR-52 (Santee)
SR-14	5	SR-14/I-5 (Sylmar); Lancaster	Santa Clarita; SR-14/US-395 (Inyokern)
SR-152	102	Watsonville	Chowchilla
SR-180	58	SR-99 (Fresno)	SR-245 Junction
SR-198	89	I-5 (Coalinga)	Sequoia National Park
SR-199	36	US-101 (Crescent City)	CA/OR Border
SR-20	21	US-101 (Ukiah)	SR-29 (Upper Lake)
SR-20	143	SR-53 (Clearlake Oaks)	I-80 (Emigrant Gap)
SR-23	32	SR-118 (Moorpark)	US-101 (Thousand Oaks)
SR-24	16	I-980 (Oakland)	I-680 (Walnut Creek)
SR-29	31	SR-53 (Lower Lake)	SR-20 (Upper Lake)
SR-299	100	Arcata	Douglas City
SR-4	44	SR-4/I-80 (Hercules)	Brentwood
SR-4	55	Port of Stockton Expressway	SR-49 (Angels Camp)
SR-41	150	Fish Camp	Shandon
SR-46	88	Paso Robles	McFarland
SR-55	18	Anaheim	Newport Beach
SR-58	71	SR-58/SR-14 (Mojave)	SR-58/I-5 (Barstow)
SR-67	7	I-8 (El Cajon)	Eucalyptus Hills (NHS Terminus)
SR-7	7	I-8 (Holtville)	SR-98 (Calexico)
SR-905	9	CA/Mexico Border	I-5 (San Diego)
SR-94	37	I-5 (San Diego)	SR-188 (Tecate Rd)
US-101	46	Ukiah; Trinidad	Garberville; CA/OR Border
US-101	42	Trinidad	Klamath
US-395	352	Topaz	Hesperia
US-395	203	CA/OR Border	CA/NV Border
US-97	54	CA/OR Border	I-5 (Weed)

Table 7: Rounds 1 – 6 Alternative Fuel Corridor Designations – EV Corridor Ready

Corridor	Miles	Start	End
I-10	142	Santa Monica	Indio
I-105	21	El Segundo (California Street)	I-105/I-605 (Norwalk)
I-110	24	Los Angeles (1230 W 3rd St)	I-110/SR-47 (San Pedro)
I-15	187	San Diego (@start of I-15)	Yermo
I-205	13	Tracy (@ I-580)	Tracy (@ I-5)
I-210/SR-210	69	Glendale (Pennsylvania Ave exit 17)	I-10/SR-210 (Redlands)
I-215	45	San Bernardino	Murrieta
I-280	57	San Francisco (5th and King St)	I-680 (San Jose)
I-405	62	I-5 (Mission Hills)	I-5 (Irvine)
I-5	470	CA/OR Border	CA/Mexico Border
I-5	260	Buttonwillow	CA/Mexico Border
I-505	39	I-505/I-5 Split (Dunnigan)	I-505/I-80 (Vacaville)
I-580	73	US-101 (San Rafael)	I-5 (Tracy)
I-605	34	I-605/I-210 (Duarte)	I-605/I-405 (Seal Beach)
I-680	73	Cordelia	I-280 (San Jose)
I-710	23	Los Angeles (@ E. Valley Rd)	Long Beach
I-8	17	San Diego	El Cajon
I-80	206	San Francisco	Cisco Grove
I-805	28	I-805/I-5 (Sorrento Valley)	I-805/I-5 (San Ysidro)
I-880	45	I-280 (San Jose)	I-80 (Oakland)
SR-111/SR-78/SR-86	40	Palm Springs	Coachella
SR-12	104	SR-12/SR-116 (Sebastopol)	SR-12/SR-99 (Lodi)
SR-14	43	Santa Clarita	Lancaster
SR-299	39	Douglas City	Redding
SR-39	21	SR-39/SR-72 (La Habra)	SR-29/SR-1 (Huntington Beach)
SR-58	85	I-5 (Buttonwillow)	SR-58/SR-14 (Mojave)
SR-60	78	I-10/I-5 (Los Angeles)	I-10 (Beaumont)
SR-78	17	SR-78/I-5 (Oceanside)	SR-78/I-15 (Escondido)
SR-91	60	SR-91/I-110 (Gardena)	SR-78/I-15 (Riverside)
SR-99	425	Red Bluff	Wheeler Ridge
US-101	521	I-10/I-15 (Los Angeles); Garberville	Ukiah; Trinidad
US-50	106	West Sacramento	South Lake Tahoe

Freight EV Corridors

This year the FHWA introduced the designation of Freight EV corridors. Title VIII of Division J of the Bipartisan Infrastructure Law requires the designation of national EV charging corridors that identify the near- and long-term need for, and the location of, EV charging infrastructure to support freight and goods movement at strategic locations along major national highways, the National Highway Freight Network,[41] and goods movement locations including ports, intermodal centers, and warehousing locations.

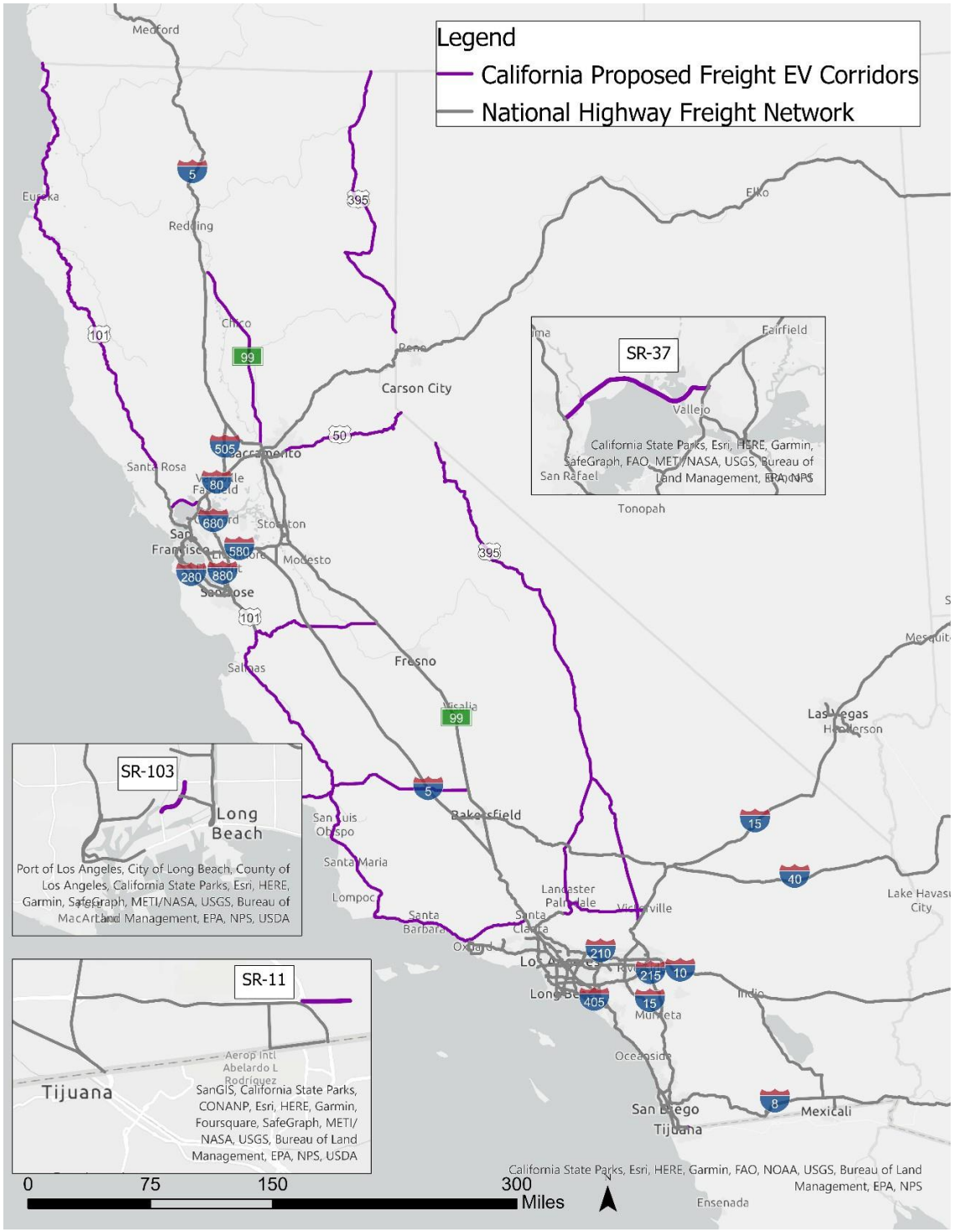
The FHWA proposed using the National Highway Freight Network as the preliminary designation for Freight EV corridors. California has nominated 14 additional corridor segments to be included as Freight EV corridors (Figure 7 and Table 8). The nominated corridors were identified by stakeholder input and the Senate Bill 671 Working Group.

Table 8: Proposed Freight EV Corridors

Corridor	Miles	Start	End
SR- 11	1.4	SR-125/SR-905	SR 11 Terminus (Enrico Fermi Dr)
SR-14	121	SR-14/I-5 (Sylmar)	SR-14/US 395 (Inyokern)
SR- 37	21	SR-37/US-101	SR-37/I-80
SR-46	89	SR-46/US-101	SR-46/SR-99
SR-99	127	I-5/SR-99 (Red Bluff)	SR-99/I-5 (Sacramento)
SR-103	3	SR-103/SR-47	SR-103/SR-1
SR-126	41	SR-126/US-101 (Ventura)	SR-126/I-5 (Santa Clarita)
SR-138	48	SR-14/SR-138 (Palmdale)	SR-138/I-15 (Victorville)
SR-152	83	SR-152/US-101	SR-152/SR-99
US-50	106	US-50/I-80	CA/NV Border
US-101	322	CA/OR Border	US 101 Santa Rosa @ Colgan Ave
US-101	351	US 101 (Gilroy @ Leavesley Rd)	US 101 Terminus Los Angeles
US-395	193	CA/OR Border	CA/NV Border
US-395	354	CA/NV Border	US-395/I-15 (Hesperia)

[41] Federal Highway Administration. *National Highway Freight Network*.

Figure 7: Proposed Freight EV Corridors



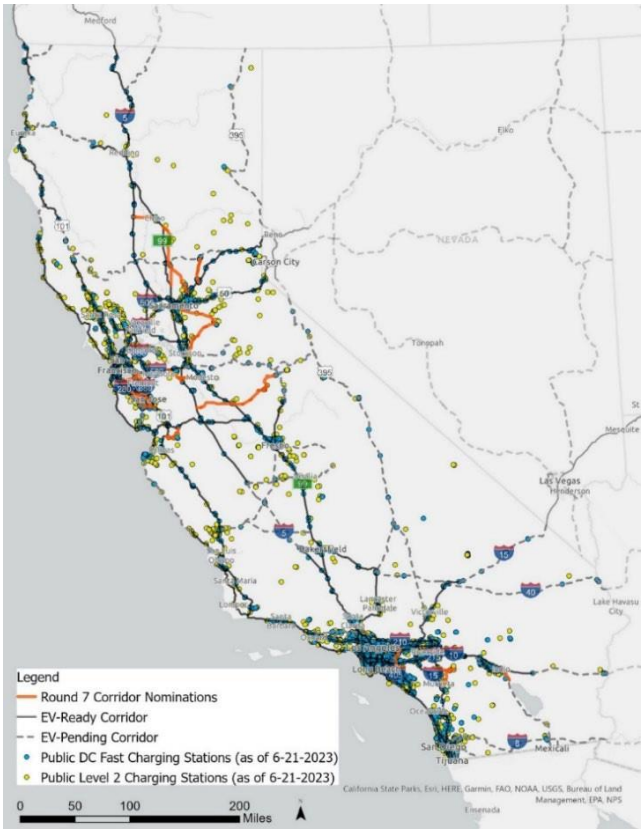
Existing Charging Stations

Existing Locations of Charging Infrastructure Along AFCs

A complete table of existing locations of public charging infrastructure along AFCs can be downloaded from the US Department of Energy's (US DOE) Alternative Fuels Data Center (AFDC). Figures 8-10 summarize this data by displaying locations of existing public DC fast and Level 2 charging stations along electric corridors.

As of June 2023, California has 1,902 public DCFC stations with 9,207 DC fast chargers or ports, and 14,133 public Level 2 stations with 32,046 Level 2 chargers.[42] This represents an increase of 321 DCFC stations with 2,446 DC fast chargers and 1,565 Level 2 stations with 3,169 Level 2 chargers since August 2022, when the previous version of the NEVI Plan was published.

Figure 8: Alternative Fuel Corridors and Existing Public DC Fast Charging and Level 2 Charging Stations in California



[42] US Department of Energy. *Alternative Fueling Station Locator*.

A station location is a site with one or more EVSE ports (i.e., chargers) at the same address. An EVSE port (or charger) provides power to charge only one vehicle at a time even though it may have multiple connectors.

Figure 9: Alternative Fuel Corridors and Existing Public DC Fast Charging and Level 2 Charging Stations in California (Selected Zoom of Northern California)

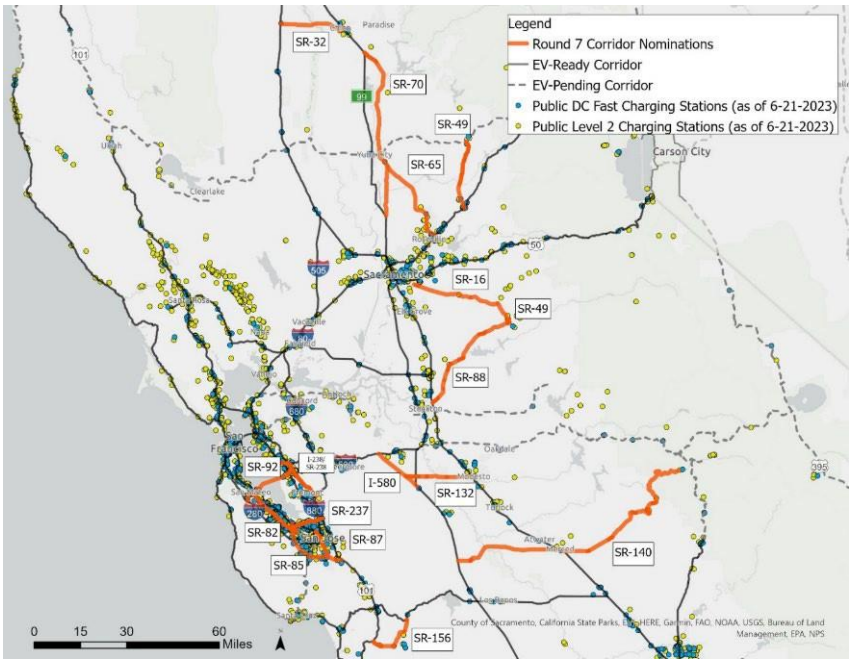
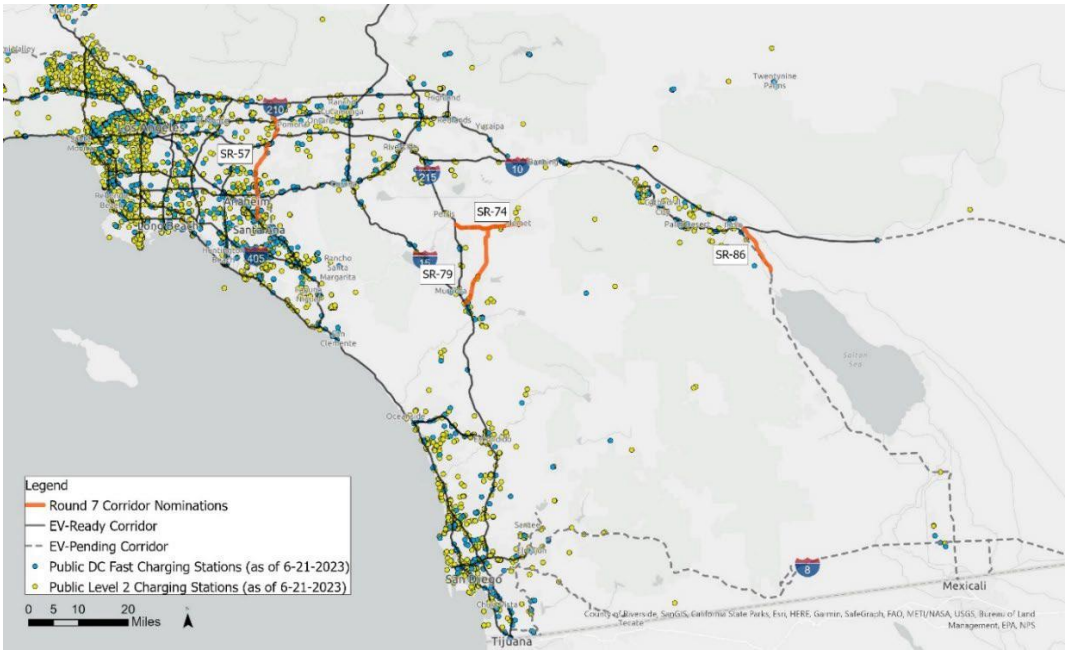


Figure 10: Alternative Fuel Corridors and Existing Public DC Fast Charging and Level 2 Charging Stations in California (Selected Zoom of Southern California)



EV Charging Infrastructure Deployment

See the Plan Vision and Goals Section for a description of California's overarching strategy for EV charging infrastructure installations.

Planned Charging Stations

As shown in Table 9, California is making good progress in funding and deploying light-duty charging stations; over 18,000 DC fast chargers have been installed or financed to date. However, over 19,000 new DC fast chargers are needed to support the 2030 target of 8 million ZEVs. The $384 million in funding from the NEVI Formula Program will be critical to financing the stations and chargers needed to achieve the 2030 goal.

Presently, the match requirement in most of the CEC's funding programs for DCFCs is 50 percent. At a macro level, more than half of the state's chargers for light-duty vehicles were funded solely with private capital. For public sector spending, the CEC, Caltrans, and DGS combined to fund 10 percent of the operational chargers. Utilities account for nearly 30 percent of light-duty charging infrastructure funding, with settlement funds from VW and NRG accounting for another 5 percent.[43]

Table 9: Status of Chargers Needed to Support 2030 Light-Duty ZEV Targets

Category	Level 2	DCFC
Existing Publicly Available and Shared Private Chargers	78,500	9,207
Chargers for which Funding is Allocated	163,000	9,000
Totals	**241,500**	**18,207**
AB 2127 Report's Estimate of 2030 Charging Needs	1,126,855	37,461
Number of Chargers Needed to Achieve 2030 Targets	**885,355**	**19,254**

Source: CEC Staff Analysis as of March 2023

[43] California Energy Commission. (2022, December 1). *Zero-Emission Infrastructure Plan*.

Infrastructure Deployments/Upgrades

Figures 11-13 show the locations of existing public DC fast charging stations and NEVI-compliant stations (based on the 2022 NEVI Formula Program Guidance) as of June 2023.[44] The NEVI-compliant stations displayed are DC fast charging stations that have at least four EVSE ports with CCS connectors that each support a power output of at least 150 kW and are within one mile of an AFC. The US DOE's AFDC provides station data by state and fuel type. As of June 2023, California has a total of 158 stations (795 DCFCs) that meet the original NEVI Formula Program criteria.

Charging stations should be no more than 50 miles apart and within one mile from the corridor exit or intersection to meet the NEVI Formula Program standards. California's NEVI Formula Program solicitation manual will include the number, and, in some cases, the approximate location of stations required on AFCs to fulfill these requirements. Future updates of the NEVI Corridor Group Interactive Map will show portions of corridors that have not been built out to signal to applicants where gaps occur.[45]

[44] California's NEVI agencies do not have access to the data that would confirm compliance with the new federal requirements for a NEVI station.
[45] California Energy Commission. *California's National Electric Vehicle Infrastructure (NEVI) Funding Program Map*.

Figure 11: Existing DC Fast Charging Stations Along Alternative Fuel Corridors in Northern and Southern California

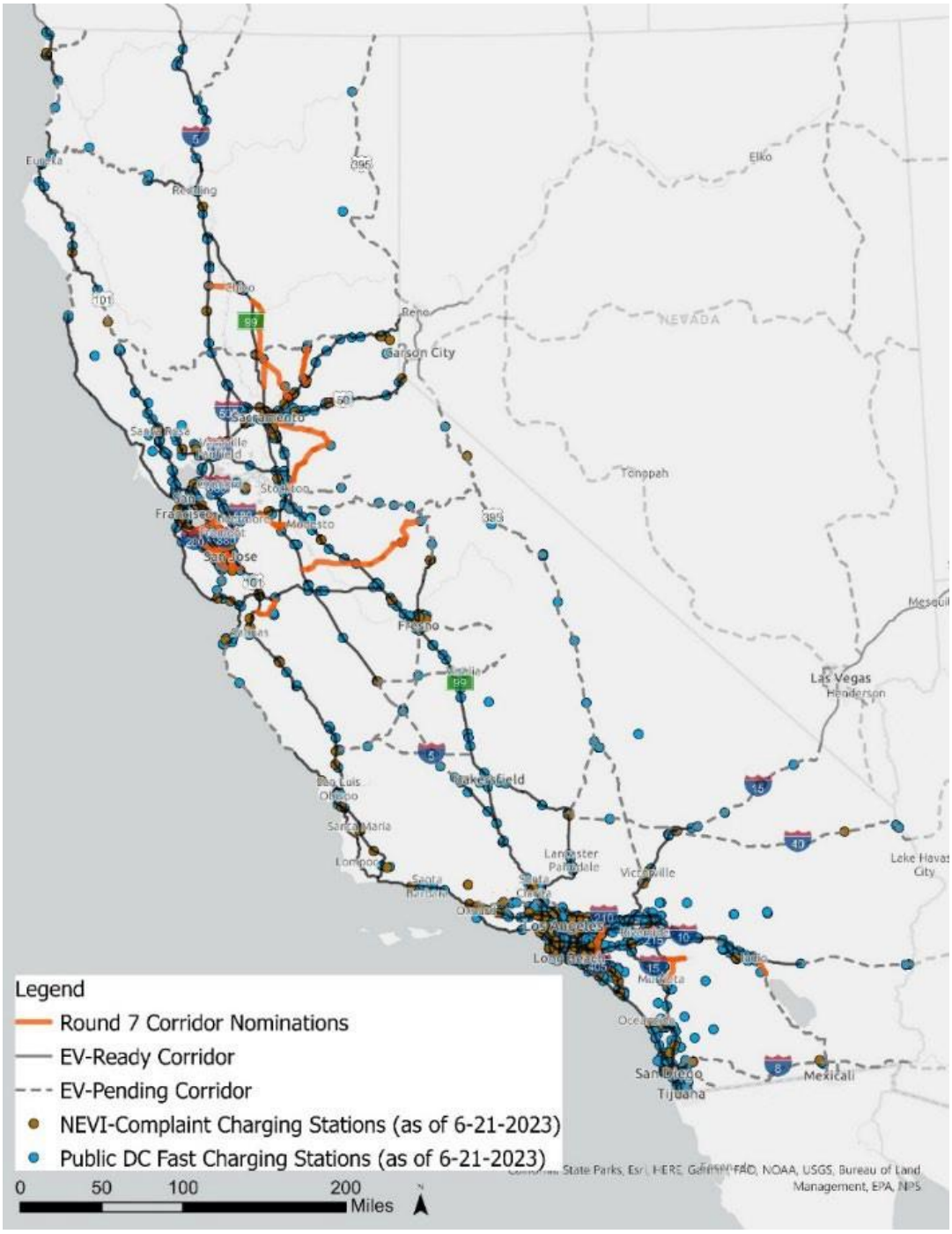


Figure 12: Existing DC Fast Charging Stations Along Alternative Fuel Corridors (Selected Zoom of Northern California)

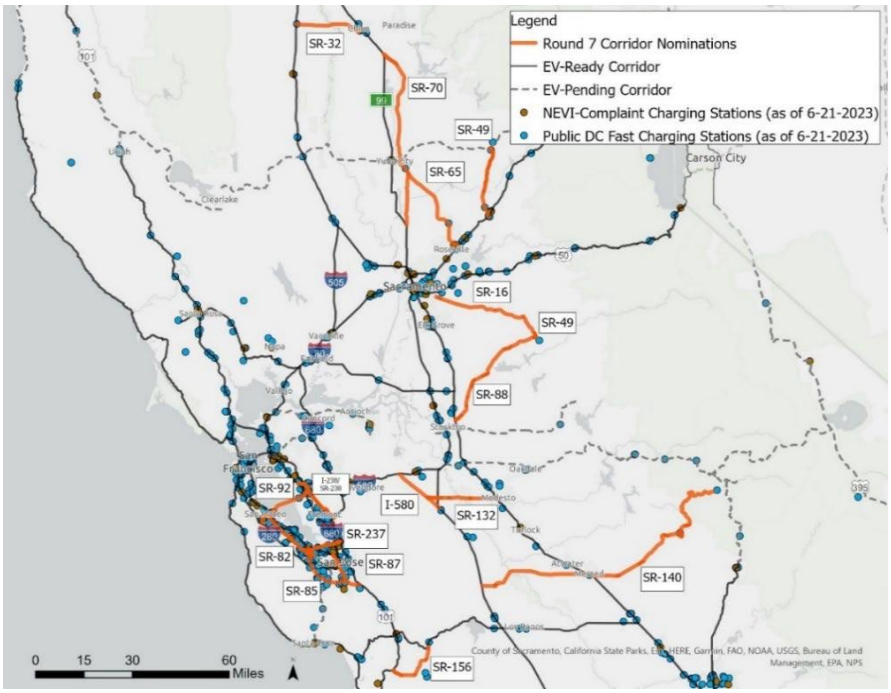
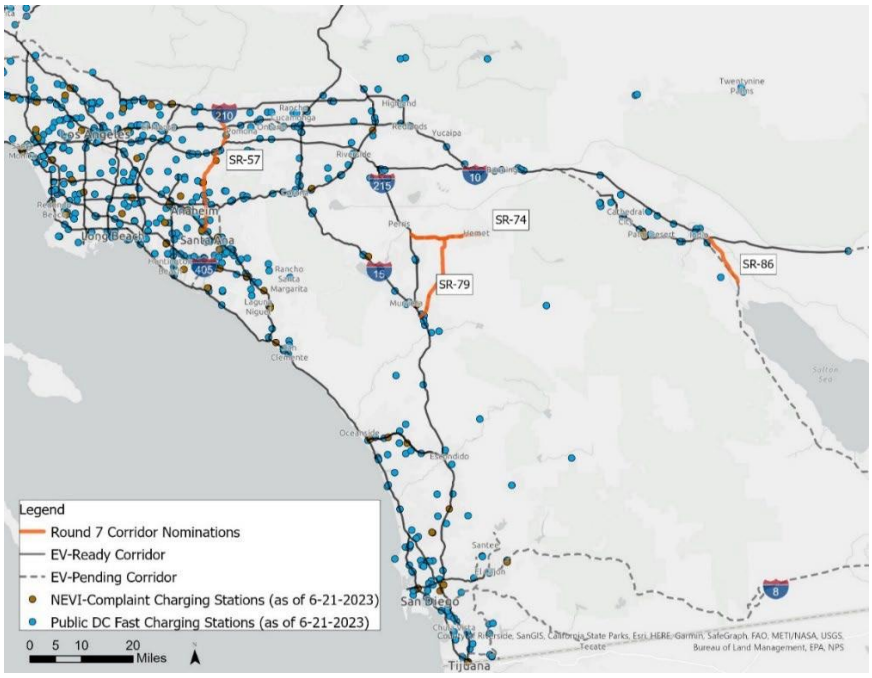


Figure 13: Existing DC Fast Charging Stations Along Alternative Fuel Corridors (Selected Zoom of Southern California)



Planning Towards a Fully Built Out Determination

The first six corridor groups to be put out for solicitation will require 28 charging stations and 291 charging ports to meet NEVI Formula Program requirements. Additional needs analysis will be performed prior to designing and releasing subsequent solicitations. The number of charging stations and ports may increase or decrease. Increases would occur with the designation of additional AFCs and if some existing Electrify America sites are deemed non-compliant with NEVI Formula Program requirements. Decreases would occur if additional NEVI-compliant charging stations are deployed or additional 150 kW+ charging ports are deployed at existing stations.

Implementation

The CEC has taken rigorous steps to support the reliable operation and maintenance of charging infrastructure funds provided through the CTP, including those funded through the NEVI Formula Program. Current and future CEC solicitations for charging infrastructure will include (1) minimum reliability standards, (2) detailed recordkeeping and reporting requirements, (3) requirements for annual preventive maintenance, and (4) maximum times to conduct corrective maintenance. The CEC is taking additional steps to better understand and ensure the reliability of charging infrastructure operating in California. The CEC has recently approved a contract for a third-party to field test publicly accessible chargers by sending testers to charging stations and attempting to charge a variety of EV makes and models.

Assembly Bill 2061 was signed by Governor Newsom in September of 2022 and requires the CEC to develop uptime recordkeeping and reporting requirements for all chargers installed with a state incentive on or after Jan 1, 2024. Pursuant to Assembly Bill 2061, the CEC is currently drafting regulatory language, which is scheduled to publish in Q3 2023. This regulation will align with, and add to, the requirements of 23 CFR Part 680.

Please see the Plan Vision and Goals Section for a full description of the measures the California NEVI agencies will use to ensure that the NEVI-funded stations are operated and maintained in conformance with federal requirements, including accountability by station owners and operators. As noted, planning, installation, maintenance, and ownership of the NEVI-funded stations is the responsibility of the grant recipient. These obligations are part of the legally binding agreements each awardee must agree to in accepting a NEVI-funding award.

Please see the Labor and Workforce Considerations Section for a full description of the measures California will use to ensure conformance with NEVI's labor, training, and installation standards.

Strategies to Address Resilience, Emergency Evacuation, Snow Removal/Seasonal Needs

Due to varied climate and geography, California experiences a variety of natural disasters and extreme weather events, including earthquakes, wildfires, flooding, mud slides, and snowstorms. During these events it is important to have charging infrastructure that is reliable in the event of evacuations. A challenge in maintaining reliability is that the weather events often lead to power and communication outages. Additionally, in recent years, utilities have begun shutting down power during high winds to prevent fires. California will look to technology advancements and innovation to provide power during extreme weather events and emergency evacuations. Battery backup and storage, often coupled with solar power, are some of the technologies currently under consideration.

With direction from the CPUC, investor-owned utilities are investigating ways to help EV owners and fleets managers charge their vehicles during planned or unplanned power outages, including: (1) Improving communication, before and during potential or active de-energization events, about the location and accessibility of charging stations near impacted areas; (2) Investigating the feasibility of grid-independent EV charging stations (e.g., mobile charging stations) which can be used to charge EVs during power shutoffs and other emergency events; and (3) Coordinating with EV charging network providers to reinforce EV charging networks with backup generation.

Equity Considerations

Caltrans and the CEC will continue to prioritize NEVI Formula Program funding for corridor charging that delivers direct and intentional benefits to disadvantaged and low-income communities (LICs), including California tribes and rural communities. At least 40 percent of NEVI Formula Program funds will be for projects that provide benefits to Justice40-designated communities. Additionally, at least 50 percent of NEVI Formula Program funds will be for projects that provide benefits to California-designated DACs or LICs.

Staff will rank corridor segments to ensure deployment aligns with charging deployment goals, including equity goals, and provide funding for projects in rank order until funding is exhausted. Segments within Justice40-designated communities or California-designated DACs or LICs will receive higher scores during application evaluations to meet the equity goals under the Justice40 Initiative and the CEC's CTP. Staff will also evaluate NEVI project applications and prioritize those that provide additional community benefits beyond project location, and will require that all funded projects satisfy, at minimum, the requirements of the NEVI Formula Program and the White House Interim Guidance on Justice40.

Identification and Outreach to Disadvantaged Communities (DACs)

See the discussion in the Outreach Section for more information about California's outreach to DACs and tribes.

Caltrans and the CEC will continue to use the Justice40 community designations, and California-designated DAC and LIC designations. These are defined as follows:

- Justice40 communities are designated by the Council on Environmental Quality as communities that experience health, transportation access, and energy burdens, with economies highly dependent on fossil energy sources, and exposure to environmental and climate hazards. These include federally recognized tribal nations and US Territories.
- California DACs are designated by the California Environmental Protection Agency as communities that experience the highest pollution burden and are especially vulnerable to pollution's effects.
- California LICs are designated by CARB as census tracts with median household incomes at or below 80 percent of the statewide median income or with median household incomes at or below the threshold designated as low income by the Department of Housing and Community Development.

Figures 14-16 show the locations AFCs, Justice40 communities only, California DACs or LICs only, and overlap of Justice40 communities and California DACs or LICs.

Figure 14: Locations of Alternative Fuel Corridors and Disadvantaged or Low-income Communities

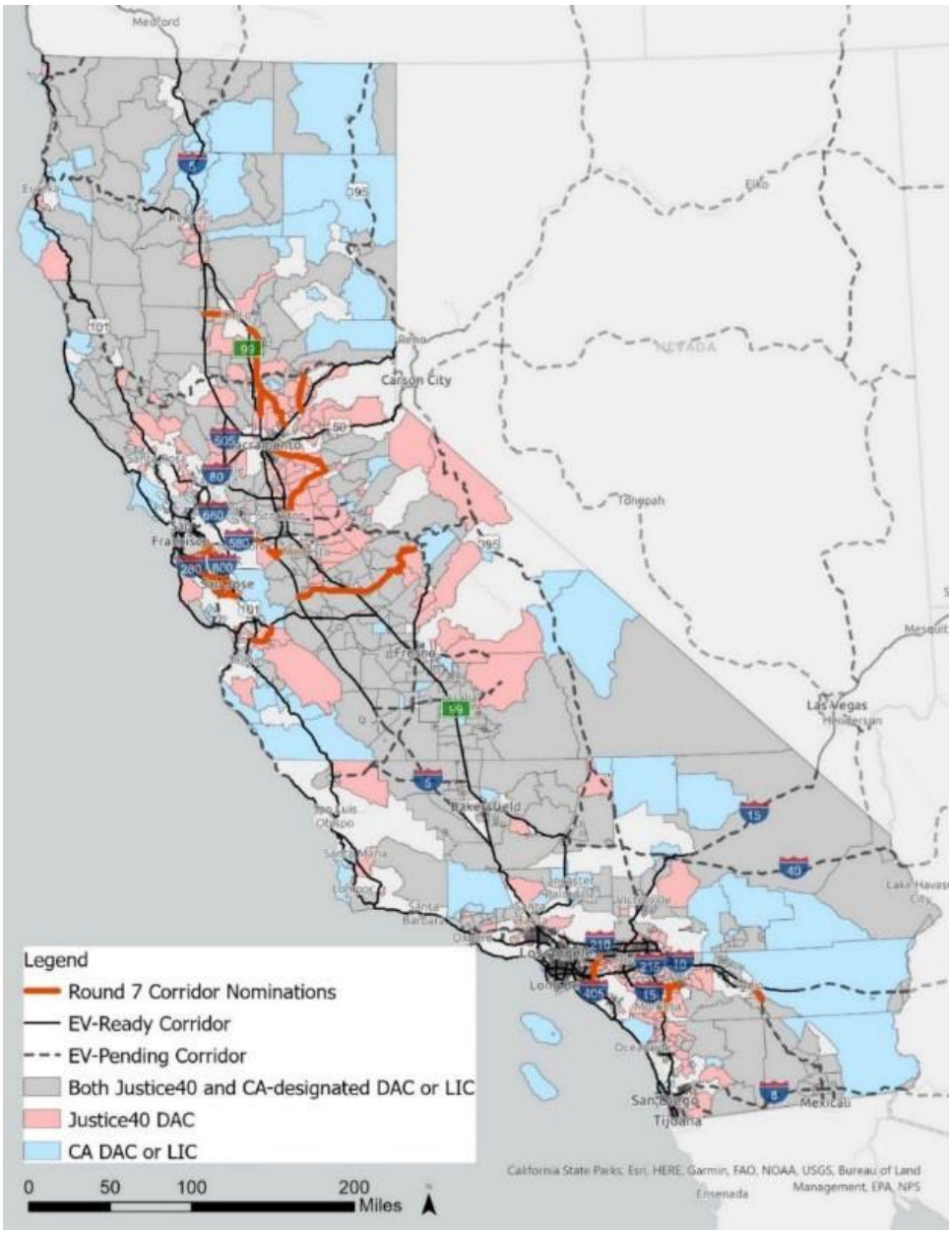


Figure 15: Locations of Alternative Fuel Corridors and Disadvantaged or Low-income Communities (Selected Zoom of Northern California)

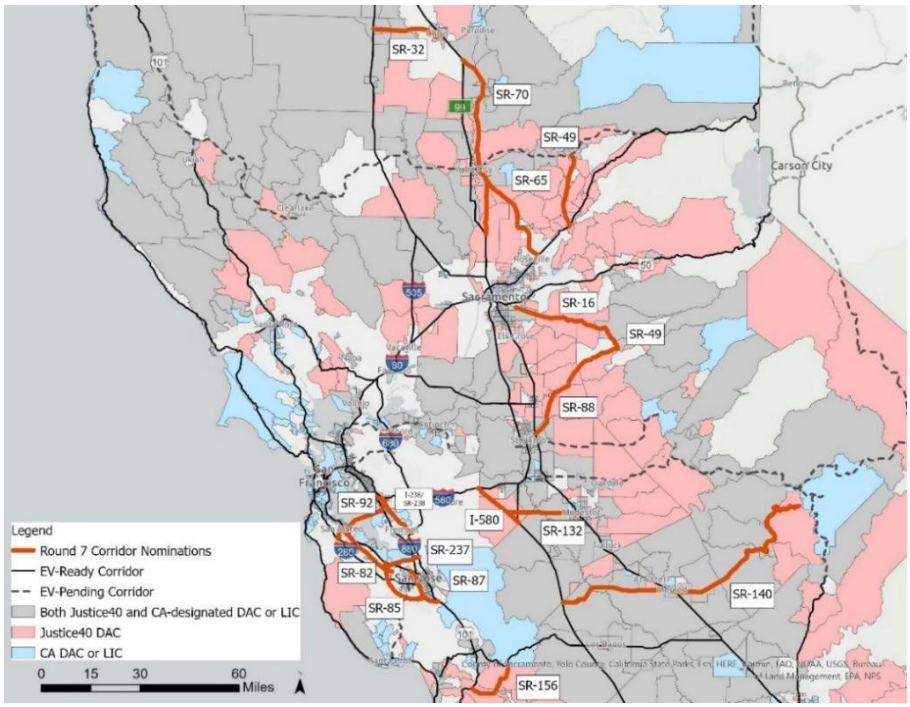
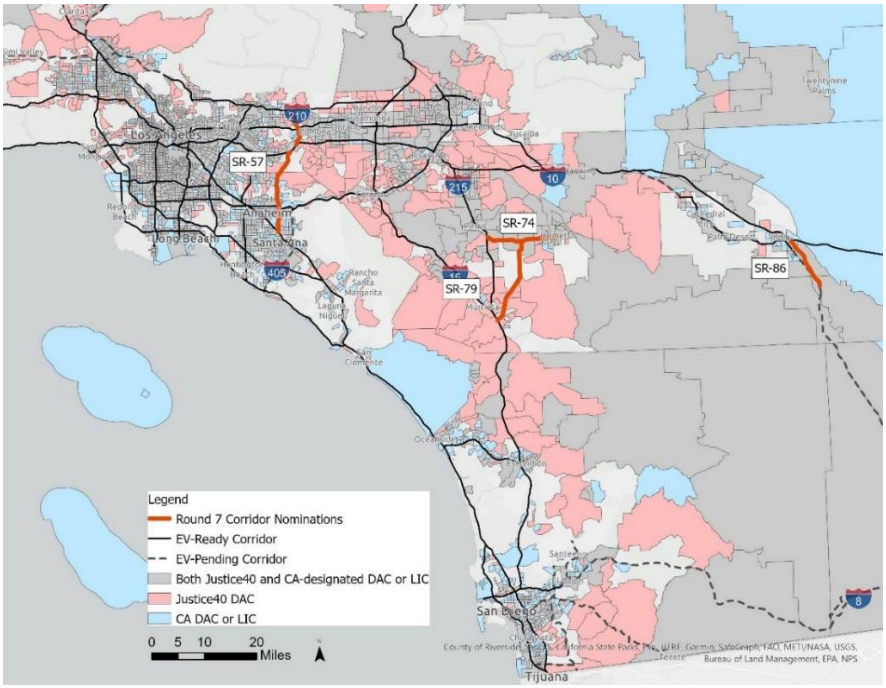


Figure 16: Locations of Alternative Fuel Corridors and Disadvantaged or Low-income Communities (Selected Zoom of Southern California)



Process to Identify, Quantify, and Measure Benefits to DACs

Applications to the competitive solicitations will be evaluated on how well they deliver benefits and avoid disbenefits to communities, particularly to DACs, including California tribes, and LICs. California will direct project applicants to the latest NEVI Corridor Group Interactive Map, which displays eligible corridors, Justice40 communities, DACs, and LICs. Project applicants will be required to report qualitative and quantitative measurements of benefits, including whether the project addresses community-identified needs, improves access and economic well-being, and removes transportation-related disparities to residents in and affected by the project area. To ensure that projects do not result in disbenefits or harms to communities, such as displacement and eventual gentrification, applicants will be asked to identify potential disbenefits from the project and action taken to avoid these. Table 10 lists goals, metrics, and baselines for tracking NEVI project benefits.

Caltrans and the CEC will continue to engage with community leaders and advisory groups (Disadvantaged Community Advisory Group, the Native American Advisory Committee, Interagency Transportation Equity Advisory Committee, etc.) throughout each round of solicitation design. Caltrans and the CEC will listen to community partners and consider their input when designing solicitation requirements, scoring criteria, and identifying metrics and data collection requirements for quantifying community benefits. Program outcomes will be monitored through data collection requirements in agreements with solicitation awardees. This data collection will support compliance with NEVI requirements while documenting community transformation from these investments through community feedback.

CEC staff are working with communities, tribal and government entities, and advocacy groups to develop the CTP's Community Benefits Framework, which is intended to assess, track, and improve community benefits beyond project location. This draft framework will assist in identifying the needs of rural communities and tribes and allow for improved benefits, tailored to these communities and tribes.[46] Staff at the CEC held a workshop introducing the framework in November 2022 and organized community listening sessions to gather input. The framework is expected to be released at the end of 2023.

[46] California Energy Commission. (2022, November 29). *Clean Transportation Program Community Benefits*.

The CEC has also contracted with the National Renewable Energy Laboratory to develop methods for calculating CTP direct and indirect benefits. Metrics will include those related to air quality improvement, greenhouse gas emission reductions, and petroleum displacement. Per Senate Bill 1000 (Lara, Chapter 368, Statutes of 2018) and since 2019, the CEC has assessed the distribution of and access to public EV charging station infrastructure to determine whether infrastructure is disproportionately deployed and to inform CTP funding. The Senate Bill 1000 analysis is ongoing and will help identify areas of prioritization throughout the state to meet federal and state equity goals.[47] All of these efforts will inform how California identifies, tracks, and measures benefits to communities from NEVI Formula Program investments.

Table 10: Measuring Benefits of NEVI Formula Program Investments

Benefits Category (i.e., goals)	Metrics	Baseline
1. Improve clean transportation access through the location of chargers.	• Number of existing NEVI-compliant chargers within Justice40 communities, DACs, or LICs and percent within California tribes and rural areas. • Number of chargers installed outside of Justice40 communities, DACs, or LICs that serve residents of those communities. Include documentation of community support for the site(s) that reflect community-identify needs.	• Number of existing NEVI-compliant chargers within Justice40 communities, DACs, or LICs and percent within California tribes and rural areas. • Number of existing NEVI-compliant chargers at sites accruing benefits to Justice40 communities, DACs, or LICs that are not located within these communities.
2. Decrease the transportation energy cost burden by enabling reliable access to affordable charging (at 97% charging port uptime per port installed for at least six years after operation begins).	• Average dollars saved in fuel costs. • Gallons of gasoline and/or diesel fuel displaced (with associated mileage information). • Monthly uptime percentage of each charging port (formula for calculation will be provided by the CEC). • Payment methods used to initiate charging sessions. • Methods used to reduce or minimize charging costs to drivers, particularly drivers	• Average dollars spent on fuel costs. • Average gallons of gasoline used. • Availability of operating gas stations within three miles of project site. • Payment methods available at operating gas stations nearby. • Limited consideration of ways to minimize charging costs for drivers from Justice40

[47] Senate Bill 1000 requires the CEC to assess whether charging infrastructure is disproportionately deployed by population density, geographical area, or population income level.

Benefits Category (i.e., goals)	Metrics	Baseline
	from Justice40 communities, DACs, or LICs.	communities, DACs, or LICs.
3. Reduce environmental exposures to transportation emissions.	• Grams of CO_2 equivalent reduced per dollar of NEVI investment. • Criteria air pollutants reduced, including non-methane hydrocarbons, oxides of nitrogen, particulate matter, formaldehyde, using Argonne National Laboratory's Alternative Fuel Life-Cycle Environmental and Economic Transportation Charging and Fueling Infrastructure. • Reduction in asthma and cardiovascular disease visits (CalEnviroScreen).	• Grams of CO_2 emitted without infrastructure. • Criteria air pollutants emitted without infrastructure. • Asthma and cardiovascular disease visits without infrastructure.
4. Increase parity in clean energy technology access and adoption (at least 50% benefitting California-designated DACs or LICs, at least 40% benefitting Justice40 communities).	• Number of chargers installed and proportion within or near Justice40 communities, DACs, or LICs.	• No limits on siting, including within or near Justice40 communities, DACs, and LICs.
5. Increase access to low-cost capital to increase equitable adoption of more costly, clean energy technologies like EVs and EV chargers.	• Dollars spent on capital and percent of revenue going to businesses in Justice40 communities, DACs, or LICs.	• Cost to install infrastructure without NEVI Formula Program support.
6. Increase the clean energy job pipeline, job training, and enterprise creation in disadvantaged communities.	• Dollars spent on job training and percent spent for training Justice40, DAC, or LIC residents. • Number of job training, apprenticeship, and education program participants and percent from Justice40 communities, DACs, or LICs. • Number of jobs created by project and percent of hires from Justice40 communities,	• Dollars spent on training Justice40, DAC, or LIC residents for clean energy jobs in the last five years. • Number of clean energy job and education programs targeting Justice40, DAC, or LIC residents in the last five years. • Number of filled clean energy job positions in

Benefits Category (i.e., goals)	Metrics	Baseline
	DACs, or LICs. Include proportion that are full-time versus part-time.	the area and proportion that are full-time versus part-time and Justice40, DAC, or LIC hires.
7. Provide charging infrastructure for transit and shared-ride vehicles.	• Engagement with ride-hailing/ride-sharing services measured by comments received from entities during the public engagement process. • Number of transit buses, transit routes, and/or riders served by charging infrastructure.	• No effort to engage with ride-hailing/ride-sharing services. • Non-ZEV transit routes.
8. Increase equitable access to the electric grid.	• Dollars spent to electrify sites and number of sites requiring increased electrical service. Percent of dollars spent and number of sites within Justice40 communities, DACs, or LICs. Include documentation of utility findings for sites located within or benefiting Justice40 communities, DACs, or LICs. • Number of additional charging sites with back-up solar and battery energy storage. Percent within Justice40 communities, DACs, LICs, rural areas, and California tribes. • Includes specs (e.g., size in megawatt hours) for equipment.	• Number of sites within Justice40 communities, DACs, or LICs, including within California tribes and rural areas, that do not require increased electrical service and proportion of those sites that are EV-capable, ready, or installed. • Number of charging sites within Justice40 communities, DACs, or LICs with solar and battery energy storage.
9. Minimize gentrification-induced displacement from new EV charging infrastructure.	• Documentation from project applicants describing how they will mitigate potential gentrification-induced displacement resulting from the project. • Letters of support from community leaders from Justice40 communities, DACs, or LICs impacted by the project. • Community transportation needs assessments developed with community	• Limited focus on displacement and gentrification effects in project applications. • No or few letters of support from community leaders or members. • Community transportation needs assessment not identified within project applications.

Benefits Category (i.e., goals)	Metrics	Baseline
	input that identify fast charging as a transportation need within the community.	
10. Increasing wealth for Justice40 and California-designated DACs or LIC.	• Portion of NEVI investments in or benefitting Justice40 communities, DACs or LICs, California tribes, or rural areas. • Number of contracts and dollar value awarded to small businesses and businesses that are principally owned by women, BIPOC, disabled veterans, and/or LGBTQIA+ persons.	• Portfolio of charging infrastructure investments for targeted Justice40 communities, DACs, LICs, California tribes, and rural communities within the last five years. • No emphasis on contracts with small business that are principally owned by women, BIPOC, disabled veterans, and/or LGBTQIA+ persons.

Labor and Workforce Considerations

The CEC and Caltrans continue to advance labor and workforce discussions to deliver on NEVI objectives of supporting EV charger installation and maintenance with a trained, experienced, and diverse workforce. During the past year, the state continues to engage with industry, labor, and training partners to not only ensure that the workforce installing, maintaining, and operating chargers has appropriate licenses, certifications, and trainings in compliance with 23 CFR 680.106(j), but that this workforce grows over time to meet NEVI and other EV charger deployment goals in the state.

The CEC is developing a potential partnership with the California Employment Training Panel (ETP) to increase the number of EVITP-trained and certified electricians in the state. The ETP is a state agency that provides training through a pay-for-performance methodology that advances high road economic principles while providing skills training for industry and job specific work such as EV charger installation and maintenance. The ETP will use CEC funding to offer training for journey-level electricians and C-10 licensed electricians to become EVITP trained and certified. Outreach and engagement for this training will be conducted in rural communities, Justice40 communities, DACs, and LICs.

California's first NEVI Plan described how potential state budget resources through the California Workforce Development Board (CWDB) could be leveraged upon budget approval by the state Legislature and the Governor. These budget resources have been approved and will provide funding and support for high road training partnerships (HRTP) that could be used for EV charger construction, installation, and maintenance. The CEC is working with the CWDB to ensure that training partnerships related to EV charging are eligible for HRTP funding and grants.

To further ensure diversity, licensure, and certification of electricians, the CEC is working with the California State Licensing Board, which approves C-10 licensees, the classification eligible for the installation of EV chargers and EVITP training. The State Licensing Board provides industry bulletins to C-10 licensed electricians regarding new developments, training, and business opportunities. The CEC, working with the State Licensing Board, will post periodic industry bulletins regarding the availability of EVITP training and certification for NEVI-related work.

The CEC has conducted public workshops, meetings, and discussions with EVITP, qualified technicians, and EV charger companies to better understand advancements in charger technologies, workforce impacts, and EVITP training since submission of the 2022 NEVI Plan. California's electricians are trained on EVITP 4.0 curriculum, which is currently going through a revision and update to EVITP 5.0 that will keep pace with industry and market changes and the need to upskill electricians in the classroom and in the field. EVITP indicates that the new curriculum and training will be released in late 2023 and the CEC will encourage C-10 licensed electricians to be trained in the latest version curriculum.

California's NEVI agencies will include compliance, verification, and validation of all licensed trades, crafts, and contractors performing work under NEVI. These labor and workforce requirements will require specific documentation (e.g., contractor's license number, EVITP certification number, etc.) in solicitation responses. The agreements for NEVI projects will also specify ongoing documentation as well as data collection that validate compliance with all licensing requirements; ensure all businesses, electricians, or tradespeople are in good standing; and identify any incidences related to labor violations.

In September 2022, Governor Newsom signed Senate Bill 674 (Durazo, Chapter 875, Statutes of 2022) that established the High Road Jobs in Transportation-Related Public Contracts and Grants Pilot Program into law. The law requires the Department of General Services or Caltrans to incorporate high road job standards into covered public contracts, as defined, for the acquisition of zero-emission transit vehicles or EVSE valued at $10 million or more. The law also specifies the Department of General Services, with Caltrans and the Labor and Workforce Development Agency, develop policies, procedures, and requirements that effectuate high road provisions in the State Contracting Manual. Further, affected contractors are to submit annual reports that demonstrate compliance implementing these requirements. The law also specifies that the public agency that awarded the contract shall impose penalties for non-compliance in reporting. Once these labor policies and requirements are completed, the CEC and Caltrans will evaluate how the provisions of this law will be incorporated into contracting and procurement processes under the NEVI Formula Program.

Also in September 2022, Governor Newsom signed Assembly Bill 2974 (Committee on Jobs, Economic Development, and the Economy, Chapter 600, Statutes of 2022), which establishes a goal that state agencies achieve 25 percent small business participation in contracts for the construction, repair, or improvement of the state's infrastructure that is funded with proceeds from the Infrastructure Investment and Jobs Act.

Physical Security & Cybersecurity

In September 2018, former Governor Jerry Brown signed Senate Bill 327 (Jackson, Chapter 886, Statutes of 2018) which put into law the nation's first information privacy law, specifically pertaining to connected devices. Connected devices often contain vulnerabilities and are a target for cyberattacks. The law requires a "manufacturer of a connected device to equip the device with a reasonable security feature or features that are appropriate to the nature and function of the device." Additionally, any information the device may collect, contain, or transmit must be protected from unauthorized access, destruction, use, modification, or disclosure.

EV chargers provide direct connections to the vehicle's onboard system and the EV charging service provider's network, and indirectly to the driver's smart phone if the charge is paid for with an app, banking information if a debit or credit card is utilized, telecommunications provider, and the electric grid.

In April 2022, the National Renewable Energy Laboratory and members of the EV industry performed testing of SAE International's Public Key Infrastructure Design Platform. Public key infrastructure is a method for encrypting information exchange and certifying the authenticity of devices to help ensure digital trust between vehicles and charging stations.[48] Although additional testing is needed, the demonstration indicated that the public key infrastructure platform could improve security of communications between vehicles and EV charging equipment. EV charging equipment will be required to conform with the NEVI minimum standards for physical security and cybersecurity until additional measures are commercially available.

Program Evaluation

California has multiple tools for evaluating program effectiveness, monitoring charger deployment, and assessing charger needs. To evaluate program effectiveness, California currently monitors and reports progress of EV charging infrastructure through the Zero-Emission Vehicle Infrastructure Plan (ZIP). The CEC published its initial ZIP in 2022 and plans to update it biennially.[49] The ZIP includes updates on ZEV infrastructure and funding. The CEC also publishes an annual investment plan for the CTP, which includes program evaluation to guide future investments.

To assess charger needs, the CEC publishes biennial assessments, which include discussions of current charging infrastructure.[50] The CTP requires an annual investment plan, which includes updates on progress towards the state's goals. To monitor charger deployment, the CEC publishes a count of EV chargers and EV deployment in California and updates it quarterly.[51]

All of these mechanisms include public workshops, drafts, or opportunities to comment, and all will assist the state in monitoring and reporting progress on the EV AFC network. The required annual updates to the Deployment Plan will be used as further opportunities to evaluate and report progress. In preparing each year's NEVI Plan, California will include updates on the status of charging infrastructure in general, and projects supported with NEVI funding in particular. Finally, CEC agreement managers will track progress on NEVI projects through monthly calls, quarterly reports, invoice reviews, and critical project reviews with awardees.

Both successful and unsuccessful applications will be reviewed, and lessons learned will be incorporated into future solicitations and agreements in an effort to continually look for opportunities to improve California's NEVI Plan.

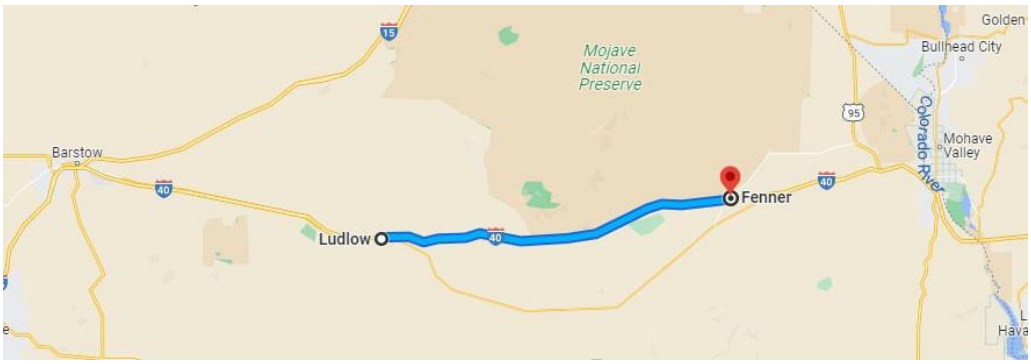
---

[48] O'Neill, C. (2022, April 29). *Electric Vehicle Manufacturers Mobilize Behind Charging Cybersecurity at NREL*. National Renewable Energy Laboratory.
[49] California Energy Commission. (2022, April 14). *Draft Zero-Emission Vehicle Infrastructure Plan.*
[50] California Energy Commission. *Electric Vehicle Charging Infrastructure Assessment – Assembly Bill 2127*.
[51] California Energy Commission. *Electric Vehicle Chargers in California*.

Discretionary Exceptions

In December 2022, California requested an exception to the NEVI Formula Program's requirement that charging stations be no more than 50 miles apart. California's request was for the section of Interstate 40 between Ludlow and Fenner (Figure 17). This request is pending approval from the FHWA.

Figure 17: Ludlow to Fenner Along Interstate 40



Source: Google Maps

Interstate 40 is designated "Corridor-Pending" for EV charging for the entire corridor in California. This 144-mile corridor has existing sites that potentially meet NEVI criteria in Barstow, Fenner, and Needles (Figure 18).

Figure 18: Corridor With Potential NEVI-compliant and Upgradable EV Charging Stations

Source: AFDC Alternative Fueling Station Locator

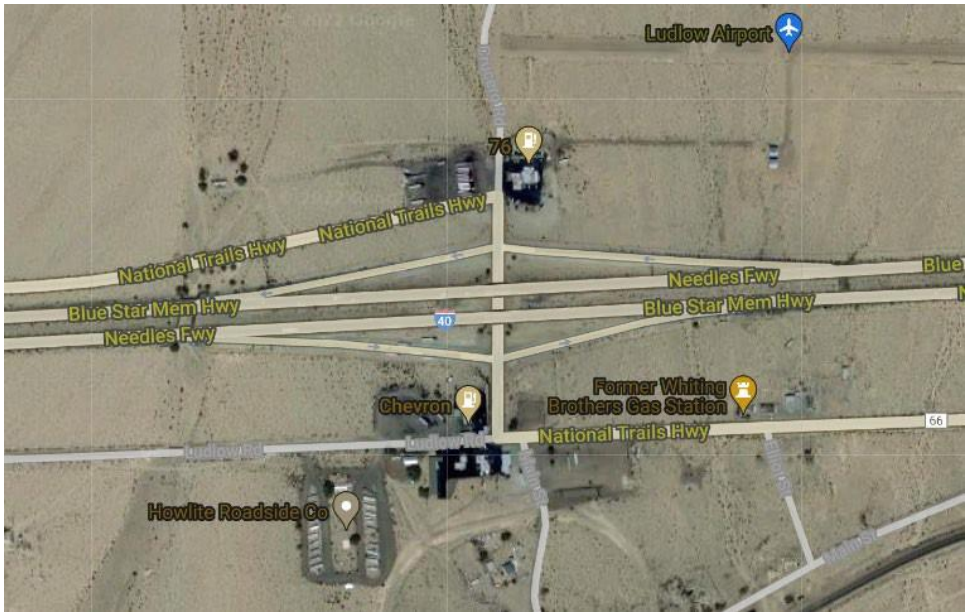
Two sites are needed between Barstow and Fenner to satisfy the NEVI requirement that stations are no farther than 50 miles apart. However, there is a 59-mile segment between Ludlow and Fenner with no existing amenities within one mile of the corridor. The entire corridor is mostly rural with few surrounding towns and cities and primarily serves as a connecting route to and from Arizona (Figure 19). The entire corridor is located within both California-designated DACs and LICs and Justice40-designated communities.

Figure 19: Ludlow to Fenner

Source: Google Maps

Ludlow has two existing gas stations that may potentially host NEVI stations (Figure 20); a more detailed site analysis is needed to determine if these sites have sufficient power to host a DC fast charging station. Deployment of charging stations at these potential locations will also require site host interest. At this time, however, California assumes that a NEVI-compliant site will be built in Ludlow.

Figure 20: Potential Charging Station Sites in Ludlow



Source: Google Maps

Assuming a site can be successfully built in Ludlow, there will still be a 59-mile stretch between stations in Ludlow and Fenner. There are only two highway exits between Ludlow and Fenner, at Kelbaker Road and Essex Road. However, these exits have no amenities available within one mile of the exits (Figures 21 and 22).

Figure 21: Kelbaker Road at Interstate 40

Source: Google Maps

Figure 22: Essex Road at Interstate 40

Source: Google Maps

Deploying a NEVI-site at either Kelbaker Road or Essex Road between Ludlow and Fenner would require development of a new site since there are no amenities at either exit. Since there are no other exits in that stretch, it is unlikely there would be any other suitable locations to build a NEVI-site. Attempting to deploy a NEVI-site between Ludlow and Fenner at either the Kelbaker Road or Essex Road exits is likely to pose extraordinary costs to build and operate a station in a location with no existing amenities. This could involve major electrical upgrades to deliver sufficient power to support a charging station. If a NEVI-eligible station is deployed in Ludlow, approval of the requested exception will allow the corridor to meet the goals and objectives of NEVI funding with a nine-mile deviation from NEVI requirements.