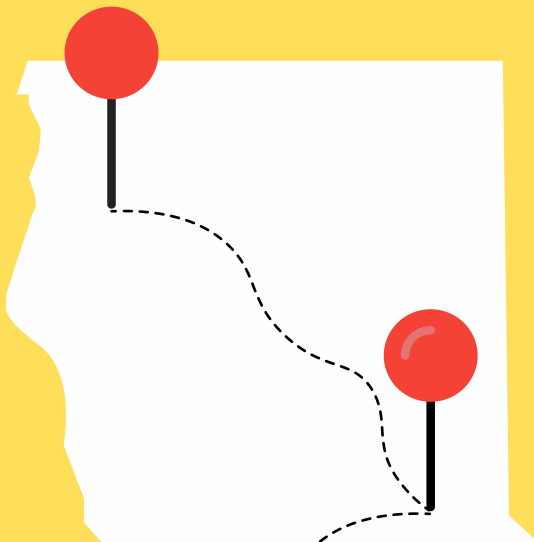
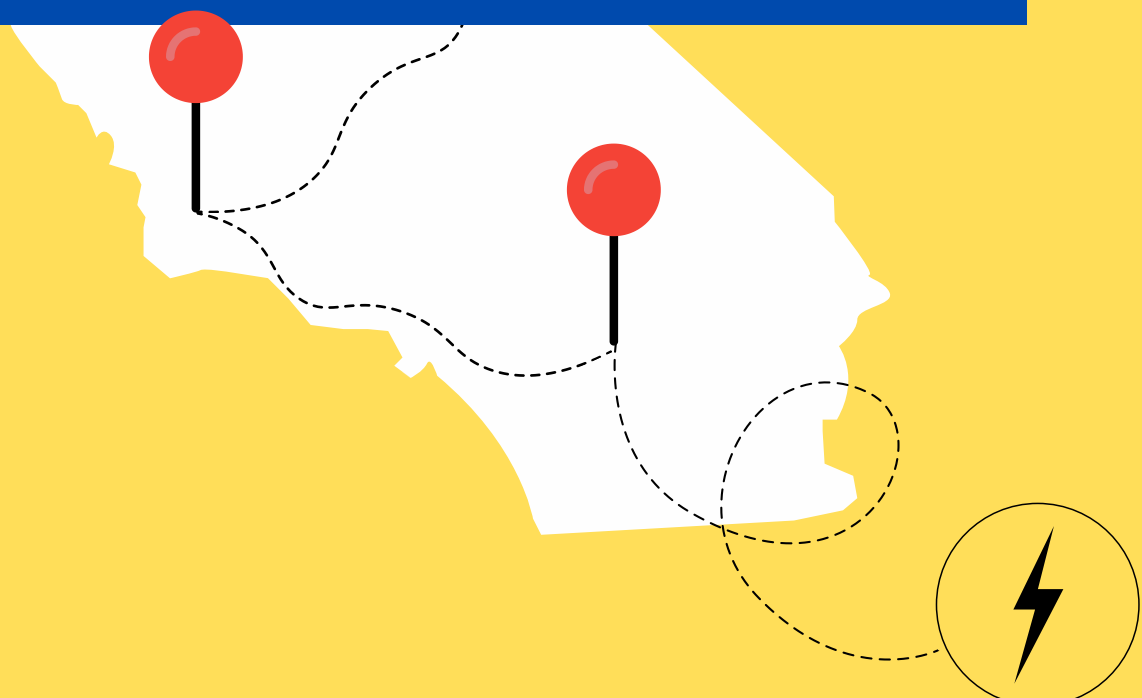


<b>DOCKETED</b>	
<b>Docket Number:</b>	22-EVI-03
<b>Project Title:</b>	National Electric Vehicle Infrastructure Deployment Plan Development, 2022-26 for CEC and Caltrans
<b>TN #:</b>	244314
<b>Document Title:</b>	2022 California National Electric Vehicle Infrastructure (NEVI) Deployment Plan
<b>Description:</b>	<p>*** This Document supersedes TN# 244274 *** -</p> <p>Edits:</p> <p>Page 29 - Error! Reference source not found, Figure 3.</p> <p>Page 34 - Error! Reference source not found, Figure 4.</p> <p>Page 36 - Error! Reference source not found, Figure 5.</p> <p>Page 38 - Error! Reference source not found, blank.</p> <p>Page 48 - Error! Reference source not found, Figure 6.</p> <p>Page 50 - Table 2 Error! Reference source not found, blank.</p>
<b>Filer:</b>	Spencer Kelley
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	8/4/2022 3:53:25 PM
<b>Docketed Date:</b>	8/4/2022



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



PREPARED BY



**CALIFORNIA**  
ENERGY COMMISSION

# California Department of Transportation California Energy Commission

## Primary Authors & Contributors

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

## Project Managers

Tracey D'Aoust Roberts  
**California Department of Transportation**

Dustin Schell  
**California Energy Commission**

## Coordinating Lead Authors

Barby Valentine  
**Zero-Emission Vehicle Hub Manager**  
**Director's Office of Sustainability**  
**California Department of Transportation**

Tony Dang  
**Deputy Director for Sustainability**  
**California Department of Transportation**

Mark Wenzel  
**Branch Manager**  
**Light-Duty Electric Vehicle Infrastructure and Analysis Branch**  
**California Energy Commission**

Hannon Rasool  
**Director of Fuels and Transportation Division**  
**California Energy Commission**

# California’s Plan for Electric Vehicle Infrastructure Deployment

## Table of Contents

- California's Plan for Electric Vehicle Infrastructure Deployment ..... 2
  - Table of Contents..... 2
  - List of Tables ..... 3
  - List of Figures ..... 3
- Abbreviations & Terms..... 4
- Introduction..... 5
  - Dates of State Plan for Electric Vehicle Infrastructure Deployment Development and Adoption..... 7
  - State Agency Coordination ..... 8
  - Public Engagement ..... 9
    - Stakeholders Involved in Plan Development ..... 10
    - Public Outreach..... 13
- Plan Vision and Goals ..... 14
  - Seamless Travel ..... 17
  - Equity ..... 17
  - Reliability..... 17
  - Buildout ..... 17
- Contracting ..... 18
- Existing and Future Conditions Analysis ..... 19
  - State Geography, Terrain, Climate and Land Use Patterns..... 19
  - State Travel Patterns, Public Transportation Needs, Freight and Other Supply Chain Needs ..... 22
  - AFC - Corridor Networks ..... 25
  - Round 6 Designations – EV Corridor Pending..... 27
  - Rounds 1 -5 Designations – EV Corridor Pending Corridors ..... 27
  - Rounds 1-5 Designations – EV Corridor Ready Corridors ..... 28
  - Existing Locations of Charging Infrastructure Along AFCs..... 29
  - Known Risks and Challenges ..... 31
- EV Charging Infrastructure Deployment ..... 33
  - Funding Sources..... 33

2022 Infrastructure Deployments/Upgrades.....	34
Fiscal Year 2023-26 Infrastructure Deployments.....	40
State, Regional, and Local Policy .....	40
Implementation.....	41
Strategies for EVSE Operations & Maintenance .....	41
Strategies for Identifying Electric Vehicle Charger Service Providers and Station Owners.....	42
Strategies for EVSE Data Collection & Sharing.....	43
Strategies to Address Resilience, Emergency Evacuation, Snow Removal/Seasonal Needs .....	43
Strategies to Promote Strong Labor, Safety, Training, and Installation Standards .....	44
Civil Rights .....	45
Equity Considerations .....	46
Identification and Outreach to Disadvantaged Communities (DACs) in the State..	47
Process to Identify, Quantify, and Measure Benefits to DACs Through this Plan .....	49
Labor and Workforce Considerations .....	50
Cybersecurity .....	52
Program Evaluation .....	53
Discretionary Exceptions.....	54
Appendix A: National Environmental Policy Act (NEPA) Documents.....	54

## List of Tables

Table 1: Key Milestones for California's NEVI Deployment Plan .....	7
Table 2: Rounds 1 – 6 Alternative Fuel Corridors (AFC) for Electricity .....	38

## List of Figures

Figure 1: Excerpt from the California Legislative Analyst's Office's Climate Change Impacts Across California – Crosscutting Issues .....	22
Figure 2: Designated and Round 6 Alternative Fuel Corridors for Electric Vehicles.....	26
Figure 3: Alternative Fuel Corridors and Existing Public DCFC and Level 2 Chargers in California .....	30
Figure 4: Existing DCFC Along Alternative Fuel Corridors.....	35
Figure 5: NEVI Built-Out Corridors and Gaps.....	36
Figure 6: Disadvantaged and Low-Income Communities and Federally Recognized Tribal Lands.....	48

# Abbreviations & Terms

Abbreviation	Term
AFC	Alternative Fuel Corridor
AFDC	Alternative Fuels Data Center
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CEC	California Energy Commission
CFAC	California Freight Advisory Committee
CPUC	California Public Utilities Commission
CTC	California Transportation Commission
CWDB	California Workforce Development Board
DACAG	Disadvantaged Communities Advisory Group for CEC and CPUC
DCFC	Direct Current Fast Chargers
Deployment Plan	Electric Vehicle Infrastructure Deployment Plan
ETP	Employment Training Panel
EV	Electric Vehicle
EVITP	Electric Vehicle Infrastructure Training Program
EVSE	Electric Vehicle Supply Equipment
GFO	Grant-Funding Opportunity
GO-Biz	Governor's Office of Business and Economic Development
HRCC	High Road Construction Careers
HRTP	High Road Training Partnerships
ICT	Innovative Clean Transit
IIJA	Infrastructure Investment and Jobs Act
IOU	Investor-Owned Utility
Joint Office	Joint Office of Energy and Transportation a partnership between the United States Department of Transportation and United States Department of Energy

Abbreviation	Term
NAAC	Native American Advisory Committee
NEVI	National Electric Vehicle Infrastructure Formula Program
NREL	National Renewable Energy Laboratory
O&M	Operations and Maintenance
OJT	On-the-Job Training
PKI	Public Key Infrastructure
SAE	Society for Automotive Engineers
VMT	Vehicle Miles Traveled
ZEV	Zero Emission Vehicles
ZIP	ZEV Infrastructure Plan

## Introduction

California is committed to reducing emissions from the transportation sector by increasing the adoption of zero-emission vehicles (ZEVs). Through legislation, regulatory action, and Executive Orders, California is making the transition across market segments ranging from passenger cars to heavy-duty trucks. To support widespread adoption of electric vehicles (EV), 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 and 157,000 chargers for medium- and heavy-duty vehicles. The light-duty target includes public chargers that are available at parks, shopping centers, hotels, public buildings, etc., and shared private electric vehicle chargers, such as those at workplaces and multi-unit dwellings.

California's progress and strategy to achieve these goals is described in more detail in the draft ZEV Infrastructure Plan (ZIP). The ZIP describes public funding of more than \$194 million committed to medium- and heavy-duty ZEV infrastructure and more than \$109 million invested in light-duty EV charging. Current and proposed investments, including National Electric Vehicle Infrastructure (NEVI) funding, are expected to total about \$3 billion over five years. NEVI funding is proposed to be deployed as part of an integrated and holistic strategy that will include investments in light-, medium-, and heavy-duty vehicles, and both EV charging and hydrogen fueling.

Readily available EV charging infrastructure is a key component to the adoption of EVs. EV drivers, especially those with access to only one vehicle, need to be able to drive to the same places they drove to in gasoline or diesel-powered vehicles. Access to EV chargers needs to be available to all drivers, including those in disadvantaged, low-income, Tribal, and rural communities. EV adoption is growing rapidly and charging

infrastructure needs to meet the demand. Otherwise, adoption of EVs will be disproportionate across population segments.

On November 15, 2021, President Joe Biden signed the Infrastructure Investment and Jobs Act (IIJA), which included significant formula and discretionary grant funding to advance ZEV infrastructure deployment. California's share from the NEVI Formula Program is estimated at \$384 million over five years. California agencies and communities are expected to be eligible to apply for additional funding as part of the \$2.5 billion discretionary Charging and Fueling Infrastructure grant program administered by the Federal Highway Administration.

The purpose of the NEVI Formula Program is to “provide funding to States to strategically deploy EV charging infrastructure and to establish an interconnected network to facilitate data collection, access, and reliability.” This goal will be met through the creation of a convenient, affordable, reliable, and equitable network of chargers throughout the country. NEVI funding will provide charging infrastructure along some of the busiest interstates in California, as well as rural state routes. The funding will not only facilitate the travel of electric vehicle drivers within California but will also provide for ease of travel to the neighboring states of Arizona, Nevada, and Oregon.

In February 2022, the newly created Joint Office of Energy and Transportation, a partnership between the United States Department of Transportation and United States Department of Energy, developed and issued NEVI formula program guidelines and guidance for the development of the Electric Vehicle Infrastructure Deployment Plans. These guidelines provide each state with the flexibility to develop a plan for NEVI funds that meets the needs and goals of the state.

To maximize NEVI investments and benefits to travelers, California's initial deployment plan includes ongoing engagement and outreach efforts to shape the continued development and refinement of plan elements. The initial deployment plan will focus on investments in light-duty vehicle charging infrastructure and will consider projects that can also accommodate medium- and heavy-duty charging infrastructure. Subsequent plans will reevaluate NEVI investments across segments and will continue to evaluate the NEVI funding in the context of the broader set of state and federal investments in light-duty, medium-duty, and heavy-duty vehicle infrastructure.

Deployment of NEVI-funded infrastructure will build on the existing infrastructure along California's Alternative Fuel Corridors (AFC) by filling gaps in the AFC network and upgrading existing sites to meet the latest AFC criteria to achieve “fully built-out” status. California may nominate additional routes for AFC designation, with consideration given to rural locations and historically disadvantaged and low-income communities where private investment in electric vehicle supply equipment (EVSE) is lacking. Additionally, emphasis will be placed on the deployment of EVSE along the highways and routes that lead to national parks and forests within the state, as well as many state parks, forests, and beaches.

The deployment plan will be updated each year to reflect progress of the previous year, identify new challenges and opportunities, highlight future deployment plans, and



ensure alignment with California's EV charging infrastructure planning efforts, such as the state's ZIP. California is committed to reviewing the outcomes from the deployment plan to determine best practices, ensure that the plan meets the program guidelines, and to confirm that the plan is accomplishing the state's goals for a connected network of EV chargers.

## Dates of State Plan for Electric Vehicle Infrastructure Deployment Development and Adoption

The development of California's deployment plan is a coordinated effort between the California Department of Transportation (Caltrans) and the California Energy Commission (CEC). Final state approval and adoption will be jointly authorized by the:

- Caltrans Director
- California State Transportation Agency (CalSTA) Secretary
- California Energy Commission Lead Commissioner for Transportation

Table 1: Key Milestones for California's NEVI Deployment Plan

Anticipated Date	Milestone
February - May 2022	Initial Draft Preparation & Stakeholder Engagement
June 2022	Internal, State Agency, and Stakeholder Review
Early July 2022	Final Deployment Plan Completed
Late July 2022	Approval and Adoption of Deployment Plan
August 2022	Submittal of Deployment Plan to the Federal Highway Administration
Late September 2022	Approval by the Federal Highway Administration
Qtr. 4 2022	Pre-Solicitation Workshops & Solicitation Development
Qtr. 4 2022	Continued Engagement with Stakeholders and Communities, including Tribal Governments
Qtr. 4 2022 – Qtr. 1 2023	Publish Solicitation
Qtr. 1 2023	Application Scoring and Review
Qtr. 2 2023	Preparation of Contractual Agreements for Deployment of Charging Infrastructure
Qtr. 2 – Qtr. 3 2023	Execution of Contractual Agreements and Commencement of Projects

## State Agency Coordination

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

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

To help meet these targets, Governor Newsom tasked the Governor's Office of Business and Economic Development (GO-Biz) to collaborate with other agencies and partners to direct the development of the Administration's ZEV Market Development Strategy (ZEV Strategy).<sup>1</sup> The ZEV Strategy outlines the roles of state agencies in building and incentivizing the ZEV market and presents each agency's objectives. Each year, each agency submits an action plan to GO-Biz which describes the agency's actions, priorities, and equity strategies to support the ZEV Strategy.

Collaboration between Caltrans and the CEC in the development of California's deployment plan was based upon each agency's core responsibilities, as well as those outlined in the ZEV Strategy. Caltrans manages more than 50,000 miles of California's highway and freeway lanes that serve those who walk, bike, drive, or use transit, and plays a supporting role in the ZEV Strategy. The CEC is California's lead agency for zero-emission infrastructure and funds projects to accelerate ZEV infrastructure rollout and improve equity. NEVI funding will complement CEC funding as part of an integrated strategy for infrastructure deployment. The CEC evaluates charging needs to support California's plug-in EV goals and analyzes grid integration, energy resilience, EVSE equipment standards, and funding needs to accommodate the growing ZEV infrastructure charging market.

In addition to responsibilities outlined in the ZEV Strategy, the California Air Resources Board (CARB), GO-Biz, and the California Public Utilities Commission (CPUC) provided input and guidance during the development of the initial deployment plan. These state agencies are each responsible for components essential to a sustainable, connected network of EV chargers and EV adoption

To maximize opportunities to utilize U.S.-made EV supply equipment, these state agencies also worked together to identify EV charger manufacturers that sell, manufacture, or operate in California. The effort identified six California manufacturers that manufacture non-proprietary DC fast chargers (DCFC).

---

<sup>1</sup> [https://static.business.ca.gov/wp-content/uploads/2021/02/ZEV\\_Strategy\\_Feb2021.pdf](https://static.business.ca.gov/wp-content/uploads/2021/02/ZEV_Strategy_Feb2021.pdf)

To mitigate supply issues and encourage the utilization of US-made products, the CEC is utilizing state funds to develop funding incentives that expand California's in-state capacity of ZEV related manufacturing. This includes manufacturing EV charging infrastructure, vehicles, and vehicle components such as EV batteries. However, projects to expand manufacturing capacity are labor- and capital-intensive and can take years to complete as manufacturers expand their production lines.

## Public Engagement

Throughout the development of the initial deployment plan, California engaged with a variety of groups, including the public, state and local government agencies, Native American Tribal Governments, industry representatives, environmental advocacy organizations, and representatives of rural and disadvantaged communities. The outreach was accomplished through the CalSTA/Caltrans Infrastructure Investment and Jobs Act Transition to ZEVs Sub-Working Group, informational workshops, presentations at regular state agency meetings, and small group meetings.

California anticipates additional engagement and outreach throughout the first year of the plan to further reach stakeholders and community members. This outreach and engagement will build awareness of California's EV charging infrastructure efforts and the NEVI formula funding. Efforts will also be made to continue to collect information, input, and feedback from community members, partner agencies, and stakeholders about challenges in EV adoption, and the siting, installation, and operation of EV chargers.

The outreach goals include:

- Building awareness and understanding of the deployment plan.
- Engaging communities in the deployment planning process with an emphasis on engaging disadvantaged communities, low-income communities, and rural communities.
- Soliciting meaningful input from stakeholders and local agencies by initiating broad, inclusive conversations and leveraging the expertise of subject matter experts.
- Strengthening relationships with Tribal governments.
- Building support for the adoption of EVs through the deployment of EV charging infrastructure.

To gain additional strategic input and technical guidance to support the continued development of the deployment plan, California will engage stakeholders and partner agency staff with experience in planning, designing, building, operating, and maintaining EV charging infrastructure. Engagement efforts will also be directed toward advocacy groups and stakeholders with a demonstrated interest in the advancement of EVs. The aim is to gather diverse input representing all urban, suburban, and rural geographic areas of the state. Additional effort will be made to include those groups

representing disadvantaged, low-income, Tribal, and rural communities.

The engagement and outreach efforts support the goals and objectives of the NEVI deployment plan by:

- Providing technical and non-technical input to guide the further development of the deployment plan.
- Sharing data and contributing recommendations for additional alternative fuel corridor nominations.
- Contributing to the identification and prioritization of sites for EV charging infrastructure.
- Providing technical and electrical grid-based knowledge of geographic/service areas.
- Advising on data collection, evaluation, and best practices to enhance the deployment plan's technical or contracting requirements.
- Facilitating the development of a statewide plan through the engagement of those who represent a range of socioeconomic, ethnic, cultural, and geographic groups with a cross-section of people of various interests and places of residence.

This additional outreach will enable California to further engage with community-based organizations and those who represent and reside in disadvantaged, low-income, Tribal, and rural communities. The outreach will include more robust conversations with the Tribal governments, as well as those living in rural communities. Due to the size of the state, California will rely on Metropolitan Planning Organizations (MPOs), Regional Transportation Planning Agencies (RTPAs), and state agency liaisons to help with engagement. California will also reach out to groups that promote clean energy and EVs within disadvantaged, low-income, Tribal, and rural communities.

### **Stakeholders Involved in Plan Development**

Shortly after the IIJA was enacted, CalSTA convened the statewide IIJA Transportation Implementation Working Group. The working group was comprised of state and local agencies, the Federal Highway Administration, and other transportation stakeholders, including Tribal governments and the private sector. The goal of the working group was to develop action plans for implementing IIJA programs. From this effort, sub-working groups were formed to facilitate in-depth discussions in specific policy areas.

The Transition to Zero Emissions sub-working group was formed to contribute to the development and implementation of California's deployment plan, determine the need for state legislative changes to implement the plan, and determine how the plan aligns with the state's goals and planning efforts. The first meeting, held on March 1, 2022, included an overview of the IIJA zero-emission provisions and the state's initial thoughts for the program implementation concept. The attendance at this meeting was 103.

The second meeting of the Transition to Zero Emissions sub-working group on April 5,

2022, had attendance of 104. This meeting included a discussion of the role of the NEVI Program in California's EV infrastructure investment landscape, the guiding principles that would lead the deployment plan's development, and a discussion of how the federal administration's Justice40 initiative would be integrated with the data traditionally used by California to define disadvantaged and low-income communities.<sup>2</sup>

The attendance at the third meeting of the Transition to Zero Emissions sub-working group on May 16, 2022, was 217. The meeting included a review of the Round 6 Alternative Fuel Corridors nominations as well as a discussion on the prioritization of corridors. The group also discussed possible siting requirements.

The sub-working group was engaged throughout the development of the plan and many of the attendees followed up with emails and phone calls to both provide input and request information.

Participants in the Transition to Zero Emissions sub-working group included representatives from the industries, agencies, and groups listed below. The organizations shown in **bold** represent disadvantaged communities.

- Business associations
- California Air Resources Board
- California Department of Food & Agriculture
- California Energy Commission
- California Governor's Office of Business and Economic Development
- California High Speed Rail Authority
- California Office of Emergency Services
- California State Transportation Agency
- California Transportation Commission
- Chambers of Commerce
- Communications infrastructure providers
- Community Choice Energy Associations
- **Community-based organizations**
- County governments with existing EV charging programs
- **Disadvantaged Communities Advisory Group**
- Electric utilities
- Energy consultants
- Environmental consultants
- **Environmental justice, equity, and other community advocacy organizations with an interest in EV charging**
- EV advocacy groups
- EV charging infrastructure service/repair companies
- Hydrogen fuel cell manufacturers
- Local air districts
- Metropolitan Planning Organizations
- **Native American Advisory Committee**
- **Non-profit organizations involved with green energy**

---

<sup>2</sup> <https://www.whitehouse.gov/environmentaljustice/justice40/>

- Petroleum fuel manufacturers
- Port authorities
- Private fleet operators
- Private sector EV charging station owners and network operators
- Public transportation agencies and authorities
- Regional Transportation Planning Agencies
- Representatives of California assemblymembers
- Representatives of California senators
- Transportation authorities
- Representatives of the University of California
- Vehicle manufacturers

In addition to the Transition to Zero Emissions sub-working group meetings, representatives from Caltrans and the CEC reached out to organizations and community groups with whom the two organizations engage on an ongoing basis.

California is home to 109 federally recognized Native American tribes with nearly 100 separate reservations or Rancherias.<sup>3</sup> In 1996, the Native American Advisory Committee (NAAC) was established to ensure that Caltrans 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 Indian organizations.

Caltrans met with the NAAC on April 23, 2022, to provide an overview of the NEVI Formula Funding Program and California's NEVI deployment plan concept. Caltrans and the CEC will continue to reach out to the tribes, as many of the Native American Tribes have facilities or own property where there are gaps in EV charging infrastructure. Tribes can play an important role in providing charging infrastructure along California's interstates and rural areas of the state.

The CEC and Caltrans also met several times with members of the Disadvantaged Communities Advisory Group (DACAG). DACAG was formed in 2015 to ensure that disadvantaged communities benefit from proposed clean energy and pollution reduction programs. The group meets throughout the year to review CEC and CPUC clean energy programs and policies. Each member is either from, or represents, a disadvantaged community and the group reflects the diversity of California. During the meetings between DACAG, CEC, and Caltrans, DACAG members asked questions specific to areas of concern within the communities they represent. Employment opportunities and the reduction of harmful emissions from medium- and heavy-duty vehicles were stated as deployment plan outcomes that the group thought would most benefit their communities.

Many of the comments received from stakeholders were incorporated into the deployment plan. The concerns expressed and information provided by stakeholders

---

<sup>3</sup><https://www.courts.ca.gov/3066.htm#:~:text=How%20many%20California%20tribes%20are,lands%20that%20cross%20state%20boundaries>. California Courts – Reviewed 05/04/2022

will also be incorporated into the development of the Grant Funding Opportunity (GFO) and will help to shape elements of the evaluation criteria and contractual obligations.

### **Freight and Goods Movement**

In 2013, Caltrans established the California Freight Advisory Committee (CFAC). The CFAC is a chartered member advisory body representing public and private sector freight stakeholders, including representatives of ports, shippers, carriers, freight-related associations, the freight industry workforce, Caltrans, and local governments. CFAC meets quarterly to participate in the development of the California Freight Mobility Plan and to advise on freight-related priorities, issues, projects, and funding needs.

Extensive and continuous stakeholder outreach is planned for the California Freight Mobility Plan update, which will include 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. During this outreach, Caltrans will have opportunities to engage with this group regarding the deployment plan.

Caltrans is coordinating with the California Transportation Commission (CTC) and a variety of freight industry stakeholders on the CTC's Clean Freight Corridor Efficiency Assessment under Senate Bill (SB) 671. The assessment seeks to identify freight corridors and infrastructure needed to support the deployment of zero-emission medium- and heavy-duty vehicles. The CTC's assessment also considers the potential for emissions-reduction, truck parking facilities, congestion reduction, improved road safety, resiliency, and impacts to neighboring communities. The SB 671 committee meets a minimum of once monthly. In March 2022, the group discussed the need for alignment of the Clean Freight Corridors with California's Alternative Fuel Corridors and the deployment plan. Outreach and engagement with this committee will continue throughout the development of California's deployment plan

During the development of the initial deployment plan, many organizations requested meetings with Caltrans and the CEC to share information and to ask for presentations to be delivered to their organization or group. Because of the time frame for plan development, not all requests for meetings and presentations were met. Caltrans and the CEC will strive to contact these organizations prior to holding pre-solicitation workshops.

The California Energy Commission and the California Transportation Commission are also working with stakeholders to identify optimal locations for medium- and heavy-duty charging infrastructure. These findings may be incorporated into subsequent deployment plans.

### **Public Outreach**

Outreach to the public for the initial plan was in the form of a live/online informational workshop on June 14, 2022, with attendance of 335. The workshop was promoted using contact lists from the CEC and GO-Biz. Additionally, Caltrans reached out to MPOs and RTPAs for their assistance in publicizing the workshop to cities and counties.

The workshop introduced the draft deployment plan and provided an overview of the funding, the guiding principles that led the development of the plan, and the deployment plan concept. The public was invited to comment and submit questions through email. The CEC and Caltrans received and reviewed more than 50 comment letters. Written comments were collected in an online, publicly accessible docket established by the CEC. Public comments were integrated into the final draft of deployment plan. Other comments will be incorporated into the development of the GFO and will help to shape elements of evaluation criteria and contractual obligations.

As indicated above California will continue to engage the public throughout implementation of the plan through public workshops, individual stakeholder meetings, and email communications. This outreach will provide the public with plan information, gauge the effectiveness of the plan's progress, and provide feedback for updates to the plan.

## Plan Vision and Goals

The vision for California's Deployment Plan is that NEVI funding will play an important part in California's comprehensive strategy to ensure ZEV infrastructure will meet the needs of the growing ZEV market. As described in more detail in the draft ZIP, California is developing EV charging and hydrogen fueling infrastructure to increase access and equitable adoption and accelerate the transition away from fossil fuels. Infrastructure will have to serve the needs of light-, medium-, and, heavy-duty vehicles, and both short- and long-distance travel. Within the overall context of California's strategy, we envision that NEVI funding will help connect California's major population centers and increase connectivity and service in rural areas to reduce barriers to EV adoption.

California's ZEV Market Development Strategy includes four pillars: vehicles, infrastructure, end users, and workforce.<sup>4</sup> California's strategy for the infrastructure pillar is outlined in the draft ZIP.<sup>5</sup> The focus of the ZIP is to support the projected ZEV population with charging and fueling infrastructure. The draft ZIP lays out plans to support the development of convenient, accessible, reliable, and equitable EV charging.

California plans to use the estimated \$134 million in formula funding from the first two years of the NEVI Program to primarily provide connectivity for passenger vehicles throughout the state, complementary to state investments. While this first batch of NEVI-funded stations would be designed to serve light-duty vehicles, we will look for ways that station designs can also serve heavier vehicle classes, e.g., with higher-powered chargers or pull-through charging sites. Also, as required by NEVI Guidance, "Station designs should also consider the potential for future expansions

---

<sup>4</sup> <https://business.ca.gov/industries/zero-emission-vehicles/zev-strategy/>

<sup>5</sup> <https://www.energy.ca.gov/sites/default/files/2022-04/CEC-600-2022-054.pdf>



needed to support the electrification and charging demands of medium- and heavy-duty trucks, including station size and power levels.”

California's goals include:

1. Ensuring ZEV infrastructure will meet the needs of the growing ZEV market.  
By 2025:
  - o 250,000 electric vehicle chargers, including 10,000 DCFC<sup>6</sup>By 2030:
  - o 1.2 million chargers, including 37,500 DCFC for light-duty vehicles and 157,000 chargers for medium- and heavy-duty vehicles by 2030.
2. Accelerating deployment and ensuring equitable outcomes.

In future annual deployment plans, California will reassess proposed uses of NEVI funds, including infrastructure that primarily serves light or medium- and heavy-duty vehicles, within the requirements of the NEVI program and in the context of California's overall funding and deployment strategy.

California forecasts the need for a network of approximately 1.2 million public and private-shared chargers for light-duty vehicles and 157,000 chargers for medium- and heavy-duty vehicles by 2030.<sup>7</sup> This is a massive scale up: today there are 79,000 public and shared private chargers for light-duty vehicles. NEVI program funding will supplement state funds to assist California in meeting its ambitious goals. Continued investment in DCFC deployment will be crucial to support long-distance travel, provide quick-opportunity charging, and serve drivers who do not have access to charging at home. Nearly every driver will need DCFC at some point. A robust DCFC network will create the backbone for mass EV adoption within California.

#### California State Funding Context

The CEC's Clean Transportation Program (CTP) provides grant funding for ZEV infrastructure, as well as other clean transportation investments. The CEC publishes an annual Investment Plan, with input from the CTP Advisory Committee and other stakeholders. The most recent final investment plan, included the following CTP investments:<sup>8</sup>

- Fiscal Year 2021-2022 – Total \$842.2 million, including:
  - o \$270.1 million for light-duty EV charging
  - o \$57.0 million for hydrogen fueling
  - o \$391.4 million for medium- and heavy-duty ZEV infrastructure.

---

<sup>6</sup> Executive Order B-48-18 available at <https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/39-B-48-18.pdf>.

<sup>7</sup> <https://efiling.energy.ca.gov/getdocument.aspx?tn=238853>

<sup>8</sup> <https://efiling.energy.ca.gov/GetDocument.aspx?tn=240977>

- Fiscal year 2022-2023 and 2023-2024, the plan allocates:
  - \$43.9 million for light-duty EV charging
  - \$30 million for hydrogen fueling
  - \$298.9 million for medium- and heavy-duty infrastructure.

Through the CTP, the CEC is deploying some of the funding dedicated for medium- and heavy-duty infrastructure through a block grant project known as EnergiIZE.<sup>9</sup> The project will award grant funding for public charging for medium- and heavy-duty vehicles later in 2022. CEC staff are also developing Innovative Charging and Hydrogen Refueling solicitations that will focus on publicly accessible medium- and heavy-duty infrastructure. Analysis and reporting efforts, such as those pursuant to SB 671, SB 643, and Assembly Bill (AB) 2127, will analyze corridors and assess the infrastructure needed to meet California's zero-emission truck, bus, and off-road vehicle goals.

Additionally, through the CTP, the CEC is developing future funding opportunities for light-duty charging include light duty block grants, known as Communities in Charge and CALeVIP 2.0, expected to open funding windows in late 2022 or early 2023, and competitive solicitations targeting specific cases such as multifamily housing.

#### Other Federal Funding Opportunities

In addition to EV charging infrastructure investments and NEVI formula funds, California intends to assess new federal discretionary grant programs that support light- or medium- and heavy-duty EV charging infrastructure and, where feasible, pursue directly or support local and regional agencies and private applicants in preparing competitive applications. Over the life of IIJA, new federal funding programs that support transportation zero-emission vehicle adoption include:

- Charging and Fueling Infrastructure Discretionary Grant Program (\$2.5 billion) - administered by the Federal Highway Administration
- Reduction of Truck Emissions at Port Facilities (\$400 million) - administered by the Federal Highway Administration
- Port Infrastructure Development Program (PIDP) (\$2.25 billion) - administered by the Maritime Administration
- Low No Emission Grants Program for Transit (\$2 billion) - administered by the Federal Transit Administration
- Buses and Bus Facilities Formula and Competitive Grants (\$5.1 billion) - administered by the Federal Transit Administration

---

<sup>9</sup> <https://www.energiize.org/>

## Seamless Travel

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 goals. Funding through the NEVI Formula Program provides necessary support to build out the state's EV corridors to ensure seamless interstate travel for EV drivers and will be complemented by state funding.

Nominations of AFCs in California are a collaboration between local/regional agencies and Caltrans, the CEC, and GOBiz. In establishing the state's AFCs, local agencies coordinated with Caltrans to submit 55 interstates and U.S. Route/state highway corridors in the first six rounds of AFC nomination. In the first two years of AFC nominations, California focused on electric, hydrogen, and compressed natural gas and liquified natural gas. Factors for selecting the corridors included whether they were part of the National Highway Freight Network System and noting routes near ports and intermodal facilities to support implementation of the Sustainable Freight Action Plan. In Rounds 3 to 6, nominations for EV AFCs were driven more by light-duty vehicle needs and infrastructure. Round 6, in particular, nominations focused on expanding access and connectivity to rural areas and corridors serving disadvantaged and low-income communities.

The AFC designations play a key role in expanding infrastructure to enable widespread consumer adoption of ZEVs. Consumers need confidence they can charge and fuel their vehicles in the communities where they live and work and along major routes. The nominations concentrate on corridors that provide an interconnected network across the state, allowing for intra- and interstate travel.

## Equity

Through workshops and outreach, California will ensure equitable and collective decision-making in solicitation design to ensure charger installations are meeting the needs of the communities they serve while providing seamless statewide access.

## Reliability

The solicitation process will enable the state to oversee project progress and maintain requirements stated in NEVI Guidance. Reporting requirements will be essential in this solicitation to ensure chargers in the network are functioning with at least 97 percent uptime and meet corridor travel demand. Additional reliability standards for NEVI-funded projects will conform to any regulations resulting from the proposed rulemaking by the Federal Highway Administration issued on June 22, 2022

## Buildout

California anticipates releasing the first solicitation in late 2022. Based on timelines from previous EV charging installation projects, the first chargers should be operational in the second quarter of 2025, with full buildout completed by 2030.

As EV adoption increases in California and successive deployment plans are established, the state will continue to create a connected network of EV chargers to

enable convenient, accessible, reliable, and equitable EV charging for all EV drivers. The network will facilitate data collection, equitable access, and network reliability.

## Contracting

Through the CTP, the CEC has awarded over \$1 billion in grant funding through competitive solicitations and first-come-first-served projects. In 2015 and 2016, the CEC funded a corridor charging program. The state intends to utilize the CEC's grant solicitation experience to administer funding to the deployment plan projects. Staff from Caltrans and the CEC, in coordination with other state agencies and the public, will determine how the grant solicitation will be structured to best meet the state's goals and needs and align with federal guidance.

The CEC and Caltrans will jointly develop a competitive grant-funding opportunity (GFO) to seek applications for funding to install DCFCs along California's AFCs. The funding opportunity development process will include research, stakeholder meetings, defining the minimum eligibility and technical requirements, holding at least one public workshop, finalizing the GFO, and releasing the GFO. Input from stakeholders will help to establish a solicitation designed to provide a fair and equitable selection of entities bidding for projects. Completed applications will be scored by an evaluation team comprised of staff from both agencies. Completed applications will be scored by an evaluation team with staff from both agencies.

California will invite applicants to submit proposals for segments based on an analysis of gaps in the network, future charger needs, and geography. Due to the size of the state, generally several gap segments will be grouped by geographical proximity to facilitate construction and maintenance of the sites. Specific sites for stations will not be identified. Instead, applicants will be invited to submit proposals for sites that meet performance standards for:

- DCFC power levels.
- Number of chargers.
- Maximum distance between charging stations.

The standards for segments may exceed the NEVI program minimum standards, depending on analysis of locations, traffic, existing electric utility infrastructure, and other factors. The analysis will consider "current and anticipated market demands for EV charging infrastructure, including with regard to power levels and charging speed, and minimizing the time to charge current and anticipated vehicles."<sup>10</sup>

Applicants may propose upgrading existing charging stations or building new charging stations. Upgrading existing stations to meet NEVI requirements may cost less than

---

<sup>10</sup> The National Electric Vehicle Infrastructure (NEVI) Formula Program Guidance. Page 26. <https://driveelectric.gov/technical-assistance/>

building new locations. Additionally, some existing charging stations include “stub-outs” with conduit ready for new installations. Funding new stations and upgrading existing ones may allow for greater deployment and access. The current approach is not to favor one option over another, but instead to evaluate applications based on the established criteria.

Applicants will be responsible for locating sites that meet the requirements defined in the GFO, as well as for negotiating site agreements with each host to secure the site for at least the minimum term defined in the solicitation. The GFO may encourage applicants to utilize small businesses that meet the eligibility requirements as site hosts and may be included in the GFO’s Project Locations evaluation criteria section.

To ensure efficient and effective deployment that aligns with broader goals, segments will be ranked according to funding priority. California expects to provide funding for projects in rank order until funding is exhausted. Each update of the deployment plan will assess completed solicitations and re-evaluate priorities.

To ensure efficient ongoing operations and maintenance activities, the solicitation will define operations and maintenance standards and requirements that will be incorporated into the agreement. For example, applications may include an Outreach and Communication Plan that would detail how the applicant will engage communities where EV charging infrastructure will be installed. More detail on California’s approach is in the “Implementation” section. Also, additional standards for operations and maintenance of NEVI-funded projects will conform to any regulations resulting from the proposed rulemaking by the Federal Highway Administration issued on June 22, 2022.

Efficient and effective deployment will also be emphasized in the evaluation of applications. The CEC and Caltrans will evaluate all qualifying bids equitably. When all applications are evaluated, the highest scoring eligible application for each segment will be proposed for an award. The CEC will develop grant agreement packages with proposed awardees. Each agreement will include a scope of work, budget, schedule of products, and terms and conditions. Agreements will require monthly calls and quarterly project reports to communicate progress and quickly address any issues that may arise. In addition, periodic critical project reviews will gauge progress. Finally, a percentage of the budget will serve as a retention to ensure compliance with all requirements, including operations and maintenance.

## **Existing and Future Conditions Analysis**

### **State Geography, Terrain, Climate and Land Use Patterns**

California is a large state with extreme variations in terrain, climate, and land use patterns. This diversity brings challenges to both providing electrical service and EV

chargers installations. As an example, California experiences extreme heat and extreme cold, both factors that impact vehicle charging times. Also, while California has grid capacity to support an increase in EV chargers, there will be areas where EV chargers are needed, but electricity isn't available. To ensure reliable EV charging throughout California a variety of technologies and innovations will need to be utilized. The sections below illustrate just how different areas of the state are by comparing temperatures, rainfall, populations, etc.

### **State Geography and Terrain**

California is bordered by Oregon to the north, by Nevada and Arizona to the east, by the Mexican state of Baja California to the south, and by the Pacific Ocean to the west. Both the highest and lowest points in the 48 contiguous states are within the state of California—Mount Whitney and Death Valley, respectively.

The heartland of California is the Central Valley, which runs for 450 miles through the center of the state between the Coast Ranges to the west and the Sierra Nevada to the east. The valley is the state's agricultural center. The valley's single opening is the delta through which the Sacramento and San Joaquin rivers drain into San Francisco Bay. The valley is sealed off by the Cascade Range to the northeast and by the Klamath Mountains to the northwest. In the south, the Central Valley is closed off by the Tehachapi Mountains, which are regarded as a dividing wall between southern and central California.

While the terrain in the northwestern part of the state is rugged and heavily forested, most of eastern California is desert. The northeastern corner of the state is made up of barren plains and mountains, as well as a volcanic plateau. In the east-central region is the Trans-Sierra desert, which extends along the sheer east escarpment of the Sierra Nevada range and comprises part of the vast interstate Great Basin.

In the southeast lies the Mojave Desert, which, at more than 25,000 square miles, occupies one-sixth of the land area of California. Its landmarks are broad basins, eroded mountains, and fault blocks. Just south of the Mojave Desert is the lower Colorado Desert, which begins in the Coachella Valley and descends to the Imperial Valley adjacent to the Mexican border. More than 4,000 square miles of the desert lie below sea level, including the 300-square-mile Salton Sea, a lake with no outlet formed in 1905–07 when the nearby Colorado River broke out of its channel.

The Sierra Nevada extends for 430 miles. Aside from Mount Whitney (14,494 feet above sea level), 10 other peaks in the Sierra Nevada exceed 14,000 feet in elevation. East-west passes are few but high; some are found at more than 9,000 feet in elevation. There are three national parks in the Sierra Nevada: Kings Canyon, Sequoia, and Yosemite.

The roughly 1,100-mile-long coastline of California is generally mountainous, although lesser elevations surround the three major natural harbors, in San Diego, San Francisco, and Eureka. Much of the terrain in Southern California is plateaus and valleys along the coast, which turns mountainous then to desert toward the eastern part of the state.

## **Climate**

California's climate varies by geography. The climate of coastal California is often compared to that of the Mediterranean with warm, dry summers and wet, mild winters. Farther inland from the coast, the summers become drier and hotter, and the winters are wet and cold enough for frost to accumulate. Continuing east within the state, the climate changes with the elevation. Summer temperatures in the low-lying Colorado Desert can reach a high of 130 °F, while winter temperatures in the Sierra Nevada drop to freezing and provide the snow melt that feeds Yosemite's spectacular waterfalls. In the mountainous regions there are four seasons, however, the majority of California's climate is marked by two seasons—a wet and a dry. Historically, precipitation ranges from more than 170 inches in the northwest to traces in the southeastern desert. Death Valley, with its lowest point at 282 feet below sea level, is the hottest and driest place in North America with an average annual rainfall of only about 2 inches. Coastal rainfall varies, with an annual precipitation average of about 14 inches in Los Angeles and about 20 inches in San Francisco.

Currently, however, California is in its third year of drought. The first four months of 2022 were the driest on record in California. California's two largest reservoirs are at critically low levels. The modest snowmelt seeped into dry ground instead of running off into streams and rivers that lead to the state's aqueducts and reservoirs.

## **Land Use Patterns**

California's land use patterns are shaped by its geography and climate. The largest population centers are along the coast where the temperature is moderate. Nearly 19 percent of the state's population of over 39 million live in the cities of Los Angeles, San Diego, San Jose, and San Francisco. The population of Los Angeles alone exceeds that of 22 states. In these cities, land use is similar – high rise office buildings and dense housing make up the city center. Just outside of the downtown area are manufacturing facilities, then commercial areas with car dealerships and big box stores, and finally the suburbs. California is working to limit suburban sprawl by providing incentives to those who build high density housing or add an auxiliary dwelling unit (ADU) to their property.

The cities in the middle of the state, although less populated, have similar land use patterns where the suburbs are often surrounded by farms. On the eastern side of the state the population is sparse, as is the development.

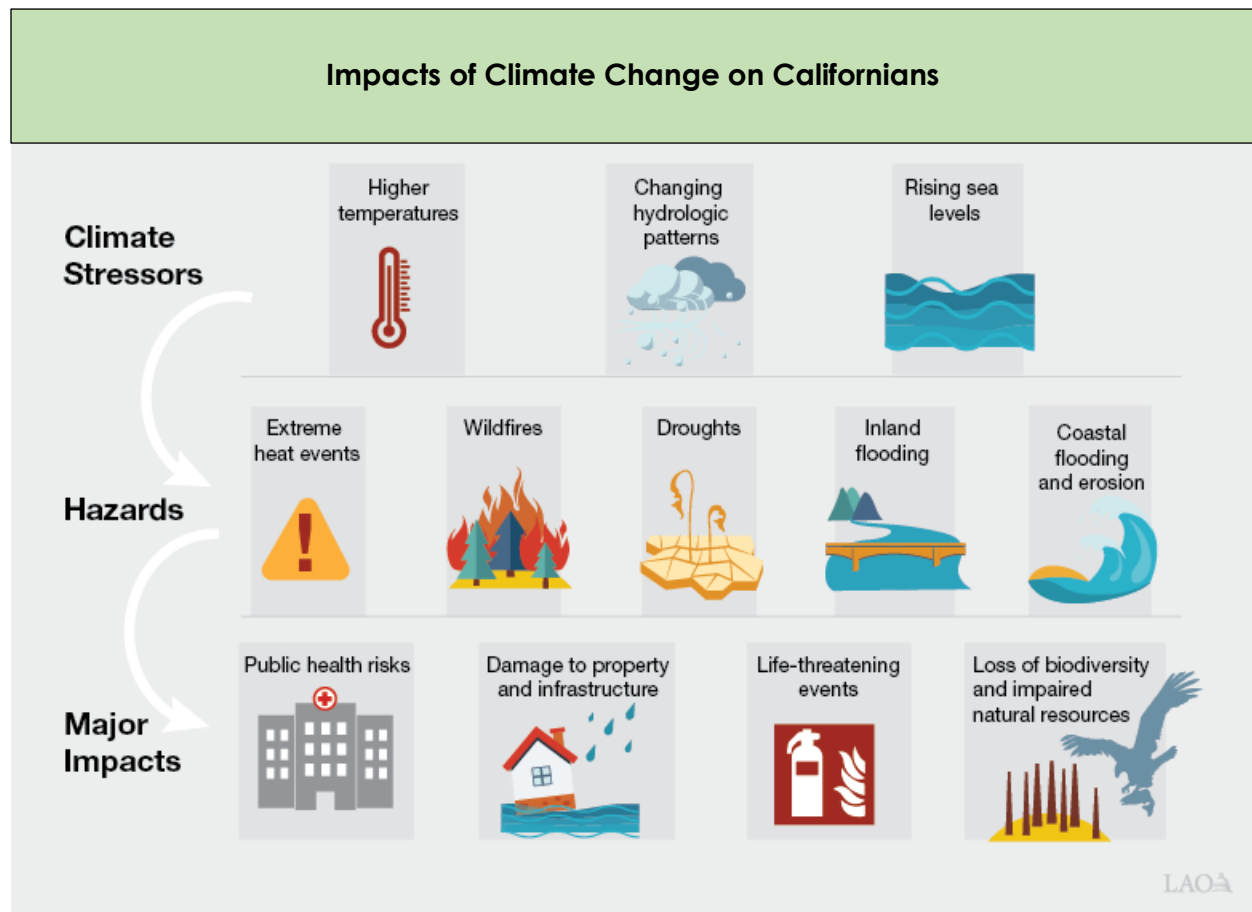
## **Current and Future Environmental Conditions**

California is vulnerable to nearly every climate change stressor and extreme weather threat. Increasing temperatures, more frequent and intense wildfires, heavier rainstorms, extended periods of drought, and rising sea levels and storm surges pose a significant risk to California's natural and human resources and to the state's infrastructure.

The effects of climate change have and will continue to impact the various regions throughout California. For example, increasing temperatures and rising sea-levels will have direct impacts on public health and infrastructure. Drought, coastal and inland flooding, and wildfire will continue to affect people's livelihoods and local economies. Changing weather patterns and more extreme conditions will impact tourism and rural

economies in California, along with changes to agriculture and crops, which are critical to California's economic success. There will also be negative impacts to California's ecosystems, both on land and in the ocean, leading to local extinctions, migrations, and management challenges.

Figure 1: Excerpt from the California Legislative Analyst's Office's *Climate Change Impacts Across California – Crosscutting Issues*



<https://lao.ca.gov/Publications/Report/4575>

## State Travel Patterns, Public Transportation Needs, Freight and Other Supply Chain Needs

### Travel Patterns

People choose travel options based on where they live, where they work, how safe they feel, how far they are traveling, and the cost of each option, among other factors. In 2015 (California's base year for Transportation Planning), Californians used an automobile for 88 percent of all travel in the state. In many communities, the automobile remains the only viable or convenient means of transportation available.



Statewide Vehicle Miles Traveled (VMT) is used to calculate the total annual miles traveled by all vehicles in the state. Between 2001 and 2017, VMT grew by nearly 14 percent—about the same rate as population growth during this period. VMT is expected to increase by 13 percent but could rise by as much as 35 percent if the state experiences the additional growth forecasted by some. Much of the growth will occur in California's most populous regions of the Bay Area and Los Angeles, with the San Joaquin Valley, Sacramento region, and Inland Empire also experiencing a significant increase due to high population growth estimates, and relatively fewer non-auto options.<sup>11</sup>

In 2021, over 250,00 electric vehicles were sold in California, bringing the total number of electric vehicles sold in California to over 1 million.<sup>12</sup> Sales are anticipated to continue at this pace in California if vehicles are available for purchase. While much will change over the coming decades, Californians will still be driving, and driving will remain the dominant mode of transportation. Non-auto mode share, primarily biking, walking, and transit, is projected to increase only one percentage point between 2015 and 2050.<sup>13</sup> Most of the shift will be due to people switching from driving to walking, with transit and biking experiencing minimal increases. In order to reach its climate goals, California must continue to advance clean fuel technologies, including ZEV technology and supportive infrastructure.

### **Public Transportation Needs**

The CARB's Innovative Clean Transit (ICT) regulation requires all public transit agencies to gradually transition to a 100-percent zero-emission bus fleet. Under the ICT regulation, zero-emission bus purchase requirements will begin to apply to transit agencies in 2023. Beginning January 1, 2023, 25% of new bus purchases by large transit agencies each calendar year must be zero-emission buses. The purchase requirement will increase over the course of the decade and will begin to apply to small transit agencies beginning in 2026. As of the end of 2020, 8,761 transit buses were in service in California.<sup>14</sup>

Electric vehicle charging for public transportation fleets will require a great deal of power. Upgrades to substations, microgrids, and general infrastructure improvements will be needed to provide the necessary charging capabilities. In addition to providing charging for the transit fleet, transit stations should include multi-modal charging stations that allow for a variety of charging levels for transit users' electric vehicles, bicycles, and scooters.

---

<sup>11</sup><https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf>

<sup>12</sup> <https://www.veloz.org/california-first-u-s-state-to-hit-1-million-evs-sold/>

<sup>13</sup> <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf>

<sup>14</sup><https://www.transit.dot.gov/nfd/data-product/2020-vehicles>

## Freight and Other Supply Chain Needs

As of January 1, 2022, there were 645,045 medium- and heavy-duty trucks registered and/or based in California. There are nearly 2.1 million additional heavy-duty trucks that travel throughout California but are based in other jurisdictions and registered under the International Registration Plan. The owners of trucks based outside California pay prorated (apportioned) fees based on the percentage of highway mileage traveled in each state.

Freight transportation is a highly competitive business, and the availability and reliability of charging infrastructure to support freight vehicles will be crucial to electrification efforts in the medium- and heavy-duty vehicle sectors. Electric batteries are heavier and take up more of the total allowable weight of a vehicle, so fleets may need additional zero-emission vehicles to transport the same volume of goods. Also, until technology develops further, freight operators may need to stop to charge more frequently than they previously stopped to re-fuel their vehicles.

CARB is developing Advanced Clean Fleets, a medium and heavy-duty zero-emission fleet regulation, with the goal of achieving a zero-emission truck and bus California fleet by 2045 everywhere feasible and earlier for certain market segments such as last mile delivery and drayage applications. The initial focus will be on high-priority fleets with vehicles that are suitable for early electrification, their subhaulers, and the entities that hire them. The goal of this effort is to accelerate the number of medium and heavy-duty zero-emission vehicle purchases to achieve a full transition to zero-emission vehicles in California as soon as possible.

Freight transporters face the ongoing need and challenges of a short supply of truck parking within the state and throughout the nation. According to Caltrans' recently released California Statewide Truck Parking Study which identified where additional truck parking is needed, there is a statewide deficit of 3,404 truck parking spaces during peak demand hours.<sup>15</sup> California will be challenged to simultaneously build out its truck parking supply to meet demand while building a network of EV chargers for large vehicles. A CEC analysis completed in support of the state's climate and air quality goals under Executive Order N-79-20 concluded that California could have as many as 180,000 zero-emission medium-duty and heavy-duty trucks on the roadways by 2030.<sup>16</sup> To prepare for these trucks, the California Statewide Truck Parking Study also includes design considerations to support EV charging and fueling strategies from the outset of private or public truck parking lot construction.

Additionally, in some parts of rural California there is limited access to adequate electrical infrastructure needed to establish charging facilities for medium- and heavy-duty vehicles. One strategy to address the lack of electrical infrastructure in rural areas is including solar infrastructure in the design of the facility. On-site solar generation and

---

<sup>15</sup> Caltrans. California Statewide Truck Parking Study. Retrieved from <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/freight-planning/plan-accordion/catrpkpgstdy-finalreport-a11y.pdf>

<sup>16</sup> California Energy Commission (2021). Assembly Bill 217 Electric Vehicle Charging Infrastructure Assessment Analyzing Charging Needs to Support ZEVs in 2030.

stationary battery storage provide an opportunity for additional energy production at parking areas, with the ability to lessen demands on the grid. There are current projects testing the deployment of solar panels to support EVSE to support zero-emission trucks.<sup>17</sup> The first solar-powered truck stop in the United States for heavy-duty electric trucks is expected to open late October 2022 in Bakersfield, California.<sup>18</sup>

## AFC - Corridor Networks

A total of 17 California corridors received Corridor-Pending EV Alternative Fuel Corridor designations in the 2022 Round 6 Request for Nominations. California continues to make significant progress building critical infrastructure along Interstates and State Routes. Nomination of these routes will allow for future expansion to increase clean transportation in support of air quality and climate goals.

California's success to date, and future plans to further develop the state's zero-emission vehicle infrastructure, rely on a robust and diverse network of stakeholders. Caltrans coordinated the nominations with Metropolitan Planning Organizations, Rural Transportation Planning Agencies, and local city and county governments throughout the state. The Governor's Office of Business and Economic Development also reached out for input from the Clean Cities Coalitions.

The Round 6 nominations placed emphasis on the rural, disadvantaged, and tribal areas within California. Nearly all the AFC corridors are in or adjacent to disadvantaged communities as determined by CalEnviroScreen and the Justice40 Initiative.<sup>19 20</sup>

Designating EV AFCs supports future charging infrastructure and adoption of EVs. With an extensive intra- and inter-state network, consumers and businesses are likely to feel confident that they can fuel their vehicles both within and outside of their home and work communities.

---

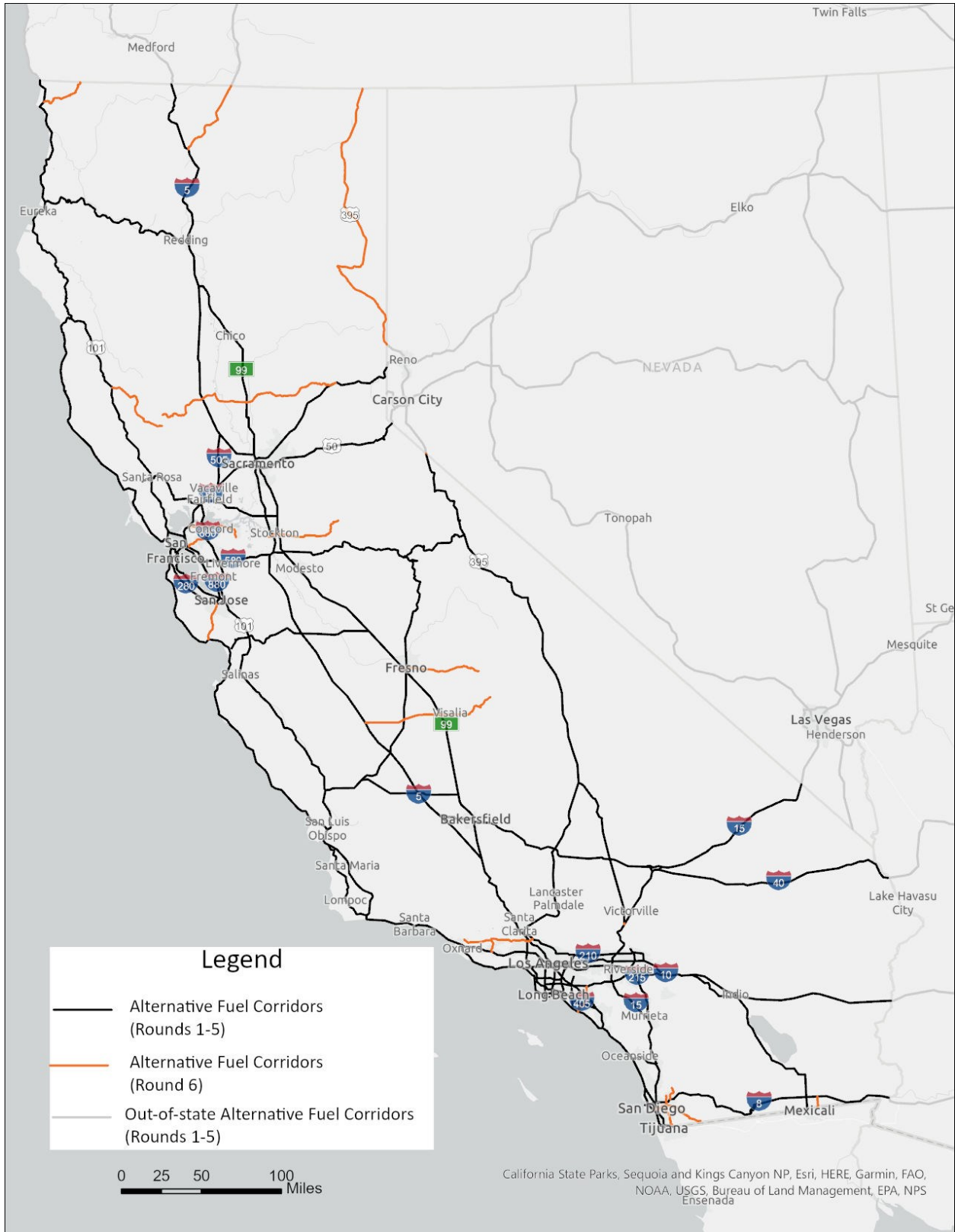
<sup>17</sup> North American Council for Freight Efficiency (2019). Amping Up: Charging Infrastructure for Electric Trucks.

<sup>18</sup> <https://www.truckinginfo.com/10150943/solar-powered-truckstop-for-electric-truck-charging-to-break-ground-this-fall>

<sup>19</sup> CalEnviroScreen, an analytical tool created by the California Environmental Protection Agency (CalEPA), combines different types of census tract-specific information into a score to determine which communities are the most burdened or "disadvantaged."

<sup>20</sup> Electric Vehicle Charging Justice40 Map displays US Department of Energy/US Department of Transportation guidance disadvantaged communities.

Figure 2: Designated and Round 6 Alternative Fuel Corridors for Electric Vehicles



## Round 6 Designations – EV Corridor Pending

Corridor	Miles	Start	End
SR-4	44	Hercules (I-80)	Brentwood
SR-4	55	Port of Stockton Expressway	Angels Camp (SR-49)
SR-7	7	Holtville (I-8)	Calexico (SR-98)
SR-17	27	San Jose	Santa Cruz (I-280/I-880 interchange)
SR-20	21	Ukiah (US-101)	Upper Lake (SR-29)
SR-20	143	Clearlake Oaks (SR-53)	Emigrant Gap (I-80)
SR-23	32	Moorpark (SR-118)	Thousand Oaks (US 101)
SR-24	16	Oakland (I-980)	Walnut Creek (I-680)
SR-29	31	Lower Lake (SR-53)	Upper Lake (SR-20)
SR-55	18	Anaheim	Newport Beach
SR-67	7	El Cajon (I-8)	Eucalyptus Hills (NHS terminus)
SR-94	37	San Diego (I-5)	Tecate Rd (SR-188)
SR-118	46	Saticoy (near Oxnard)	San Fernando
SR-125	22	Otay Mesa (SR-905)	Santee (SR-52)
SR-180	58	Fresno (SR-99)	Junction SR-245
SR-198	89	Coalinga ( I-5)	Sequoia National Park
SR-199	36	Crescent City (US 101)	CA/OR Border
US-97	54	CA/OR Border	Weed (I-5)
US-395	203	CA/OR Border	CA/NV Border

## Rounds 1 -5 Designations – EV Corridor Pending Corridors

Corridor	Miles	Start	End
I-10	100	Indio	CA/AZ border
I-15	101	Yermo	Border CA/NV
I-210/SR-210	17	Sylmar (I-210/I-5 interchange)	Glendale (Pennsylvania Ave. exit 17)
I-40	144	Barstow	CA/AZ border
I-5	67	Colinga	Buttonwillow
I-8	154	El Cajon	CA/AZ border
SR-1	294	Fort Bragg	Monterey
SR-1	315	Camino Capistrano (@ I-5); Monterey	San Simeon
SR-111/SR-78/SR-86	12	White Water	Palm Springs
SR-120	162	Lathrop (intersection w/ I-5)	Lee Vining (intersection w/ US-395)

SR-14	5	Sylmar (start at intersection of SR-14 and I-5); Lancaster	Santa Clarita; Inyokern (end at intersection of SR-14 and US-395)
SR-152	102	Watsonville	Chowchilla
SR-299	100	Arcata	Douglas City
SR-41	150	Fish Camp	Shandon
SR-46	88	Paso Robles	McFarland
SR-58	71	SR-58/SR-14 interchange in Mojave	SR-58/I-5 interchange in Barstow
SR-905	9	CA/Mexico border	San Diego CA (at intersection with I-5)
US-101	46	Ukiah; Trinidad	Garberville; CA/OR Border
US-101	42	Trinidad	Klamath
US-395	352	Topaz	Hesperia

### Rounds 1-5 Designations – EV Corridor Ready Corridors

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

### Existing Locations of Charging Infrastructure Along AFCs

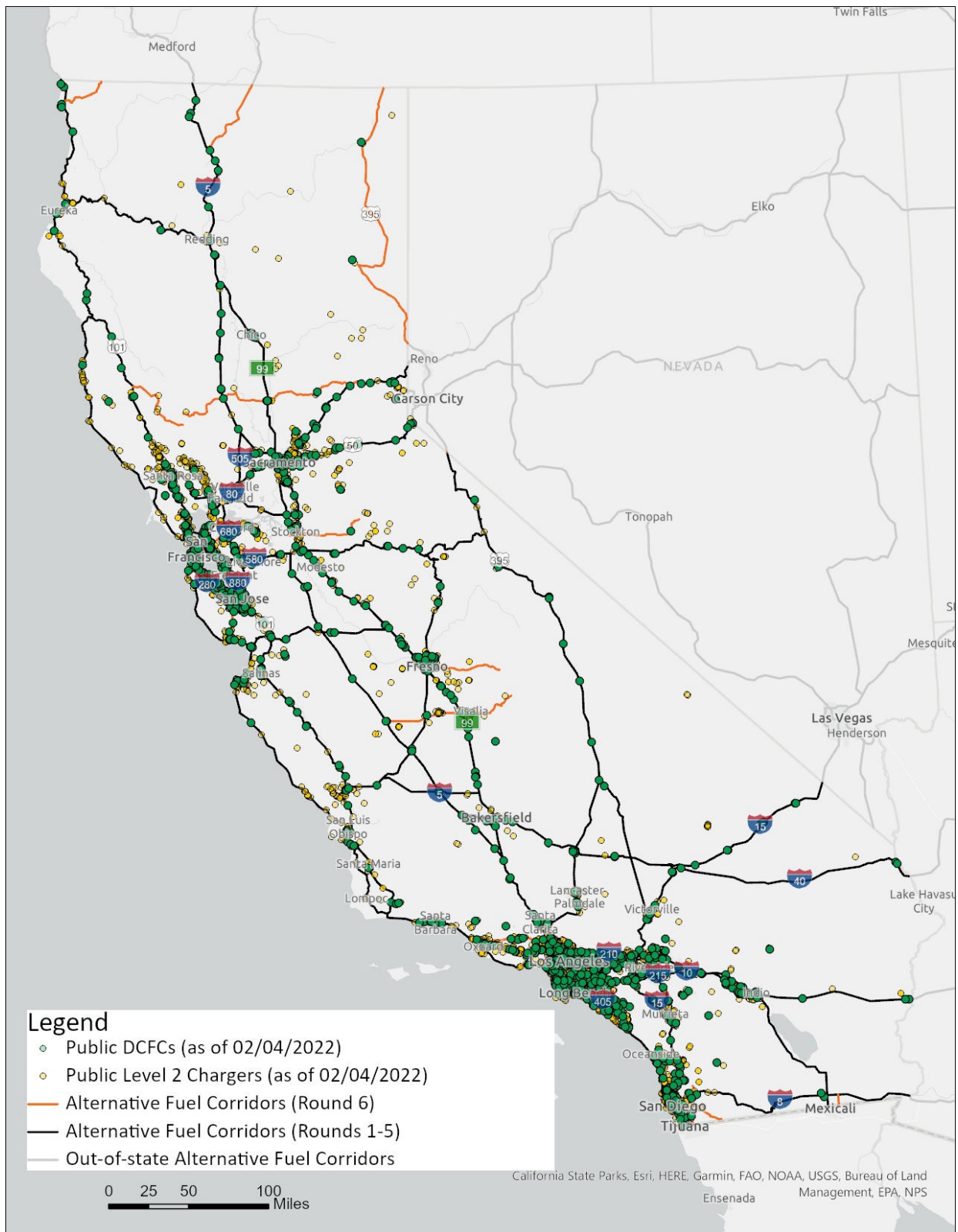
The US Department of Energy's Alternative Fuels Data Center (AFDC) provides information on EV charging, including station location, port counts, connector types, and network providers. The complete table of existing locations of public charging infrastructure along AFCs can be downloaded from the AFDC. Figure 3 summarizes this data by displaying locations of existing public DCFC and Level 2 charging stations along electric corridors. As of February 2022, California has 1,581 public DCFC stations (6,764 DCFCs) and 12,568 public Level 2 stations (28,877 Level 2 chargers).<sup>21 22</sup>

<sup>21</sup> U.S. Department of Energy Alternative Fuels Data Center, available at <https://afdc.energy.gov/>.

<sup>22</sup> 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 3: Alternative Fuel Corridors and Existing Public DCFC and Level 2 Chargers in California



Source: U.S. Department of Energy Alternative Fuels Station Locator



## Known Risks and Challenges

As with any new program, there are challenges and risks associated with the NEVI Program and its deployment. California identified known risks and challenges to mitigate and plan for their impact.

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 EV charging service providers.<sup>23</sup> To mitigate this, public funding, including the NEVI funding, is essential to bridging this gap; grant applicants will be incentivized by the evaluation criteria to minimize the amount of public funding applicants request. Other amenities and services which provide revenue for the site host may be necessary, similar to a gas station business model with a co-sited market, restaurant, or restrooms.

Uncertainties in the application process may mean that a successful applicant is not able to complete the project under the terms it submits. In particular, this is a higher risk in an economic environment with high inflation, as seen in 2021 and the first half of 2022. It is also a risk that chargers are not operated beyond the required term of the agreement if utilization is not high enough. These risks are higher in areas with lower population density and travel demand. California's proposed Advanced Clean Cars II regulations would result in a rapid increase in adoption of EV but risks and uncertainties about the role and utilization levels of DCFC and long-distance travel remain.<sup>24</sup>

Associated with the utilization risk is a set of challenges for public awareness of chargers. In most cases, we expect that the stations funded under NEVI will require partnerships between site hosts and charging providers. Site hosts' willingness to participate will depend on their awareness of the benefits and challenges of hosting EV charging infrastructure, and their calculation of the future benefits and opportunity costs. EV service providers report spending significant time and resources in recruitment and education of potential site hosts. This presents an execution risk that may be higher in less-developed areas where there are fewer eligible properties to begin with. To mitigate this risk, organizations like Veloz are working to increase public awareness.<sup>25</sup>

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 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.

EVSE installations will also be required to receive construction permits from local governments, which is sometimes a lengthy process. Further, the process and timing can vary greatly from jurisdiction to jurisdiction. To mitigate this risk, all cities and

---

<sup>23</sup> <https://www.npr.org/transcripts/940172037>

<sup>24</sup> <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii>

<sup>25</sup> <https://www.veloz.org/>

counties in California are required by law to streamline permitting processes for EV charging stations and limit project review to health and safety requirements in an expedited timeframe. Further information regarding permit streamlining is described in the State, Regional, and Local Policy section.

Deployment of ZEV infrastructure has experienced slowdowns due to utility interconnection and energization. Electrify America has identified utility interconnection costs and timelines as a barrier to DCFC deployment, stating that as of the end of the third quarter of 2021, the new service utility interconnections averaged nearly nine months in California. EVgo noted bottlenecks in interconnections have delayed projects from six months to a year. EVgo notes that Southern California Edison's interconnection procedures have evolved and include clear application requirements, predictable timelines, and access to the utility's authorities when clarifications are needed. To mitigate this risk, in the resolutions approving the investor-owned utilities' (IOUs) Electric Vehicle Infrastructure Rules, the CPUC directed the IOUs to host a public workshop to discuss the barriers to timely EV charging service energization. Following the workshop, the IOUs are to propose an average timeline for EV charging interconnection of between 90 and 160 days.

California is committed to workforce development to help the transition to electric transportation, as described elsewhere in this plan. Including NEVI funding, the State of California is proposing about \$3 billion in ZEV infrastructure over 5 years, with another approximately \$1 billion proposed in funding from utilities regulated by the California Public Utilities Commission. This requires a rapid scaling of a trained and certified workforce to install, service, permit and inspect, or interconnect and energize EVSE. Under California law (Assembly Bill 841, 2020), EVSE located on the customer side of the electrical meter that is funded or authorized by specified state entities shall be installed by a contractor with the appropriate license and by electricians who are Electric Vehicle Infrastructure Training Program (EVITP) trained and certified. As described in the Contracting section, the CEC will develop agreements with grant recipients, and the requirements of AB 841 would thus apply to NEVI-funded projects.

According to California State Association of Electrical Workers and Coalition of California Utility Employees, the number of EVITP-certified electricians in California is approximately 2300 as of mid-2022. Training and, as of mid-2022, testing, are currently available online which should facilitate further growth in the number of EVITP-certified electricians. . However, the adequacy of the number of many critical occupations in this workforce sector, including licensed electricians/electrical contractors and EVITP trained- and certified workforce, to meeting the rapid increase in demand from publicly- and privately-funded installations remains uncertain. To mitigate risks of having too few available EVITP certified electricians, the CEC is contracting with the community college system to expand the locations for in-person examinations to improve access to communities outside of the San Francisco Bay Area and Los Angeles area.

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, as discussed elsewhere, the CEC is

investigating how to track and measure the reliability of stations over time. The CEC intends to develop and publish reliability standards to increase uniformity and transparency. Any standards for NEVI-funded projects will conform to the regulations resulting from the proposed rulemaking by the Federal Highway Administration issued on June 22, 2022, and standards for state-funded projects will also be developed with consistency with federal standards in mind. Consumer-facing apps and websites like PlugShare, market surveys and studies, and automakers' in-car navigation provide additional information.<sup>26 27</sup>

## EV Charging Infrastructure Deployment

The overarching strategy for EV charging infrastructure installations is to run a competitive GFO for applicants to propose projects to acquire, install, own, operate, and maintain EV chargers at stations that meet the NEVI requirements. California anticipates dividing the AFCs into segments based on geography, station size, and other attributes. For each segment, a grant will be awarded based on evaluation of the applications for that segment.

For the initial funding, California will prioritize segments that have infrastructure gaps. In future years, the segments would be re-evaluated and potentially re-ranked for one or more subsequent GFOs. Over time, the CEC and Caltrans plan to use the NEVI funding to develop an interconnected network of stations that meet or exceed NEVI standards along all designated corridors and connect to neighboring states.

### Funding Sources

In recognition that grant recipients will own and have the ability to receive revenue from the chargers, we anticipate that those recipients will provide a cost share that will cover at least the non-federal share of 20 percent of project costs. An evaluation criterion of minimizing public funding will incentivize applicants to provide higher cost shares, as well as to lower overall costs.

Previous successful GFOs and block grants executed by the CEC have offered DCFC funding with a required "match" share by the recipient. California anticipates that successful applicants for NEVI funding will provide at least the 20 percent cost-share required, from private funding and/or stacked incentives from utility or local government programs. If necessary to meet NEVI spacing requirements, the state will consider, in limited cases, providing cost-share from state funding.

---

<sup>26</sup> PlugShare Website: <https://www.plugshare.com/>

<sup>27</sup> J.D. Power. August 18, 2021. "Public Charging Experience for Electric Vehicle Owners Can Get Much Better, J.D. Power Finds." <https://www.jdpower.com/business/press-releases/2021-us-electric-vehicle-experience-evx-public-charging-study>; Umlaut. January 31, 2022. "US EV Charging Infrastructure – How Fast and How Convenient?" <https://www.umlaut.com/en/stories/us-ev-charging-infrastructure-how-fast-and-how-convenient>.

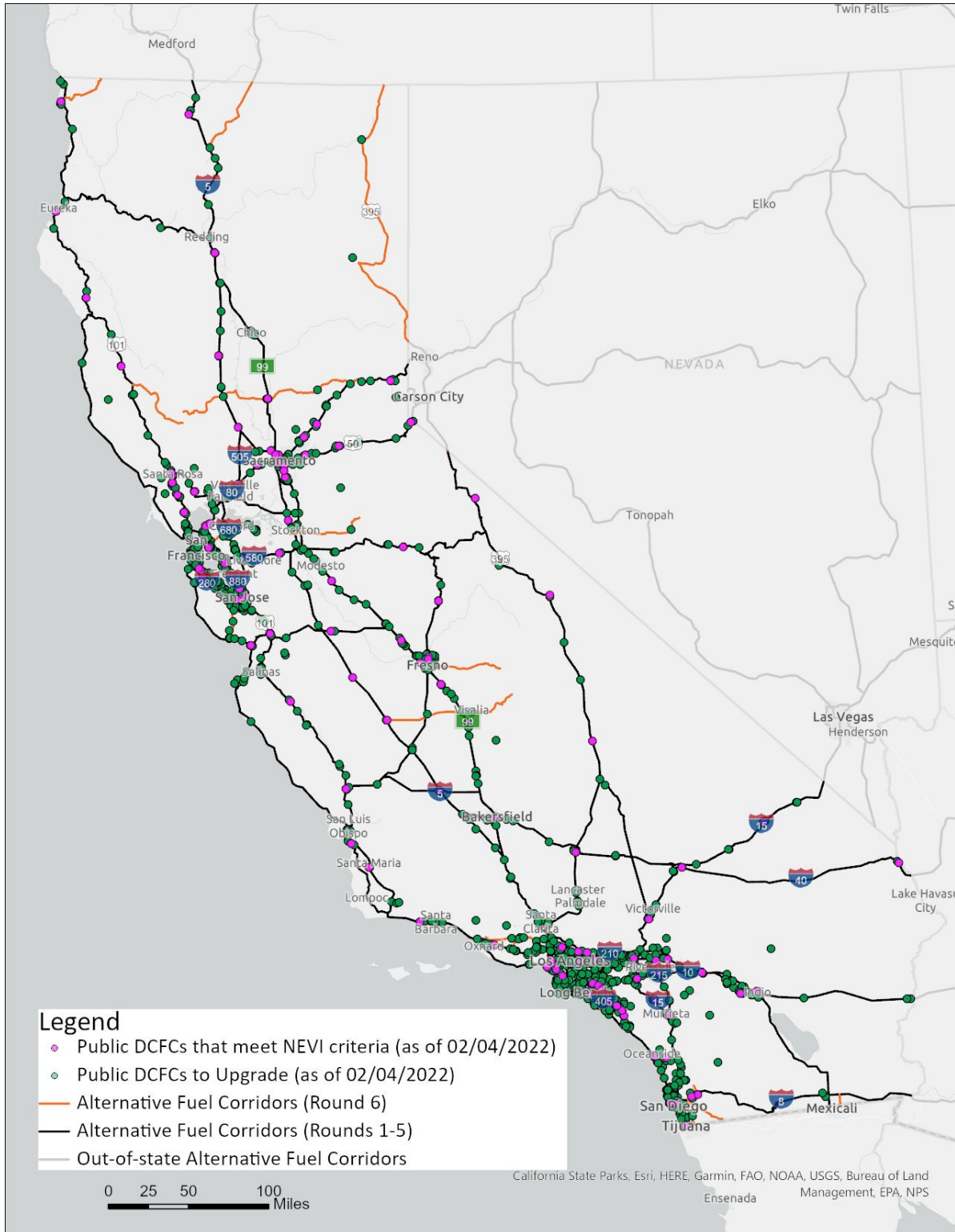
## 2022 Infrastructure Deployments/Upgrades

As described previously, California will divide the AFCs into segments based on an analysis of gaps in the current network, future charger needs, and geography. The gap analysis will begin with a review of existing infrastructure. During this analysis, California will also establish a criterion for determining if more than 4 charging ports are needed to fill the gap in infrastructure and if the gap location would benefit from chargers with power beyond 150kW per port.

Figure 4 shows the locations of existing public DCFCs as of February 2022. Stations in purple meet the NEVI Formula Program standards: they are located less than 1 mile from an electric corridor exit, have a minimum of four CCS type 1 ports with a maximum charging power per port of at least 150 kW, and site power capacity of no less than 600 kW. As of February 2022, California has a total of 113 stations (592 DCFCs) that meet the NEVI Formula Program criteria.

Locations of proposed new installations should be no more than 50 miles from stations that meet the NEVI Formula Program standards and 1 mile from the corridor exit. Stations in green are the remaining public DCFCs in California (1,468 stations, 6,172 DCFCs) that do not meet the NEVI Program standards.

Figure 4: Existing DCFC Along Alternative Fuel Corridors



Source: U.S. Department of Energy Alternative Fuels Station Locator

Current DCFC deployment locations that meet NEVI Formula Program standards along electric corridors will inform the approximate locations of proposed new station installations. Figure 5 displays AFC Rounds 1 – 6 electric corridors with DCFC stations that meet NEVI standards marked with yellow circles. “NEVI built-out” corridors sections are highlighted in blue. The gaps in DCFC infrastructure will be targeted as approximate locations for future stations funded through the NEVI Formula Program.

Figure 5: NEVI Built-Out Corridors and Gaps



Source: U.S. Department of Energy Alternative Fuels Data Center

**Upgrades of Corridor Pending Designations to Corridor Ready Designations**

California has 55 corridors currently designated for electricity as an AFC from the first six rounds of AFC Nominations. The designated corridors consist of 19 Interstates, 32 State Routes, and 4 US Routes covering nearly 6,600 miles in California.



Table 2: Rounds 1 – 6 Alternative Fuel Corridors (AFC) for Electric Vehicles\*

Corridor Type	Corridors
Interstate (I)	I-5, I-8, I-10, I-15, I-40, I-80, I-105, I-110, I-205, I-210, I-215, I-280, I-405, I-505, I-580, I-605, I-680, I-710, I-805, I-880
State Route (SR)	SR-1, SR-4, SR-7, SR-12, SR-14, SR-17, SR-20, SR-23, SR-24, SR-29, SR-39, SR-41, SR-55, SR-58, SR-60, SR-67, SR-78, SR-86, SR-91, SR-94, SR-99, SR-111, SR-118, SR-120, SR-125, SR-152, SR-180, SR-198, SR-199, SR-210, SR-299, SR-905
US Route	US-50, US-97, US-101, US-395

\* Portions of the corridor may be undesignated

California continues to make progress building critical infrastructure along Interstate and State Routes to allow for inter- and intra-regional travel. The previous rounds of designations required public DCFCs less than 50 miles apart, within 5 miles from the corridor exit, and having both CHAdeMO and Combined Charging System (CCS) connectors. The updated requirements led to additional analysis to determine which designated corridor segments meet the NEVI built-out requirements. The current analysis assumes that built-out corridor segments must have DCFC charging stations within one mile of each endpoint, stations less than 50 miles apart, and DCFCs meeting the NEVI criteria. The initial analysis indicates that most built-out corridor segments are in urbanized areas, such as the San Francisco Bay Area, Sacramento, Los Angeles, and San Diego region.

For the initial funding, California will prioritize segments that have infrastructure gaps, i.e., that do not meet the requirements for “Corridor Ready.” Over time, California will utilize NEVI funding to develop an interconnected network of stations that meet or exceed NEVI standards along all designated corridors and connecting to neighboring states.

A ranking process will be developed to prioritize corridors to focus DCFC deployments to convert corridors from pending, or ready under a previous definition, to “NEVI built-out” in a cost-effective and efficient manner. Criteria under consideration for prioritization of corridors include, but are not limited to, the items listed below. Additional stakeholder outreach and a public workshop will help refine the criteria.

- Corridor type:** The NEVI Formula Program Guidance includes guidance that “States should first prioritize investments along the Interstate Highway System.” With the exception of a few short connectors, nearly all of California’s interstates are designated for AFC electricity. However, due to changes in the AFC criteria, the majority of the Interstate Corridors have gaps.
- Equity:** As part of the NEVI Guidance, states must target at least 40 percent of the benefits towards disadvantaged communities as identified by the EV Charging Justice<sup>40</sup> Mapping Tool. The CEC’s goal is to provide more than 50 percent of Clean Transportation Program funds towards projects that benefit low-income and disadvantaged communities.



- **Traffic and/or projected demand for corridor charging:** California will utilize two data sources to determine traffic and projected demand for EV charging within a corridor. Traffic counts indicating 2019 (pre-COVID) annual average daily traffic counts (AADT) will be used to rank the corridor segments. Due to the seasonality of some routes, traffic counts may be analyzed using the highest traffic or peak month of the year for the segment which may be more representative of the traffic conditions than the Annual ADT (total volume for the year divided by 365 days). The EVI-Road Trip model uses AADT to project the number and locations of DCFCs needed to enable electrified road trips from EVs of 100 miles or more. Combining the EVI-Road Trip model with traffic count data allows a corridor to be ranked by traffic and/or projected demand for DCFC.
- **Existing/planned DCFC efforts:** In addition to public funding, the private sector, local air districts, and electric utilities in California are investing in public charging station installations. The state will focus efforts where other entities may not be willing to invest in deploying DCFC, such as harder to reach rural corridors and areas where bringing electricity to a site may be difficult.
- **Permit Streamlining:** Sites within jurisdictions that have implemented permit streamlining for EV stations, as described in the State, Regional, and Local Policy section, will offer efficiency and time savings.

The number of built-out AFC corridors will be dependent on requirements in the solicitation and proposals received and awarded.

### **Increases of Capacity/Redundancy along Existing AFC**

California has hundreds of DCFC stations located along highways built before the NEVI requirements were introduced. These sites may serve as prime locations and critical sites to be upgraded as part of the deployment plan. As part of two previous programs, DCFC corridor sites funded by the CEC were mandated to install stub-outs, ready-to-go infrastructure for additional chargers. The requirement specified that all conduit ran for the charging stations must be sized to accommodate chargers of 150 kW or larger. Although utility transformers and supporting equipment may need to be upgraded, additional trenching would not be required to add or replace existing chargers with higher-powered chargers. Additionally, the amount of time required for planning, design/engineering, and permitting will also be reduced. Building stub-outs can lead to substantial decreases in costs and time.

### **Electric Vehicle Freight Considerations**

In October 2021, California's Governor Newsom signed SB 671 to establish the Clean Freight Corridor Efficiency Assessment. The bill requires the CTC to identify freight corridors, or segments of corridors, as priority candidates for the deployment of zero-emission medium- and heavy-duty vehicles by December 2023. The assessment's findings and recommendations will be incorporated into the California Transportation Plan. Subsequently, the California Freight Mobility Plan will include a description of

needed infrastructure, projects, and operations needed to develop the freight corridors identified in the assessment.

The SB 671 effort includes both public and private sector stakeholders including the following:

- Academia
- California Air Resources Board (CARB)
- California Department of Transportation (Caltrans)
- California Energy Commission (CEC)
- California Public Utilities Commission (CPUC)
- Environmental organizations
- Freight industry (i.e., trucking firms, ports, distributors)
- Governor's Office of Business and Economic Development (GO-Biz)
- Local governments
- Metropolitan planning organizations,
- Public health representatives
- Regional transportation planning agencies
- Stakeholders from low-income and disadvantaged communities

In February 2022, the stakeholders identified priority corridors throughout the state. The priority corridors identified, not surprisingly, aligned with the Alternative Fuel Corridors nominated in Rounds 1 – 5. Thus, indicating that the corridors that are most important for goods movement are amongst those that are a priority for all types of travel.

### **Public Transportation Considerations**

The majority of EV charging for public transportation fleets in urban settings will most likely be conducted at the agency's bus depot or yards. However, in rural areas where bus routes are longer, these fleets may find it advantageous to utilize public DCFC that are near turn around points at the ends of routes. Publicly accessible DCFC could allow transit drivers to add range to the vehicle while they take a lunch or stretch break.

Public transportation fleets are an important part of emergency evacuation planning. As such, back up batteries and solar power generation should be considered, as appropriate. In areas prone to wildfire, electricity service providers find it necessary to shut down power during high wind events to prevent fires caused by downed power lines. The rural areas need reliable charging infrastructure to enable emergency response by the public transportation fleets.

### **Fiscal Year 2023-26 Infrastructure Deployments**

California's proposed structure for the deployment plan is intended to be durable and flexible to achieve the goals of the NEVI program with future years' funding. While the structure will likely remain stable, the state needs may evolve. In future annual deployment plans, California will reassess the proposed uses of NEVI funds, including infrastructure that primarily serves light or medium- and heavy-duty vehicles, within the

requirements of the NEVI program and in the context of California's overall funding and deployment strategy. In each year of the program, California will revisit the segment definitions, charging needs, and rankings; and evaluate equity needs, deployment, station utilization along with complementary investments from the private sector, electric utilities, and other public funding programs. Market and technology developments, and forecasts for both vehicles and charging infrastructure, will be reviewed in conjunction with stakeholder input and other information. It is anticipated that the first grant funding opportunities will utilize the first two years of NEVI funding due to the timing of the deployment plan approval process.

If the NEVI funding, in combination with other investments, is sufficient to build out California's corridors, the state will propose other uses for the funding, such as increasing capacity near demand centers, or increasing corridor charging capacity by adding or upgrading chargers and stations to provide additional equity, capacity, and redundancy.

### State, Regional, and Local Policy

California currently has two existing permit streamlining laws for EV charging infrastructure. The intention of these laws is to make the permitting process for EV stations consistent and expedient across California. [Assembly Bill 1236](#) (Chiu, 2015), mandates that all California cities and counties adopt ordinance to expedite the permitting process for new EV charging stations and provide a checklist to applicants. [AB 970](#) (McCarty, 2021) builds on this legislation and codifies specific timelines for the permitting process.

To assist cities in implementing these laws, the Governor's Office of Business and Economic Development (GO-Biz) developed a permitting guidebook, [Fact Sheet](#), permitting [Scorecard](#), and a [Frequently Asked Questions Page](#). GO-Biz is in the process of updating the [Electric Vehicle Charging Station Permitting Guidebook](#) to reflect the evolving landscape of EV charging equipment.

GO-Biz also manages an [EV Charging Station Permit Streamlining Map](#) to create a shared understanding of EV charging station permit streamlining across the state and track compliance with California laws AB 1236 and AB 970. The objective of the map is to allow communities to use these tools to easily replicate success, leverage lessons learned, and save time as we all work to aggressively build out California's ZEV infrastructure network.

California's existing EV permit streamlining laws provide a strong foundation to further build out EV infrastructure in the state. GO-Biz is in regular communication with EV charging stakeholders, private/public companies, cities/counties, and utility providers. As of May 1, 2022, California had 190 jurisdictions with streamlined permitting, 128 jurisdictions in the process of streamlining, and 222 jurisdictions that need to adopt the legislation.

The funding available through NEVI should serve to further advance permit streamlining efforts across the state. GO-Biz will utilize existing resources and communication networks to best prepare jurisdictions to receive NEVI funds and build out EV

infrastructure. To expediate the completion of the projections funded through NEVI, California may give funding priority to jurisdictions that are fully streamlined or have started the streamlining process.

## Implementation

The CEC has studied EV charging infrastructure reliability since summer of 2021. These efforts have revealed anecdotal evidence that indicate a shortcoming in the overall reliability of EV charging infrastructure throughout California. This negatively impacts the overall user experience for EV drivers and is a barrier to EV adoption. It is imperative that reliability is maintained.

CEC staff, in collaboration with Caltrans, CPUC, and CARB, are investigating and developing mechanisms to ensure the reliability of publicly funded chargers. Broadly speaking, these are likely to include maintenance, recordkeeping, and reporting requirements that all funding recipients must agree to meet as a condition of funding. These requirements will be included in NEVI funding agreements to ensure that the minimum 97 percent uptime requirement is met. Additional standards for NEVI-funded projects will conform to any regulations resulting from the proposed rulemaking by the Federal Highway Administration issued on June 22, 2022.

The CEC, CPUC, and others are collaborating to make sure that EV chargers are “good citizens of the electric grid.” Analysis suggests the state will be able to handle millions of EVs in the near term. At the same time, studies highlight the importance of thoughtful electrical distribution build-out and managed charging strategies. In implementation of NEVI project funding, California expects to explore the role of on-site generation and stationary storage to minimize grid impacts and costs and maximize benefits.

### Strategies for EVSE Operations & Maintenance

To comply with proposed NEVI standards, including minimum uptime requirements, California will include those standards in the funding agreements with recipients. CEC and Caltrans also plan to require applicants to provide a detailed Operations & Maintenance (O&M) Plan in their applications, and to meet robust maintenance, recordkeeping, and reporting requirements. We expect that operations and maintenance costs would be eligible expenses for agreements with NEVI funds and are exploring the possibility of provisions that would make funding available only after recipients provide evidence that the chargers operated reliably.

CEC's two most recent light-duty EV charging solicitations, the Rural Electric Vehicle (REV) Charging and the Reliable, Equitable, and Accessible Charging for multi-family Housing (REACH) both required minimum time uptimes of 97 percent for 5 years from the commissioning of charging equipment. California plans to adopt the same requirements for the projects funded through the NEVI program.

Applicants will be required to submit an O&M Plan to demonstrate that the equipment

will be operational at least 97 percent of the time based on the hours of operation. Additionally, the O&M plan will address customer service, site host training, process and timelines for upkeep, and repair turnaround time. California expects most types of malfunctions and repairs to be addressed within 48 hours of the initial notice, and the O&M Plan will outline how this repair time will be achieved. For significant or complex issues leading to downtime (such as vandalism), the equipment should be repaired in 2 – 5 days. The O&M Plan will also identify the party responsible for payment of all operating costs, including but not limited to payment of leases, rents, royalties, licenses, fees, taxes, revenue sharing, utilities, and electric power supply for the charging equipment and supporting elements, such as area lighting.

Additionally, the O&M Plan will address who will be responsible for ensuring the maintenance of the charging station pedestals, and all ancillary equipment, including but not limited to any awnings, canopies, shelters and information display kiosks or signage associated with the charging station. This includes providing all needed repairs or desired and approved alteration, as well as cleaning the equipment and keeping it safe and presentable. California is also collaborating with the charging industry, automakers, standards organizations, community organizations and other stakeholders to develop robust maintenance, recordkeeping, and reporting requirements to enable the verification of uptime, preventative maintenance, corrective maintenance, and interoperability standards are met. Additional standards for NEVI-funded projects will conform to any regulations resulting from the proposed rulemaking by the Federal Highway Administration issued on June 22, 2022.

### **Strategies for Identifying Electric Vehicle Charger Service Providers and Station Owners**

California will conduct research, hold workshops, and meet with EV charger manufacturers and network providers while designing the GFO. This will enable the establishment of requirements for the GFO and help communicate with potential applicants. Notices for the GFO public workshops will be sent using CEC's email lists.

The GFO will establish the minimum requirements for eligible sites. Depending on the proposed business models, potential applicants will be responsible for soliciting interested site hosts or station owners and making sure the site hosts meet the GFO's eligible site requirements. The proposed charging station location will be identified on the application and evaluated on the degree to which it meets or exceeds the GFO's minimum requirements. Ample time will be provided before application due dates to allow applicants to locate potential sites, negotiate with site hosts, and prepare a letter of intent.

### **Strategies for EVSE Data Collection & Sharing**

The CEC frequently requires funding recipients to collect and report utilization and reliability data. Past CALeVIP program participants agreed to supply data through their EVSPs. As a result, the CEC developed a standard list of utilization data that all funding recipients will be required to provide for an agreed upon period following

commissioning.<sup>28</sup>

As noted in the 'Network Reliability' section below, the CEC is also developing standard data relevant to reliability that funding recipients will be required to report to the CEC. We are exploring unifying both the utilization and reliability data requirements into a single data requirements approach that can be incorporated into all funding agreements. California will include data collection and reporting requirements into agreements with station developers under the NEVI Program.

The data from industry accepted protocols, such as the Open Charge Point Protocol (OCPP), tracks metrics that inform both utilization and charger reliability. The CEC is currently evaluating how data is collected, stored, and transmitted to the CEC; what specific data can or should be required; and whether or how to aggregate and publish this data or resultant analyses.

In parallel, Atlas Public Policy and the Society for Automotive Engineers (SAE) are creating standard data requirements. The CEC is actively engaging with these groups and collaborating to align requirements as much as possible. The long-term goal for these efforts will be a unified set of data to track use and reliability of publicly funded charging infrastructure.

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

Due to varied climate and geography, California has experienced 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 in the infrastructure 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 in an effort 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 to 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 public safety power shutoffs and other emergency events; 3) Coordinating with EV charging network providers to reinforce EV charging networks with backup generation.

---

<sup>28</sup> <https://calevip.org/>

Additionally, California is looking at opportunities for charging stations to inform drivers of potential disaster events. Earthquake Warning California is the country's first publicly available statewide warning system that could provide crucial seconds to get to safety before any shaking is felt. Managed by the Governor's Office of Emergency Services (Cal OES), Earthquake Warning California uses ground motion sensors from across the state to detect earthquakes before humans can feel them and can notify Californians to "Drop, Cover and Hold On" in advance of an earthquake. The earthquake warnings are currently available through a download of the MyShake App. California is looking into ways to incorporate the warning system into charging stations to warn drivers to move away from structures such as signs or solar canopies that could cause them harm during an earthquake.

## **Strategies to Promote Strong Labor, Safety, Training, and Installation Standards**

### **Workforce Training & Safety**

California has cultivated and developed strong partnerships with the crafts and trades associated with transportation electrification, broadly, and with EVSE installations, specifically. The state will continue to work with these partners to establish a strong labor force of trained individuals to support and enhance the industry. Specific partnerships with the EVSE workforce and labor include those with the National Electrical Contractors Association (NECA), the International Brotherhood of Electrical Workers (IBEW), and Jobs to Move America (JMA). State workforce agency partners that support labor, apprenticeships, and training, for EVSE installation, service, and replacement include the California Workforce Development Board (CWDB), the California Employment Training Panel (ETP), the California Community Colleges, the Division of Apprenticeship Standards in the Department of Industrial Relations, and the California Conservation Corps.

The state also has strong regional and local labor and workforce partners such as the Kern County Electrical Joint Apprenticeship Training Committee, regional workforce development boards, local workforce investment boards, and municipal partners like the County of Los Angeles Workforce Development, Aging, and Community Services Department. Through its Clean Transportation Program, the CEC expects to continue investments in EVSE workforce training and development programs to align with EVSE workforce supply and demand. Many existing apprenticeship and pre-apprenticeship programs in AFC-adjacent communities can be leveraged to transform and train a new EVSE workforce. The state's community colleges and universities are also an important partner in worker education and training for the requisite skills needed for project delivery especially in underrepresented communities.

Previous CEC solicitations for ZEV and EVSE funding opportunities have required applicants to include EVSE Workforce Plans.<sup>29</sup> <sup>30</sup>The EVSE Workforce Plans were subject to a scoring criterion that included responses to criteria/areas such as job creation and

---

<sup>29</sup> <https://www.energy.ca.gov/solicitations/2020-11/gfo-20-606-zero-emission-drillage-truck-and-infrastructure-pilot-project>

<sup>30</sup> <https://www.energy.ca.gov/solicitations/2022-03/gfo-21-605-zero-emission-transportation-manufacturing>



recruitment, training and upward mobility, safe workplace conditions, workforce engagement, workforce accessibility to jobs, pay/prevaling wages, supplier diversity, and benefits. Additionally, the CEC launched the IDEAL ZEV Workforce Pilot Project. The project provided funding for community-based solutions in underserved communities that includes EVSE workforce training and development across the state including 23 tribal communities. California is considering including similar requirements in the grant funding opportunity for NEVI funding.

### **Opportunities for Small Business**

The state will engage with rural and small businesses across the EVSE supply chain through existing channels such as through the Rural County Task Force (RCTF), the Rural County Representatives of California (RCRC), the California Association for Local Economic Development (CALED), and through the EVSE industry. Outreach to rural and small businesses will also include communications and targeted meetings across the EVSE supply chains.

## **Civil Rights**

Title VI of the Civil Rights Act of 1964 prohibits discrimination on basis of race, color, national origin, sex, age, and disability in connection with programs or activities receiving federal financial assistance from the United States Department of Transportation, Federal Highway Administration and/or Federal Transit Administration. These prohibitions extend to Caltrans as a direct recipient of financial assistance and to its sub recipients, including the CEC.

California seeks to provide early, meaningful, and inclusive opportunities for involvement by all affected parties: citizens, partner agencies, businesses, industries, Native American tribal governments, organizations, advocates, and disadvantaged and traditionally under-represented communities, including limited-English proficient individuals, people of color, and low-income residents. Engagement for the deployment plan includes information sharing, discussions regarding project alternatives, and input and feedback.

In alignment with Title VI, California is dedicated to increasing the participation of Small Business ,Disadvantaged Business Enterprise (DBE), and Disabled Veteran Business Enterprise (DVBE) firms. DBEs 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 presumed to be 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 DBE program is designed to remedy ongoing discrimination and the continuing effects of past discrimination in federally assisted transportation. The primary remedial goal and objective of the DBE program is to level the playing field by providing small



businesses owned and controlled by socially and economically disadvantaged individuals a fair opportunity to compete for federally funded transportation contracts.

If EV chargers are available for use by the general public, the chargers must be accessible to individuals with disabilities. California's American Disabilities Act (ADA) Compliance Standards for EV Charging Stations is primarily governed by California Building Code<sup>31</sup>. The building code sets a minimum number of van and standard accessible spaces given the total number of chargers at a facility. The building codes also specify 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.

## Equity Considerations

To address racial equity and the climate crisis, the Justice40 Initiative sets the goal of delivering 40 percent of overall federal investment benefits in climate and clean energy, including sustainable transportation, to disadvantaged communities, including federally recognized Tribal Nations and U.S. Territories.<sup>32</sup> The California Energy Commission's Clean Transportation Program seeks to provide more than 50 percent of program funds towards projects that benefit disadvantaged and low-income communities, including Tribal land.

As described in more detail in the "Upgrades of Corridor Pending Designations to Corridor Ready Designations" subsection of the "EV Charging Infrastructure Deployment" section, Caltrans and the CEC plan to use NEVI Program funding, especially in the initial years, to prioritize corridor charging that is in and/or serves low-income and disadvantaged communities, including Tribes and rural communities. At least 50 percent of the NEVI funding will be utilized for projects within California designated disadvantaged communities and/or low-income communities. California will ensure that in doing so, a minimum of 40 percent of the NEVI funding will be utilized in disadvantaged communities designated under Justice40. This will be accomplished through the ranking of corridor segments. Where feasible, requirements for individual segments will include a minimum amount of funding be spent in designated communities.

## Identification and Outreach to Disadvantaged Communities (DACs) in the State

For the purposes of the NEVI program, the Joint Office of Energy and Transportation developed an interim definition of disadvantaged communities in alignment with the Justice40 Interim Guidance. This definition of disadvantaged communities includes communities that experience health, transportation access, and energy burdens, with economies highly dependent on fossil energy sources, and exposure to environmental

---

<sup>31</sup> [https://calevip.org/sites/default/files/docs/calevip/California\\_EVCS\\_Regulations\\_Guide.pdf](https://calevip.org/sites/default/files/docs/calevip/California_EVCS_Regulations_Guide.pdf)

<sup>32</sup> <https://www.anl.gov/es/electric-vehicle-charging-equity-considerations> April 13, 2022

and climate hazards. Federally recognized Tribal Nations and U.S. Territories are also included as disadvantaged communities in the Joint Office definition.<sup>33</sup>

California identifies disadvantaged communities using the California Office of Environmental Health Hazard Assessment's California Environmental Health Screening Tool (CalEnviroScreen). CalEnviroScreen is a mapping tool that identifies California communities that are most affected by many sources of pollution and where people are often especially vulnerable to pollution's effects. CalEnviroScreen uses environmental, health, and socioeconomic information to produce scores for every census tract in the state. Census tracts within the top 25<sup>th</sup> percentile of CalEnviroScreen scores are considered disadvantaged.

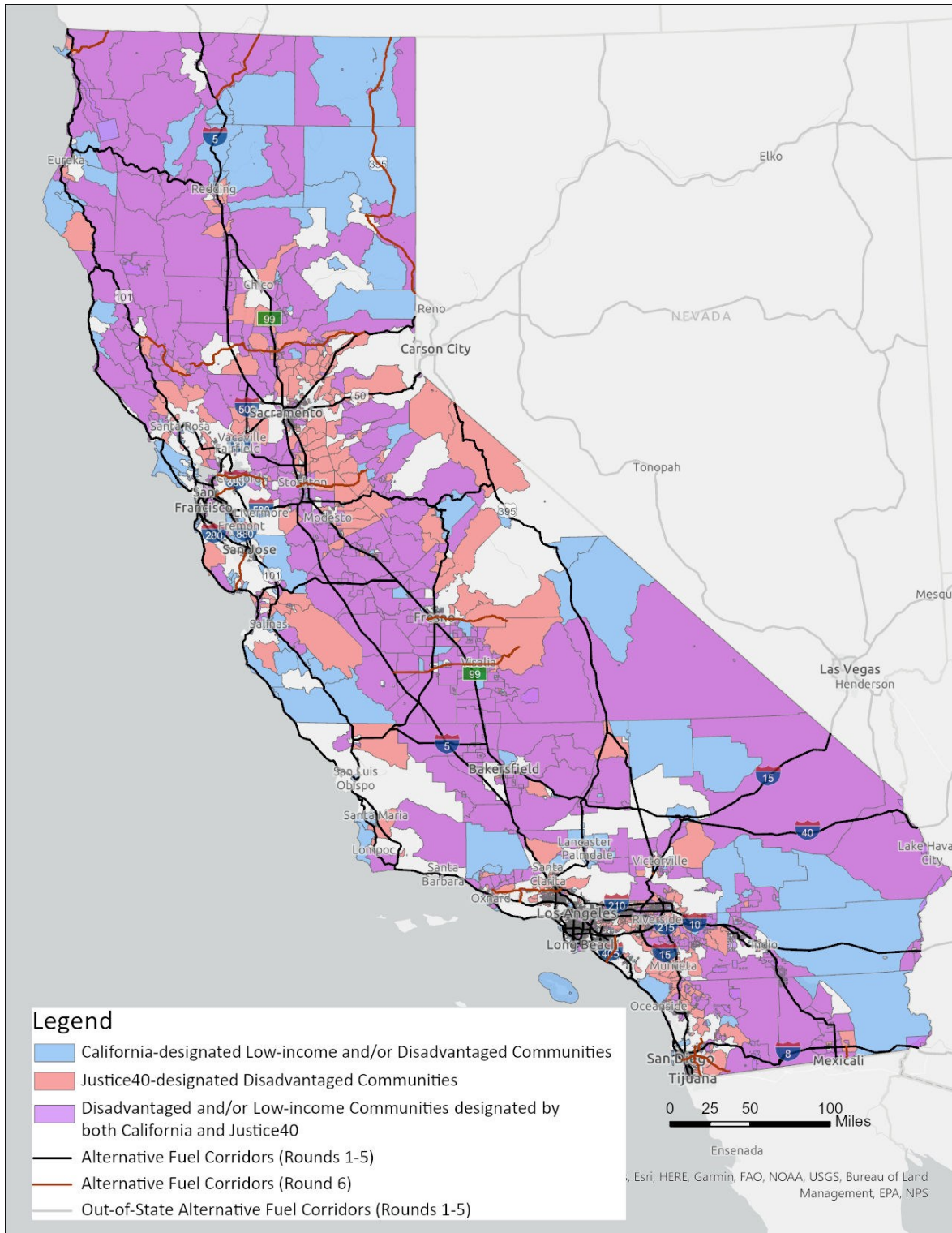
California low-income communities are defined as census tracts with median household incomes at or below 80 percent of the statewide median income or with median household incomes at or below the threshold designated as low income by the Department of Housing and Community Development.<sup>33</sup>

Figure 6 shows communities that are disadvantaged, under the Justice40 Initiative and/or California Environmental Protection Agency (CalEPA) designations, and/or low-income.

---

<sup>33</sup> <https://www.anl.gov/es/electric-vehicle-charging-equity-considerations>

Figure 6: Disadvantaged and Low-Income Communities and Federally Recognized Tribal Lands



Sources: CalEnviroScreen 4.0, American Community Survey 2019 5-year income and average household size estimates, California Department of Housing and Community Development 2021 State Income Limits, U.S. Department of Transportation and U.S. Department of Energy Interim Disadvantaged Community Designations

## Process to Identify, Quantify, and Measure Benefits to DACs Through this Plan

The CEC contracted with the National Renewable Energy Laboratory (NREL) to develop methods for calculating the benefits of the Clean Transportation Program, including charging infrastructure deployment projects. This quantification includes analyzing two categories of benefits: “expected benefits” (i.e., direct benefits) and “market transformation benefits” (i.e., indirect benefits). Comparable benefits can similarly be assessed for projects funded under the NEVI Program.

As indicated below, the quantifications of expected benefits and market transformation benefits both include key metrics, related to air quality improvement, greenhouse gas emission reductions, and petroleum displacement. Additionally, NREL also calculated the monetary value of air quality improvement benefits associated with the Clean Transportation Program’s EVSE infrastructure investments. Finally, independent of NREL’s analysis, the CEC tracks the amount of program and match funding invested into each project.

Benefit	Metric
Air Quality Improvement	Particulate matter reductions NO <sub>x</sub> reductions
Greenhouse Gas Emission Reductions	Carbon dioxide-equivalent reductions
Petroleum Displacement	Gasoline or Diesel gallons displaced

When focusing on charging infrastructure projects, which have a fixed address, these benefits can be localized and assigned to distinct communities, including those identified as disadvantaged and low-income communities.

Key data inputs for NREL’s analysis of charging infrastructure include both literature reviews of average charging usage as well as real world reported data from Clean Transportation Program funding recipients. The CEC continues to explore opportunities to collect more charger usage data directly from EVSPs. For air quality metrics, emission factors are based on CARB’s Vision 2.1 model, which incorporates calendar year, vehicle type, fuel type, and location. Greenhouse gas reduction metrics are based on CARB’s established carbon intensities for fuels under the Low Carbon Fuel Standard, or, when necessary, CARB’s CA-GREET 2.0 model.

In addition to the Clean Transportation Program’s Benefits Report, the CEC also identifies improving mobility as an important benefit in the state’s shift toward transportation electrification. Access to charging infrastructure by all Californians will give drivers greater confidence that EVs will meet their mobility needs. Since 2019, the CEC has assessed whether public EV charging infrastructure is disproportionately deployed to inform Clean Transportation Program investments in EV charging infrastructure. The initial *Senate Bill 1000 Electric Vehicle Charging Infrastructure Deployment Assessment*, published in December 2020, focused on public Level 2 and

DCFC capacity, and found that low-income communities, on average, have fewer public chargers per capita than middle- or high-income communities. The second assessment, which the CEC expects to publish in July 2022, focuses on public DCFC coverage and finds that rural communities have less access to public DCFCs than their urban counterparts.<sup>34</sup>

The CEC will continue to refine and update the analysis to identify charging network gaps and build out charging infrastructure that serves all Californians. Findings from the SB 1000 assessment, including statewide maps showing DCFC capacity and coverage within disadvantaged, low-income, and/or rural communities, will help guide DCFC deployments funded by NEVI. The findings will also help to identify areas of prioritization throughout the state to meet federal and state equity goals.

The state is also working to quantify benefits in ways that go beyond measuring funding with a given location and will continue to investigate new metrics to ensure investments and DCFC deployments enhance equity within the state.

## Labor and Workforce Considerations

California strongly supports investments that expand good paying jobs, increase job access, improve job quality, provide strong labor standards, strengthen local/regional economies, and develop an equitable and diverse workforce in building EVSE infrastructure.

Projects funded through NEVI will be approved by the CEC, with oversight by Caltrans. By utilizing a CEC contracting mechanism, projects funded through NEVI will therefore be required to meet the provisions of California's Assembly Bill 841 (Ting, Chapter 372, Statutes of 2020) . The requirements specify that all electric vehicle charging infrastructure and equipment located on the customer side of the electrical meter shall be installed by a contractor with the appropriate license classification, as determined by the Contractors' State License Board. Additionally, at least one electrician on each crew, at any given time, must hold an EVITP certification. Since each NEVI-funded charger will supply 25 kilowatts or more to a vehicle, at least 25 percent of the total electricians working on the crew for a project, at any given time, must possess EVITP certification. One member of each crew may be both the licensed contractor and an Electric Vehicle Infrastructure Training Program certified electrician. Additional standards for NEVI-funded projects will conform to any regulations resulting from the proposed rulemaking by the Federal Highway Administration issued on June 22, 2022.

California has taken a strategic approach to promote an inclusive EVSE workforce, implement labor standards, provide safety training, and establish EVSE career pathways starting with the state's high school career training education programs. This is not a static effort, as the transportation electrification sector is dynamic given the growth in new and emerging EVSE technologies, new and revised building and electrical codes

---

<sup>34</sup> About 43 percent of rural communities are low-income.

that improve worker and consumer safety, and the need to synthesize transportation electrification across the energy systems of the built environment.

The “Workforce Projections to Support Battery Electric Vehicle Charging Infrastructure Installation”<sup>35</sup> report shows that California’s statewide light-duty EV program goals, and the associated EVSE infrastructure, would generate workforce needs of approximately 38,200 up to 62,400 job-years<sup>36</sup> between 2021 to 2031 in California. Estimates of projected medium and heavy-duty EV growth indicate the associated charging infrastructure would generate approximately 9,100 job-years from 2021 – 2030 in addition to the light-duty charging infrastructure workforce needs. The combined estimate of workforce needs for charger installations is approximately 47,300 up to 71,500 job-years.

California has established and will engage the appropriate labor and workforce entities and strategies for successful implementation of this plan. Examples include:

1. Strong Workforce Support and Training – California has a history of strong support and partnerships in the development of a diverse workforce for EVSE installation including:
  - **ETP** - ETP provides funding to employers to assist in upgrading the skills of their workers through training that leads to good paying, high-road jobs and long-term careers. Since 1982, ETP has reimbursed employers, including small and minority owned enterprises, well over \$1 billion for training workers. ETP prioritizes construction apprenticeship as well as apprenticeship training in non-traditional/emerging sectors, such as EVSE manufacturing and installations. Applicable training occupations for EVSE installations include inside wireman, construction workers, and electricians.
  - **CEC** – CEC will continue to invest in incumbent and new worker entrants upskilling and new skills development to support communities to place chargers in their areas.
  - **CWDB** - CWDB establishes workforce development policy<sup>37</sup>, develops innovative initiatives<sup>38</sup>, and administers workforce programs such as High Road Construction Careers (HRCC) and High Road Training Partnerships (HRTPs). The principles of social equity, quality jobs, and climate resilience define California’s High Road vision—and partnership, worker voice, industry-led problem solving, and industry-based training solutions are the essential

---

<sup>35</sup> [https://caletc.com/assets/files/Workforce-](https://caletc.com/assets/files/Workforce-ProjectionsSupportBatteryElectricVehicleChargingInfrastructureInstallation-Final202106082.pdf)

[ProjectionstoSupportBatteryElectricVehicleChargingInfrastructureInstallation-Final202106082.pdf](https://caletc.com/assets/files/Workforce-ProjectionsSupportBatteryElectricVehicleChargingInfrastructureInstallation-Final202106082.pdf)

<sup>36</sup> Workforce needs are estimated based on analysis of survey responses, provided in person-days, and converted to job-years assuming a full time equivalent (FTE) of 2080 hours and 8-hour workdays. Note that job-years cannot always be directly translated into a number of jobs created, but instead help to describe the demand for work. One job-year is equivalent to one person performing a job for one year, or two people performing the same job for half a year, etc.

<sup>37</sup> [https://cwdb.ca.gov/policy\\_briefs/](https://cwdb.ca.gov/policy_briefs/)

<sup>38</sup> <https://cwdb.ca.gov/initiatives/>



elements of a High Road approach to workforce development. HRCC is designed to create access to registered apprenticeship in the electrical trades, among other crafts, for disadvantaged and under-represented workers. HRTPs currently exist in ZEV manufacturing, public transit, and other transportation fields and could be a model for EVSE manufacturing in California. The California fiscal year 2022-23 budget includes \$15 million in HRCC and HRTF per year for the next three years, which could be utilized to advance economic equity in California's growing EVSE industry.

- **Foundation for California Community Colleges** – The Grow Apprenticeship California initiative helps to expand and scale apprenticeship in new and innovative sectors, and pre-apprenticeship programs linked to traditional and new and innovative programs, with the goal of connecting all Californians to good jobs with family-sustaining wages and advancement opportunities.
2. **On-the-Job Training (OJT)** – The state developed new OJT programs for EVSE installations and service including basic safety training Occupational Safety and Health Administration (OSHA) 10-hour training classes teaches basic safety and health information to entry-level workers in construction and general industry. These new OJT programs are critical to the state's goals and to the deployment plan as the training is provided in low-income communities and disadvantaged communities and in rural areas of the state. These programs provide important early career EVSE pathways to pre-apprenticeships and apprenticeships. New partnerships that will be modeled for the implementation of this deployment plan include the Transportation Electrification Training Project with four regional locations of the California Conservation Corps, the Kern Community College District, the County of Los Angeles, and community-based organizations.

## Cybersecurity

In September 2018, California's Governor Jerry Brown signed Senate Bill 327 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”<sup>39</sup>. 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.

---

<sup>39</sup> [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201720180SB327](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB327)

In April 2022, NREL and members of the electric vehicle industry performed testing of SAE International's PKI Design Platform. PKI, or 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.<sup>40</sup> Although additional testing is needed, the demonstration indicated that PKI could improve security of communications between vehicles and EV charging equipment. Additional standards for NEVI-funded projects will conform to any regulations resulting from the proposed rulemaking by the Federal Highway Administration issued on June 22, 2022.

## 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 ZIP. The CEC will publish the final ZIP in 2022 and plans to update it biennially.<sup>41</sup> The ZIP will include updates on ZEV infrastructure and funding. The CEC also publishes an annual Investment Plan for the Clean Transportation Program, which includes program evaluation to guide future investments.

To assess charger needs, the CEC publishes biennial assessments<sup>42</sup>, which include discussions of current charging infrastructure. The Clean Transportation Program 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.<sup>43</sup>

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 Plan, California will include updates on the status of charging infrastructure in general, and the projects funded with NEVI funding in particular. Finally, CEC agreement managers will track progress through monthly calls, quarterly reports, invoice reviews, critical project reviews, and other tools.

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 for improvement in California's deployment plan.

---

<sup>40</sup> <https://www.nrel.gov/news/program/2022/ev-manufacturers-mobilize-behind-charging-cybersecurity-at-nrel.html>

<sup>41</sup> <https://www.energy.ca.gov/event/workshop/2022-04/draft-zero-emission-vehicle-infrastructure-plan>

<sup>42</sup> <https://www.energy.ca.gov/programs-and-topics/programs/electric-vehicle-charging-infrastructure-assessment-ab-2127>

<sup>43</sup> <https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics/electric-vehicle>



## **Discretionary Exceptions**

As California works to identify gaps in the current DCFC infrastructure and prepare for the initial solicitation, there may be segments where the state may need to request exceptions to the AFC and/or NEVI criteria and guidelines. At this time, California has not yet identified a need for exceptions.

## **Appendix A: National Environmental Policy Act (NEPA) Documents**

*Categorical Exclusion Determination Form*



**CEQA EXEMPTION / NEPA CATEGORICAL EXCLUSION  
DETERMINATION FORM (rev. 04/2022)**

**Project Information**

**National Electric Vehicle Infrastructure Formula Funding (NEVI) California State EV Infrastructure Deployment Plan (Plan) State of California; Department of Transportation**

**Project Description**

The Bipartisan Infrastructure Law (BIL), enacted as the Infrastructure Investment and Jobs Act (IIJA), Public Law 117-58 (Nov. 15, 2021), includes a total of up to \$7.5 billion in dedicated funding to help make EV chargers accessible to all Americans for local to long-distance trips. That \$7.5 billion includes a \$5 billion formula program and a \$2.5 billion discretionary grant program. The \$5 billion NEVI Formula Program will provide dedicated funding to States to strategically deploy EV charging infrastructure and establish an interconnected network to facilitate data collection, access, and reliability.

The BIL requires States to develop and submit a State EV Infrastructure Deployment Plan (Plan) that describes how the State intends to use its apportioned NEVI Formula Program funds in accordance with the provided guidance. The State of California has developed a Plan to be reviewed by the Federal Highway Administration (FHWA) for approval.

The State's Plan comprises the building blocks for the facilitation of a national EV charging network within California, providing EV users with the confidence that they can travel long distances and expect reliable access to EV charging stations when needed, while also recognizing the unique needs of different regions and communities. The Plan specifically provides information about how the state intends to deploy EV charging infrastructure including strategies for operations and maintenance; strategies for identifying electric vehicle charger service providers and station owners, strategies for EVSE data collection and sharing; strategies to address resilience, emergency evacuations, snow removal, and other seasonal needs; strategies for promoting strong labor, safety, training, and installation standards; equity considerations; labor and workforce considerations; cybersecurity considerations; a plan for how the program will be evaluated, discretionary exceptions; and environmental concerns and considerations.

**Caltrans CEQA Determination** (Check one)

- Not Applicable** – Caltrans is not the CEQA Lead Agency
- Not Applicable** – Caltrans has prepared an IS or EIR under CEQA

Based on an examination of this proposal and supporting information, the project is:

- Exempt by Statute.** (PRC 21080[b]; 14 CCR 15260 et seq.)
- Categorically Exempt. Class** (PRC 21084; 14 CCR 15300 et seq.)
  - No exceptions apply that would bar the use of a categorical exemption (PRC 21084 and 14 CCR 15300.2). See the Caltran's SER Chapter 34 for exceptions.



**CEQA EXEMPTION / NEPA CATEGORICAL EXCLUSION  
DETERMINATION FORM**

**Covered by the Common Sense Exemption.** This project does not fall within an exempt class, but it can be seen with certainty that there is no possibility that the activity may have a significant effect on the environment (14 CCR 15061[b][3].)

**Prepared by:**

Tracey D'Aoust Roberts

Print Name  
District 8 Env. Office Chief

Signature

07/11/2022

Date

**Environmental Approval:**

Kurt Heidelberg

Print Name  
Deputy Director of Env., D8

Signature

7/21/2022

Date

**Project Manager:**

Tony Dang

Print Name  
Deputy Director of  
Sustainability

Signature

7/21/2022

Date



CEQA EXEMPTION / NEPA CATEGORICAL EXCLUSION DETERMINATION FORM

Caltrans NEPA Determination

Not Applicable

Caltrans has determined that this project has no significant impacts on the environment as defined by NEPA, and that there are no unusual circumstances as described in 23 CFR 771.117(b). See Caltrans' SER Chapter 30 for unusual circumstances. As such, the project is categorically excluded from the requirements to prepare an EA or EIS under NEPA and is included under the following:

23 USC 326: Caltrans has been assigned, and hereby certifies that it has carried out the responsibility to make this determination pursuant to 23 USC 326 and the Memorandum of Understanding dated April 18, 2022, executed between FHWA and Caltrans. Caltrans has determined that the project is a Categorical Exclusion under:

- 23 CFR 771.117(c): activity (c)(1)
23 CFR 771.117(d): activity (d)
Activity listed in Appendix A of the MOU between FHWA and Caltrans

23 USC 327: Based on an examination of this proposal and supporting information, Caltrans has determined that the project is a Categorical Exclusion under 23 USC 327. The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.

Prepared by:

Tracey D'Aoust Roberts

Handwritten signature of Tracey D'Aoust Roberts

07/11/2022

Print Name
District 8 Env. Office Chief

Signature

Date

Environmental Approval:

Ramon Hopkins

Handwritten signature of Ramon Hopkins

07/21/2022

Print Name
Division Chief of Env. Analysis

Signature

Date

Project Manager:

Tony Dang

Handwritten signature of Tony Dang

7/21/2022

Print Name
Deputy Director of Sustainability

Signature

Date



## CEQA EXEMPTION / NEPA CATEGORICAL EXCLUSION DETERMINATION FORM

**Date of Categorical Exclusion Checklist completion (if applicable):** 07/11/2022

**Date of Environmental Commitment Record or equivalent:** N/A

An Environmental Commitments Record is not required for the plan, as the plan is an activity that does not lead directly to construction. With that said, the installation of EV charging infrastructure is a separate activity(s) which will require its own environmental approval(s) and environmental commitment record(s).

In order to account for the potential environmental effects of proposed activities associated with the deployment of EV chargers throughout the state, the following primary, yet not complete list of potential (which will be clarified during the project-level analysis) state and federal environmental challenges/concerns must be considered:

- Potentially hazardous waste issues could impact the development and delivery of projects. Assessments for acquisition of new properties to identify hazardous and potentially hazardous waste contaminations within and adjacent to the property locations will be required. Additionally, aerially deposited lead (ADL) testing may need to occur depending on the locations(s) of the project sites.
- Critical habitat and occurrences of federal and state listed special status/endangered/threatened/fully protected species are known to occur in areas adjacent to and/or areas that transverse AFCs and nominated AFCs which could result in the need for Section 7 consultations, biological assessments, mitigation, and permitting.
- Many structures and archaeological sites eligible or listed on the National Register of Historic Places and/or the California Register of Historical Resources are located along the existing AFCs as well as the cycle 6 AFC nominations. Moreover, many of the current and nominated AFCs run parallel to or transverse prehistoric trails and trade routes which could mean the presence of cultural resources. The potential impacts to cultural resources will result in the need for various reports, consultations, and potential mitigation.
- Impacts to farmland will result in the Farmland Protection Act (coordination with NRCS and completion of Form CPA-106 or Form AD-1006) requirements being applied as well as compliance with the Williamson Act (CEQA).

For each segment, the project locations must be evaluated to determine potential environmental impacts to comply with both NEPA and CEQA. For projects that will have impacts to the environment, environmental document(s) must be completed along with the necessary consultations. Should waters of the US or waters of the state, streambed alterations, and/or coastal waters and shores be impacted, permitting will be required.



## CEQA EXEMPTION / NEPA CATEGORICAL EXCLUSION DETERMINATION FORM

### Continuation sheet:

#### AIR QUALITY

Environmental Engineering completed their review of the *California Plan for Electric Vehicle Infrastructure Deployment*, received on July 6, 2022. The NEVI plan is exempt from conformity determination because it falls under the exempt project (Planning activities) listed in 40 CFR 93.126. An Air Quality Report is not required.

#### NOISE QUALITY

Environmental Engineering completed their review of the *California Plan for Electric Vehicle Infrastructure Deployment*, received on July 6, 2022. There are no physical construction activities included in the NEVI plan which means the plan is not a Type I project. Therefore, no noise study is required.

#### HAZARDOUS WASTE

Environmental Engineering completed their review of the *California Plan for Electric Vehicle Infrastructure Deployment*, received on July 6, 2022. There are no physical construction activities proposed, therefore there are no impacts to hazardous waste.

#### BIOLOGICAL RESOURCES

Biological Studies completed their review of the *California Plan for Electric Vehicle Infrastructure Deployment*, received on July 6, 2022. No effect to special status species listed under the Federal Endangered Species Act or U.S. Fish and Wildlife Service designated critical habitat and "no take" of State listed species. No effect to riparian habitat, sensitive natural communities, wetlands, or wildlife habitat connectivity. The NEVI plan does not conflict with local, regional, or state habitat conservation plans

#### CULTURAL RESOURCES

Cultural Studies completed their review of the *California Plan for Electric Vehicle Infrastructure Deployment*, received on July 6, 2022. This is an administrative action and is not considered to be an undertaking under Section 106 of the National Historic Preservation Act. No cultural technical study is required for approval of this plan.

#### WATER QUALITY

The project does not propose to add any new impervious surfaces. The project would not result in any erosion, discharge, or water pollution. No water quality impacts are anticipated.

#### STORM WATER

The project does not propose any physical construction and will not alter the drainage pattern or velocity of existing stormwater runoff.

#### HYDROLOGY AND FLOODPLAIN

The project is located within a 100-year base floodplain and will not result in a significant encroachment in the 100-year floodplain.



## CEQA EXEMPTION / NEPA CATEGORICAL EXCLUSION DETERMINATION FORM

### LANDSCAPE ARCHITECTURE

Because the NEVI is a plan without and design aspects, A Visual Impact Assessment (VIA) questionnaire to determine the VIA level was not necessary or required.

### COMMUNITY IMPACTS

The NEVI is a plan without design or construction aspects. Therefore, no relocations or land use changes are proposed. The project does not propose to acquire land designated as farmlands/timberlands, parks, recreational facilities, schools, community centers, medical facilities, or other facilities with community value. The NEVI plan proposes off system activities, so it will not impact emergency services, traffic, transportation/pedestrian facilities, and bicycle facilities. The NEVI plan will not impact any designated Wild and/or Scenic rivers. The NEVI plan will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of EO 12898. No negative community impacts are anticipated.

### GEOLOGY/SOILS/SEISMICITY/TOPOGRAPHY/PALEONTOLOGY

The plan itself does not involve activities that disturb any soils or build any structures which would be dependent on the soils below. No impacts to geology, soils, seismicity, topography, or paleontology.

### ENERGY

The NEVI plan does not involve operational and capacity improvements. No energy impacts are anticipated.

### GREENHOUSE GAS EMISSIONS

The NEVI plan itself does not consist of any physical construction and will not alter or create a new source of greenhouse gas emissions. No impacts to greenhouse gases are anticipated.

### CLIMATE CHANGE

The plan itself does not involve physical construction, or operational and capacity improvements. The plan will not alter the hazard of wildfires, flooding, or sea level rise. No climate change impacts are anticipated.

### WILDFIRE

The plan does not propose to alter the existing topography. The plan does not propose to install associated infrastructure or require maintenance on system. The plan is off system and will not impair emergency response plans or emergency evacuation plans. No wildfire impacts are anticipated.

### PERMITS REQUIRED

No permits are required for this plan.

Changes to the project description, scope of work, limits, construction strategy and/or staging and storage requirements will require that Environmental Planning be notified in



**CEQA EXEMPTION / NEPA CATEGORICAL EXCLUSION  
DETERMINATION FORM**

a timely manner, to determine if an Environmental Revalidation (and/or updates to the Technical Studies performed) is required.