Lake County Zero-Emission Vehicle Infrastructure Plan

Draft Plan

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LAKE COUNTY ZERO EMISSION VEHICLE INFRASTRUCTURE PLAN

LAKE APC ICF DKS

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Executive Summary

Lake County is preparing for a major shift in how people travel as more residents, workers, and visitors adopt electric and hydrogen-powered vehicles. State and federal policies are accelerating this transition and will influence the types of vehicles seen on local roads in the coming decades. California requires all new passenger cars sold by 2035 to be zero emission. Other rules encourage the transition of commercial trucks, buses, and public fleets to cleaner technologies. These changes are expected to increase the number of zero-emission vehicles in Lake County each year and create a growing need for convenient places to charge and refuel.

Today, Lake County has a small charging network with 15 locations and 36 total ports. Only a few of these are fast chargers. Many communities lack any public charging at all. This limits access for residents who cannot charge at home and creates barriers for travelers passing through the region. It also affects local businesses that want to attract visitors and workers who rely on electric vehicles. Expanding charging access will allow the County to support a cleaner transportation system while also strengthening economic activity.

Vehicle adoption trends show steady growth. More than 700 light-duty zero-emission vehicles are now registered in Lake County, with battery-electric vehicles making up most new purchases. State forecasting tools project that by 2050 most passenger vehicles in Lake County will be electric and an increasing share of medium- and heavy-duty vehicles will be electric or hydrogen-powered. These projections highlight the need for the County to prepare long before the majority of vehicles shift to zero-emission models.

To meet this future demand, the project team estimated the number and types of charging stations Lake County will need in the years ahead. The results show a substantial increase in the need for residential, workplace, and public chargers. Fast chargers will play an important role for drivers who travel long distances or lack access to charging at home. Modeling also shows that Lake County will need hydrogen fueling capacity as heavier vehicles begin to transition. Based on projected demand levels, the County is expected to need an initial hydrogen station in the early 2030s, with a second station required later in the later-2030s as demand continues to grow.

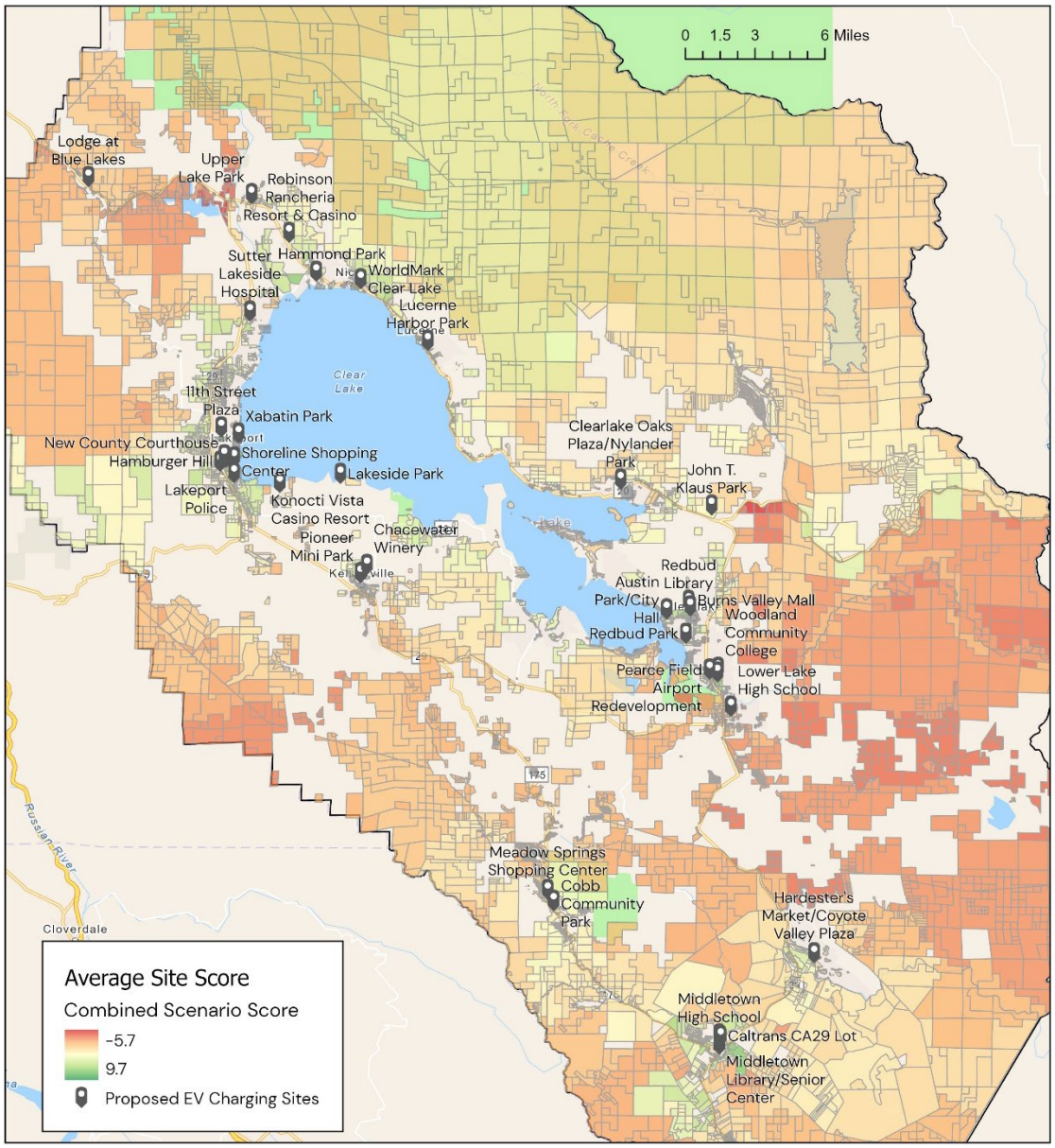
A detailed siting analysis was conducted to identify the most promising locations for new public charging stations. Every parcel in the County was evaluated using factors such as travel behavior, land use, nearby amenities, grid capacity, and equity considerations. The analysis found that the best locations tend to be commercial centers, grocery stores, parks, schools, government buildings, and medical facilities. These locations are already popular destinations where drivers typically spend enough time for meaningful charging. They also offer good visibility and access from major roads. Using this analysis, the project team identified 35 recommended sites across the County. These locations are shown in Figure ES 1, which maps the proposed public charging network.

Community input shaped the selection of sites and priorities. Residents expressed strong support for placing chargers where they can shop, eat, or use public services while charging. Many participants emphasized the need for fast charging, especially in South County where access is limited today. Medical staff noted that charging at healthcare facilities could improve commuting reliability. Community members also raised concerns about reliability and encouraged the County to install multiple chargers at each site. Some residents supported pairing charging stations with solar power to improve resilience during outages.

The Implementation Strategy provides a roadmap for how the County and its partners can move these projects forward. It calls for close coordination between local governments, tribal partners, the regional transportation agency, utilities, and private site hosts. It outlines ways to simplify and speed up permitting so that new stations can be built more easily. The strategy also describes how the County can pursue joint funding applications, encourage public-private partnerships, and support local workforce training. These steps will help ensure that chargers are installed efficiently and remain reliable over time.

Overall, this plan positions Lake County to build a charging network that is convenient, equitable, and ready for future transportation needs. The recommended sites focus on supporting residents who cannot charge at home, attracting visitors, and strengthening key community destinations. With steady coordination, thoughtful investment, and strong community partnerships, Lake County can create a clean transportation system that supports economic growth, improves air quality, and enhances quality of life for everyone in the region.

Figure ES 1. Proposed EV Charging Sites



Introduction

Located approximately 100 miles north of San Francisco and 35 miles east of the Pacific Ocean, Lake County borders six counties: Mendocino, Sonoma, Napa, Yolo, Colusa, and Glenn. The area is connected to its neighbors by State Highways 20, 29 and 175. Clear Lake, a body of water that identifies Lake County, represents five percent of the County's land area. The main economic drivers in the region are agriculture, tourism, and geothermal development in the southwestern mountainous terrain of the County. The population typically increases during the summer months with the influx of tourists and seasonal residents. According to the US Census, 12% of the existing homes in the County are seasonally vacant [1]. Seven tribes are present in the County: five have land and four have established casinos. Lakeport and Clearlake concentrate the largest population in the County. The latter serves as a significant tourist hub in Northern California, with several parks, stays, tasting rooms, and water activities.

The geographical positioning of the County subjects it to the environmental complexities associated with air quality management. The Lake County Air Quality Management District (AQMD) has made significant strides in ensuring clear air for the region, with the American Lung Association ranking it one of the top 25 cleanest counties in the US for ozone and $PM_{2.5}$ pollution in 2024 [2]. However, the pollution localized to areas with high vehicle tailpipe emissions continues to pose considerable health risks to local populations. Additionally, the transportation sector also remains a significant contributor to greenhouse gas (GHG) emissions. Across the state, transportation accounts for approximately 38 percent of total emissions in the state [3]. With a population of over 67,700 people spread over 1,256 square miles, Lake County is no exception [1].

California has put in place ambitious plans to reduce transportation emissions with current mandates seeking to increase the adoption of zero emission vehicles (ZEVs). As Lake County prepares to meet the State of California policies and regulations, it also faces the need to service its increasing residential and touristic demand for electric vehicle (EV) charging stations. This also requires the County and its member cities to carefully prepare for the future of alternative fueling providing options, which includes current and developing technologies such as hydrogen, and to form a larger network of zero emission fueling facilities joined with other jurisdictions. This is especially challenging for a large rural county like Lake County, which serves a large low-income and tourist population in need of ZEV infrastructure to support their trips.

Leading these planning efforts is the Lake Area Planning Council (APC), which is the designated Regional Transportation Planning Agency (RTPA) for the region. The Council was established in 1972 and operates under a Joint Powers Agreement between local jurisdictions in the region. Three committees advise the APC: the Policy Advisory Committee (PAC), the Technical Advisory Committee (TAC), and the Social Services Transportation Advisory Council (SSTAC). With the leadership of the APC, a Technical Advisory Group (TAG) has been formed to assist with the development of Lake County's ZEV Infrastructure Plan (LCZIP).

In this introduction, we will review in-depth the major policy drivers impacting the region at a Federal, State, and County level.

Major Drivers for EV Transition

Three main factors are shaping the move toward clean transportation in Lake County. The first is the need to reduce greenhouse gas emissions and protect public health. The second is strong state and federal policy direction. The third is the availability of funding for public charging

stations and clean vehicle adoption. These factors work together and create a clear path toward zero-emission travel.

Federal Policies, Regulations, and Programs

Federal policy plays a major role in the growth of zero emission transportation. Over the past several years, the federal government has adopted large funding programs and new emissions standards that support the transition to cleaner vehicles. These actions help local governments and rural regions prepare for future charging and fueling needs.

California's NEVI

Include $384 million over the five-year period. The California Energy Commission (CEC) leads NEVI development. Funds can only be used on AFCs. NEVI's Corridor 8 includes highway 29 from Upper Lake to Lower Lake and highway 20 from Clearlake to Yuba.

The Bipartisan Infrastructure Law (BIL) and the Inflation Reduction Act (IRA) created the largest national investment in clean transportation to date [4]. It includes funding for EV charging, clean school buses, hydrogen fueling, and grid improvements. Two key programs from this law are the National Electric Vehicle Infrastructure (NEVI) program and the Charging and Fueling Infrastructure (CFI) program [5]. The NEVI program supports DC fast charging along USDOT-designated Alternative Fuel Corridors (AFCs). Figure 1 displays maps of the AFCs across the country and within Lake County, including CA-20 and CA-29 as shown in the inset [6]. The CFI program supports both corridor and community charging. These programs are described in Table 1. State and local partners rely on them to expand public charging access and fill gaps in rural regions.

Figure 1. FHWA Alternative Fuel Corridor (AFC) Designations and Corridor 8 in Lake County

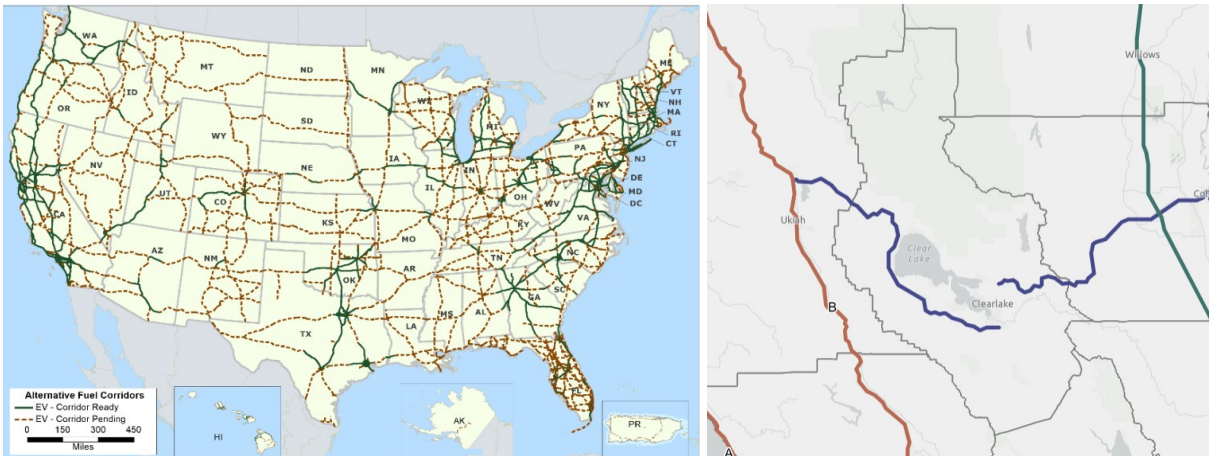


Table 1. Incentive Programs and Tax Credits Offered through the BIL and IRA

Incentive/Program	Description
National Electric Vehicle Infrastructure Program (NEVI)	Supports the buildout of fast charging along major highways. The goal is to provide reliable charging every fifty miles to help drivers travel long distances with confidence.
Charging and Fueling Infrastructure (CFI) Program	Provides grants for public charging in both community locations and highway corridors. Helps local governments and tribes install chargers in areas that lack access today.

Incentive/Program	Description
Alternative Fuel Infrastructure Tax Credit	Offers tax credits covering up to 30% of charging or fueling equipment costs, expiring on June 30th, 2026.
Clean Heavy-Duty Vehicle Program	Helps replace older heavy duty vehicles with cleaner models. Supports vehicle purchases, infrastructure, and workforce training in communities with air quality concerns.
Rural Economic Development Loan and Grant Programs	Provides financing for EV charging in rural communities. Local utilities can use these funds to support new stations that serve residents and visitors.

Aside from incentive programs being offered through the BIL and IRA, the federal government has also recently adopted several key regulations that promote the adoption of clean technologies. In 2024, the U.S. Environmental Protection Agency (EPA) implemented new historic emissions standards for light-, medium-, and heavy-duty vehicles [7]. These standards, aimed at lowering the tailpipe emissions of new cars & trucks, represent the strongest vehicle standards ever proposed by the EPA. For light- and medium-duty vehicles, the Multipollutant Emission Standards would apply from model years 2027 to 2032, necessitating rapid vehicle electrification due to the aggressive emissions reduction targets. Similarly, heavy-duty vehicles must meet the Phase 3 rule for model years 2027 through 2032, focusing on GHG emissions reduction [8]. These standards, in conjunction with other federal investment in charging infrastructure, are expected to accelerate the transition to EVs, particularly. The proposed regulation could lead to 54% to 60% of new vehicles sold in 2030, and 67% of those sold in 2032, being ZEVs.

Some federal programs face uncertainty under the current administration, including temporary pauses in some infrastructure payments. For this reason, state and local programs remain important sources of near-term support. Even so, federal funding and standards will continue to influence ZEV adoption in Lake County and across the country.

State's Emissions Reduction Landscape

Regulations Supporting EV Deployment

California has adopted some of the strongest clean transportation rules in the country. Early laws focused on reducing greenhouse gas emissions. Newer regulations now require a shift toward zero-emission cars, trucks, and buses. The Low Carbon Fuel Standard also creates financial credits that support EV chargers and hydrogen stations. These rules, highlighted below in Figure 2 and in Table 2, guide the long-term direction of transportation in the state and create a clear need for local charging access.

Figure 2. Timeline of California Regulations Supporting the EV Market and Charging Deployment

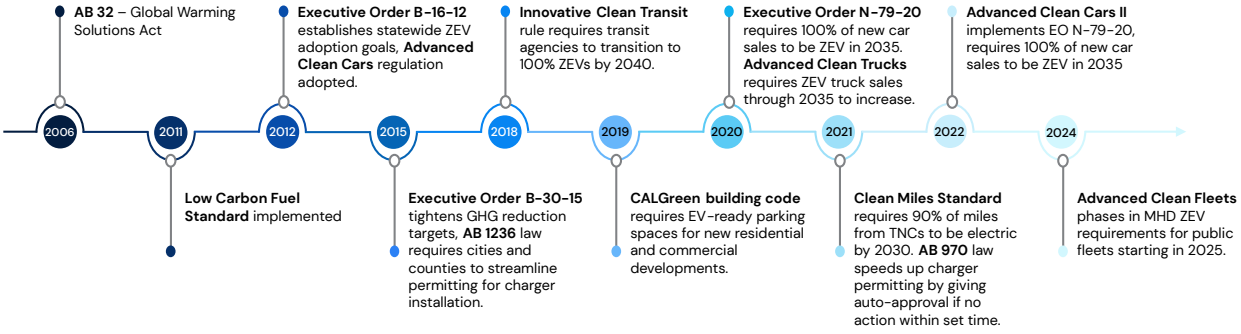


Table 2. California Regulations Supporting ZEV Deployment

Regulation	Description
Low Carbon Fuel Standard (LCFS)	Lowers the carbon intensity of transportation fuels over time. Provides credits to charging and hydrogen stations that help reduce operating costs for site owners.
Advanced Clean Cars II	Requires all new cars sold in California to be zero emission by 2035. Sets clear annual targets so the market can prepare for long term change.
Advanced Clean Trucks (ACT) Regulation	Requires manufacturers to produce more clean medium duty and heavy duty vehicles each year. Supports the long term transition of goods movement and commercial fleets.
Advanced Clean Fleets (ACF) Regulation	Requires public fleets and many private fleets to begin shifting to clean vehicles starting in 2024. Helps ensure that the vehicles used for essential services become cleaner over time.
Innovative Clean Transit (ICT) Regulation	Requires transit agencies to convert to zero emission bus fleets by 2040. Helps reduce emissions in communities that rely on public transportation.
Clean Miles Standard	Requires rideshare trips to rely mostly on ZEVs by 2030. Encourages companies to support drivers who want to adopt clean vehicles.
CALGreen Code	Requires new buildings to include wiring and electrical capacity for EV charging. Helps lower the cost of future charger installations for residents and businesses.
AB 1236 & AB 970	Requires cities and counties to process EV charger permits quickly and consistently. Helps reduce delays and makes it easier to install new charging stations.
SB 454	Requires public chargers to allow open and simple payment methods. Helps create a network where drivers can pay easily without joining a membership program.

In addition to laws and incentives directed at increasing ZEV adoption, California has adopted standards and regulations related to the deployment of EV chargers, also referred to as electric vehicle supply equipment (EVSE). The purpose of these standards is to create a uniform and streamlined permitting, installation, and usage of EVSE statewide to bolster EV driver confidence in the charging network. These are highlighted below in Table 3.

Table 3. California Regulations Supporting Charger Deployment

Regulation	Description
CALGreen Code	Requires new buildings to include wiring and electrical capacity for EV charging. Helps lower the cost of future charger installations for residents and businesses.
AB 1236 & AB 970	Requires cities and counties to process EV charger permits quickly and consistently. Helps reduce delays and makes it easier to install new charging stations.
SB 454	Requires public chargers to allow open and simple payment methods. Helps create a network where drivers can pay easily without joining a membership program.

Lake County complies with the current permit guidelines and has integrated EVCS installation language into its County Code as well as developed its publicly available permitting checklist [9] [10]. As of April 2025, the jurisdiction of Lakeport is reported as "not streamlined" and and that of Clearlake as "Streamlining in process" [11]. While Clearlake's Municipal Code 18-19.230 (Electric Vehicle Charging Stations) includes the expedited processing clause, there is no checklist available to fully comply with Government Code Section 65850.7 [12].

State and Regional Plans

California has created several plans to guide the growth of ZEV infrastructure. These plans show how the state will support charging and hydrogen fueling over the next decade. They also explain what local governments can do to prepare for higher levels of ZEV use across rural and urban communities.

Figure 3. EVCS ready spaces marked with signage according to CalGreen Code.

The CEC released its first Statewide ZEV Infrastructure Plan in 2022 [13]. The plan describes the near term and long term actions needed to build enough charging and hydrogen stations to meet future demand. It also explains how state agencies will coordinate funding and support local governments. A second report released in 2024 shows that the electric grid can support future ZEV growth with proper planning [14]. The report also highlights the need for early investment in areas with limited existing infrastructure.

The State's ZEV Market Development Strategy guides the rollout of vehicles, infrastructure, workforce programs, and consumer support. It helps agencies align their work and coordinate with cities, counties, and regional governments. The strategy encourages rural counties to adopt ZEV readiness plans and to focus on new charging stations in locations that are used often by residents and visitors. These locations include grocery stores, parks, government buildings, and other public destinations.

The state has also funded two major planning efforts in Northern California. The Northwest California Alternative Fuels Readiness Project provides recommendations for expanding electric vehicle charging, hydrogen fueling, and other clean transportation options in rural counties [15]. The project identifies common barriers in these regions and offers guidance on funding, building codes, workforce training, and outreach. Mendocino County was included in this study. It shares many similarities with Lake County including rural geography and seasonal travel patterns.

The North Coast and Upstate Fuel Cell Electric Vehicle Readiness Plan focuses on hydrogen infrastructure [16]. The plan examines travel corridors across nine northern counties and identifies locations that may need hydrogen stations in the future. The study compares each county to key criteria. These include proximity to major highways and distance from existing hydrogen markets. Lake County ranked low in this evaluation. It was not identified as an early priority for hydrogen deployment. Even so, the plan recommends long term preparation to support medium duty and heavy-duty hydrogen vehicles as they become more common.

Together, these state and regional plans provide a roadmap for how Lake County can expand ZEV infrastructure. They confirm that rural regions will need more public chargers and more support for clean vehicle adoption. They also show that early coordination across agencies will

help prepare the grid, support local fleets, and give drivers confidence to travel throughout the region in clean vehicles.

Incentive Programs

To facilitate the transition of California's on-road and rail transportation to zero and near-zero emission, the State has also implemented a number of incentive programs. These include rebate programs, vehicle replacement programs, point-of-sale incentives, infrastructure incentives, and funding directed for tribes or tribal organizations. Table 4 lists incentive programs that are currently in effect and are directly supporting the expansion of ZEVs and infrastructure throughout the State.

Table 4. California Incentive Programs for Clean Technology Adoption; Yellow Suggests No Available Funding in 2025 but May Reopen in Future Years

Regulation	Description
Clean Vehicle Rebate Project (CVRP)	Offers rebates for eligible clean vehicles. Helps reduce upfront costs for households and encourages broader EV adoption across the state.
California EV Infrastructure Project (CALeVIP)	Provides rebates for public charging stations across California. Supports fast charging and Level 2 charging in areas that need more access.
Clean Cars 4 All	Provides grants to retire older vehicles and replace them with cleaner models. Helps low income residents reduce emissions and lower long term fuel costs.
Driving Clean Assistance Program (DCAP)	Offers grants and low interest loans for low income residents who want to buy an EV. Also provides extra assistance for charging at home or in the community.
California HVIP	Provides point of sale vouchers for zero emission trucks and buses. Helps fleets adopt clean technology for goods movement and transit services.
CEC Clean Transportation Program	Funds clean transportation projects across research, demonstration, and infrastructure. Helps prepare communities for the growing demand for EV charging.
Low Carbon Fuel Standard LCFS	Provides credits to charging and hydrogen stations based on electricity use and capacity. Helps reduce operating costs as more vehicles begin using the stations.
California Capital Access (CalCAP) Program	Helps small businesses secure financing to install EV charging equipment. Reduces the financial risk for lenders and supports small commercial sites.
Tribal EV Grants	Supports tribes with funding for charging installations, planning activities, and workforce development. Helps expand access to ZEV infrastructure on tribal land.
EnergIIZE	Supports charging and hydrogen stations for medium and heavy duty vehicles. Helps fleets develop the infrastructure they need for clean commercial operations.

Regional and Local Efforts

Figure 4. Clearlake Oaks charging station.

The latest Regional Transportation Plan, published in 2026 recognized the need for more charging stations in Lake County [17]. Also, it summarized the efforts towards alternative fuel vehicles, such as fuel cell electric vehicles (FCEV) and its infrastructure for the new Interregional Transit Center.

The Lake County Transit Development Plan, updated in 2023, specifies the actions taken by the County surrounding the integration of alternative fuel in their fleet and infrastructure. The County evaluated the transition to electric vehicles to comply with the state's regulations, such as ICT. This encompasses vehicles range in size from small vans used for paratransit services to full-size buses uses for fixed routes. The capital requirements to transition were deemed extremely high ($15 million) and the technology capabilities for buses used in mountainous regions limited. The County is preparing to transition, while looking to be exempted due to the reasons stated before.

On the other hand, Lake County plans to develop a new Transit Center in Clearlake, located in the intersection of South Center Drive and Dam Road Extension. The plan received a grant from the Transit and Intercity Rail Capital Program (TIRCP), adding almost $13 million to the fund allocated to build the center. It is expected to purchase four fuel cell electric buses powered by hydrogen with the corresponding fueling and maintenance infrastructure. The location for said infrastructure will be at Lower Lake yard, about 1.5 miles from the proposed transit center.

As part of the 2026 Regional Transportation Plan update, the Lake Area Planning Council adopted relevant goals, policies, and objectives related to EV charging infrastructure. Within the "Overarching Issues" element, they've set a goal to develop a multi-modal system of seamless transportation facilities designed to service both regional and interregional needs. Multiple objectives are linked to this goal. In particular, Objective OI-3 is to "reduce greenhouse gas emissions by promoting and facilitating transit use and increasing active transportation alternatives." This included several policies including OI-3.4: "Support and facilitate the installation of electric vehicle charging stations for public use. Explore options for affordable, clean energy technology and programs" and OI-3.6: "Support planning projects which will facilitate a transition to zero emissions vehicles consistent with Executive Order EO N-79-20." [18]

Existing Conditions

This section provides a comprehensive analysis of the current state of ZEV charging and trends in ZEV adoption in Lake County, California. By exploring the County's existing infrastructural capacity and identifying opportunities for future investment in infrastructure development, this sets the stage for achieving the County's goal of expanding its ZEV infrastructure to meet community needs and broader electrification goals across the State of California.

As part of this analysis, the project team documented the number of existing ZEV charging and refueling stations using PlugShare, the CEC Charging Station dashboard and the Alternative Fueling Station Locator [19] [20] [21]. Additionally, the team analyzed ZEV registrations using the CEC ZEV Dashboard and the California Air Resources Board (CARB)'s Fleet Database to understand the existing vehicle population [22] [23].

Existing EV Charging Stations

As illustrated in Figure 5, Lake County currently has a total of 17 different sites with EV chargers and 40 ports. Of these, only 10 of these ports are direct current fast charging (DCFC) and 30 of them are Level 2 (L2) stations. More details for each of these sites is included in Table 5. Each of these sites includes a link to the website where we found the information along with more details about the connector type, payment type, facility type, and charging speed.

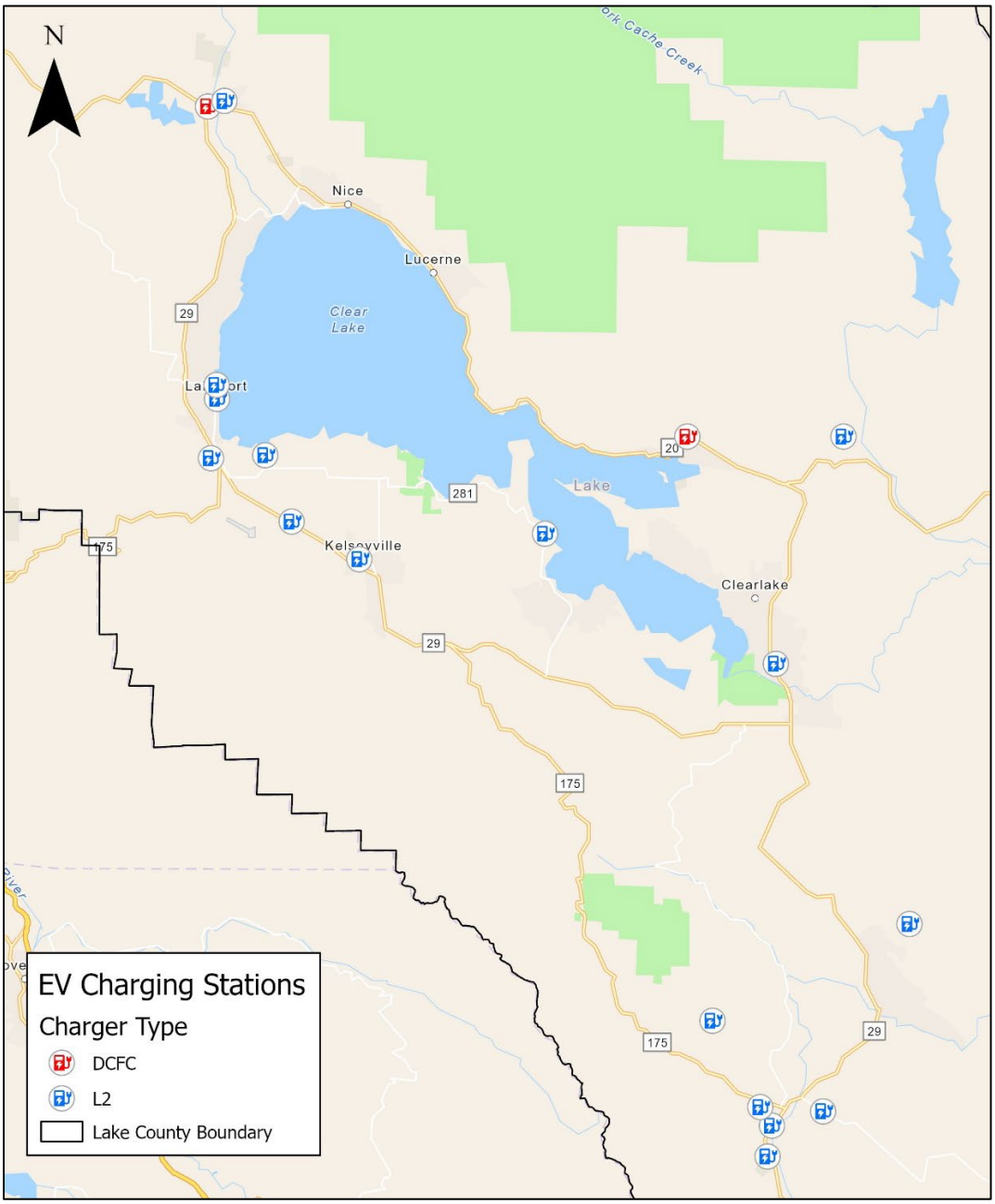
Geographically, the northern side of Clear Lake does not have any existing chargers between the unincorporated communities of Upper Lake and Clearlake Oaks on California Highway 20, although both of those cities have DCFC. The two major cities of Lakeport and Clearlake each have some chargers but have no fast chargers in them. Notably, there are no fast chargers on the southern side of the Lake, and any visitors from Napa County heading north on CA 29 would have to drive all the way to Clearlake Oaks or Upper Lake to be able to use a fast charger.

Table 5. Public Electric Vehicle Charging Stations in Lake County, CA.

Station	Network	Charger Type & Ports	Address
3 Brothers Travel Plaza	Tesla	DCFC, 8 ports	775 CA-20, Upper Lake, CA 95485
Tallman Hotel and Blue Wing Restaurant	Tesla Destination	L2, 2 ports	9550 Main St, Upper Lake, CA 95485
Stonehouse Cellars	Tesla Destination	L2, 3 ports	500 Old Long Valley Rd, Clearlake Oaks, CA 95423
Adventist Health Clear Lake	Non-networked	L2, 3 ports	15631 18th Ave, Clearlake, CA 95422
Suites On Main Kelseyville	Blink	L2, 1 port	3965 Main Street, Kelseyville, CA 95451
Shannon Family of Wines at the Mercantile	Blink	L2, 2 ports	4350 Thomas Drive, Kelseyville, CA 95453
Mendocino College - Lake Center	ChargePoint	L2, 2 ports	2565 Parallel Dr, Lakeport, CA 95453
City of Lakeport	EV Connect	L2, 2 ports	225 Park St, Lakeport, CA 95453
Skylark Shores Resort	EV Connect	L2, 2 ports	1120 N Main St, Lakeport, CA 95453
Middletown USD	Non-networked	L2, 1 port	17110 Butts Canyon Rd, Middletown, CA 95461
Domaine Helena Vineyard	Tesla Destination	L2, 2 ports	20963 Hwy 175, Middletown, CA 95461
Calpine Geothermal Visitor Center	ChargePoint	L2, 2 ports	15500 Central Park Rd, Middletown, CA 95461

Station	Network	Charger Type & Ports	Address
Twin Pine Casino & Hotel	Tesla Destination	L2, 3 ports	22223 Rancheria Rd, Middletown, CA 95461
Clearlake Oaks Maintenance Station	Non-networked	DCFC, 2 ports	13070 CA-20, Clearlake Oaks, CA 95423
Konocti Harbor Resort	Non-networked	3 chargers	8727 Soda Bay Rd, Kelseyville, CA 95451
Harbin Hot Springs	Non-networked	L2, 2 ports	18424 Harbin Springs Rd, Middletown, CA 95461
Wild Diamond Vineyards	Non-networked	L2, 2 ports	15015 Spruce Grove Road, Hidden Valley Lake, CA 95467

Figure 5. Locations of Existing EV Chargers in Lake County

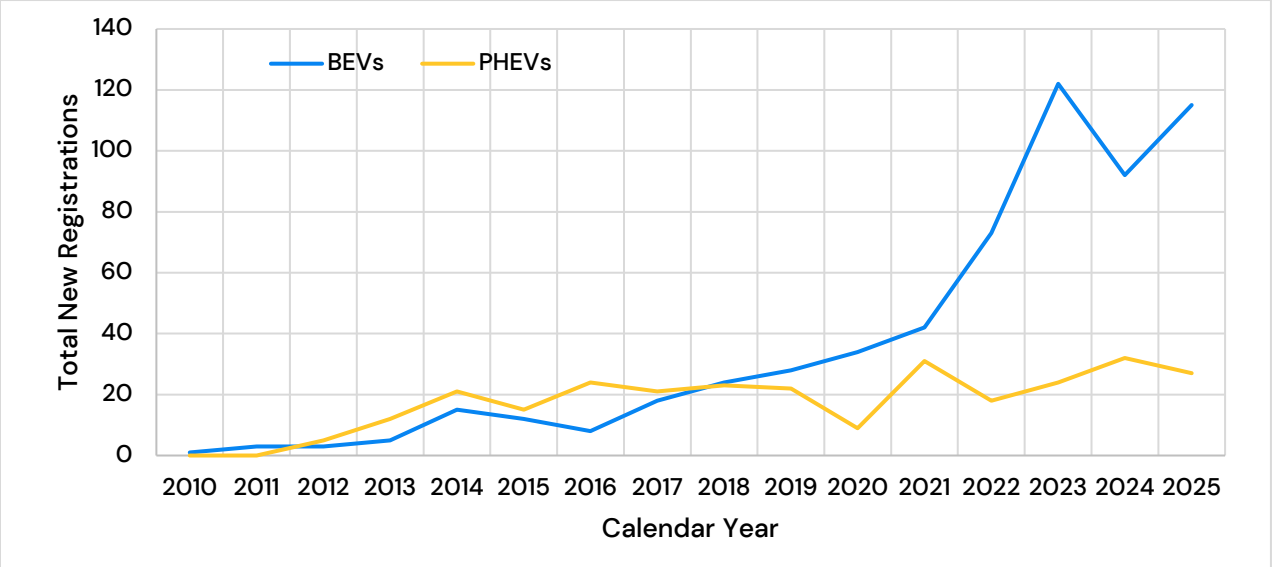


Lake County has a relatively low number of public charging ports per capita (0.6 ports per 1000 people) compared to neighboring rural communities in Mendocino County (3.5 ports per 1K pop) and Sonoma County (3 ports per 1K pop). This disparity reinforces the need for targeted investment and may strengthen future competitive grant applications by clearly demonstrating unmet demand.

Current ZEV Population

California's CEC dashboard provides timely reports on the registrations of EVs across the state by zip code [22]. This data shows that through 2025, a total of 848 light-duty (LD) ZEVs had been sold to residents in Lake County, with 142 of those sales happening in 2025. CEC also has a similar dashboard for medium- and heavy-duty (MHD) vehicles, although at this time, Lake County only has one MHD ZEV – an electric school bus. A further dive into this data in Figure 6 shows how the adoption of battery electric vehicles (BEVs) has drastically increased over time while plug-in hybrid electric vehicles (PHEVs) purchases have remained relatively steady over the years. Of these registrations, Tesla cars represented 47% of all BEVs in the County – with Chevrolet being the 2nd most popular make way down at 12%. Among PHEVs, Toyotas were most popular with 35%, while Ford and Chevrolet had 13% and 12% respectively.

Figure 6. New ZEV Registrations in Lake County Based on CEC Data [22]



Infrastructure Needs Assessment

CARB adopted the Advanced Clean Cars II (ACCII) regulation in August 2022. The new rule requires all new passenger cars, trucks and SUVs sold in California to be zero-emissions by 2035. Similarly, the Advanced Clean Trucks (ACT) and the Advanced Clean Fleets (ACF) regulations were adopted by CARB in 2021 and 2023, respectively, and accelerate the transition of MDH vehicles to ZEVs.[1] These regulations require manufacturers to increase the sales of ZEVs, including BEVs, PHEVs, and FCEVs. As a result, it has become essential to expand the charging infrastructure to support the rapid growth of new and cleaner technologies. This section of the report analyzes the growing ZEV demand in Lake County through 2050 and calculates the charging infrastructure necessary to support the expected increase in charging demand over time.

To do so, the project team divided Lake County's vehicle population into two main categories: LD and MHD vehicles.[2] We based our ZEV population projections on EMFAC2025, the official vehicle emission inventory model managed by CARB, which provides forecasts of vehicle population and their fuel type at County level through 2050 [24]. The projection incorporates CARB's latest regulations to inform ZEV adoption in the region.

The team estimated the charging infrastructure needs for the LD plug-in electric vehicles (PEV), which includes both BEVs and PHEVs, using the National Renewable Energy Laboratory (NREL's EVI-X Tool [25]. The analysis considers daily commuting as well as long-distance travel, specifically interregional trips of 100 miles or more. For the MHD PEVs, the team modeled both public and depot charging needs using ICF's proprietary model. Given the potential growth of FCEVs in the region, the study also includes an analysis to evaluate the number and capacity needed for hydrogen refueling stations.

Current and Projected Vehicle Mix

The team derived the ZEV adoption and vehicle technology forecast from CARB's EMFAC2025 [24] model, which incorporates the vehicle population and technology mix based on vehicle fuel types, including BEV, PHEV, FCEV, and internal combustion engine (ICE).

The EMFAC2025 model forecasts a general decline in both LD and MHD vehicle populations from 2025 to 2050 (Figure 7 and Figure 8). Meanwhile, the ZEV share continues to exhibit consistent growth. In 2025, the LD vehicle technology mix is 97% ICE, 2% BEV, and 1% PHEV. By 2050, the projection expects the share to change to 24% ICE, 66% BEV, 7% PHEV, and 3% FCEV. On the other hand, the MHD technology mix in 2025 consists of almost all ICEVs, and the projection estimates its population to reduce to 40% by 2050. During the same period, both BEV and FCEV shares increase from 0% to 52% and 8%, respectively. Overall, the ZEV adoption by 2050 is expected to reach 76% for LD and 60% for MHD vehicles. California's latest regulations set stronger transition goals for both LD, and MHD categories by regulating both supply and demand sides in the industry. The current EMFAC2025 projection shows the effect of regulations on the technology mix which strongly support the State's emission reduction goal.

[1] Recent changes at the federal level, such as the Congressional Review Act, may affect the future enforcement of these regulations.

[2] LD vehicles encompass gross vehicle weight ratings (GVWR) of less than 8,500 lb. MHD vehicles include classes 2b and above with a GVWR exceeding 8,500 lbs.

Figure 7. LDV Technology Mix Forecast in Lake County as Extracted from EMFAC2025.

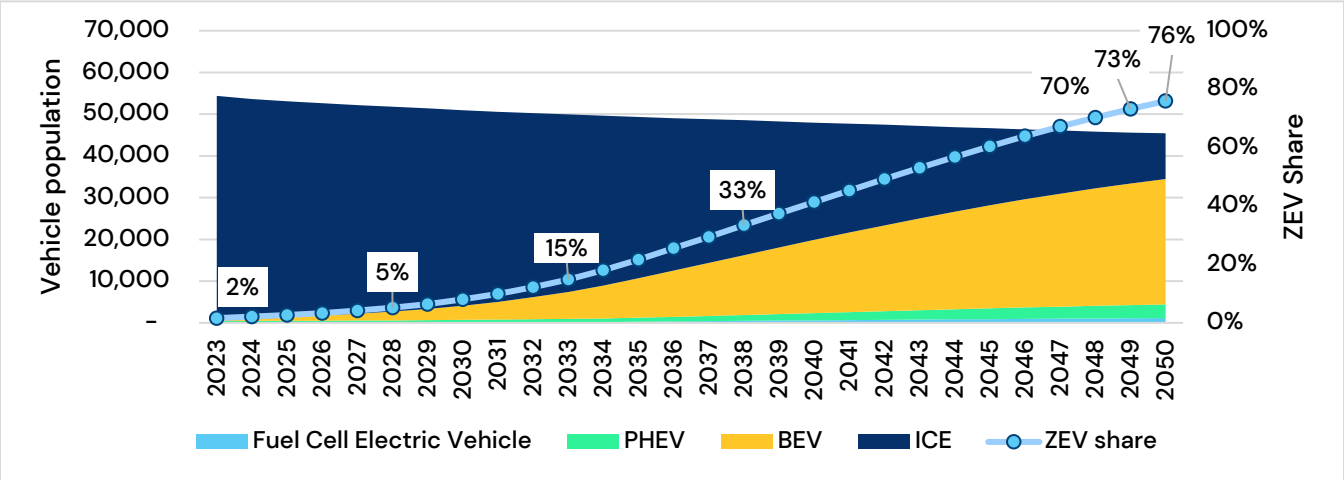
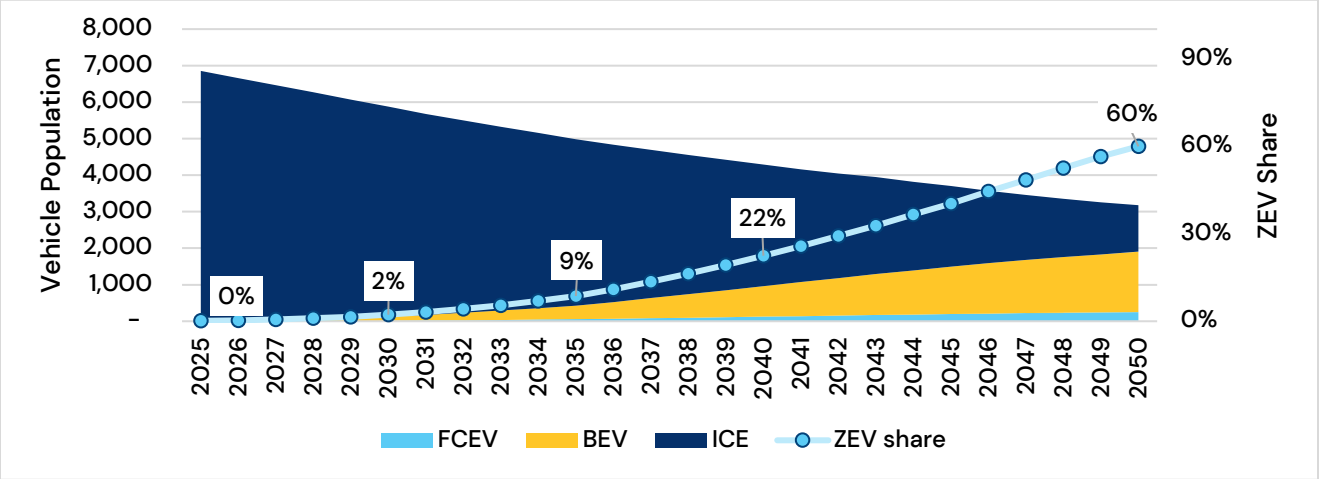


Figure 8. MHD Technology Mix Forecast in Lake County as Extracted from EMFAC2025.



Projected Light-Duty (LD) Charging Infrastructure Needs

Using the LD forecasted PEVs as an input, the project team leveraged the NREL's EVI-X suite of tools, including EVI-Pro Lite and EVI-RoadTrip, to estimate the evolution of charging infrastructure over time in Lake County [25]. EVI-Pro Lite estimates the recommended number of charging ports by type based on typical daily travel in a given metropolitan area, while EVI-RoadTrip estimates the number and types of charging ports needed to support long-distance travel of 100 miles or more along highway corridors.

Below, we summarize the EVI-Pro Lite modeling results by access type (Figure 9) and by power level (Figure 10 & Figure 11). Residential chargers are individual ports that would need to be installed at the residences of EV drivers. Private chargers are defined as shared charging ports that are accessible exclusively to certain groups, such as residents of multi-unit dwellings (e.g., apartments, condominiums, and duplexes) or for employee workplace charging. Public chargers encompass all the infrastructure in publicly available spaces such as schools, shopping centers, healthcare facilities, and neighborhoods, amongst others. Table 6 summarizes the ports needed based on power level. L1 chargers are only considered for residential charging. The current

projection suggests a total shared private and public vehicle to port ratio in 2035 of 17:1, which is aligned with the average ratio as suggested in the Assembly Bill (AB) 2127 report for the entire state [14].

Today, Lake County has 40 existing public charging ports across 17 locations, most of which are Level 2 chargers. By contrast, modeling results indicate a need for more than 400 public charging ports by 2035 to support projected light-duty ZEV adoption, including over 350 Level 2 ports and nearly 50 DC fast charging ports. This contrast highlights the substantial gap between existing infrastructure and future demand, underscoring the need for phased and sustained investment.

Figure 9. Forecasted Charging Infrastructure Demand (Ports) for Daily Trips by Access Type.

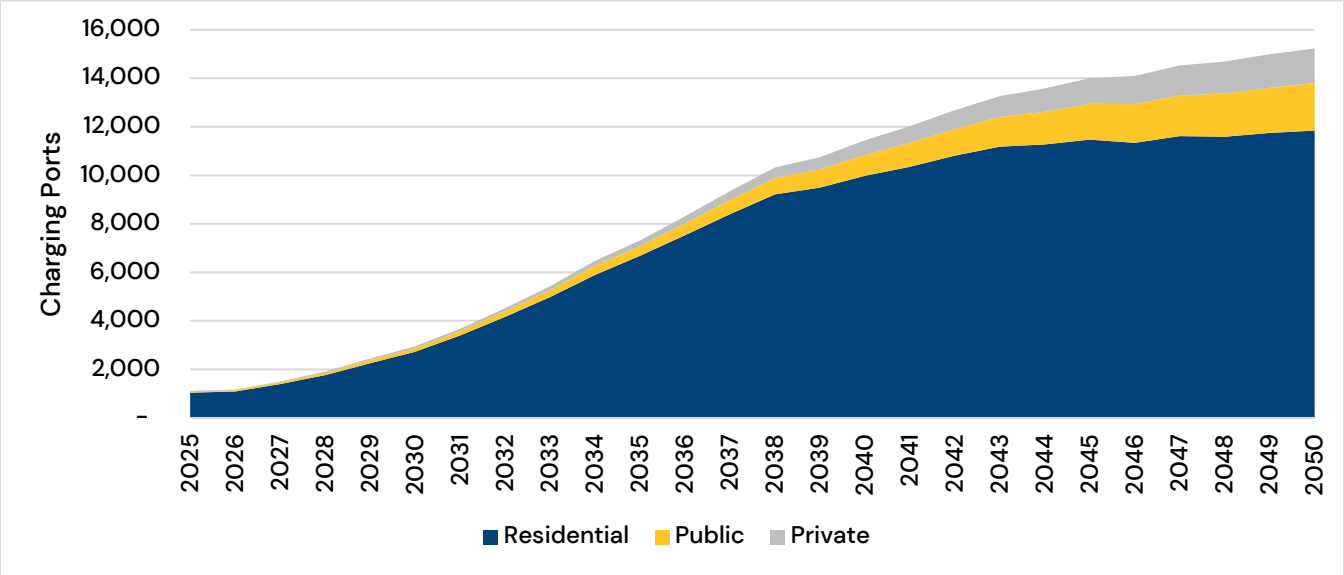


Figure 10. Forecasted Level 2 Charging Infrastructure Demand for Daily Trips.

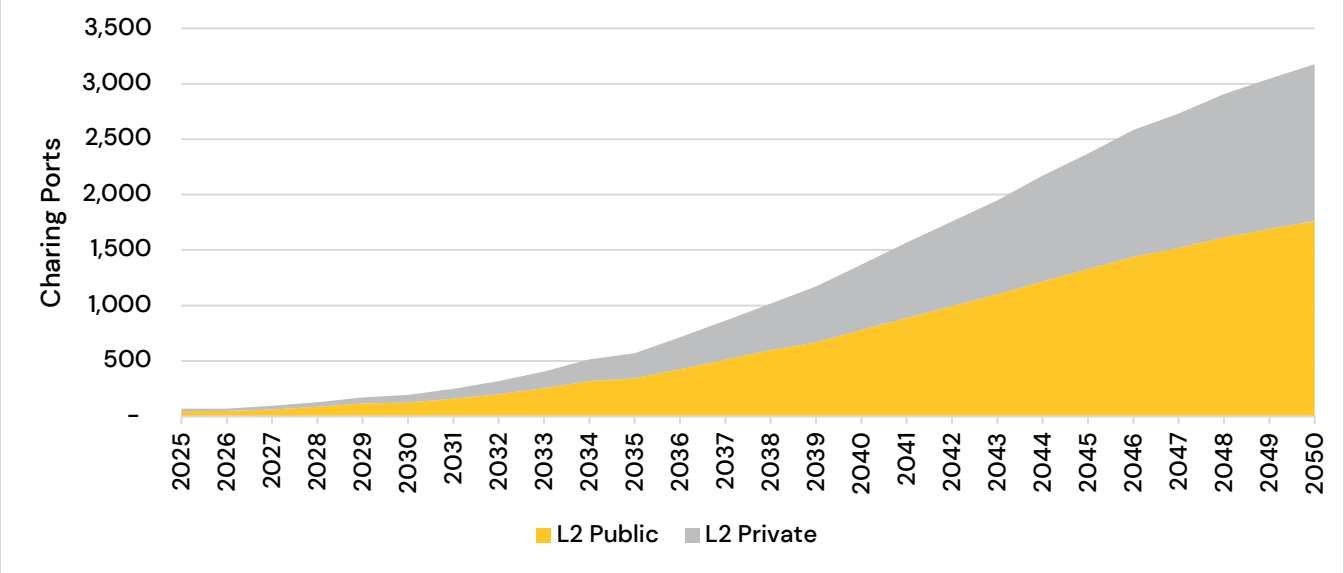


Figure 11. Forecasted DCFC Demand for Daily Trips.

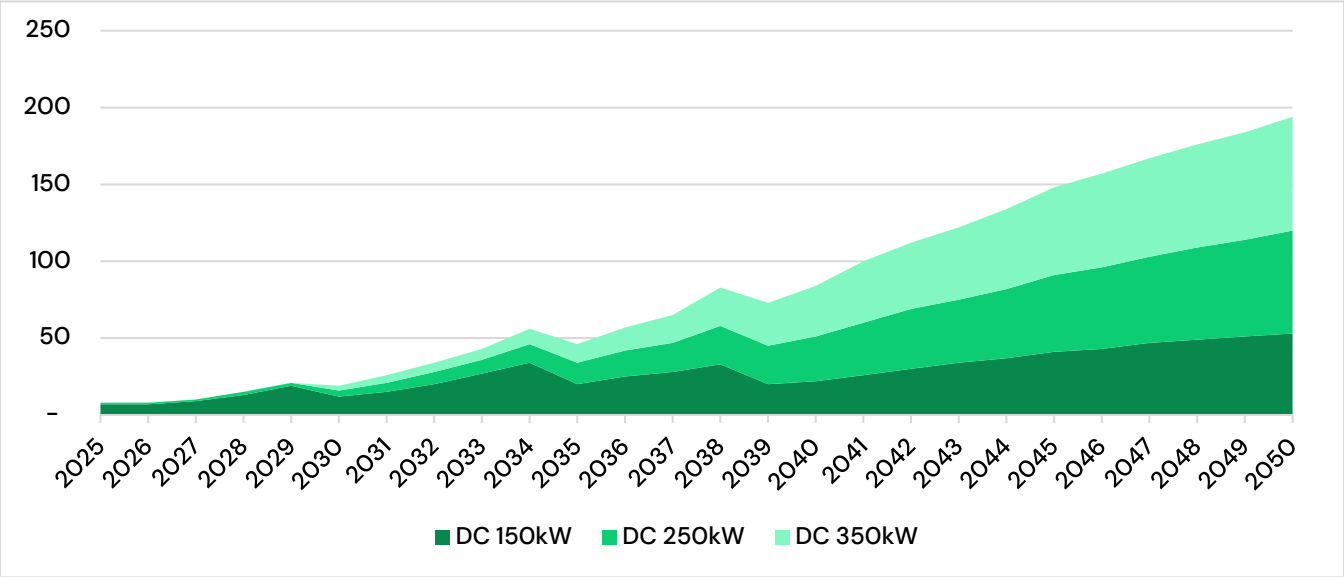


Table 6. LD Charging Infrastructure Needed for Daily Trips by Power Level.

Year	L1	L2	DC 150kW	DC 250kW	DC 350kW	Total Ports
2025	340	774	7	1	0	1,122
2030	782	2,146	12	4	3	2,947
2035	1,813	5,453	20	14	12	7,312
2040	2,702	8,656	22	29	33	11,442
2045	3,110	10,747	41	50	57	14,005
2050	3,240	11,801	53	67	74	15,235

Lake County experiences significant interregional travel between the Bay Area, Sacramento Valley, and Northern California. Distances between fast charging stations in surrounding counties can exceed 50 miles, creating coverage gaps for travelers and commercial traffic. Addressing these gaps can improve reliability for pass-through travel and support tourism and goods movement.

In addition to the daily trip analysis, we also estimated the need for trips longer than 100 miles using EVI-RoadTrip. It models traffic on the County's main corridors based on historical travel data and outputs the numbers of DCFC chargers required. According to the EVI-RoadTrip results, the State-175 and State-53 highways don't require DCFC infrastructure for long-distance travel. The State-20 and State-29 highway will require up to 5 DCFC ports by 2050, as shown in Table 7.

Table 7. DCFC Needed for Long Distance Travel along Lake County's Main Corridors.

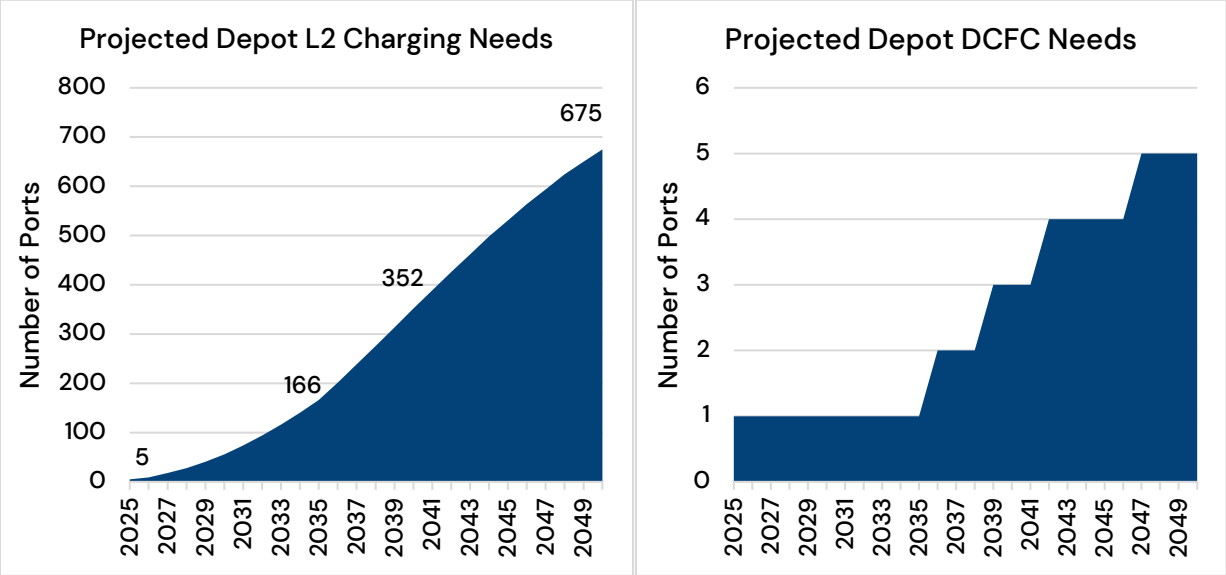
Corridor	2035	2050
State-20	3	5
State-29	4	5

Projected Medium & Heavy-Duty (MHD) Charging Infrastructure Needs

MHD electric vehicles use two primary charging models: depot and public. Depot charging includes all vehicles that regularly return to their home base and park overnight. Long-haul and interstate trucks mainly rely on public or en-route charging, which requires high-power DCFCs or the ultrafast Megawatt Charging System (MCS) to recharge depleted batteries quickly and meet their operational requirements.

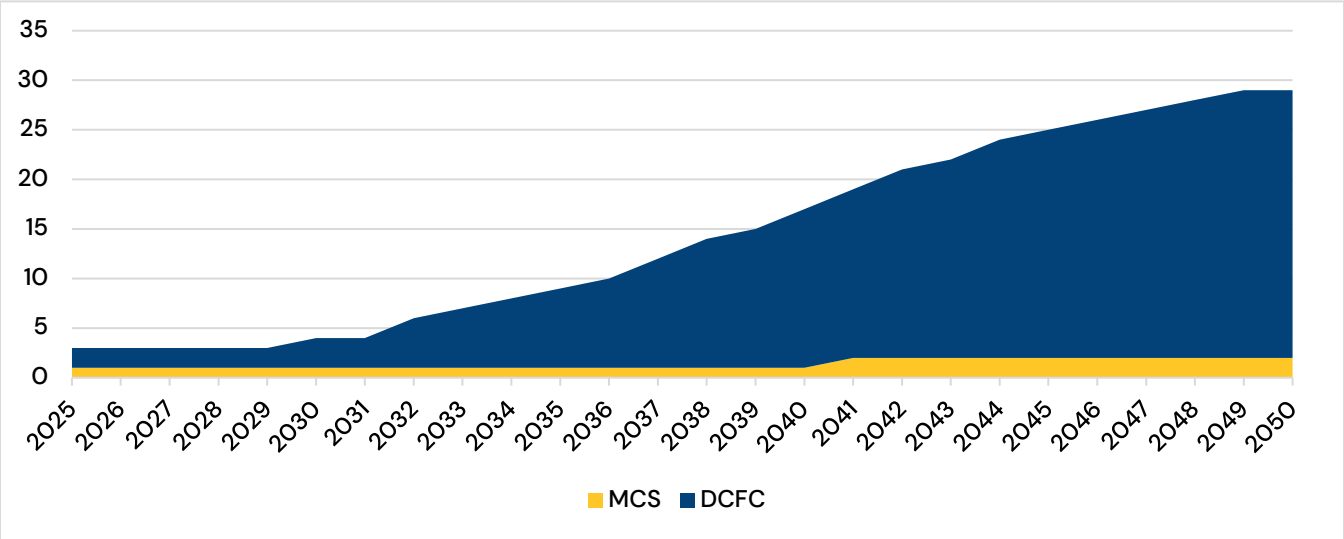
Given the extended dwelling time for vehicles with depot charging access, most charging needs can be satisfied using L2 ports, as shown in Figure 12. The demand for depot L2 chargers will begin with five units in 2025 and is projected to increase to 166 units by 2035, and 675 units by 2050. A small proportion of MHD vehicles will require DCFC (50 kW) for depot charging, with one required in 2025, and 5 total by 2050.

Figure 12. Overnight Depot Charging Infrastructure Needs for MHD Vehicles in Lake County



For the share of MHD that requires public charging infrastructure, the results exhibit a similar trend to that of the depot chargers, showing a steady increase over time, as shown below in Figure 13. Starting in 2025, the project team estimated that there will be a need for two DCFCs and one MCS charger. By 2035, the requirement for DCFC increases to eight while MCS remains constant. Later, in 2050, the DCFC need will reach 27 ports while the MCS will increase to two. The need for MCS in Lake County remains relatively low and stable over time because the vast majority of vehicles operating in the region don't make trips exceeding 700 miles or drive for more than 16 hours based on existing data. Much of the Konocti Corridor along CA-29 is designated as an Alternative Fuel Corridor. Strategic placement of medium- and heavy-duty charging infrastructure along this corridor could support the preferred southern route for interregional freight traffic and provide early readiness for electric and hydrogen trucks.

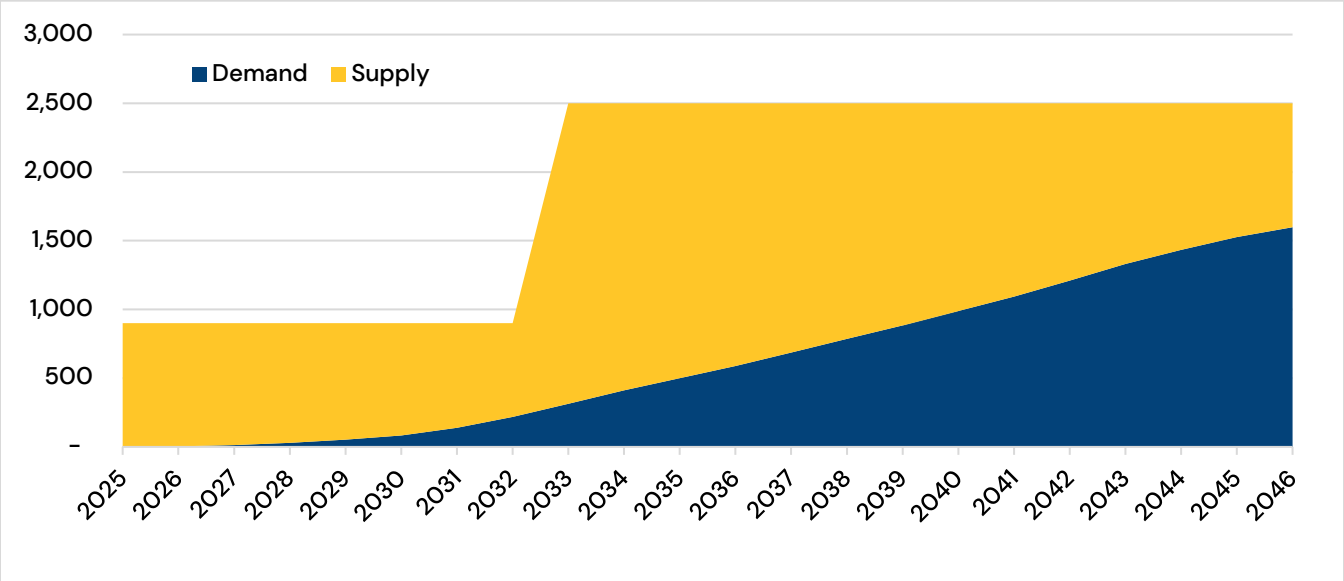
Figure 13. Projected MHD Public Charging Infrastructure Needs



Projected Hydrogen Fueling Infrastructure Needs

The hydrogen consumption in Lake County is expected to be low over the next five years, requiring less than 100 kg per day. After 2030, the hydrogen consumption projection quickly ramps up and reaches approximately 500 kg per day by 2035. It is reasonable to assume that, given a low demand level, the first station will follow the phase-in schedule for LDVs in California. According to the AB8 report, average station capacity is projected to be 900 kg/day by 2029 and 1,600 kg by 2032 in the region. Therefore, the team assumed the first station would have a capacity of 900 kg per day, which would be available starting in 2025. As demand continues to increase over time, we estimate that a second hydrogen station will be needed by 2033. By then, the average station capacity is forecasted to be 1,600 kg per day. The development of a second station at this capacity would increase the total supply for the County from to 2,500 kg per day, a capacity sufficient through 2050, as shown in Figure 14.

Figure 14. Projected Hydrogen Supply and Demand in Lake County



EVSE Siting Analysis

Expanding EV charging infrastructure requires careful siting to maximize usage, ensure equitable access, and justify investment. Well-located stations support drivers who cannot charge at home, enable long-distance travel, and provide convenient charging at everyday destinations. Strategic siting also helps distribute charging infrastructure across communities—including lower-income areas and neighborhoods impacted by grid constraints or Public Safety Power Shutoffs (PSPS) events.

This analysis identifies priority locations for new LD and MHD EV charging across Lake County as shown in Figure ES 1. The approach combines modeled travel behavior, parcel-level characteristics, and feasibility considerations to highlight sites where chargers will see meaningful demand and support equitable, reliable access across the region. The process included scoring every parcel in the County, excluding parcels unsuitable for public charging, evaluating top-ranked candidates using aerial imagery, and conducting field visits to validate physical conditions such as parking layout, ADA feasibility, and nearby electrical infrastructure.

Results from this analysis guided the selection of 30 recommended sites that balance demand, geographic coverage, equity considerations, and practical feasibility. The findings from these site visits are documented in the Appendix and were shared with the regional agencies during the previous monthly calls.

Site Selection Methodology

The site selection methodology integrates travel demand (Replica), land use data from County/City GIS layers, equity metrics (CalEnviroScreen), existing charger locations (AFDC), transit stops, and PG&E grid capacity data to assign each parcel a composite score. Table 8 summarizes these inputs and how they were used in this modeling.

Table 8. Description of Inputs Used in the Siting Analysis for LD Vehicles

Information Type	Source	How it is used
Trip data (private auto trips)	Replica	Generate travel demand scores
Land use	County-provided zoning layer, City provided layers for Lakeport and Clearlake	Exclusion of sites solely used for housing or agriculture, boosting scores of areas < ¼ mi from multi-family housing and public land
Disadvantaged communities (DAC)	CalEnviroScreen 4.0	Boosting scores of sites in DACs (areas with high population burden)
EV charger locations	Alternative Fuel Data Center (AFDC) database	Decreasing scores of sites < 1 mi away from existing chargers, both L2 and DCFC
Lake Transit bus stops	Transitland General Transit Feed Specification (GTFS) feed	Boosting scores of sites within ½ mi of transit hubs
Utility load capacity by circuit	PG&E ICA Map	Decreasing scores of sites with limited grid capacity available
Key destinations (hospitals, casinos, and grocery stores)	Google Maps	Boosting scores of sites < ¼ mi away from key destinations

Information Type	Source	How it is used
Frequency of public safety power shutoffs	PSE California PSPS Interactive Map	Decreasing scores of sites in Census tracts by annual frequency of PSPS events

The scoring process occurred across three scenarios that reflect different charging use cases:

1. Destinations with longer dwell times (best for L2 or slow charging)
2. Short-stay sites suitable for fast charging near major roads
3. Locations frequently visited by disadvantaged households

Parcels were boosted or penalized based on proximity to housing, key destinations, existing chargers, grid constraints, and PSPS exposure. After scoring, parcels used exclusively for single family residential, agricultural, or otherwise unsuitable purposes were excluded to narrow the candidate list. Remaining high-ranking parcels were visually inspected via aerial imagery and Street View before advancing to field review.

Site Scoring Results

The scoring results shown in Figure 15, Figure 16 and Figure 17 reveal clear patterns in where EV charging infrastructure will be most effective across Lake County. The strongest scores appear in Lakeport, Clearlake, Middletown, and Kelseyville. These areas contain the largest concentration of commercial activity, public services, and community destinations. They also attract the highest number of non-home trips in the Replica travel dataset. These conditions support both Level 2 charging and fast charging because drivers regularly stop at these locations for errands, medical appointments, recreation, or daily needs. This can be explored in much more detail by visiting the webmap.[3]

Across the three scoring scenarios, the same general clusters of high-performing sites emerge. The first scenario favors destinations where vehicles remain parked for longer periods. The second scenario reflects short-stay locations near major roads where fast charging is appropriate. The third scenario highlights areas with high trip frequency within disadvantaged communities. Although each scenario has a distinct purpose, they consistently identify parcels near grocery-anchored shopping centers, civic facilities, medical offices, and busy retail corridors. These parcels score well because they serve a range of trip types and because they are natural places for people to spend time.

Modifier layers also shape the results. Parcels located within one mile of existing chargers receive reduced scores. This prevents unnecessary duplication of service and encourages broader geographic coverage. Parcels located near key services such as grocery stores, schools, clinics, libraries, and transit stops receive a score increase, which helps emphasize sites that can serve multiple community needs. Equity modifiers increase the scores of parcels located in disadvantaged communities. This is especially visible in portions of Clearlake, Nice, and Clearlake Oaks where many households lack home charging access.

Grid capacity remains a limiting factor in several areas. Portions of Lower Lake and other locations with constrained electrical infrastructure receive lower scores even when trip activity is moderate. These areas may be appropriate for future charging once grid upgrades occur or

[3] https://dbcteam.maps.arcgis.com/apps/mapviewer/index.html?webmap=463b892ee15c49298505531bb48817ca

once resilience infrastructure such as solar and battery storage is added. For near-term siting decisions, however, parcels with adequate electrical capacity score more favorably.

Rural parts of Lake County generally receive low scores. These areas have limited commercial activity, low trip density, few public destinations, and minimal electrical infrastructure. They also contain large numbers of parcels excluded from consideration because they consist of agriculture or single-family housing. The scoring confirms that these areas are unlikely to support sustained use of public EV charging.

Figure 15. Results of Parcel Scoring – Scenario 1 Score (higher score is better).

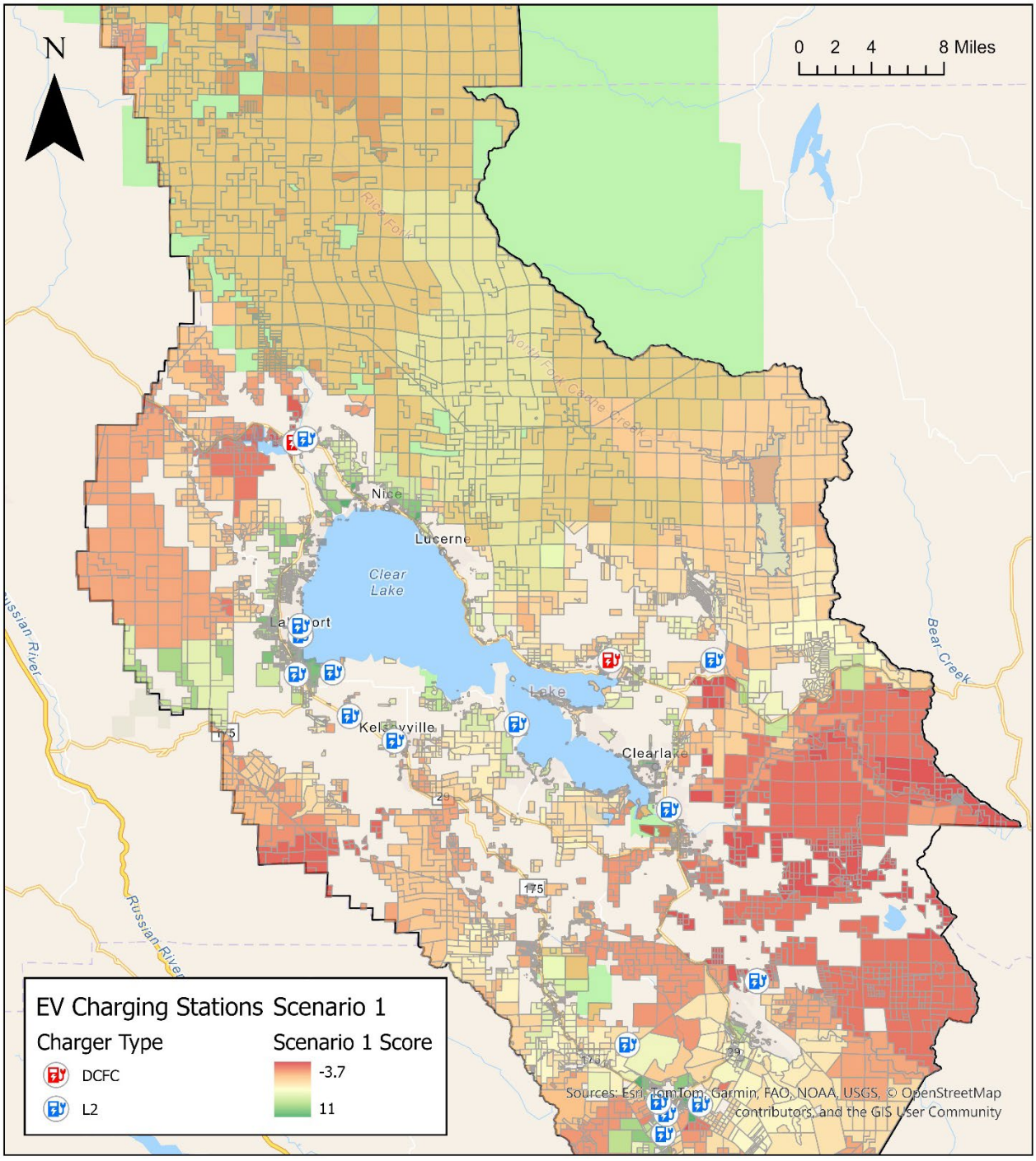


Figure 16. Results of Parcel Scoring – Scenario 2 Score

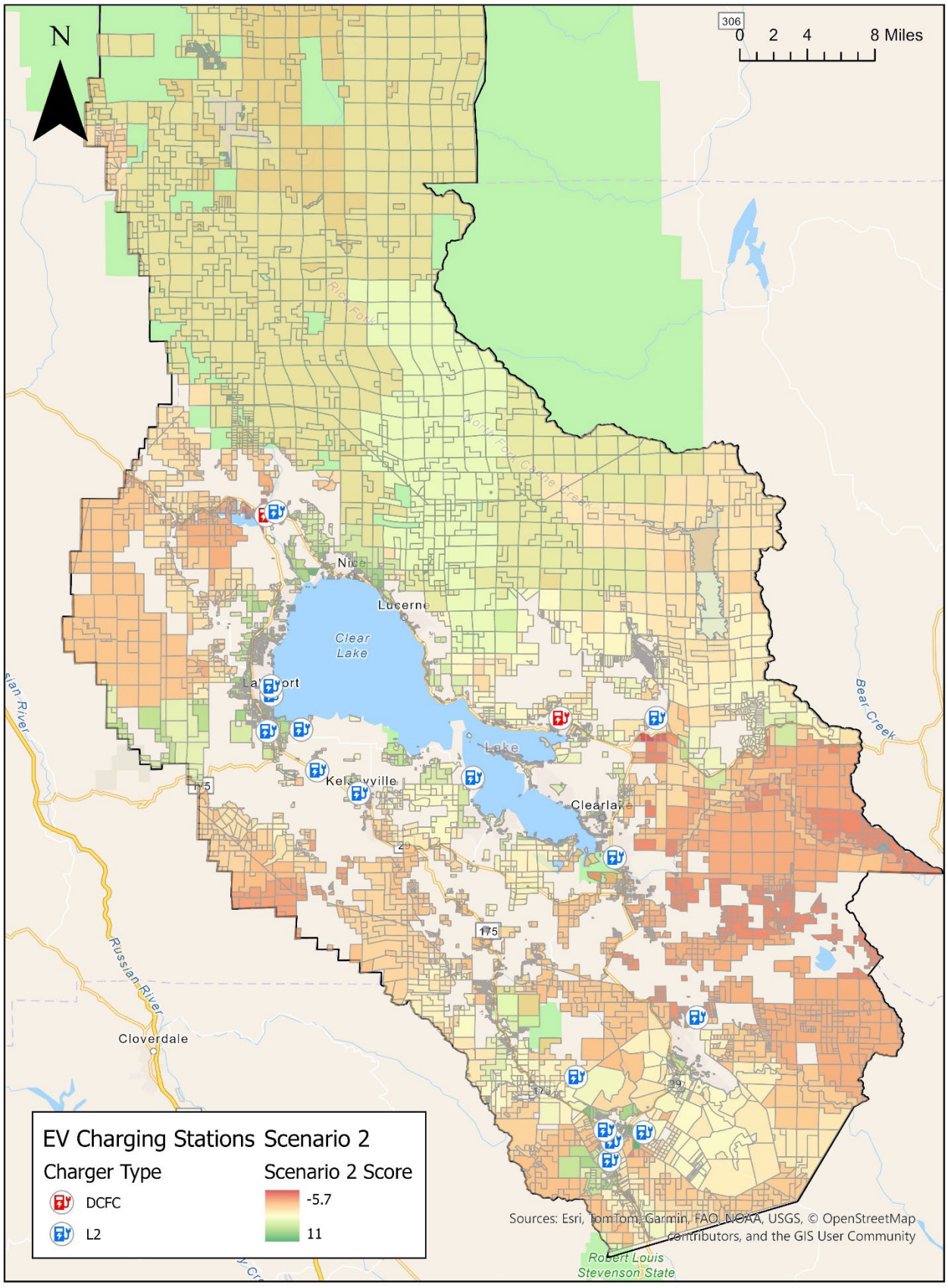
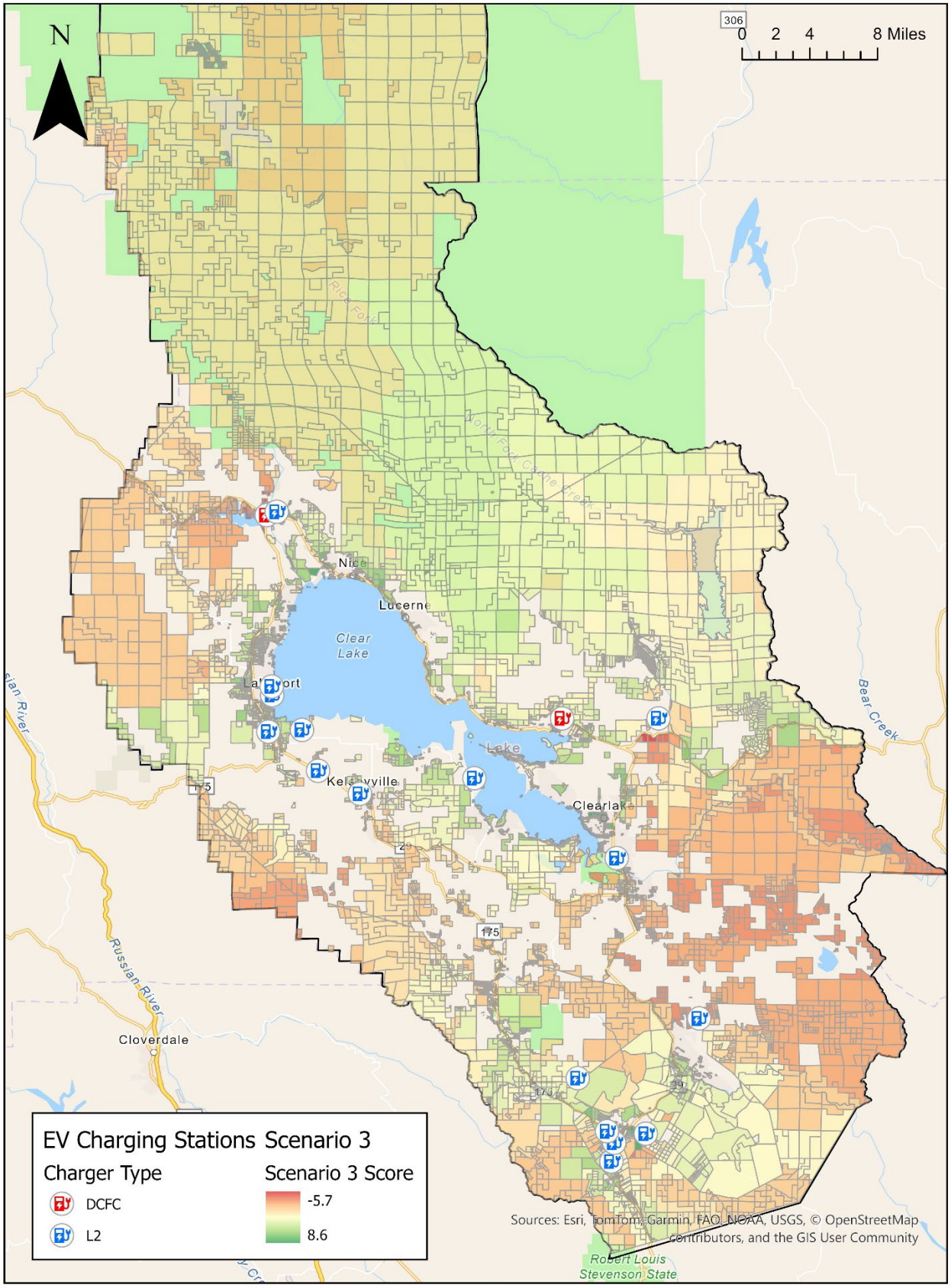


Figure 17. Results of Parcel Scoring – Scenario 3 Score



Proposed Sites

The siting analysis identified **35 priority locations** for public EV charging in Lake County. These sites reflect a balance of demand, geographic coverage, equity considerations, and practical feasibility. They include a mix of County properties, city facilities, commercial centers, parks, schools, and major destinations. Each location was selected for its accessibility, visibility, proximity to key services, and potential to serve both residents and visitors.

A full description of each site is included in the Appendix.

The proposed sites are:

1. **Shoreline Shopping Center**
2. **Cobb Community Park**
3. **Woodland Community College**
4. **Hardester's Market/Coyote Valley Plaza**
5. **Middletown High School**
6. **Hammond Park**
7. **Lucerne Harbor Park**
8. **Chacewater Winery**
9. **Robinson Rancheria Resort & Casino**
10. **Lakeport Police/Shopping Plaza**
11. **Sutter Lakeside Hospital**
12. **Silveira Community Center**
13. **New Lake County Courthouse**
14. **Burns Valley Mall**
15. **Redbud Library**
16. **Clear Lake Shopping Center**
17. **Austin Park/Clearlake City Hall**
18. **Lower Lake High School**
19. **11th Street Plaza**
20. **Middletown Library/Senior Center**
21. **Meadow Springs Shopping Center**
22. **Konocti Harbor Casino & Resort**
23. **Pioneer Mini Park**
24. **Redbud Park**
25. **Hamburger Hill Complex**
26. **Lakeside Park**
27. **Lakeport Tribal Health Center**
28. **WorldMark Clear Lake**
29. **Pearce Field Airport Redevelopment**
30. **Clearlake Oaks Plaza**
31. **Caltrans lot at CA29 & Wardlaw**
32. **John T. Klaus Park**
33. **Lodge at Blue Lakes**
34. **Upper Lake Park / 35. Running Creek Casino**

The selection of 35 candidate sites for EV charging infrastructure in Lake County reflects an understanding of local needs and priorities. Key observations from the chosen locations are the following:

These locations cover a range of property types:

- **County-owned properties:** 10 sites
- **City or state-owned properties:** 7 sites
- **Commercial, lodging and retail centers:** 10 sites
- **Schools:** 3 sites
- **Tribal-owned:** 3 sites
- **Medical facilities:** 2 sites

All wineries, hospitals, casinos, and theaters in the County were evaluated due to high dwell times. Five of these locations were recommended, though others may be suitable for future privately funded charging.

Site Visits

To refine the final site list, the project team conducted field visits in August 2025. These visits validated physical conditions, parking layouts, access, ADA feasibility, and nearby electrical infrastructure. Staff from Lake County, Lakeport, and Clearlake also provided updated information on ownership, planned projects, and potential constraints.

Field reviews resulted in the addition of six locations that demonstrated strong potential:

- Silveira Community Center
- Konocti Harbor Casino & Resort
- Redbud Park
- Lakeport Tribal Health Center
- Hamburger Hill Complex
- WorldMark Clear Lake

The visits also identified several locations with considerations that may affect the timing or design of charging projects. These included limited parking access at Lower Lake High School and low activity or undeveloped parking areas at Hammond Park. While not removed from the recommended list, these observations may help shape project sequencing.

Many sites are likely to support low-cost installation due to existing electrical infrastructure. Several commercial centers and public facilities have large transformers positioned close to parking areas, which reduces trenching needs and overall construction costs. This includes Sutter Lakeside Hospital, Woodland Community College, Shoreline Shopping Center, Meadow Springs Shopping Center, Redbud Library, Silveira Community Center, WorldMark Clear Lake, Konocti Harbor Casino & Resort, and the Burns Valley Mall.

Community Engagement & Public Input

This section synthesizes community input gathered through pop-up events, presentations, online survey responses, Social Pinpoint interactive map submissions, Municipal Advisory Council, and stakeholder meetings. The findings below in Figure 18 are organized by thematic area, followed by recommendations for incorporation into the final ZEV Infrastructure Plan.

Figure 18. Community Engagement Overview

Key Findings

The following themes emerged consistently across community surveys, interactive mapping, Municipal Advisory Council presentations, and public events.

Siting Priorities: Co-location with Amenities

The strongest theme across all engagement activities was the importance of placing EV charging infrastructure where drivers can access amenities while charging. Survey data showing 69% preference for grocery stores and shopping centers was reinforced by advisory council discussions emphasizing restaurants, shopping, and local businesses. Community members stressed that chargers in isolated locations represent missed economic opportunities.

Representative feedback:

- "Public and private places where time can be spent doing something while the vehicle is charging. Grocery store, mall, park, library, courthouse, etc." (Survey respondent, Hidden Valley Lake)

- "Convenient location visited by many people living in or passing through Lake County. The availability of shopping, food, coffee, and restrooms makes this a particularly good location. It's nice when you are charging to be able to use a bathroom, eat, or shop, especially when you are a visitor to the area." (Social Pinpoint comment, Walmart area)
- "I really encourage considering places that have amenities like a shopping center because if you don't, then it's a lost opportunity for someone from out of town to come in and spend money." (Cobb Advisory Council)
- "If I were to park at the Tractor Supply parking lot, which is a huge parking lot, where do I eat? There's really nothing there to do." (Scotts Valley)

Tourism and Economic Development Potential

The survey finds that 47% prioritize highway corridor locations reflecting the economic opportunity of capturing pass-through travelers. Lake County's position between the Bay Area and Northern California creates opportunities for local businesses to benefit from EV drivers stopping to charge. Residents noted that EV drivers often have disposable income and will spend money locally during charging sessions if given the opportunity.

Representative feedback:

- "Placing chargers in the park area of Lucerne would help draw customers to our local businesses while the drivers wait." (Social Pinpoint comment)
- "Cobb is a convenient stop with things to do while charging and a great midpoint from the fast chargers in Napa Valley and Clear Lake." (Interactive map comment)
- "It is a 'if you build it, they will come.' People will invest; you'll see if somebody's sitting there charging, people will bring more businesses." (Middletown Area Town Hall)

Strong Preference for DC Fast Charging in South County

Survey results showing that 57% prefer fast charging align with consistent advisory council feedback about the absence of fast charging options in South County. The nearest DC fast charger is in Upper Lake, leaving a coverage gap for Cobb and surrounding communities.

Representative feedback:

- "We don't have any options down there. No options... So, your nearest fast charger is Upper Lake." (Cobb Advisory Council)
- "Great midpoint from the fast chargers in the Napa Valley and Clearlake, Lakeport, etc." (Social Pinpoint comment, Cobb)
- "If it's not 400 volts or higher, it's probably going to be passed up unless it's in an area where you do expect people to be there for quite a long time." (Cobb Advisory Council, EV owner)

Healthcare Facility Access

Healthcare facilities emerged as priority locations for EV charging infrastructure in community feedback. Sutter Lakeside Hospital, the tribal medical center near Lakeport, and other medical offices received strong support as charging locations in the Social Pinpoint mapping exercise.

In stakeholder discussions, particularly in the Lakeport area, participants connected charging infrastructure to workforce retention challenges. Medical professionals commuting from outside Lake County face limited charging options, which stakeholders identified as a barrier to staff retention at local healthcare facilities.

Representative feedback:

- "New tribal medical center right off Freeway" - suggested charging location (Social Pinpoint)
- "Medical Offices, Acute Care, DMV" - suggested charging location in Lakeport (Social Pinpoint)
- "We don't have the methodology yet to have highly professional people want to stay here… Anything we can do to help keep them here instead of having all these rotating people there would be a huge advantage to this county." (Scotts Valley Municipal Advisory Council Chair).

Quantity and Reliability of Chargers

Community members with EV ownership experience emphasized the importance of multiple chargers per location to ensure availability and reduce the risk of arriving at an occupied station. Charger reliability was also raised as a concern, with some early adopters expressing frustration with malfunctioning or poorly maintained stations.

Representative feedback:

- "The hospital only had one working charging station (the other two were down & supposedly the company that supplies the chargers has gone out of business)." (Barbara C., Community Workshop, Clearlake)
- "If there's only one, like there is next to City Hall, that's usually not going to be very interesting because I have to take a chance to see if someone gets here before me. But if you got six to eight, and they're 400 volt or better… that's usually good." (Scotts Valley)
- "I tried plugging in on Hwy 20 at PG&E and was not able to use the station with my Kia 2017 Soul all electric car. There was no current contact information to have someone troubleshoot. It would be nice to have contact info at charging stations as well as standard charging plugs." (Barbara C., Community Workshop, Clearlake)

Visibility and Accessibility

Community members emphasized that charging stations should be placed at recognizable, easy-to-find locations. Feedback from both community councils and the online engagement consistently pointed to well-known destinations, such as grocery stores, shopping centers, and downtown areas, as ideal sites. Hidden or hard-to-find locations may be overlooked by travelers using charging apps.

Representative feedback:

- "I like the idea of the library… that way it's visible from the street versus back here in the corner area." (Middletown)

Grid Reliability and Renewable Energy Integration

The survey finding that 24% cited power outages and grid reliability as a barrier to EV adoption reflects Lake County's experience with PSPS events and extended outages. Some community members expressed interest in pairing EV charging with solar installations or microgrid development, particularly in areas with unreliable grid service.

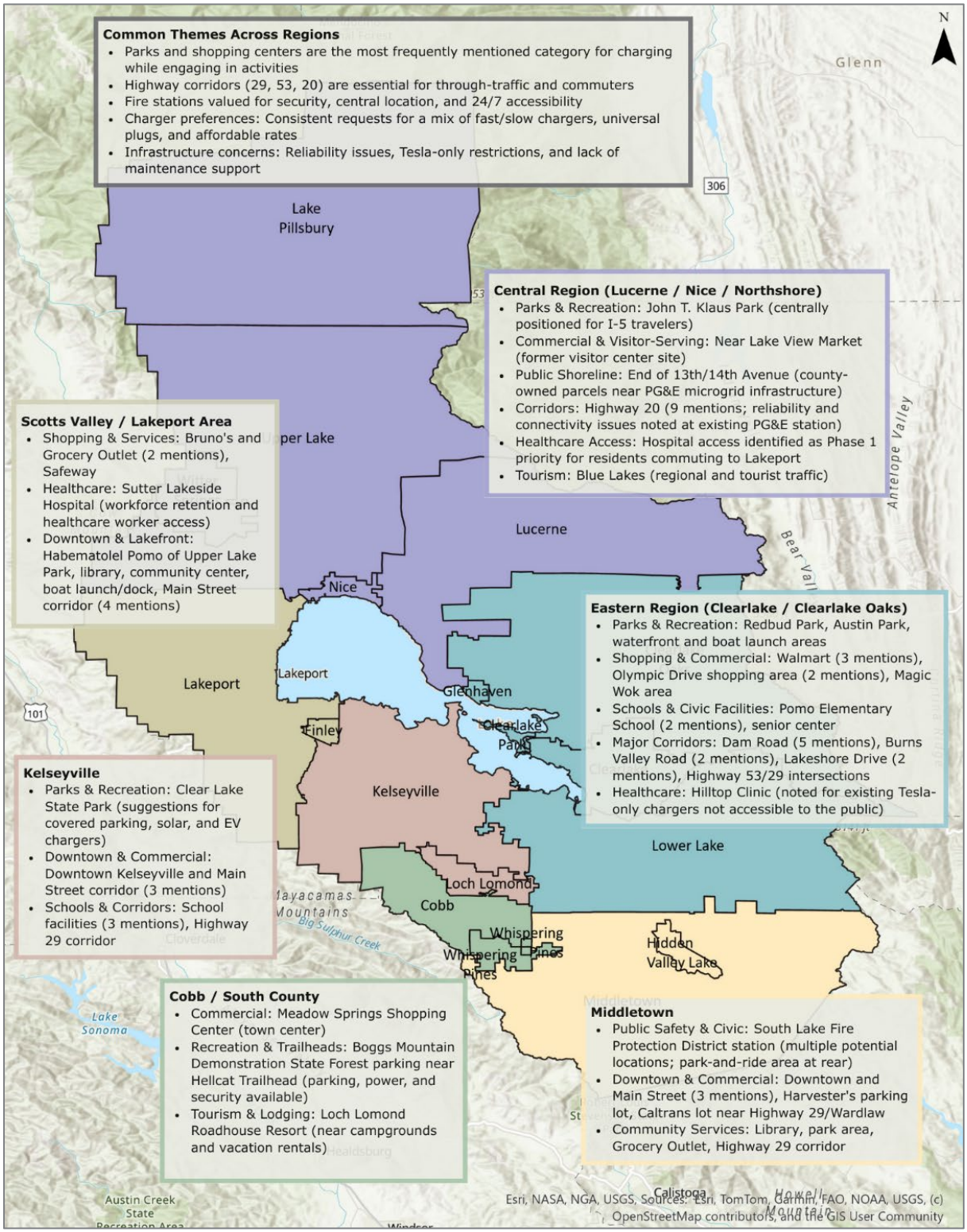
Representative feedback:

- "We have a 40 Amp charger installed and Solar (Hoo-Boy! Are we ready for gas shortages or what?)" - Lucerne respondent (current EV owner)
- "Provide covered parking with solar panels and EV Charge stations" - Rickwhite57 (suggested for multiple locations including Kelseyville County Park, State Park, and Grocery Outlet)
- "One idea might be to get it next to places where we can put solar. The pool is a great place. Also, the shopping center… we could cover that with solar panels, too." (Cobb)
- "I would love to see us as a microgrid… because I'm really not happy with losing power for up to 10 days at a time." (Cobb)

Site-Specific Feedback by Region

Community input from the Social Pinpoint engagement platform as well as the Municipal Advisory council meetings, popup events and online surveys identified the following priority locations for EV charging infrastructure, organized by region in Figure 19.

Figure 19: Site Feedback by Region



Recommendations

Based on survey results and community input, the project team recommends the following priorities for the final ZEV Infrastructure Plan:

1. Prioritize commercial and downtown locations where drivers can access restaurants, shopping, and local businesses during charging sessions, consistent with the 69% survey preference for grocery/shopping locations and 59% support for downtown areas.
2. Address the DC fast charging gap in South County by prioritizing at least one fast charging location in the Cobb area, with Meadow Springs Shopping Center as the leading candidate, responding to the 57% survey preference for fast charging.
3. Include employment centers as priority sites to support workforce retention, particularly Sutter Lakeside Hospital and similar facilities serving healthcare professionals commuting from outside the county.
4. Ensure visibility and accessibility by siting chargers where they can be seen from main travel routes and are within a short walk (under 10 minutes) of amenities.
5. Reconsider K-12 school sites for public charging given low survey support (3%) and community concerns; these may be better suited for employee charging programs.
6. Explore renewable energy integration in areas with documented grid reliability concerns, such as Cobb, responding to the 24% of survey respondents citing power outages as a barrier to EV adoption.
7. Develop partnerships with private property owners at high-priority commercial locations, following successful models from other communities.
8. Coordinate with tribal communities on charging infrastructure siting, building on relationships established through Big Valley Rancheria and Robinson Rancheria events.
9. Develop a maintenance and reliability strategy as part of implementation planning to address community concerns about charger uptime and functionality.
10. Address equity implications for residents without home charging access (approximately 17% of survey respondents) by prioritizing Level 2 chargers in areas with higher concentrations of multi-family housing and ensuring geographic coverage in lower-income neighborhoods.
11. Establish guidance on charger type mix and pricing structures, responding to consistent community requests for a combination of fast and slow chargers, universal plugs, and affordable rates.

Limitations and Gaps in Engagement

Several limitations should be acknowledged when interpreting engagement findings:

Representation Gaps. Survey respondents skewed toward older residents (73% aged 45+), homeowners (84%), and current EV owners (38%). Tribal community members comprised only 2% of respondents despite targeted outreach at the Big Valley Rancheria Tule Lake Boat Festival. Renters and multifamily housing residents, who face greater barriers to home charging, were underrepresented.

Geographic Coverage. Two Municipal Advisory bodies, the Western Region Town Hall and Big Valley Advisory Council, could not be scheduled for presentations within the project timeline. An informational packet was provided to the Western Region Town Hall for distribution.

Implications. Implementation planning should include continued coordination with tribal governments, targeted outreach to renters and multifamily residents during site-specific planning, and follow-up engagement with communities not reached during this phase.

Implementation Strategy

This implementation strategy shows how the County, cities, tribal governments, utilities, and local organizations can move from planning to real projects on the ground. It explains the steps needed to get charging sites built and operating. It outlines how partners can choose locations that make sense for residents and visitors. It also describes how they can work together to apply for funding and reduce delays. The strategy highlights ways to make the permitting process simpler and easier. It encourages collaboration with businesses and property owners who can host chargers. Overall, as outlined in Figure 20, these strategies provide a roadmap to help Lake County build a cleaner transportation future.

Figure 20. Overview of Strategies included in the Implementation Strategy

Regional Coordination & Funding

Summary: Coordinate across local governments, tribal entities, utilities, and regional/state agencies to maximize funding, avoid duplication, and ensure Lake County's rural needs are front and center. In a small county, the most effective way to compete for and absorb funding is to present a unified program—projects bundled by geography and use case—backed by partners who can carry delivery risk (utilities and vendors) and provide technical support (state/federal agencies). This strategy establishes the governance, grant pipeline, and utility alignment to move sites from concept to energized chargers with minimal rework.

Responsible parties: Lead: Lake APC. Co-leads: County/City Planning & Public Works, tribal governments, PG&E/utility partners, site hosts (schools, clinics, parks), CEC/CARB/Caltrans.

Establish a Lake County ZEV Implementation Task Force

Hand off oversight of ZEV infrastructure planning to the APC Technical Advisory committee via a quarterly (or as grants come up) agenda item to reevaluate progress, set priorities, and unblock permitting/utility issues. Include Lake APC, County and City departments, tribal governments, utility reps, and key site hosts. Publish decisions and a 12-month workplan so partners and vendors can prepare resources in advance.

Pursue Joint Grant Applications

Bundle sites (corridors, community hubs, tribal lands) into joint submissions for CEC, CALeVIP, NEVI, IRA, and utility programs. Assign a lead applicant and fiscal agent for each package, identify matching funds early, and standardize attachments (letters of support, site control, utility pre-application notes) to reduce cycle time.

Develop a Regional Funding Matrix

Maintain a living database of programs, timelines, eligibility, match requirements, and reporting. Map each proposed site to one or more programs and pre-stage application materials (e.g., ADA layouts, load calcs, cost estimates) so Lake County can submit quickly when windows open.

Advocate for Rural ZEV Incentives

Coordinate with state/federal representatives to tailor incentives to rural realities: higher per-charger caps, technical assistance allowances, and small-county carve-outs for staff capacity. Seek right-sizing of performance metrics (utilization thresholds, uptime reporting) that reflect seasonal demand patterns. Work with Northern Regional Energy Network (NREN) to evaluate options for regional programs with shared implementation goals.

Coordinate with Utilities for Make-Ready Programs

Hold quarterly pre-application meetings with utilities to align on capacity, trenching bundles, and energization timelines. Use utility make-ready programs to install conduits, panels, and service upgrades in one mobilization. Track milestones (design approval, construction complete, meter set, energization) and escalate bottlenecks through the Task Force.

Siting, Permitting & Land Use Policy

Summary: Streamline siting and approvals so priority locations can move from concept to construction with predictable steps. Pair GIS-based site scoring (access, safety, grid capacity, equity) with a one-stop permitting pathway and clear ADA standards. In rural contexts, curbside/shared solutions and flexible siting (mobile/temporary chargers) can bridge gaps while permanent sites come online.

Responsible parties: Lead: County/City Planning & Building; DPW. Partners: Lake APC GIS, utilities, ADA coordinators, tribal planning, site hosts.

Utilize & Maintain the Countywide Siting Prioritization Map

The ZEV Infrastructure plan used GIS to score candidate sites by land use, corridor proximity, distance to existing chargers, equity, and grid readiness. Maintain and keep public a map layer to help in selection and prioritization of future sites by cities and County partners.

Streamline Permitting for ZEV Infrastructure Beyond State Reqs.

Create clear checklists and an expedited review track for standard L2/DCFC installations. Accept electronic signatures, limit review to health/safety, and provide one comprehensive deficiency notice. Provide model ADA layouts and cord management guidance to reduce

revisions. Projects proposed within or adjacent to Caltrans facilities should be coordinated early with Caltrans District 1 Encroachment Permits staff to confirm permitting requirements and avoid delays

Update Zoning Codes for Retrofits and New Builds Beyond State Reqs.

Require EV-ready or EV-installed spaces in new builds and significant renovations, with thresholds scaled for small sites. Count EV spaces toward parking minimums, classify charging as an accessory use, and define triggers at resurfacing or electrical service upgrades.

Enable Curbside and Shared Charging Pilots

Authorize curbside/shared chargers (and Level-1 cord covers where appropriate) under strict ADA and safety standards—perpendicular crossings, retractable cords, clearance zones, and no advertising. Start with pilots on low-conflict streets near multifamily housing and community hubs.

Pilot Flexible Siting Models

Test mobile or temporary chargers for events, seasonal peaks, and remote communities. Use pilots to collect usage, grid impacts, and O&M learnings that inform permanent deployments and procurement specs.

Public-Private Partnerships & Business Models

Summary: Use P3 models to stretch limited public dollars and accelerate buildout. Pre-qualify vendors, leverage Charging-as-a-Service, and craft revenue-sharing that works for small rural sites. Align with utility programs to lower capital costs and integrate managed charging/demand response.

Responsible parties: Lead: County Economic Development & Procurement. Partners: Lake APC, utilities, charging providers, site hosts, legal/counsel.

Create a Pre-Qualified Vendor Pool

Establish a bench of vetted installers/operators (with EVITP electricians, open-protocol networking, demonstrated uptime). Use task orders for speed, standardized terms for training and data sharing, and performance service level agreements.

Pilot Charging-as-a-Service (CaaS) Models

Invite turnkey providers to finance/install/operate chargers in exchange for fees or revenue share. Prioritize sites with reliable dwell times (workplaces, civic centers) and require open payments, transparent pricing, and data access for public reporting.

Incentivize Rural Site Hosts

Offer small grants, fee waivers, or tax credits to businesses, schools, and clinics that host chargers. Provide a simple application, TA, and model agreements covering power costs, signage, and maintenance responsibilities.

Explore Shared Revenue Models

Develop templates for revenue sharing that scale with usage and protect uptime. Include clauses for maintenance response times, data transparency, and step-in rights if operators fail performance.

Pursue Utility Partnerships

Bundle grid upgrades and demand-side programs (managed charging, off-peak rates) into projects. Seek utility cost sharing for make-ready and use LCFS revenue to offset O&M at low-volume rural sites.

Community Engagement & Equity

Summary: Design the network with and for Lake County communities. Prioritize DACs, tribal lands, seniors, renters, and residents without dedicated parking. Provide multilingual education, ride-and-drive events, and hands-on TA for property owners. Track outcomes publicly to ensure benefits are equitably distributed.

Responsible parties: Lead: County/City Outreach; Partners: Lake APC, CBOs, tribal liaisons, libraries/parks, major employers, schools/colleges.

Conduct Targeted Outreach & Education

Run workshops and ride-and-drive events with clear total cost of ownership info, incentives, and charger etiquette. Use multiple languages and trusted venues (libraries, clinics, tribal centers).

Provide Technical Assistance

Offer direct TA to HOAs, small property owners, and businesses to navigate permitting, utility coordination, and funding. Provide templates (letters, surveys, MOUs) and connect applicants to vetted vendors.

Monitor and Report Equity Outcomes

Publish quarterly dashboards showing charger distribution, uptime, pricing, and usage by geography and site type. Include qualitative feedback and adjust programs where gaps persist.

Workforce Development & Local Capacity

Summary: Grow local capacity to plan, install, and maintain chargers and support EV ownership. Partner with community colleges and unions on EVSE training, require apprenticeships in contracts, and train agency staff on ZEV codes and processes. Centralize opportunities in a resource hub and measure outcomes.

Responsible parties: Lead: Workforce Board & Community Colleges; Partners: IBEW/EVITP, County/City HR, Lake APC, vendors, utilities.

Partner for EVSE Training

Develop short courses and certifications for electricians, inspectors, and O&M techs. Align curricula with EVITP and local utility interconnection standards. Sponsor cohorts from underserved communities.

Offer Local Hiring & Apprenticeships

Require or incentivize apprenticeships and local hiring in ZEVI contracts. Track hours worked, certifications earned, and placement into full-time jobs.

Provide Staff Training for Agencies

Train planning, building, and public works staff on permitting checklists, ADA, open protocols, and performance reporting so applications move faster and inspections are consistent.

Operations, Maintenance & Performance Monitoring

Summary: Design for reliability from day one. Standardize O&M requirements, require networked chargers with transparent uptime/pricing, and set rapid-response service level agreements. Track usage, equity, and GHG benefits, and plan phased tech upgrades (managed charging, vehicle-to-grid (V2G) or vehicle-to-everything (V2X), hydrogen compatibility) as adoption grows.

Responsible parties: Lead: County Facilities/Fleet & Site Hosts; Partners: operators, utilities, Lake APC for reporting; legal for service agreements.

Develop a Countywide O&M Plan

Standardize maintenance schedules, spare parts, and responsibilities across public sites. Use contracts with defined mean repair times, escalation paths, and step-in rights for persistent downtime.

Implement Real-Time Performance Monitoring

Require networked chargers with remote diagnostics, open data, and public status displays. Monitor uptime, utilization, pricing, and fault codes; publish summaries.

Establish Rapid Response Protocols

Define outage categories and response clocks (e.g., 24-hour triage, 72-hour repair for L2; faster for DCFC). Provide a unified help channel and visible contact info at every site.

Track Usage, Equity, and GHG Metrics

Measure sessions, energy, dwell times, and emissions reductions; disaggregate by geography/site type to validate equity impacts and trigger capacity expansion where utilization exceeds thresholds.

Plan for Future Technology Upgrades

Monitor managed charging/V2X pilots, new connector standards, and hydrogen developments. Specify conduit sizing and panel capacity today to ease.

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