California Energy Commission

Alternative and Renewable Fuel and Vehicle Technology Program

FINAL PROJECT REPORT

Central Coast Go-Zero: Zero Emission Vehicle Readiness Implementation Plan

Encompassing the Counties of: San Luis Obispo, Santa Barbara, and Ventura

Prepared for: California Energy Commission

Prepared by: San Luis Obispo County Air Pollution Control District

SLO COUNTY apcd | Air Pollution Control District San Luis Obispo County

California Energy Commission

Edmund G. Brown Jr., Governor

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PREFACE

Assembly Bill (AB) 118 (Nùñez, Chapter 750, Statutes of 2007), created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). The statute authorizes the California Energy Commission (Energy Commission) to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the state's climate change policies. AB 8 (Perea, Chapter 401, Statutes of 2013) re-authorizes the ARFVTP through January 1, 2024, and specifies that the Energy Commission allocate up to $20 million per year (or up to 20 percent of each fiscal year's funds) in funding for hydrogen station development until at least 100 stations are operational.

The ARFVTP has an annual budget of approximately $100 million and provides financial support for projects that:

- Reduce California's use and dependence on petroleum transportation fuels and increase the use of alternative and renewable fuels and advanced vehicle technologies.
- Produce sustainable alternative and renewable low-carbon fuels in California.
- Expand alternative fueling infrastructure and fueling stations.
- Improve the efficiency, performance and market viability of alternative light-, medium-, and heavy-duty vehicle technologies.
- Retrofit medium- and heavy-duty on-road and non-road vehicle fleets to alternative technologies or fuel use.
- Expand the alternative fueling infrastructure available to existing fleets, public transit, and transportation corridors.
- Establish workforce training programs and conduct public outreach on the benefits of alternative transportation fuels and vehicle technologies.

To be eligible for funding under the ARFVTP, a project must be consistent with the Energy Commission's ARFVTP Investment Plan, updated annually. The Energy Commission issued GFO-16-601 to fund projects that support new and existing planning efforts for zero-emission vehicles (battery-electric vehicles and hydrogen fuel cell electric vehicles and including plug-in hybrid electric vehicles). In response to GFO-16-601, the recipient submitted an application which was proposed for funding in the Energy Commission's Notice of Proposed Awards January 12, 2017 and the agreement was executed as ARV-16-015 on May 5th, 2017.

ABSTRACT

This report is a zero-emission readiness implementation plan prepared for the Tri-Counties region of San Luis Obispo, Santa Barbara, and Ventura. This plan aims to tackle the challenge of how best to accelerate regional zero-emission vehicle (ZEV) adoption and infrastructure deployment in the Tri-Counties region. The plan illustrates the approach, outcome, challenges, lessons learned and next steps of each task.

To implement zero-emission readiness in the Tri-Counties, the plan first describes the steps of establishing a ZEV Ombudsman to work with local and regional agencies, infrastructure service providers, site hosts, and consumers to implement and increase adoption of ZEVs. Using mobile device and other key data sources, the plan then describes how to identify key strategic siting opportunities for EV charging stations as well as priority sites for each of the three counties and priority sites in disadvantaged and low-income communities. Concurrently, to accelerate deployment of electrifying fleets, the plan describes the process of reaching out to major fleets to explain the benefits of electrifying trucks, buses and light-duty vehicles. Using the identified strategic siting analysis and recognizing the most interested fleets, the plan then explains how to coordinate EVSE site assessments to begin the process of installing EV charging stations. To promote zero emission transportation awareness to key demographics and stakeholders, the plan describes engagement tactics such as green car shows for both EVs and hydrogen vehicles, community and EV charging installation workshops. Also, the plan focuses on increasing competency to first responders in the case of fuel cell electric vehicles (FCEVs) accidents as well as assess local hydrogen fueling station infrastructure.

Keywords: California Energy Commission, Central Coast, San Luis Obispo County, Santa Barbara County, Ventura County, Zero-Emission Vehicle, Plug-in Electric Vehicles, Fuel Cell Electric Vehicles, Electric Vehicle Supply Equipment, Low-Income Communities, Disadvantaged Communities, First Responders, Hydrogen Infrastructure

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LIST OF ABBREVIATIONS

AB – Assembly Bill

ADA – Americans with Disabilities Act

AFDC - US Department of Energy's Alternative Fuels Data Center

AIChE - American Institute of Chemical Engineers

ARFVTP - Alternative and Renewable Fuel and Vehicle Technology Program

BEV – Battery Electric Vehicle

CaFCP - California Fuel Cell Partnership

CALeVIP – California Electric Vehicle Infrastructure Project

CAUSE - Central Coast Alliance United for a Sustainable Economy

CEC – Community Environmental Council

CPA – Clean Power Alliance

CSE – Center for Sustainable Energy

CVAP – Clean Vehicle Assistance Program

CVC- California Vehicle Codes

CVRP – Clean Vehicle Rebate Program

DAC – Disadvantaged Community

DCFC – Direct Current Fast Charger

DOE – U.S. Department of Energy

Energy Commission – California Energy Commission

EPIC - Electric Program Investment Charge

ERM - Emergency Response Manuals

EV – Electric Vehicle

EVSE – Electric Vehicle Supply Equipment

FCEV – Fuel Cell Electric Vehicle

FERC - Federal Energy Regulatory Commission

GHG – Greenhouse Gases

GOBiz- California Governor's Office of Business and Economic Development

HVIP - Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project

ICT – Innovative Clean Transit

IOU – investor owned utility

L2 Charger – Level 2 Charger

LCFS – Low Carbon Fuel Standard

LIC – Low-income Community

MBCP – Monterey Bay Community Power

MICOP - Mixteco/Indígena Community Organizing Project

MUD – multi-dwelling unit

MUTCD – Manual on Uniform Traffic Control Devices

OEHHA – California Office of Environmental Health Hazard Assessment

OEM – Original Equipment Manufactures

PG&E – Pacific Gas and Electric

PHEV- Plug-in hybrid electric vehicle

PIA - Plug-in America

SB – Senate Bill

SBCAPCD – Santa Barbara County Air Pollution Control District

SBCAG – Santa Barbara County Association of Governments

SLOCAPCD – San Luis Obispo County Air Pollution Control District

SLOCOG - San Luis Obispo Council of Governments

SoCal Edison – Southern California Edison

TAZ – Traffic Analysis Zone

THRP – Tri-Counties Hydrogen Readiness Plan

V2G - Vehicle to Grid

VCAPCD – Ventura County Air Pollution Control District

VCREA - Ventura County Regional Energy Alliance

VCTC- Ventura County Transportation Commission

VGI - vehicle-grid integration

ZEV – zero emission vehicle

EXECUTIVE SUMMARY

The goal of this Plan is to implement and build upon key recommendations from the Electric Vehicle Readiness Plan for Ventura, Santa Barbara, and San Luis Obispo Counties (CEC-ARV-11-002 - completed 2014), the Alternative Fuel Vehicle Readiness Plan (CEC-ARV-13-017 - completed 2016), and the Hydrogen Readiness Plan (CEC-ARV-14-038 – completed in 2017) to accelerate the region's deployment of zero emission vehicle (ZEV) infrastructure and expand the regional adoption of ZEVs among both consumers and fleet operators. Key implementation tasks for this project include: (1) creation of a ZEV ombudsman position; (2) analysis of strategic EVSE siting opportunities using mobile device data; (3) acceleration of medium- and heavy-duty ZEV adoption by regional fleet operators; (4) coordination of site assessments for EV charging stations; (5) promotion of increased ZEV awareness through test-drive events, demonstrations, workshops, and green car shows; (6) ZEV safety training for first responders; and (7) site assessments for hydrogen refueling stations. The project activities placed special emphasis on disadvantaged communities, as defined by CalEPA's CalEnviroScreen3.0, and low-income communities, as defined by Assembly Bill 1550. This emphasis was to support a more equitable distribution of ZEV adoption, infrastructure development, and benefits from increased all-electric vehicle travel in the region.

The California Southern Central Coast region includes San Luis Obispo, Santa Barbara, and Ventura counties, heretofore referred to as the Tri-Counties. The San Luis Obispo County Air Pollution Control District was the project manager responsible for completing this Plan. Subcontractors that were responsible for completing the activities listed above included Community Environmental Council, Santa Barbara County APCD, Ventura County APCD, Fehr and Peers, EV Alliance, ABM Inc., the Central Coast Clean Cities Coalition, and Ivor John & Associates.

The funding for this Plan was awarded by the California Energy Commission to help meet California greenhouse gas emissions reduction targets specified under Senate Bill 32 and meet state goals of having 1.5 million ZEVs on California's roads by 2025 and 5 million by 2030. In recent years, ZEVs have become common kitchen table conversation topics and have become a reliable and realistic transportation option with about 45 light-duty models, 30 medium and heavy-duty van and truck, and 55 transit and school bus models. Major vehicle manufactures, such as Toyota, BMW, Ford, General Motors, and Volvo have declared an end to the creation of vehicles powered by combustion engines and will migrate to electric only models.

While this Plan was prepared for the Tri-Counties region, the identified approach, outcomes, challenges, lessons learned, and next steps for each task listed above are transferable to other areas of California and beyond. The Plan aims to tackle the challenge of how best to accelerate infrastructure deployment and ZEV adoption in the Tri-Counties region.

To achieve these overarching goals, the following details the activities within the Plan:

- In the ZEV Ombudsman role, CEC served as the main point of contact for ZEV stakeholders and helped the SLOCAPCD coordinate ZEV implementation activities for the Plan. The role of the ZEV Ombudsman was to work with local governments, Metropolitan Planning Organizations, Air Pollution Control Districts, ZEV infrastructure service providers, site hosts, and ZEV consumers to map out a plan for expanded ZEV infrastructure implementation and increase ZEV use in the region. The ZEV Ombudsman also facilitated and guided the process to rebrand Plug-in Central Coast, the region's existing plug-in electric vehicle collaborative, to Electric Drive 805 (named for the 805-area code), which included design and development of the Electric Drive 805 website. The website has multilingual information for drivers, workplaces and employers, property managers, and local governments in the region.
- With the help of the mobility data company Streetlight Data, Fehr and Peers conducted a strategic EVSE siting analysis using anonymized mobile device data to identify 25 key areas for deployment of electric vehicle (EV) charging stations, including priority sites for each of the three Counties, and in disadvantaged or low-income communities. The results are displayed online in a user-friendly mapping format and are available for all to view on the SLOCAPCD's webpage: slocleanair.org/community/zev.php.
- To accelerate fleet electrification, EV Alliance reached out to many employers with fleets in the Tri-Counties area to encourage electrification and explain the benefits of electrifying trucks, buses and light-duty vehicles. The outreach efforts resulted in increased awareness and understanding and aided another objective of this grant – conducting site assessments for EVSE.
- Using the identified strategic siting analysis and recognizing the most interested fleets, the project team coordinated 18 EVSE site assessments for EV chargers for various businesses and entities including school districts, government agencies and private businesses. Nine of these assessments were located in low-income (or would serve low-income) or disadvantaged communities. Five recipients of a site assessment moved forward and applied for air district funding and are on their way to installing an EV charger.
- The ZEV Ombudsman and the Central Coast Clean Cities Coalition (C5) increased ZEV awareness among key demographics and stakeholders by displaying green cars at showcases, conducting test drives, and hosting workshops which focus on the benefits of ZEVs and the process of installing chargers. Outreach activities focused on general community outreach, targeted community engagement and direct stakeholder engagement. The activities elevated the general awareness of ZEVs in the Tri-Counties region.
- Ivor John & Associates hosted two trainings in San Luis Obispo and Santa Barbara County to inform first responders on how best to respond to accidents involving hydrogen fuel cell electric vehicles (FCEVs). The team worked to ensure the trainings for first responders would be delivered using stat-of-the-art resources by compiling emergency response manuals and materials from the U.S. Department of Energy (DOE)

Pacific Northwest National Laboratory. Additionally, Ivor John & Associates engaged with station owners to identify suitable retail stations interested in connecting with hydrogen station developers and maintained contact with both station owners and installers to monitor progress and determine if preliminary commitments and agreements could be reached.

The work performed to accomplish these objectives will be furthered through the Electric Drive 805 coalition. The ElectricDrive805.org website will serve as a ZEV resource clearing house. Many of the partners who worked on this report are members of the coalition including the CEC, San Luis Obispo, Santa Barbara & Ventura County APCDs and C5. The members of the coalition are motivated to advance the objectives of this grant, continue to aid state goals, and bring truth to their tagline – "the future of clean driving is now."

CHAPTER 1: Introduction

Project Objectives and Supporting Contractors

The report was prepared for the Tri-Counties region of San Luis Obispo, Santa Barbara, and Ventura but the identified approach, outcome, challenges, lessons learned, and next steps for each of the eight project tasks are implementable to other areas of California and are provided in each chapter. The goal of this Plan is to implement and build upon key recommendations from the Electric Vehicle Readiness Plan for Ventura, Santa Barbara, and San Luis Obispo Counties (CEC-ARV-11-002 - completed 2014), the Alternative Fuel Vehicle Readiness Plan (CEC-ARV-13-017 - completed 2016), and the Hydrogen Readiness Plan (CEC-ARV-14-038 – completed in 2017) to accelerate the region's deployment of zero emission vehicle (ZEV) infrastructure and expand the regional adoption of ZEVs among both consumers and fleet operators. The SLOCAPCD was the administrator of this grant. Several subcontractors supported the SLOCAPCD in accelerating ZEV adoption and accomplishing the objectives outlined in Table 1 below. In addition, the project tasks and products outlined to accomplish the below stated objectives are identified in Appendix A.

Several challenges and lessons learned surfaced while administering this grant. One main issue included a lack of specific identification of responsibilities within each task. For example, Task 5 was not clear on who would be responsible for identifying potential site hosts for the electric vehicle supply equipment (EVSE) site assessments. The team that developed the grant application assumed the contractor would accomplish this subtask, but ABM had not anticipated this work in the quote they provided for the application. As such, the air districts and CEC absorbed this responsibility and since they were not versed in identifying potential site hosts, the process was not efficient. To help streamline their efforts, the SLOCAPCD recommends the following to other potential project managers: 1) ensure that subtask responsibilities are well defined in Energy Commission project applications; 2) consider narrowing your project scope; and 3) consider minimizing the number of project subcontractors. More challenges and lessons learned are included in the chapters for each task.

As for next steps, the work performed to accomplish the project objectives will be furthered through the ElectricDrive805 coalition that was refined as part of the work for this project. The ElectricDrive805.org website will serve as a ZEV resource clearing house. Many of the partners who worked on this report are members of the coalition including Community Environmental Council in Santa Barbara, San Luis Obispo, Santa Barbara & Ventura County APCDs and C5. The members of the coalition are motivated to advance the objectives of this grant, continue to aid state goals, and bring truth to their tagline – "the future of clean driving is now."

Table 1: Project Objectives and Supporting Contractors

Supporting Contractor(s)	Objective
CEC	Establish a ZEV Ombudsman that will work with local governments, Coalition of Governments, APCDs, infrastructure service providers, site hosts, and ZEV consumers to implement Electric Vehicle Supply Equipment (EVSE) and hydrogen fueling station siting and build out and increase ZEV adoption in the region.
Fehr & Peers, CEC, SBCAPCD & VCAPCD	Conduct an analysis using empirical mobile device data to identify and evaluate key locations for EVSE infrastructure installations.
Fehr & Peers, CEC, SBCAPCD & VCAPCD	Identify and prioritize at least 25 key strategic siting opportunities for EV charging stations, including priority EVSE sites identified for each of the three Counties, priority EVSE sites identified in disadvantaged communities or within % mile of their geographic boundaries, and priority EVSE sites identified in low-income census tracts.
EV Alliance, SBCAPCD & VCAPCD	Accelerate deployment of PHEVs in major fleets and increase fleet access to EV charging infrastructure, with an emphasis on medium- and heavy-duty EVs.
ABM Inc., CEC, SBCAPCD & VCAPCD	Coordinate at least 18 EVSE site assessments, including site assessments for each county, site assessments for disadvantaged communities, and site assessments for low-income census tracts in the region.
CEC, C5, SBCAPCD & VCAPCD	Promote increased ZEV awareness among key demographics and stakeholders, including regional fleet operators, political leaders, first responders, potential ZEV drivers, and businesses and multi-family dwellings in disadvantages communities.
Ivor John & Associates	Conduct 2 or 3 one-day, safety trainings for First Responders. Trainings will ideally be hosted at a centrally located fire department in each county.
Ivor John & Associates	Facilitate agreements between hydrogen infrastructure providers and regional fueling station owners.

Source: SLOCAPCD

CHAPTER 2:
ZEV Ombudsman & Electric Drive 805

Task 2 was intended to create a ZEV Ombudsman for the region covering the 805-area code who could serve as the main point of contact for ZEV stakeholders and support Central Coast ZEV Readiness Implementation activities. SLOCAPCD convened the project team and Plug-In Central Coast partners to appoint the ZEV Ombudsman after the ZEVRI grant agreement was executed with the California Energy Commission and the kick-off meeting for grant-funded activities was completed. CEC was selected to serve as the region's ZEV Ombudsman and led Task 2 activities in collaboration with the grant project partners and members of the Electric Drive 805 collaborative (formerly Plug-in Central Coast).

In the ZEV Ombudsman role, CEC served as the main point of contact for ZEV stakeholders and helped SLOCAPCD coordinate ZEV implementation activities for the grant-funded project. The main goals for the ZEV Ombudsman under the scope of work for Task 2 included:

- Building collaboration and engagement with a wide range of ZEV stakeholders, including local governments, Municipal Planning Organizations, large workplaces, property managers, commercial businesses, fleet operators, and drivers in the region
- Supporting ZEV stakeholders with EVSE infrastructure development to expand access to electric vehicle charging at key locations
- Coordinating ZEV outreach and engagement activities with the grant-funded project partners (see Task 6)
- Developing and maintaining a clearing house of ZEV resources, contacts, incentive program information, and ZEV readiness implementation data to assist project partners and ZEV stakeholders

To meet the regional needs for ZEV Readiness Implementation support and achieve these goals, CEC led work to provide targeted ZEV Ombudsman support with a variety of activities. These activities included:

- Facilitating and guiding the process to rebrand Plug-in Central Coast, the region's existing plug-in electric vehicle collaborative, to Electric Drive 805 (named for the 805-area code)
- Designing and developing the Electric Drive 805 website with targeted information for key stakeholders in the region
- Tracking and supporting implementation of (AB) 1236 in the region, which requires local governments to provide streamlined permitting processes for residential and non-residential EV charging stations
- Surveying and cataloging information about incentives for ZEV stakeholders, including utility EVSE incentives, infrastructure programs, and rates (see the report in Appendix B-1)

- Compiling existing resources and developing new resources to support EVSE infrastructure development at key locations
- Identifying EV infrastructure service providers in the region (see Appendix B-2)
- Facilitating access to incentives for new, leased, and used EVs, with special emphasis on low-to-moderate income households that are eligible for increased rebates from the Clean Vehicle Rebate Program (CVRP) or down payment grants from the Clean Vehicle Assistance Program pilot (CVAP)
- Providing resources and guidance for EV charging demand surveys at workplaces and Multi-Unit Dwellings (MUDs)
- Convening project partners and stakeholders to explore opportunities for new local or regional ZEV incentive programs
- Updating ZEV resources as needed

Approach

A wide range of stakeholders need to collaborate and take coordinated action to achieve statewide goals for ZEV adoption and infrastructure development. Building collaboration across key ZEV stakeholders at the local and regional levels will help each county and municipality in California do its fair share to achieve the statewide target for 5 million ZEVs on California roads by 2030, deploy 250,000 EV charging stations, and build 200 hydrogen fueling stations. The ZEV Ombudsman helped anchor, expand, and coordinate regional collaboration in support of these state ZEV targets.

To support collaboration with project partners and grant subcontractors, CEC used Google Drive for file sharing. Shared Google documents and spreadsheets were used for collaborative resource development, meeting coordination, and data collection and collation. Meetings were convened with Electric Drive 805 stakeholders, grant subcontractors, and regional stakeholders to identify key needs related to ZEV infrastructure development, incentives, and outreach and education activities. These stakeholders included CalTrans District 5 staff in San Luis Obispo County, sustainability staff from local governments, non-profit housing corporations, property management companies, fleet managers, transit operators, investor-owned utility staff, statewide incentive program administrators, and community-based organizations serving the region's disadvantaged, low-income, and rural communities.

Electric Drive 805 Rebranding

After being appointed as the project's ZEV Ombudsman, the CEC led the process to rebrand Plug-in Central Coast, the region's plug-in electric vehicle collaboration, as Electric Drive 805. The rebranding effort was initiated to support the Task 6 goal for more inclusive ZEV outreach and engagement since the Plug-in Central Coast brand was not representative of many non-coastal communities in the project region. There is also a lack of widespread agreement about geographic regions that make up California's Central Coast. For example, some residents in Ventura County identify as being part of the Southern California region while others describe their region as the Central Coast. The project team's rebranding was intended to create a more

inclusive and geographically targeted brand identity that would strongly resonate with the region's diverse stakeholders.

CEC used a collaborative process to develop the new brand for the Plug-in Central Coast coalition. Best practices on marketing and brand development from Patagonia were applied to guide the rebranding process.[1] After collecting input from partners and conducting collaborative working group meetings, the project team developed a brand positioning statement that clearly and concisely articulated who the coalition was and why we were working to support the transition to ZEVs:

Brand Positioning Statement: *We are a coalition dedicated to achieving a rapid, equitable transition to electric vehicles. We lead local action to increase access to the cleaner, more efficient electric vehicles available today. Our goal is to reduce emissions from the largest source of pollution in the 805 regions, the cars and trucks we drive.*

CEC and project partners used the brand position statement to develop ideas for new brand identities. CEC collected input on new brand identity concepts from Plug-In Central Coast coalition members, ZEV stakeholders, and community-based organizations serving Disadvantaged and Low-Income Communities and Spanish-speaking residents. Numerous ideas for the new brand identity were collected and input on the different concepts was solicited from project partners and regional stakeholders. Based on the input from partners, the project team and Plug-in Central Coast, members selected Electric Drive 805 as the new brand identity for the coalition. The project team selected the Electric Drive 805 brand identity because they felt residents of the region strongly identified with the 805-area code, which also represents a distinct geographic area covering the three counties. Stakeholders with community-based organization serving Spanish-speaking community members also felt the brand identity could function well across multiple languages, which was aligned with the coalition's focus on multilingual ZEV awareness and education.

After the Electric Drive 805 brand was selected, CEC worked with their inhouse graphic design and communications team to develop the brand logo and a multilingual tagline. Concepts for the logo and tagline were refined with project partners to create the final versions (Figure 1).

1 *Tools for Grassroots Activists.* Patagonia. Edited by Nora Gallageher and Lisa Myers. 2016.

Figure 1: Electric Drive 805 Brand Logo and Tagline

Source: CEC & Pharos Creative LLC Website Development

The new Electric Drive 805 branding was used for the regional ZEV website, ElectricDrive805.org. The Electric Drive 805 website was designed to provide targeted information to four key ZEV stakeholders groups: drivers, workplaces, property managers, and local governments. CEC created a site map to outline the ElectricDrive805.org webpages and develop the navigation structure for the website. After the preliminary site map was developed, draft text was developed for each webpage and iterative updates to site map were made as necessary. The clearing house of ZEV resources, incentive program information, and ZEV readiness implementation guidance that CEC assembled was used to develop content for the ElectricDrive805.org webpages. A temporary landing page was created and launched while full content for the website was developed. The temporary landing page announced that the full webpage was forthcoming and allowed website visitors to sign-up for email notifications from the Electric Drive 805 coalition. The MailChimp platform was used on the backend of the Electric Drive 805 website to manage the mailing list and send custom email notifications.

Project partners had the opportunity to review draft versions of webpages as they were developed and were asked to share inputs and edits. CEC moved forward with coding and design for webpages as the text for each webpage was finalized. The first iteration of the full website was developed at the end of 2018. The full website launched on January 23, 2019, after beta testing was completed with project partners. Each Electric Drive 805 member issued a press release announcing the website launch in their region between January 23 and January 29, 2019.

ZEV Resource Clearing House

Resources were also compiled or developed to support ZEV awareness and adoption among the region's drivers, with special emphasis on low-to-moderate income households that were eligible for increased incentives from the CVRP or down-payment grants from the Clean Vehicle Assistance Grant Program. These resources focused on ZEV options, their benefits, current incentives, and the charging/fueling options available to drivers in the region.

Additional resources were compiled or developed to support EVSE infrastructure development at key locations, including large workplaces, multifamily housing developments, and public destinations in the region. The project team complied information about 2016 California Building Code requirements for accessible EV charging infrastructure, so stakeholders could easily access this information and install EV charging stations in conformance with the Americans with Disabilities Act (see Appendix E-3). A list of EV infrastructure service providers in the region was developed, so the project team could help stakeholders connect with EVSE hardware vendors, network service providers, and electrical contractors that have experience with EV charging station planning, design, and installation (see Appendix B-2).

Utility EVSE Incentive Programs

Two investor-owned utility (IOU) EVSE incentive pilot programs were operating in the region during the ZEVRI project, including SCE's Charge Ready Pilot Program and PG&E's EV Charge Network Program. The IOU EVSE incentive pilot programs cover the full cost of electrical infrastructure upgrades that are required for EV charging station installations. PG&E and SCE also provide rebates for EVSE hardware to further reduce the upfront costs of EV charging station installations. The rebate amount depends on the location, type, and number of charging station that an eligible site host elects to install. Larger rebates are available for EV charging stations projects located in Disadvantaged Communities or at MUD locations.

To support regional awareness and access to new utility incentive programs for EV infrastructure development, CEC, aided by Air District partners engaged utility staff managing PG&E's EV Charge Network and SCE's Charge Ready pilot programs.[2]

A special meeting was conducted with PG&E's EV Charge Network and local government staff within the utilities service territory on December 12, 2017. The meeting took place shortly before the full launch of the EV Charge Network. During the meeting, PG&E staff shared information about EV Charge Network pilot program eligibility, EVSE project requirements, and guidance to facilitate successful applications. PG&E staff encouraged stakeholders to give special attention to Americans with Disabilities Act (ADA) accessibility requirements for EVSE, as outlined in the 2016 California Building Code.

SCE's Charge Ready Program staff were also engaged to support coordination and information sharing about their utility EVSE incentive programs with regional stakeholders in the utilities service territory. CEC participated in Charge Ready Pilot Advisory Board meetings to track pilot program updates. SCE staff also shared information and resources to help facilitate access to the Charge Ready program for eligible sites in the ZEVRI project region.

The project team asked the SCE and PG&E utilities about the best approaches to share information about their respective EVSE incentive pilot programs. In response, utility staff

2 The project region is split across PG&E and SCE utility service territories. San Luis Obispo County and the northern half of Santa Barbara County are located in PG&E service territory, while Ventura County and the southern half of Santa Babara County are located in SCE service territory.

encouraged CEC and the ZEVRI project team to direct regional stakeholders to their utility EVSE incentive program websites since these would have the most up-to-date information. CEC and Air District partners directly notified large entities in their region that could potentially meet the significant minimum project size required by these IOU programs. This proved to be an effective approach with several large entities completing projects through the IOU programs.

EV Charging Demand Surveys

CEC also developed online survey templates to assess EV charging demand at workplaces and MUDs. The online surveys templates were developed in Google forms. Survey piping and question logic were used to skip respondents over any questions that did not apply to them. A respondent's answers to previous survey items were used to determine the subsequent survey items that would not be applicable to them, which helped provide a streamlined experience and reduced the time required to respond. With this survey design approach, most respondents could complete the EV charging demand surveys in less than 5 minutes.

Both online surveys to assess workplace and MUD charging demand were developed to collect data on current EV ownership rates and current charging access at the residence/workplace location. For non-EV drivers, survey questionnaire items were designed to assess the level of interest in future EV ownership and how access to EV charging would influence respondents' consideration of an EV as their next automobile. Respondents who indicated that they were not considering an EV as their next automobile, were directed to an open-ended question asking the respondent to describe their reason(s) for not considering a plug-in electric vehicle as their next automobile.

Each of the survey templates also included questions to collect targeted information. The workplace charging demand survey collected targeted information about travel behaviors related to workplace commuting, including mode choice(s), commute distance, the number of days respondents' drove to work during a typical week, parking availability/access, and vehicle dwell times. The MUD charging demand survey collected targeted information about the number of vehicles in respondents' households, mode choice(s), parking access at their multifamily residence, commuting habits to work/school, and the location(s) of their workplace/school.

The survey templates that CEC developed were shared with SLOCAPCD and project partners, so they could be adapted into surveys for specific workplace/MUD locations. Links to the Google Forms for workplace and MUD EV charging demand survey templates are included in Appendix B-2.

Identifying New Local & Regional ZEV Incentive Opportunities

CEC coordinated 3 meetings with SLOCAPCD and local government members of the rebranded Electric Drive 805 coalition (formerly Plug-in Central Coast) to explore opportunities for new regional ZEV incentive programs. Before facilitating the 3 incentive meetings, CEC identified local and regional EV rebates and charging infrastructure development incentives launched by

local governments outside of the ZEVRI project region. SLOCAPCD and the project partners discussed different EV incentive programs from outside the region during the first meeting.

The last two meetings were used to identify EV incentive models that seemed more aligned with the 805 region's needs, develop new incentive program concepts for the region, and explore potential funding sources. The project team identified two main opportunities to expand EV charging infrastructure incentives for the region, including 1) securing block grant funding for a regional CALeVIP project that could support public EV charging infrastructure development and 2) building collaboration with Community Choice Aggregation programs that expanded into the region.

AB 1236 Implementation Tracking & Support

CEC also tracked and supported local government implementation of AB 1236 in the region. Building officials at municipal and county governments were contacted to determine if the requirements of AB 1236 were being met and evaluate how local governments were meeting the AB 1236 mandates.

CEC conducted outreach from December 2017 to October 2018 to assess local government implementation of AB 1236 in the counties of San Luis Obispo, Santa Barbara, and Ventura. Building and permitting officials for a total of 12 local governments (4 in each county) were contacted via phone and email to assess the status of AB 1236 implementation. CEC worked with engaged local government staff to determine if their municipality or county had met 4 key requirements of AB 1236:

1. Passed an AB 1236 ordinance to streamline permitting for both residential and non-residential EV charging station projects
2. Provided a checklist of all the requirements that residential and non-residential EV charging station projects must meet to receive expedited permit application processing
3. Posted all EV charging station checklists and required permitting documents to a publicly accessible webpage on the local government's website
4. Allowed for electronic submittal (via email, internet, or fax) of the permit application and associated documents

AB 1236 outlines additional requirements for streamlined local government permitting. However, CEC focused on these key requirements because they are among the strongest and most broadly applicable requirements in AB 1236. Few if any conditional clauses apply to the above requirements, which are binding for all local governments in the state (except for the rare few that do not currently have a local government website).

All local governments in California were required to implement streamlined permitting in conformance with AB 1236 no later than September 30, 2017. However, only 4 of the 12 local governments had met the key requirements outlined above when their staff were initially engaged. 7 of the 12 local governments had partially implemented streamlined permitting for EV charging station projects. For example, 2 of the 4 local governments contacted in Ventura

County had passed the required ordinance and streamlined permitting for single-family residential EV charging stations but did not have a streamlined permitting process in place for multi-family residential and/or commercial charging station installations.

Since two-thirds of the local governments that CEC engaged were not in conformance with key requirements of AB 1236, CEC provided guidance and support to help local governments implement streamlined permitting processes for residential and non-residential EV charging stations. The guidance document that CEC developed to support local government implementation of AB 1236 included model ordinances and permitting checklists (see Appendix B-3).

Based on CEC's engagement with local governments, the main factors contributing to incomplete implementation of streamlined permitting requirements set forth in AB 1236 include:

- No enforcement: there is currently no state agency mandated to track, support, or enforce local government implementation of AB 1236, so many cities and counties have not prioritized implementation of streamlined permitting
- Limited awareness: in some cases, local government staff indicated that they were not aware AB 1236 requirements, which highlights the need for improved information sharing between state authorities and local government building officials.
- Lack of local government capacity: many local governments were open about staff capacity limitations and budget constraints that prevented them from devoting time and resources to AB 1236 implementation.

In many cases, local governments serving disadvantaged, low-income, and/or rural areas had the least staff capacity for AB 1236 implementation. As a general rule, the local governments that serve disadvantaged, low-income, and rural communities bring in less revenue from property, sales, and income taxes. This lack of revenue can reinforce a cycle of under investment in these areas of need, which is reflected in both the implementation of AB 1236 and regional charging infrastructure development.

It is important to note that CEC did not assess the permitting fees for residential and non-residential charging stations, but the cost to receiving permits and approval for charging station installations can present significant barriers. For example, the City of Fresno required traffic impact studies as part of their non-residential charging station approval process. These traffic impact studies cost several thousand dollars and a significant investment of time to complete. When the first CALeVIP incentives program launched in the City of Fresno in 2018, the traffic study requirement for permitting and approval presented a significant barrier to the timely dispersal of CALeVIP incentive funding for charging infrastructure development.

Future outreach and engagement with local government building officials should be conducted to ensure that the fees and approval processes for EV charging station permitting are affordable and do not present barriers to EV infrastructure development or investment in the region.

Outcomes

The first full iteration of the Electric Drive 805 website launched on January 23, 2019, and can be accessed at ElectricDrive805.org. The press releases issued by Electric Drive 805 coalition members generated significant media coverage across the ZEVRI project region, including news reports that ran on local television stations, radio interviews, and published news articles.[3] [4] [5] Some coalition members issued their press releases in both Spanish and English.[6] More than 450 people have requested to sign-up for Electric Drive 805 notifications so they can receive updates about electric vehicle events, incentives programs, infrastructure development opportunities, and EV policies.

CEC used the clearing house of ZEV resources to develop the Electric Drive 805 website. Online ZEV resources are linked throughout the website on webpages that are targeted to the four specific stakeholder groups that the Electric Drive 805 is focused on engaging, including drivers, workplaces, property managers, and local governments. Some of the clearing house resources developed for the ZEVRI project were not made available on the Electric Drive 805 website due to insufficient funding, coalition member concerns, and/or related challenges described in the following section. The list of EV infrastructure service providers that the project team developed is available in Appendix B-2.

The Santa Barbara County Association of Governments (SBCAG) incorporated key questions from the workplace EV charging demand survey template into a broader commuting survey. The survey was distributed to all local government employees at the City of Santa Barbara and County of Santa Barbara. The Ventura County Regional Energy Alliance (VCREA) also used the MUD and workplace EV charging demand survey templates to develop surveys and collect data on EV charging demand for the Ventura County EV Ready Blueprint.[7] [8]

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3 "New Coalition hopes to bring more electric cares to the Central Coast." *KEYT*. Nathlie Vera. January 29, 2019. Available at: https://www.keyt.com/news/environment/new-coalition-hopes-to-bring-more-electric-cars-to-the-central-coast/994889490

4 "Electric cars cost less than you think." *Santa Barbara Independent*. Amelia Buckley. February 1, 2019. http://m.independent.com/news/2019/feb/01/tri-county-initiative-aims-increase-electric-vehic/

5 "Electric Drive 805 coalition aims to increase EV access in Santa Barbara, SLO, Ventura counties." *Santa Maria Times*. Mike Hodgson. January 28, 2019. https://santamariatimes.com/news/local/electric-drive-coalition-aims-to-increase-ev-access-in-santa/article_39457904-c005-5a99-871c-f4f24351701d.html

6 "Bilingual report: Effort launched to transition county drivers to electric vehicles." *Amigos805.com*. January 23, 2019. Available at: https://amigos805.com/bilingual-report-effort-launched-to-transition-county-drivers-to-electric-vehicles/

7 As of August 16, 2019, the draft version of the Ventura County Electric Vehicle Blueprint was available at: https://www.vcenergy.org/electric-vehicle-blueprint/

8 VCREA collected more than 1,200 responses from employees at 3 of Ventura County's largest workplaces and 47 response from residents at one MUD. VCREA also collected 350 comments about perceived or actual barriers to ZEV adoption from people who indicated that they were not considering an EV as their next automobile. This work was funded with a separate California Energy Commission grant (AVR-17-046).

This effort collected a total of 1,200 employee responses from three workplace surveys and 47 resident responses from one multifamily housing development survey. Also collected were about 350 comments about perceived or actual barriers among people that are not considering an electric vehicle currently.

Building and permitting officials for a total of 12 local governments (4 in each county) were contacted via phone and email to assess the status of AB 1236 implementation. CEC found relatively low rates of implementation for AB 1236 among local governments in the region. Two-thirds of the 12 local governments that CEC engaged had EV charging permitting practices that did not meet the streamlining requirements of AB 1236.

Given the low rates of conformance among the contacted local governments, Community Environmental Council provided guidance and support for AB 1236 implementation. As a result of these efforts to encourage local government implementation of streamlined permitting, 2 out of the 8 local governments that did not meet AB 1236 requirements initially were in full conformance as of 2019. The local governments that moved from non-conformance to full conformance included the City of Oxnard and City of Moorpark.

The 3 meetings to explore opportunities for new regional ZEV incentive programs sparked continued conversation about a regional CALeVIP project for the 805 region. As a result of continued dialogue with Electric Drive 805 members, a meeting with CALeVIP administrators from the Center for Sustainable Energy (CSE) was scheduled for August 27, 2019. Staff from Monterey Bay Community Power and the Clean Power Alliance are anticipated to participate in the CALeVIP meeting with CSE and Electric Drive 805 members since their Community Choice Aggregation programs recently expanded into the 805 region.

Challenges

Issues related to scoping and funding presented challenges for Task 2 implementation. Numerous activities were scoped under Task 2 and the funding allocation for was not sufficient to cover all of CEC's work for the scoped activities. In particular, the amount of time that would need to be devoted to web development was underestimated.

Funding constraints limited CEC's ability to host all ZEV clearing house resources on the Electric Drive 805 website. CEC did not publish the list of EVSE service providers due to concerns among some local government members of Electric Drive 805. The main concern was that public agencies could be misperceived as endorsing private EVSE infrastructure companies.

CEC had difficulty engaging local governments to assess AB 1236 implementation. In many cases, building official were slow to respond to inquiries and share documents related to AB 1236 implementation. This highlighted issues with local government capacity and resourcing that also affected Task 6 activities. Local governments serving disadvantaged communities, low-income communities, and rural areas were often slower to respond or more difficult to engage.

Lessons Learned

Based on CEC's engagement with local governments, the main factors contributing to incomplete implementation of streamlined permitting requirements set forth in AB 1236 include:

- No enforcement: there is currently no state agency mandated to track, support, or enforce local government implementation of AB 1236, so many cities and counties have not prioritized implementation of streamlined permitting
- Limited awareness: in some cases, local government staff indicated that they were not aware of AB 1236 requirements, highlighting the need for improved information sharing between state authorities and local government building officials.
- Lack of local government capacity: many local governments were open about staff capacity limitations and budget constraints that prevented them from devoting time and resources to AB 1236 implementation.

In the absence of state regulations to enforce AB 1236, more resources and support will be needed to accelerate local government implementation of streamlined EV charging station permitting requirements.

The California Governor's Office of Business and Economic Development (GOBiz) released the EV Charging Station Permitting Guidebook in July 2019 to help meet this need and is providing increased leadership for local government implementation of AB 1236.[9] In tandem with the guidebook's recent release, GOBiz also provided a Permitting Electric Vehicle Charging Stations Scorecard and launched a dedicated ZEV Readiness site to track EV charging station permit streamlining for each local government in the state.[10] The website includes a map that will display the Permitting EV Charging Station Scorecard results for local government jurisdictions, which could help create greater transparency and accountability for AB 1236 implementation.

As of this report, the GOBiz ZEV team is in the beginning stages of evaluating the streamlining status of jurisdictions throughout California. The scored map will be populated with additional information over the coming weeks and months.

Next Steps

CEC and grant partners should also reach out to GOBiz to share information about local government implementation of AB 1236 in the 805 regions, so their agency can more readily score local governments in the region on their streamlined EV charging station permitting. Streamlined permitting policies and checklists can accelerate the EV charging station siting and

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9 California Governor's Office of Business & Economic Development (GOBiz). "Electric Vehicle Charging Station Permitting Guidebook". July 2019. Available at: http://businessportal.ca.gov/wp-content/uploads/2019/07/GoBIZ-EVCharging-Guidebook.pdf

10 The Permtting Electric Vehicle Charging Station Scorecard and California EV Charging Station Permit Streamlining Map are available at: http://www.business.ca.gov/zevreadiness

installation process, reduce costs, and ensure that installed EVSE operates effectively and safely. Recommended permit streamlining initiatives are described below:

1. Streamline EVSE permitting processes by 1) approving all zoning and land use classifications for electric vehicle charging in local ordinance; 2) providing digital and online permit submission options; 3) establishing and communicating standard permit approval times by building type; 4) identifying a point of contact for the EVSE permitting process; 5) clearly defining required materials for permit application; 6) including Permit Process Language in local ordinance; 7) maintaining reasonable – and flat – charger permit fees; 8) waiving plan requirements for simple installations such as single-family residential charging; and 9) establishing phone and online inspection request systems.
2. Integrate CALGreen language in local ordinance to bring local communities into compliance with AB 1236, so that all municipalities in Ventura County will see increased deployment of electric vehicle charging stations in new construction.
3. Develop a countywide initiative to implement Reach codes that increase EVSE requirements for new buildings and major remodels. Ventura County can build on the multi-county Reach Code effort ongoing in Alameda, Santa Clara, and San Mateo Counties, coordinated by TRC.
4. Develop an interactive, map-based Electric Vehicle Planning tool that will assist in public and private EVSE development and that can be used to locate existing electric vehicle charging infrastructure, largest MUDs and workplaces, major public destinations, and Disadvantaged and Low-income Communities.
5. Track private and public sector funding opportunities to bring electric vehicle charging infrastructure to areas where it is needed most. Utilize Electric Drive 805 website to present up to date funding information for stakeholders to consider in their EVSE planning.
6. Prioritize public charging development strategically to increase overall electric vehicle adoption and serve communities throughout the Ventura County region. EVSE siting should focus on 1) locations with heavy vehicle turnover, including grocery stores and shopping centers; 2) locations with longer vehicle dwell time such as multi-unit apartments, workplaces, airports, and transit hubs; 3) site proximity in disadvantaged or low-income communities as identified by CARB for AB 1550; and 4) site distance from existing electric vehicle charging stations.

Bringing local communities into compliance with AB 1236 to ensure streamlined EV charging station permitting will 1) support increased deployment of residential and non-residential EV charging stations, 2) facilitate quick delivery of incentive funding for EV charging stations to applicants; and 3) support timely EV charging infrastructure development for new construction or retrofits that are subject to CALGreen or Reach Code requirements for EV charging.

It is important to note that CEC did not assess the permitting fees for residential and non-residential charging stations, but the cost to receiving permits and approval for charging station installations can present significant barriers. For example, the City of Fresno required traffic impact studies as part of their non-residential charging station approval process. These

traffic impact studies cost several thousand dollars and a significant investment of time to complete. When the first CALeVIP incentives program launched in the City of Fresno in 2018, the traffic study requirement for permitting and approval presented a significant barrier to the timely dispersal of CALeVIP incentive funding for charging infrastructure development. Future outreach and engagement with local government building officials should be conducted to ensure that the fees and approval processes for EV charging station permitting are affordable and do not present barriers to EV infrastructure development or investment in the region.

CEC will continue to work with partners and Electric Drive 805 coalition members to identify funding sources that can sustain ZEV Ombudsman activities, including web design and resource development for the Electric Drive 805 collaborative. If additional funding is secured for ZEV Ombudsman support, CEC could work with Electric Drive 805 coalition members and ZEV stakeholders to implement the following recommendations:

- If the state budget allows, engage the California Energy Commission and the Center for Sustainable Energy to launch a regional CALeVIP incentive project serving Ventura County before the end of 2020. Santa Barbara and San Luis Obispo County could also choose to participate depending on the discussions with CALeVIP representatives. A regional CALeVIP project would offer incentives for the purchase and installation of electric vehicle charging infrastructure at publicly accessible sites.
- Create and launch online applications and an expedited review process for local Air District EV charging station incentive programs, which will facilitate quick dispersal of grant funding that can be stacked with other electric vehicle infrastructure development incentives (such as CALeVIP) to reduce upfront cost barriers.
- Build greater collaboration with the region's IOUs and CCA programs, including the Clean Power Alliance (CPA) and Monterey Bay Community Power (MBCP), to establish new electric vehicle pilot projects and incentive programs.
- Seek strategic partnerships with SCE, CPA, PG&E, and MBCP that can help fund coordinated electric vehicle marketing, outreach, and education activities throughout the region.
- Develop lists of the region's 300 largest workplaces, 300 largest MUDs, and 100 high priority locations in disadvantaged/low-income communities so they can be targeted for ZEV outreach and infrastructure development.
- Connect workplaces with an Electric Vehicle Coach (see the 'Next Steps' section of Chapter 6), so they can receive one-on-one support with EV infrastructure development, access EV infrastructure incentive programs, and apply for grant funding opportunities – with an emphasis on dual use opportunities for electric vehicle fleets, employees, and the public.
- Create an Electric Vehicle Champion recognition program to increase electric vehicle awareness among employers and acknowledge leadership in advancing California's clean transportation and climate goals.
- Explore innovative "charging as a service" financing models that reduce upfront costs and operational risks for site hosts.

- Encourage deployment of lower-cost Level 1 charging where feasible and appropriate for sites where vehicles are parked for more than six to eight hours each day (i.e. long-dwell scenarios).
- Prioritize outreach, education, and support for workplaces and MUD charging infrastructure development that will meet the electric vehicle charging needs of multiple users (e.g. employees and fleet operators, or residents and public users).
- Educate MUD residents on the "electric experience" to create demand for MUD charging.
- Focus programs on new MUD construction and areas with gaps in public charging infrastructure development.
- Deploy public charging at or near larger clusters of apartments and condos
- Convene utility, industry, and funding partners to coordinate MUD electric vehicle charging deployment.
- Focus investment on electric vehicle infrastructure that will serve residents in the region's disadvantaged, low-income, and rural communities.
- Target MUD outreach to properties with 17 or more units that are subject to the 2013 California Building Code for electric vehicle charging infrastructure development. (As of January 2, 2014, the California Building Code requires that all MUDs with 17 or more units shall set aside three percent of the total number of parking spaces, but no less than one parking space, to be charging station capable, i.e., have stub-outs and sufficient panel capacity to accommodate EVSE).

CHAPTER 3:
Strategic EVSE Siting Analysis

The purpose of the Strategic EVSE Siting Analysis was to conduct an analysis using empirical mobile device data to identify key locations for the development of electric vehicle charging stations, referred to as EVSE in this report. The results were used to identify strategic EVSE siting opportunities for the counties of Ventura, Santa Barbara, and San Luis Obispo that were not included in the 2014 Central Coast EV Readiness Plan's[11] recommended site maps. The identified EVSE siting opportunities from the analysis were used to prioritize locations for the site assessments described in Chapter 5.

In addition to empirical mobile device data, Fehr & Peers incorporated utility grid infrastructure data from Pacific Gas & Electric (PG&E) and Southern California Edison (SoCal Edison) into the analysis. To increase equitable access to EV charging, data from the California Office of Environmental Health Hazard Assessment's (OEHHA) CalEnviroScreen 3.0 tool and AB 1550 were used to identify high-priority locations for EVSE infrastructure in the region's disadvantaged and low-income communities.[12] [13]

The project team was not aware of any other assessments that incorporated empirical mobile device data to help identify and prioritize geographic areas for EV infrastructure development upon completion of the Strategic EVSE Siting Analysis. However, empirical mobile device data has been used for broader analysis of travel demand. For example, the 2016 Central Coast Origin-Destination Survey used empirical mobile device data to gather information on the travel behavior of people who make regional and inter-regional trips on US 101 in the Central Coast region.[14] Empirical mobile device data provides a new basis for prioritizing EVSE infrastructure development based on observed travel behaviors at the regional level. There are both advantages and disadvantages of using mobile device data represented in the Table 2 below.

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11 https://www.c-5.org/altfuel-readiness.php; Central Coast from this plan represents Ventura, Santa Barbara, and San Luis Obispo Counties of California. This area is also consistent with the Tri-County region described in this ZEV Readiness Implementation Plan.

12 California OEHHA. *CalEnviroScreen 3.0 (updated June 2018).* Last accessed July 16, 2019. Available at: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

13 CARB. *California Climate Investments: Priority Population Investments.* Last access July 16, 2019. Available at: https://ww3.arb.ca.gov/cc/capandtrade/auctionproceeds/communityinvestments.htm/

14 SBCAG, SLOCOG, VCTC, and Fehr & Peers. *Central Coast Origin-Destination Survey.* July 8, 2016. Last accessed July 16, 2019. Available at: http://www.sbcag.org/uploads/2/4/5/4/24540302/central_coast_o-d_survey_final_report_7-8-2016.pdf

Table 2: Mobile Device Data Advantaged and Limitations

Advantages	Disadvantages
• Very large sample size able to provide information regarding all types of trips that occur. • Provides true origin-destination data rather than observed or vehicle registration location. • Provides origin-destination data in a format more suitable for comparison and integration with travel demand models. • Data can be queried, aggregated and disaggregated to match desired level of analysis. • Data collection method does not require set up time or human transcribing of observed field data.	• Unable to directly measure information regarding trip purpose, frequency, characteristics of travel or demographics. However, much of this information can be inferred or supplemented with information from other sources. • Collection and aggregation of data can be costly but provides a significantly larger sample size than other methods.

Source: CEC

For the Strategic EVSE Siting Analysis, Fehr & Peers worked with StreetLight Data to obtain anonymous data showing the location and movement of mobile devices in the Tri-Counties region's roadway network. Streetlight data aggregated the mobile device data across geographic "zones" to ensure user privacy. This zonal mobile device data was used to identify high traffic locations that could be well suited for EVSE installations.

Analysis was conducted to identify high-priority areas for EVSE infrastructure development across four user groups, including intraregional travelers, workplace employees, multi-dwelling residents (henceforth referred to as "renters"), and fleet operators. Individual map-based results for each of these four user groups were developed and show the high-priority areas where additional EVSE infrastructure development would be most likely to meet EV charging needs for each user group. Fehr & Peers also combined the individual results for each user group to create a "combined use score" map that displays the top 25 high-priority areas for EVSE development.

The map-based results of the Strategic EVSE Siting Analysis are available online, so stakeholders can identify potential strategic locations for the siting of EVSE in the Tri-County region. The publicly available online prioritization maps can be accessed on the SLOCAPCD website.[15] The individual results for each of the four user groups can be displayed in the online maps at a regional or county level, along with the combined use score map showing the top 25 high-priority areas for EVSE infrastructure development in the Tri-County region.

15 Available at www.slocleanair.org/community/zev.php.

Fehr & Peers produced a report on the Task 3 results and a technical memorandum which can be found in Appendix C-1.

Approach

Step 1: Data Collection and Collation

To determine the strategic siting opportunities for EVSE in the region, Fehr & Peers first obtained mobile device data from Streetlight Data and collected shapefiles of relevant supplemental data. Such data included shapefiles for CalEnviroScreen 3.0 Disadvantaged Communities from the California OEHHA, AB 1550 Low-Income Communities data from California Climate Investments, and utility infrastructure data from PG&E and SCE.

Additionally, existing and forecasted growth of both multi-dwelling units (MUDs) and the number of retail and office employees was collected from the regional travel demand models used by SBCAG, SLOCOG (San Luis Obispo Council of Governments), and VCTC (Ventura County Transportation Commission. Data on existing charging stations was obtained from the US Department of Energy's Alternative Fuels Data Center (AFDC) and fleet operator data was obtained from Fleet Seek. However, this data was not included in final EVSE analysis due to completeness and reliability issues. The MUDs and workplace data was used to identify high-priority areas for EVSE infrastructure development for multifamily housing and major employers.

Step 2: Traffic Analysis Zone Development

Fehr & Peers next developed a 288-zone geographic layer for the region to provide a geographic system for data analysis, scoring, and mapping. The geographic layer was based on the traffic analysis zone (TAZ) structure of the 2016 Central Coast Origin-Destination Survey. All of the collected data was incorporated into GIS datasets. Fehr & Peers overlaid, aggregated, and tagged these GIS datasets onto the TAZ systems to create a shapefile that could then be sorted, queried, and spatially analyzed. StreetLight Data then collated the anonymized data from mobile devices in the region for analysis using the defined TAZ structure.

Step 3: Develop List of Travel Behavior Metrics

Next, Fehr & Peers, CEC, and SLOCAPCD developed a list of travel behavior metrics to apply to the EVSE siting analysis. The metrics were designed to identify regional travel patterns that are most likely to create a higher demand or need for EV charging in a geographic zone. The travel behavior metrics included:

- Total auto trips passing through each zone
- Total auto trips "parking" in each zone
- Auto trips of 20+ miles, 40+ miles, and 100+ miles that pass into a zone and park
- Work trips, shopping trips, and intermediate trips (intermediate trips refer to secondary trips made as part of a longer primary trip which are less than 20 miles)
- Medium-duty truck trips of 40+ miles passing through each zone
- Medium-duty truck trips of 40+ miles that pass into a zone and park

- Heavy-duty truck trips of 40+ miles passing through each zone
- Heavy-duty truck trips of 40+ miles that pass into a zone and park

These selected travel behavior metrics were based on a set of assumptions about charging needs, EV driving ranges, and EV charging preferences for each user group.

Table 3: Key Assumptions for EVSE Siting Analysis

Parameter	Data Format	Scoring Method	Assumptions
Land Use			
Multi-Unit Residential Units	number of units	percentile	EVSE infrastructure development should be prioritized at MUD locations with a higher share of units since this will help increase EV charging access for a larger number of residents that rent.
Proposed Multi-Unit Residential Growth	number of units	percentile	EVSE infrastructure development should be prioritized for land use zones that will see relatively higher growth in the number of MUDs since the State of California Building Code requires "EV-ready" parking spaces for new multi-family residential construction.
Retail Employment	number of employees	percentile	EVSE should be deployed at retail centers based on the share of employees, not just customers, since e retail employees may need access to EV charging.
Office Employment	number of employees	percentile	EVSE should be prioritized for larger workplaces since this will increase EV charging access for a greater number of employees. If employees are renters who lack access to home charging, workplace charging may enable EV ownership for some renters who lack access to home charging. EVSE at office locations is scored for intraregional travel since office chargers are less likely to be publicly accessible and charging at an office location will be less attractive than charging at a location with retail amenities for long-distance travelers.
Proposed Office Employment Growth	number of employees	percentile	EVSE infrastructure development should be prioritized for land use zones that will see relatively higher growth in the number of offices since this will increase the number of employees commuting to the area. This parameter is not scored for intraregional travel for the reasons specified above.
Other Employment	number of employees	percentile	EVSE should be prioritized for all large workplaces, not just employees at large retailers or offices, since this will help increase EV charging access for all of the region's workforce.
Location of Fleet Operators	number of fleet operators	percentile	Areas with a larger share of fleet operators will need additional EVSE infrastructure development and electrical system upgrades - especially if a large number of fleets EVs will be charging at the same times.

Parameter	Data Format	Scoring Method	Assumptions
Residential Demographics (for sorting)			
Disadvantaged Community (Disadvantaged Communities)	0 if no, 1 if yes	binary	EVSE infrastructure development should be prioritized within the region's Disadvantaged Communities to ensure equitable access to EVs and charging.
Non-Disadvantaged Communities Low-income Communities	0 if no, 1 if yes	binary	EVSE infrastructure development should be prioritized within the region's Low-Income Communities to ensure equitable access to EVs and charging. To avoided double counting, the Low-Income Communities used in the analysis exclude AB 1550 low-income areas that are also designated as Disadvantaged Communities in CalEnviroScreen 3.0.
County	County Name	trinary	County-level analysis of high-priority EVSE locations is needed since high-priority areas will naturally skew to higher population centers in the Ventura County region.
Electrical Infrastructure			
PG&E DC Charging Capacity	0 if no, 1 if yes	binary	Areas with more available electrical capacity will require fewer infrastructure upgrades and allow for lower-cost DC Fast Charging installations that can serve intraregional travelers at retail locations near major travel corridors as well as fleet operators. PG&E staff indicated that grid capacity is less of an issue for Level 2 charging stations, which are more likely to be a good fit for workplaces and MUDs.
PG&E 1-mile Substation Proximity	0 if no, 1 if yes	binary	Substation locations and 1-mile buffer areas around substations were identified but should not be used for scoring since utility staff indicated that EVSE proximity to substations is not necessarily important for infrastructure development and grid reliability.
SCE 15% Charging Capacity	0 if no, 1 if yes	binary	Areas with more available electrical capacity will require fewer infrastructure upgrades and allow for lower-cost DC Fast Charging installations that can serve intraregional travelers at retail locations near major travel corridors as well as fleet operators. PG&E staff indicated that grid

Parameter	Data Format	Scoring Method	Assumptions
			capacity is less of an issue for Level 2 charging stations, which are more likely to be a good fit for workplaces and MUDs.
SCE 1-mile Substation Proximity	0 if no, 1 if yes	binary	Substation locations and 1-mile buffer areas around substations were identified but should not be used for scoring since utility staff indicated that EVSE proximity to substations is not necessarily important for infrastructure development and grid reliability.
Existing L1 or L2 chargers	number of chargers	percentile	EVSE infrastructure development should be prioritized in areas that do not have existing EVSE but are likely to see higher charging demand to close significant gaps in the region's EV charging network. **Due to incomplete and inaccurate data, the number of Level 1 and Level 2 chargers in a geographic zone was not scored.**
Existing DC fast chargers	number of chargers	percentile	EVSE infrastructure development should be prioritized in areas that do not have existing EVSE but are likely to see higher charging demand to close significant gaps in the region's EV charging network. **Due to incomplete and inaccurate data, the number of DC Fast Chargers in an geographic zone was not scored.**
Travel Behavior			
Total Personal Auto Trips Passing Through	number of trips	percentile	Areas with higher travel demand will be associated with higher demand for EV charging as more drivers and fleets transition to plug-in EVs. Therefore, EVSE infrastructure development should be prioritized in areas with higher travel demand.
Personal Auto Trips Passing Through of 20+ miles	number of trips	percentile	A 40-mile round trip is within the range of all available BEVs and PHEVs, but increased charging access will help reduce range anxiety for prospective BEV drivers and will increase the number of electric miles for the region's PHEV drivers.

Parameter	Data Format	Scoring Method	Assumptions
Personal Auto Trips Passing Through of 40+ miles	number of trips	percentile	If an employee drives 40+ miles to work in a BEV with less than 90 to 100 miles of range, they may not be able to get home without workplace charging - especially if they need to run errands or complete additional travel before or after work. Since Drivers may not be comfortable transitioning to an EV if there is uncertainty about their ability to complete the return trip home for their daily commute, increased access to workplace charging will help long-distance commuters feel more confident that an EV can meet their needs and can increase EV adoption among drivers that need to commute more than 40 miles each day.
Personal Auto Trips Passing Through of 100+ miles	number of trips	percentile	Almost all one-way trips over 100 miles are for intraregional pass-through trips. Drivers completing pass through trips in an EV will prefer to use DC Fast Charging near a major travel corridor at locations with amenities.
Total Personal Auto Parking Events	number of parking events	percentile	EVSE infrastructure development should be prioritized at locations where a large number of renters/employees park for a period of time and will have an opportunity to charge. More detailed analysis could be conducted in the future with mobile device data to infer the median vehicle dwell times for zones and determine the best types of EV charging to make available (i.e. more DCFC charging for zones with shorter median vehicle dwell times versus more L1/L2 charging for zones with longer median dwell times).
Personal Auto parking events with 20+ miles left	number of parking events	percentile	Greater priority for EVSE infrastructure development should be given to areas where a large share of drivers will need to travel 20 miles or more after parking.
Personal Auto parking events with 40+ miles left	number of parking events	percentile	Greater priority for EVSE infrastructure should be given to areas where a large share of drivers will need to travel 40 miles or more after parking.
Heavy-Duty Truck Trips Passing Through of 40+ miles	number of trips	percentile	DCFC development should be prioritized in areas where a large number of heavy-duty vehicles travel 40 or more miles to support regional fleet electrification and opportunity charging for freight/delivery trucks.

Parameter	Data Format	Scoring Method	Assumptions
Heavy-Duty Truck Parking Events with 40+ miles left	number of parking events	percentile	Greater priority for EVSE infrastructure development should be given to areas where a large number of heavy-duty vehicles will need to travel 40 miles or more after parking.
Medium-Duty Truck Trips Passing Through of 40+ miles	number of trips	percentile	DCFC development should be prioritized in areas where a large number of medium-duty vehicles travel 40 or more miles to support regional fleet electrification and opportunity charging for delivery/utility vehicles.
Medium-Duty Truck Parking Events with 40+ miles left	number of parking events	percentile	Greater priority for EVSE infrastructure development should be given to areas where a large share of medium-duty vehicles will need to travel 40 miles or more after parking.
Work Trips	number of trips	percentile	Prioritizing EVSE infrastructure development in areas with a higher number of workplace commuting trips will increase access to EV charging for a greater number of people and promote EV adoption. Renters living at MUDs without EVSE may be able to charge at their workplace and employees with longer commutes will be more likely to adopt an EV if they can charge at the workplace. If a business or agency has a fleet of vehicles to support their operations, EVSE infrastructure development at the workplace will support the transition to more EVs in the fleet.
Shopping/Recreation Trips	number of trips	percentile	Prioritizing EVSE infrastructure development in areas with a higher number of shopping/recreation trips will increase access to EV charging for a greater number of people and promote EV adoption. Renters living at MUDs without EVSE may be able to charge at nearby shopping centers and employees that lack access to workplace charging may be able to charge at retail locations before or after work while running errands. Locations with amenities such as coffee, food, and retail near major travel corridors are prime opportunities for recharging during long-distance trips. Trucks delivering goods could also recharge during or after deliveries/pickups.
Intermediate Trips	number of trips	percentile	EVSE infrastructure development should be prioritized at locations with a large number of intermediate trips for renters and intraregional travelers. Since renters are much less likely to have access to home charging, they will need more access to EV charging at public destinations where they stop to run errands, recreate, or receive services.

The metrics for total pass through auto trips and parking auto trips in each zone are based on the assumption that higher overall travel demand will be associated with higher demand for EV charging as more drivers transition to plug-in electric vehicles. Metrics at varying distances were selected based on the all-electric driving ranges for pure battery electric vehicle (BEV) and plug-in-hybrid electric vehicle (PHEV) options. Pure battery electric vehicles have a driving range of 80 to 100-miles or more, while most current PHEVs have an all-electric range of less than 20 miles to upwards of 50 miles.

Mobile device data was used to infer and differentiate a variety of trip types. Shopping trips and work trips were analyzed to capture the relative need for expanded workplace and destination charging in each zone. A metric for intermediate trips of less than 20 miles was included to capture drivers who make multiple short distance trips to a variety of destinations since the cumulative travel from these trips could exceed the all-electric range of pure battery electric or plug-in hybrid vehicle.

Medium- and heavy-duty vehicle metrics were also developed to identify zones where regional fleet operators, freight, and delivery services are most likely to need charging to complete their duty cycle. Streetlight Data inferred and isolated trip data for fleet vehicles with a proprietary algorithm that evaluates parameters related to the time of day a trip occurred, origin-destination points, and travel patterns. The project team assumed that most fleet vehicles are medium or heavy-duty trucks for the EVSE fleet analysis. The fleet-focused metrics were applied to the inferred fleet vehicle trip data to identify zones where relatively high numbers of fleet vehicles pass through with 40+ miles of travel remaining and where fleet vehicle drivers tend to park with more than 40 miles travel remaining.[16] All of the above described metrics were tagged to the 288-zone geographic layer developed from the TAZ systems for subsequent analysis that applied weighed scoring.

Step 4: Develop Weighted Scoring Criteria

The selected travel behavior metrics were assigned scores, weighted, and applied in the geographic analysis to identify high-priority zones for EVSE. An Excel-based weighted scoring spreadsheet was developed for the travel behavior metrics. Weights and scores were also set for contextual parameters related to land use and grid infrastructure for each of the 288 zones. Separate weighting factors were developed for each of the four user groups to account for differences in a group's unique charging demands and needs.

The different weighted factors for user groups allowed Fehr & Peers to conduct an individual assessment of high-priority EVSE areas for the each of the four user groups, which included intraregional travel, workplaces, MUDs, and fleets. The individual user assessments considered

16 The assumption that all fleet vehicles are medium- or heavy-duty vehicles is not completely valid since some fleet include light-duty vehicles. The project team applied this assumption to simply the EVSE siting analysis in the absence of data on the relative distribution of vehicle classes for the region's fleets.

different metrics and applied varying weights to create scores that could help decision-makers and stakeholders with strategic charging infrastructure development in the geographic zones based on each user group's assumed behaviors and charging needs.

Table 4: Weighted Scoring

Parameter	Data Format	Remove for Sorting	Scoring Method	Weighting Factor by Use Case			
				Employee	Renter	Road Tripper	Fleet Operator
Land Use				1.0			
Multi-Unit Residential Units	number of units		percentile	-	5	-	-
Proposed Multi-Unit Residential Growth	number of units		percentile	-	5	-	-
Retail Employment	number of employees		percentile	2	2	5	2
Office Employment	number of employees		percentile	5	5	-	1
Proposed Office Employment Growth	number of employees		percentile	5	5	-	1
Other Employment	number of employees		percentile	1	2	3	2
Location of Fleet Operators	number of fleet operators		percentile	-	-	-	5
Residential Demographics (used for sorting)				1.0			
Disadvantaged Community (DAC)	0 if no, 1 if yes	1	binary	-	-	-	-
Non-DAC Low-income Communities	0 if no, 1 if yes	1	binary	-	-	-	-
County	County Name	1	trinary	-	-	-	-

Parameter	Data Format	Remove for Sorting	Scoring Method	Weighting Factor by Use Case			
				Employee	Renter	Road Tripper	Fleet Operator
Electrical Infrastructure				1.0			
PG&E DC Charging Capacity	0 if no, 1 if yes		binary	2	2	5	5
PG&E 1-mile Substation Proximity	0 if no, 1 if yes	1	binary	-	-	-	-
SCE 15% Charging Capacity	0 if no, 1 if yes		binary	2	2	5	5
SCE 1-mile Substation Proximity	0 if no, 1 if yes	1	binary	-	-	-	-
Travel Behavior				1.0			
Total Personal Auto Trips Passing Through	number of trips		percentile	2	2	-	-
Personal Auto Trips Passing Through of 20+ miles	number of trips		percentile	3	3	3	-
Personal Auto Trips Passing Through of 40+ miles	number of trips		percentile	5	5	4	
Personal Auto Trips Passing Through of 100+ miles	number of trips		percentile	-	-	5	-
Total Personal Auto Parking Events	number of parking events		percentile	1	1	-	-
Personal Auto parking events with 20+ miles left	number of parking events		percentile	4	5	4	-

Parameter	Data Format	Remove for Sorting	Scoring Method	Weighting Factor by Use Case			
				Employee	Renter	Road Tripper	Fleet Operator
Personal Auto parking events with 40+ miles left	number of parking events		percentile	5	5	4	
Heavy-Duty Truck Trips Passing Through of 40+ miles	number of trips		percentile	-	-	-	5
Heavy-Duty Truck Parking Events with 40+ miles left	number of parking events		percentile	-	-	-	3
Medium-Duty Truck Trips Passing Through of 40+ miles	number of trips		percentile	-	-	-	5
Medium-Duty Truck Parking Events with 40+ miles left	number of parking events		percentile	-	-	-	3
Work Trips	number of trips		percentile	5	2	-	1
Shopping/Recreation Trips	number of trips		percentile	-	3	-	2
Intermediate Trips	number of trips		percentile	-	4	4	-

Source: CEC

Step 5: Develop Final Scores for Each Use Case

To develop a final "score" that represented each zone's potential charging demand for each of the four use cases, a scale from one to five was applied to each selected metric for each zone. Additionally, to account for equity considerations, scores for the low-income and disadvantaged communities can be isolated and sorted to provide a standalone ranking of high-priority zones for EVSE infrastructure development in these areas of need. As a potential economic factor, zones can be sorted based on distance from a PG&E or SCE substation. Appendix C-1 (page 28) includes the indexed scale for each metric for all 288 zones.

To create the final scores for each zone, the weighted scoring criteria was multiplied by the scaled metric scores for each zone. For example, if a zone had a metric score of 2 for "Volume of Parking Events for Commute", and the weighted score was 3 for renter charging, it would contribute 6 points to the final renter charging score for that zone. Additionally, a combined use score was developed for each of the 288 zones to determine the overall top 25 scoring zones in the Tri-County area. The scores for each of the four use cases added together create the combined use score. Appendix C-1 (page 34) shows the final scores for all 288 zones.

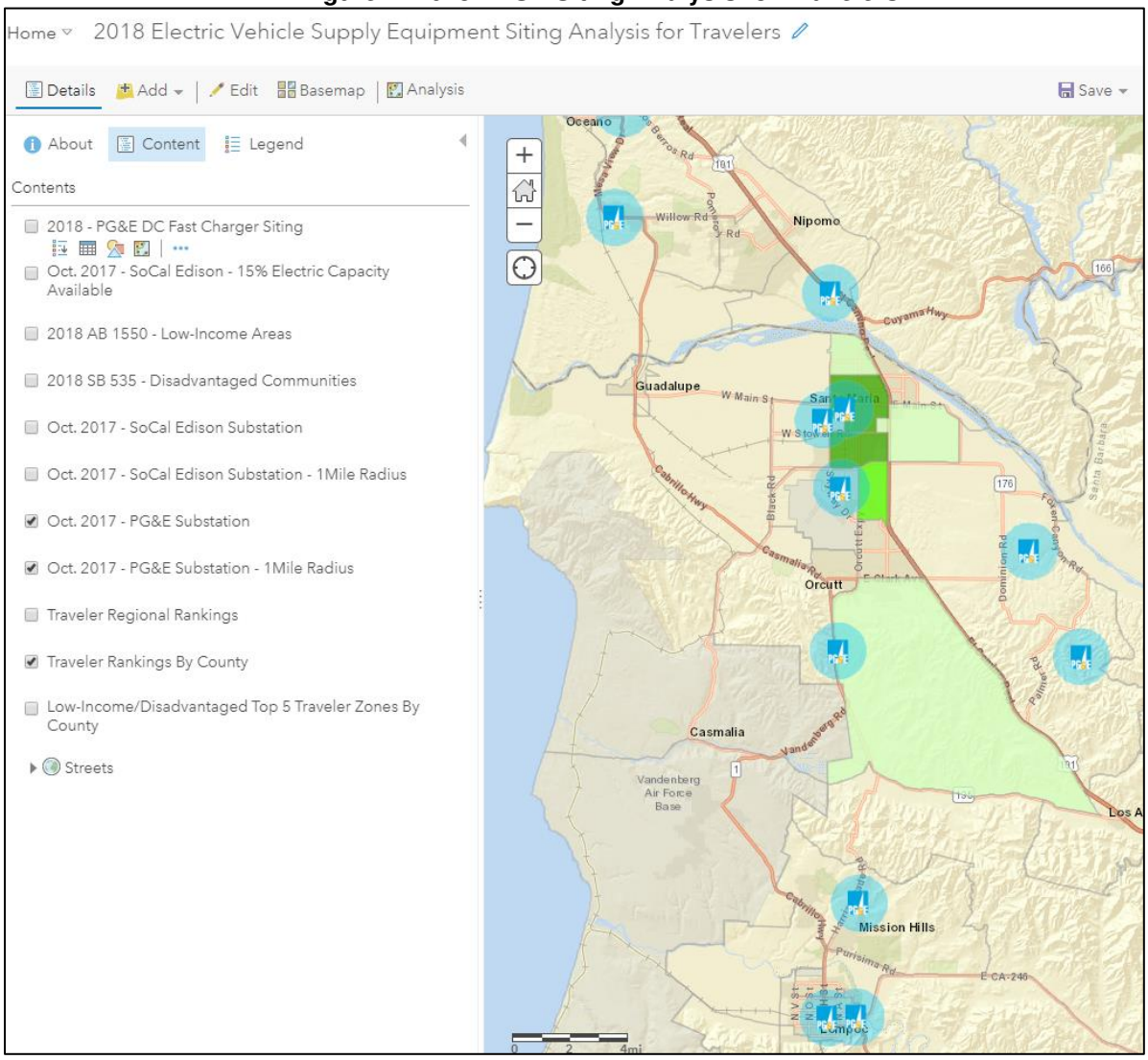
Outcome

Online, publicly accessible maps of the four use cases and combined use score were created to visualize the results of the final scores for each zone. The following URL links can be used to access the maps:

- 2018 Electric Vehicle Supply Equipment Siting Analysis for Travelers: https://arcg.is/1K4OHf
- 2018 Electric Vehicle Supply Equipment Siting Analysis for Workplaces: https://arcg.is/1jeOez
- 2018 Electric Vehicle Supply Equipment Siting Analysis for Renters: https://arcg.is/08reK0
- 2018 Electric Vehicle Supply Equipment Siting Analysis for Fleets: https://arcg.is/1eLHKn
- 2018 Electric Vehicle Supply Equipment Siting Analysis for Combined Use Score: https://arcg.is/4rKaO

The maps have layers that can be switched on or off. Each map varies in its displayed layers. Figure 2 below shows a screenshot of the map for intraregional travelers. The boxes and labels to the left show which layers are turned "on" and which layers are turned "off" indicated by a check mark.

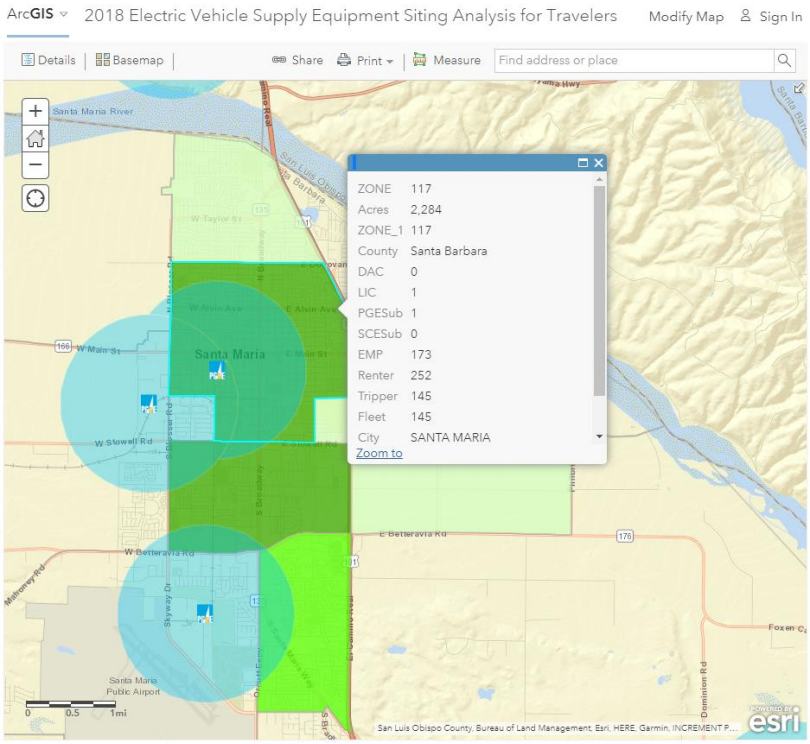
Figure 2: 2018 EVSE Siting Analysis for Travelers



Source: Fehr & Peers and SLOCAPCD

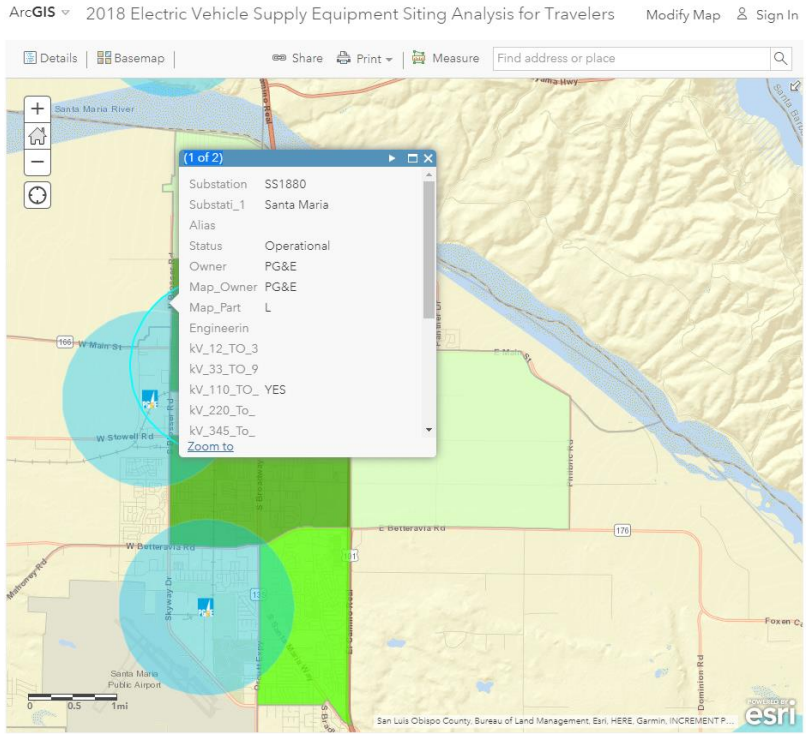
Additionally, the layers are clickable, meaning a user can click on the displayed layer to find out more information about the attributes for different map objects and polygons. Figure 3 below displays a screenshot of the clicked attributes for the Zone 117 polygon. The pop-up window for the zone includes acreage, county and city information, whether the zone is in a CalEnviroScreen 3.0 Disadvantaged Community or in an AB 1550 Low Income Community, number of substations in the zone, and the scoring for the employee, renter, traveler, and fleet categories. As a second example, Figure 3 below displays a screenshot of the clickable attributes within the layer for PG&E Substation 1-mile Radiuses. A pop-up window shows information including the substation name, owner, status and kilovolt amperage.

Figure 3: 2018 EVSE Siting Analysis for Travelers – Zone 117



Source: Fehr & Peers and SLOCAPCD

Figure 4: 2018 EVSE Siting Analysis for Travelers – PG&E Substation Attribute

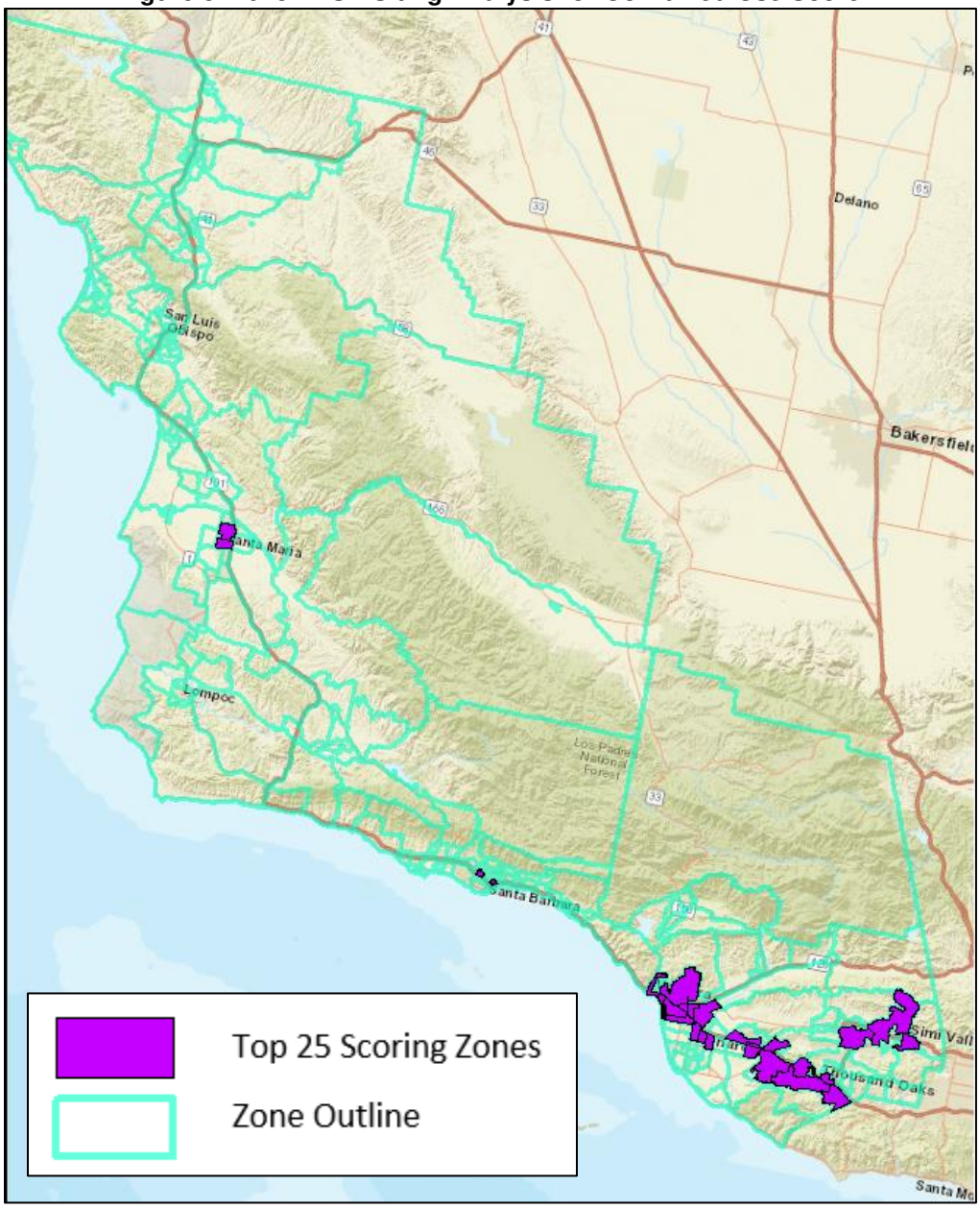


Source: Fehr & Peers and SLOCAPCD

Regional Combined Use Score of Four Use Cases

Figure 5 below is a screenshot of the highest 25 combined use scores in the Tri-County Region. As shown below, Ventura County had many high scoring zones (21 out of 25). Ventura County has a higher population and land use density than the Santa Barbara and San Luis Obispo counties, so the zones in Ventura County had a relatively higher volume of pass-through travel and parking trips compared to the other two counties. As a result, the highest 25 combined use scores were skewed towards zones in the Ventura County region.

Figure 5: 2018 EVSE Siting Analysis for Combined Use Score

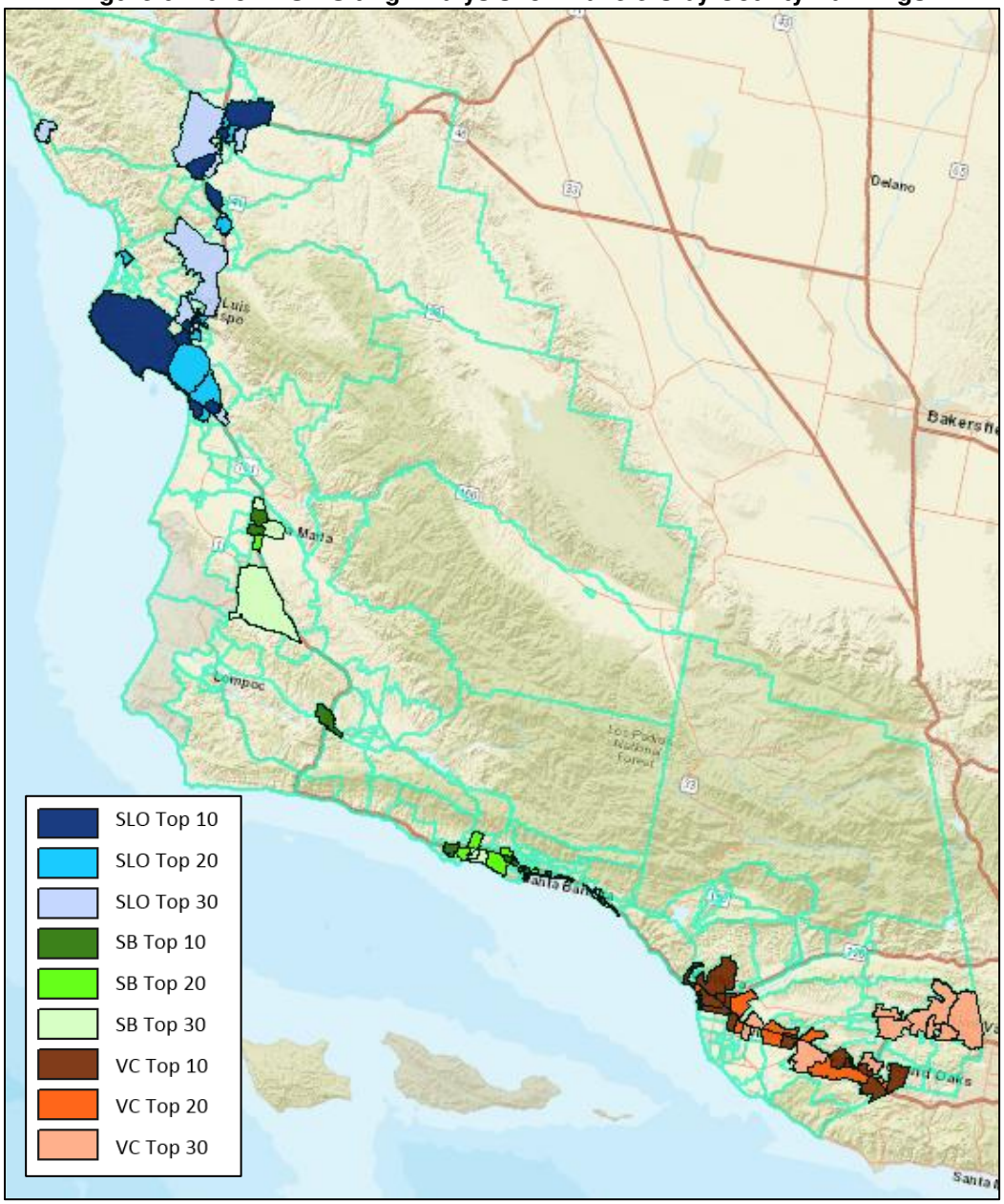


Source: Fehr & Peers and SLOCAPCD

Top 30 Rankings for Each County

To understand and visualize each County's independent demand for charging stations, a set of individual rankings were developed for the counties of Santa Barbara, San Luis Obispo, and Ventura. For example, Figure 6 below shows the independent results of the Traveler analysis for each county. Each of the three counties is represented by three different color palettes. The top 10 scoring zones in each county are shown as a darker shade, followed by the next 10 highest scoring zones (rankings 11 to 20) in a medium shade and the lightest shade represents the next top 10 highest scoring zoning (rankings 21 to 30).

Figure 6: 2018 EVSE Siting Analysis for Travelers by County Rankings



Source: Fehr & Peers and SLOCAPCD

Top 5 Low-Income or Disadvantaged Community Rankings for Each County

To further refine the results for each county and help support equitable access to EV charging across the region, a layer of the top 5 highest scoring zones in disadvantaged or low-income communities was created. Figure 7 below shows results of the Renter EVSE siting analysis for the region's low-income and disadvantaged communities. The top 5 highest scoring low-income or disadvantaged zones in each of the counties are represented by the same color palette as the overall County rankings (blue for San Luis Obispo, green for Santa Barbara, and orange for Ventura County).

Figure 7: 2018 EVSE Analysis for Renters - Top 5 Low-Income or Disadvantaged Community Zones by County Rankings

Source: Fehr & Peers and SLOCAPCD

Challenges

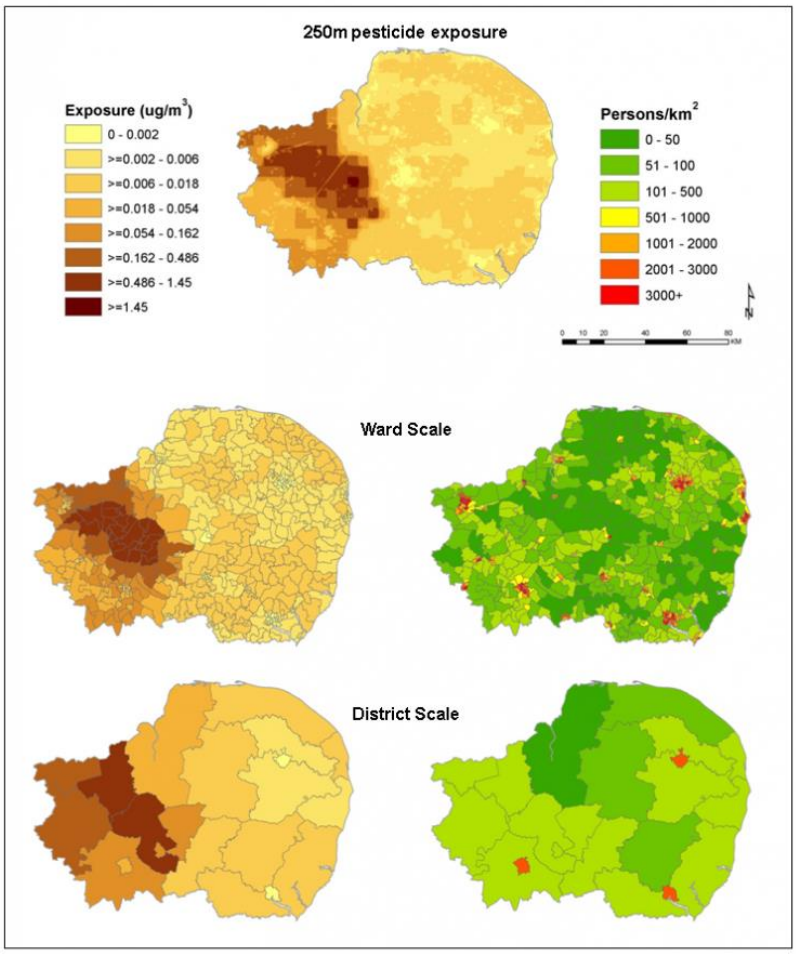
The main challenge of the EVSE analysis was the quality of data associated with certain data sources. Data for existing level 1, 2 and DC fast chargers in the region was obtained from the US Department of Energy's Alternative Fuels Data Center (AFDC). However, the project team determined that the AFDC data on existing charging stations in the region was neither complete nor reliable. The AFDC data did not include many of the region's publicly accessible charging stations. Some of the AFCD data also included inaccurate information about the number and types of charging ports available at locations identified as having existing EVSE infrastructure. Data obtained from Fleet Seek to identify the location of fleet operators in the region also had issues related to completeness and reliability. The dataset did not identify some of the region's fleet operators and some of the data that identified fleet operators was outdated and no longer accurate. While the AFDC charging station and fleet data are included in final datasets for the EVSE analysis, they were not used to identify high-priority locations and are not clickable layers in the online maps to avoid misrepresentation or confusion.

Additionally, some other data sources were not displayed properly on the online maps. The 2018 PG&E DC Fast Charger Siting layer does not display detailed information when clicked. PG&E provides detailed information about their infrastructure capability relative to future DC fast charger installations for 300 one-mile radius bubbles in their service area. PG&E's service territory covers all of San Luis Obispo County and the northern half of Santa Barbara County. There are 10 DC Fast Charger sites that PG&E identified across Santa Barbara and San Luis Obispo counties, which are represented by green bubbles in the online maps. The PG&E DC Fast Charging Siting layer has limitations that needed to be noted to support informed decision-making; PG&E did not conduct on-the-ground evaluation of the identified DCFC sites and many may not have parking to support public DC fast charging. A PDF of the information for these ten bubbles and criteria definitions are included in Appendix C-2. These bubbles tend to overlap the San Luis Obispo and Santa Barbara County zone that the Task 3 analysis identified as priority zones for EVSE infrastructure development.

Furthermore, the 288-zone geographic layer provided a high-level analysis for EVSE siting. Since a relatively high spatial resolution was used in the analysis, the map-based results cannot be used to identify the specific locations for EVSE infrastructure development that will best meet the region's EV charging needs. The spatial resolution that is applied in geographic analysis can have a significant impact on the results. This is demonstrated in Figure 8, which shows how the results of an assessment on pesticide exposure vary when the same input data is analyzed at different spatial resolutions.[17]

17 Integrated Environmental Health Impact Assessment System. *Effects of spatial resolution: worked example*. Integrated Assessment Toolbox Consortium. Last accessed July 16, 2019. Available at: http://www.integrated-assessment.eu/eu/guidebook/effects_spatial_resolution_worked_example.html

Figure 8: Effects of Spatial Resolution



Source: Integrated Environmental Health Impact Assessment System

The cost to obtain and analyze empirical mobile device increases for each additional zone that is analyzed. As a result, the project team could not conduct a more granular analysis that used a higher spatial resolution and included more than 288 zones with the budget available for work on Task 3. Data privacy issues can also prevent analysis of empirical mobile device data for smaller geographic zones (i.e. higher spatial resolution). Given budget constraints and privacy considerations, the Task 3 EVSE analysis needed to be at a high-level in order to perform the other tasks within this grant. The result of the analysis presents a general understanding of strategic EVSE demand within the region and within the individual counties. Decision-makers, and EVSE stakeholders will need to conduct on-the-ground outreach and evaluations to further refine their understanding of charging demand, the ability to deploy EVSE at sites within high-priority zones, and site-specific design considerations.

Lessons Learned

The completion of the analysis proved to take much longer than anticipated and because of this, the start of other tasks that were intended to rely on Task 3 results were delayed. The

delay mostly affected Task 5 (as described in Chapter 5) since the main goal of the EVSE analysis was to prioritize specific areas for EVSE site assessments based on Task 3 results. It was not possible to identify locations in the high-priority zones until the siting analysis was complete, so Task 5 also exceeded the anticipated project deadline. A map of the assessments completed are included in Chapter 5.

Next Steps

As a next step, regional stakeholders are encouraged to take the following actions that will support strategic EVSE deployment and broader access to EV charging for all community members:

- Identify the top 100 largest workplaces and top 100 largest MUDs in each county
- Identify the top 50 largest MUDs in each region's disadvantaged or low-income communities
- Identify all major retail locations within ½ mile of existing MUDs to support public EVSE infrastructure development that can serve multifamily renters that lack access to charging at home.
- Develop comprehensive datasets for all existing EV charging (Level 1, Level 2, and DCFC stations) at workplaces, MUDs, and public destinations to identify significant gaps in the region's charging network.
- Develop policies to facilitate the expansion of publicly accessible electric vehicle charging infrastructure, such as the adoption of a "One Mile, One Charger" target to ensure that no resident is never more than one mile away from an EV charging station.[18]
- Adopt policies to support electric vehicle charging infrastructure development at multifamily residential properties. For example, a local government could set a target to deploy at least two electric vehicle charging stations at each of the 20 largest multifamily residential developments in their jurisdiction before 2025.
- Use electric vehicle outreach and engagement activities to support community-informed electric vehicle infrastructure planning and development, which will help ensure that new charging stations are installed at the locations that will best serve current and future electric vehicle drivers.
- Engage the 100 largest workplaces to advance access to electric vehicle charging for commuting employees and provide resources that will facilitate participation in incentives programs for electric vehicle charging infrastructure development (e.g. SCE Charge Ready program, Ventura County APCD, Electrify America, etc.).
- Engage the property managers and owners of the region's 100 largest multifamily properties to promote electric vehicle charging infrastructure development for renters and facilitate property manager/owner participation in incentive programs for electric

18 City of Torrance. *One Mile, One Charger: City of Torrance Publicly Accessible EV Charging Infrastructure.* Last accessed July 16, 2019. Available at: https://www.torranceca.gov/our-city/community-development/planning/ev-project

vehicle charging infrastructure development (e.g. SCE's Charge Ready program and Ventura County APCD's electric vehicle charging infrastructure grants).

- Prioritize electric vehicle charging infrastructure development in areas that will increase access to electric vehicle charging in the region's disadvantaged, rural, and lower-income communities
- Install electric vehicles charging stations at all local government parking lots – with a special emphasis on projects that can provide charging to multiple users (e.g. the public, fleet operators, and employees).
- Prioritize and offer increased local incentives for electric vehicle charging infrastructure development at public destinations (such as shopping centers) located within a half mile of high- and medium-high density housing developments.
- Launch an Electric Drive 805 Champion program that will recognize multifamily property owners and management companies that are regional electric vehicle leaders. Recognition can be based on a variety of factors, such as the number of charging stations installed per resident, implementing engagement activities that promote electric vehicle awareness, and implementing innovative electric rideshare programs for residents.
- Provide resources to support electric vehicle charging station infrastructure development at multifamily housing developments in collaboration with Electric Drive 805, including toolkits that are designed to help property managers and owners install electric vehicle charging stations, access incentives for electric vehicle infrastructure development, and implement best management practices.

CHAPTER 4:
Electric Vehicle Fleet Accelerator

The goal of this task was to accelerate deployment of plug-in electric vehicles (PHEVs) among fleet operators in the Tri-Counties Region with specific attention to electrifying trucks, buses, and light-duty vehicles. The task also aimed to increase all-electric travel by increasing fleet access to EV charging infrastructure that can support all-electric medium- and heavy-duty EVs.

There is great opportunity for both public and private fleets to electrify as fleets often have set routes which can be optimized for EV ranges. Efforts under this task helped large employers improve their familiarity of both electric vehicle technology and the benefits, such as reduced operation and maintenance costs. Currently, however, very few private fleets on the Central Coast utilize EVs, and while some public fleets have added a token number of EVs, the overall opportunity gap for fleet electrification remains very large. Light-duty has been the primary initial transition, mainly due to factors such as limited medium- to heavy-duty truck options, limited range, a lack of awareness or interest amongst fleet managers. Other early adoption challenges include the fact that there are:

- Limited EV fleet mandates and EV friendly policies
- High perceived upfront vehicle purchase costs
- Complexity and additional costs for installing charging infrastructure
- Constraints in parking lots and areas, and
- Additional real or perceived barriers.

This task focused on addressing many of these issues and barriers through outreach directly to fleet managers in the Tri-Counties Region and assistance with transition planning. Primary contractor EV Alliance collected data about the target fleets and then contacted them to learn more about their goals and their potential barriers to electrifying their fleet vehicles. EV Alliance then provided customized information to fleets on vehicle and EVSE options. They presented to 27 groups of fleets by sector and developed customized EV Fleet Accelerator Plans for 7 fleets who were the most engaged fleet managers. EV Alliance also identified 2 sites for level 2 and fast chargers in optimum locations to match fleets expected to adopt PHEVs in 2017 through 2019. A summary of the key conclusions from this task are displayed in Appendix D-1.

Approach and Outcome

Fleet Outreach

EV Alliance developed a master list of potential fleets, with the help of FleetSeek and other relevant data sources and reached out to 85 of the largest fleets throughout the three Central Coast counties. EV Alliance attempted to contact a wide range of fleet types throughout the three counties. The more populous Ventura and Santa Barbara Counties had more and larger fleets than San Luis Obispo County. Multiple calls and emails were made to identify the

contacts most interested in fleet electrification. EV Alliance was able to directly speak to 61 of the 85 fleets, or 72 percent of the list, and 21 of these fleets provided spreadsheets of their fleet composition, including twelve in Ventura County, five in Santa Barbara County, and four in San Luis Obispo County.

EV Alliance developed a pitch to communicate the operational and environmental advantages of EVs as well as deliver information on incentives and available vehicles to the fleets. Appendix D-2 contains the fleet sheet EV Alliance provided to the fleets that included information on infrastructure and financing options. Fleet managers were asked if they currently have EVs in their fleet, or plans to add them, and what the main barriers to electrification were. At the end of each conversation EV Alliance asked for a fleet spreadsheet to learn more about the individual fleet. EV Alliance informed fleet managers about opportunities for sector specific EV presentations and the opportunity to participate in a fleet transition plan. They also answered questions and provided information about vehicles and incentives during this initial conversation.

Presentations

EV Alliance developed high-level PHEV presentations aimed at the various sectors of local governments, transit and paratransit, and school bus fleets, and presented to 27 fleets in total. In person presentations were made at two regularly scheduled meetings, the Central Coast Quarterly Fleet Managers' Meeting (including large cities and counties from all three counties) and TRANSCOMM (transit and paratransit providers in Ventura County). Two webinars were produced to target school buses, transit and paratransit fleet managers, and several individual meetings and phone calls were also completed.

The presentations were tailored for each sector and discussed the background of the Energy Commission grant project, state EV policy goals, overall benefits and challenges of fleet electrification, EV models available, existing and pending incentive programs for vehicles and charging, and case studies. Ample time for questions was provided and a robust discussion often occurred. The following bulleted list includes the agencies who received presentations:

- City of Camarillo
- City of Ojai
- City of Santa Barbara
- City of Santa Paula
- City of Simi Valley
- City of Thousand Oaks
- City of Ventura
- Coast Unified SD
- County of San Luis Obispo
- County of Santa Barbara
- County of Ventura
- Easy Lift Santa Barbara
- Gold Coast Transit
- Lompoc Unified School District
- Moorpark Unified School District
- Orcutt School District
- Paso Robles SD
- Pleasant Valley SD
- RockStar Transportation
- San Luis Obispo RTA
- SLO County Office of Education
- Ventura County Energy Alliance
- Ventura County Transportation Commission

All presentations can be accessed on the SLOCAPCD Webpage: slocleanair.org/community/zev.php.

Fleet Transition Plans

Through conversations with fleet managers, EV Alliance identified the most motivated and interested fleets for transition plans. Many of these fleets were school districts, which often rely on outside funding to purchase school buses, such as California Energy Commission grant solicitations. Many Ventura school districts in disadvantaged communities were particularly interested in this funding source and were in high scoring regions from the Task 3 Siting Analysis.

EV Alliance scheduled an initial conversation to learn more about the individual fleet composition, driving cycles, motivations, and goals. EV Alliance then developed the fleet transition plans as PowerPoint presentations, which included background information, photos and lists of available EVs, and customized advice on which vehicles should be prioritized for electrification. Age of vehicles, driving cycle, and availability of EV product were key determinants of prioritization. EV Alliance also included a section on programs and incentives to help pay for the vehicles and charging infrastructure.

EV Alliance then presented individualized E-Fleet transition plans to each fleet manager. In these presentations, EV Alliance reviewed the plans and answered a broad range of questions about fleet electrification. For the City of San Luis Obispo, EV Alliance also developed a Word document that conveyed more information about electrifying their diverse fleet, as the municipality is highly motivated to electrify to advance their goal of Carbon Neutrality by 2035. The list below displays the fleets that received E-Fleet transition plans. The following bulleted list includes the agencies who received E-Fleet transition plans:

- Oxnard School District
- City of San Luis Obispo
- Paso Robles Joint Unified School District
- Oceanview School District
- Oxnard Union School District
- Pleasant Valley School District
- Moorpark Unified School District

All fleet transition plans can be accessed on the SLOCAPCD Webpage: slocleanair.org/community/zev.php.

Site Identification

Information was provided on sites for Level 2 and fast chargers for fleet transition plan collaborators that appeared most likely to electrify in the next few years. EV Alliance collaborated closely with the City of San Luis Obispo and Paso Robles Unified School District. Much of EV Alliance's efforts for this task were directed to provide the charging specifications required for project partner ABM to conduct a site assessment for the

City of San Luis Obispo described in Chapter 5. This ended up being a tricky chicken-and-egg problem, as generally chargers are specified after a vehicle and duty-cycle have been identified. Ultimately, to support the City of San Luis Obispo, EV Alliance spoke to multiple vehicle manufacturers to ensure the charger specifications provided would be compatible with whatever make, and model of E-bus the City procured in the future.

Contact information for the City of San Luis Obispo and Paso Robles Unified School District is displayed in Table 5 below.

Table 5: Level 2 and Fast Charger Site Lists

Site Name	Primary Category	Address	City	Zip Code	Contact Name	Contact Phone	Contact Email
City of San Luis Obispo	Transit	29 Prado Rd	San Luis Obispo	93401	Tim Bochum	805-781-7203	tbochum@slocity.org
Paso Robles School District	School	2910 Union Road	Paso Robles	93446	Kelly Stainbrook	805-769-1160 ext. 32009	kstainbrook@pasoschools.org

Source: EV Alliance staff

Challenges

Fleet managers identified several barriers to electrifying their fleets during interviews with EV Alliance. The most prominent barriers identified included:

- Upfront cost for both EVs and charging infrastructure
- Lack of appropriate EV models
- Lack of familiarity with EVs and their benefits
- Reluctance to try new technologies and uncertainty about long term operational savings
- Inertia and lack of time to devote to exploring EV options

Cost of new electric vehicles and the additional cost and complexity of installing charging stations was a top perceived barrier encountered in conversations with fleets. Light-duty vehicles are approaching price parity, especially with the number of incentives available. Further, the reduced fuel and maintenance costs can result in a favorable total cost of ownership, but the value calculation with medium- and heavy-duty vehicles is more complex.

Some fleet managers were unaware of California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP), uncertain how to monetize the federal tax credit, and unaware of benefits from other programs such as the Low Carbon Fuel Standard.

In addition, the payback period was also hampered by the low operational mileages allowed by the limited ranges of early generation EVs, such as the Nissan Leaf (84-mile

range). Because fleet managers were worried about employees running out of charge and being stranded, they restricted vehicles to local usage. For example, in the County of Santa Barbara, their fleet of 4 Nissan Leafs purchased in 2013 only averaged 3,714 miles/year.

Overcoming Barriers to Fleet Electrification

To surmount these barriers, the EV Alliance recommends several strategies:

1. **Monetize Federal Tax Credits:** Public or non-profit fleets should seek to monetize the $7,500 federal tax credit by working with a dealer that is willing to pass through the tax credit. Most fleets were aware of the $2,500 California Clean Vehicle Rebate and found it easy to claim.
2. **Monetize the Low Carbon Fuel Standard (LCFS) Credits:** Currently, awareness of the LCFS is very low. It is very easy for consumers to claim this rebate which is $1,000 in SoCal Edison and $800 for PG&E territory. Fleets simply need to register on the LCFS website and provide reporting. The potential benefits can be very high, as an average electric bus can receive $14,000 a year. At the beginning of the task outreach, Santa Barbara Metropolitan Transit District with 14 EV buses in service or on order, was not taking advantage of the program. After hearing about the program, they now are registered and are participating. Through their participation, Santa Barbara MTD will serve as a model of the process, costs, and benefits of the LCFS program for other local fleets.
3. **Prioritize Use of Battery EV Fleets to Increase Electric Miles Traveled:** In order to increase electric mileage and speed payback, agencies should shift limited range EVs to employees that travel at least 30-60 miles/day, rather than leave them as pool cars where their mileage may be limited. Agencies should also work with employees and vehicle assignment software to make sure these EVs are driven more often.
4. **Include Longer-Range EVs in Fleet Deployments:** To maximize electric vehicle miles for fleets, investment should be made in longer range EVs such as Chevrolet Bolts (238-mile range) and use vehicle assignments to make sure these vehicles are routinely maximized. For example, the County of Santa Barbara could assign a Bolt to the employee driving the furthest each day, such as from administrative centers in Santa Barbara to Santa Maria and back, for a distance travelled of 158 miles.

In the light-duty category, there are now over 40 EV models available in California, with ranges up to 300 miles. Most of these are sedans. SUV selection is more limited, though some new offerings in 2019 and 2020 provide more opportunities to meet the needs of fleets interested in electrifying. Many public fleets have significant numbers of light-duty trucks. While there are currently no light-duty pick-up truck options on the market, brands like Ford, Workhorse, Havelaar, and Rivian have committed to delivering light-duty electric trucks in the early 2020s.

Lack of appropriate EV models was a large barrier for many fleets, especially in the medium and heavy-duty sectors. For medium and heavy-duty vehicles, there are limited options from major manufacturers, though there are many offerings from smaller companies, many of which receive substantial funding from the California HVIP program. Many fleet managers are hesitant to deploy vehicles from smaller start-up companies because of high pricing and uncertainty if the company will survive into future years and honor warranties.

On the medium- and heavy-duty side, EV Alliance focused on school and transit districts for Task 4 as school and transit buses are the most progressive EV technologies and are seen as a "beachhead" sector. School districts benefited from this Task by learning about EV school bus replacements. EV Alliance collected 21 spreadsheets from regional fleets and through the Electric Drive 805 website, fleet managers will be able to learn about new EV models and grant funding opportunities as they become available.

One of the largest barriers that was found was an unfamiliarity with EVs and their benefits. Fleet managers are often risk-averse by nature as their primary job duties are to maintain existing vehicles in reliable working order. Many have also had challenging experiences with past alternative fuels such as CNG and are cautious about expending resources on electrification until the product is fully proven. Concurrently, there have been a lack of internal fleet EV mandates or green fleet policies in many organizations. These two factors have resulted in very limited EV adoption in regional fleets to date. To address this challenge, EV Alliance recommends:

5. **Develop Fleet EV mandates or "Green Fleet Policies."** Many public and private fleets have sustainability goals, but these are often vague when it comes to vehicle electrification. Specific EV goals, such as the California Department of General Services goal of purchasing 25% electric light-duty vehicles by 2020, and 50% by 2025 will drive faster EV adoption. Another approach is to identify how many EVs a fleet will need to meet their share of California's 5 million by 2030 EV goal. Policies such as the City of Santa Monica's administrative instruction to consider EVs first in procurement can help an agency reach their goal. EV Alliance sent information on these goals to all fleets contacted, but it will require ongoing advocacy on the part of Electric Drive 805 and local leaders to move these goals forward.
6. **Develop comprehensive Fleet Electrification plans to provide a clear timeline and strategy for acquiring EVs and building out charging infrastructure.** These plans should build upon EV goals and take full advantage of various EV incentives. They should also include workplace charging as many large employers contacted have hundreds of employees, and commuting is often a larger use of fuel than the organization's fleet.

Installing charging stations was another large barrier, as this involved both coordination among different departments, as well as dedicating a budget in advance for charging infrastructure. The EV Alliance recommends:

7. **Utilize Existing Incentive Programs:** This includes utility, local air districts, and grant funded opportunities. Relevant programs include:
    - PG&E's EV Charge Network Program
    - SoCal Edison's Charge Ready Program
    - Local Air District grant programs
    - California Electric Vehicle Infrastructure Project (CALeVIP)
    - Incentive programs funded by community aggregate power companies

The EV Alliance informed local organizations about Electric Drive 805, and the coalition's work accelerating EV market adoption. Electric Drive 805 can update Tri-County fleets on annual opportunities for grant funded chargers through the California Energy Commission and other programs through the data and contacts list from this Task.

Lessons Learned and Next Steps

Public versus private fleets

The EV Alliance generally found that private fleets are more cautious about engaging with third party fleet consultants. Private fleets were less likely to respond to initial outreach and EV Alliance received very few fleet spreadsheets after conversing. Many private fleets have only a handful of vehicles or operate medium and heavy-duty vehicles with limited EV options available. Large national fleets are driving private fleet electrification such as UPS and FedEx. However, these large companies are primarily focused on fleet electrification in large urban centers. The smaller outposts on the Central Coast have not yet been prioritized for EV deployment.

Public fleets were more receptive, perhaps as they are more familiar with state EV goals and have been deploying small EV pilot projects. They also typically fund vehicle acquisition more often with outside grant funds, particularly in the case of school or transit buses.

School Bus, Transit, Paratransit and County Fleets should be prioritized

Th EV Alliance found school bus fleet operators, transit districts, and county fleets to be most receptive to near term fleet electrification. School districts typically acquire vehicles through state grants, often administered by APCDs, and thus are accustomed to applying for grants. During EV fleet outreach, a major Energy Commission grant project was active and put hundreds of EV school buses on California's roads, and this created significant interest at school districts to learn more from the EV Alliance team.

Many Central Coast school districts applied for the Energy Commission funding, and several will likely receive EV buses from the solicitation. There are also well-established school bus manufacturers deploying EV school buses, so many products are available and are expected to be reliable. School transportation directors are acutely aware of their aging diesel buses and the pollution impacts on sensitive youth populations. Paso Robles Unified School District will be the first Tri-County district to receive an electric bus, in Fall or Winter of 2019, and Electric Drive 805 should prioritize this example for a case study for dissemination to other regional school districts.

Transit buses are the other heavy-duty "beachhead" sector for fleet electrification. The Innovative Clean Transit (ICT) Rule, recently passed by CARB, mandates increased EV transit bus purchases, which culminates in the requirement for 100% EV bus procurement by 2029 for all transit districts. Given fleet turnover, this rule will enable California transit fleets to reach 100% EV buses by 2040. With the ICT mandate, Tri-County transit agencies were motivated to take advantage of EV Alliance's outreach and support. If local APCDs can prioritize additional discretionary funding to help regional transit providers electrify, Tri-County agencies could well become statewide leaders in transit electrification.

The Santa Barbara Metropolitan Transit Agency is an established leader in fleet electrification, with the longest running EV bus program in the country. They currently operate the state's second largest EV bus fleet, with 14 buses in operation or on order. In November 2018, at the request of the CEC and the Sierra Club, they became the first Central Coast agency to join six other transit districts around the state in adopting a 100% electric bus by 2030 goal.

The EV Alliance is not aware of any regional paratransit agencies that operate EVs, but many are interested in fleet electrification for their light- and medium-duty vans and shuttles. Many local agencies run dozens of vehicles, often traveling 50-100 miles a day, with day ahead scheduling, so this sector is ripe for electrification. A large minority of trips do not need wheelchair accessible vehicles and another significant portion only need one wheelchair seating space. EV Alliance presented to all the major local paratransit agencies. These providers received a tepid response because of the large vehicle size and high cost of their offerings, relative to local paratransit provider needs and capacities.

During research and conversations, the EV Alliance determined there is significant opportunity to downsize some vehicles to EV sedans for ambulatory paratransit customers, which would have significant capital and operational savings. Additionally, there are new products such as the Chrysler Pacifica PHEV, which could also provide a lower capital and operating cost option for trips that need wheelchair capabilities. Easylift Paratransit in Santa Barbara was particularly interested in innovating new electrified paratransit options. Electric Drive 805 and the SBCAPCD should consider partnering with them on a future grant opportunity or project.

The EV Alliance also found counties have significantly more opportunity and positive use cases for fleet electrification than cities. Counties are much larger agencies, with the County of Ventura being the largest with over 1,700 vehicles, and the County of Santa Barbara close behind with 1,600 vehicles. They operate over a much larger physical space, so experience higher mileage on their vehicles. Some employees are regularly making long trips such as from Santa Barbara to Santa Maria administrative centers (and similarly long intra-county trips in SLO and Ventura Counties). These trips could be made with a longer-range BEV such as a Chevrolet Bolt, leading to a higher number of electrified miles every day. Counties also operate many departments with high numbers of employees using assigned cars that travel over 30 miles/day, such as Social Services, Probation, Child Welfare Services, Building Inspectors, and more. These departmental use cases are prime targets for electric vehicles where low operating costs could make for a fast payback given higher mileage utilization.

In contrast, many Tri-County cities are much smaller, both physically (many vehicles rarely drive outside of a small city), and in vehicle count, and do not have departments with frequent travel requirements. Therefore, to maximize electric VMT per incentive dollar expended, the EV Alliance recommends that local counties are prioritized for EV resources, EV-friendly policies, and EV action plans. Existing county EV pool cars that are experiencing limited usage should be transferred to departments with use cases that drive at least 30-60 miles/day. New, higher range EVs should be purchased for pool cars, with protocols developed via fleet management software to assign these cars to employees that are traveling the highest mileage each day. The County of Santa Barbara is taking the lead on some of the recommendations and are currently developing an EV plan for public review in Spring 2019. Finally, while the findings point to county fleets as the most logical focus for electrifying, there are some cities that have progressive policies (e.g. San Luis Obispo) or that have unique driving needs where fleet electrification opportunities exist.

Workplace charging for the “employee fleet”

While not entirely in the scope of Task 4, the EV Alliance has identified workplace charging for the “employee fleet” as a quick win for regional vehicle electrification. Local agencies are some of the largest employers in the region, such as the County of Ventura, with over 8,000 employees. These employees often commute significant distances. For example, 1,000 of the County of Santa Barbara’s 4,600 employees commute more than 60 miles per day to work, and likely use many times more fuel than the County’s own fleet. These government workers with long commutes are prime targets for switching to EVs, as they can easily harvest the operating savings of high mileage EV use. Additionally, existing CVRP and other incentives in California bring upfront costs in-line with conventional light-duty ICE vehicles, and there are now abundant (over 40) EV model choices available for consumers. Electric Drive 805 should prioritize plans to develop workplace charging at the many employment centers across the public and

private organizations contacted by this project, as well as develop turnkey education and outreach materials for employers to help their workers electrify their commutes.

CHAPTER 5:
EVSE Site Assessments

The main goal of Task 5 was to prioritize locations interested in installing EVSE and perform 18 site assessments. Air District partners (San Luis Obispo, Santa Barbara, and Ventura County) and CEC worked together to identify potential sites in their regions and to engage site owners or managers. The partners worked with representatives from sites expressing the most interest to gather and submit project and site information needed by the primary contractor, ABM, to evaluate EVSE viability for each site.

Once sites were chosen, ABM worked with their secondary contractor, Electricraft, to perform site walks and preliminary drawings for "permit-ready" documents. ABM finalized the documents and Air District partners and CEC sent documents to the prospective EVSE site hosts. Each County received 6 site assessments, totaling 18 in the region. Of the selected locations, 7 were in low-income communities, 2 were in disadvantaged communities, and 1 was within a half mile of a disadvantaged community. Each prospective EVSE site host received "permit-ready" documents with the intent to inform their decision-making about EV infrastructure development for their site. Site hosts were encouraged to complete their EVSE project or build from ABM's documents with additional quotes, project modifications or expansions.

Approach

Once the Task 3 EVSE Site Analysis was complete, Air District partners and CEC began formulating an initial list of potential candidates to receive a site assessment. These lists included school, fleet, business, multi-unit dwelling, and government agency locations for each of the three counties. The candidate site lists for each county were then narrowed to the top 10 locations inside and outside of low-income/disadvantaged areas (providing 30 total locations for targeted engagement). The top 10 location lists for each county were formed based on initial interest expressed by site hosts and rankings from the EVSE Siting Analysis.

Once the top candidate lists were formed, Air District partners and CEC worked with prospective site hosts to collect and submit the necessary documentation to ABM, so their contractor team could determine the best locations for site assessments. The required documents included a site plan of the area, one-line electrical diagram, and 12 months of utility bills. Because of the time constraints of this grant, the final sites were selected based on submittal of needed documentation. Table 5 below shows the final site assessment locations. See Appendix E-1 for Expanded Information Table of EVSE Site Assessment Locations.

Table 6: Completed EVSE Site Assessment Locations

County	City	Entity Name	Address	Charger Use	Low-Income/ Disadvantaged?
San Luis Obispo	San Luis Obispo	SLO County General Hospital	2180 Johnson Ave	Fleet	LIC
San Luis Obispo	San Luis Obispo	Cal Poly University San Luis Obispo	1 Grand Ave	Fleet	LIC
San Luis Obispo	San Luis Obispo	San Luis Obispo City Corporation Yard	29 Prado Road	Fleet	Serves LIC
San Luis Obispo	San Miguel	San Miguel Laundry	1141 Mission St	Public	No
San Luis Obispo	Paso Robles	Paso Robles Joint Unified School District	2910 Union Road	Fleet	Serves LIC
San Luis Obispo	San Luis Obispo	SLO Guild Hall	2880 Broad St	Public	No
Santa Barbara	Santa Barbara	El Escorial Villas	240 Por La Mar Cir	Multi-Unit Dwelling	LIC
Santa Barbara	Santa Maria	City of Santa Maria	110 S. Pine St	Public	LIC
Santa Barbara	Santa Barbara	La Cumbre Jr. High School	2255 Modoc Road	Public	No
Santa Barbara	Santa Barbara	Cachuma Lake Recreation Area	2225 Highway 154	Public	No
Santa Barbara	Santa Barbara	UC Santa Barbara	522 University Road	Public	No
Santa Barbara	Santa Barbara	The Koto Group	525 E. Micheltorena St	Multi-Unit Dwelling	No
Ventura	Oxnard	Oxnard Elementary School District	514 West Wooley Road	Fleet	DAC
Ventura	Oxnard	Ocean View School District	4200 Olds Road	Fleet	DAC
Ventura	Port of Hueneme	Port of Hueneme	105 Hueneme Road	Public	No
Ventura	Camarillo	Cal State University Channel Islands	1 University Dr	Public	No
Ventura	Moorpark	Moorpark Unified	5297 Maureen Lane	Fleet	No
Ventura	Oxnard	Oxnard Union High School	3400 W. Gonzales Road	Fleet	DAC

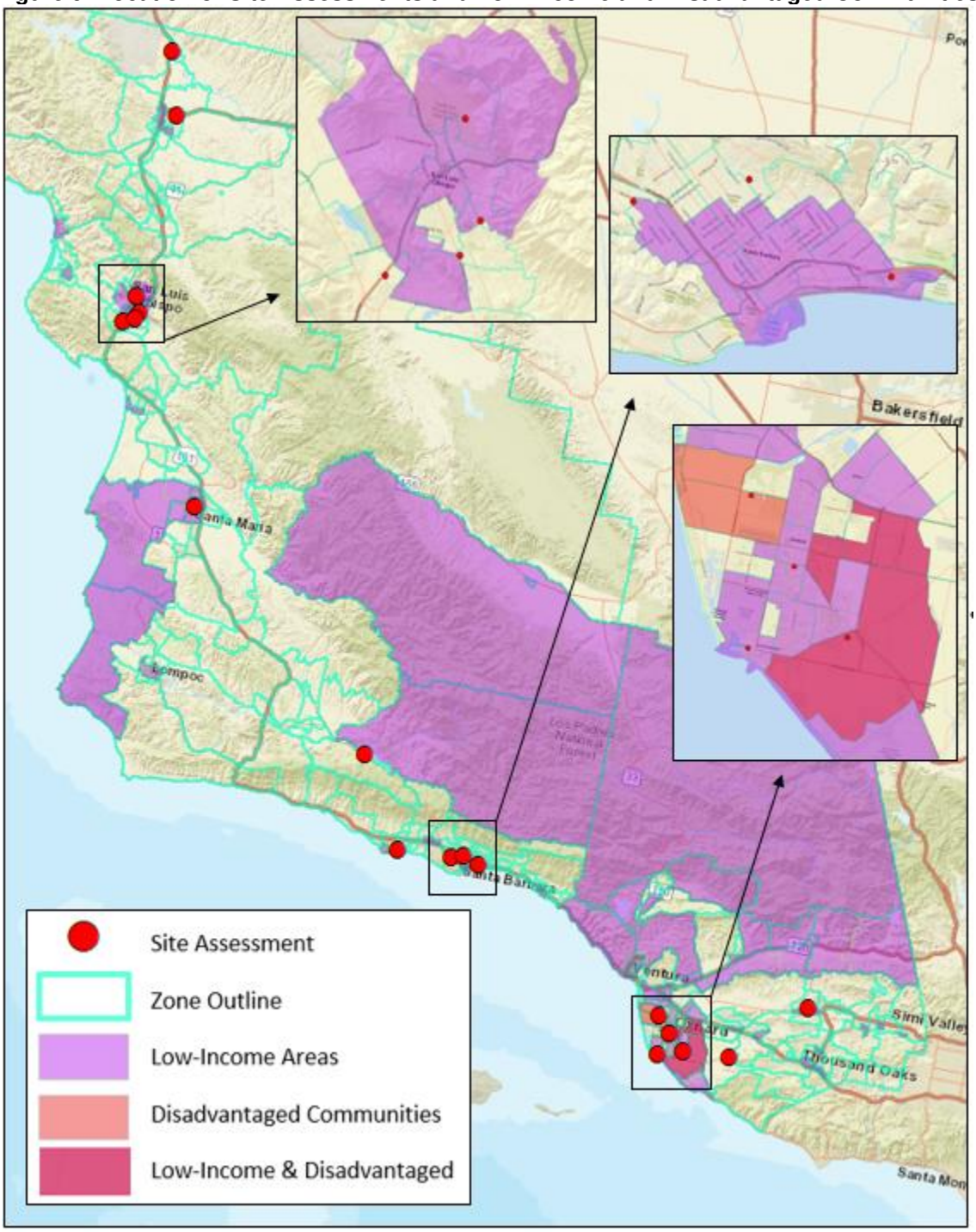
Source: ABM Inc.

After documentation was gathered, the project team worked to schedule the site walks. Primary contractor ABM coordinated with secondary contractor Electricraft to send an electrician to walk the site and evaluate available electrical power. Information gathered from site walks was used to create permit-ready documents and quotes. Final permit-ready documents and quotes were sent to the project team, who then distributed the permit-ready documents to site hosts.

Outcome

Each County received 6 site assessments, totaling 18 in the Tri-Counties Region. Of the selected locations (see Table 6 above), 7 were in low-income and 2 were in disadvantaged communities and 1 was within a half mile of a disadvantaged community. The site assessments for Paso Robles Joint Unified School District and the San Luis Obispo City Corporation Yard were for electric bus charging and both facilities would serve low-income populations on their routes. Figure 9 below illustrates the location of the site assessments with red dots, and their relation to low-income and/or disadvantaged communities. Low-income areas are shown below in light purple and disadvantaged communities are light red. An area in Oxnard has an overlapping low-income and disadvantaged community which is shown in darker red. The turquoise lines indicate the zone outlines from the Task 3 site assessment analysis explained further in Chapter 3.

Figure 9: Location of Site Assessments and Low-Income and Disadvantaged Communities



Source: ABM Inc. and Fehr & Peers

Upon receiving their "permit-ready" documents, prospective EVSE site hosts could choose to complete the EVSE project with ABM, request updated quotes with project modifications/expansions from ABM, seek additional quotes from other contractors, or decline to move forward with EVSE infrastructure development at their site. Appendix E-

2 shows an example of the "permit-ready" documents from the SLO County General Hospital Health Campus in San Luis Obispo. In general, the permit-ready documents included:

- Quote: Itemized list of installation, equipment, cloud plan, warranty, shipping, and tax costs
- Overall site view and photo mock-up: Bird's eye and in-person mock-up photos of charger location on site
- Electrical diagram and subpanel information: Illustration of connections from utility meter to chargers
- Specification sheets for equipment: Details of single and dual port chargers with hardware and electrical output information
- Parking site guidelines and layout: Details of parking configurations and signage

The Air District partners, and CEC worked with ABM to ensure that site assessment and permit-ready documents addressed key factors related to the siting, permitting, and installation of EVSE. These key factors include:

- **Availability of electrical capacity:** The availability of electrical capacity at a site directly impacts the number of chargers and rate of charging possible at the site. Larger deployments of Level 2 and DC Fast Charging with large peaks in energy usage can quickly surpass available electrical capacity on a site. Panel and conduit capacity within existing structures, and the physical distance between electrical service panels and the proposed electric vehicle service equipment, are also critical factors.
- **Proximity to existing charging or other geospatial considerations:** Siting new electric vehicle service equipment based on gaps in the charging ecosystem can alleviate driver range anxiety by providing options for on-route or destination charging. The Task 3 site assessment results can help stakeholders identify the geographic zones where there is a higher need for EV infrastructure development in the region.
- **Ease of permitting and site approval:** Local permitting processes that impose high fees, are burdensome, or create projects delays can significantly impede electric vehicle charging station deployment. Permit delays in a particular jurisdiction may cause EVSE developers to locate EVSE elsewhere in the future and discourage potential site hosts from installing new EV charging stations. AB 1236 sets forth requirements for local governments to streamline electric vehicle permitting processes, as discussed in Chapter 2.
- **Property ownership arrangements:** Tenant/landlord relationships, building ownership, and management structures for (MUDs) present unique challenges and barriers to EVSE infrastructure development. The same is true for leased workplace properties. To be successful, innovative business models and approaches are needed for the MUD and leased workplace segments.

- **Americans with Disabilities Act (ADA) requirements, accessibility, and security:** Developers must carefully consider ADA requirements, where local interpretation of high-level guidance often determines how a project must proceed. For example, difference in ADA requirements for new buildings and remodels often exist within different local contexts. Other key factors related to accessibility include ensuring a safe path of travel from the EVSE installation, parking lot security, and access schedules. All three factors can greatly affect charger utilization and accessibility.

Table 7: Minimum Requirements for Accessible EV Charging Station Spaces

Total Number of EVCS at a Facility	Minimum Number (by type) of EVCS Required to Comply with Section 11B-8121		
	Van Accessible	Standard Accessible	Ambulatory*
1 to 4	1*	0	0
5 to 25	1	1*	0
26 to 50	1	1	1*
51 to 75	1	2	2*
76 to 100	1	3	3*
101 and over	1, plus 1 for each 300, or fraction thereof, over 100	3, plus 1 for each 60, or fraction thereof, over 100	3, plus 1 for each 50, or fraction thereof, over 100

Source: 2016 California Building Code, Chapter 11B, Section 11B-228.3, Table 11B-228.3.2.1

To help ABM address these key factors, the project team requested that ABM deliver site assessments addressing the high-level siting recommendations outlined in the *2014 Electric Vehicle Readiness Plan for the Ventura, Santa Barbara, and San Luis Obispo Counties*. These recommendations include:

1. Financial feasibility: Select sites must be financially feasible given available installation incentives or provide other real benefits to the site owners.
2. Visibility and accessibility: Select highest-utilization, highest-visibility, publicly accessible locations for the first few chargers. Examples include government office buildings, shopping malls, restaurants, hotels, parks, marinas, municipal parking garages, colleges, schools, and airports.
3. Power supply: Select a location where Level 1 (120/15A) or Level 2 (240V/40A), or Fast Charge (480 volt) electrical supply is or can be made available with relative ease and minimal cost.
4. ADA Access: Consider and comply with ADA guidelines for disabled access and take precautions to ensure that charger cord management is optimized to reduce risk of accident or injury.
5. Security: Select secure locations with adequate lighting.
6. Signage: Provide enforcement and other signs that comply with the Manual on Uniform Traffic Control Devices (MUTCD) and California Vehicle Codes (CVC).

7. Equipment Protection: EV chargers should be placed where they can be best protected from physical damage by such measures as curbs, wheel stops, setbacks, bumper guards, and bollards, while simultaneously taking into consideration ease of access to the charger, mobility of users, and foot traffic in the area.

Air District partners and CEC asked ABM to give special attention to site-specific ADA requirements, based on the California Building Code, since stakeholders have highlighted delays in EVSE permitting and project delivery when ADA requirements were not adequately addressed in site plans. The California Building Standards Commission adopted the accessibility standards for EV charging stations as part of the 2016 California Building Code (California Code of Regulations, Title 24), which became effective on January 1, 2017, and made California the first state to adopt specific accessibility standards beyond ADA requirements.[19] California Building Code Ch. 11b-238.3.2.1 include the sections of code for EVSE accessibility requirements. Appendix E-3 displays the code.

19 Division of the State Architect, Department of General Services. Summary of 2016 California Building Code Changes for Electric Vehicle Charging Station Accessibility. Retrieved from: https://www.documents.dgs.ca.gov/dsa/access/2016CaliforniaCodes-electric vehicle charging stations_FactSheet_accessible.pdf

Table 8: 2016 California Building Code EVSE Accessibility Requirement Sections

SECTION	TITLE	NOTES
11B-228.3	Electric vehicle charging stations	Provides scoping for electric vehicle charging stations installed in new and existing facilities with Table 11B-228.3.2.1 to determine the number of accessible EVCS required. Provides reference to 11B-812 for technical requirements for EVCS.
11B-812	Electric vehicle charging stations	Provides new section with technical provisions for EVCS.
11B-812.1	General.	General requirements for the dimensions and marking of EV charging spaces and access aisles.
11B-812.2	Operable parts.	Technical requirements for operable parts of the EVCS.
11B-812.3	Floor or ground surfaces.	Technical requirements for floor and ground surfaces of the EVCS.
11B-812.4	Vertical clearance.	Provisions for vertical clearance requirements at EVCS.
11B-812.5	Accessible routes	Provides requirements for accessible routes to electric vehicle chargers and to a building entrance.
11B-812.6	Vehicle spaces.	Provides dimensions for length of van accessible, standard accessible, ambulatory and drive-up EVCS.
11B-812.7	Access aisle.	Provides requirements for the access aisle adjacent to the electric vehicle charging space.
11B-812.8	Identification signs.	Provides general scoping for the technical sections for identification signs for accessible EVCS.
11B-812.9	Surface marking.	Provides requirements for the surface markings at EVCS.
11B-812.10	Electric vehicle chargers.	Technical requirements for electric vehicle chargers, which includes the requirements for operable parts, point-of-sale devices and location of the chargers in relation to the EV space.

Source: 2016 California Building Code, Chapter 11B, Section 11B-228.3, Table 11B-228.3.2.

Challenges

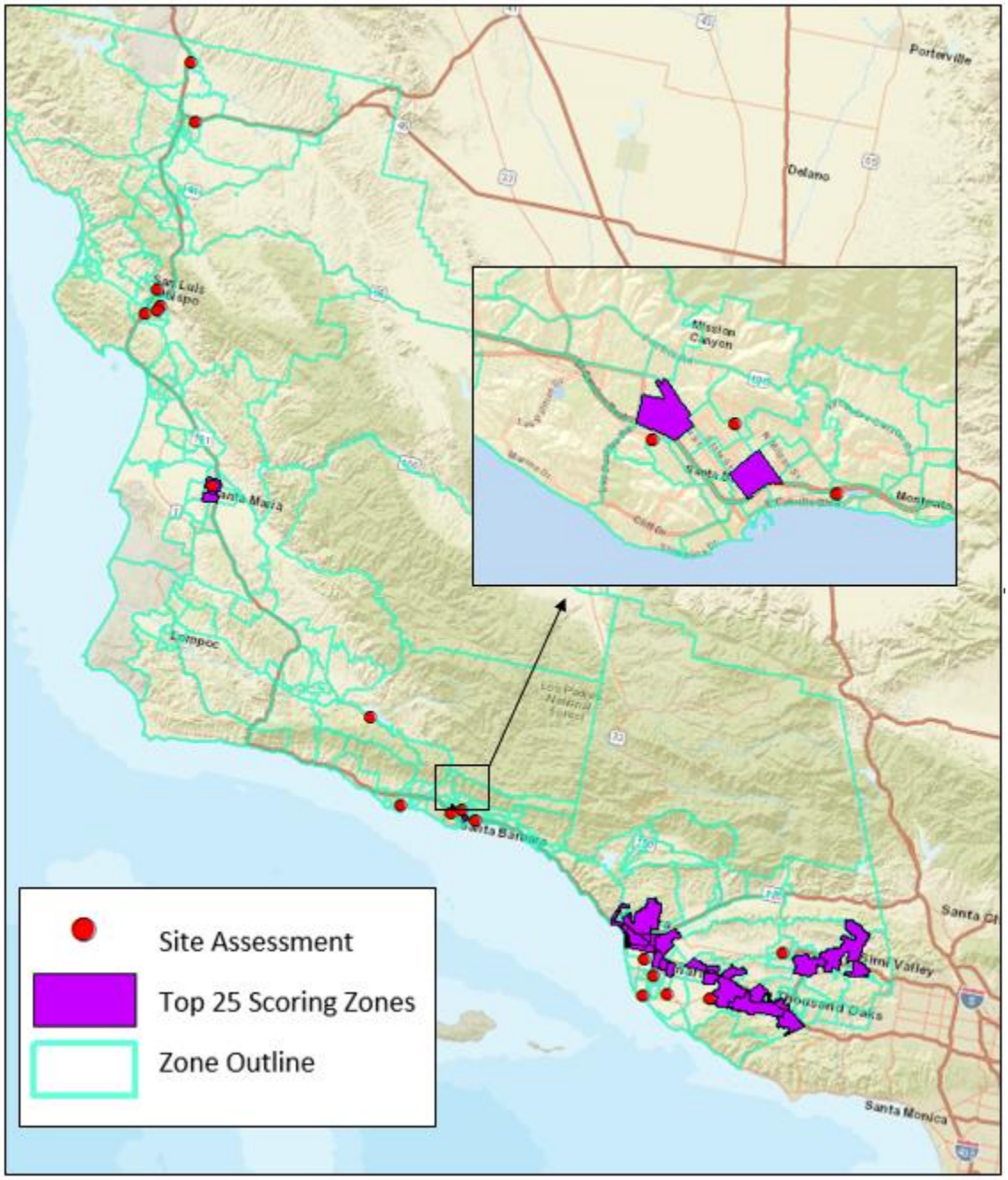
The Task 3 EVSE Site Analysis used empirical and anonymized data on regional travel to identify areas in the Tri-County Region where the demand for EV charging was likely to be highest for a variety of EV charging station users, including workplace employees, MUD residents, fleet operators, and drivers passing through the region for long-distance travel. Results of the Task 3 analysis were used to conduct targeted outreach to potential sites in areas that are likely to have a higher EV charging demand (referred to as "higher-priority zones"). However, it was difficult for the project team to find willing site hosts in many of these higher-priority zones. Interest from the site owner is the single most important factor for EVSE infrastructure development. Very few site owners will install EV charging stations unless there is some combination of:

- Incentive funding for EVSE infrastructure development
- A compelling and affordable offer for EV charging station installation and networking services from a third-party EVSE company
- Significant demand from customers, employees, or residents

Initial outreach to potential EVSE site hosts within the areas also highlighted challenges with obtaining and submitting the necessary documentation to ABM, which included a

site plan of the area, one-line electrical diagram, and 12 months of utility bills. In some cases, potential site hosts struggled to obtain and transmit high-quality copies of the required documents to the project team in a timely manner, which contributed to delays. In other cases, the requirement to obtain and submit documentation presented a barrier to continued engagement with the candidate sites - especially if the managing staff were already subject to a significant workload and had limited capacity to obtain documentation. Because of the challenges to obtain documentation from potential sites and the deadline to complete work on Task 5, the project team had to move forward with the first sites to turn in their documents, rather than the sites located in higher-priority zones identified in the Task 3 analysis. As seen in Figure 10 below, only the site assessment in Santa Maria fell within a Top 25 highest priority zone.

Figure 10: Location of Site Assessments and Tri-County Top 25 Scoring Zones from Task 3 EVSE Siting Analysis

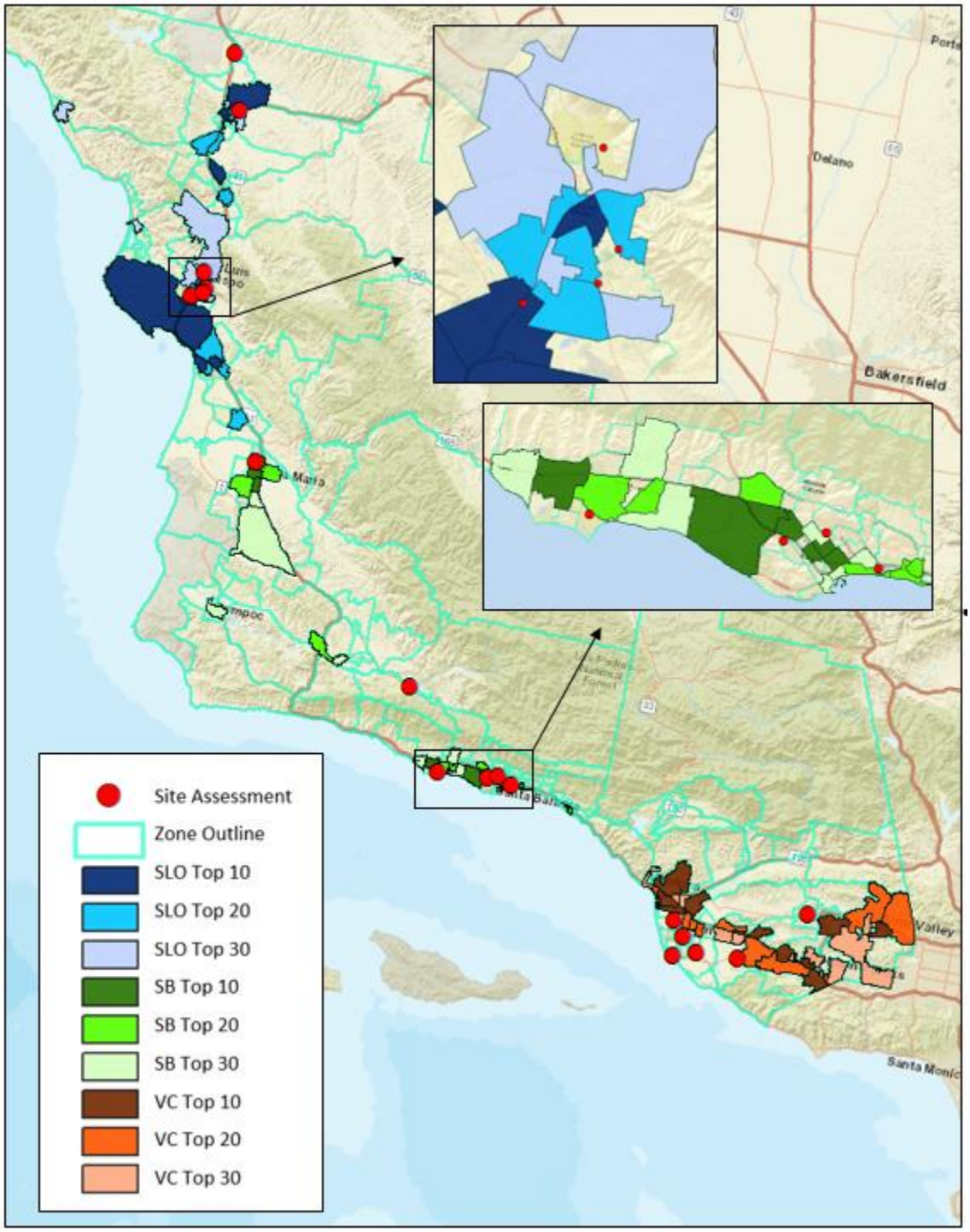


Source: ABM Inc. and Fehr & Peers

It was noted in Chapter 3 that 21 of the 25 top scoring zones are in Ventura County. Because of this, the project team broke out the highest scoring zones by county. Instead of relying on the overall top 25 highest scoring zones for the region, the project team used the highest scoring zones by county to target EVSE site assessments. Figure 11 below shows the site assessment locations overlaid with the county regional rankings for Workplaces. Many site assessments in San Luis Obispo and Santa Barbara Counties

were very near or in county based top ranking zones. Neither the overall top 25 scoring zones nor the highest scoring zones by county had significant overlap with the region's disadvantaged communities, which are all located in Ventura County. However, the project team had committed to complete at least 3 site assessments in the Ventura County's disadvantaged communities within the grant award agreement with the California Energy Commission. To meet this commitment and support clean transportation equity in the region, it was necessary to prioritize assessments in Ventura County's disadvantaged communities that were not identified as high-priority zones in Task 3.

Figure 11: Location of Site Assessments and County Specific Top Scoring Zones from Task 3 EVSE Siting Analysis



Source: ABM Inc. and Fehr & Peers

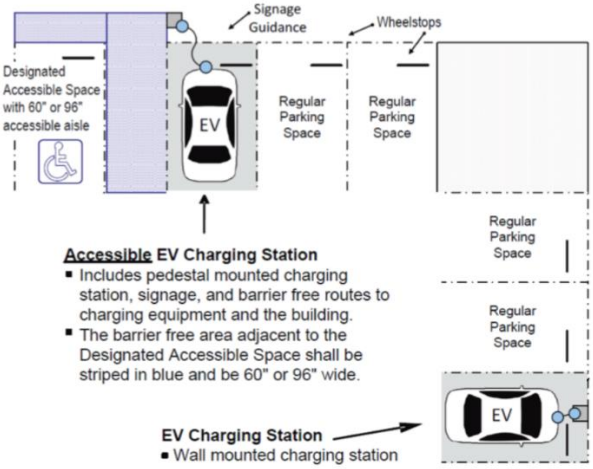
The available budget for the site assessments was an additional challenge with this Task. Electricraft, the secondary contractor to ABM, stated that they only had enough funding to complete site assessments for 4 or less charging stations per site. However,

several prospective site hosts wanted to move forward with larger EVSE projects with 10 or more charging stations. These site assessment recipients were not satisfied with their "permit-ready" documents and stated they would not move forward to construct their projects, would seek other bids, or change the scope of their project to better meet their needs and seek another assessment.

Communication among the project team also proved to be challenging. ABM and Electricraft did not notify the project team that each site assessments would be limited to 4 or less charging stations until several sites had been walked and permit-ready documentation was in development. As a result, Air District partners and CEC could not establish clear expectations about the limitations of EVSE site assessments in advance. This led to unnecessary confusion and frustration among some of the site assessment recipients intending to move forward with larger EVSE projects. ABM also contracted out the task of walking the sites and creating the preliminary drawings to Electricraft without providing a clear directive to update Air District partners and CEC. These members of the project team were therefore not well informed about EVSE site assessment scheduling, progress, and issues. This gap in communication left many site assessment recipients wondering about the status of their assessment for longer than necessary.

There were additional challenges related to the completeness of the "permit-ready" documents which ABM and Electricraft developed together. In some cases, these permit ready documents did not address ADA accessibility requirements for EVSE, despite repeated requests from the project team for site-specific EVSE designs that addressed ADA requirements and highlighted related facility updates (e.g. restriping parking spaces, new curb ramp, etc.).

Figure 12: Typical ADA-Compliant Electric Vehicle Charging Parking Space



Source: Ventura County Electric Vehicle Ready Blueprint

The completion of all 18 site assessments proved to take much longer than anticipated. This was partially due to the late completion of Task 3, but also because of the difficulties with getting site hosts to turn in the 3 needed documents and stated communication issues with contractors delivering site assessment services.

Lessons Learned

Among the project team, the responsibilities of certain subtasks were not clear. For example, ABM believed their only task was to perform 18 site assessments for locations provided to them. The Air Districts and CEC were initially under the impression that ABM would analyze the Task 3 maps and communicate with site hosts to explain the process of getting a site assessment and answer any questions. To avoid later confusion and frustration among the project team, responsibilities should have been better defined in the project scope and restated throughout the progression of the task. Similar future projects could see more streamlined results and better communication if there is only one electrical contractor completing the site assessment work. Further, it would be best if this contractor can both identify the best site host leads with their own internal tools/methods and coordinate directly with the potential site hosts to secure needed documents, discuss their EVSE needs, and walk the site with them. Many of the issues and challenges for Task 5 could have been avoided with a simplified and streamlined process for EVSE service delivery and a single point of contact for the service rendered.

One important EVSE siting and permitting factor the project team did not consider is local government zoning requirements for parking space minimums. Local government zoning ordinances for MUDs and workplace destinations often include minimum parking space requirements. In some cases, these zoning codes stipulate that a minimum number of parking spaces be specifically dedicated to tenants or workplace employees. Parking spaces for publicly-accessible EVSE installations may not be counted towards the required minimum parking spaces for tenants or workplace employees – even when charging stations are intended for mixed use by the public and tenants or employees. If the installation of publicly accessible EVSE prevents MUD and workplace locations from meeting local minimum parking requirements, this can present a significant barrier to public EVSE development at key workplace and MUD locations. Furthermore, it can also prevent workplace and MUD locations from accessing local charging station incentives that include public accessibility as a funding award requirement. Future EVSE siting, permitting, and installation efforts should consider the minimum parking requirements set forth in local government zoning ordinances.

Next Steps

Four out of the six recipients of the site assessments performed in San Luis Obispo County have submitted an application to receive grant funding for their projects through the San Luis Obispo County Air Pollution Control District's Alternative Fuel

Infrastructure Program. The SLO County Hospital on Johnson Avenue, Cal Poly University on Grand Avenue and the Paso Robles Joint Unified Bus Barn on Union Road will all be receiving Community Air Protection Program funding and the San Miguel Laundry location will be receiving local DMV funds from the Carl Moyer Program.

At this point, none of the six recipients of the site assessments performed in Santa Barbara County have moved forward with their EVSE projects. This lack of progress is likely attributed to a combination of overestimated project costs, not enough incentive funding being available, and site assessment recipients being dissatisfied with the "permit-ready" documents that they received. The Santa Barbara County Air Pollution Control District continues to work with several of these sites with the goal of hopefully moving forward with their EVSE projects in the future.

In Ventura County, both Ocean View School District and Oxnard Union High School District have been included in the CEC Grant Funding Opportunity (GFO-17-607) Notice of Proposed Awards posted on June 3, 2019. Both locations are in disadvantaged communities. The Ocean View School District has submitted an application to receive additional funding, if required, with the VCAPCD through the Carl Moyer Program, funded by local DMV vehicle registration fees.

CHAPTER 6:
Zero Emission Vehicle Awareness

The main goal of Task 6 was to elevate awareness of ZEVs and ZEV fueling or charging infrastructure, with special emphasis on activities and projects that will promote equitable access to ZEVs across the region's diverse communities. The project team used a wide range of activities, ranging from broad community outreach events that allowed participants to get first-hand experience with ZEVs to one-on-one engagement that was carefully targeted to build collaboration with stakeholders. Task 6 outreach and engagement activities included:

- Green car showcases featuring PHEVs and/or FCEVs
- Test drive events allowing participants to drive or ride along in a PHEV and/or FCEV
- Workshops highlight the PHEVs and/or FCEVs options, operating characteristics, benefits, and ownership considerations for the region's drivers
- Information sharing about federal, state, utility, and local incentives for PHEVs and/or FCEVs
- Direct outreach to businesses, workplaces, property managers/owners, commercial destinations, K-12 school districts, universities/colleges, and local government staff
- Webinar and remote conference calls to support key stakeholders with ZEV infrastructure development

SLOCAPCD and their grant partners exceeded targets for several of the ZEV outreach and engagement activities scoped in the ARV-16-015 grant agreement. A summary of outreach activities is included in Appendix F-1.

In alignment with the goal to support equitable access to ZEVs and fueling or charging infrastructure, the project team conducted Task 6 activities in the region's state-designated Disadvantaged Communities and/or Low-Income Communities whenever possible. To help ensure that key information about ZEVs was more accessible to the region's diverse communities, the project team also developed Spanish-language versions of all Electric Drive 805 outreach materials produced for Task 6.

According to 2013-2017 data from the United States Census, more than one third (39.7 percent) of Santa Barbara County's population and Ventura County's population (38.6 percent) speaks a language other than English at home.[20] Nearly one-fifth (18.2 percent) of households in San Luis Obispo County speak a language other than English according

20 United States Census Bureau's QuickFacts for Santa Barbara County. Available at: https://www.census.gov/quickfacts/santabarbaracountycalifornia

to Census data.[21] The number of households that speak a language other than English is much higher in some of our region's other communities. For example, this Census data for the city of Santa Maria estimates that more than half (65.4 percent) of households in the city speak a language other than English.[22] Similarly, Census data for the City of Oxnard estimates that 67.9 percent of the city's households speak a language other than English.[23]

Data from the Santa Barbara County Department of Behavioral Wellness estimates that there are also approximately 18,000 to 30,000 Mixtec Indian migrants living and working primarily in the Santa Maria Valley within the county's agricultural sector. According to the Mixteco/Indígena Community Organizing Project (MICOP), there are more than 20,000 indigenous people from Mexico in Ventura County.[24] The Mixtec Indian migrants are primarily from the states of Oaxaca, Puebla and Guerrero in Mexico. In many cases, Mixtec Indians rely on their indigenous Mixtec language for communication and speak limited English or Spanish.[25]

The multilingual outreach materials developed for Task 6 are available in Appendix F-2.

Approach

Since a spectrum of ZEV awareness activities were conducted to reach a variety of audiences for Task 6, the specific approaches used varied. However, most ZEV awareness activities were focused on one of three audience areas: 1) general community outreach, 2) targeted community engagement, or 3) direct stakeholder engagement.

1. *General community outreach* (including most ZEV showcases and/or test drive events): intended to distribute information and/or provide first-hand experience with ZEVs to a large number of people from our region's diverse communities at existing events and large community gatherings.
2. *Targeted community engagement* (including most workshops and some ZEV showcases and/or test drive events): intended to share information that promotes ZEV awareness and adoption for a targeted group of community members, or to support stakeholders that have a special interest in ZEV infrastructure development.

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21 United States Census Bureau's QuickFacts for San Luis Obispo County. Available at: https://www.census.gov/quickfacts/sanluisobispocountycalifornia

22 United State Census Bureau's QuickFacts for Santa Maria city, California. Available at: https://www.census.gov/quickfacts/santamariacitycalifornia
23 United State Census Bureau's QuickFacts for Oxnard city, California. Available at: https://www.census.gov/quickfacts/oxnardcitycalifornia
24 Mixteco/Indígena Community Organizing Project (MICOP). *Mixtecs in Ventura County.* Available at: http://mixteco.org/mixtecs/
25 Santa Barbara County Department of Behavioral Wellness *2018 Cultural Competence Plan.* Available at: http://www.countyofsb.org/behavioral-wellness/Asset.c/5003

3. *Direct stakeholder engagement* (including most one-on-one outreach to key stakeholders): intended to build collaborative relationships, share information, and promote ZEV infrastructure development through one-on-one engagement with key stakeholders (e.g. facilities managers, policy makers, human resources staff) at workplaces, property management companies, commercial businesses, local governments, K-12 school districts, and universities/colleges.

All outreach activities placed special emphasis on the region's Disadvantaged Communities and Low-Income Communities, as defined for California Climate Investments under Senate Bill 535 (De León, Chapter 830, Statutes of 2012) and AB 1550 (Gomez, Chapter 369, Statutes of 2016). Outreach to the region's Disadvantaged Communities and Low-income Communities was intended to expand EV awareness and support infrastructure development that will make cleaner transportation solutions more accessible to California's low-income and disadvantaged communities, in alignment with the goals and vision set forth in Senate Bill 350 (de León, Chapter 547, Statutes of 2015).

It is important to highlight that the state uses existing Census tract boundaries to identify Disadvantaged Communities and Low-Income Communities, but the true geographic extent of local environmental impacts and socioeconomic adversities do not conform to Census tract boundaries. In many cases, Census tract boundaries cut through our region's most impacted communities that currently bear a disproportionately high burden of pollution and socioeconomic stressors.

General Community Outreach

Almost all broad community outreach activities consisted of ZEV showcases and test drive events. Whenever possible, the project team conducted ZEV showcases and test drives at existing events, such as Earth Day Festivals and farmers' markets. Bringing ZEV outreach to existing events or locations where groups already gather is a key practice to engage people who would not be motivated or able to attend a standalone ZEV showcase or test-drive. In some, the project team combined ZEV showcases, test-drives, and workshops when a venue could accommodate a range of ZEV awareness activities.

Broad community outreach activities were designed to:

- Provide first-hand experience with ZEVs to members of the public and key stakeholders
- Help drivers identify the type of ZEV and vehicle models that could best meet their transportation needs
- Provide handouts and resources to encourage ZEV adoption and facilitate access to ZEV incentives

The project team conducted tabling during ZEV showcases and test-drive events to answer questions from community members, share resources about ZEVs, and facilitate access to incentive for PHEVs and/or FCEVs. Several ZEV showcases featured plug-in

electric vehicles from local PHEV and FCEVs drivers who volunteered to display their personal vehicles at events. Most of the volunteering ZEV owners stay with their vehicles throughout the event so they can talk with community members about their experience and share insights about driving a ZEV.

In recent years, CEC and our the Electric Drive 805 partners have placed increasing emphasis on building a network of local PHEV and FCEV drivers who are interested in volunteering at ZEV awareness events. Involving volunteer PHEV and FCEV owners in ZEV showcases allows local community members to gain first-hand experience with ZEVs and learn about different vehicle options that could work for them without having to talk with a dealership salesperson.

Targeted Community Engagement

Most of the project's targeted community engagement activities consisted of ZEV workshops that the project delivered to employees at major workplaces, established community organizations, or stakeholder groups interested in ZEV infrastructure development or adoption. The project team delivered 6 workshops that were designed to share key information about ZEV options, their operating characteristics (including charging and hydrogen refueling), ownership considerations, and incentives. The presentations also highlighted the availability of EV charging stations and/or hydrogen fueling stations near the workshop location, as well as future plans for additional ZEV infrastructure development in the state and region. Presentations were followed with an open question and answer session with participants. A sample presentation from workshops conducted at UC Santa Barbara during National Drive Electric Week is included in Appendix F-3.

Air District partners and staff from CEC also conducted 3 webinar workshops on EVSE infrastructure for Task 6. Since many of the free EVSE site assessments were conducted at locations in Disadvantaged Communities and/or Low-Income Communities, the webinars were designed to support the 18 stakeholders that received free EVSE site assessments (see Task 5). The recipients of the Task 5 site assessments included businesses, workplaces, property managers/owners, commercial destinations, K-12 school districts, universities/colleges, and local government. The webinars were used to walk these stakeholders through draft EVSE site plans delivered by ABM, provide guidance on next steps for EV charging station installations, and share information about local Air District and utility EVSE incentive programs to help cover some installation costs.

To conduct the webinar workshops, the project team used Zoom and WebEx platforms for audio and video conferencing with participants. Air District staff presented a general timeline for EVSE project delivery and highlighted next steps to install EV charging stations installations, including opportunities to apply for District EV charging station grant funding. ABM's contractor team presented two draft EVSE site assessments during the webinar workshops. ABM walked participants through the draft assessments to

explain key information about site plans for EV charging stations and price quotes for charging station hardware, installation, and network fees. CEC closed the Ventura and Santa Barbara presentations with a summary of utility EV charging station incentive programs and best practices for station management, including guidance for structuring charging station user fees.

Direct Stakeholder Engagement

The project team conducted direct stakeholder engagement activities for Task 6 to promote the free EVSE site assessments (see Task 5) and encourage EV infrastructure development at key locations, including workplaces, MUDs, and commercial/public destinations. The project team focused on key stakeholders that could be interested in installing EV charging stations or advance hydrogen fueling infrastructure development. Emphasis was placed on engagement to facilities managers, human resources staff, property owners, fleet operators, and local government decision-makers.

The project team used direct stakeholder engagement to:

- Increase stakeholder awareness of statewide goals for ZEV infrastructure development
- Share information about EV charging station technologies, vendors, and networking options
- Explain the standard EV charging station installation process and high-level EVSE siting recommendations
- Request and obtain electrical one-line drawings, site plans, and utility bills for the last 12 months for EVSE site assessments
- Highlight EV charging station incentives, including PG&E's EV Charge Network program, SCE's Charge Ready program, and local air district grant funding opportunities
- Identify local barriers, opportunities, and needs for ZEV charging infrastructure development

The project team and Electric Drive 805 partners used a collaborative process to develop a stakeholder outreach lists for candidate EVSE sites in each county. Each county's stakeholder outreach list was developed in a shared Google Spreadsheets, so all project team members and Electric Drive 805 partners could add sites and contact information to the lists together. A variety of approaches were used to identify stakeholder for outreach. Some of the locations to target for stakeholder outreach were identified with Google Earth and the geospatial results from the strategic EVSE analysis (Task 3). SLOCAPCD staff were able to convert ArcGIS shape files for the Task 3 analysis into Google Earth .kmz files, which allowed the project team to identify sites in high-priority areas for EVSE infrastructure development with Google's extensive location-based data. Since the geospatial results for Task 3 also showed Low-Income Communities and Disadvantaged Communities, the project team was also able to identify additional locations for direct stakeholder outreach in these areas using Google

Earth. The project team conducted collaborative meetings with Electric Drive 805 partners to share ideas about strategic sites for EVSE infrastructure development in each county, with special emphasis on low-income and disadvantaged communities.

After preliminary stakeholder outreach lists were developed for each county, the project team compiled contact information for direct outreach to specific locations. In some cases, Air District staff were also able to leverage existing agency data for their region to identify additional candidate sites for EVSE infrastructure development or to provide contact information for outreach to specific locations. Using this process, the project team was able to identify more than 400 candidate sites that could be targeted for direct outreach across the three counties. An email or phone number was collected for more than 214 of these sites and more than 120 sites were contacted during the project, including 40 employer/workplace locations, 11 fleet headquarters, 22 local government facilities, 9 multi-family properties, 32 schools, and 9 public/commercial destinations.

Engaged stakeholders represented major workplaces, property management companies, public/commercial destinations, K-12 school districts, colleges/universities, and local governments. Additional engagement was conducted to reach key stakeholders in the region's Disadvantaged Communities and Low-Income Communities to support with EVSE infrastructure development in these areas of need. A complete list for the 400 candidate sites that the project team identified is available in Appendix F-4.

Given the high cost and early market development for hydrogen fueling infrastructure, there was limited focus on direct stakeholder outreach related to hydrogen fueling station development for Task 6. However, Task 7 and 8 is centered on developing resources for and promoting hydrogen infrastructure.

Multilingual Outreach Material Development

Collaboration with Electric Drive 805 members was essential to the development of multilingual outreach materials. All outreach materials for Task 6 were drafted and designed to align with branding and messaging for the Electric Drive 805 collaborative's website (Task 2). CEC led the development of Electric Drive 805 outreach materials, with input from local government staff and Air District partners that are members of the Electric Drive 805 collaborative.

To begin the development of multilingual outreach materials, CEC drafted English-language text. After the English-language text was proofed, CEC created draft layouts and graphic designs for the one-pager and three tri-fold brochures. SLOCAPCD staff and Electric Drive 805 partners reviewed the draft English-language outreach materials and submitted recommended edits. After the English-language materials were finalized, SLOCAPCD staff completed Spanish-language translation since CEC did not have staff that were fluent in Spanish. Once CEC received the draft Spanish-language text from SLOCAPCD, their nonprofit's graphic designer created new versions of the outreach materials in Spanish. The Spanish-language outreach materials were sent to SLOCAPCD

and the VCREA for final review and proofing by their Spanish-speaking team members. Additional guidance was obtained from Central Coast Alliance United for a Sustainable Economy (CAUSE) to help ensure that the multilingual outreach materials were culturally appropriate for target audiences. CAUSE is a community-based organization serving the immigrant and low-income Spanish-speaking communities across Santa Barbara and Ventura counties.

A one-pager and 3 tri-fold brochures were developed for Task 6. Since Spanish-language translations were developed for each of these print materials, a total of 8 handouts were developed. Table 9 summarizes the 8 different print materials that CEC developed for outreach activities with Electric Drive 805 partners. All Task 6 outreach materials are available in Appendix F-2.

Table 9: Multilingual Outreach Materials

#	Format	English-language version	Spanish-language version
1	One-pager	"Electric Drive 805: Who we are"	"Electric Drive 805: Quiénes somos"
2	Tri-fold	"Find the electric vehicle that is right for you"	"Encuentre el vehículo eléctrico adecuado para usted"
3	Tri-fold	"Charging FAQs"	"Las preguntas más frecuentes sobre vehículos eléctricos"
4	Tri-fold	"Workplace, fleet, and apartment/condo charging"	"Cargar en el lugar de trabajo, estacionamiento, o apartamento y condominio"

Source: CEC

Outcomes

ZEV Green Car Showcases, Test Drives, and Workshops

The project partners met or exceeded all targets for the number of ZEV green car showcases, test drives, and workshops in the scope of work for Task 6. The partners estimate that more than 19,000 people across the region were reached through the project's ZEV showcases, test drives, and workshops. Table 10 summarizes the total number of ZEV events conducted across the region, in each County, and in the region's Low-Income or Disadvantaged Communities. Appendix F-1 provides detailed information about ZEV showcases, test drives, and workshops.

Table 10: Summary of ZEV Awareness Events

COUNTY	ZEV Showcases	Test Drives	Workshops	Estimated Participants
San Luis Obispo	**4**	**3**	**4**	**278**
Outside LICs	2	2	2	230
Located in LICs	2	1	2	48
Santa Barbara	**6**	**1**	**6**	**15653**
Outside LICs	5	1	4	15377
Located in LICs	1	0	2	276
Ventura	**3**	**2**	**3**	**3153**
Outside DACs	1	1	2	93
Located in DACs	2	1	1	3060
Grand Total	**13**	**6**	**13**	**19084**

Source: CEC

A total of 13 ZEV showcases were conducted, which exceeded the target to produce at least 6 of these events, with at least two of the ZEV showcases taking place in each County. The ZEV showcases were held at a variety of venues, including but not limited to the University of California, Santa Barbara; the California Lemon Festival in Goleta; the 2018 Santa Barbara Earth Day Festival, San Luis Obispo Earth Day Festival, and Thousand Oaks Earth Arbor Day celebration; the Ventura 4th of July Street Fair; the Santa Maria Fiesta Patrias celebration; and the City of Oxnard Multicultural Festival. Of the 13 ZEV showcases, 6 were held in Santa Barbara County, 4 were held in San Luis Obispo County, and 3 were held in Ventura County. Nearly one-third of all ZEV showcases (4 total) were located in Disadvantaged Communities or Low-Income Communities.

Figure 13: 2018 Ventura 4th of July Street Fair ZEV Showcase [26]

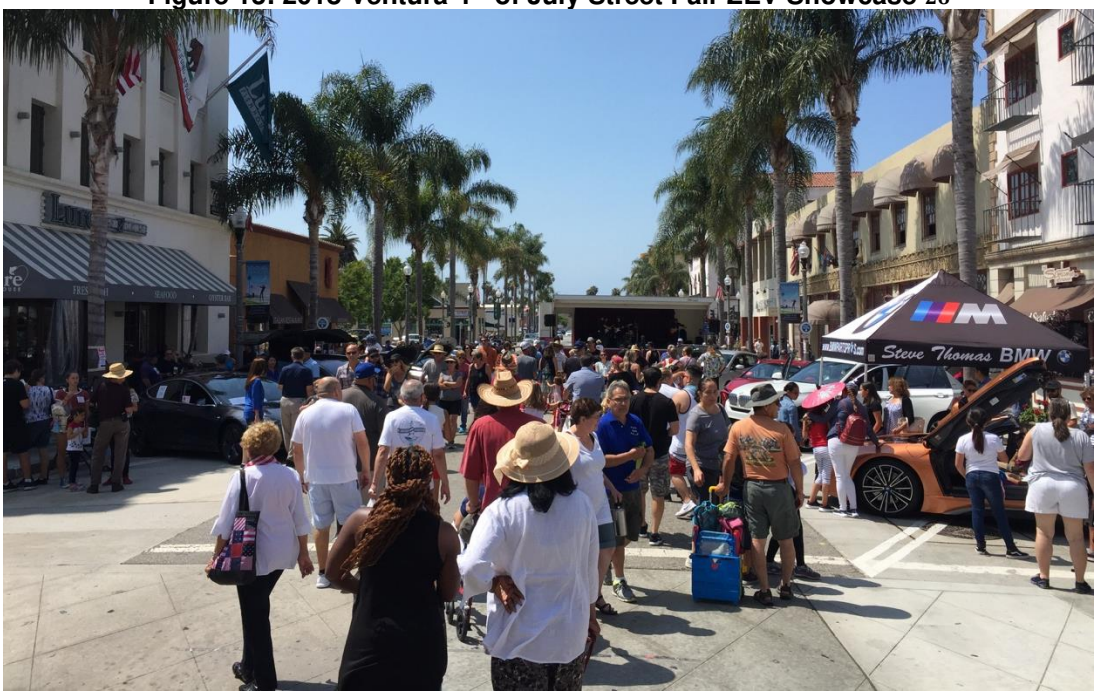

Photo Credit: Cameron Gray/CEC

The project team completed 6 ZEV test drive events in the region, which exceeded the target of 5 test drive events for Task 6. Of the 6 test drives completed, 3 were conducted in San Luis Obispo County (including one event in the county's Low-income Communities). One test drive was conducted in Santa Barbara County at the 2018 Santa Barbara Earth Day Festival. Two test drives were conducted in Ventura County, including a test drive at the Oxnard Multicultural Festival, which is located within a half-mile of a state-designated Disadvantaged Community. Fifteen test drives were delivered at the Oxnard Multicultural Festival, test-drive management issues prevented more from being completed. Thirty FCEV test drives were delivered at the Thousand Oaks Earth Arbor Day event.

Due to the limited availability of hydrogen in the region and higher cost of FCEVs, the project team placed more emphasis on PHEVs for most workshops. However, C5 and SLOCAPCD conducted a special hydrogen fueling station workshop and ride and drive for civic leaders, decision-makers, citizens, local and state fleets and local government officials in San Luis Obispo County on September 21, 2017. The workshop was held at the San Luis Obispo County Air Pollution Control District office. Workshop topics included an overview of existing and planned hydrogen fueling stations on the Central Coast; current fuel cell technologies and available fuel cell vehicles; the 2017 Tri-County

26 A full set of photos form the City of Ventura 4th of July Street Fair ZEV showcase is available at: https://drive.google.com/open?id=1e8b44jAbTGrZcsmwvbwMzzX-2e9FRULx

Hydrogen Readiness Plan; hydrogen fueling station technology; and Caltrans' regional and local hydrogen fuel cell vehicle fleet planning. Following the workshop participants were invited to test drive the Toyota Mirai or the Honda Clarity.

Figure 14: Hydrogen Ride and Drive at SLOCPACD

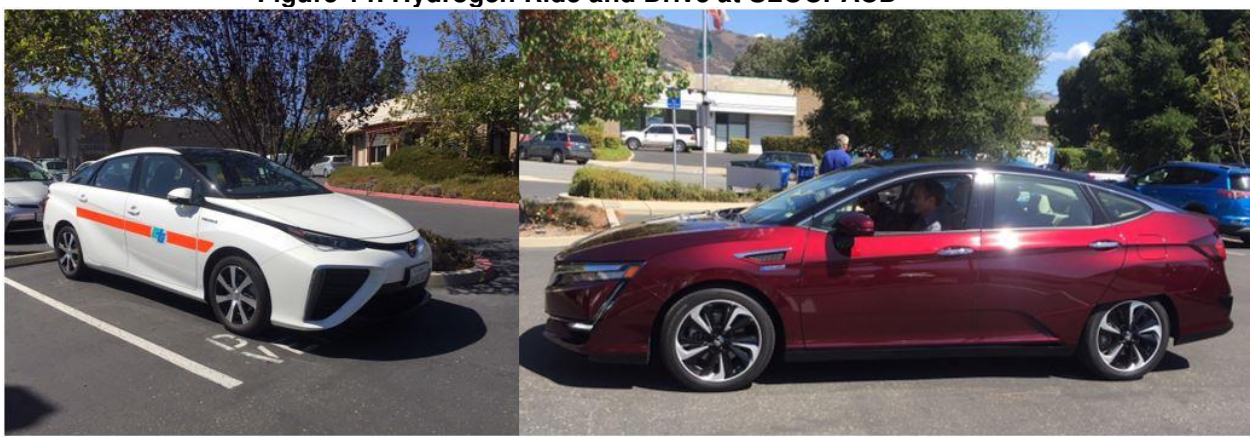

Photo Credit: Melissa Guise/C5

Other workshops focused on ZEV deployment and infrastructure development for fleets in the region, including a workshop on electric school buses that C5 and SLOCAPCD conducted with the Electric Bus Workshop and Ride and Drive at the Paso Robles Joint Unified School District. Three bus manufacturers, GreenPower Motor Company Inc., Lion Electric and Blue Bird Buses were in attendance. An invitation was extended to all school districts in San Luis Obispo County. Twenty-five representative from seven school districts in San Luis Obispo County participated in the workshop and ride and drive. Topics covered during the workshop included; incentives offered through the SLOCAPCD and the California Air Resources Board; cost of infrastructure and charging times; and school bus specifications and range. Following the workshop, two buses were available for test rides. There were four test rides conducted which allowed all interested parties to experience the buses. The event was well received by the school districts on the Central Coast and several districts have expressed an interest in incorporating electric buses into their fleets.

Figure 15: Electric Bus Workshop and Ride and Drive

Photo Credit: Vince Kirkhuff/SLOCAPCD

ZEV showcases and test drives had the biggest impact when these activities were integrated into existing events that already have high attendance. More than 30,000 people attended the 2018 Santa Barbara Earth Day Festival which featured 24 plug-in electric and fuel cell vehicles in a static display spanning one full block length. The 2018 SBEDF also featured 5 additional vehicles that were available for test drives, including 2 Toyota Mirai FCEVs, 1 Plug-in Prius Prime, 1 Nissan Leaf, and 1 Chrysler Pacific PHEV. During the two-day SBEDF event, staff from CEC provided a total of 248 test drives to festivalgoers.

The 2018 Earth Day Festival in San Luis Obispo featured a variety of electric and plugin hybrids vehicles including 2 Honda Clarities (one full electric and one plugin hybrid), 1 Chevy Bolt, 1 Chevy Volt, 2 Tesla model 3, 1 Tesla model X, 1 BMW i3 and 1 Nissan Leaf. Students from the California Polytechnic State University also displayed a solar car. Additional information and booths were set up to educate attendees about electric vehicle charging stations and solar power options.

Figure 16: Earth Day San Luis Obispo 2018 -Solar Car

Photo Credit: Melissa Guise/C5

The project team completed 13 workshops across the region. This included 6 workshops that were located in or served stakeholders from the region's Low-Income Communities and Disadvantaged Communities. Nearly half of the workshops (6 total) were designed to share key information about ZEVs options. The remaining workshops were targeted to specific stakeholder audiences and addressed either EV charging station infrastructure development, fleet electrification, or hydrogen fueling infrastructure development. These targeted workshops included 3 webinars to support the 18 stakeholders that received free EVSE site assessments for Task 5.

More than 300 people attended the 13 workshops delivered for this project. Some of the most effective workshops were delivered at UC Santa Barbara during National Drive Electric Week. CEC led 3 workshops at 3 different locations on the UC Santa Barbara campus in one day. A static display of 9 plug-in electric vehicles was set up at each workshop location, so workshop participants could look at plug-in electric vehicle models before and after the workshop. The static display included a Tesla Model 3, Chevy Bolt EV, Chevy Volt PHEV, Toyota Plug-in Prius Prime, Nissan LEAFs, Chrysler Pacific Plug-in, Fiat 500e, BMW 330e iPerformance, and BMW i3 Rex. The vehicles were brought by 4 participating car dealerships, the Santa Barbara County APCD, and a community member who volunteered to showcase their new plug-in electric vehicle.

More than 75 staff and faculty from UC Santa Barbara attended the workshops, which generated significant interest in plug-in electric vehicle adoption. CEC staff received at

least 6 follow-up phone calls from UCSB workshop participants seeking additional guidance to access incentives and purchase a plug-in electric vehicle in the coming weeks.

Figure 17: UC Santa Barbara Facilities Management Workshop and ZEV Showcase

Photo Credit: Cameron Gray/CEC

Challenges

When the scope of work for Task 6 was developed in response to the California Energy Commission's GFO-16-015, the project team proposed activities to expand the reach of traditional ZEV awareness efforts. Our goal was to make outreach activities more inclusive of the region's diverse communities. To achieve this goal, the scope of work placed special emphasis on Spanish-language information sharing and broader engagement with the region's disadvantaged communities and low-to-moderate income households that are eligible for increased state incentives.

As the project team worked to implement ZEV awareness activities, it became increasingly clear that the internal capacity to deliver multilingual outreach and engagement activities varied across project partners. CEC did not have a fluent Spanish-speaking team member, which limited their ability to share information in Spanish at community events. Air District partners had Spanish-speaking team members to support translation and interpretation for outreach materials development. However, the demand for Spanish translation and interpretation services was already high, which limited the capacity for the Air District's fluent Spanish-speaking team members to

conduct multilingual outreach at events and develop Spanish-language text for outreach materials. Due to these internal capacity issues, the project team was not able to deliver robust multilingual outreach for all of the ZEV awareness events with Spanish-speaking attendees.

The internal capacity challenges for multilingual outreach were most evident at the ZEV showcase conducted for National Drive Electric Week at the Santa Maria Fiesta Patrias celebration on Sunday, September 16, 2018 from 12 noon to 5pm. More than 95 percent of all the people we spoke with at the 2018 Fiesta Patrias event spoke Spanish and/or Mixtec as their primary language. Despite the language barriers, CEC was able to have nearly 25 interactions with Spanish-speaking families that wanted more information about EVs. In many cases, young adults and children in the families served as translators and made these interactions possible.

The project team also encountered challenges with partnerships for ZEV showcases and test drive events. Previous experience with ZEV awareness activities has shown that local automobile dealerships and OEMs seem to be the weakest links in regional efforts to promote ZEV adoption. It can be very difficult to motivate participation in ZEV showcases and/or test drives from local automobile dealerships and marketing representatives with automobile OEMs. Outreach to these stakeholders for this project's ZEV awareness activities followed past trends and had a mixed track record of success, even with recent growth in California's EV market. There is a need for both local and statewide programs that can effectively motivate increased collaboration for ZEV awareness activities among automobile dealerships and OEMs.

CEC also encountered significant challenges for the Oxnard Multicultural Festival's ZEV test drive. The project team encountered delays with City permitting and approval for the event. CEC began working with City staff on permitting and approval in mid-June of 2018, nearly 5 months before the Oxnard Multicultural Festival was scheduled to take place but approval was not received until late August 2018. As a result, CEC had less than 3 months lead time to coordinate, plan, and organize the event with partners. Due to the tight timeline, the project team approached SCE and Plug-in America (PIA) to see if they could support the test-drive event. Since the test-drive was located in a disadvantaged community, SCE was able to provide funding to PIA staff, so their team could lead coordination for the test-drive.

The project team worked extensively with PIA to plan the Oxnard test-drive, put the necessary insurance coverage in place with the City of Oxnard, and secure test-drive vehicles in the months leading up to the event. On Thursday, October 4, 2018, PIA contractors notified the project team and City of Oxnard staff that they intended to cancel the test drive. Notice of the planned test-drive cancelation was given less than 48 hours before the event was scheduled to take place.

PIA's contractors cited an insufficient number of test-drive vehicles as their reason for canceling the test-drive, even though CEC had confirmed 4 vehicles from three different

manufacturers for the test drive. After extensive discussion with City of Oxnard staff and CEC, the leadership for PIA arranged to have 2 of their organization's PHEVs available for ride-along at the event (a Nissan LEAF and Chevy Volt). None of the dealerships that originally planned to make vehicles available for test-drives were able to participate after the last-minute cancelation notice was sent from PIA. Due to the partnership challenges with PIA and the small number of vehicles available, only 15 ride-along trips were delivered at the event.

Lessons Learned

Challenges related to multilingual ZEV outreach and engagement provided a variety of lessons. The project team members, Air District partners, and Electric Drive 805 members learned that there is a need to increase their internal capacity for multilingual outreach. If there are limited opportunities to increase the internal capacity for multilingual ZEV outreach, the project team could focus on ZEV outreach activities that target K-12 schools and community-based organizations serving youth from the region's predominantly Spanish-speaking areas. Interactions between the project's outreach teams and Spanish-speaking families made it clear that youth and young adults tend to be multilingual and can be a key provider of information for their Spanish-speaking family members.

Issues with the Oxnard Multicultural Festival also provided important lessons about test-drive planning and coordination. In particular, it became increasingly clear that internal capacity issues at the City of Oxnard were a major factor in delayed permitting and approval by City staff. CEC collaborates with local governments across the 805-region and their staff have noticed that many local governments serving a higher percentage of low-income, rural, and/or disadvantaged households are much more likely to be resource constrained. Based on CEC's experience, a lack of local government funding and resources can greatly reduce the capacity of local government staff. When local government staff have a high workload and limited capacity for engagement, their ability to support ZEV outreach and infrastructure development is diminished - especially if their local government leaders have not established a clear mandate prioritizing zero-emissions transportation planning and projects for their communities. The under resourcing of local governments that serve low-income, rural, and/or disadvantaged households reinforces a cycle of underinvestment and impedes equitable access to clean, zero-emission transportation solutions.

The partnership issues with PIA for the Oxnard Multicultural Festival's test drive also provided important lessons about the permitting, planning, and coordination timespans that are needed to ensure successful test drive events. CEC intended to begin dealership outreach for the Oxnard test drive with at least 3-months lead time before the event date, so there was sufficient time to conduct outreach and motivate participation from automobile dealerships.

However, due to the approval and permitting delays, the project team had only two months to collaborate with PIA and secure test-drive vehicles for the event from dealerships. Given the challenges with motivating dealership and/or OEM participation in local ZEV test-drive events, this timeline was not adequate to bring in the number of test-drive vehicles that PIA was required to deliver for the event under the terms of their agreement with SCE. Based on this experience, CEC will more strictly adhere to a best practice requiring all permits and approval for test-drives at least 3 months before the event date.

Next Steps

According to University of California, Davis research conducted in 2016, fewer than 35 percent of households were aware that the State offers electric vehicle rebates and less than half of all people could name a single electric vehicle model that was currently available.[27] The researchers' conclusions were clear: Californians are not deciding they don't want electric vehicles. Rather, they remain "to a great extent unaware of electric vehicles and anything about them". Extensive public outreach and engagement to promote electric vehicle adoption and infrastructure development will be needed to advance zero-emission transportation solutions, so the region can reduce GHG emissions, improve air quality, protect public health, and help households lower their transportation costs. The following steps will help create broad electric vehicle awareness and expanded infrastructure development, which will be crucial to delivering the many benefits of cleaner, zero-emission vehicles to communities across the region.

1. Develop and adopt local government policies that establish a clear mandate to support broad public outreach and engagement to expand ZEV awareness.
2. Prioritize funding and staffing to support ZEV outreach, education, and engagement activities. Incorporating electric vehicle awareness into fiscal year budgets on a recurring basis will help ensure that there is a reliable and continuous stream of funding to support these activities.
3. Create local ZEV Coach positions. ZEV Coaches will coordinate awareness activities, help local entities navigate the process of planning for electric vehicle adoption, and facilitate charging infrastructure development. ZEV Coaches will provide direct consumer assistance (e.g. helping people identify the electric vehicle options that meet their needs, answering questions about ZEV incentives, and sharing information about EV charging stations or hydrogen fueling stations).
4. Identify ongoing funding and resources for a regional ZEV Ombudsman. The ZEV Ombudsman will help to coordinate and align ZEV implementation activities with

27 Ken Kurani and Scott Hardman. "Automakers and Policymakers May Be on a Path to Electric Vehicles; Consumers Aren't." UC Davis Institute of Transportation Studies. February 2018. Accessed July 2, 2019. Available at: https://its.ucdavis.edu/blog-post/automakers-policymakers-on-path-to-electric-vehicles-consumers-are-not/

local government partners and key stakeholders across the 805 region. The ZEV Ombudsman will also expand and maintain the clearing house of ZEV resources developed for the Central Coast ZEV Readiness Implementation project, including the Electric Drive 805 website. ZEV Coaches will collaborate with the ZEV Ombudsman to secure additional funding, maintain a clearing house of locally-targeted ZEV resources, and conduct targeted stakeholder outreach with special emphasis on low-to-moderate income households, rural areas, and state-designated Disadvantaged Communities in the region.

5. Develop, implement, and iteratively update a set of key performance indicators that can be used to evaluate and continuously improve the success of electric vehicle engagement activities over time.
6. Deliver all ZEV outreach and engagement activities in the multiple languages spoken throughout the region, using messages and engagement approaches that are culturally appropriate for reaching the intended audiences.
7. Develop multilingual resources and media campaigns to increase awareness of ZEV options, facilitate access to available ZEV incentives, and help people learn about EV charging and/or hydrogen refueling locations in their communities.
8. Create a package of toolkits to support transportation electrification and regional electric vehicle charging infrastructure development including: 1) fleet electrification toolkits targeting public agencies, transit, and goods movement; 2) MUD charging toolkits targeting property managers to support multifamily residential electric vehicle charging infrastructure development; 3) workplace charging toolkits targeted to support electric vehicle charging infrastructure development with the region's employers; and 4) local government toolkits targeted to support policy development and public electric vehicle charging infrastructure development.
9. Launch a 2020 Electric Drive 805 campaign in partnership with key electric vehicle stakeholders, including local governments, SCE, Community Power Alliance, Monterey Bay Community Power, Electrify America, electric vehicle service providers, local automobile dealerships, the VCAPD, SBCAPCD, SLOCAPCD, C-5, VCREA, and relevant non-governmental organizations. The campaign could include: 1) dealership and sales training; 2) the launch of new or increased local electric vehicle incentives; 3) sales and marketing strategies to accelerate electric vehicle deployment; 4) electric vehicle showcases and Ride and Drives (i.e. test-drive events); and 5) collaborative promotional campaigns with the region’s utilities, CPA, and/or MBCP that link their ratepaying customers to ZEV resources, incentive applications, and best practices.
10. Conduct at least 6 annual, brand-neutral ZEV showcases and/or test drives at existing community events.
11. Build a regional network of ZEV owners who are willing to volunteer and support community outreach activities and events, so members of the public can engage directly with local ZEV drivers and learn from their experience. The EV Advocates

of Ventura County, a volunteer group formed in 2014 to support electric vehicle development, is a model for ZEV-drive-led advocacy, education and outreach.

12. Partner with CPA and MBCP to design an optimized EV support pilot program, including: 1) streamlined incentives administration; 2) education and outreach in alignment with Electric Drive 805 campaigns; 3) EV fleet transition assistance; 4) support multifamily residential charging infrastructure development; 5) targeted EV awareness to low-to-moderate income households; and/or 6) launch of a group purchasing program that provides limited-time discounts on new, leased, and/or used electric vehicles.
13. Track the One-Stop-Shop electric vehicle incentive application pilot project. CARB and GRID Alternatives are currently developing the One-Stop-Shop application for the pilot project, which will allow low-income consumers in select areas to apply for all available electric vehicle incentives with a single form.

CHAPTER 7:
ZEV Safety Training for First Responders

In 2017, the Tri-Counties Region completed the Tri-Counties Hydrogen Readiness Plan (THRP). The plan included a number of recommendations for implementing the acceptance of hydrogen-fuel transportation, one of which was to ensure the development of local competency and resources for delivering hydrogen training to first responders.

Hydrogen training for first responders is essential for ensuring a safe and acceptable management of hydrogen in our communities. First responders will be at the front line if and when an incident or accident occurs involving hydrogen. This applies to FCEVs, hydrogen deliveries and hydrogen dispensing infrastructure. In addition to having risks associated with the use of hydrogen, FCEVs and BEVs both have high voltage electrical risks that first responders need to be aware of and be able to respond to safely.

Through the initial TRHP planning activities in the Tri-Counties, it became clear there are a limited number of trainers and training organizations delivering this type of training in California. Often the training is not offered when a response agency has the most need, and it is potentially expensive and logistically complex to engage with outside trainers to deliver this service locally.

The TRHP also pointed out the local Fire Departments have significant limitations with respect to time availability for holding hydrogen training for responders because of seasonal commitments and other demands for training. Also, since the fast charging and hydrogen infrastructure build out is not expected to occur uniformly over time in all cities and counties across the region, it may not be appropriate for all Fire Departments to make hydrogen and EV response a training priority at corresponding times.

Due to the current limitation of competent trainers to provide timely ZEV training to First Responders, this task was proposed to have a small number of competent individuals become qualified to provide this training by attending a “train the trainer” class.

Accordingly, the task involved two main elements:

- Review and consolidation of hydrogen safety emergency response manuals
- Conduct two or three trainings for first responders locally, and prepare training course follow-up reports

Approach

Hydrogen Safety Emergency Response Manuals

The team working on this task was committed to ensure local response training would be delivered using state-of-the-art resources, and those training materials should be made available to trainers and trainees. This would ensure all locally delivered training would be based on a consistent set of course materials developed by a reputable organization. The hydrogen response training materials developed and made available through the U.S. Department of Energy (DOE) Pacific Northwest National Laboratory were identified as the best resource for this purpose. These are available at the h2tools.org/training-materials webpage. The webpage provides an extensive library of training materials that the local trainers can draw from and adapt to local needs.

Another source of useful information to assist those responding to hydrogen and/or electric vehicle accidents are the Emergency Response Manuals (ERMs) available from the Original Equipment Manufacturers (OEMs) which identify vehicle-specific hazards associated with on-board hydrogen and high-voltage systems. These include quick response guides that are likely to be extremely helpful in an emergency. Selected ERMs are included in Appendix G-1.

Safety Trainings – Initial Approach

In this task, the original intent was to recruit at least two professional safety/emergency response trainers in the Tri-Counties that would become trained to deliver this specific training to first responders in the region. These trainers would attend an appropriate train-the-trainer course to develop the capability for delivering this training and become familiar with training resources that are available and appropriate. The trainers would then be available to conduct two or three train the trainer classes locally during the term of this agreement.

Potential venues for obtaining this initial training were identified, including courses offered by the California Fuel Cell Partnership (CaFCP), the DOE National Laboratories, University of West Virginia Alternative Fuels Training Center, as well as from industry associations (such as the Hydrogen Safety Center of the American Institute of Chemical Engineers (AIChE)), and/or national standards institutes (such as the National Fire Protection Association).

During the initial efforts to implement this task element, two unforeseen problems came up that needed to be resolved. First, the team was not able to identify two suitable professional safety trainers locally who were interested in completing the hydrogen first responder training to become trainers themselves. Second, there were no training courses scheduled through the organizations listed above within the timeframe of this planning task. As such, an alternative approach was proposed by the team and a change was proposed to the Energy Commission in mid-March 2019 and was approved in mid-May 2019.

Safety Trainings – Revised Approach

As an alternative way of meeting the objective for this training task, the revised approach was to reallocate a portion of the grant funds for this task to hire Ms. Jennifer

Hamilton to visit the Tri-Counties to deliver the training locally. Ms. Hamilton is a qualified professional trainer associated with the CaFCP and Frontier Energy. As a result, the scope for Task 7b was changed to conduct a minimum of two one-day, safety trainings for first responders in the Tri-Counties region. Ideally these training opportunities would be hosted by local Fire Departments and delivered at their training headquarters. However, due to venue availability limitations, the two training sessions were scheduled to be hosted at the local APCD offices on August 20 in San Luis Obispo and August 21 in Santa Barbara. The trainings were mainly publicized to the local first responder organizations consisting of fire departments and law enforcement.

Outcome

Hydrogen Safety Emergency Response Manuals

The project team compiled emergency response manuals from the OEMs for a number of hydrogen FCEVs and Battery Electric Vehicles and they can be found in Appendix G-1.

Safety Training – San Luis Obispo

On August 20th, 2019, the project team hosted a Safety Training at the SLOCAPCD. Fifteen SLO County based fire personnel attended the training. A training course report for the San Luis Obispo safety training that documents the training materials used, the trainer name, the course content, the number of attendees, feedback, and opportunities for improvement is included in Appendix G-2. Training course materials and URL links to the H2Tools website will be posted online on the SLOCAPCD website so first responders in the Tri-Counties can access the tools in the future. By providing a link to the H2Tools website, first response agencies will be able to access current training information and content.

The PowerPoint presentation used for the San Luis Obispo training session was taken from the H2Tools training resource and adapted where appropriate for the local training. Adapting the materials to make them relevant and applicable to the current situation of hydrogen deployment in the Tri-counties. It is important to recognize the H2Tools training covers risks from a hydrogen release as well as exposure to high voltage. Therefore, the training is applicable to FCEVs as well as high voltage Battery Electric Vehicles and hybrids.

Feedback from attendees at the training was positive. The first responders appreciated the opportunity to learn about hydrogen safety, hazard recognition, and best practices for responding to vehicle, facility incidents and accidents could occur. Attendees recognized the training is helpful even at the “early stage” for hydrogen deployment in the Tri-Counties, knowing hydrogen vehicles are already traveling through the region and the population of BEVs and hybrids are increasing.

The task was successful in promoting the need for hydrogen training and initial progress has been made in having qualified individuals trained locally to provide this training going forward. With 15 fire personnel from SLO County based fire departments

completing the initial training in San Luis Obispo on August 20, 2019, the local capability is in place to conduct future trainings to first responders using the materials available when the need arises.

Safety Training – Santa Barbara

For the Safety Training course that was initially offered on August 21st, 2019, there was insufficient response to hold the class. As such the class was rescheduled for October 29th. The venue for this training was at the SBCAPCD. Again, there was a low response, in part due to the many wildfires happening in the State at this time, but the training did take place with three attendees. Documentation of this course with the trainer name and the number of attendees is also included in Appendix G-2. Training course materials and URL links to the H2Tools website are being posted online on the SLOCAPCD websites, so they are accessible to attendees and to first responders in the Tri-Counties at any time they are needed in the future. By providing a link to the H2Tools website, first response agencies will be able to access current training information and content.

Feedback from the Santa Barbara course attendees was also positive. In this case, the attendees included safety and environmental professionals who expressed interest in supporting the deployment of hydrogen infrastructure going forward. In this respect the fundamental goal of having training resources available locally has been met through these trainings.

Overall this task was successful in promoting the need for hydrogen training, and initial progress has been made in having qualified individuals trained locally to provide this training going forward. With the additional three professionals completing the course in Santa Barbara on October 29th, the Tri-County capability is in place to conduct future trainings to first responders using the materials available when the need arises.

Lessons Learned

Fire agencies are required to provide extensive training to their first responders, and it is challenging to get anything “new” added to the training calendars. It requires a patient and persistent effort to help these agencies appreciate the importance of hydrogen and high voltage training applicable to our evolving transportation systems. Once this is recognized, the training that can be offered and delivered is appreciated.

Another lesson learned is “non-essential” hydrogen response training should not be scheduled and promoted during the “peak fire season”.

In addition, it is important to maintain contact with training officers at all the responder agencies in the Tri-Counties. People and positions change frequently in these agencies, so it is desirable to maintain current contact details and keep the fire departments aware of hydrogen training opportunities. This begs the question as to where the long-term training responsibility lies. The organization or entity identified needs to be recognized as the “go to” for vehicular related hydrogen and high voltage information. This could be at the regional or state level.

Next Steps

With the anticipation of a growing hydrogen infrastructure in the Tri-Counties, it is invaluable to have the resources and materials to perform first responder safety training as needed. The training will most likely be called for when new stations are installed in the region. To take best advantage of the training conducted in this project, the following next steps are recommended:

- First, maintain current copies of the training materials on the local APCD websites, and make these materials available to first response agencies whenever requested.
- Second, maintain active engagement with the agencies who participated in this training and the agencies contacted through the promotional efforts of the training. Our team made direct contact with a number of primary response agencies locally that expressed interest in the course but were unable to participate at this time.
- Third, establish a list of professional trainers who are willing and able to present the training when requested by the local response agencies. This list should be in addition to the capable trainers within the agencies who can perform this training internally. Being able to perform this training locally is greatly facilitated through having a standard and validated training materials available through the H2Tools resource website.
- Fourth, continue to engage with the experts that have developed and piloted the First Responder Safety Training courses to take advantage of their personal experience and to stay informed of developments. In particular, these include Ms. Jennifer Hamilton of the California Fuel Cell Partnership and Mr. Nick Barrillo of the DOE Pacific Northwest Laboratory.
- Fifth, monitor the safety performance of hydrogen fuel cell vehicles and fueling stations with a particular emphasis on learning from incidents and accidents that may occur. The investigations that are performed after such incidents occur provide important information that can be beneficial to first responders universally as they are called to respond to hydrogen incidents more frequently in future years. The H2Tools website is a useful starting place for this activity.

CHAPTER 8:
Hydrogen Readiness Station Siting

In 2017, the Tri-Counties Region completed the Tri-Counties Hydrogen Readiness Plan (THRP)[28]. The plan included a number of recommendations for implementation, one of which was to establish a list of retail gas station owners and operators that would be willing to site a hydrogen dispenser onsite. Siting hydrogen stations at existing retail fueling stations is a natural extension of existing fueling habits. Another recommendation was for local agencies to engage with installers to encourage and facilitate their interest in developing hydrogen infrastructure in the region.

From the preliminary planning work, it was clear having a station in San Luis Obispo county was a priority to provide connectivity along the Highway 101 corridor, and having at least two hydrogen stations closely located in the region to allow local dealers to establish timelines and pathways for making FCEV sales and servicing available at local dealerships.

This task was designed to implement the THRP recommendations to assess local hydrogen fueling infrastructure needs and siting options for stations. The initial THRP identified potential locations within the region where early sales of FCEVs could be expected if the hydrogen infrastructure were developed to support such sales. Ultimately, commitments from existing gasoline (retail) station owners are needed for hydrogen station developers to proceed with installations when funds become available.

Currently, hydrogen stations are installed in Thousand Oaks and in Santa Barbara, but there are no other stations in place or in development between Santa Barbara and San Jose. There is clear need for additional stations in the Tri-County region to provide connectivity, destination sites and ultimately new market-based centers for local FCEV vehicle sales and use. This could be facilitated if there were agreements in place between retail station owners and installers. The FCEV manufacturers and FCEV owners have noted a strong desire to have more stations along the Highway 101 corridor and there is also a need for additional stations to enhance connectivity and destination travel between the Central Coast and the Central Valley Highway 5 corridor.

Approach

The goal of this task was to encourage retail gas station owners to consider making their properties available for the installation of hydrogen dispensing equipment. Station

28 https://www.ourair.org/wp-content/uploads/Tri-CountiesHydrogenReadinessPlan-NoAppendix.pdf

owners in general should be aware that hydrogen fuel is becoming more available throughout California, and this represents a new business opportunity which will likely grow over time. Ideally, the station owners expressing interest should be aware of installers that would be willing to work in the Tri-Counties region, and vice versa. The intent of this task was to help establish preliminary agreements between retail station owners and hydrogen system installers so applications for funding could be made whenever funds become available for hydrogen stations.

The THRP report included preliminary lists of existing stations that looked favorable for siting hydrogen based on a number of subjective criteria. The current task is intended to take the next step in this site selection process through the implementation of three subtasks as follows:

1. Engage with Station Owners

The hydrogen station siting analysis already completed in the THRP planning project was used to identify a sample of suitable retail stations interested in connecting with hydrogen station developers. Station owners and operators were asked about their willingness to site a hydrogen dispenser at their stations. This was accomplished with phone calls and/or personal visits using contact information available from the three APCDs in the Tri-Counties region, with their permission. Owners who expressed positive interest were noted, but many were reluctant or skeptical at first. It was emphasized this was a preliminary inquiry process, and no promises could be made that implied their stations would be funded.

While the THRP analysis includes specific lists with subjective suitability ratings, there were often several good options for hydrogen installation in most priority areas. It was important to ensure preferential treatment was not given to any owner or fuel brand in this assessment process.

2. List of Hydrogen Station Installers

The second step in the work activity was to make an inclusive list of hydrogen station installers and reach out to them to determine their degree of interest in providing installation services in the Tri-Counties region. A list of about 15 reputable companies was identified. The list was compiled using information from the Energy Commission's public process for funding light duty vehicle hydrogen refueling infrastructure which includes names of installers who have previously shown interest. The FCEV OEMs and their representatives were also contacted to see if there are other qualified installers to add to this list. Throughout this process, our team was mindful of being impartial when identifying and contacting installers. Suggestions were also provided by the CAFCP for reaching additional stations installers.

These installers were contacted directly by email and telephone to explain the initiatives underway in the Tri-Counties to promote FCEVs and hydrogen-fueled transportation, and to invite communication with our team and/or the retail station owners expressing

willingness to consider hydrogen dispensing. Installers were encouraged to engage with station owners directly to establish preliminary agreements for hydrogen station installations.

3. Tentative Commitments and Agreements

The third step was to maintain contact with station owners and installers to monitor progress, and to determine where preliminary commitments and agreements might be reached. Over the term of this project, a number of interactions took place. The "site assessment process" was intended to establish commitments from existing (retail) station owners, and hydrogen system installers to proceed with hydrogen dispensing systems, when government funds become available.

The following provides a quick reference summary of the approach:

- Make contact with station owners and operators (identified in the THRP) to discuss their willingness to site a hydrogen dispenser at their stations.
- Develop a list of station owners expressing willingness and interest in siting hydrogen infrastructure at their station location(s).
- Engage with an inclusive list of hydrogen station installation providers to determine their degree of interest in providing installation services in the Tri-Counties region.
- Encourage hydrogen station installers to engage with station owners to establish preliminary agreements for hydrogen installation and share lists of the more favorable locations.
- Complimentary and parallel hydrogen station support activities

During the course of this implementation effort, the SLOCAPCD made the decision to offer a grant award to the first hydrogen station installer to develop a hydrogen station in the SLO County. This development was not part of the initial task description agreed upon for this Energy Commission project, but because the SLOCAPCD grant notice was distributed to the same list of hydrogen station installers, there were a number of synergies that came up in which the implementation team was able to take into consideration. For example, the request for proposals (RFP) involved additional outreach efforts to the installers, including an RFP webinar, and a number of calls to state agencies and other hydrogen/fuel cell stakeholders, such as the California Fuel Cell Partnership (CaFCP). These complimentary efforts supported the overall outreach effort for this Energy Commission grant task. It should be noted there are three San Luis Obispo County cities included in the February 11, 2019 CaFCP OEM list of priority California station locations. The list also includes two Santa Barbara County cities and three cities in Ventura County.

Also in parallel with this task, the project team maintained communication and dialogue with the FCEV OEMs and their agents to stay informed of their preferences for new

stations in the Tri-Counties, and also to monitor timelines and pathways for making FCEVs and FCEV maintenance available through dealers in the region.

Outcome

Two of the three products associated with task are included in Appendix H. These include the list of retail station owners expressing an interest in siting a hydrogen system, and the current list of hydrogen station installers that are active in California, noting those expressing interest in working within the Tri-Counties.

Ultimately, the team was not able to obtain copies of any preliminary agreements between station owners and installers, so no agreement list was created. However, it was evident that discussions were taking place to explore station possibilities in the Tri-Counties. In retrospect, it is understandable the installers may not want it to be public knowledge that they are negotiating with station owners, knowing most applications for government funding is done on a competitive basis. It would be unwarranted to speculate on the potential agreements that might transpire, but the engagement with station owners and installers is an important step.

Continued discussions and dialogue with station owners is warranted, especially to assure them none are categorically excluded from the funding opportunity, and prospects should be pursued if the motivation and commitment is present. Of course, the potential for funding will depend on site suitability, for example in terms of location and footprint.

Lessons Learned

A key lesson learned is installers are reluctance to share information about relationships with station owners whenever there is a competitive process in play for government funds to support installations. Recognizing this, the role of local agencies in promoting the opportunity for siting hydrogen stations would likely be limited to awareness building with the station owners.

The anticipated changes to the way in which the Energy Commission allocates funds for station installations may have led to a more guarded process on the part of the installers. For example, the proposed Energy Commission decision for station installers to develop a tranche of stations with batch prioritization introduces further complexity to the process of station matchmaking. Additionally, the much-anticipated Grant Funding Offer from the Energy Commission for the next round of hydrogen station funding has been delayed and this may be creating some uncertainty with installers and station owners.

Next Steps

Based on the lessons learned in this task, it is suggested the Energy Commission consider setting up a more inclusive process for collaborating with local government

agencies such that the local agencies are clear on near term funding opportunities from the State. Local agencies would likely be more proactive in outreach efforts with station owners if they knew a station in their jurisdiction was being sought for funding. With the current process, jurisdictions are not given a clear indication from the state about such near-term priorities. This has to be made clear before permitting agencies are ready to commit time and effort into streamlining the permit process.

Local agencies who are not in the core (urban) market areas for hydrogen deployment could also better support hydrogen infrastructure development in their regions if there were separate funds available for rural areas where connector and destination stations play a critical role in facilitating trans-state mobility. A good example of this is the 101 corridor between Los Angeles and San Jose. Each station then becomes an anchor point for growing the statewide network for FCEVs. Siting and funding criteria for these need to be different than for stations in core markets.

Local agencies in the Tri-Counties region are expected to continue to maintain relationships with station owners and installers, and also monitor the changing landscape for funding from state agencies. The Tri-Counties region recognizes the potential for FCEVs to play a significant role in reducing tailpipe emissions and provide consistency with SB 32's GHG emission reduction goals from the transportation sector. The county agencies will continue to offer support to local station owners and hydrogen fueling station developers with an interest in building stations in this region. This support is likely to emphasize promotion and awareness to the station owners and the public in general.

The success of these endeavors will call for patient and persistent engagement with the various stakeholders, as evidenced by the SLOCAPCD RFP offering match funds for a local station. This action demonstrates the local agency's sincere commitment to secure a hydrogen station in SLO County as part of their ZEV infrastructure support.

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United State Census Bureau’s QuickFacts for Santa Maria city, California. Available at: https://www.census.gov/quickfacts/santamariacitycalifornia

United States Census Bureau’s QuickFacts for San Luis Obispo County. Available at: https://www.census.gov/quickfacts/sanluisobispocountycalifornia

United States Census Bureau’s QuickFacts for Santa Barbara County. Available at: https://www.census.gov/quickfacts/santabarbaracountycalifornia

Ventura County Electric Vehicle Blueprint available at: https://www.vcenergy.org/electric-vehicle-blueprint/

APPENDIX A-1:
Project Tasks & Products with Supporting Contractors

Project Tasks & Products with Supporting Contractors

Task (Chapter) & Supporting Contractor(s)	Subtasks	Products
Task 2: CEC	• Establish a regional ZEV ombudsman- a staff position tasked to serve as a regional resource and liaison for EVSE siting and build out and ZEV adoption. • Create and maintain a ZEV Website on the Plug-In Central Coast website. • Survey EVSE permitting requirements established in at least 10 municipalities within the three counties under the Tri-Counties region and consolidate information and resources on the Plug-In Central Coast website. • Assist cities in compliance with Assembly Bill 1236 which mandates local ordinances for streamlined permitting. • Survey and catalog available incentives in the Central Coast region, including new Investor-Owned Utility (IOU) EVSE programs. • Coordinate and conduct 2 to 3 meetings to develop new incentives addressing current gaps and targeting disadvantaged communities. • Work with potential site hosts to determine eligibility for active IOU EVSE programs, including Southern California Edison's Charge Ready Program and Pacific Gas & Electric's forthcoming EVSE pilot program. • Survey and catalog local ZEV infrastructure service providers. • Provide resources and guidance for EV charging demand surveys at workplace and Multi-Dwelling Unit (MDUs). • Update regional ZEV resources as needed.	✓ Provide an URL for ZEV website displaying EVSE permitting requirements ✓ Report cataloging EVSE permitting and compliance with AB 1236 ✓ Report cataloging IOU EVSE incentive programs ✓ Report cataloging ZEV infrastructure providers ✓ Provide surveys on EV charging demand at workplaces and MDUs
Task 3: Fehr & Peers, CEC, SBCAPCD & VCAPCD	• Develop a geographic zone system for the mapping of "origin-destination" points as determined by observed mobile phone and GPS-enabled devices. • Designate low-income communities and disadvantaged communities as independent zones for targeted analysis. • Define additional zones based on population densities, EVSE sites, and MDU densities, residential/non-residential zones, and major travel corridors. • Coordinate with StreetLight Data to tag origin-destination points and obtain tabular data for the 150	✓ Report on Task 3 Results and technical memorandum ✓ Publicly accessible online map of recommended EVSE locations

	designated zones. • Analyze strategic siting opportunities based on demographic factors, equity considerations, and regional travel patterns. • Use results from the analysis to prioritize and recommend at least 25 strategic siting opportunities for a mix of workplace destinations, MDUs, and publicly accessible locations. • Develop charts and figures to present results from Task 3, and a technical memorandum describing the analysis and methodology. • Publicly accessible online map visualizing recommended EVSE locations from the analysis.	
Task 4: EV Alliance, SBCAPCD & VCAPCD	• Use survey data to identify leading regional fleet operators with the highest potential for electrification of trucks, buses, and light-duty vehicles. • Provide high level PEV educational presentations to at least 15+ major fleet managers. • Develop fleet transition plans for at least 5 major fleets to identify the economic, operational, environmental, and customer benefits of electrification. • Identify sites for Level 2 and fast chargers in optimum locations to match fleet duty cycles of major fleets adopting PEVs in 2017-2019. • Provide information to fleet managers on available regional, state, and federal, and private financing for EV fleet vehicles and infrastructure	✓ PEV presentation for fleet managers ✓ Completed fleet transition plans ✓ Level 2 and fast charger site lists, including point-of-contact, entity name, mailing address, phone number, and email address ✓ Copy of fleet sheet with information on financing options and infrastructure
Task 5: ABM Inc., CEC, SBCAPCD & VCAPCD	• Facilitate and coordinate charging infrastructure site assessments at locations consistent with those identified in Task 3 (Strategic EVSE Siting Analysis). • Complete at least 15 EVSE site assessments, including at least: 5 site assessments for each of the three counties in the region; 3 site assessments conducted within or near disadvantaged communities; and 3 site assessments for low-income communities. • Coordinate with the ZEV Ombudsman to share information about EVSE service providers, incentives, and permitting requirements. • Ensure consistency with best practices and high-level siting recommendations in the region's EV Readiness Plan. • Provide potential site hosts with permit ready documents for EVSE installations.	✓ List of completed EVSE site assessment locations, to include, but not be limited to: workplaces, MDUs, and publicly-accessible site host point-of-contact, entity name, mailing address, phone number, and email address ✓ Map of potential EVSE sites based on completed site assessments
Task 6: CEC, C5, SBCAPCD & VCAPCD	• Produce at least 6 green car shows (2 per county) and 5 ZEV test-drive events (1 per county and at least 2 in disadvantaged communities). • Host a minimum of 9 community workshops (a minimum of 3 for each county) to educate potential/prospective ZEV adopters. • Conduct outreach to at least 20 businesses, property managers, and/or stakeholders in each of the three counties to support ZEV charging or Hydrogen refueling station installations at the highest priority locations. • Contact at least five sites located within disadvantaged communities as potential host sites for	✓ Monthly ZEV Awareness Activity report documenting all outreach activities conducted during the activity duration ✓ Tri-fold brochures and one-page information sheets promoting ZEV adoption

	charging infrastructure. • Conduct a minimum of 3 ZEV charging or hydrogen refueling station installation workshops located within disadvantaged communities. • Develop multilingual outreach materials (brochure and one sheeter) for potential ZEV station host sites. Make brochures available to the public online. • Develop multilingual outreach materials (brochure and one sheeter) for potential ZEV drivers. Make brochures available to the public online. • Track total attendees, community contacts, test drives, and other outreach activities for reporting.	
Task 7: Ivor John & Associates	• Review and consolidate emergency response manuals from original equipment manufacturers to better inform training to first responders. • Conduct a minimum of 2 one-day, safety trainings for first responders. Trainings will ideally be hosted local Fire Departments and delivered at their training headquarters for each county.	✓ Course materials for training involving Hydrogen FCEVs or accidents involving electric vehicles with high voltages ✓ Training course reports following each safety training that document number of attendees, feedback, and opportunities of improvement
Task 8: Ivor John & Associates	• Contact station owners and operators, to discuss their willingness to site a hydrogen dispenser at their stations. • Develop contact list for station owners that express willingness and interest in siting hydrogen infrastructure at their station location(s). • Engage with an inclusive list of installation providers to determine their degree of interest in providing installation services in the Tri-Counties region. • Encourage installers to engage with station owners to establish preliminary agreements for hydrogen installation. • Maintain contact with station owners to monitor progress with these discussions to determine where commitments and agreements are reached. • Communicate with FCEV OEMs and local dealerships to monitor timelines and pathways for making FCEVs available in the region. • Coordinate with the ZEV Ombudsman to deliver information on EVSE service providers, incentives, and permitting requirements.	✓ A list of station owners interested in adding a hydrogen dispenser ✓ A list of infrastructure installers expressing interest in working within the Tri-Counties ✓ A list of stations where preliminary agreements are reached by owners and installers for moving forward with hydrogen infrastructure projects if funds are made available

Source: SLOCAPCD

APPENDIX B-1:
IOU EVSE Programs

The California Public Utilities Commission provides a summary of state utility programs to support ZEV deployment on their website. The following information covers the utility incentives, rates, charging infrastructure programs, and vehicle-grid integration pilots that are being administered by SCE and PG&E as of January 2019. Additional information on the CPUC's regulatory history with transportation energy and ZEVs is also included.

For the most up-to-date information about all state utility ZEV programs and policies, go to **https://www.cpuc.ca.gov/zev/**.

Rebates and Incentives

Low-Carbon Fuel Standard Rebates

The electric utilities provide rebates to their customers that drive plug-in hybrid electric vehicles (PHEVs).

- PG&E Clean Fuel Rebate
- SCE Clean Fuel Rewards

Funds for these rebates come from the utilities' sales of credits received through California's Low Carbon Fuel Standard (LCFS). Find out more about LCFS here.

Rates

Plug-in Electric Vehicle Rates

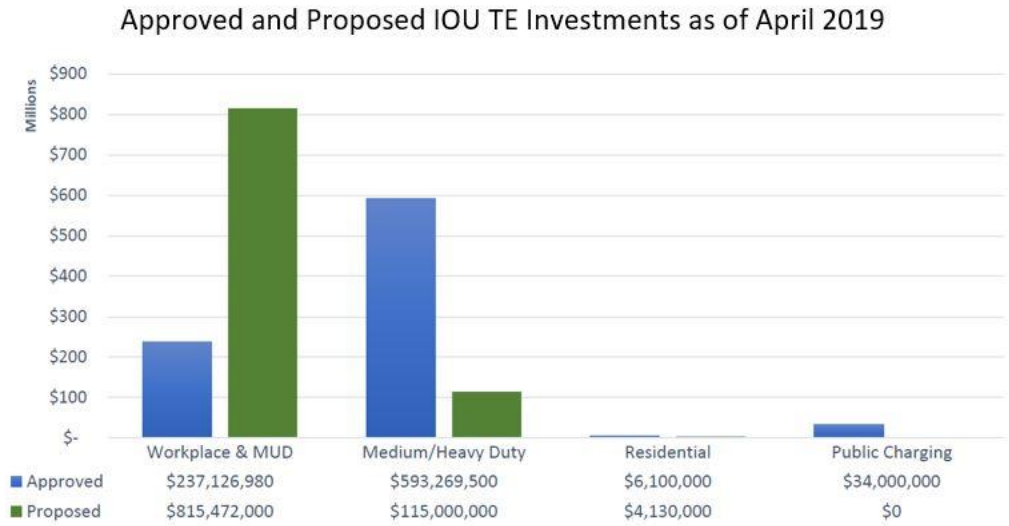
PG&E and SCE each offer electric vehicle "time-of-use" energy rates for residential customers. Time-of-use rates encourage customers to charge during "off-peak" hours. This helps minimize the impact of the energy demand from electric vehicles on the electric grid. Customers may elect to measure both their home and electric vehicle energy use on one meter or measure them separately.

The CPUC hosted a ZEV Rate Design Forum on June 7-8, 2018 to review and evaluate electric rate designs that could support the state's ZEV goals. Documents and recordings are available here.

Plug-in Electric Vehicle Submetering Pilot

Residential and commercial plug-in electric vehicle customers of PG&E, SCE, and SDG&E, including Net Energy Metering customers, are also eligible to participate in the Plug-In Electric Vehicle Submetering pilot, which uses energy meters specifically for PHEV charging to help drivers save on fuel costs and avoid paying to install a new utility meter just for their PHEV. Phase 2 ran from January 2017 through April 2018.

Charging Infrastructure



Infrastructure Pilot Programs

PG&E, SCE, and SDG&E are currently implementing pilot programs to install infrastructure to support electric vehicle charging at MUDs, workplaces, and public interest destinations. Each utility convenes a program advisory council comprised of representatives from state agencies, ratepayer advocates, environmental justice groups, technology providers, automakers, and others to provide feedback and guidance on pilot design and implementation. The three utility pilots will install the infrastructure to support up to 12,500 charging stations with total budgets up to $197 million. This table summarizes key pilot information.

Proposed IOU Infrastructure programs

The CPUC is currently considering several charging infrastructure programs proposed by the state's investor-owned utilities as required under Senate Bill 350 as described here.

CPUC/NRG Settlement

In 2012, the Federal Energy Regulatory Commission (FERC) approved an agreement between NRG Energy and the CPUC to settle outstanding legal issues regarding the 2000 California energy crisis. The settlement requires NRG to invest $102.5 million in electric vehicle charging infrastructure across the state at no cost to site hosts. NRG is obligated to install public fast-charging stations, make electrical upgrades to support electric vehicle charging at existing building facilities ("make-ready infrastructure"), fund technological research and development programs related to electric vehicle charging strategies, and support electric vehicle access programs for under-served communities.

NRG is required to submit quarterly reports on its progress in fulfilling provisions of the settlement agreement and provide a list of its public charging stations and make-ready installations. EVgo, which was a subsidiary of NRG, is currently implementing the settlement requirements on behalf of NRG. The sixth year of the settlement's implementation began on December 6, 2017.

The settlement calls for NRG to finance two third-party audits of its compliance with the settlement agreement. The first tracks NRG's progress midway through settlement implementation and provides a third-party opinion on NRG's compliance with the settlement conditions and provisions as of the settlement's midpoint. The mid-term review audit is available here.

More details on the settlement, including NRG's quarterly and annual reports, are available here.

Infrastructure Pilot Programs at Schools and State Parks and Beaches

AB 1082 and AB 1083 (Burke, 2017) authorize the investor-owned utilities to propose pilot programs to install electric vehicle charging infrastructure at school facilities and/or state parks and beaches, respectively. The Assigned Commissioner, Carla Peterman, issued a guidance ruling to the IOUs in January 2018 regarding what should be included in their applications if they choose to propose pilots under AB 1082 and AB 1083.

In July 2018, four utilities, PG&E, SCE, SDG&E and Liberty Utilities, filed applications under AB 1082 and 1083 requesting a combined $56.4 million for pilot programs at school facilities and state parks and beaches:

CPUC staff hosted a public workshop on December 6, 2018 for PG&E, SCE, SDG&E, and Liberty Utilities to provide an overview of their AB 1082 & AB 1083 applications.

Agenda

CPUC Energy Division Discussion Document
Presentation

PG&E

(A.18-07-020) Application and Testimony

PG&E expects to spend $5.76 million over 5 years to install 88-132 L2 EV charging ports across 22 school campuses in Alameda, Fresno, and San Joaquin counties for use by school employees, school fleets, and visitors. At least thirty-five percent of the participating schools will be located in disadvantaged communities, and no more than ten percent of the program participants will be higher education facilities The utility will also partner with the selected schools to organize a marketing, education, and outreach campaign that seeks to increase EV adoption, improve charging awareness and educate current and future drivers of the benefits to EV ownership.

PG&E also proposes to spend $5.54 million over 5 years to install at least 40 level 2 (L2) ports and 3 direct current fast chargers (DCFC) EV chargers across 15 state parks and beaches for use by visitors, employees, and parks fleets. The utility will also partner with the selected parks to organize a marketing, education, and outreach campaign that seeks to improve EV ownership and charging awareness and educate potential EV owners of the ability of EVs to reach isolated parks with the hope of reducing “range-anxiety.”

SCE

(A.18-07-022) Application and Testimony

SCE expects to spend $9.89 million over 2 years to install and support up to 250 charging ports at 40 K-12 schools in its service territory. The schools pilot also proposes to perform a comprehensive marketing, education, and outreach campaign through on-campus events and presentations to explain the benefits of EV ownership the next generation of drivers.

SCE also proposes to spend $9.88 million over 2 years to install make-ready infrastructure at 27 state parks and beaches to support up to 120 level 2 (L2) charging ports and 10 direct current fast chargers (DCFC). SCE is also proposing to support15 mobile EV charging ports. The parks pilot also proposes to perform a comprehensive marketing, education, and outreach campaign through multi-media outlets and in park presentations to explain the benefits of EV ownership to drivers who enjoy outdoor activities, state park users, advocates, and employees.

PG&E Empower EV Charge Network

(A.18-07-021)

PG&E is requesting $4.1 million to provide incentives for up to 2,000 level 2 EV charging stations for low-to-moderate income residents. PG&E is also proposing to provide up to 800 low-income residents with no-cost home electrical upgrades if needed to support EV charging. In addition, PG&E proposes to work with community-based organizations to provide outreach and education about the program and plans to contract with an "implementer" to verify customers' program eligibility, provide no-cost chargers, and coordinate installation services. The proposed program timeline is 6 months for startup, one year for outreach and implementation, and three months for evaluation.

Vehicle-Grid Integration

The CPUC, in collaboration with other state agencies, is developing policies that support vehicle-grid integration (VGI). VGI helps align electric vehicle charging with the needs of the electric grid. To do this, electric vehicles must have capabilities to manage charging or support two-way interaction between vehicles and the grid. Additional information and documentation can be found on the VGI working group website.

Pilot Programs

EPIC Program

The Electric Program Investment Charge (EPIC) supports the development of non-commercialized new and emerging clean energy technologies in California and provides assistance to commercially viable projects. The California Energy Commission administers 80 percent of the funds collected, and the three IOUs administer the remaining 20 percent. Several EPIC projects are related to vehicle-grid integration.

Demand Response Pilots

PG&E and SCE implemented “demand response” pilots for electric vehicles developed in accordance with D.12-04-045. Demand response (or DR) is when customers change their

electricity usage (typically reducing use or shifting use to other times in the day) at certain times in response to economic incentives, price signals, or other conditions.

- PG&E BMW iChargeForward Pilot
- SCE Workplace Charging Pilot
- SCE Smart Charging Pilot

Department of Defense Vehicle-to-Grid Pilot

SCE partnered with Los Angeles Air Force Base from late 2015 to September 2017 to conduct a vehicle to grid (V2G) pilot program that allowed its electric vehicle fleet to send power back to the electric grid. The vehicle batteries acted as storage, charging when power was cheapest – typically midday when renewable energy generation peaks – and discharge energy back to the grid when there were supply constraints. The fleet of 34 electric and hybrid vehicles served as a storage resource participating in the California power market. Throughout the pilot, which was funded by the California Energy Commission and the U.S. Department of Defense, SCE provided L.A. Air Force Base a specific vehicle-to-grid (V2G) rate.

The final pilot report can be found here.

Low Carbon Transportation Choices Research

The Air Resources Board's low carbon transportation choices research program seeks to improve understanding of what drives vehicle choices, identify real-world emissions benefits of new and used electric vehicles and help increase adoption of zero and low-emissions vehicles across all income levels. Results of ARB's research through this program helps inform many of its clean vehicle incentive programs.

Regulatory History

The CPUC works jointly with other state agencies to meet California's goal of reducing greenhouse gas emissions (GHG) and criteria air pollutants from the transportation sector.

The CPUC began implementing policies aimed at reducing emissions from transportation energy in 1990 but its work escalated in 2006 after the passage of Assembly Bill (AB) 32, the Global Warming Solutions Act, which aims to reduce greenhouse gas emissions to 1990 levels by 2020.

In 2009, pursuant to the Scoping Plan and Senate Bill 626, the CPUC began an Alternative Fuel Vehicles rulemaking (R.09-08-009) to support the widespread deployment and use of plug-in hybrid and electric vehicles.

Prior to the existing time-of-use rates, SDG&E conducted a PHEV TOU Pricing and Technology Study. Customers were eligible for Experimental PHEV Rates (Rev.1) (Rev.2), approved in Resolution E-4334. SDG&E published a final evaluation of the pilot, which ended in 2013.

PG&E and SCE conducted pilot projects offering time-of-use pricing to public transit systems, in an effort to develop rates that meet the charging and utilization demands of bus and other public transit fleets. These pilots were limited to three years and available only to government-

owned or operated fleets, as the CPUC works to develop policies that address electric vehicle fleet charging needs and behaviors statewide.

- PG&E offered the San Joaquin Regional Transit District its small general service TOU energy rate to meet the transit district's new electric bus charging load from September 2013 to 2016, as approved in Resolution E-4628.
- SCE offered a small general service TOU rate from December 2012 to December 2015 to governments that included electric vehicles in their fleets , as approved in Resolution E-4514.

In 2013, CPUC continued to develop rules with a specific focus on ZEVs. It decided (D.13-06-14) that the utilities should continue conducting research about the grid impacts of the load associated with electric vehicle charging and costs associated with any new transmission infrastructure needed to service increased electric vehicle load. The joint IOU load research reports can be found here:

- 2012-2013 Load Research Report
- 2013-2014 Load Research Report
- 2014-2015 Load Research Report
- 2015-2016 Load Research Report
- 2016-2017 Load Research Report
- 2017-2018 Load Research Report

In December 2014, the CPUC decided that investor-owned utilities could own transportation electrification infrastructure but programs must be considered on a case-by-case basis. This facilitated the development of PG&E, SCE and SDG&E's infrastructure pilot programs.

In recent years, CPUC has hosted several workshops to help inform its policy making including these listed below:

- The Basics of Cost Effectiveness Analysis: Presentations (3/6/15)
- PHEV Infrastructure Site Selection (6/10/15) and Metrics & Data (6/16/15) Presentations

The current, ongoing proceeding, R.13-11-007, seeks to develop policies that ensure that ZEVs efficiently integrate with the utility grid and have access to fair rates that encourage electrification. CPUC is also working with other state agencies to implement policies and programs that encourage the deployment of charging equipment and infrastructure. A key part of the agencies' work is focused on implementing requirements set forth by California Senate Bill (SB) 350 to support widespread transportation electrification. More information about the investor-owned utilities' most recent proposals to accelerate the deployment of transportation electrification is available on the SB 350 transportation electrification website.

Resources

Research Database

In 2018, CPUC collected pilot project information through a new survey on zero-emission vehicle infrastructure and vehicle-grid integration research. The survey results are publicly available and can be downloaded as an Excel file.

CPUC seeks to maintain up-to-date, consolidated information on pilot programs to help researchers, regulators, and other utility and transportation stakeholders stay informed about this quickly changing field. The database includes for each project: contact information, location, participants, objectives, rates, funding, timeline, vehicles, equipment, standards, and software.

In 2016, the CPUC organized information about a variety of past and ongoing pilot projects and compiled the results into an easily-searchable presentation. This resource includes links to dozens of reports with findings from research on transportation electrification, and was last updated in August 2018.

Disadvantaged Communities

- CPUC work to support disadvantaged communities
- California Air Resources Board Low-Income Barriers Study Part B: Overcoming Barriers to Clean Transportation Access for Low-Income Residents
- California Energy Commission SB 350 Barriers Study Proceeding
- CEC SB 350 Low-Income Barriers Study Part A

California Air Resources Board

- Scoping Plan – Describes California's policies designed to meet the state's GHG reduction goals.
- Mobile Source Strategy – A 15-year plan aimed at meeting air quality standards, reducing GHG emissions, reducing petroleum consumption and lowering health risks from transportation emissions throughout California.
- State Implementation Plan for Federal Ozone and PM2.5 Standards – California's plan to meet federal ambient air quality standards for smog-forming pollutants.
- The Center for Sustainable Energy administers the California Clean Vehicle Rebate Project for the ARB and shares rebate statistics.

California Energy Commission

- Integrated Energy Policy Report – A biannual report providing data regarding trends and issues across the energy sector in California. Provides a forecast of California's energy demand.
- Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) – The CEC is authorized to spend approximately $100 million annually to help develop and deploy alternative fueled transportation technologies through this program.
- Zero-Emission Vehicles and Infrastructure Progress reports

California Sustainable Freight Action Plan

An interagency action plan aimed at improving freight efficiency, transitioning to cleaner fuels, and increasing the competitiveness of California's freight system

APPENDIX B-2:
ZEV Resources

The following resources were not published to Electric Drive 805 due to funding limitations, partner concerns, and/or related challenges outlined in Chapter 2. The resources are provided in this appendix for reporting purposes.

If you have any issues accessing the list via Dropbox or survey templates, contact:

Cameron Gray

Transportation & Climate Program Manager

Community Environmental Council

cgray@cecmail.org

(805) 963-0583 x111

EVSE Service Providers List

The list of EVSE service providers compiled for the ZEVRI project can downloaded at:

https://www.dropbox.com/s/u1olrh5yk9muau5/Appendix_2.2-ZEVRI-EVSE_providers.xlsx?dl=0

To download the list, follow the link and click on the "…" in the upper right-hand corner of the webpage (next to the blue "Share" button).

EV Charging Demand Surveys

To access the online Google Form templates for workplace and MUD charging demand surveys, follow the links below:

Workplace EV Charging Demand Survey template

MUD EV Charging Demand Survey template

APPENDIX B-3:
AB 1236 Implementation

In 2015, AB 1236 established requirements for cities and counties to streamline their permitting systems for residential and nonresidential electric vehicle charging stations. Under this legislation, all California cities and counties were required to adopt an ordinance that establishes an expedited, streamlined permitting process for EVSE no later than September 30, 2017.[29] The legislative intent of AB 1236 is to: 1) encourage the installation of electric vehicle (EV) charging stations by removing obstacles and minimizing costs for charging station permitting, so long as the action does not supersede the building official's authority to identify and address higher priority life-safety situations; and 2) streamline local government permitting processes for EV charging stations.

Key requirements in AB 1236 state that cities and counties shall:

- Adopt an ordinance that creates an expedited, streamlined permitting process for residential (including multi-family residential) and non-residential electric vehicle charging stations, in consultation with the local fire department or district and the utility director (if the city, county, or city and county operates a utility).
- Adopt a checklist of all requirements with which residential and non-residential electric vehicle charging stations shall comply to be eligible for expedited review.
- Publish the checklist and required permitting documentation on a publicly accessible internet web site.
- Provide a means of electronic submittal (via email, fax, or the internet) of a permit application and associated documentation.
- Authorize the electronic signature on all forms, applications, and other documentation in lieu of a wet signature by an applicant. If unable to authorize the acceptance of an electronic signature on all forms, applications, and other documents in lieu of a wet signature by an applicant, the city, county, or city and county shall state, in the ordinance required under AB 1236, the reasons for its inability to accept electronic signatures and acceptance of an electronic signature shall not be required.

CEC conducted outreach from December 2017 to October 2018 to assess local government implementation of AB 1236 in the counties of San Luis Obispo, Santa Barbara, and Ventura. This work was scoped under California Energy Commission grant

29 Assembly Bill 1236 Local Ordinances: electric vehicle charging stations (Chiu, 2015). Signed into law October 8, 2015. Full text available at: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB1236

agreement ARV-16-015 for regional Zero Emission Vehicle Readiness Implementation. Building and permitting officials for a total of 12 local governments were contacted and asked about the status of AB 1246 implementation.

AB 1236 Local Government Implementation Matrix

Information about the status of AB 1236 implementation for the 12 local governments that CEC contacted for the ZEVRI project is available in a matrix, which can be downloaded at the following link. The information in the matrix linked below was last updated in January 2019 and therefore does not necessarily represent the current status of implementation for local government that are listed.

AB 1236 Implementation Matrix

To download the list, follow the link and click on the "…" in the upper right-hand corner of the webpage (next to the blue "Share" button).

If you have any issues accessing AB 1236 implementation matrix or downloading the document linked within the matrix, please contact:

Cameron Gray

Transportation & Climate Program Manager

Community Environmental Council

cgray@cecmail.org

(805) 963-0583 x111

AB 1236 Implementation Resources

California Building Officials Resources and AB 1236 Tool Kits (2016)

- Small Jurisdictions (population of less than 200,000) Toolkit PDF
- Large Jurisdictions (population of 200,000 or more) Toolkit PDF

Center for Sustainable Energy – Electric Vehicle Charging Station Toolkit Guidance (2017)

- Checklist for Residential and Nonresidential Permit Application
- Plan Review and Permit Correction Sheet for Residential and Nonresidential
- Installation Checklist for Residential and Nonresidential

Model Permitting Checklists

- California Governor's OPR - "Zero Emission Vehicles in California: Community Readiness Guidebook" Plug-In Electric Vehicle Infrastructure Permitting Checklist (2013)
- City of Oxnard Model Permitting Forms & Checklists

Central Coast EV Readiness Plan Guidance (2014)

- Appendices A – C

Note: *If you have any issues accessing the documents linked above, backup versions have been uploaded to this* ***Google Drive folder*****.**

Full AB 1236 Legislative Text

Available at:
https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB1236

AB 1236 Legislative Intent

- Encourage the installation of electric vehicle (EV) charging stations by removing obstacles and minimizing costs for charging station permitting, so long as the action does not supersede the building official's authority to identify and address higher priority life-safety situations.
- Streamline local government permitting processes for EV charging stations

AB 1236 Key Requirements

A city, county, or city and county:

- Shall administratively approve an application to install EV charging stations through the issuance of a building permit or similar nondiscretionary permit.
- Shall limit the review of applications for EV charging station installs to the building official's determination of whether the station does or does not meet all health and safety requirements of local, state, and federal law.
- Shall limit the requirements of local law to those standards and regulations necessary to ensure that the EV charging station will not have a specific, adverse impact upon the public health or safety. Local government staff can require the applicant to apply for a use permit if their building official makes a finding, based on substantial evidence, that the electric vehicle charging station could have a specific, adverse impact upon the public health or safety,
- May deny an application for a use permit to install an electric vehicle charging station only if it makes written findings based upon substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, *and* there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact.
- Shall include the basis for the rejection of potential feasible alternatives of preventing the adverse impact in written, evidence-based findings.
- Shall adopt an ordinance that creates an expedited, streamlined permitting process for electric vehicle charging stations, in consultation with the local fire department or district and the utility director (if the city, county, or city and county operates a utility). The ordinance shall be adopted **on or before September 30, 2016**, for every city, county, or city and county with a population of 200,000 or more residents, and, **on or before September 30, 2017**, for every city, county, or city and county with a population of less than 200,000 residents. The ordinance shall be consistent with the goals and intent of AB 1236.
- Shall adopt a checklist of all requirements with which electric vehicle charging stations shall comply to be eligible for expedited review.

- Shall deem an application complete if it satisfies the information requirements in the checklist, as determined by the city, county, or city and county.
- Shall approve the application and issue all required permits or authorizations upon confirmation by the city, county, or city and county of the application and supporting documents being complete and meeting the requirements of the checklist, and consistent with the ordinance, a city, county, or city and county.
- Shall issue a written correction notice detailing all deficiencies in the application and any additional information required to be eligible for expedited permit issuance upon receipt of an incomplete application.
- An application submitted to a city, county, or city and county that owns and operates an electric utility shall demonstrate compliance with the utility's interconnection policies prior to approval.
- Shall publish the checklist and required permitting documentation on a publicly accessible Internet Web site if the city, county, or city and county has an Internet Web site
- Shall allow for electronic submittal of a permit application and associated documentation
- Shall authorize the electronic signature on all forms, applications, and other documentation in lieu of a wet signature by an applicant. If unable to authorize the acceptance of an electronic signature on all forms, applications, and other documents in lieu of a wet signature by an applicant, the city, county, or city and county shall state, in the ordinance required under AB 1236, the reasons for its inability to accept electronic signatures and acceptance of an electronic signature shall not be required.
- Shall not condition approval for any electric vehicle charging station permit on the approval of an electric vehicle charging station by an association, as that term is defined in Section 4080 of the Civil Code.

AB 1236 Definitions

"A feasible method to satisfactorily mitigate or avoid the specific, adverse impact" includes, but is not limited to, any cost-effective method, condition, or mitigation imposed by a city, county, or city and county on another similarly situated application in a prior successful application for a permit.

"Electronic submittal" means the utilization of one or more of the following:

- Email.
- The Internet.
- Facsimile.

"Electric vehicle charging station" or "charging station" means any level of EVSE station that is designed and built in compliance with Article 625 of the California Electrical

Code, as it reads on the effective date of this section, and delivers electricity from a source outside an electric vehicle into a plug-in electric vehicle.

"Specific, adverse impact" means a significant, quantifiable, direct, and unavoidable impact, based on objective, identified, and written public health or safety standards, policies, or conditions as they existed on the date the application was deemed complete.

Other Relevant Legislation

Existing law, the Electric Vehicle Charging Stations Open Access Act, prohibits the charging of a subscription fee on persons desiring to use an electric vehicle charging station, as defined, and prohibits a requirement for persons to obtain membership in any club, association, or organization as a condition of using the station, except as specified.

APPENDIX C-1:
Task 3 Results and Technical Memorandum

See next 40 pages.

FEHR PEERS

MEMORANDUM

Date: October 16, 2018

To: Andy Mutziger, SLOCAPCD

From: Kevin Johnson, Fehr & Peers and Laura Schewel, StreetLight Data

Subject: Task 3: Strategic EVSE Siting Analysis Methodology and Results

WC17-3425

PROJECT BACKGROUND

In 2012, Plug-in Central Coast (PCC) prepared a Plug-In Electric Vehicle (PEV) Readiness Plan (Plan) for the California Central Coast to guide the development of PEV charging infrastructure for the counties of Ventura, Santa Barbara, and San Luis Obispo ("the Tri-Counties region). PCC established a goal to develop a public charging network that enables all-electric travel throughout the region. The Plan provided infrastructure site maps indicating the location of existing charging stations, as well as recommended locations for additional electric vehicle (EV) charging infrastructure. The site maps for workplace charging recommended electric vehicle supply equipment (EVSE) for the largest employers in the Tri-Counties. Direct current fast chargers (DCFC) were recommended based on the desired geographic distances between each DCFC station and proximity to major highways.

Since 2012, the best practices for EVSE siting have been refined and updated, with increased emphasis on workplace and multi-family dwelling unit (MDU) installations.

PROJECT PURPOSE

The purpose of this project is to conduct an analysis using empirical mobile device data to identify and evaluate key locations for EVSE infrastructure installations. The results of the analysis will be used to prioritize the recommended EVSE sites from the region's PEV Readiness Plan. The analysis will also identify additional key travel origins and destinations that present strategic siting opportunities.

The analysis will allow for a more granular evaluation of siting opportunities in CalEnviroscreen defined Disadvantaged Communities (DACs) and AB1550 low-income communities (LICs). The results of this targeted analysis for these demographics will facilitate the prioritization of EVSE projects that will support a more equitable distribution of EVSE infrastructure and the emission reductions benefits from increased all-electric travel.

The results of the mobile data analysis will also be published in open, publicly-available online maps, which could be updated by project partners and the regional ZEV ombudsman if there are resources to support this work. These maps, along with regularly updated web-based application showing installed EVSEs, will allow regional stakeholders to access good locations for future EVSE installations.

BIG DATA OVERVIEW

The availability of mobile device data provides a new basis for prioritizing EVSE installations at the regional level. Mobile devices such as cell phones and GPS devices in cars, phones, and handheld units, frequently communicate with the mobile network, both during use (i.e. on a call or sending/receiving text or data) and in idle mode. StreetLight Data is a company that specializes in mobile device data. Their services were used in this effort to collect and analyze mobile device data and record the anonymous location (ensuring user privacy) and movement of mobile devices on the project region's roadway network. This information can be assessed both in real-time or over almost any designated time period, based on the network's mobile signaling data.

In general, this anonymous, archival location data from mobile devices can help planners answer important questions about their communities that were previously difficult and expensive to answer. Specifically, mobile device data can be used to gain key insights into the:

- Origins and destinations of travelers in a region or on a specific roadway
- Locations where residents of a region work and shop
- Areas where commuters to a region reside
- Trip lengths from a region or to a destination
- Demographic characteristics for the users of a corridor or at a trip destination

These insights allow planners and decision-makers to better understand mobility behaviors, enabling more informed and beneficial community projects.

METHODOLOGY

The following section describes the methodology used to develop a basis for identifying and prioritizing the recommended areas for EVSE infrastructure installations and to support a more equitable distribution of EVSE infrastructure within the Tri-Counties area. The intention of the analysis was to perform a high-level analysis of areas within the Tri-County region to feed into more granular siting and planning in other tasks associated with the CEC/APCD Grant.

Step 1: Obtained existing data relevant to (future/needed) EVSE strategic siting opportunities

The following existing data relevant to (future/needed) EVSE strategic siting opportunities was obtained in shapefile format for the Tri-County area.

- Demographic data for LICs identified by CARB under Assembly Bill 1550 and DACs identified by CalEPA under Senate Bill 535
- Areas within one mile of a Pacific Gas & Electric (PG&E) or Southern California Edison (SCE) substation which steps down high voltage to lower voltage distribution, which significantly cuts costs of installing an EV Station. Provided by PG&E and SCE in October 2017.
- Suitable areas identified for DC Fast Charging infrastructure development by PG&E in 2018. The study designated one-mile radius areas that can support DC Fast Charger installation and where there is an expected unmet need for fast charging locations by 2025.
- SCE service areas that have at least 15% available electric capacity provided by SCE in October 2017.
- Number of existing multi-family residential units from the MPO travel models
- Forecasted growth in multi-family residential units by the year 2040 from the MPO travel models
- Number of existing retail and office employees from the MPO travel models
- Forecasted growth in retail and office employees by the year 2040 from the MPO travel models

- Number of existing fleet operators with six or more trucks – this data was originally incorporated into the analysis but found to be of pool quality so was removed

Step 2: Developed zonal geographic layer

A 288-zone geographic layer was developed for the Tri-Counties area to provide a geographic system for data analysis, scoring, and mapping. The geographic layer was developed based on the traffic analysis zone (TAZ) structure of the travel demand models for the metropolitan planning organizations (MPOs) in San Luis Obispo, Santa Barbara, and Ventura counties. The existing data relevant to future charging opportunities was first overlaid on the TAZ systems and TAZs were aggregated based on their spatial homogeneity with the existing relevant data. This relevant data was then spatially tagged and aggregated where applicable to the final 288-zone geographic layer. The resulting shapefile provided a geo-coded database of relevant data for future EVSE siting in the Tri-Counties. These data could then be sorted, queried, and spatially analyzed. Additional metrics were tagged to the geo-coded database. A weighted scoring system was applied to the metrics and used to rank and prioritize the 288 TAZs for future EVSE infrastructure development.

Step 3: Obtained StreetLight Data & developed travel behavior metrics

StreetLight Data analyzed anonymous, archival location data from mobile devices in the Tri-Counties region and developed a list of available travel behavior metrics that were presented to the project team (a detailed description of StreetLight Data's methodology, data sources, and analysis steps is provided in **Appendix A**). Using local context and expert knowledge of EV charging behavior, the following travel behavior metrics were selected for analysis to best represent characteristics that could drive demand for EVSE in the Tri-Counties.

- Total auto trips passing through each zone
- Total auto trips "parking" in each zone
- Auto trips of 20+ miles, 40+ miles, and 100+ miles that pass into a zone and park
- Work trips, shopping trips, and intermediate trips[1]
- Medium-duty truck trips of 40+ miles passing through each zone
- Medium-duty truck trips of 40+ miles that pass into a zone and park

[1] Intermediate trips refer to secondary trips made as part of a longer primary trip (i.e. stopping for coffee or gas on the way to work).

- Heavy-duty truck trips of 40+ miles passing through each zone
- Heavy-duty truck trips of 40+ miles that pass into a zone and park

The project team and partners assumed that higher travel demand would be associated with a higher demand for EV charging, so a metric for the number of trips through zones was used to capture the geographic area's relative transportation demand. Since drivers recharge while their electric vehicle is parked, a metric was also developed to assess the total number of parking events in each zone. Given this assumption, it was anticiapted that an inequitable number of high scoring zones would be located in Ventura County due to its population and land use density and that additional metrics and alternative ways to look at the results would be required.

The distance of trips is an important consideration for prioritizing EV charging. The project team created a metric for auto trips of 40+ miles that pass into a zone and park to help prioritize charging infrastructure development in areas where a larger number of trips are completed within the 80-to-100-mile driving range of most pure battery electric vehicles (BEVs).

Similarly, a metric for auto trips of 20+ miles that pass into a zone and park was created to identify areas where a high number of trips are at the threshold of the all-electric driving ranges for plug-in electric vehicles (PHEVs). Most PHEVs have an all-electric range of 20 to 50 miles. To complete trips that exceed a plug-in hybrid's all-electric range, driver must travel in a "hybrid mode" that powers the vehicle with a mix of electricty and gasoline. Greater air quality and emission reduction benefits from PHEVs can be realized when their drivers have access to charging at rental properties and work.

We also included metrics for trips less than 20 miles to account for drivers that need to complete additional trips between home and work that may not be able to complete the trip home in a BEV unless they have access to workplace or public charging. Imagine an employee who has needs to run errands when they get off or at lunch, or the working parent that needs to take their children to and from school. If these drivers are already commuting more than 30 or miles into the work, they are likely to experience some range anxiety and may even deplete their battery if they can't recharge at their place of employment. To capture this need, the project team considered a metric for trips made during the workday, shopping trips, and additional intermediate travel. Metrics were also included for trips less than 20 miles to account for drivers who make multiple short distance trips (i.e. visitng multiple shopping centers miles apart) that together could exceed the range of PHEVs.

A group of metrics was also developed to identify zones where regional fleet operators are most likely to need charging to complete their duty cycle. The fleet-focused metrics break out medium- and heavy-duty electric vehicles, and were applied to identify zones where large numbers of fleet vehicles pass through with 40+ miles of travel remaining and where fleet vehicle drivers tend to park after driving more than 40 miles. These metrics assume that most electric fleet vehicles will need to recharge at least every 40 miles, and that charging will be most convenient when fleet vehicle drivers park at the locations they serve.

Data for each travel behavior metric was then tagged to the 288-zone geographic layer developed for the Tri-Counties area that already included existing data relevant to (future/needed) EVSE strategic siting opportunities.

Step 4: Developed weighted scoring criteria

An Excel-based weighted scoring spreadsheet was developed using existing relevant data metrics obtained as part of Step 1 and travel behavior metrics obtained as part of Step 3 for each of the 288 zones developed for the Tri-Counties area (data for each of the metrics is provided for all 288 zones in **Appendix B** along with a map of the 288-zone geographic layer for reference). Weighting factors were developed for the following four use cases because the key parameters for an individual driver's charging demand vary for different driving scenarios:

- Workplace Destinations (Employees) - Focus on areas with higher concentrations of existing and proposed office employment. Focus on higher frequency of personal auto through trips of 40 miles or more, personal auto parking events with 40 or more miles left to the final destination, and a high frequency of work trips.
- Multi-unit Developments or High Renter Occupied Areas (Renters) - Focus on areas with higher concentration of existing and proposed multi-unit residential units and existing and proposed office employment. Focus on personal auto through trips of 40 miles or more, and personal auto parking events with 20 or more miles left to the final destination.
- Travelers (Tourists or Visitors) - Focus on areas with higher concentrations of existing and proposed retail employment. Focus on higher frequency of personal auto through trips that are longer than 20 or more miles, and personal auto parking events with 20 or more miles left to the final destination.
- Fleet Operators - Focus on areas with higher concentrations of fleet operators and office and retail development. Focus on higher frequency of heavy- and medium-duty truck through trips that are longer than 40 miles.

Since these different EV charging users face different charging barriers and exhibit different travel behaviors, distinct assessments were completed for each user group to prioritize charging infrastructure development that can help facilitate increased EV adoption. These distinct user assessements considered different metrics and applied varying weights to create scores that could effectively priortize charging infrastructructure development in different geographic areas based on each user group's unique needs and behaviors.

Indexed Scale for each Metric

One of the goals of the project was to enable easy, intuitive comparison of the anticipated need for EV charging in distinct geographic areas of the Tri-Counties region, with respect to specific goals of enhancing EV charging access for distinct user groups and ensuring equitable access for charging in DACs and LICs. Because different metrics were on different scales (i.e. number of auto trips vs. number of fleet operators), it became imperative to develop a system to allow for their comparison. To mitigate this, the team indexed each metric on a scale of one to five based on the quintile the score fell into. This created a relative and indexed scale for all metrics to which weighting scoring factors could be applied.

For example, the lowest monthly number of personal car trips over 20 miles was 102, and the highest 500,000. Thus, a zone with 102 such trips got a score of 1 (first quintile), a zone with 251,000 got a score of 3 (third quintile), and a zone with 490,000 got a score of 5 (fifth quintile). The indexed scale for each of the metrics is provided for all 288 zones in **Appendix B**.

Weighted Scoring Factors

To create a simplified score for each zone, the project team developed a weighting scoring factor ranging from zero to five for each behavioral component that would be applied to the indexed scale of one to five for each metric. Project team partners were consulted to develop these weights. Because several different charging behaviors were of interest, several different weights were used. The table below shows those weights for each metric and below is a discussion of considerations for the weighted scoring factors. For example, the total volume of personal trips is considered somewhat important for identifying areas where there is higher demand for charging among employees that drive into work, so this travel behavior has a weight of two for the Commuter-focused analysis. The volume of personal trips has less influence on the likely demand for "Fleet" charging, so this travel behavior has a weight of zero for the Fleet-focused analysis.

Metric	Data Format	Scoring Method	Weighting Factor by Use Case			
			Employee	Renter	Road Tripper	Fleet Operator
Land Use						
Multi-Unit Residential Units	number of units	percentile	0	5	0	0
Proposed Multi-Unit Residential Growth	number of units	percentile	0	5	0	0
Retail Employment	number of employees	percentile	2	2	5	2
Office Employment	number of employees	percentile	5	5	0	1
Proposed Office Employment Growth	number of employees	percentile	5	5	0	1
Other Employment	number of employees	percentile	1	2	3	2
Location of Fleet Operators	number of fleet operators	percentile	0	0	0	5
Electrical Infrastructure						
PG&E DC Charging Capacity	0 if no, 1 if yes	binary	2	2	5	5

Metric	Data Format	Scoring Method	Weighting Factor by Use Case			
			Employee	Renter	Road Tripper	Fleet Operator
SCE 15% Charging Capacity	0 if no, 1 if yes	binary	2	2	5	5
Travel Behavior						
Total Personal Auto Trips Passing Through	number of trips	percentile	2	2	0	0
Personal Auto Trips Passing Through of 20+ miles	number of trips	percentile	3	3	3	0
Personal Auto Trips Passing Through of 40+ miles	number of trips	percentile	5	5	4	0
Personal Auto Trips Passing Through of 100+ miles	number of trips	percentile	0	0	5	0
Total Personal Auto Parking Events	number of parking events	percentile	1	1	0	0
Personal Auto parking events with 20+ miles left	number of parking events	percentile	4	5	4	0
Personal Auto parking events with 40+ miles left	number of parking events	percentile	5	5	4	0
Heavy-Duty Truck Trips Passing Through of 40+ miles	number of trips	percentile	0	0	0	5
Heavy-Duty Truck Parking Events with 40+ miles left	number of parking events	percentile	0	0	0	3
Medium-Duty Truck Trips Passing Through of 40+ miles	number of trips	percentile	0	0	0	5
Medium-Duty Truck Parking Events with 40+ miles left	number of parking events	percentile	0	0	0	3
Work Trips	number of trips	percentile	5	2	0	1
Shopping/Recreation Trips	number of trips	percentile	0	3	0	2
Intermediate Trips	number of trips	percentile	0	4	4	0

Land-use Weighting Considerations

The zoning for local government land uses was incorporated into the analysis to prioritize EV infrastructure development at locations for multi-unit apartment locations, workplaces, fleets, and public destinations. The goal was to ensure that geographic areas with different land uses were scored in a way that prioritizes infrastructure development where these different users live, work, and travel. Weights were set so that analysis zones with larger amounts of land area designated for multi-unit residential developments and multi-unit residential growth scored higher for rental charging.

Similarly, geographic areas with more retail, office, and proposed office land uses scored higher for workplace charging and fleet charging. Retail and other employment land use areas were also weighted to score higher for pass-through/road trip charging infrastructure. The project team assumed that fleet operators and drivers completing road trips would want to stop at locations with amenities that are close to the major travel corridor they are using. A weight of 5 was assigned for retail land-uses within 1 mile of a freeway or highway for road trippers, and a lower weight of 2 was assigned to this metric for the fleet operator analysis.

Demographic Weighting Considerations

The analysis to identify high-priority locations for EV charging infrastructure places special emphasis on Disadvantaged Communities (DACs) and the Low-Income Areas (LIAs) that fall outside of DACs. Instead of assigning weights to the zones that were DACs and LIAs, the project team implemented a binary scoring method. This binary method labeled all zones as either DACs or non-DACs and LIAs or non-LIAs. Using the binary scoring method allowed the Fehr & Peers to assess anticipated charging need in only DACs and LIAs. With this binary sorting function in place, Fehr & Peers created an additional layer of analysis the provided stand-alone rankings for the highest priority areas to develop EV charging infrastructure in the region's DACs and LIAs. The benefit of this approach, as opposed to inclusion of LIAs and DACs into the weighted scoring, allowed for the identification of the top scoring LIA and DAC zones and for their comparison to top scoring non-LIA and non-DAC zones to help understand if the chosen metrics and indexing system permitted an equitable analysis of siting opportunities and to ensure siting opportunities were identified in LIA and DAC zones.

Electrical Infrastructure Weighting Considerations

The analysis assigned weights to two electric infrastructure datasets obtained from PG&E and SCE. PG&E completed an analysis to identify the most suitable locations for DCFC locations in their service territory through an Electric Program Investment Charge (EPIC) demonstration project. According to PG&E, the EPIC project "used state travel data with other important factors related to EV driver convenience and accessibility to identify the top 300 areas in PG&E's territory."

The identified DCFC sites have the highest predicted unmet charging demand for electric vehicles in 2025. Within each area, potential site locations for DCFCs were identified based on criteria from drivers, potential charger hosts, and network developers, as well as current available capacity at the service transformer to install two or more DCFCs without necessitating an upgrade to the distribution service transformer.

The areas PG&E identified as suitable DCFC received a weight of 5 for road trippers and fleet operators, since these users are more likely to require DCFC for their transportation needs. A weight of 2 was assigned to PG&E's identified areas for DCFC since the identified areas for DCFC in PG&E's service territory may also be good locations for installing a large bank of Level 2 chargers (e.g. 10+ charging stations in the same parking lot). The weights assume that employees and renters will need to use DCFC periodically but that DCFC demand will be lower for drivers engaged in day-to-day travel since DCFCs is more expensive than Level 1 or Level 2 charging. Furthermore, regular use of DCFCs reduces the battery life of vehicles, providing additional incentive to use the lower-power charging options.

SCE has not completed a dedicated analysis to identify suitable locations for DCFC installations in their service territory, so the team used electric grid penetration level data from SCE's Distributed Energy Resource Integration Map (DERiM). The penetration level is an indicator of the amount of additional power that a section of electrical line can transmit, which is relevant for electric vehicle charging infrastructure development. Electric vehicle charging – especially at DCFCs – has the potential to significantly increase the demand for power in a given area. As the demand for power increases, the need for additional electricity generation also increases.

The electrical circuits connected to new electrical generation sources need to have enough available capacity to transmit additional power to the areas with higher demand. If the circuits serving an area do not have available capacity for transmitting this additional power, grid operations would be negatively affected and the lifetime of electric infrastructure would be reduced. To prevent these

negative impacts and stay in compliance with CPUC regulations, circuits that lack additional penetration capacity would need to be updated[2].

Since it is advisable to consider the capacity of the electrical circuits that would serve DCFC installations or large banks of Level 2 charges, the analysis assigned a weight of 5 to the zones with higher available electrical capacity for DCFC charging infrastructure that would serve road trippers and fleets. A weight of 2 was assigned to areas with higher available penetration capacity for charging infrastructure serving employees and renters. The weights for available penetration capacity in SCE's service territory are based on the same assumptions that informed weights for the suitable areas that PG&E identified for DCFC installations.

Travel Behavior Weighting Considerations

The travel behaviors for employees, renters, road trippers, and fleet operators diverge in several different ways that influence when and where EV charging is needed. For this reason, the project team developed unique weights for travel behavior metrics to help identify locations with the greatest need for charging infrastructure development.

Renters and employees are the two user groups that were assumed to have the most overlap in travel behaviors and EV charging needs since many employees are also renters. The type of trips completed by employees and renters for a given area was assumed to be more important than the total number of trips or parking events in that area. A lower weight of 2 was assigned for zones where a higher number of personal automobile trips were made by renters and employees. The total number of parking events received a low weight of 1 for employees and renters. Higher weights were assigned to a set of metrics that captured different factors indicating the type of trips completed by employees and renters. These factors are the number of trips falling with a given range (measured in miles), land uses for the area where trips began from and/or ended, the time of trips occurred, and the types of vehicles used.

Trips completed from 6:00 a.m. to 10:00 a.m. and 3:00 p.m. to 7:00 p.m. that ended in a zone with office/retail land-uses were assumed to be commuter travel completed by employees. A weight of five was assigned to zones with a higher number of completed commuting trips for the employee

[2] The 15% penetration level represents the amount of additional power, measured in megawatts (MW), that electrical circuits can transmit while satisfying California Public Utility Commission (CPUC) requirements under Rule 21, Screen M. Screen M requires that the amount of generation for an electrical circuit must not exceed 15% of the circuits total capacity (also referred to as the circuits peak load).

analysis. Trips outside of the designated commuting times were assumed to be mostly for personal or business purposes. These trips were categorized as intermediate trips or shopping trips based on the designated land use of the parking location, number of miles traveled before parking, and origin point of the trip. Medium- and heavy-duty (MHD) vehicle trips were also isolated and used to identify areas suitable for fleet EV charging.

For the renter analysis, a weight of 2 was assigned to zones with a high number of trips during the commuting period that originated from areas with multi-unit residential land uses. This assumes renters tend to have less access to charging than homeowners and will therefore benefit from greater access to workplace charging. Weights of 3 and 4 were assigned for zones that saw a large number of shopping and intermediate trips that originated from areas with multi-unit residential land uses and occurred outside of regular commuting hours. This assumes that renters who lack access to charging at their residence would benefit from charging infrastructure development at locations where they regularly access services.

The project team assumed that trips of 20 to 40 or more miles would have the greatest need for workplace and rental charging. Since drivers that complete longer commutes are in the best position to reduce transportation emssions, a weight of 5 was assigned to the number of commuting trips of 40+ miles for employees. The higher weight for longer trips also assumes that plug-in electric vehicle drivers would be able to maximize the number of all-electric miles driven during their commute. Zones with a a high number of shorter trips (i.e. no more than 20 miles of their origin point) received a lower weight of 3. This weight assumes that there is value to electrifying shorter trips but that the greatest GHG emission reduction and air quality benefits will be generated if a large number of long-distance trips are completed in electric vehicles. Trips of more than 100+ miles were assumed to be for long-distance travel, and were weighted for the "road tripper" analysis.

Step 5: Developed final scores for each use case

The weighted scoring factors for each use case were applied to the indexed scale of one to five for each metric for each zone to develop a final "score" that represented each zone's potential charging demand for each of the four use cases. The final scores could then be used for identifying and prioritizing locations for EVSE site assessments within the highest scoring zones. Sorting and querying could also be applied based on equity factors such as zones that fall within LIAs and DACs to support a more equitable distribution of EVSE infrastructure for the Tri-Counties area.

To create the final scores for each zone, the weights were first multiplied by the indexed metric scores, and then added together. For example, if a zone had a relative score of 2 for "Volume of Parking Events for Commute", and that gets a weight of 3 for Renter Charging, it would contribute 6 points to the final Renter Charging Score for that zone.

A table of scores for each use case for each zone was then developed as shown below, providing a flexible tool that allows users to "lookup" the details of the score for any individual zone, as well as to identify top scoring zones for each use case. The final scores for each of the use cases is provided for all 288 zones in **Appendix B**.

ZONE	County	DAC	LIC	PGESub	SCESub	EMP	Renter	Tripper	Fleet	City
100	San Luis Obispo	0	1	0	0	192	157	104	101	EL PASO DE ROBLES (PASO ROBLES)
101	San Luis Obispo	0	1	1	0	192	243	152	131	EL PASO DE ROBLES (PASO ROBLES)
102	San Luis Obispo	0	0	1	0	192	161	110	108	EL PASO DE ROBLES (PASO ROBLES)
103	San Luis Obispo	0	1	1	0	192	77	36	41	EL PASO DE ROBLES (PASO ROBLES)
104	San Luis Obispo	0	0	1	0	192	179	114	101	ATASCADERO
105	San Luis Obispo	0	1	0	0	192	141	77	67	MORRO BAY
106	San Luis Obispo	0	0	0	0	190	158	102	61	SLOUninc-W of 101, N of 46
107	San Luis Obispo	0	1	0	0	190	102	56	56	SLOUninc-W of 101, S of 46
108	San Luis Obispo	0	1	0	0	190	147	93	83	SLOUninc-W of 101, S of 46
109	San Luis Obispo	0	1	0	0	188	156	106	82	SAN LUIS OBISPO
110	San Luis Obispo	0	1	0	0	187	230	146	114	SAN LUIS OBISPO
111	San Luis Obispo	0	1	0	0	186	171	107	98	SLOUninc-E of 101, S of 58
112	San Luis Obispo	0	0	0	0	185	181	93	82	SAN LUIS OBISPO
113	San Luis Obispo	0	1	1	0	184	157	100	70	SLOUninc-W of 101, S of 46
114	San Luis Obispo	0	1	0	0	183	70	41	47	SLOUninc-W of 101, S of Arroyo
115	San Luis Obispo	0	1	0	0	182	104	44	57	SLOUninc-W of 101, S of Arroyo

Additionally, a combined use score was developed for each of the 288 zones to determine the overall top 25 scoring zones in the Tri-County area. This combined use score was developed by adding together the scores for each of the four use cases for each zone. The final combined use scores are provided for all 288 zones in **Appendix B**.

RESULTS

The following section describes the results of the weighted scoring analysis, which assisted in identifying and prioritizing locations for EVSE site assessments within the highest scoring zones, and to support a more equitable distribution of EVSE infrastructure for the Tri-Counties area.

Highest 25-scoring Zones in the Tri-County Region

Below is a table of zones with the highest 25 combined use scores in the Tri-County Region. As shown below, an inequitable number of high scoring zones (21 out of 25) were located in Ventura County. It was hypothesized that this would occur due to Ventura County's population and land use density, as the magnitude of pass-through and parking trips of particular lengths were an important aspect of the scoring, even with the inclusion of additional metrics. A review of the scoring results confirmed this hypothesis as all of the highest 25-scoring zones fell in the fifth quartile for nearly all travel behavior metrics. However, the review also indicated all of the highest 25-scoring zones fell in the fourth or fifth quartile for existing office or multi-unit development as well as projected office or multi-unit development growth from the travel demand models, important metrics given the increased emphasis on workplace and MDU installations.

Zone #	County	City	DAC?	LIC?	Employee Score	Renter Score	Road Tripper Score	Fleet Score	Combined Use Score
239	Ventura	Ventura	No	Yes	192	262	165	155	774
213	Ventura	Camarillo	No	Yes	192	272	165	135	764
209	Ventura	Thousand Oaks	No	No	192	252	165	150	759
237	Ventura	Ventura	No	No	190	265	160	138	753
240	Ventura	Ventura Unincorporated	No	Yes	187	267	165	134	753
201	Ventura	Thousand Oaks	No	No	192	262	165	132	751
205	Ventura	Thousand Oaks	No	Yes	192	262	165	132	751
254	Ventura	Ventura	Yes	Yes	177	260	165	147	749
189	Ventura	Simi Valley	No	No	190	270	150	130	740
194	Ventura	Ventura Unincorporated	No	No	185	265	150	134	734
158	Santa Barbara	Santa Barbara	No	Yes	192	247	165	129	733
236	Ventura	Oxnard	No	Yes	182	262	165	123	732
215	Ventura	Camarillo	No	No	182	258	161	127	728
408	Ventura	Oxnard	Yes	Yes	186	256	150	136	728
242	Ventura	Ventura	No	No	184	258	157	127	726
274	Ventura	Camarillo	No	No	188	253	155	128	724
278	Ventura	Thousand Oaks	No	No	180	255	160	126	721

Zone #	County	City	DAC?	LIC?	Employee Score	Renter Score	Road Tripper Score	Fleet Score	Combined Use Score
238	Ventura	Ventura	No	Yes	172	252	165	131	720
117	Santa Barbara	Santa Maria	No	Yes	173	252	145	145	715
283	Ventura	Ventura Unincorporated	No	No	190	235	150	140	715
216	Ventura	Camarillo	No	No	177	240	165	127	709
225	Ventura	Oxnard	No	No	181	250	156	119	706
118	Santa Barbara	Santa Maria	No	Yes	175	255	144	130	704
166	Santa Barbara	Santa Barbara	No	No	180	249	154	121	704
219	Ventura	Ventura Unincorporated	No	No	181	257	146	117	701

Zonal Mapping and Visualization

The zonal scores for each of the four use cases were tagged to the 288-zone geographic shapefile for the purposes of spatial querying, mapping, and online visualization. A single shapefile was then provided to each member of the project team. The zonal scoring shapefile was then used to develop a series of online and offline maps to visualize the EVSE scoring results. Below are links to the publicly accessible online maps visualizing recommended EVSE locations from the analysis. Screenshots of maps developed by Fehr & Peers to illustrate the highest scoring zones for review purposes are also provided below.

EVSE Siting Maps for Workplace Destinations

EVSE Siting Maps for Multi-unit Developments or High Renter Occupied Areas

EVSE Siting Maps for Travelers

EVSE Siting Maps for Fleet Operators

EVSE Siting Maps for the Combined Use Score

The map below shows the highest 25-scoring zones for workplace destinations in the Tri-County Region represented by green dots. As shown below and discussed previously, an inequitable number of high scoring zones (22 out of 25) were located in Ventura County due to its population and land use density, as magnitude of pass-through and parking trips of particular lengths were an important aspect of the scoring, even with the inclusion of additional metrics. Therefore, two alternative ways of looking at the results were developed to provide a more universally usable reference tool and to ensure an equitable distribution of EVSE which are discussed below.

The first alternative way of looking at the top scoring zones was looking at the top-10, top-20, and top-30 scoring zones for each county independently to provide each county with their own reference tool specific to their areas of concern. The map below shows the top-30 scoring zones for workplace destinations in San Luis Obispo County in orange, in Santa Barbara County in blue, and in Ventura County in yellow with the top-10 scores represented by the largest dots, the top-20 scores represented by the second-largest dots, and the top-30 scores represented by the smallest dots. As shown below, the distribution of the highest scoring zones is much more equitable under this alternative way of looking at the results with the dots spread out amongst the cities and for the most part concentrated along US 101.

The second alternative way of looking at the top scoring zones was looking at the top-five scoring zones in either low-income or disadvantaged communities for each county independently. The map below shows the top-5 scoring zones for workplace destinations in San Luis Obispo County in green, in Santa Barbara County in blue, and in Ventura County in brown. As shown below, the distribution of the highest scoring zones is concentrated in the City of San Luis Obispo, City of Santa Maria, and City of Santa Barbara but spread out across Ventura County, consistent with the locations of areas designated as LIAs and DACs. This set of maps were developed to help support a more equitable distribution of EVSE infrastructure for the Tri-Counties area by ensuring high scoring zones were identified in LIAs and DACs.

LIMITATIONS OF THE ANALYSIS

The primary limitation of the EV siting analysis was the aggregate level of the zonal geographic layer with only 288 zones designated for the entire Tri-County reason. This limitation was largely driven by travel behavior data costs and privacy issues which were determined to be an important metric due to the assumption that higher travel demand would be associated with a higher demand for EV charging. However, it was also driven by the intention of the analysis to provide a high-level analysis to feed into more granular siting and planning in other tasks performed by teaming partners with more specific knowledge of localized siting opportunities. The goal of this task was also to develop a framework for a tool that could be used by a variety of users and updated, expanded, and refined for future EV siting and planning.

Another limitation of the EV siting analysis was data quality issues associated with the existing relevant data sources. For instance, the framework originally included the number of existing fleet operators with six or more trucks, but this data was found to be of pool quality so was removed. The framework also originally included the location of existing L1, L2, and DCFCs but was removed over similar concerns largely due to the lack of up-to-date sources. A key concern of any data-driven model development is quality of the data so we included only data sources we reviewed and felt were accurate while ensuring the development of a flexible framework to which future datasets, zonal detail, and refined scoring/weighting criteria could be added.

As suggested above, the EV siting tool could be improved in the future by the inclusion of more disaggregate data, additional data sources with information that influences demand for EV charging, and the ability to refine scoring/weighting criteria in specific areas or area types such as central business districts or rural areas.

REFERENCES

Below are links to the data sources used to obtain existing data relevant to (future/needed) EVSE strategic siting opportunities for the Tri-County area.

California Electric Substation Data

Potential DCFC Sites Identified by PG&E

Southern California Edison's Distributed Energy Resource Interconnection Map

California SB 535 Disadvantaged Communities and AB 1550 Low-income Communities

StreetLight InSight® Metrics for SLOCAPCD ZEVRI Project: Our Methodology and Data Sources

StreetLight Data is a firm that develops software that process Big Data into comprehensive analytics about travel behavior, as described below. The *StreetLight InSight* tool has been used in hundreds of transportation and urban planning projects across the US and Canada.

Locational Data Sources and Probe Technologies

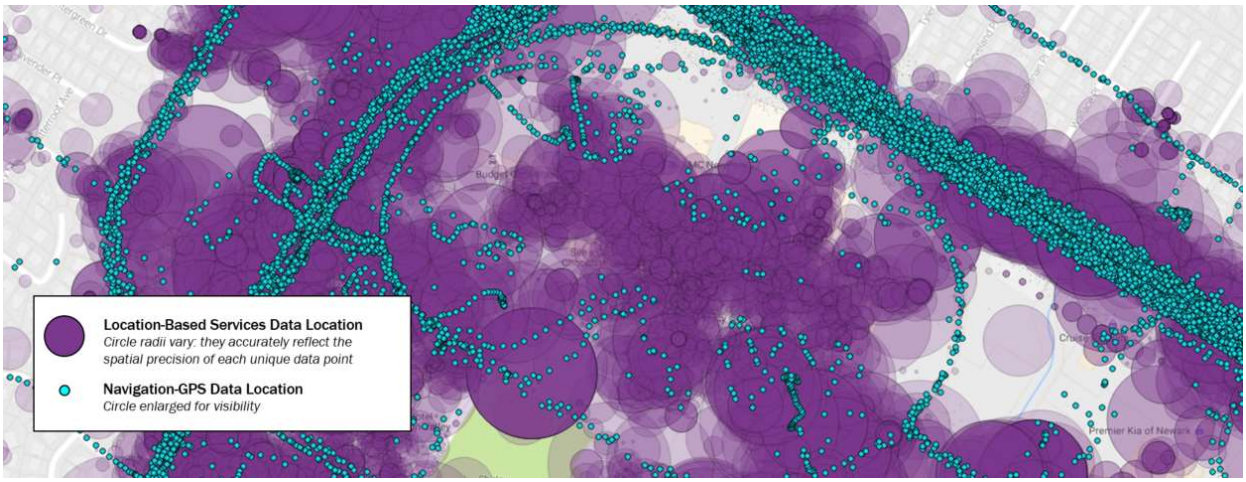
StreetLight Data's Metrics are currently derived from two types of locational "Big Data": navigation-GPS data and Location-Based Services (LBS) data. StreetLight has incorporated and evaluated several other types of mobile data supply in the past, including cellular tower and ad-network derived data.

As the mobile data supply landscape has evolved and matured over time, we have determined that a combination of navigation-GPS data and LBS data is best suited to meet the needs of transportation planners. As of September 2017, StreetLight's data repositories process analytics for over 62M devices, or ~23% of the adult US and Canadian population, and about 12% of commercial truck trips. We currently use one major navigation-GPS data supplier, INRIX, and one LBS data supplier, Cuebiq.

Our Navigation-GPS and LBS Data Sources

See Figure 1 below for a visualization of these data sources.

Figure 1 – Filtered visualization of a subset of unprocessed navigation-GPS and LBS data near a mall in Fremont, California.



LBS data can be processed into personal travel patterns at a comprehensive scale. Its fairly high spatial precision and regular ping rate allow for capturing trips as well as activity patterns (i.e.: home and work locations), trip purpose, and demographics.

Cuebiq, our LBS data supplier, provides pieces of software (called SDKs) to makers of mobile apps to facilitate Location-Based Services. These smartphone apps include: couponing, dating, weather, tourism, productivity, locating nearby services (i.e.: restaurant/bank/gas station), and many more apps, all of which utilize their users' location in the physical world as part of their value. The apps collect anonymous user locations when they are operating in the foreground. In addition, these apps may collect anonymous user locations when operating in the background. This "background" data collection occurs when the device is moving. LBS software collects data with WiFi proximity, a-GPS and several other technologies. As such, all the data that StreetLight uses has better than 20-meter spatial precision.

LBS data complements navigation-GPS data, which has a smaller sample size but does differentiate commercial truck trips from personal vehicle trips. This makes navigation-GPS data ideal for commercial travel pattern analyses. Navigation-GPS data is also suitable for very fine resolution personal vehicle travel analyses (e.g.: speed along a very short road segment) because of its extremely high spatial precision and very frequent ping rate.

INRIX, our navigation-GPS data supplier, provides data that comes from navigation-GPS devices and turn-by-turn navigation smartphone apps. For personal vehicles, if the vehicle is in INRIX's partner system and has a navigation console, INRIX (and thus StreetLight) will collect a "ping" every few seconds whenever the vehicle is on, even if the driver is not actively using the navigation system. This provides a very complete picture of vehicles' travel patterns and certainty that the trips are in vehicles. INRIX also provides us with data for medium-duty and heavy-duty commercial trucks. For commercial trucks, if the vehicle's on-board fleet management system is within INRIX's partner system, INRIX (and thus StreetLight) will collect a ping every one to three minutes whenever the vehicle is on, even if the driver is not actively using navigation.

Data Processing Methodology

Step 1 – ETL (Extract Transform and Load)

First, we pull data in bulk batches from our suppliers' secure cloud environments. They have been de-identified by suppliers before they are obtained by StreetLight. The ETL process not only pulls the data from one environment securely to another, but also eliminates corrupted or spurious points, reorganizes data, and indexes it for faster retrieval and more efficient storage.

Step 2 – Data Cleaning and Quality Assurance

After the ETL process, we run several automated, rigorous quality assurance tests to establish key parameters of the data. To give a few examples, we conduct tests to:

- Verify that the volume of data has not changed unexpectedly,
- Ensure the data is properly geolocated,
- Confirm the data shares similar patterns to the previous batch of data from that particular supplier.

In addition, StreetLight staff visually and manually reviews key statistics about each data set. If anomalies or flaws are found, the data are reviewed by StreetLight in detail.

Step 3 – Create Trips and Activities

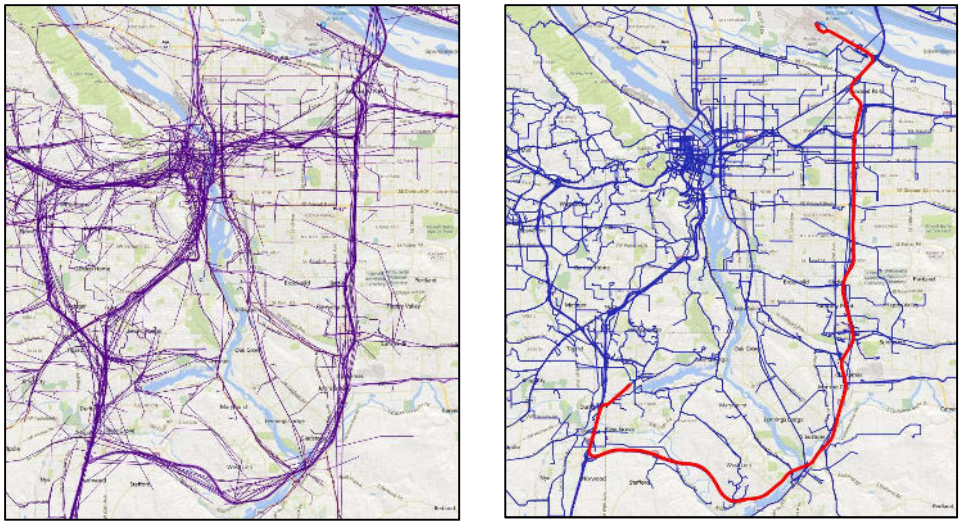
For any type of data supply, the next step is to group the data into key patterns. For example, for navigation-GPS data, a series of data points whose first time stamp is early in the morning, travels at reasonable speeds for a number of minutes, and then stands still for several minutes, could be grouped into a probable "trip." For LBS data, we follow a similar approach. However, since LBS data continues to ping while the device is at the destination, we see clusters of pings in close proximity at the beginnings and ends of trips.

Step 4 – Contextualize

Next, StreetLight integrates other "contextual" data sets to add richness and improve accuracy of the mobile data. These include road networks and information like speed limits and directionality, land use data, parcel data, and census data, and more.

For example, a "trip" from a navigation-GPS or LBS device is a series of connected dots. If the traveler turns a corner but the device is only pinging every 10 seconds, then that intersection might be "missed" when all the device's pings are connected to form a complete trip. StreetLight utilizes road network information including speed limits and directionality, to "lock" the trip to the road network. This "locking" process ensures that the complete route of the vehicle is represented, even though discrepancies in ping frequency may occur. Figure 2, below, illustrates this process.

Figure 2: "Unlocked" Trips becoming locked trips.



As another example, if a device that creates LBS data regularly pings on a block with residential land use, and those pings often occur overnight, there's a high probability that that the device's owner lives on that block/block group. This allows us to associate "home-based" trips and a "likely home location" to that device. In addition, we can append distribution of income and other demographics for residents of that census block to that device. That device can then "carry" that distribution everywhere else it goes. (Our demographic data sources for the US are the Census and American Community Surveys. In Canada, our source is Manifold Data.) This allows us to normalize the LBS sample to the population, and to add richness to analytics of travelers such as trip purpose and demographics.

Step 5 – More Quality Assurance

After patterns and context are established, additional automatic quality assurance tests are conducted to flag patterns that appear suspicious or unusual. For example, if a trip appears to start at 50 miles per hour in the middle of a four-lane highway, that start is flagged as "bad."

Step 6 – Normalize

Next, the data is normalized along several different parameters. As all data suppliers change their sample size regularly (usually increasing it), monthly normalization occurs. For LBS data, we perform a population-level normalization for each month of data. For each census block, StreetLight measures the number of devices in that sample that appear to live there, and makes a ratio to the total population that are reported to live there. A device from a census block that has 1,000 residents and 200 StreetLight devices will be scaled differently

everywhere in comparison to a device from a census block that has 1,000 residents and 500 StreetLight devices.

For navigation-GPS trips, StreetLight uses a set of public loop counters at certain highway locations to measure the change in trip activity each month. Then it compares this ratio to the ratio of trips at the location, and normalizes appropriately.

Step 7 – Store Clean Data in Secure Data Repository

After being made into patterns, checked for quality assurance, normalized, and contextualized, the data is stored in a proprietary format. This enables responses to queries via the *StreetLight InSight* platform in an extremely efficient manner.

Step 8 – Aggregate in Response to Queries

Whenever a user runs a Metric query via *StreetLight InSight*, our platform automatically pulls the relevant trips from the data repository and aggregates the results. Results always describe aggregate behavior, never the behavior of individuals.

Step 9 – Selection of Metrics for SLOCAD ZEVRI Project

StreetLight presented all possible travel behavioral Metrics to the ZEVRI team. Based on local context and expert knowledge of EV Charging behavior, the following were selected as relevant for the project at hand:

- Total auto trips passing through
- Total auto trips “parking”
- Total auto trips parking with 20+ miles, 40+ miles, and 100+ miles to go on next trip
- Medium-duty truck trips passing through of 40+ miles
- Medium-duty truck trips “parking” of 40+ miles
- Heavy-duty truck trips passing through of 40+ miles
- Heavy-duty truck trips “parking” of 40+ miles
- Number of personal trips that were home based, work based, or going elsewhere.

Each Metric was created for each Zone of Interest in the study area, as shown below.

Figure 3 – Screen Shot of Travel Behavioral Scores for each Zone

ZONE	P Auto Trips	P Auto T 20+	P Auto T 40+	P Auto T 100+	P Auto Park	P Auto P 20+	P Auto P 40+	HD Truck Trips	HD Truck Park	MD Truck Trips	MD Truck Park	HBW	HBO	NHB
100	41,033	27,985	25,194	19,778	8,615	2,269	1,618	49,738	603	27,203	1,509	1,482	3,455	3,679
101	81,312	43,095	31,224	21,873	50,994	4,904	2,381	60,815	1,254	41,403	1,966	7,343	19,276	24,375
102	74,555	18,639	11,183	5,964	22,969	1,728	437	52,916	195	29,607	303	4,801	10,520	7,649
103	22,457	2,493	876	247	5,624	504	123	473	4	749	188	1,327	3,082	1,220
104	64,086	52,422	25,250	14,996	15,174	1,642	640	21,078	304	28,465	761	3,338	6,874	4,962
105	17,711	12,309	4,428	1,541	10,097	1,110	337	447	201	1,755	173	1,969	4,937	3,191
106	8,095	7,229	3,465	1,506	16,313	2,799	672	49	22	932	207	2,626	6,933	6,754
107	17,211	3,305	1,050	344	5,303	561	133	32	85	671	248	1,135	2,588	1,580
108	122,651	72,119	33,116	17,784	10,041	654	205	21,946	293	31,815	234	3,785	2,942	3,314
109	85,020	55,943	26,696	15,049	18,619	1,452	664	21,170	61	29,519	158	4,487	7,410	6,721
110	160,042	64,177	31,528	16,644	70,565	5,674	1,708	21,679	81	31,137	396	12,984	26,180	31,401
111	197,675	61,872	32,616	16,605	20,147	1,326	163	21,729	163	30,940	375	5,984	6,790	7,374
112	72,265	8,310	2,023	795	36,718	2,991	598	370	104	1,295	187	7,784	14,210	14,724
113	55,097	18,623	6,942	2,424	34,424	1,899	691	812	28	3,335	111	7,780	15,250	11,394
114	15,166	2,563	1,380	485	3,233	297	148	372	12	1,040	58	475	1,267	1,487
115	17,774	3,093	1,351	409	5,515	510	146	210	485	771	430	1,428	2,973	1,114
116	126,735	61,720	34,218	16,982	61,488	4,394	2,167	22,461	461	30,060	1,109	10,822	27,793	22,874
117	114,297	60,349	37,832	18,745	64,333	3,756	1,231	38,311	618	31,796	1,068	13,510	31,523	19,300
118	127,457	57,356	38,110	18,864	66,912	4,526	1,162	39,212	1,186	33,050	1,320	10,572	28,438	27,902
119	92,455	60,558	36,797	17,936	19,544	1,460	538	35,629	493	30,983	658	4,085	10,769	4,691
120	18,375	2,334	588	147	10,035	789	214	3,053	5,084	3,355	2,820	2,910	4,044	3,081
121	22,613	12,075	3,256	588	2,487	126	49	4,611	508	5,196	625	632	614	1,241
122	2,093	1,333	825	295	2,888	211	73	654	985	556	619	777	1,557	554
123	9,264	8,458	2,159	343	11,542	1,059	270	1,224	345	2,213	285	2,862	3,440	5,240

Step 10 – Indexing of SLOCAD ZEVRI Metrics

One of the goals of the project was to enable easy and intuitive comparison of the strength of different locations for EV Charging that met the goals of the project. Because different Metrics were on different scales, it became different to compare them. To mitigate this, the team Indexed each Metric on a scale of 1-5 based on the quintile the score falls into. For example, the lowest monthly number of personal car trips over 20 miles was 102, and the highest 500,000. Thus, a zone with 102 such trips got a score of 1 (first quintile), and a zone with 251,000 got a score of ~3 (third quintile).

Appendix B-1: Metric Data for All 288 Zones

ZONE	County	DAC	LIC	PG&E Substation	SCE Substation	Multi-Family Units	Multi-Family Growth	Retail Employees	Office Employees	Office Growth	Other Employees	Fleet Operators	PG&E DC Capacity	SCE 15% Capacity	Existing L1 or L2 Chargers	Existing DC Fast Chargers	Personal Auto Trips	Personal Auto Trips 20+ Miles	Personal Auto Trips 40+ Miles	Personal Auto Trips 100+ Miles	Personal Auto Parking Events	Personal Auto Parking With 20+ Miles Left	Personal Auto Parking With 40+ Miles Left	Heavy Duty Truck Trips	Heavy Duty Truck Parking Events	Medium Duty Truck Trips	Medium Duty Truck Parking Events	Home-Based Work Trips	Home-Based Other Trips	Non-Home-Based Trips
100	San Luis Obispo	0	1	0	0	579	86	61	121	20	815	1	0	0	12	0	41,033	27,985	25,194	19,778	8,615	2,269	1,618	49,738	603	27,203	1,509	1,482	3,455	3,679
101	San Luis Obispo	0	1	1	0	1062	457	742	2286	151	2074	1	1	0	8	1	81,312	43,095	31,224	21,873	50,994	4,904	2,381	60,815	1,254	41,403	1,966	7,343	19,276	24,375
102	San Luis Obispo	0	0	1	0	236	0	244	199	30	511	0	1	0	0	0	74,555	18,639	11,183	5,964	22,969	1,728	437	52,916	195	29,607	303	4,801	10,520	7,649
103	San Luis Obispo	0	1	1	0	500	0	0	12	0	140	0	0	0	0	0	22,457	2,493	876	247	5,624	504	123	473	4	749	188	1,327	3,082	1,220
104	San Luis Obispo	0	0	1	0	948	183	363	2771	0	893	0	1	0	0	0	64,086	52,422	25,250	14,996	15,174	1,642	640	21,078	304	28,465	761	3,338	6,874	4,962
105	San Luis Obispo	0	1	0	0	243	224	109	112	89	410	0	0	0	0	0	17,711	12,309	4,428	1,541	10,097	1,110	337	447	201	1,755	173	1,969	4,937	3,191
106	San Luis Obispo	0	0	0	0	112	78	317	344	23	723	1	1	0	3	0	8,095	7,229	3,465	1,506	16,313	2,799	672	49	22	932	207	2,626	6,933	6,754
107	San Luis Obispo	0	1	0	0	512	0	113	198	18	484	0	0	0	0	0	17,211	3,305	1,050	344	5,303	561	133	32	85	671	248	1,135	2,588	1,580
108	San Luis Obispo	0	1	0	0	642	14	11	94	18	1068	0	0	0	8	0	122,651	72,119	33,116	17,784	10,041	654	205	21,946	293	31,815	234	3,785	2,942	3,314
109	San Luis Obispo	0	1	0	0	387	0	85	725	0	1175	0	0	0	0	0	85,020	55,943	26,696	15,049	18,619	1,452	664	21,170	61	29,519	158	4,487	7,410	6,721
110	San Luis Obispo	0	1	0	0	1397	14	1110	3101	253	2068	2	1	0	1	0	160,042	64,177	31,528	16,644	70,565	5,674	1,708	21,679	81	31,137	396	12,984	26,180	31,401
111	San Luis Obispo	0	1	0	0	235	205	225	1316	0	1433	3	0	0	2	0	197,675	61,872	32,616	16,605	20,147	1,326	163	21,729	163	30,940	375	5,984	6,790	7,374
112	San Luis Obispo	0	0	0	0	1193	76	224	981	68	695	2	1	0	4	0	72,265	8,310	2,023	795	36,718	2,991	598	370	104	1,295	187	7,784	14,210	14,724
113	San Luis Obispo	0	1	1	0	1148	0	176	120	0	571	0	0	0	0	0	55,097	18,623	6,942	2,424	34,424	1,899	691	812	28	3,335	111	7,780	15,250	11,394
114	San Luis Obispo	0	1	0	0	90	0	20	44	13	83	0	1	0	0	0	15,166	2,563	1,380	485	3,233	297	148	372	12	1,040	58	475	1,267	1,487
115	San Luis Obispo	0	1	0	0	573	197	39	133	0	321	0	0	0	0	0	17,774	3,093	1,351	409	5,515	510	146	210	485	771	430	1,428	2,973	1,114
116	San Luis Obispo	0	0	0	0	1638	1035	997	933	0	2155	1	1	0	3	0	126,735	61,720	34,218	16,982	61,488	4,394	2,167	22,461	461	30,060	1,109	10,822	27,793	22,874
117	Santa Barbara	0	1	1	0	2018	504	2016	1452	399	5386	10	1	0	0	0	114,297	60,349	37,832	18,745	64,333	3,756	1,231	38,311	618	31,796	1,068	13,510	31,523	19,300
118	Santa Barbara	0	1	0	0	1412	526	2041	969	287	2994	3	0	0	6	0	127,457	57,356	38,110	18,864	66,912	4,526	1,162	39,212	1,186	33,050	1,320	10,572	28,438	27,902
119	Santa Barbara	0	1	0	0	0	0	352	48	15	540	0	0	0	0	0	92,455	60,558	36,797	17,936	19,544	1,460	538	35,629	493	30,983	658	4,085	10,769	4,691
120	Santa Barbara	0	1	1	0	0	0	234	83	31	3507	11	0	0	0	0	18,375	2,334	588	147	10,035	789	214	3,053	5,084	3,355	2,820	2,910	4,044	3,081
121	Santa Barbara	0	1	0	0	0	0	50	0	0	1303	5	0	0	0	0	22,613	12,075	3,256	588	2,487	126	49	4,611	508	5,196	625	632	614	1,241
122	Santa Barbara	0	1	0	0	0	0	122	88	14	448	0	0	0	0	0	2,093	1,333	825	295	2,888	211	73	654	985	556	619	777	1,557	554
123	Santa Barbara	0	1	0	0	0	0	1	6293	2444	1474	0	0	0	0	0	9,264	8,458	2,159	343	11,542	1,059	270	1,224	345	2,213	285	2,862	3,440	5,240
124	Santa Barbara	0	1	1	0	4610	1225	1252	2510	871	2588	2	0	0	3	0	7,910	4,271	3,251	799	30,726	3,631	1,620	2,570	728	2,633	1,241	7,405	15,117	8,204
125	Santa Barbara	0	0	0	0	0	0	48	0	0	41	0	1	0	2	0	46,645	46,505	38,715	20,151	2,271	1,036	821	28,151	278	27,258	311	425	1,033	813
126	Santa Barbara	0	0	1	0	0	0	952	141	107	1262	1	1	0	2	12	40,053	37,249	30,841	15,460	21,030	6,116	3,913	28,243	772	24,210	2,295	4,500	8,160	8,370
127	Santa Barbara	0	0	0	0	469	124	1055	638	172	1506	0	0	0	6	0	11,877	4,858	2,387	653	35,428	8,026	4,047	331	204	638	420	7,192	14,136	14,065
128	Santa Barbara	0	0	0	1	0	0	0	0	0	7	0	0	0	0	0	42,698	42,399	38,087	17,549	621	605	364	30,435	1,467	29,301	727	11	146	464
129	Santa Barbara	0	0	0	1	0	0	0	0	0	366	0	0	0	0	0	43,500	43,152	38,454	17,705	1,048	442	179	32,088	177	29,917	194	31	299	718
130	Santa Barbara	0	1	0	0	0	0	0	0	0	6	0	0	0	0	0	33,686	31,699	18,797	9,634	888	228	78	897	2	2,259	16	61	219	607
131	Santa Barbara	0	1	0	0	0	0	10	11	4	181	0	0	0	0	0	251	197	175	99	687	37	12	17,518	675	3,685	963	161	238	288
132	Santa Barbara	0	1	0	0	0	0	8	22	0	113	0	1	0	0	0	148	144	138	94	92	25	23	16,339	1,183	3,549	257	20	44	28
133	Santa Barbara	0	0	0	1	0	0	92	0	0	98	0	0	0	0	0	13,386	1,446	830	147	2,218	151	75	29	16	253	154	264	818	1,133
134	Santa Barbara	0	0	0	1	0	0	8	110	47	63	0	0	0	0	0	35,312	32,840	19,280	9,993	3,013	564	316	884	28	2,076	82	259	1,513	1,241
135	Santa Barbara	0	1	0	0	0	0	0	0	0	711	0	0	0	4	0	26,307	2,289	1,605	658	2,625	121	96	31	4	314	41	643	1,194	790
136	Santa Barbara	0	0	0	1	0	0	1744	783	428	2716	0	0	1	0	1	110,817	49,646	43,551	20,390	74,134	4,829	3,266	31,806	1,956	30,223	1,695	17,125	30,840	26,169
137	Santa Barbara	0	0	0	0	197	2303	372	582	225	3813	0	0	1	0	0	211,683	59,483	50,592	22,862	25,999	1,860	1,221	35,471	450	33,207	1,591	6,812	7,878	11,310
138	Santa Barbara	0	0	0	1	748	115	488	159	68	1459	2	0	1	2	1	187,272	58,616	49,814	22,660	9,499	694	490	35,939	351	34,691	562	2,261	3,923	3,325
139	Santa Barbara	0	0	0	1	362	61	1222	66	14	1245	0	0	1	1	0	91,458	29,815	24,785	10,975	54,026	2,629	1,852	18,880	392	18,014	1,094	10,535	23,663	19,828
140	Santa Barbara	0	0	0	1	0	0	10	4	1	119	1	0	1	0	0	170,338	66,261	46,673	21,974	14,921	727	517	20,115	10	20,342	96	3,999	8,192	2,731
141	Santa Barbara	0	1	0	1	0	0	49	638	221	242	0	0	0	3	0	140,540	34,432	27,265	11,805	11,230	844	630	19,062	378	18,142	295	2,572	5,155	3,504
142	Santa Barbara	0	1	0	1	0	0	5	3455	1296	317	0	0	1	8	0	182,042	65,717	46,785	21,845	4,308	244	157	20,361	21	20,487	74	1,228	1,848	1,232
143	Santa Barbara	0	0	0	1	0	0	9	75	39	321	0	0	0	0	0	94,401	35,212	21,146	10,479	16,580	892	583	960	23	2,465	97	4,195	8,191	4,195
144	Santa Barbara	0	0	0	1	296	25	258	358	95	2192	0	0	1	2	0	255,535	54,173	40,119	17,376	60,259	3,116	1,780	20,111	96	20,220	357	16,390	27,297	16,571
145	Santa Barbara	0	0	0	1	485	25	2271	281	67	1425	0	0	1	4	5	383,851	97,882	77,154	35,314	97,102	5,404	3,326	38,786	361	39,825	764	14,468	38,161	44,473
146	Santa Barbara	0	0	0	1	406	21	6	21	8	147	0	0	1	0	0	89,061	6,323	3,830	891	10,816	430	294	283	5	920	29	2,888	5,927	2,001
147	Santa Barbara	0	0	0	1	0	0	181	739	244	1159	0	0	1	0	0	306,272	82,693	66,155	30,321	69,463	3,013	2,009	38,412	116	38,319	358	18,338	33,134	17,991
148	Santa Barbara	0	0	0	1	299	47	513	83	26	696	0	0	1	0	0	236,786	63,459	53,514	24,152	22,952	1,000	693	37,481	53	36,359	346	4,751	11,017	7,184
149	Santa Barbara	0	0	0	1	167	25	987	1706	871	2837	3	0	1	0	0	236,480	62,431	52,972	23,884	14,074	719	484	36,435	699	35,286	1,324	4,194	4,461	5,404
150	Santa Barbara	0	0	0	1	54	3	623	206	56	583	0	0	0	0	0	72,325	6,654	4,123	868	67,574	3,045	1,813	34	188	389	258	14,934	33,652	18,988
151	Santa Barbara	0	0	0	0	325	17	41	0	0	20	0	0	0	0	0	45,617	3,923	2,281	502	15,558	872	598	43	4	152	40	3,454	6,472	5,616
152	Santa Barbara	0	1	0	1	0	0	58	7	2	175	0	0	0	0	0	91,777	7,159	4,497	1,010	11,495	320	188	351	1	673	50	3,184	6,426	1,885
153	Santa Barbara	0	1	0	0	175	8	818	103	34	2005	0	0	0	10	0	87,937	11,959	7,563	1,671	30,396	3,005	2,100	130	6	666	170	4,955	10,821	14,620
154	Santa Barbara	0	1	0	0	645	80	471	76	17	261	0	0	0	0	0	399,461	117,442	91,077	38,348	11,429	410	229	40,025	11	41,755	31	3,429	4,640	3,360
155	Santa Barbara	0	1	0	1	194	18	118	215	53	915	0	0	1	0	0	359,817	114,782	89,594	37,781	9,733	556	287	40,011	12	41,555	60	2,462	3,679	3,601
156	Santa Barbara	0	1	0	1	1613	83	641	1062	229	1402	0	0	1	0	0	436,568	112,635	87,750	37,545	33,027	1,655	1,056	39,923	33	41,307	146	6,308	13,475	13,244
157	Santa Barbara	0	1	0	1	780	38	1460	2892	765	4239	0	0	1	12	1	174,535	12,916	8,029	1,745	107,907	6,597	4,172	246	31	823	336	23,092	37,336	47,479
158	Santa Barbara	0	1	0	1	603	69	3106	1784	627	3906	1	0	1	2	0	352,179	120,093	94,032	38,388	100,560	6,675	4,417	40,107	379	41,790	427	16,592	34,693	49,174
159	Santa Barbara	0	1	0	1	437	148	669	38	12	694	0	0	0	4	0	197,442	64,366	49,953	20,534	35,956	3,728	2,556	19,737	35	21,626	172	3,811	12,692	19,452
160	Santa Barbara	0	1	0	1	0	0	189	244	194	1874	2	0	0	6	0	354,407	135,383	104,904	40,048	27,016	2,786	1,748	40,625	277	42,905	368	3,620	9,212	14,156
161	Santa Barbara	0	1	0	0	76	4	67	3	1	136	0	0	0	0	0	313,960	140,340	108,944	40,501	11,924	904	533	41,095	43	43,247	28	1,526	5,449	4,948
162	Santa Barbara	0	0	0	0	0	0	274	19	19	658	0	0	1	4	0	299,801	141,506	110,027	40,473	33,989	3,527	2,594	41,112	177	43,239	129	6,016	11,318	16,689
163	Santa Barbara	0	1	0	1	155	8	441	55	22	1246	0	0	0	0	0	101,678	8,134	5,084	915	25,557	1,310	808	235	32	770	323	4,907	10,453	10,197
164	Santa Barbara	0	0	0	1	194	10	20	33	12	612	0	0	0	0	0	86,266	7,074	4,486	776	28,190	1,420	807	61	31	484	117	7,639	12,516	8,062
165	Santa Barbara	0	0	0	1	1195	61	49	22	4	126	0	0	0	0	0	393,386	106,214	83,004	36,585	7,737	394	224	39,528	7	40,994	23	1,927	3,760	2,050
166	Santa Barbara	0	0	0	1	1936	99	554	4659	1644	2395	0	0	1	0	0	462,969	104,631	81,946	36,112	56,404	3,141	1,778	39,330	142	40,457	549	11,788	23,746	20,869
167	Santa Barbara	0	0	0	1	1014	52	82	511	154	1173	0	0	0	0	0	156,874	9,412	5,647	1,255	46,556	1,679	1,039	84	17	600	177	10,894	20,671	14,991
168	Santa Barbara	0	0	0	1	182	9	27	105	32	476	0	0	0	4	0	100,075	6,205	3,703	701	35,592	1,460	1,022	14	3	449	104	8,827	17,547	9,218
169	Santa Barbara	0	0	0	1	92	8	10	84	30	311	0	0	0	0	0	149,682	6,885	4,041	898	23,610	995	671	49	4	501	64	4,887	11,711	7,036
170	Santa Barbara	0	0	0	1	0	0	2	8	3	146	0	0	0	0	0	106,718	10,031	6,403	1,174	23,939	1,133	770	223	3	753	72	6,104	11,467	6,368
171	Santa Barbara	0	0	0	1	0	0	0	8	3	505	0	0	0	0	0	76,804	6,528	3,840	614	16,617	858	572	12	4	389	63	2,858	7,827	5,932
172	Santa Barbara	0	0	0	1	0	0	515	277	76	590	0	0	0	2	0	45,899	3,993	2,341	459	45,120	2,900	1,854	17	8	351	108	10,603	17,191	17,326
173	Santa Barbara	0	0	0	1	102	17	297	113	18	611	0	0	1	3	0	229,478	86,972	66,778	22,030	36,102	2,752	1,823	22,237	16	23,552	117	6,932	12,816	16,354
174	Santa Barbara	0	0	0	1	0	0	56	27	0	97	0	0	0	0	0	129,706	11,025	7,004	1,038	9,840	477	266	42	2	688	18	2,322	4,044	3,474
175	Santa Barbara	0	0	0	1	0	0	121	4	1	245	0	0	0	0	0	78,672	9,913	6,215	1,023	30,089	1,568	865	140	4	623	39	6,078	6,499	17,512
176	Santa Barbara	0	0	0	1	0	0	0	3	1	51	0	0	1	0	0	261,387	152,127	118,408	41,561	5,601	472	304	41,384	18	43,487	32	1,115	2,408	2,078
177	Santa Barbara	0	0	0	0	0	0	155	11	4	263	0	0	1	2	0	224,625	158,810	123,319	42,005	9,706	1,025	611	41,241	299	43,623	207	2,485	3,582	3,640
178	Santa Barbara	0	0	0	1	0	0	13	0	0	164	0	0	0	0	0	205,122	161,636	125,330	42,460	12,781	1,241	764	41,584	50	43,894	93	2,722	6,237	3,834
179	Santa Barbara	0	0	0	1	0	0	58	0	0	447	0	0	1	0	0	16,629	7,450	4,756	1,081	4,130	481	247	1,117	48	1,344	170	1,243	1,718	1,165
180	Santa Barbara	0	1	0	1	132	7	432	60	25	4899	2	0	0	3	0	343,083	135,175	104,983	39,798	20,829	1,281	672	40,876	132	42,474	460	3,937	8,686	8,186
181	Santa Barbara	0	0	0	0	292	35	298	5	2	177	1	0	1	0	0	194,764	164,186	126,986	42,653	6,674	1,492	850	41,559	521	44,087	587	1,155	2,389	3,130
182	Santa Barbara	0	1	0	1	97	6	616	203	92	1394	0	0	1	6	0	188,268	167,182	128,964	42,737	17,478	3,463	2,003	42,304	397	44,387	717	2,552	6,362	8,582
183	Santa Barbara	0	0	0	0	0	0	319	1	2	251	0	0	0	0	0	7,530	2,741	1,303	301	4,047	458	205	160	32	387	85	1,137	1,388	1,522
184	Santa Barbara	0	0	0	1	0	0	53	8	2	541	0	0	1	0	0	111,329	87,839	66,686	21,153	5,684	862	456	22,576	217	23,184	294	1,404	2,683	1,597
185	Santa Barbara	0	0	0	1	0	0	94	112	86	1730	0	0	0	0	0	94,695	89,108	66,949	21,022	4,222	1,025	368	22,644	122	22,726	296	1,452	1,507	1,262
186	Santa Barbara	0	0	0	1	0	0	1	1	0	23	0	0	0	0	0	7,482	6,292	1,556	322	1,795	220	99	30	1	416	11	257	1,043	494
187	Santa Barbara	0	0	0	1	0	0	420	85	23	502	1	0	0	6	0	181,222	172,342	132,655	43,131	3,011	654	285	42,586	295	44,999	215	825	897	1,286
188	Ventura	0	1	0	0	731	20	94	151	271	870	0	0	0	0	0	38,447	8,843	1,576	154	7,447	1,269	158	291	3	880	69	1,951	3,954	1,542
189	Ventura	0	0	0	1	2253	1159	1526	3079	1117	7762	1	0	0	6	0	337,484	218,352	101,583	8,775	84,845	14,779	2,493	40,899	953	38,574	1,313	19,854	41,574	23,417
190	Ventura	0	1	0	0	197	25	1044	336	128	1320	0	0	0	1	2	337,465	213,953	99,215	8,437	34,204	3,165	747	39,002	342	38,155	436	4,549	15,768	13,887
191	Ventura	0	0	0	0	448	327	221	421	136	770	0	0	0	0	0	33,795	8,314	1,656	135	31,216	6,955	1,086	85	187	655	312	8,803	16,170	6,243
192	Ventura	0	1	0	1	1195	1577	1318	623	180	3586	0	0	0	0	0	121,074	28,937	9,686	605	47,714	4,782	1,038	700	236	1,792	407	8,684	21,137	17,893
193	Ventura	0	1	0	0	44	20	7	95	3	116	0	0	0	0	0	44,139	7,283	1,721	132	5,883	759	212	127	2	505	53	1,600	3,506	771
194	Ventura	0	0	0	1	1732	810	1903	2346	218	6392	3	0	0	5	1	393,830	205,973	94,913	8,270	111,274	13,686	2,956	36,492	1,933	35,305	1,803	20,141	47,959	43,174
195	Ventura	0	1	0	0	1339	68	173	390	112	2464	0	0	0	0	0	101,619	35,160	17,072	2,134	29,715	3,279	1,160	24,691	213	15,669	264	7,399	13,996	8,320
196	Ventura	0	1	0	1	361	244	149	380	121	2177	1	0	0	0	0	63,389	28,271	14,453	2,092	31,711	3,053	1,093	22,082	1,471	13,745	1,185	7,611	12,843	11,289
197	Ventura	0	0	0	0	361	15	103	333	139	1035	0	0	0	0	0	47,251	17,388	7,749	567	47,981	8,633	3,072	409	26	2,447	319	12,283	27,445	8,253
198	Ventura	0	0	0	1	219	939	109	227	79	307	0	0	0	0	0	24,467	9,395	4,453	416	17,388	4,148	1,589	528	21	2,733	74	3,391	8,972	5,025
199	Ventura	0	0	0	1	1497	228	113	241	43	1687	0	0	0	28	0	42,984	9,070	2,321	172	107,625	20,851	4,170	2	13	292	174	29,920	56,826	20,879
200	Ventura	0	0	0	1	1409	68	777	1587	0	3706	1	0	1	0	0	1,209,907	556,557	258,920	41,137	189,629	20,189	4,673	87,039	61	59,249	285	48,166	74,524	67,129
201	Ventura	0	0	0	1	1849	91	728	2933	524	7620	0	0	1	16	2	690,507	335,586	157,436	24,168	305,460	33,754	8,037	44,336	263	35,017	1,115	71,478	113,937	120,046
202	Ventura	0	0	0	1	19	3	1405	432	115	1171	0	0	1	3	1	1,011,996	515,106	250,975	40,480	145,760	13,740	2,838	86,629	167	58,305	347	21,427	57,138	67,195
203	Ventura	0	1	0	1	714	103	392	395	197	1190	1	0	1	0	0	1,004,366	494,148	247,074	40,175	70,265	4,480	946	86,235	153	58,473	147	14,334	28,879	27,122
204	Ventura	0	1	0	0	1395	89	82	720	117	877	0	0	1	3	0	1,025,555	507,650	256,389	41,022	50,984	5,245	1,416	90,466	116	63,022	269	10,911	23,249	16,825
205	Ventura	0	1	0	1	2169	104	2549	2482	444	8041	0	0	1	14	2	836,488	466,760	251,783	42,661	228,664	19,836	4,959	91,778	256	63,686	834	36,358	97,411	94,896
206	Ventura	0	1	0	0	220	22	32	32	3	111	0	0	1	0	0	222,738	84,418	27,397	2,227	12,812	1,499	344	3,462	58	7,073	44	3,075	6,931	2,806
207	Ventura	0	0	0	1	476	69	465	254	226	3716	0	0	1	1	0	471,909	165,640	56,629	4,719	144,099	15,358	4,065	8,804	179	14,770	604	30,549	69,312	44,238
208	Ventura	0	0	0	1	132	54	6	53	12	543	0	0	0	2	0	37,485	8,097	2,624	112	37,060	6,018	1,341	18	12	185	183	6,263	15,046	15,751
209	Ventura	0	0	0	1	140	256	1690	3214	1219	11546	4	0	1	7	0	547,557	343,318	214,095	41,067	123,412	17,604	6,161	86,244	1,759	56,029	2,012	30,853	47,884	44,675

Appendix B-1: Metric Data for All 288 Zones

ZONE	County	DAC	LIC	PG&E Substation	SCE Substation	Multi-Family Units	Multi-Family Growth	Retail Employees	Office Employees	Office Growth	Other Employees	Fleet Operators	PG&E DC Capacity	SCE 15% Capacity	Existing L1 or L2 Chargers	Existing DC Fast Chargers	Personal Auto Trips	Personal Auto Trips 20+ Miles	Personal Auto Trips 40+ Miles	Personal Auto Trips 100+ Miles	Personal Auto Parking Events	Personal Auto Parking With 20+ Miles Left	Personal Auto Parking With 40+ Miles Left	Heavy Duty Truck Trips	Heavy Duty Truck Parking Events	Medium Duty Truck Trips	Medium Duty Truck Parking Events	Home-Based Work Trips	Home-Based Other Trips	Non-Home-Based Trips
210	Ventura	0	1	0	0	2210	224	179	593	214	2516	0	0	0	4	0	462,556	322,864	205,375	41,167	26,562	3,366	1,466	84,808	117	56,030	700	5,897	11,554	9,111
211	Ventura	0	0	0	0	389	168	186	730	220	3695	3	0	0	0	0	82,413	33,377	17,389	2,802	33,565	5,183	2,450	32,180	754	20,406	1,145	8,223	15,104	10,237
212	Ventura	0	1	0	0	602	22	105	103	3	797	0	0	0	0	0	485,928	303,219	196,801	40,818	12,465	495	252	90,973	33	57,517	149	2,767	5,908	3,789
213	Ventura	0	1	0	0	1787	643	541	1454	338	4394	0	0	1	2	0	451,411	294,771	193,655	41,078	72,621	6,834	3,788	82,385	531	54,395	910	12,781	29,992	29,847
214	Ventura	0	0	0	1	8	0	756	552	243	2232	3	0	0	0	0	260,972	158,149	105,694	23,227	30,735	3,694	1,911	44,600	1,225	31,678	902	2,797	11,188	16,751
215	Ventura	0	0	0	0	1527	610	839	971	38	2560	0	0	1	0	0	484,922	278,345	186,210	41,703	54,365	5,117	2,606	79,992	516	54,216	720	14,244	26,802	13,319
216	Ventura	0	0	0	0	535	86	880	609	197	2488	0	0	1	3	2	285,914	159,826	103,787	22,587	63,891	16,846	10,343	49,472	1,032	32,233	797	7,603	23,192	33,159
217	Ventura	0	0	0	1	482	41	3	35	10	797	0	0	0	9	0	7,936	4,111	1,302	63	3,351	645	289	25	6	135	68	1,062	1,263	1,025
218	Ventura	0	0	0	1	16	5	307	252	118	1005	1	0	0	0	0	99,337	50,861	30,397	3,278	2,997	328	145	10,937	435	8,837	305	668	851	1,478
219	Ventura	0	0	0	0	1533	1421	170	396	724	3592	0	0	0	0	0	276,104	179,744	113,203	22,641	42,279	7,569	3,760	48,026	653	31,739	637	11,711	19,406	11,119
220	Ventura	0	1	0	0	109	49	70	2790	175	812	0	0	0	1	0	28,841	27,197	20,044	2,221	8,658	1,048	262	306	135	5,006	131	2,147	2,130	4,381
221	Ventura	1	1	0	0	879	510	169	119	187	5088	1	0	0	3	0	71,034	34,949	21,878	2,557	16,237	2,982	2,097	8,551	7,461	7,614	1,407	3,946	6,381	5,910
222	Ventura	1	1	0	0	0	0	168	1219	1805	5672	2	0	0	2	0	238,029	150,434	103,781	23,327	7,030	1,534	728	49,408	10,166	33,075	5,029	2,327	1,181	3,529
223	Ventura	0	1	0	1	2195	302	390	116	44	2660	1	0	0	0	0	94,126	32,379	20,708	2,824	29,074	2,118	1,294	18,174	1,225	10,775	718	6,454	14,915	7,705
224	Ventura	1	1	0	1	1112	513	698	1084	476	12838	4	0	0	2	0	74,123	13,194	6,671	815	21,620	1,448	724	5,055	8,969	3,170	3,947	5,535	7,610	8,475
225	Ventura	0	0	0	1	617	305	833	683	344	2631	0	0	0	2	0	252,443	131,775	92,899	22,467	58,836	4,135	1,930	35,542	1,547	30,135	1,006	10,061	26,182	22,593
226	Ventura	0	1	0	0	269	44	1342	113	95	1068	3	0	0	4	1	415,062	268,960	184,703	41,921	26,883	3,241	1,269	97,275	747	65,736	666	3,441	10,457	12,984
227	Ventura	0	1	0	0	607	75	795	249	131	1148	1	0	0	0	0	410,929	250,256	175,056	41,504	13,228	599	269	63,733	183	55,048	495	2,818	6,389	4,021
228	Ventura	0	0	0	1	159	18	29	38	3	383	0	0	1	0	0	28,751	3,824	1,754	230	5,159	304	126	757	4	478	62	1,274	2,982	908
229	Ventura	0	1	0	1	4525	165	889	1646	195	3826	0	0	1	0	0	44,519	9,304	5,120	445	48,811	3,272	1,565	1,075	1,354	1,050	649	10,006	21,916	16,889
230	Ventura	0	1	0	1	3194	436	334	224	61	1514	0	0	0	0	0	60,154	11,008	5,414	602	27,464	1,888	861	9,091	204	1,875	355	6,784	15,023	5,658
231	Ventura	0	1	0	0	1090	146	160	58	16	1238	0	0	1	0	0	74,423	9,898	5,061	595	19,269	1,106	527	1,824	492	1,576	225	3,796	10,135	5,338
232	Ventura	0	0	0	1	4111	653	406	341	71	2193	0	0	1	0	0	54,832	8,663	4,112	603	77,774	12,570	7,086	2,207	58	1,796	677	14,622	39,976	23,099
233	Ventura	1	0	0	0	527	694	53	335	319	1993	0	0	1	0	0	134,678	30,976	16,431	1,481	14,068	1,432	608	2,372	289	3,320	284	3,193	7,090	3,770
234	Ventura	0	1	0	0	264	44	44	47	4	271	0	0	1	0	0	56,224	7,253	3,486	394	6,175	425	213	1,288	130	1,100	139	1,352	3,304	1,525
235	Ventura	0	1	0	1	2754	522	269	1504	410	2639	1	0	0	0	0	72,962	10,361	5,180	730	33,479	1,931	716	4,129	145	2,836	278	6,461	15,936	11,082
236	Ventura	0	1	0	1	4143	1413	1075	284	152	2671	0	0	1	1	2	266,053	132,494	92,320	22,615	75,700	5,966	2,588	27,103	1,711	27,060	907	12,945	35,276	27,479
237	Ventura	0	0	0	0	3879	201	349	860	610	4846	2	0	1	8	10	406,622	251,292	180,134	44,322	97,359	13,090	4,991	70,811	3,013	64,034	3,080	19,180	46,830	31,350
238	Ventura	0	1	0	1	5151	1033	1532	7810	0	8313	0	0	1	36	1	371,195	230,141	168,523	43,059	99,033	10,118	4,009	55,669	913	52,567	2,504	18,222	42,287	38,524
239	Ventura	0	1	0	1	922	189	1740	3802	610	8882	7	0	1	2	0	409,379	233,755	169,483	45,850	76,937	7,296	2,575	49,898	2,747	52,670	2,349	13,156	26,697	37,084
240	Ventura	0	1	0	1	2295	1400	2042	1428	184	8365	0	0	1	19	2	410,709	238,211	174,551	45,589	135,161	13,457	4,943	56,357	1,338	58,023	1,870	29,600	57,173	48,388
241	Ventura	1	0	0	0	206	69	40	148	93	900	0	0	0	0	0	108,468	28,527	14,860	1,302	17,088	1,988	1,011	2,188	115	3,263	178	3,759	8,629	4,699
242	Ventura	0	0	0	0	1682	291	253	765	137	2159	0	0	1	4	0	296,995	202,254	151,467	44,252	54,076	9,490	4,986	46,391	378	49,261	976	8,868	23,199	22,009
243	Ventura	0	1	0	1	395	71	102	17	0	490	0	0	0	0	0	91,711	36,501	25,037	6,236	6,317	316	148	16,580	7	16,943	89	954	2,900	2,464
244	Ventura	0	1	0	1	943	40	44	27	9	429	0	0	0	0	0	60,024	35,594	26,110	6,363	4,878	636	298	27,671	61	21,930	1,606	1,078	2,454	1,346
245	Ventura	0	1	0	0	237	68	33	25	49	577	0	0	0	0	0	52,772	28,286	13,246	897	1,788	160	52	1,993	246	3,205	459	390	915	483
246	Ventura	0	1	0	0	876	115	182	444	230	2984	2	0	0	2	0	82,230	51,065	35,194	7,483	9,431	2,334	1,019	30,343	2,547	27,886	3,945	1,981	4,225	3,235
247	Ventura	0	1	0	1	1903	1004	480	465	263	2769	0	0	0	0	0	41,730	31,965	24,996	5,967	13,968	1,573	721	29,470	445	24,515	798	2,947	7,124	3,897
248	Ventura	0	1	0	0	1727	305	736	239	399	2288	0	0	1	0	0	43,561	31,582	24,743	5,881	13,221	1,260	378	27,380	378	22,212	512	2,988	7,100	3,133
249	Ventura	0	1	0	1	1119	351	179	290	235	2075	1	0	1	0	0	36,338	34,012	27,944	6,359	9,826	2,679	634	30,254	879	26,615	987	2,280	5,296	2,260
250	Ventura	0	1	0	0	70	23	0	1	1	111	0	0	0	0	0	33,113	30,431	24,802	5,927	1,030	230	49	29,234	21	24,738	67	152	501	377
251	Ventura	0	1	0	0	47	60	0	17	6	63	0	0	0	0	0	6,144	5,646	1,143	215	1,550	307	185	43	24	532	366	222	473	856
252	Ventura	0	1	0	0	468	142	219	99	0	1317	0	0	0	0	0	12,562	3,630	2,161	188	20,352	4,243	1,569	57	84	473	294	4,864	9,382	6,106
253	Ventura	0	1	0	0	807	304	135	92	213	805	0	0	0	0	0	36,059	33,499	28,162	6,346	6,095	2,802	867	30,884	1,244	27,098	1,591	1,012	3,066	2,017
254	Ventura	1	1	0	0	2246	676	658	1545	72	5282	4	0	1	17	0	247,954	197,123	146,789	43,888	41,267	7,194	3,129	44,865	695	48,068	1,040	7,015	17,538	16,713
255	Ventura	0	1	0	0	1934	830	416	812	79	2407	0	0	1	4	0	27,793	6,754	2,752	445	24,654	3,227	1,231	549	8	1,279	359	5,325	12,352	6,952
256	Ventura	0	1	0	0	57	43	19	69	71	417	0	0	1	0	0	205,332	188,700	140,242	43,736	2,685	860	351	43,593	782	46,923	317	403	859	1,420
257	Ventura	0	1	0	0	701	210	105	175	11	1750	0	0	1	4	0	46,495	24,921	10,740	883	19,538	3,680	1,362	1,042	41	2,709	183	4,885	8,558	6,096
258	Ventura	0	0	0	0	283	84	193	461	16	1964	1	0	0	12	0	47,905	19,976	8,144	671	29,538	5,093	2,960	867	119	2,408	399	6,410	11,874	11,254
259	San Luis Obispo	0	0	0	0	3	0	21	52	10	164	1	1	0	1	0	31,045	27,102	25,550	20,459	1,548	345	219	45,620	3,607	26,192	1,767	198	633	717
260	San Luis Obispo	0	0	0	0	22	0	0	0	0	0	0	1	0	0	0	69,903	39,355	26,423	17,825	1,190	99	39	22,506	4	28,674	2	156	646	388
261	San Luis Obispo	0	1	0	0	37	0	368	169	10	928	0	1	0	4	0	158,292	46,380	21,053	10,764	27,045	2,360	1,046	11,641	32	17,772	204	2,272	9,682	15,091
262	San Luis Obispo	0	1	0	0	16	352	207	838	0	541	2	1	0	5	0	181,411	64,945	33,561	17,415	9,889	495	72	21,744	58	30,828	189	2,492	3,293	4,104
263	San Luis Obispo	0	1	0	0	220	0	0	93	0	585	0	1	0	0	0	26,872	2,660	645	242	7,203	380	49	15	1	276	27	1,974	2,845	2,391
264	San Luis Obispo	0	0	1	0	655	0	294	732	0	685	2	0	0	0	0	56,696	5,726	1,247	454	14,907	753	148	207	13	772	99	4,099	7,334	3,473
265	San Luis Obispo	0	0	1	0	114	251	412	840	95	1245	0	0	0	3	2	58,701	5,459	1,350	470	18,527	1,121	155	97	157	769	250	3,891	6,392	8,245
266	San Luis Obispo	0	0	0	0	0	0	0	7	20	8	0	0	0	0	0	409	314	271	140	685	41	27	18,201	437	5,613	257	131	174	380
267	Santa Barbara	0	0	0	1	0	0	1	4	1	455	0	0	0	0	0	312,474	155,925	120,615	41,872	15,709	931	604	41,416	16	43,691	39	3,990	6,205	5,514
268	Santa Barbara	0	0	0	0	0	0	59	58	22	8392	0	0	0	24	0	40,231	6,517	4,828	2,092	28,615	1,317	1,008	106	119	475	258	10,101	9,700	8,813
269	Santa Barbara	0	0	0	0	0	0	80	563	334	1846	0	0	0	0	0	58,744	46,525	40,768	18,681	13,454	1,154	701	32,055	329	29,837	690	3,794	6,915	2,745
270	Santa Barbara	0	0	0	0	0	0	2	8	0	606	0	0	0	2	0	45,294	43,573	38,500	17,755	6,738	1,528	1,161	32,018	119	29,961	234	1,469	2,190	3,079
271	Santa Barbara	0	0	0	0	0	0	45	26	9	131	0	0	0	0	0	33,092	31,603	18,631	9,663	3,556	1,265	751	850	49	2,094	204	281	1,252	2,027
272	Ventura	0	0	0	0	972	376	350	279	130	1360	0	0	1	0	0	40,416	20,572	8,689	647	13,838	2,487	792	665	180	1,742	463	3,515	7,099	3,224
273	Ventura	0	1	0	0	183	137	103	160	61	701	0	0	1	0	0	41,520	25,576	11,086	789	9,454	1,642	687	821	109	2,288	245	1,702	4,831	2,912
274	Ventura	0	0	0	1	1510	48	327	1496	428	4822	0	0	0	0	0	454,219	312,048	200,765	40,880	68,822	8,052	3,337	83,760	900	55,815	985	20,784	30,970	16,999
275	Ventura	0	0	0	0	205	50	140	80	51	550	0	0	0	0	0	65,108	33,075	24,090	6,185	13,916	1,456	773	16,552	82	16,840	340	2,978	7,807	3,131
276	Ventura	0	0	0	0	500	74	521	689	201	2504	0	0	0	0	0	92,266	17,254	8,212	830	81,581	8,537	4,351	10,270	146	5,572	503	18,193	44,462	18,927
277	Ventura	0	0	0	0	80	35	9	23	7	147	0	0	0	0	0	27,555	26,783	19,950	2,177	5,388	2,691	1,019	197	7	5,003	73	571	2,047	2,769
278	Ventura	0	0	0	0	2757	339	399	548	150	3274	0	0	1	0	0	420,139	226,875	127,722	23,108	202,217	29,538	10,996	43,618	676	31,916	1,106	47,925	107,782	46,510
279	Ventura	0	0	0	0	1618	169	100	228	160	993	0	0	1	0	0	449,252	160,832	57,055	4,942	138,779	21,624	6,951	8,948	39	15,190	362	32,613	73,969	32,197
280	Ventura	0	0	0	0	1079	129	179	275	53	1779	0	0	1	0	0	351,657	114,992	38,682	3,165	83,110	14,630	4,129	4,388	150	9,401	582	19,863	44,215	18,949
281	Ventura	0	0	0	0	196	445	37	166	24	530	1	0	0	0	0	500,787	337,030	212,834	41,565	24,928	4,908	2,196	95,263	384	61,139	535	5,185	13,486	6,257
282	Ventura	0	0	0	0	2824	126	403	873	767	3485	0	0	0	0	0	136,873	38,461	12,182	821	123,564	23,248	6,893	847	98	2,556	658	31,138	66,354	26,072
283	Ventura	0	0	0	0	174	3	989	957	533	3884	4	0	0	0	0	418,345	204,989	87,016	7,949	75,926	12,922	4,575	34,882	1,421	34,075	1,558	12,756	30,370	32,800
284	Ventura	0	0	0	0	3	1	45	33	141	186	0	0	0	0	0	195,262	143,908	73,028	7,029	3,036	1,281	587	32,491	215	30,372	171	556	1,148	1,333
285	Ventura	0	0	0	0	2530	0	353	707	351	2656	2	0	0	0	0	321,208	231,270	105,677	9,315	57,648	15,814	2,733	42,217	654	40,676	893	15,046	30,553	11,991
286	Ventura	0	0	0	0	489	118	303	483	86	3256	0	0	0	0	0	355,591	206,243	97,076	8,534	57,389	10,897	2,492	39,077	133	38,230	336	14,175	31,392	11,880
287	Ventura	0	0	0	0	299	52	109	141	144	1233	4	0	0	0	0	51,216	32,932	24,891	5,890	2,958	464	224	27,286	396	22,216	389	828	1,328	802
288	Santa Barbara	0	0	0	0	0	0	10	0	0	58	0	0	0	0	0	11,155	2,242	1,305	234	4,080	486	277	2	1	162	12	783	1,791	1,506
289	Santa Barbara	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,778	599	334	54	5,636	259	119	4	3	37	15	795	2,333	2,508
290	Santa Barbara	0	0	0	0	0	0	12	10	3	116	0	0	0	1	0	32,714	2,519	1,309	294	20,424	802	522	8	4	234	54	3,370	10,273	6,760
291	Santa Barbara	0	0	0	1	0	0	181	72	21	353	0	0	0	2	0	146,639	7,772	4,106	880	19,267	828	578	106	54	940	100	4,162	9,210	5,896
292	Santa Barbara	0	0	0	0	0	0	6	72	29	402	1	0	0	0	0	79,990	8,319	5,199	1,200	4,405	266	133	11,325	5	4,279	116	1,317	2,269	815
293	Santa Barbara	0	0	0	0	0	0	22	0	0	32	0	0	0	0	0	12,693	939	520	51	1,281	52	41	4	2	129	12	350	725	205
294	Santa Barbara	0	0	0	0	0	0	30	0	0	342	0	0	0	1	0	44,606	43,134	38,406	17,619	2,754	801	347	31,286	1,534	29,519	952	482	705	1,570
295	Santa Barbara	0	0	0	0	0	0	97	1653	0	1882	0	0	0	6	1	21,409	10,662	4,667	2,098	13,622	4,669	2,099	324	52	575	300	3,719	5,912	3,991
296	Santa Barbara	0	0	0	0	0	0	285	35	14	330	0	0	0	3	0	40,157	33,049	20,038	9,437	7,893	1,472	587	975	112	2,428	151	1,705	3,291	2,897
297	Santa Barbara	0	0	0	0	0	0	0	0	0	33	0	0	0	0	0	35,066	31,805	19,006	9,643	1,042	288	114	988	5	2,360	34	173	302	567
298	Santa Barbara	0	0	1	0	0	0	37	3	1	179	0	0	0	0	0	67,607	43,404	32,384	14,130	7,367	1,380	523	15,945	16	16,172	70	1,400	2,991	2,976
299	Santa Barbara	0	0	0	0	0	0	307	15	5	502	1	0	0	0	0	21,571	17,688	13,180	5,975	5,973	1,756	895	998	12	2,799	66	1,242	2,443	2,288
300	Santa Barbara	0	0	1	0	0	0	3	4	4	211	0	0	0	0	0	32,895	20,033	14,474	6,711	7,102	2,103	582	996	6	2,788	117	2,102	2,876	2,123
301	Santa Barbara	0	0	0	0	0	0	3	4	2	175	0	0	0	0	0	33,695	30,999	18,836	9,502	3,702	945	294	983	7	2,336	154	926	1,851	926
302	Santa Barbara	0	0	0	0	0	0	20	3	2	265	0	0	0	0	0	49,000	47,481	39,690	20,433	2,471	521	332	45,470	59	31,198	298	319	761	1,389
303	Santa Barbara	0	0	1	0	0	0	0	6	0	62	0	0	0	0	0	58,226	51,006	41,457	20,903	1,096	298	170	28,586	63	27,500	95	216	252	628
304	Santa Barbara	0	0	0	0	0	0	0	5	3	163	0	0	0	0	0	43,175	42,355	37,908	17,270	759	287	141	29,251	200	28,727	270	219	289	252
305	Santa Barbara	0	0	0	0	0	0	19	19	0	70	1	0	0	0	0	50,869	46,291	38,762	17,499	1,009	235	142	31,919	184	30,291	259	155	430	423
306	Santa Barbara	0	0	0	0	0	0	25	0	0	120	0	0	0	0	0	49,518	44,814	35,356	17,975	1,916	447	272	28,706	197	26,576	230	228	810	878
307	Santa Barbara	0	0	1	0	0	0	14	22	8	135	0	0	0	0	0	15,610	6,993	2,217	515	2,868	589	291	1,487	12	1,538	314	708	1,646	513
308	Santa Barbara	0	0	0	0	0	0	67	71	14	377	0	0	0	0	0	17,034	7,904	2,402	494	6,467	1,042	364	1,687	20	2,110	130	2,011	3,402	1,054
309	Santa Barbara	0	0	0	0	0	0	357	19	5	1707	0	0	0	0	0	23,041	8,110	3,249	622	7,285	928	380	1,916	221	2,646	264	1,355	3,606	2,324
310	Santa Barbara	0	0	0	0	334	52	697	198	90	478	0	0	0	0	0	20,303	5,624	1,908	386	12,973	1,391	658	1,071	813	1,340	682	2,218	5,968	4,787
311	Santa Barbara	0	0	0	0	0	0	152	782	294	125	1	0	0	0	0	24,700	10,078	2,890	568	3,114	498	209	2,073	247	2,859	158	847	1,613	651
312	Santa Barbara	0	0	0	0	0	0	3	11	3	101	0	0	0	0	0	2,703	1,060	438	114	504	47	29	1,022	4	756	26	118	272	114
313	Santa Barbara	0	0	0	0	0	0	2	0	0	23	0	0	0	0	0	10,428	7,185	5,662	1,241	771	109	64	3,269	4	4,458	8	170	429	173
314	Santa Barbara	0	0	0	0	0	0	288	95	26	564	3	0	0	0	0	71,034	57,040	40,916	20,529	15,939	1,944	918	29,436	168	30,250	358	3,092	8,671	4,176
315	Santa Barbara	0	0	0	0	0	0	41	0	0	420	3	0	0	3	0	53,268	33,293	21,733	10,014	2,604	511	189	24,944	357	19,794	440	549	898	1,156
316	Santa Barbara	0	0	0	0	0	0	1	0	0	23	0	0	0	0	0	13,984	10,908	2,979	531	208	43	4	2,299	3	3,458	11	56	77	76
317	Santa Barbara	0	0	0	0	0	0	197	59	16	465	0	0	0	0	0	20,124	10,887	3,059	543	12,249	1,451	507	2,273	9	3,460	205	2,854	6,663	2,719
318	Santa Barbara	0	0	1	0	0	0	632	1332	1014	5563	5	0	0	1	0	59,105	12,767	3,487	650	32,879	2,585	585	4,040	1,441	7,209	2,296	8,844	11,475	12,560
319	Santa Barbara	0	0	0	0	0	0	1472	739	248	1017	1	0	0	9	0	107,378	56,266	38,656	19,221	52,012	5,073	1,171	32,675	1,439	33,650	1,198	8,686	23,145	20,129

Appendix B-1: Metric Data for All 288 Zones

ZONE	County	DAC	LIC	PG&E Substation	SCE Substation	Multi-Family Units	Multi-Family Growth	Retail Employees	Office Employees	Office Growth	Other Employees	Fleet Operators	PG&E DC Capacity	SCE 15% Capacity	Existing L1 or L2 Chargers	Existing DC Fast Chargers	Personal Auto Trips	Personal Auto Trips 20+ Miles	Personal Auto Trips 40+ Miles	Personal Auto Trips 100+ Miles	Personal Auto Parking Events	Personal Auto Parking With 20+ Miles Left	Personal Auto Parking With 40+ Miles Left	Heavy Duty Truck Trips	Heavy Duty Truck Parking Events	Medium Duty Truck Trips	Medium Duty Truck Parking Events	Home-Based Work Trips	Home-Based Other Trips	Non-Home-Based Trips
320	Santa Barbara	0	0	0	0	0	0	225	131	77	900	0	0	0	0	0	85,867	57,187	40,615	19,921	21,505	1,989	605	28,411	58	30,524	482	5,935	11,785	3,785
321	Santa Barbara	0	0	0	0	0	0	274	1827	609	1357	3	0	0	0	0	119,740	61,906	38,916	19,039	14,383	1,836	509	24,524	10,044	31,247	2,465	3,912	5,466	5,005
322	Santa Barbara	0	0	0	0	0	0	151	154	54	648	1	0	0	0	0	98,258	60,232	37,240	18,178	14,804	1,595	430	35,152	631	31,307	364	4,071	7,920	2,798
323	San Luis Obispo	0	0	0	0	0	0	13	11	0	185	0	0	0	0	0	110,486	68,501	38,118	18,230	3,200	320	137	39,243	298	35,764	249	550	1,520	1,130
324	San Luis Obispo	0	0	1	0	74	0	73	67	0	397	0	0	0	0	0	102,790	67,019	37,518	17,988	6,269	799	368	23,960	136	31,211	678	1,561	3,022	1,686
325	San Luis Obispo	0	0	1	0	0	0	89	81	0	240	0	0	0	0	0	9,671	1,954	735	242	4,578	324	94	940	42	1,154	593	1,053	2,495	1,030
326	San Luis Obispo	0	0	0	0	321	555	253	207	228	503	0	0	0	0	0	7,973	2,695	1,076	287	19,415	2,070	690	627	141	727	862	4,524	10,193	4,698
327	San Luis Obispo	0	0	0	0	1	0	100	4	4	224	0	0	0	0	0	2,756	1,519	871	309	9,205	1,817	440	701	28	1,085	183	1,620	4,566	3,019
328	San Luis Obispo	0	0	0	0	1	209	135	39	24	460	1	0	0	0	0	22,609	8,139	3,030	1,017	13,801	1,837	551	3,297	104	2,500	378	2,677	7,453	3,671
329	San Luis Obispo	0	0	0	0	25	0	31	57	10	175	0	0	0	0	0	7,375	2,198	1,003	347	2,952	98	42	666	1,191	1,588	321	567	1,051	1,334
330	San Luis Obispo	0	0	1	0	1	0	7	7	5	62	0	0	0	0	0	15,665	2,788	1,081	392	870	104	49	336	0	896	33	177	431	262
331	San Luis Obispo	0	0	0	0	1	0	16	17	1	672	0	0	0	0	0	100,252	59,249	27,269	15,539	8,387	685	187	21,651	175	30,604	425	1,703	3,648	3,036
332	San Luis Obispo	0	0	0	0	0	11	4	51	17	258	0	0	0	0	0	9,951	7,941	6,707	4,747	3,279	792	374	49,962	2,207	24,098	1,390	561	1,453	1,266
333	San Luis Obispo	0	0	0	0	1	0	4	6	1	42	0	0	0	0	0	428	101	31	6	92	27	8	5	7	223	6	13	45	35
334	San Luis Obispo	0	0	0	0	87	74	22	42	18	140	0	0	0	2	0	62,287	54,501	26,098	15,073	1,293	261	60	21,293	49	29,639	101	257	645	390
335	San Luis Obispo	0	0	1	0	159	246	52	233	0	823	1	0	0	1	0	53,673	9,339	3,918	1,234	11,521	744	319	2,173	55	2,909	166	2,673	5,242	3,595
336	San Luis Obispo	0	0	0	0	950	0	262	752	0	1012	0	0	0	0	0	75,827	34,274	18,502	9,327	30,556	1,445	662	11,729	178	16,102	445	6,814	15,125	8,586
337	San Luis Obispo	0	0	0	0	79	123	226	348	105	357	0	0	0	0	0	108,488	65,527	35,910	17,467	11,016	720	220	22,366	91	30,373	171	2,247	4,957	3,812
338	San Luis Obispo	0	0	0	0	0	0	0	88	2	67	0	0	0	1	0	18,601	2,511	744	298	3,712	314	127	79	12	721	139	694	1,904	1,114
339	San Luis Obispo	0	0	0	0	3	0	116	252	10	395	1	0	0	0	0	156,656	65,169	35,561	17,859	19,947	1,563	467	23,011	127	31,536	381	4,528	9,116	6,303
340	San Luis Obispo	0	0	0	0	127	0	134	241	0	682	0	0	0	0	0	103,173	38,484	19,603	8,976	28,128	2,037	531	11,837	31	16,448	402	5,457	12,714	9,957
341	San Luis Obispo	0	0	0	0	20	0	711	311	83	635	0	0	0	4	0	113,493	63,897	34,956	17,251	48,304	2,735	1,015	22,023	549	30,596	461	6,376	20,819	21,061
342	San Luis Obispo	0	0	0	0	674	0	178	435	64	1686	0	0	0	14	1	109,608	57,654	32,334	16,441	39,113	5,329	2,665	22,740	69	30,884	376	4,772	15,880	18,461
343	San Luis Obispo	0	0	0	0	146	0	29	226	59	1825	0	0	0	2	0	126,717	56,896	32,820	16,600	26,432	2,756	892	22,535	65	30,293	321	4,811	8,828	12,793
344	San Luis Obispo	0	0	0	0	66	0	385	1119	0	1759	2	0	0	0	0	59,515	6,011	1,607	655	17,265	1,642	300	352	352	2,018	538	5,318	5,266	6,682
345	San Luis Obispo	0	0	0	0	77	464	1416	1264	195	1679	1	0	0	13	2	136,016	58,623	33,052	16,866	57,619	5,313	924	21,505	1,096	30,821	960	7,779	19,302	30,538
346	San Luis Obispo	0	0	0	0	671	0	93	123	0	408	0	0	0	0	0	37,012	5,885	1,629	555	26,332	1,439	379	243	84	1,153	78	5,714	12,745	7,873
347	San Luis Obispo	0	0	0	0	182	423	302	139	0	1742	0	0	0	0	0	28,765	10,097	7,853	4,890	19,799	2,067	733	51,189	770	24,385	651	4,138	9,662	5,999
348	San Luis Obispo	0	0	0	0	8	28	3	22	92	211	0	0	0	0	0	6,983	6,920	6,606	4,714	345	33	16	51,878	104	23,877	112	102	180	62
349	San Luis Obispo	0	0	1	0	107	111	19	40	1	209	0	0	0	0	0	13,486	13,081	12,771	10,600	1,673	470	324	19,235	79	13,091	579	313	853	507
350	San Luis Obispo	0	0	0	0	0	0	3	45	0	381	0	0	0	0	0	9,922	8,205	7,541	5,011	1,361	197	82	53,577	410	25,830	614	279	578	502
351	San Luis Obispo	0	0	0	0	97	0	47	124	10	746	1	0	0	17	0	16,122	10,931	3,676	1,451	11,696	3,013	1,524	309	86	2,108	730	1,041	3,357	7,298
352	San Luis Obispo	0	0	0	0	0	123	45	19	27	379	0	0	0	0	0	28,681	26,817	25,641	20,736	2,818	460	279	48,307	233	27,593	534	597	1,409	812
353	San Luis Obispo	0	0	0	0	9	0	14	40	5	289	0	0	0	6	0	8,233	4,989	2,659	1,103	7,665	1,789	564	43	6	803	118	767	3,549	3,350
354	San Luis Obispo	0	0	0	0	1	0	9	4	0	89	0	0	0	1	0	22,272	17,484	6,526	2,806	3,205	417	102	545	13	2,479	110	462	1,228	1,516
355	San Luis Obispo	0	0	0	0	97	19	65	145	0	254	0	0	0	3	0	8,909	8,455	3,421	1,051	5,194	1,092	188	174	18	1,328	115	914	2,317	1,963
356	San Luis Obispo	0	0	0	0	0	0	0	2490	24	324	0	0	0	0	0	23,396	12,306	5,100	1,778	3,466	814	134	553	24	1,863	113	1,061	880	1,525
357	San Luis Obispo	0	0	0	0	1	0	0	40	24	51	0	0	0	0	0	49,821	18,783	7,025	2,591	1,313	77	11	1,031	4	3,235	36	252	657	404
358	San Luis Obispo	0	0	1	0	660	0	439	704	0	1464	1	0	0	2	0	15,772	9,842	4,101	1,372	26,389	3,987	1,087	322	340	1,660	395	4,117	10,292	12,007
359	San Luis Obispo	0	0	0	0	60	227	5	9	0	118	0	0	0	0	0	32,032	14,286	5,542	1,954	1,885	187	34	563	3	2,148	15	217	667	1,001
360	San Luis Obispo	0	0	0	0	0	312	8	109	8	82	1	0	0	0	0	17,848	3,516	1,107	357	2,830	182	43	170	3	1,009	56	642	1,443	744
361	San Luis Obispo	0	0	0	0	46	312	24	95	1	164	0	0	0	0	0	3,920	725	196	59	6,017	502	169	14	2	248	104	1,336	3,406	1,276
362	San Luis Obispo	0	1	0	0	250	0	25	58	18	152	0	0	0	0	0	10,428	2,263	563	177	4,348	487	157	30	5	437	103	874	2,509	970
363	San Luis Obispo	0	0	0	0	14	119	331	190	316	1158	2	0	0	6	0	26,247	19,764	18,137	13,675	12,485	2,348	1,217	56,092	1,229	29,114	3,830	2,272	5,094	5,119
364	San Luis Obispo	0	0	0	0	8	0	29	16	44	220	0	0	0	14	0	97,178	53,448	35,178	23,420	8,483	1,136	339	61,462	26	44,062	214	1,306	3,427	3,749
365	San Luis Obispo	0	0	0	0	222	730	237	167	0	1127	0	0	0	4	0	52,024	30,330	16,752	10,405	18,003	2,684	756	11,829	352	16,679	548	3,601	7,831	6,571
366	San Luis Obispo	0	0	0	0	265	240	99	369	90	1510	0	0	0	4	0	71,996	45,141	25,847	16,199	11,106	1,173	299	21,695	399	27,844	1,213	2,199	4,442	4,465
367	San Luis Obispo	0	0	0	0	0	0	24	68	37	424	0	0	0	0	0	81,848	43,052	27,255	17,515	4,952	1,167	572	22,692	323	28,814	971	891	1,535	2,526
368	San Luis Obispo	0	0	0	0	0	0	1	20	20	216	0	0	0	5	0	11,174	7,766	6,950	4,771	6,047	954	491	52,022	163	24,573	376	1,040	3,144	1,862
369	San Luis Obispo	0	0	0	0	0	0	37	113	1	181	0	0	0	0	0	6,845	1,800	568	192	4,051	744	148	136	25	1,037	197	774	2,123	1,155
370	San Luis Obispo	0	0	0	0	40	8	0	6	0	78	0	0	0	0	0	61,957	53,903	25,960	15,118	3,628	485	123	21,253	42	29,272	98	853	1,988	787
371	San Luis Obispo	0	0	1	0	335	0	36	356	0	682	1	0	0	0	0	18,494	6,473	2,293	1,239	7,567	1,130	266	974	84	1,374	399	1,975	3,481	2,111
372	San Luis Obispo	0	0	1	0	15	0	0	24	9	103	0	0	0	0	0	6,518	3,383	1,017	528	5,753	688	168	321	16	638	94	1,197	3,222	1,335
373	San Luis Obispo	0	0	0	0	0	0	3	25	23	61	0	0	0	0	0	36,085	25,440	13,893	8,696	5,862	810	227	11,453	12	15,307	217	1,014	3,048	1,794
374	San Luis Obispo	0	0	0	0	0	0	66	15	2	112	0	0	0	0	0	66,242	46,502	25,834	16,097	2,898	348	43	21,805	10	28,165	320	661	852	1,385
375	San Luis Obispo	0	0	0	0	502	160	321	761	296	1046	0	0	0	1	8	72,765	50,717	26,050	15,790	17,992	2,396	577	21,611	343	28,726	987	3,760	8,240	6,009
376	San Luis Obispo	0	0	0	0	384	0	246	258	11	391	2	0	0	0	0	72,366	52,104	25,400	15,197	8,198	569	251	21,576	120	29,145	259	1,394	3,501	3,296
377	San Luis Obispo	0	0	0	0	0	0	4	16	7	18	0	0	0	0	0	4,249	1,517	327	85	1,133	137	27	67	1	627	87	249	678	207
401	San Luis Obispo	0	1	0	0	6247	2012	0	150	0	1652	0	0	0	4	0	37,257	15,238	5,961	2,161	10,193	608	275	632	13	2,140	159	3,231	3,466	3,496
402	San Luis Obispo	0	1	0	0	1592	0	24	39	0	1166	0	0	0	0	0	49,134	11,792	4,520	1,867	10,050	936	228	358	4	1,471	84	3,246	4,000	2,804
403	Santa Barbara	0	1	1	0	1260	0	10	0	0	50	1	0	0	0	0	11,910	905	214	71	2,263	64	13	3,565	5	1,716	39	575	1,281	407
404	Santa Barbara	0	1	0	0	4421	190	482	58	13	148	0	0	0	4	0	11,754	2,092	1,293	470	24,264	1,952	1,648	9	55	213	157	6,624	12,496	5,144
405	Santa Barbara	0	1	0	1	1211	45	49	22	6	120	0	0	0	0	0	116,974	9,241	5,732	1,287	3,961	173	99	448	8	931	22	994	2,107	860
406	Santa Barbara	0	1	0	0	1259	64	14	3	1	92	0	0	0	4	0	107,388	9,880	6,121	1,289	6,269	385	187	344	2	685	25	1,975	3,210	1,085
407	Santa Barbara	0	1	0	1	1056	63	183	8	2	81	0	0	1	0	0	18,527	4,984	3,094	797	7,517	1,366	785	524	31	781	72	1,030	3,135	3,360
408	Ventura	1	1	0	0	1072	258	212	1509	529	7647	3	0	0	2	0	242,315	143,208	101,288	23,262	47,450	6,958	3,126	55,368	3,333	34,601	2,626	11,388	18,885	17,177
409	Ventura	0	0	0	0	1235	213	620	233	70	2169	0	0	0	14	0	201,249	137,856	69,632	6,842	49,078	10,593	2,757	32,439	217	30,031	351	14,772	22,919	11,435
410	Ventura	0	0	0	1	1450	37	662	1427	0	4228	0	0	1	0	0	653,299	376,954	228,001	41,811	77,061	15,098	4,010	90,073	521	60,423	422	23,735	27,819	25,507

Appendix B-2: Indexed Scale for Each Metric for All 288 Zones

ZONE	County	DAC	LIC	PG&E Substation	SCE Substation	Multi-Family Units	Multi-Family Growth	Retail Employees	Office Employees	Office Growth	Other Employees	Fleet Operators	PG&E DC Capacity	SCE 15% Capacity	Existing L1 or L2 Chargers	Existing DC Fast Chargers	Personal Auto Trips	Personal Auto Trips 20+ Miles	Personal Auto Trips 40+ Miles	Personal Auto Trips 100+ Miles	Personal Auto Parking Events	Personal Auto Parking With 20+ Miles Left	Personal Auto Parking With 40+ Miles Left	Heavy Duty Truck Trips	Heavy Duty Truck Parking Events	Medium Duty Truck Trips	Medium Duty Truck Parking Events	Home-Based Work Trips	Home-Based Other Trips	Non-Home-Based Trips
100	San Luis Obispo	0	1	0	0	3	3	2	3	2	3	1	0	0	5	1	2	3	3	4	2	4	4	5	5	5	4	5	2	3
101	San Luis Obispo	0	1	1	0	4	5	5	5	4	4	1	1	0	4	1	3	3	4	5	5	5	5	5	5	5	5	4	5	5
102	San Luis Obispo	0	0	1	0	2	1	4	3	3	3	1	1	0	1	1	3	3	3	3	4	3	3	5	4	4	3	4	4	4
103	San Luis Obispo	0	1	1	0	3	1	1	1	1	1	1	0	0	1	1	2	1	1	1	2	2	1	2	1	1	2	2	2	1
104	San Luis Obispo	0	0	1	0	4	4	4	5	1	3	1	1	0	1	1	3	4	3	4	3	3	3	4	4	5	3	3	3	3
105	San Luis Obispo	0	1	0	0	2	4	3	3	3	2	1	0	0	1	1	1	2	2	2	3	3	2	2	4	2	2	2	3	3
106	San Luis Obispo	0	0	0	0	2	3	4	4	2	3	1	1	0	2	1	1	2	2	2	3	4	3	1	2	1	2	3	3	4
107	San Luis Obispo	0	1	0	0	3	1	3	3	2	3	1	0	0	1	1	1	1	1	1	2	2	1	1	3	1	3	2	2	2
108	San Luis Obispo	0	1	0	0	4	1	1	3	2	4	1	0	0	4	1	4	4	4	4	3	2	2	3	4	4	3	3	2	3
109	San Luis Obispo	0	1	0	0	3	1	2	4	1	4	1	0	0	1	1	3	4	3	4	3	3	3	3	3	4	2	4	3	4
110	San Luis Obispo	0	1	0	0	4	1	5	5	5	4	2	1	0	1	1	4	4	4	4	5	5	4	3	3	4	4	5	5	5
111	San Luis Obispo	0	1	0	0	2	4	3	5	1	4	3	0	0	1	1	4	4	4	4	4	3	1	3	3	4	3	4	3	4
112	San Luis Obispo	0	0	0	0	4	3	3	5	3	3	2	1	0	3	1	3	2	1	2	4	4	3	2	3	2	2	4	4	4
113	San Luis Obispo	0	1	1	0	4	1	3	3	1	3	1	0	0	1	1	3	3	2	3	4	4	3	2	2	3	2	4	4	4
114	San Luis Obispo	0	1	0	0	1	1	1	2	2	1	1	1	0	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	2
115	San Luis Obispo	0	1	0	0	3	4	2	3	1	2	1	0	0	1	1	1	1	1	1	2	2	1	1	4	1	4	2	2	1
116	San Luis Obispo	0	0	0	0	5	5	5	5	1	4	1	1	0	2	1	4	4	4	4	5	5	5	3	4	4	5	5	5	5
117	Santa Barbara	0	1	1	0	5	5	5	5	5	5	5	1	0	1	1	4	4	4	4	4	4	4	5	4	5	5	5	5	5
118	Santa Barbara	0	1	0	0	5	5	5	5	5	5	3	0	0	4	1	4	4	4	4	5	5	4	4	5	4	5	5	5	5
119	Santa Barbara	0	1	0	0	1	1	4	2	2	3	1	0	0	1	1	3	4	4	4	4	3	3	4	4	4	4	4	4	3
120	Santa Barbara	0	1	1	0	1	1	4	2	3	5	5	0	0	1	1	1	1	1	1	3	2	2	3	5	3	5	3	3	3
121	Santa Barbara	0	1	0	0	1	1	2	1	1	4	5	0	0	1	1	2	2	2	2	1	1	1	3	4	3	4	1	1	2
122	Santa Barbara	0	1	0	0	1	1	3	2	2	2	1	0	0	1	1	1	1	1	1	1	1	1	2	5	1	4	1	2	1
123	Santa Barbara	0	1	0	0	1	1	1	5	5	4	1	0	0	1	1	1	2	1	1	3	3	2	2	4	2	3	3	2	3
124	Santa Barbara	0	1	1	0	5	5	5	5	5	5	2	0	0	2	1	1	1	2	2	4	4	4	3	5	2	5	4	4	4
125	Santa Barbara	0	0	0	0	1	1	2	1	1	1	1	1	0	1	1	2	4	4	4	1	3	4	4	4	4	3	1	1	1
126	Santa Barbara	0	0	1	0	1	1	5	3	4	4	1	1	0	1	5	2	3	4	4	4	5	5	4	5	3	5	4	3	4
127	Santa Barbara	0	0	0	0	3	3	5	4	4	4	1	0	0	4	1	1	1	1	2	4	5	5	1	4	1	4	4	4	4
128	Santa Barbara	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	2	3	4	4	1	2	2	4	5	4	4	1	1	1
129	Santa Barbara	0	0	0	1	1	1	1	1	1	2	1	0	0	1	1	2	3	4	4	1	1	2	4	3	4	2	1	1	1
130	Santa Barbara	0	1	0	0	1	1	1	1	1	1	1	1	0	1	1	2	3	3	3	1	1	1	2	1	2	1	1	1	1
131	Santa Barbara	0	1	0	0	1	1	1	1	1	2	1	0	0	1	1	1	1	1	1	1	1	1	3	5	3	5	1	1	1
132	Santa Barbara	0	1	0	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	3	5	3	3	1	1	1
133	Santa Barbara	0	0	0	1	1	1	2	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1
134	Santa Barbara	0	0	0	1	1	1	1	3	3	1	1	0	0	1	1	2	3	3	3	1	2	2	2	2	2	2	1	1	2
135	Santa Barbara	0	1	0	0	1	1	1	1	1	3	1	0	0	3	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1
136	Santa Barbara	0	0	0	1	1	1	5	5	5	5	1	0	1	1	1	4	4	4	4	5	5	5	4	5	4	5	5	5	5
137	Santa Barbara	0	0	0	0	2	5	4	4	4	5	1	0	1	1	1	4	4	4	5	4	4	4	4	4	5	5	4	3	4
138	Santa Barbara	0	0	0	1	4	3	4	3	3	4	2	0	1	1	1	4	4	4	5	3	2	3	4	4	5	4	3	3	3
139	Santa Barbara	0	0	0	1	3	2	5	2	2	4	1	0	1	1	1	3	3	3	4	5	3	4	3	5	5	5	5	5	5
140	Santa Barbara	0	0	0	1	1	1	1	1	1	1	1	0	1	1	1	4	4	4	5	3	2	3	3	1	3	1	4	3	2
141	Santa Barbara	0	1	0	1	1	1	2	1	4	4	2	1	0	0	2	1	4	3	3	4	3	2	3	3	4	3	3	3	3
142	Santa Barbara	0	1	0	1	1	1	1	5	5	2	1	0	1	4	1	4	4	4	4	2	2	1	1	3	2	3	1	2	2
143	Santa Barbara	0	0	0	1	1	1	1	2	3	2	1	0	0	1	1	4	3	3	3	3	2	3	2	2	2	2	4	3	3
144	Santa Barbara	0	0	0	1	3	1	4	4	4	5	1	0	1	1	1	5	4	4	4	5	4	4	3	3	3	3	5	5	5
145	Santa Barbara	0	0	0	1	3	1	5	4	3	4	1	0	1	3	5	5	4	5	5	5	5	5	4	4	5	5	5	5	5
146	Santa Barbara	0	0	0	1	3	1	1	1	1	1	1	0	1	1	1	3	1	2	2	3	1	2	1	1	1	1	3	3	2
147	Santa Barbara	0	0	0	1	1	1	3	4	5	4	1	0	1	1	1	5	4	4	5	5	4	5	4	3	5	3	5	5	5
148	Santa Barbara	0	0	0	1	3	2	4	2	3	3	1	0	1	1	1	5	4	4	5	4	3	3	4	2	5	3	4	4	4
149	Santa Barbara	0	0	0	1	2	1	5	5	5	5	3	0	1	1	1	5	4	4	5	3	2	3	4	5	5	5	4	3	3
150	Santa Barbara	0	0	0	1	1	1	5	3	3	3	1	0	0	1	1	3	1	2	2	5	4	4	1	3	1	3	5	5	5
151	Santa Barbara	0	0	0	0	3	1	2	1	1	1	1	0	0	1	1	2	1	1	1	3	2	3	1	1	1	1	3	3	3
152	Santa Barbara	0	1	0	1	1	1	2	1	1	2	1	0	0	1	1	3	2	2	2	3	1	2	2	1	1	1	3	3	2
153	Santa Barbara	0	1	0	0	2	1	5	3	3	4	1	0	0	5	1	3	2	2	2	4	4	5	1	1	1	2	4	4	4
154	Santa Barbara	0	1	0	0	4	3	4	2	2	2	1	0	0	1	1	5	5	5	5	3	1	2	5	1	5	1	3	3	3
155	Santa Barbara	0	1	0	1	2	1	3	3	3	3	1	0	1	1	1	5	5	5	5	3	2	2	5	1	5	1	3	3	3
156	Santa Barbara	0	1	0	1	5	3	5	5	5	4	1	0	1	1	1	5	5	5	5	4	3	4	4	2	5	2	4	4	4
157	Santa Barbara	0	1	0	1	4	2	5	5	5	5	1	0	1	5	1	4	2	3	2	5	5	5	1	2	1	3	5	5	5
158	Santa Barbara	0	1	0	1	3	2	5	5	5	5	1	0	1	1	1	5	5	5	5	5	5	5	4	5	4	5	5	5	5
159	Santa Barbara	0	1	0	1	3	3	5	2	2	3	1	0	0	3	1	4	4	4	4	4	4	4	5	3	2	3	2	3	4
160	Santa Barbara	0	1	0	1	1	1	3	4	4	4	2	0	0	4	1	5	5	5	5	4	4	4	4	5	4	5	3	3	4
161	Santa Barbara	0	1	0	0	1	1	2	1	1	1	1	0	0	1	1	5	5	5	5	3	2	3	5	2	5	1	2	3	3
162	Santa Barbara	0	0	0	0	1	1	4	1	2	3	1	0	1	3	1	5	5	5	5	4	4	5	5	3	5	2	4	4	5
163	Santa Barbara	0	1	0	1	2	1	4	2	2	4	1	0	0	1	1	4	2	2	2	4	3	4	1	2	1	3	4	4	4
164	Santa Barbara	0	0	0	1	2	1	1	2	2	3	1	0	0	1	1	3	2	2	2	4	3	4	1	2	1	2	4	4	4
165	Santa Barbara	0	0	0	1	4	2	2	1	1	1	1	0	0	1	1	5	5	5	5	2	1	2	4	1	5	1	2	3	2
166	Santa Barbara	0	0	0	1	5	3	5	5	5	5	1	0	1	1	1	5	4	5	5	5	4	4	4	3	5	4	5	5	5
167	Santa Barbara	0	0	0	1	4	2	2	4	4	4	1	0	0	1	1	4	2	2	2	5	3	4	1	2	1	2	5	5	4
168	Santa Barbara	0	0	0	1	2	1	2	3	3	3	1	0	0	3	1	4	1	2	2	4	3	4	1	1	1	2	5	5	4
169	Santa Barbara	0	0	0	1	2	1	1	2	3	2	1	0	0	1	1	4	1	2	2	4	3	3	1	1	1	1	4	4	4
170	Santa Barbara	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	4	2	2	2	4	3	4	1	1	1	1	4	4	4
171	Santa Barbara	0	0	0	1	1	1	1	1	1	3	1	0	0	1	1	3	1	2	2	3	2	3	1	1	1	1	3	3	3
172	Santa Barbara	0	0	0	1	1	1	4	4	3	3	1	0	0	1	1	2	1	1	1	5	4	5	1	1	1	2	5	4	5
173	Santa Barbara	0	0	0	1	2	1	4	3	2	3	1	0	1	2	1	5	4	4	5	4	4	5	3	2	3	2	4	4	5
174	Santa Barbara	0	0	0	1	1	1	2	2	1	1	1	0	0	1	1	4	2	2	2	3	2	2	1	1	1	1	3	3	3
175	Santa Barbara	0	0	0	1	1	1	3	1	1	2	1	0	0	1	1	3	2	2	2	4	3	4	1	1	1	1	4	3	5
176	Santa Barbara	0	0	0	1	1	1	1	1	1	1	1	0	1	1	1	5	5	5	5	2	2	2	5	2	5	1	2	2	2
177	Santa Barbara	0	0	0	0	1	1	3	1	1	2	1	0	1	1	1	5	5	5	5	3	3	3	5	4	5	2	3	2	3
178	Santa Barbara	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	4	5	5	5	3	3	4	5	2	5	1	3	3	3
179	Santa Barbara	0	0	0	1	1	1	2	1	1	2	1	0	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	1
180	Santa Barbara	0	1	0	1	2	1	4	2	3	5	2	0	0	2	1	5	5	5	5	4	3	3	5	3	5	4	3	4	4
181	Santa Barbara	0	0	0	0	3	2	4	1	1	2	1	0	1	1	1	4	5	5	5	2	3	4	5	5	5	4	2	2	3
182	Santa Barbara	0	1	0	1	2	1	5	3	4	4	1	0	1	1	1	4	5	5	5	3	4	5	5	4	5	4	3	3	4
183	Santa Barbara	0	0	0	0	1	1	4	1	1	2	1	0	0	1	1	1	1	1	1	2	2	1	2	2	1	1	2	2	2
184	Santa Barbara	0	0	0	1	1	1	2	1	1	3	1	0	1	1	1	4	4	4	4	2	2	3	4	4	3	3	2	2	2
185	Santa Barbara	0	0	0	1	1	1	2	3	3	4	1	0	0	1	1	4	4	5	4	2	3	2	4	3	3	3	2	1	2
186	Santa Barbara	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
187	Santa Barbara	0	0	0	1	1	1	4	2	2	3	1	0	0	4	1	4	5	5	5	1	2	2	5	4	5	3	2	1	2
188	Ventura	0	1	0	0	4	1	2	3	5	3	1	0	0	1	1	2	2	1	1	2	3	1	1	1	1	1	2	3	2
189	Ventura	0	0	0	1	5	5	5	5	5	5	1	0	0	4	1	5	5	5	3	5	5	5	5	5	5	5	5	5	5
190	Ventura	0	1	0	0	2	1	5	4	4	4	1	0	0	1	2	5	5	5	3	4	4	3	4	4	5	4	4	4	4
191	Ventura	0	0	0	0	3	4	3	4	4	4	1	0	0	1	1	2	2	1	1	4	5	4	1	3	1	3	5	4	4
192	Ventura	0	1	0	1	4	5	5	4	4	5	1	0	0	1	1	4	3	3	2	4	5	4	2	4	2	4	5	5	5
193	Ventura	0	1	0	0	1	1	1	3	1	1	1	0	0	1	1	2	2	1	1	2	2	2	1	1	1	1	2	2	1
194	Ventura	0	0	0	1	5	5	5	5	4	5	3	0	0	4	1	5	5	5	3	5	5	5	4	5	5	5	5	5	5
195	Ventura	0	1	0	0	4	2	3	4	4	5	1	0	0	1	1	4	3	3	3	4	4	4	4	4	4	3	3	4	4
196	Ventura	0	1	0	1	3	4	3	4	4	4	1	0	0	1	1	3	3	3	3	4	4	4	3	5	3	5	4	4	4
197	Ventura	0	0	0	0	3	1	3	4	4	3	1	0	0	1	1	2	2	2	1	5	5	5	2	2	2	3	5	5	4
198	Ventura	0	0	0	1	2	5	3	3	3	2	1	0	0	1	1	2	2	2	1	3	5	4	2	2	2	1	3	4	3
199	Ventura	0	0	0	1	5	4	3	3	3	4	1	0	0	5	1	2	2	1	1	5	5	5	1	2	1	2	5	5	5
200	Ventura	0	0	0	1	5	2	5	5	1	5	1	0	1	1	1	5	5	5	5	5	5	5	5	2	5	3	5	5	5
201	Ventura	0	0	0	1	5	3	5	5	5	5	1	0	1	5	2	5	5	5	5	5	5	5	5	4	5	5	5	5	5
202	Ventura	0	0	0	1	1	1	5	4	4	4	1	0	1	2	1	5	5	5	5	5	5	5	5	3	5	3	5	5	5
203	Ventura	0	1	0	1	4	3	4	4	4	4	1	0	1	1	1	5	5	5	5	5	5	4	5	3	5	2	5	5	5
204	Ventura	0	1	0	0	4	3	2	4	4	3	1	0	1	2	1	5	5	5	5	5	5	4	5	3	5	3	5	5	5
205	Ventura	0	1	0	1	5	3	5	5	5	5	1	0	1	5	2	5	5	5	5	5	5	5	5	4	5	5	5	5	5
206	Ventura	0	1	0	0	2	1	2	2	1	1	1	0	1	1	1	4	4	4	3	3	3	2	3	2	3	1	3	3	2
207	Ventura	0	0	0	1	3	2	4	4	4	5	1	0	1	1	1	5	5	4	3	5	5	5	3	3	3	4	5	5	5
208	Ventura	0	0	0	1	2	2	1	2	2	3	1	0	0	1	1	2	2	1	1	4	5	4	1	2	1	2	4	4	5
209	Ventura	0	0	0	1	2	4	5	5	5	5	4	0	1	4	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Appendix B-2: Indexed Scale for Each Metric for All 288 Zones

ZONE	County	DAC	LIC	PG&E Substation	SCE Substation	Multi-Family Units	Multi-Family Growth	Retail Employees	Office Employees	Office Growth	Other Employees	Fleet Operators	PG&E DC Capacity	SCE 15% Capacity	Existing L1 or L2 Chargers	Existing DC Fast Chargers	Personal Auto Trips	Personal Auto Trips 20+ Miles	Personal Auto Trips 40+ Miles	Personal Auto Trips 100+ Miles	Personal Auto Parking Events	Personal Auto Parking With 20+ Miles Left	Personal Auto Parking With 40+ Miles Left	Heavy Duty Truck Trips	Heavy Duty Truck Parking Events	Medium Duty Truck Trips	Medium Duty Truck Parking Events	Home-Based Work Trips	Home-Based Other Trips	Non-Home-Based Trips
210	Ventura	0	1	0	0	5	4	3	4	4	5	1	0	0	3	1	5	5	5	5	4	4	4	5	3	5	4	4	4	4
211	Ventura	0	0	0	0	3	4	3	4	4	5	3	0	0	1	1	3	3	3	3	4	5	5	4	5	3	5	4	4	4
212	Ventura	0	1	0	0	3	1	3	3	1	3	1	0	0	1	1	5	5	5	5	3	2	2	5	2	5	2	3	3	3
213	Ventura	0	1	0	0	5	5	5	5	5	5	1	0	1	1	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5
214	Ventura	0	0	0	1	1	1	5	4	5	5	3	0	0	1	1	5	5	5	5	4	4	5	5	5	4	5	3	4	5
215	Ventura	0	0	0	0	5	5	5	5	3	5	1	0	1	1	1	5	5	5	5	5	5	5	4	5	4	5	4	5	4
216	Ventura	0	0	0	0	3	3	5	4	4	5	1	0	1	2	2	5	5	5	5	5	5	5	5	4	5	4	5	4	5
217	Ventura	0	0	0	1	3	2	1	2	2	3	1	0	0	5	1	1	1	1	1	1	2	2	1	1	1	1	2	1	1
218	Ventura	0	0	0	1	1	1	4	4	4	3	1	0	0	1	1	4	4	4	3	1	1	1	3	4	3	3	1	1	2
219	Ventura	0	0	0	0	5	5	3	4	5	5	1	0	0	1	1	5	5	5	5	5	5	5	5	4	4	5	5	4	4
220	Ventura	0	1	0	0	2	2	2	5	4	3	1	0	0	1	1	2	3	3	3	2	3	2	1	3	3	2	3	2	3
221	Ventura	1	1	0	0	4	5	3	3	4	5	1	0	0	2	1	3	3	3	3	3	4	5	3	5	3	5	3	3	3
222	Ventura	1	1	0	0	1	1	3	5	5	5	2	0	0	1	1	5	5	5	5	2	3	3	5	5	5	5	3	1	3
223	Ventura	0	1	0	1	5	4	4	3	3	5	1	0	0	1	1	4	3	3	3	4	4	4	3	5	3	4	4	4	4
224	Ventura	1	1	0	1	4	5	5	5	5	5	4	0	0	1	1	3	2	2	2	4	3	3	3	5	2	5	4	3	4
225	Ventura	0	0	0	1	4	4	5	4	5	5	1	0	0	1	1	5	5	5	5	5	4	5	4	5	4	5	5	5	5
226	Ventura	0	1	0	0	3	2	5	3	4	4	3	0	0	3	1	5	5	5	5	4	4	4	5	5	5	4	3	4	4
227	Ventura	0	1	0	0	3	3	5	4	4	4	1	0	0	1	1	5	5	5	5	3	2	2	5	3	5	4	3	3	3
228	Ventura	0	0	0	1	2	1	2	2	1	2	1	0	1	1	1	2	1	1	1	2	1	1	2	1	1	1	2	2	1
229	Ventura	0	1	0	1	5	3	5	5	4	5	1	0	1	1	1	2	2	2	1	5	4	4	2	5	2	4	5	5	5
230	Ventura	0	1	0	1	5	5	4	3	3	4	1	0	0	1	1	3	2	2	2	4	4	4	3	4	2	3	4	4	3
231	Ventura	0	1	0	0	4	3	3	2	2	4	1	0	1	1	1	3	2	2	2	4	3	3	2	4	2	3	3	4	3
232	Ventura	0	0	0	1	5	5	4	4	3	5	1	0	1	1	1	3	2	2	2	5	5	5	2	2	2	4	5	5	5
233	Ventura	1	0	0	0	3	5	2	4	5	4	1	0	1	1	1	4	3	3	2	3	3	3	3	4	3	3	3	3	3
234	Ventura	0	1	0	0	3	2	2	2	1	2	1	0	1	1	1	3	2	2	1	2	1	2	2	3	2	2	2	2	2
235	Ventura	0	1	0	1	5	5	4	5	5	5	1	0	0	1	1	3	2	2	2	4	4	3	3	3	2	3	4	4	4
236	Ventura	0	1	0	1	5	5	5	4	4	5	1	0	1	1	2	5	5	5	5	5	5	5	4	5	4	5	5	5	5
237	Ventura	0	0	0	0	5	4	4	5	5	5	2	0	1	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
238	Ventura	0	1	0	1	5	5	5	5	5	5	1	0	1	5	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5
239	Ventura	0	1	0	1	4	4	5	5	5	5	1	0	1	1	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5
240	Ventura	0	1	0	1	5	5	5	5	4	5	1	0	1	5	2	5	5	5	5	5	5	5	5	5	5	5	5	5	5
241	Ventura	1	0	0	0	2	2	2	3	4	3	1	0	0	1	1	4	3	3	2	3	4	4	2	3	3	2	3	4	3
242	Ventura	0	0	0	0	5	4	4	5	4	4	1	0	1	3	1	5	5	5	5	5	5	5	5	4	5	5	5	5	5
243	Ventura	0	1	0	1	3	2	3	1	1	3	1	0	0	1	1	3	3	3	3	2	1	1	3	1	3	1	2	2	2
244	Ventura	0	1	0	1	4	2	2	2	2	2	1	0	0	1	1	3	3	3	3	2	2	2	4	3	3	5	2	2	2
245	Ventura	0	1	0	0	2	2	2	2	3	3	1	0	0	1	1	3	3	3	2	1	1	1	2	4	2	4	1	1	1
246	Ventura	0	1	0	0	4	3	3	4	5	5	2	0	0	1	1	3	4	4	3	2	4	4	4	5	4	5	2	3	3
247	Ventura	0	1	0	1	5	5	4	4	5	5	1	0	0	1	1	2	3	3	3	3	3	3	4	4	3	5	3	3	3
248	Ventura	0	1	0	0	5	4	5	3	5	5	1	0	1	1	1	2	3	3	3	3	3	3	4	4	3	4	3	3	3
249	Ventura	0	1	0	1	4	4	3	4	5	4	1	0	1	1	1	2	3	4	3	3	4	5	4	5	3	5	3	3	2
250	Ventura	0	1	0	0	1	1	1	1	1	1	1	0	0	1	1	2	3	3	3	1	1	1	4	2	3	1	1	1	1
251	Ventura	0	1	0	0	1	2	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1
252	Ventura	0	1	0	0	3	3	3	3	1	4	1	0	0	1	1	1	1	1	1	4	5	4	1	3	1	3	4	4	4
253	Ventura	0	1	0	0	4	4	3	2	4	3	1	0	0	1	1	2	3	4	3	2	4	4	4	5	4	5	2	2	2
254	Ventura	1	1	0	0	5	5	5	5	3	5	4	0	1	5	1	5	5	5	5	5	5	5	5	5	5	5	4	5	5
255	Ventura	0	1	0	0	5	5	4	5	3	5	1	0	1	3	1	2	1	1	1	4	4	4	2	1	2	3	4	4	4
256	Ventura	0	1	0	0	1	2	1	2	3	2	1	0	1	1	1	4	5	5	5	1	2	2	5	5	5	3	1	1	2
257	Ventura	0	1	0	0	4	4	3	3	2	4	1	0	1	3	1	2	3	3	2	4	4	4	2	2	2	2	4	4	4
258	Ventura	0	0	0	0	3	3	3	4	2	4	1	0	0	5	1	2	3	3	2	4	5	5	2	3	2	4	4	4	4
259	San Luis Obispo	0	0	0	0	1	1	1	2	2	1	1	1	0	1	1	2	3	3	4	1	1	2	5	5	3	5	1	1	1
260	San Luis Obispo	0	0	0	0	1	1	1	1	1	1	1	1	0	1	1	3	3	3	4	1	1	1	4	1	4	1	1	1	1
261	San Luis Obispo	0	1	0	0	1	1	4	3	2	3	1	1	0	3	1	4	4	3	3	4	4	4	3	2	3	2	3	4	4
262	San Luis Obispo	0	1	0	0	1	4	3	5	1	3	2	1	0	4	1	4	4	4	4	3	2	1	3	2	4	2	3	2	3
263	San Luis Obispo	0	1	0	0	2	1	1	2	1	3	1	1	0	1	1	2	1	1	1	2	1	1	1	1	1	1	2	2	2
264	San Luis Obispo	0	1	0	0	4	1	4	4	1	3	2	0	0	1	1	3	1	1	1	3	2	1	1	2	1	2	4	3	3
265	San Luis Obispo	0	0	1	0	2	4	4	5	4	4	1	0	0	2	2	3	1	1	1	3	3	1	1	3	1	3	3	3	4
266	San Luis Obispo	0	0	0	0	1	1	1	1	2	1	1	0	0	1	1	1	1	1	1	1	1	3	4	3	3	1	1	1	1
267	Santa Barbara	0	0	0	1	1	1	1	1	1	2	1	0	0	1	1	5	5	5	5	3	2	3	5	2	5	1	3	3	3
268	Santa Barbara	0	0	0	0	1	1	2	2	2	5	1	0	0	5	1	2	1	2	3	4	3	4	1	3	1	3	5	4	4
269	Santa Barbara	0	0	0	0	1	1	2	4	5	4	1	0	0	1	1	3	4	4	4	3	3	3	4	4	4	4	3	3	2
270	Santa Barbara	0	0	0	0	1	1	1	1	3	1	1	0	0	1	1	2	4	4	4	2	3	3	4	4	3	4	3	2	2
271	Santa Barbara	0	0	0	0	1	1	2	2	2	1	1	0	0	1	1	2	3	3	3	1	3	3	2	2	2	2	1	1	2
272	Ventura	0	0	0	0	4	5	4	4	4	4	1	0	1	1	1	2	3	3	2	3	4	4	2	3	2	4	3	3	3
273	Ventura	0	1	0	0	2	3	3	3	3	3	1	0	1	1	1	2	3	3	2	2	3	3	2	3	2	3	2	3	2
274	Ventura	0	0	0	1	5	2	4	5	5	5	1	0	0	1	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5
275	Ventura	0	0	0	0	2	2	3	2	3	3	1	0	0	1	1	3	3	3	3	3	3	4	3	3	3	3	3	3	3
276	Ventura	0	0	0	0	3	3	5	4	4	5	1	0	0	1	1	3	2	3	2	5	5	5	3	3	3	4	5	5	5
277	Ventura	0	0	0	0	1	2	1	1	1	1	1	0	0	1	1	2	3	3	3	2	4	4	1	1	3	1	1	2	2
278	Ventura	0	0	0	0	5	4	4	4	4	5	1	0	1	1	1	5	5	5	5	5	5	5	5	5	4	5	5	5	5
279	Ventura	0	0	0	0	5	4	3	3	4	3	1	0	1	1	1	5	5	4	3	5	5	5	3	2	3	3	5	5	5
280	Ventura	0	0	0	0	4	3	3	4	3	4	1	0	1	1	1	5	5	4	3	5	5	5	5	3	3	3	4	5	5
281	Ventura	0	0	0	0	2	5	2	3	2	3	1	0	0	1	1	5	5	5	5	4	5	5	5	5	4	5	4	4	4
282	Ventura	0	0	0	0	5	3	4	5	5	5	1	0	0	1	1	4	3	3	2	5	5	5	2	3	2	4	5	5	5
283	Ventura	0	0	0	0	2	1	5	5	5	5	4	0	0	1	1	5	5	5	3	5	5	5	4	5	5	5	5	5	5
284	Ventura	0	0	0	0	1	1	2	2	4	2	1	0	0	1	1	4	5	5	3	1	3	3	4	4	4	2	1	1	2
285	Ventura	0	0	0	0	5	1	4	4	5	5	2	0	0	1	1	5	5	5	3	5	5	5	5	5	5	5	5	5	4
286	Ventura	0	0	0	0	3	3	4	4	3	5	1	0	0	1	1	5	5	5	3	5	5	5	4	3	5	3	5	5	4
287	Ventura	0	0	0	0	3	2	3	3	4	4	4	0	0	1	1	3	3	3	3	1	1	2	4	4	3	4	2	1	1
288	Santa Barbara	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	2	2	2	1	1	1	1	1	2	2
289	Santa Barbara	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	2	1	1	1	1	1	1	2	2	2
290	Santa Barbara	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	2	1	1	1	4	2	3	1	1	1	1	3	4	4
291	Santa Barbara	0	0	0	1	1	1	3	2	2	2	1	0	0	1	1	4	2	2	2	3	2	3	1	2	2	2	4	4	3
292	Santa Barbara	0	0	0	0	1	1	1	2	3	2	1	0	0	1	1	3	2	2	2	2	1	1	3	1	3	2	2	2	1
293	Santa Barbara	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
294	Santa Barbara	0	0	0	0	1	1	2	1	1	2	1	0	0	1	1	2	3	4	4	1	2	2	4	5	4	5	1	1	2
295	Santa Barbara	0	0	0	0	1	1	3	5	1	4	1	0	0	4	1	1	2	2	3	3	5	5	1	2	1	3	3	3	3
296	Santa Barbara	0	0	0	0	1	1	4	2	2	2	1	0	0	2	1	2	3	3	3	2	3	3	2	3	2	2	2	2	2
297	Santa Barbara	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	2	3	3	3	1	1	1	2	1	2	1	1	1	1
298	Santa Barbara	0	0	1	0	1	1	2	1	1	2	1	0	0	1	1	3	3	4	4	2	3	3	3	2	3	1	2	2	2
299	Santa Barbara	0	0	0	0	1	1	4	1	1	3	1	0	0	1	1	1	3	3	3	2	3	4	2	1	2	1	2	2	2
300	Santa Barbara	0	0	1	0	1	1	1	1	1	2	1	0	0	1	1	2	3	3	3	2	4	3	2	1	2	2	3	2	2
301	Santa Barbara	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	2	3	3	3	2	2	2	2	1	2	2	2	2	1
302	Santa Barbara	0	0	0	0	1	1	1	1	1	2	1	0	0	1	1	3	4	4	4	1	2	2	5	2	4	3	1	1	2
303	Santa Barbara	0	0	1	0	1	1	1	1	1	1	1	0	0	1	1	3	4	4	4	1	1	2	4	3	4	1	1	1	1
304	Santa Barbara	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	2	3	4	4	1	1	1	4	4	4	3	1	1	1
305	Santa Barbara	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	3	4	4	4	1	1	1	4	3	4	3	1	1	1
306	Santa Barbara	0	0	0	0	1	1	2	1	1	1	1	0	0	1	1	3	4	4	4	1	1	2	4	4	4	3	1	1	1
307	Santa Barbara	0	0	1	0	1	1	1	1	1	1	1	0	0	1	1	1	2	1	1	1	2	2	2	1	2	3	1	2	1
308	Santa Barbara	0	0	0	0	1	1	2	2	2	2	1	0	0	1	1	1	2	1	1	2	3	2	2	2	2	2	2	2	1
309	Santa Barbara	0	0	0	0	1	1	4	1	1	4	1	0	0	1	1	2	2	2	2	2	2	3	2	4	2	3	2	2	2
310	Santa Barbara	0	0	0	0	3	2	5	3	3	3	1	0	0	1	1	1	1	1	1	3	3	3	2	5	2	4	3	3	3
311	Santa Barbara	0	0	0	0	1	1	3	5	5	1	1	0	0	1	1	2	2	2	2	1	2	2	2	4	2	2	2	2	1
312	Santa Barbara	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1
313	Santa Barbara	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	1	2	2	2	1	1	1	3	1	3	1	1	1	1
314	Santa Barbara	0	0	0	0	1	1	4	3	3	3	1	0	0	1	1	3	4	4	4	3	4	4	4	3	4	3	3	4	3
315	Santa Barbara	0	0	0	0	1	1	2	1	1	2	1	0	0	2	1	3	3	3	3	1	2	2	4	4	3	4	1	1	1
316	Santa Barbara	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	1	2	2	1	1	1	1	3	1	3	1	1	1	1
317	Santa Barbara	0	0	0	0	1	1	3	2	2	2	1	0	0	1	1	1	2	2	1	3	3	3	2	1	3	2	3	3	2
318	Santa Barbara	0	0	1	0	1	1	5	5	5	5	5	0	0	1	1	3	2	2	2	4	4	3	3	5	3	5	5	4	4
319	Santa Barbara	0	0	0	0	1	1	5	4	5	3	1	0	0	5	1	4	4	4	4	5	5	4	4	5	5	5	5	5	5

Appendix B-2: Indexed Scale for Each Metric for All 288 Zones

ZONE	County	DAC	LIC	PG&E Substation	SCE Substation	Multi-Family Units	Multi-Family Growth	Retail Employees	Office Employees	Office Growth	Other Employees	Fleet Operators	PG&E DC Capacity	SCE 15% Capacity	Existing L1 or L2 Chargers	Existing DC Fast Chargers	Personal Auto Trips	Personal Auto Trips 20+ Miles	Personal Auto Trips 40+ Miles	Personal Auto Trips 100+ Miles	Personal Auto Parking Events	Personal Auto Parking With 20+ Miles Left	Personal Auto Parking With 40+ Miles Left	Heavy Duty Truck Trips	Heavy Duty Truck Parking Events	Medium Duty Truck Trips	Medium Duty Truck Parking Events	Home-Based Work Trips	Home-Based Other Trips	Non-Home-Based Trips
320	Santa Barbara	0	0	0	0	1	1	3	3	3	3	1	0	0	1	1	3	4	4	4	4	4	3	4	2	4	4	4	4	3
321	Santa Barbara	0	0	0	0	1	1	4	5	5	4	3	0	0	1	1	4	4	4	4	3	4	3	4	5	4	5	3	3	3
322	Santa Barbara	0	0	0	0	1	1	3	3	3	3	1	0	0	1	1	4	4	4	4	3	3	3	4	5	4	3	4	3	2
323	San Luis Obispo	0	0	0	0	1	1	1	1	1	2	1	0	0	1	1	4	4	4	4	1	1	1	4	4	5	3	1	1	1
324	San Luis Obispo	0	0	1	0	1	1	2	2	1	2	1	0	0	1	1	4	4	4	4	2	2	2	4	3	4	4	2	2	2
325	San Luis Obispo	0	0	1	0	1	1	2	2	1	2	1	0	0	1	1	1	1	1	1	2	1	1	2	2	2	4	2	2	1
326	San Luis Obispo	0	0	0	0	3	5	4	3	5	3	1	0	0	1	1	1	1	1	1	4	4	3	2	3	1	5	4	4	3
327	San Luis Obispo	0	0	0	0	1	1	3	1	1	2	1	0	0	1	1	1	1	1	1	2	3	3	2	2	2	2	2	3	2
328	San Luis Obispo	0	0	0	0	1	4	3	2	2	2	1	0	0	1	1	2	2	2	2	3	4	3	3	3	2	4	3	3	3
329	San Luis Obispo	0	0	0	0	1	1	2	2	2	2	1	0	0	1	1	1	1	1	1	1	1	1	2	5	2	3	1	1	2
330	San Luis Obispo	0	0	1	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
331	San Luis Obispo	0	0	0	0	1	1	1	1	1	3	1	0	0	1	1	4	4	4	4	2	2	2	3	3	4	4	2	3	2
332	San Luis Obispo	0	0	0	0	1	1	1	2	2	2	1	0	0	1	1	1	2	2	3	1	2	2	5	5	3	5	1	1	2
333	San Luis Obispo	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
334	San Luis Obispo	0	0	0	0	1	3	1	2	2	1	1	0	0	1	1	3	4	3	4	1	1	1	3	2	4	2	1	1	1
335	San Luis Obispo	0	0	1	0	2	4	2	3	1	3	1	0	0	1	1	3	2	2	2	3	2	2	2	2	2	2	3	3	3
336	San Luis Obispo	0	0	0	0	4	1	4	5	1	3	1	0	0	1	1	3	3	3	3	4	3	3	3	3	3	4	4	4	4
337	San Luis Obispo	0	0	0	0	1	3	3	4	4	2	1	0	0	1	1	4	4	4	4	3	2	2	3	3	4	2	3	3	3
338	San Luis Obispo	0	0	0	0	1	1	1	2	1	1	1	0	0	1	1	1	1	1	1	2	1	1	1	1	1	2	1	2	1
339	San Luis Obispo	0	0	0	0	1	1	3	4	2	2	1	0	0	1	1	4	4	4	4	4	3	3	4	3	4	4	4	4	4
340	San Luis Obispo	0	0	0	0	2	1	3	3	1	3	1	0	0	1	1	4	3	3	3	4	4	3	3	2	3	4	4	4	4
341	San Luis Obispo	0	0	0	0	1	1	5	4	3	3	1	0	0	3	1	4	4	4	4	5	4	4	3	5	4	4	4	5	5
342	San Luis Obispo	0	0	0	0	4	1	3	4	3	4	1	0	0	5	1	4	4	4	4	4	5	5	4	3	4	4	4	4	5
343	San Luis Obispo	0	0	0	0	2	1	2	3	3	4	1	0	0	1	1	4	4	4	4	4	4	4	4	3	4	3	4	4	4
344	San Luis Obispo	0	0	0	0	1	1	4	5	1	4	2	0	0	1	1	3	1	1	2	3	3	2	2	4	2	4	4	3	4
345	San Luis Obispo	0	0	0	0	1	5	5	5	4	4	1	0	0	5	2	4	4	4	4	5	5	4	3	5	4	5	4	5	5
346	San Luis Obispo	0	0	0	0	4	1	2	3	1	2	1	0	0	1	1	2	1	1	1	4	3	3	1	3	2	1	4	4	4
347	San Luis Obispo	0	0	0	0	2	5	4	3	1	4	1	0	0	1	1	2	2	2	3	4	4	3	5	5	3	4	4	4	3
348	San Luis Obispo	0	0	0	0	1	2	1	1	4	2	1	0	0	1	1	1	1	2	3	1	1	1	5	3	3	2	1	1	1
349	San Luis Obispo	0	0	1	0	2	3	1	2	1	2	1	0	0	1	1	1	2	3	3	1	2	2	3	3	3	3	4	1	1
350	San Luis Obispo	0	0	0	0	1	1	1	2	1	2	1	0	0	1	1	1	2	2	3	1	1	1	5	4	3	4	1	1	1
351	San Luis Obispo	0	0	0	0	2	1	2	3	2	3	1	0	0	5	1	1	2	2	2	3	4	4	1	3	2	4	2	2	4
352	San Luis Obispo	0	0	0	0	1	3	2	1	3	2	1	0	0	1	1	2	3	3	4	1	1	2	5	4	4	4	1	1	1
353	San Luis Obispo	0	0	0	0	1	1	1	2	1	2	1	0	0	4	1	1	1	1	2	2	3	3	1	1	1	2	1	2	3
354	San Luis Obispo	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	2	3	2	3	1	1	1	2	2	2	2	1	1	2
355	San Luis Obispo	0	0	0	0	2	1	2	3	1	2	1	0	0	2	1	1	2	2	2	2	3	2	1	2	2	2	2	2	2
356	San Luis Obispo	0	0	0	0	1	1	1	5	2	2	1	0	0	1	1	2	2	2	2	1	2	1	2	2	2	2	2	1	2
357	San Luis Obispo	0	0	0	0	1	1	1	2	2	1	1	0	0	1	1	3	3	2	3	1	1	1	2	1	3	1	1	1	1
358	San Luis Obispo	0	0	1	0	4	1	4	4	1	4	1	0	0	1	1	1	2	2	2	4	4	4	1	4	2	4	4	4	4
359	San Luis Obispo	0	0	0	0	1	4	1	1	1	1	1	0	0	1	1	2	2	2	2	1	1	2	1	2	1	1	1	1	2
360	San Luis Obispo	0	0	0	0	1	4	1	3	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
361	San Luis Obispo	0	0	0	0	1	4	1	3	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	2	2	2	2	2
362	San Luis Obispo	0	1	0	0	2	1	2	2	2	2	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	2	2	2	1
363	San Luis Obispo	0	0	0	0	1	3	4	3	5	4	2	0	0	4	1	2	3	3	4	3	4	4	5	5	4	5	3	3	3
364	San Luis Obispo	0	0	0	0	1	1	2	1	3	2	1	0	0	5	1	4	4	4	5	2	3	2	5	2	5	3	2	2	3
365	San Luis Obispo	0	0	0	0	2	5	4	3	1	4	1	0	0	3	1	3	3	3	3	3	4	4	3	4	3	4	3	3	4
366	San Luis Obispo	0	0	0	0	3	4	3	4	3	4	1	0	0	3	1	3	4	3	4	3	3	2	3	4	4	5	3	3	3
367	San Luis Obispo	0	0	0	0	1	1	1	2	3	2	1	0	0	1	1	3	3	3	4	2	3	3	4	4	4	5	2	2	2
368	San Luis Obispo	0	0	0	0	1	1	1	1	2	2	1	0	0	4	1	1	2	2	3	2	2	3	5	3	3	4	2	2	2
369	San Luis Obispo	0	0	0	0	1	1	2	3	1	2	1	0	0	1	1	1	1	1	1	2	2	1	1	2	2	2	1	2	1
370	San Luis Obispo	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	3	4	3	4	2	2	1	3	2	4	2	2	2	1
371	San Luis Obispo	0	0	1	0	3	1	2	4	1	3	1	0	0	1	1	1	1	1	2	2	3	2	2	3	2	4	2	2	2
372	San Luis Obispo	0	0	1	0	1	1	1	2	2	2	1	0	0	1	1	1	1	1	1	2	2	1	2	1	1	2	2	2	2
373	San Luis Obispo	0	0	0	0	1	1	1	2	2	1	1	0	0	1	1	2	3	3	3	2	2	2	3	1	3	3	2	2	2
374	San Luis Obispo	0	0	0	0	1	1	2	1	1	1	1	0	0	1	1	3	4	3	4	1	1	1	3	1	4	3	1	1	2
375	San Luis Obispo	0	0	0	0	3	3	4	5	5	4	1	0	0	1	5	3	4	3	4	3	4	3	3	4	4	5	3	4	3
376	San Luis Obispo	0	0	0	0	3	1	4	4	2	2	2	0	0	1	1	3	4	3	4	2	2	2	3	3	4	3	2	2	3
377	San Luis Obispo	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
401	San Luis Obispo	0	1	0	0	5	5	1	3	1	4	1	0	0	3	1	2	2	2	3	3	2	2	2	2	2	2	2	3	2
402	San Luis Obispo	0	1	0	0	5	1	1	2	1	4	1	0	0	1	1	3	2	2	2	3	2	2	2	2	1	2	1	3	2
403	Santa Barbara	0	1	1	0	4	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	3	1	2	1	1	1	1
404	Santa Barbara	0	1	0	0	5	4	4	2	2	1	1	0	0	3	1	1	1	1	1	4	4	4	1	2	1	2	4	4	3
405	Santa Barbara	0	1	0	1	4	2	2	1	1	1	1	0	0	1	1	4	2	2	2	2	1	1	2	1	1	1	2	2	1
406	Santa Barbara	0	1	0	0	4	2	1	1	1	1	1	0	0	3	1	4	2	2	2	2	1	2	2	1	1	1	2	2	1
407	Santa Barbara	0	1	0	1	4	2	3	1	1	1	1	0	1	1	1	1	1	2	2	2	3	4	2	2	1	1	2	2	3
408	Ventura	1	1	0	0	4	4	3	5	5	5	3	0	0	1	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5
409	Ventura	0	0	0	0	4	4	5	3	3	4	1	0	0	5	1	4	5	5	5	3	5	5	5	4	4	4	3	5	5	4
410	Ventura	0	0	0	1	5	2	5	5	1	5	1	0	1	1	1	5	5	5	5	5	5	5	5	4	5	4	5	5	5

Appendix B-3: Final Scores for All 288 Zones

ZONE	County	DAC	LIC	PG&E Substation	SCE Substation	Employee Scores	Renter Scores	Travelers Scores	Fleet Operators Scores	Combined Use Score	City
239	Ventura	0	1	0	1	192	262	165	155	774	VENTURA
213	Ventura	0	1	0	0	192	272	165	135	764	CAMARILLO
209	Ventura	0	0	0	1	192	252	165	150	759	THOUSAND OAKS
237	Ventura	0	0	0	0	190	265	160	138	753	VENTURA
240	Ventura	0	1	0	1	187	267	165	134	753	VenturaUninc-N of 126
201	Ventura	0	0	0	1	192	262	165	132	751	THOUSAND OAKS
205	Ventura	0	1	0	1	192	262	165	132	751	THOUSAND OAKS
254	Ventura	1	1	0	0	177	260	165	147	749	VENTURA
189	Ventura	0	0	0	1	190	270	150	130	740	SIMI VALLEY
194	Ventura	0	0	0	1	185	265	150	134	734	VenturaUninc-S of 126
158	Santa Barbara	0	1	0	1	192	247	165	129	733	SANTA BARBARA
236	Ventura	0	1	0	1	182	262	165	123	732	OXNARD
215	Ventura	0	0	0	0	182	258	161	127	728	CAMARILLO
408	Ventura	1	1	0	0	186	256	150	136	728	OXNARD
242	Ventura	0	0	0	0	184	258	157	127	726	VENTURA
274	Ventura	0	0	0	1	188	253	155	128	724	CAMARILLO
278	Ventura	0	0	0	0	180	255	160	126	721	THOUSAND OAKS
238	Ventura	0	1	0	1	172	252	165	131	720	VENTURA
117	Santa Barbara	0	1	1	0	173	252	145	145	715	SANTA MARIA
283	Ventura	0	0	0	0	190	235	150	140	715	VenturaUninc-S of 126
216	Ventura	0	0	0	0	177	240	165	127	709	CAMARILLO
225	Ventura	0	0	0	1	181	250	156	119	706	OXNARD
118	Santa Barbara	0	1	0	0	175	255	144	130	704	SANTA MARIA
166	Santa Barbara	0	0	0	1	180	249	154	121	704	SANTA BARBARA
219	Ventura	0	0	0	0	181	257	146	117	701	VenturaUninc-S of 126
410	Ventura	0	0	0	1	172	237	165	125	699	THOUSAND OAKS
285	Ventura	0	0	0	0	183	239	141	132	695	VenturaUninc-S of 126
101	San Luis Obispo	0	1	1	0	166	243	152	131	692	EL PASO DE ROBLES (PASO ROBLES)
200	Ventura	0	0	0	1	172	237	165	116	690	THOUSAND OAKS
136	Santa Barbara	0	0	0	1	182	222	153	125	682	GOLETA
202	Ventura	0	0	0	1	181	220	162	119	682	THOUSAND OAKS
203	Ventura	0	1	0	1	174	238	153	114	679	THOUSAND OAKS
145	Santa Barbara	0	0	0	1	173	222	159	122	676	SANTA BARBARA
214	Ventura	0	0	0	1	170	212	156	130	668	VenturaUninc-S of 126
110	San Luis Obispo	0	1	0	0	176	230	146	114	666	SAN LUIS OBISPO
116	San Luis Obispo	0	0	0	0	161	240	150	111	662	GROVER BEACH
156	Santa Barbara	0	1	0	1	172	235	146	107	660	SANTA BARBARA
207	Ventura	0	0	0	1	175	230	146	102	653	THOUSAND OAKS
204	Ventura	0	1	0	0	169	232	140	111	652	THOUSAND OAKS
286	Ventura	0	0	0	0	173	229	141	108	651	SIMI VALLEY
409	Ventura	0	0	0	0	167	232	143	105	647	MOORPARK
210	Ventura	0	1	0	0	161	231	138	112	642	CAMARILLO
345	San Luis Obispo	0	0	0	0	164	226	141	111	642	SAN LUIS OBISPO
226	Ventura	0	1	0	0	154	206	145	128	633	VenturaUninc-S of 126
280	Ventura	0	0	0	0	167	231	138	97	633	THOUSAND OAKS
319	Santa Barbara	0	0	0	0	168	206	138	120	632	SANTA MARIA
147	Santa Barbara	0	0	0	1	170	208	141	111	630	GOLETA
279	Ventura	0	0	0	0	166	239	135	89	629	THOUSAND OAKS
182	Santa Barbara	0	1	0	1	158	197	154	118	627	CARPINTERIA
137	Santa Barbara	0	0	0	0	155	212	141	118	626	SANTA BARBARA

Appendix B-3: Final Scores for All 288 Zones

ZONE	County	DAC	LIC	PG&E Substation	SCE Substation	Employee Scores	Renter Scores	Travelers Scores	Fleet Operators Scores	Combined Use Score	City
282	Ventura	0	0	0	0	170	240	126	89	625	SIMI VALLEY
157	Santa Barbara	0	1	0	1	171	231	133	80	615	SANTA BARBARA
144	Santa Barbara	0	0	0	1	163	212	140	99	614	SANTA BARBARA
192	Ventura	0	1	0	1	157	232	127	92	608	SIMI VALLEY
211	Ventura	0	0	0	0	155	213	122	117	607	VenturaUninc-S of 126
149	Santa Barbara	0	0	0	1	155	186	130	135	606	GOLETA
281	Ventura	0	0	0	0	151	210	135	106	602	VenturaUninc-S of 126
276	Ventura	0	0	0	0	157	217	128	99	601	CAMARILLO
190	Ventura	0	1	0	0	159	198	131	112	600	SIMI VALLEY
160	Santa Barbara	0	1	0	1	155	192	135	114	596	SANTA BARBARA
342	San Luis Obispo	0	0	0	0	154	208	135	99	596	PISMO BEACH
126	Santa Barbara	0	0	1	0	153	185	143	110	591	BUELLTON
232	Ventura	0	0	0	1	147	227	124	88	586	OXNARD
229	Ventura	0	1	0	1	148	217	116	101	582	PORT HUENEME
222	Ventura	1	1	0	0	155	179	126	121	581	OXNARD
162	Santa Barbara	0	0	0	0	143	180	150	104	577	SBUninc-E of 101, N of 154
341	San Luis Obispo	0	0	0	0	149	189	134	104	576	ARROYO GRANDE
246	Ventura	0	1	0	0	142	201	117	113	573	VenturaUninc-S of 126
321	Santa Barbara	0	0	0	0	151	181	120	120	572	SBUninc-E of 101, N of 154
124	Santa Barbara	0	1	1	0	140	215	109	107	571	LOMPOC
139	Santa Barbara	0	0	0	1	137	190	139	104	570	GOLETA
227	Ventura	0	1	0	0	140	188	125	111	564	VenturaUninc-S of 126
318	Santa Barbara	0	0	1	0	147	179	108	128	562	SANTA MARIA
224	Ventura	1	1	0	1	138	204	104	115	561	OXNARD
375	San Luis Obispo	0	0	0	0	144	197	116	104	561	ATASCADERO
180	Santa Barbara	0	1	0	1	134	176	135	115	560	SANTA BARBARA
173	Santa Barbara	0	0	0	1	145	187	143	83	558	SBUninc-E of 101, N of 154
223	Ventura	0	1	0	1	135	205	119	98	557	OXNARD
249	Ventura	0	1	0	1	139	195	108	112	554	FILLMORE
195	Ventura	0	1	0	0	143	198	114	97	552	MOORPARK
196	Ventura	0	1	0	1	140	199	111	99	549	MOORPARK
248	Ventura	0	1	0	0	130	195	117	106	548	VenturaUninc-N of 126
221	Ventura	1	1	0	0	135	201	114	97	547	VenturaUninc-S of 126
235	Ventura	0	1	0	1	140	215	103	88	546	OXNARD
363	San Luis Obispo	0	0	0	0	134	174	117	118	543	EL PASO DE ROBLES (PASO ROBLES)
159	Santa Barbara	0	1	0	1	133	193	138	78	542	SANTA BARBARA
247	Ventura	0	1	0	1	131	201	107	103	542	VenturaUninc-N of 126
138	Santa Barbara	0	0	0	1	125	178	122	115	540	GOLETA
148	Santa Barbara	0	0	0	1	131	178	127	101	537	GOLETA
272	Ventura	0	0	0	0	136	201	112	84	533	VenturaUninc-N of 126
343	San Luis Obispo	0	0	0	0	138	177	118	93	526	SLOUninc-W of 101, S of 46
314	Santa Barbara	0	0	0	0	133	165	121	104	523	SBUninc-W of 101
258	Ventura	0	0	0	0	137	192	114	78	521	VenturaUninc-N of 126
104	San Luis Obispo	0	0	1	0	121	179	114	101	515	ATASCADERO
255	Ventura	0	1	0	0	127	202	100	80	509	VenturaUninc-N of 126
127	Santa Barbara	0	0	0	0	133	188	110	77	508	SOLVANG
181	Santa Barbara	0	0	0	0	114	156	131	107	508	CARPINTERIA
233	Ventura	1	0	0	0	132	191	94	91	508	VenturaUninc-S of 126
197	Ventura	0	0	0	0	144	188	99	75	506	MOORPARK
102	San Luis Obispo	0	0	1	0	124	161	110	108	503	EL PASO DE ROBLES (PASO ROBLES)

Appendix B-3: Final Scores for All 288 Zones

ZONE	County	DAC	LIC	PG&E Substation	SCE Substation	Employee Scores	Renter Scores	Travelers Scores	Fleet Operators Scores	Combined Use Score	City
230	Ventura	0	1	0	1	124	194	100	85	503	OXNARD
199	Ventura	0	0	0	1	130	204	102	62	498	VenturaUninc-N of 126
253	Ventura	0	1	0	0	120	175	104	99	498	VenturaUninc-N of 126
257	Ventura	0	1	0	0	125	189	111	73	498	VenturaUninc-N of 126
269	Santa Barbara	0	0	0	0	136	161	102	99	498	GOLETA
320	Santa Barbara	0	0	0	0	132	161	112	93	498	SBUninc-W of 101
111	San Luis Obispo	0	1	0	0	121	171	107	98	497	SLOUninc-E of 101, S of 58
155	Santa Barbara	0	1	0	1	127	159	117	93	496	SANTA BARBARA
261	San Luis Obispo	0	1	0	0	128	164	121	82	495	SLOUninc-W of 101, S of 46
365	San Luis Obispo	0	0	0	0	116	175	116	88	495	SLOUninc-W of 101, S of 46
339	San Luis Obispo	0	0	0	0	129	160	109	94	492	SLOUninc-E of 101, S of 58
366	San Luis Obispo	0	0	0	0	118	172	103	97	490	SLOUninc-E of 101, N of 58
336	San Luis Obispo	0	0	0	0	122	169	105	88	484	ARROYO GRANDE
119	Santa Barbara	0	1	0	0	120	148	113	99	480	SANTA MARIA
322	Santa Barbara	0	0	0	0	129	150	104	97	480	SBUninc-E of 101, N of 154
112	San Luis Obispo	0	0	0	0	123	181	93	82	479	SAN LUIS OBISPO
191	Ventura	0	0	0	0	133	189	91	66	479	VenturaUninc-N of 126
153	Santa Barbara	0	1	0	0	131	170	113	60	474	SANTA BARBARA
347	San Luis Obispo	0	0	0	0	107	162	101	104	474	EL PASO DE ROBLES (PASO ROBLES)
167	Santa Barbara	0	0	0	1	134	187	90	62	473	SANTA BARBARA
177	Santa Barbara	0	0	0	0	115	139	122	97	473	SBUninc-E of 101, N of 154
212	Ventura	0	1	0	0	115	152	112	92	471	CAMARILLO
100	San Luis Obispo	0	1	0	0	108	157	104	101	470	EL PASO DE ROBLES (PASO ROBLES)
150	Santa Barbara	0	0	0	1	128	165	107	70	470	SANTA BARBARA
154	Santa Barbara	0	1	0	0	112	162	110	86	470	SANTA BARBARA
241	Ventura	1	0	0	0	128	170	94	73	465	VenturaUninc-S of 126
337	San Luis Obispo	0	0	0	0	124	160	97	82	463	ARROYO GRANDE
109	San Luis Obispo	0	1	0	0	116	156	106	82	460	SAN LUIS OBISPO
358	San Luis Obispo	0	0	1	0	115	164	104	77	460	MORRO BAY
340	San Luis Obispo	0	0	0	0	116	154	104	81	455	SLOUninc-E of 101, S of 58
262	San Luis Obispo	0	1	0	0	112	151	101	87	451	SAN LUIS OBISPO
326	San Luis Obispo	0	0	0	0	116	175	81	78	450	SLOUninc-W of 101, S of Arroyo
172	Santa Barbara	0	0	0	1	129	163	97	58	447	SBUninc-E of 101, N of 154
187	Santa Barbara	0	0	0	1	108	128	113	98	447	CARPINTERIA
275	Ventura	0	0	0	0	114	152	100	79	445	VENTURA
295	Santa Barbara	0	0	0	0	121	152	108	59	440	SBUninc-E of 101, S of 154
185	Santa Barbara	0	0	0	1	117	139	102	80	438	SBUninc-E of 101, N of 154
198	Ventura	0	0	0	1	116	173	88	61	438	MOORPARK
113	San Luis Obispo	0	1	1	0	109	157	100	70	436	SLOUninc-W of 101, S of 46
178	Santa Barbara	0	0	0	1	111	137	108	79	435	SBUninc-E of 101, N of 154
284	Ventura	0	0	0	0	117	140	98	80	435	MOORPARK
141	Santa Barbara	0	1	0	1	119	145	89	81	434	GOLETA
106	San Luis Obispo	0	0	0	0	110	158	102	61	431	SLOUninc-W of 101, N of 46
256	Ventura	0	1	0	0	103	130	100	98	431	VenturaUninc-N of 126
108	San Luis Obispo	0	1	0	0	107	147	93	83	430	SLOUninc-W of 101, S of 46
231	Ventura	0	1	0	0	100	157	92	80	429	OXNARD
376	San Luis Obispo	0	0	0	0	103	139	98	87	427	ATASCADERO
220	Ventura	0	1	0	0	119	154	87	66	426	VenturaUninc-S of 126
163	Santa Barbara	0	1	0	1	112	150	100	62	424	SANTA BARBARA
273	Ventura	0	1	0	0	108	150	92	74	424	VenturaUninc-N of 126

Appendix B-3: Final Scores for All 288 Zones

ZONE	County	DAC	LIC	PG&E Substation	SCE Substation	Employee Scores	Renter Scores	Travelers Scores	Fleet Operators Scores	Combined Use Score	City
267	Santa Barbara	0	0	0	1	105	131	103	81	420	SBUninc-E of 101, N of 154
252	Ventura	0	1	0	0	104	159	91	63	417	VenturaUninc-N of 126
364	San Luis Obispo	0	0	0	0	100	127	101	88	416	SLOUninc-W of 101, N of 46
161	Santa Barbara	0	1	0	0	101	129	105	80	415	SANTA BARBARA
168	Santa Barbara	0	0	0	1	119	156	84	55	414	SANTA BARBARA
287	Ventura	0	0	0	0	100	131	79	104	414	VenturaUninc-N of 126
265	San Luis Obispo	0	0	1	0	106	159	76	67	408	SLOUninc-E of 101, S of 58
142	Santa Barbara	0	1	0	1	117	138	80	71	406	GOLETA
268	Santa Barbara	0	0	0	0	107	138	95	64	404	SBUninc-E of 101, S of 154
310	Santa Barbara	0	0	0	0	98	141	82	83	404	LOMPOC
218	Ventura	0	0	0	1	106	128	88	81	403	VenturaUninc-S of 126
344	San Luis Obispo	0	0	0	0	101	131	85	86	403	SLOUninc-E of 101, S of 58
328	San Luis Obispo	0	0	0	0	97	140	85	74	396	SLOUninc-W of 101, S of Arroyo
184	Santa Barbara	0	0	0	1	94	117	100	84	395	CARPINTERIA
208	Ventura	0	0	0	1	104	152	85	51	392	VenturaUninc-S of 126
367	San Luis Obispo	0	0	0	0	98	121	84	89	392	SLOUninc-E of 101, N of 58
404	Santa Barbara	0	1	0	0	99	161	79	53	392	SBUninc-E of 101, S of 154
270	Santa Barbara	0	0	0	0	95	119	98	79	391	SBUninc-E of 101, S of 154
165	Santa Barbara	0	0	0	1	91	134	93	72	390	SANTA BARBARA
120	Santa Barbara	0	1	1	0	84	113	75	117	389	SANTA MARIA
176	Santa Barbara	0	0	0	1	95	116	97	81	389	SBUninc-E of 101, N of 154
351	San Luis Obispo	0	0	0	0	99	137	91	62	389	SLOUninc-W of 101, N of 46
206	Ventura	0	1	0	0	102	129	89	67	387	THOUSAND OAKS
123	Santa Barbara	0	1	0	0	109	135	64	73	381	SBUninc-W of 101
125	Santa Barbara	0	0	0	0	91	109	98	82	380	SBUninc-W of 101
105	San Luis Obispo	0	1	0	0	91	141	77	67	376	MORRO BAY
140	Santa Barbara	0	0	0	1	101	119	94	62	376	GOLETA
164	Santa Barbara	0	0	0	1	103	140	82	51	376	SANTA BARBARA
324	San Luis Obispo	0	0	1	0	91	113	88	83	375	SLOUninc-E of 101, S of 58
143	Santa Barbara	0	0	0	1	107	130	79	58	374	GOLETA
296	Santa Barbara	0	0	0	0	97	120	94	62	373	SBUninc-E of 101, S of 154
244	Ventura	0	1	0	1	86	128	76	82	372	VenturaUninc-N of 126
331	San Luis Obispo	0	0	0	0	85	111	86	79	361	SLOUninc-E of 101, S of 58
401	San Luis Obispo	0	1	0	0	82	147	74	58	361	SLOUninc-W of 101, S of 46
175	Santa Barbara	0	0	0	1	96	128	93	43	360	SBUninc-E of 101, N of 154
299	Santa Barbara	0	0	0	0	91	115	101	53	360	SBUninc-E of 101, N of 154
311	Santa Barbara	0	0	0	0	106	123	62	67	358	LOMPOC
291	Santa Barbara	0	0	0	1	98	124	77	58	357	SANTA BARBARA
298	Santa Barbara	0	0	1	0	90	113	93	60	356	SBUninc-E of 101, S of 154
169	Santa Barbara	0	0	0	1	101	137	72	44	354	SBUninc-E of 101, N of 154
335	San Luis Obispo	0	0	1	0	85	132	71	60	348	SLOUninc-W of 101, S of Arroyo
346	San Luis Obispo	0	0	0	0	89	135	68	56	348	SAN LUIS OBISPO
294	Santa Barbara	0	0	0	0	73	95	85	88	341	SBUninc-E of 101, S of 154
317	Santa Barbara	0	0	0	0	91	114	72	62	339	SBUninc-W of 101
264	San Luis Obispo	0	0	1	0	86	125	65	61	337	SAN LUIS OBISPO
352	San Luis Obispo	0	0	0	0	74	101	73	89	337	SLOUninc-W of 101, N of 46
407	Santa Barbara	0	1	0	1	78	124	84	50	336	CARPINTERIA
300	Santa Barbara	0	0	1	0	90	111	83	49	333	SBUninc-E of 101, S of 154
302	Santa Barbara	0	0	0	0	76	98	83	76	333	SBUninc-E of 101, N of 154
309	Santa Barbara	0	0	0	0	77	101	84	70	332	SBUninc-W of 101

Appendix B-3: Final Scores for All 288 Zones

ZONE	County	DAC	LIC	PG&E Substation	SCE Substation	Employee Scores	Renter Scores	Travelers Scores	Fleet Operators Scores	Combined Use Score	City
170	Santa Barbara	0	0	0	1	93	123	76	39	331	SANTA BARBARA
188	Ventura	0	1	0	0	91	133	58	47	329	SIMI VALLEY
271	Santa Barbara	0	0	0	0	86	108	81	50	325	SBUninc-E of 101, S of 154
277	Ventura	0	0	0	0	84	115	84	42	325	VenturaUninc-S of 126
259	San Luis Obispo	0	0	0	0	73	89	70	91	323	SLOUninc-E of 101, N of 58
402	San Luis Obispo	0	1	0	0	79	123	65	53	320	SAN LUIS OBISPO
315	Santa Barbara	0	0	0	0	70	88	72	87	317	SBUninc-E of 101, N of 154
371	San Luis Obispo	0	0	1	0	76	110	64	67	317	ATASCADERO
306	Santa Barbara	0	0	0	0	73	89	77	77	316	SBUninc-W of 101
368	San Luis Obispo	0	0	0	0	72	94	68	81	315	SLOUninc-E of 101, N of 58
243	Ventura	0	1	0	1	70	107	76	61	314	VenturaUninc-N of 126
373	San Luis Obispo	0	0	0	0	81	102	68	61	312	ATASCADERO
128	Santa Barbara	0	0	0	1	70	87	73	81	311	SBUninc-E of 101, S of 154
245	Ventura	0	1	0	0	77	105	62	67	311	VenturaUninc-N of 126
323	San Luis Obispo	0	0	0	0	69	86	71	82	308	SLOUninc-E of 101, S of 58
134	Santa Barbara	0	0	0	1	85	106	68	47	306	SBUninc-E of 101, N of 154
332	San Luis Obispo	0	0	0	0	66	88	64	88	306	SLOUninc-E of 101, N of 58
355	San Luis Obispo	0	0	0	0	78	106	68	50	302	SLOUninc-W of 101, S of 46
234	Ventura	0	1	0	0	71	107	60	62	300	OXNARD
349	San Luis Obispo	0	0	1	0	66	99	64	68	297	SLOUninc-E of 101, N of 58
303	Santa Barbara	0	0	1	0	71	87	72	66	296	SBUninc-E of 101, N of 154
334	San Luis Obispo	0	0	0	0	71	97	64	63	295	SLOUninc-E of 101, N of 58
129	Santa Barbara	0	0	0	1	67	84	72	71	294	SBUninc-E of 101, S of 154
356	San Luis Obispo	0	0	0	0	83	102	55	54	294	SLOUninc-W of 101, S of 46
370	San Luis Obispo	0	0	0	0	71	88	68	64	291	SLOUninc-W of 101, S of 46
174	Santa Barbara	0	0	0	1	80	105	65	39	289	SBUninc-E of 101, N of 154
305	Santa Barbara	0	0	0	0	66	82	68	72	288	SBUninc-W of 101
121	Santa Barbara	0	1	0	0	53	76	62	96	287	SBUninc-W of 101
171	Santa Barbara	0	0	0	1	75	102	67	40	284	SBUninc-E of 101, N of 154
107	San Luis Obispo	0	1	0	0	69	102	56	56	283	SLOUninc-W of 101, S of 46
327	San Luis Obispo	0	0	0	0	67	93	65	57	282	SLOUninc-W of 101, S of Arroyo
374	San Luis Obispo	0	0	0	0	63	83	73	63	282	SLOUninc-W of 101, S of 46
304	Santa Barbara	0	0	0	0	61	77	65	75	278	SBUninc-W of 101
301	Santa Barbara	0	0	0	0	72	90	67	48	277	SBUninc-E of 101, N of 154
308	Santa Barbara	0	0	0	0	73	92	55	55	275	SBUninc-W of 101
179	Santa Barbara	0	0	0	1	66	84	65	58	273	SBUninc-E of 101, N of 154
292	Santa Barbara	0	0	0	0	72	89	47	61	269	GOLETA
260	San Luis Obispo	0	0	0	0	60	76	66	65	267	SLOUninc-W of 101, N of 46
115	San Luis Obispo	0	1	0	0	61	104	44	57	266	SLOUninc-W of 101, S of Arroyo
151	Santa Barbara	0	0	0	0	68	103	57	38	266	SANTA BARBARA
152	Santa Barbara	0	1	0	1	70	91	60	45	266	SANTA BARBARA
348	San Luis Obispo	0	0	0	0	59	81	49	74	263	SLOUninc-E of 101, N of 58
290	Santa Barbara	0	0	0	0	67	99	56	38	260	SBUninc-E of 101, N of 154
353	San Luis Obispo	0	0	0	0	63	93	64	38	258	SLOUninc-W of 101, N of 46
146	Santa Barbara	0	0	0	1	66	96	54	41	257	SANTA BARBARA
350	San Luis Obispo	0	0	0	0	52	69	52	81	254	SLOUninc-E of 101, N of 58
406	Santa Barbara	0	1	0	0	63	99	48	38	248	SANTA BARBARA
405	Santa Barbara	0	1	0	1	60	96	49	40	245	SANTA BARBARA
217	Ventura	0	0	0	1	64	95	46	37	242	VenturaUninc-S of 126
250	Ventura	0	1	0	0	56	72	56	58	242	VenturaUninc-N of 126

Appendix B-3: Final Scores for All 288 Zones

ZONE	County	DAC	LIC	PG&E Substation	SCE Substation	Employee Scores	Renter Scores	Travelers Scores	Fleet Operators Scores	Combined Use Score	City
357	San Luis Obispo	0	0	0	0	63	79	52	47	241	SLOUninc-W of 101, S of 46
122	Santa Barbara	0	1	0	0	53	73	45	66	237	GUADALUPE
193	Ventura	0	1	0	0	68	85	43	35	231	SIMI VALLEY
329	San Luis Obispo	0	0	0	0	51	72	44	64	231	SLOUninc-W of 101, S of Arroyo
183	Santa Barbara	0	0	0	0	56	74	58	42	230	SBUninc-E of 101, N of 154
361	San Luis Obispo	0	0	0	0	58	94	40	38	230	SLOUninc-W of 101, S of 46
228	Ventura	0	0	0	1	56	78	45	48	227	PORT HUENEME
263	San Luis Obispo	0	1	0	0	55	82	47	43	227	SAN LUIS OBISPO
369	San Luis Obispo	0	0	0	0	56	77	44	49	226	SLOUninc-E of 101, N of 58
130	Santa Barbara	0	1	0	0	56	72	56	40	224	SBUninc-E of 101, N of 154
297	Santa Barbara	0	0	0	0	56	72	56	40	224	SBUninc-E of 101, S of 154
354	San Luis Obispo	0	0	0	0	51	71	56	46	224	SLOUninc-W of 101, S of 46
362	San Luis Obispo	0	1	0	0	60	82	41	40	223	SLOUninc-W of 101, S of 46
325	San Luis Obispo	0	0	1	0	52	69	40	60	221	SLOUninc-W of 101, S of Arroyo
372	San Luis Obispo	0	0	1	0	58	79	40	38	215	ATASCADERO
307	Santa Barbara	0	0	1	0	50	70	43	48	211	SBUninc-W of 101
359	San Luis Obispo	0	0	0	0	48	79	44	40	211	SLOUninc-W of 101, S of 46
114	San Luis Obispo	0	1	0	0	50	70	41	47	208	SLOUninc-W of 101, S of Arroyo
131	Santa Barbara	0	1	0	0	39	56	35	76	206	SBUninc-E of 101, N of 154
132	Santa Barbara	0	1	0	0	40	56	37	73	206	SBUninc-E of 101, N of 154
103	San Luis Obispo	0	1	1	0	50	77	36	41	204	EL PASO DE ROBLES (PASO ROBLES)
313	Santa Barbara	0	0	0	0	46	62	44	50	202	SBUninc-W of 101
266	San Luis Obispo	0	0	0	0	43	59	32	66	200	SLOUninc-E of 101, S of 58
316	Santa Barbara	0	0	0	0	46	62	39	50	197	SBUninc-W of 101
288	Santa Barbara	0	0	0	0	48	72	44	32	196	SBUninc-E of 101, N of 154
360	San Luis Obispo	0	0	0	0	48	79	32	37	196	SLOUninc-W of 101, S of 46
403	Santa Barbara	0	1	1	0	38	69	32	45	184	SANTA MARIA
251	Ventura	0	1	0	0	43	64	36	39	182	VenturaUninc-N of 126
135	Santa Barbara	0	1	0	0	42	60	43	34	179	SBUninc-E of 101, S of 154
289	Santa Barbara	0	0	0	0	44	64	36	33	177	SBUninc-E of 101, N of 154
338	San Luis Obispo	0	0	0	0	44	63	32	36	175	SLOUninc-E of 101, S of 58
133	Santa Barbara	0	0	0	1	40	56	37	38	171	SBUninc-E of 101, S of 154
312	Santa Barbara	0	0	0	0	38	54	32	35	159	SBUninc-W of 101
186	Santa Barbara	0	0	0	1	38	54	32	30	154	SBUninc-E of 101, N of 154
293	Santa Barbara	0	0	0	0	38	54	32	30	154	GOLETA
330	San Luis Obispo	0	0	1	0	38	54	32	30	154	SLOUninc-W of 101, S of Arroyo
333	San Luis Obispo	0	0	0	0	38	54	32	30	154	SLOUninc-E of 101, N of 58
377	San Luis Obispo	0	0	0	0	38	54	32	30	154	ATASCADERO

288-Zone Geographic Layer

APPENDIX C-2:
PG&E Fast Charger Information

See next 6 pages.

Criteria	Description	Default weight for criteria (note that these are only valid within each group of criteria)	Data format	USER INPUT SCORE				
				1	2	3	4	5
MINIMUM SITING CONDITIONS								
(NOTE: All of the Minimum Conditions must be marked 'Y' for a site to receivea non-zero Final Weighted Score in Column BM. Therefore, as soon as the user enters 'N' for one of these Minimum Conditions, the site receives a zero Final Weighted Score, and the user need not bother filling the remainder of the data fields for that site.)								
1. **Sufficient spaces**	Sufficient available parking spaces to install planned # of chargers shown in Instructions tab Step 2	Minimum Conditions (ie. Total Weighted Score = 0 if ANY of these conditions is 'N')	Y/N	Y = Sufficient available parking spaces to install number of EV chargers planned (as defined by user in Instructions tab Step 2)				
2. **ADA**	Proposed parking space is ADA-compliant, or adjacent space is available for conversion		Y/N	Y = Proposed EV charger parking space is ADA-compliant (one accessible parking space, plus adjacent access space of 60 inches, per 25 marked spaces), or one adjacent parking space per every 18 proposed charger spaces can be converted for ADA compliance				
3. **Paved & level**	Parkings space/s are paved and level		Y/N	Y = Available parkings space/s are paved and level (<2.5% grade)				
4. **24/7 access**	Charger accessible 24 hrs/day, 7 days/week (no locks or gates)		Y/N	Y = Charger is accessible 24 hrs/day, 7 days/week, and not behind locked gates				
5. **Ingress/ egress**	Easy ingress/egress from traffic		Y/N	Y = Site is accessible via a route that can safely and conveniently accommodate electric vehicles entering and leaving the facility, returning to the highway, and continuing in the original direction of travel				
6. **Safe**	Safe space for drivers, with adequate lighting		Y/N	Y = Area feels safe during nighttime hours. General lighting of the area is sufficient for drivers to feel safe approaching and operating charging equipment. Answer 'Y' even if site would require additional lighting at specific parking space to facilitate reading instructions and use of charging station.				
7. **Visible**	Highly visible, or ability to install clear directional signage from main road/thoroughfare		Y/N	Y = Site is on or visible from a main road or freeway, or ability to install wayfinding signs to clearly show a simple route from a main road or freeway				
8. **Restrooms**	Restrooms and drinking water		Y/N	Y = Water and restrooms available at potential site, or within two-minute walk via safe path				
9. **Willing host**	Willing site host with authority to sign lease (or agreement of owner)		Y/N	Y = Host is interested in hosting a charging station in one parking space and has authority to sign a lease for the parking space (or, alternatively, the owner of the parking space is willing to sign)				
10. **Hazard**	On additional screen, free of contamination with hazardous waste		Y/N	The relevant threshold for hazardous waste will depend on permitting laws and funding sources for each individual network developer. One definition garnered from expert interviews is as follows: Site is not directly listed on, or adjacent to a property listed on, one of the databases that constitute the California Environmental Protection Agency's "Cortese list" of hazardous sites in the state (available here: http://www.calepa.ca.gov/SiteCleanup/CorteseList/). Property does not host nor has recently hosted business that use the land for hazardous waste intensive activities, including but not limited to airport tarmacs, dry cleaning, waste management or storage, landfill services, chemical processing or storage, or wood processing. If site is a gas station, owner has been consulted to ensure any hazardous materials issues can be resolved with minimal costs and delays.				
SITING TO INCREASE EV ADOPTION								
11. **Food**	Food for purchase	5	1 - 5	Food is not available at potential site, nor within a 2-minute walk via safe path	Food is available at potential site, or within a 2-minute walk via safe path, at least 8 hours/day, 7 days/week	Food is available at potential site, or within a 2-minute walk via safe path, at least 12 hours/day, 7 days/week	Food is available at potential site, or within a 2-minute walk via safe path, at least 16 hours/day, 7 days/week	Food is available at potential site, or within a 2-minute walk via safe path, 24 hours/day, 7 days/week
12. **Parking capacity**	Sufficient non-EV parking on site (to avoid customer complaints over EV conversion, and to provide space for EVs to wait if charger is occupied)	5	1 - 5	Highly constrained parking	Constrained parking, high utilization of non-EV parking space/s	Plenty of non-EV parking, but high utilization of non-EV parking space/s		Plenty of unused parking area
13. **Enforcement**	Parking time limits, with enforcement	4	1 - 5	Poor or zero time limits and/or parking enforcement	Parking time limit, not enforced	4 hour time limit exists, signs present, enforced	2 hour time limits exist, signs present, enforced	24/7 parking enforcement exists
14. **Shelter**	Shelter from inclement whether, or nearby indoor location very nearby	4	Y/N	Y = Existing shelter that can cover a charging station, or indoor/overhang shelter available 24/7 within short distance of charger				
15. **Premium space**	Ability to offer premium/preferred spaces for EV charging	3	Y/N	Y = Site host willing and able to offer premium / preferred spaces for EV drivers				
16. **Shop / lodge**	Nearby shopping and/or lodging	3	1 - 5	No shopping or lodging within a five-minute walk	At least 2 shopping/lodging outlets (not including food outlets) within a 5-minute walk	At least 4 shopping/lodging outlets (not including food outlets) within a 5-minute walk	At least 6 shopping/lodging outlets (not including food outlets) within a 5-minute walk	At least 8 shopping/lodging outlets (or 1 deparment store or supermarket) within a 5-minute walk
17. **Future spaces**	Adjacent space available to install future chargers beyond planned # of chargers shown in Instructions tab Step 2	3	1 - 5	No adjacent spaces available for conversion to EV charging	1 adjacent space available for conversion to EV charging	2 adjacent space available for conversion to EV charging	3 adjacent space available for conversion to EV charging	4 or more adjacent spaces available for conversion to EV charging
18. **Future capacity**	Excess transformer capacity for at least two additional chargers beyond planned # of DCFC EVSEs shown in Instructions tab Step 2	2	Y/N	Y = Sufficient capacity available on a secondary transformer within 300 ft of potential site to fit at least two additional DCFC EVSEs beyond the minimum number to be installed at site (shown in Instructions tab Step 2).				
19. **Wifi**	Wireless internet available	1	Y/N	Y = Reliable public Wifi is available at site at no or nominal cost				
SITING TO MINIMIZE COST								
20. **Transformer Capacity**	Sufficient available capacity on a 480V, three phase transformer to install planned # of new chargers shown in Instructions tab Step 2	5	Y/N	Data is pre-filled. Y = Sufficient available transformer capacity to install planned # of new chargers shown in Instructions tab Step 2. This is calculated by comparing a) the no. of DCFCs that can be served by excess capacity on a 480V, three-phase transformer within 300 ft of the site (column U) with b) the planned # of new chargers to be installed at each chosen site in this bubble (column I, hidden). If a) > b), the entry in this column is Y.				
21. **Distance**	Distance from transformer to furthest proposed EV space at site	1	1 - 5	Proposed EV parking space is greater than 150 feet from 480V, three-phase transformer	Proposed EV parking space is 101 - 150 feet from 480V, three-phase transformer	Proposed EV parking space is 51 - 100 feet from480V, three-phase transformer	Proposed EV parking space is 21 - 50 feet from 480V, three-phase transformer	Proposed EV parking space is within 20 feet of 480V, three-phase transformer
22. **Surface**	Surface material b/w transformer and furthest proposed EV space	1	1 - 5	Path to furthest proposed EV parking space from transformer is fully concrete or asphalt. 480V, three-phase transformer is > 20 feet from EV space	Path to furthest proposed EV parking space from transformer is mostly concrete/asphalt and some dirt/grass. 480V, three-phase transformer	Path to furthest proposed EV space is mostly dirt/grass and some concrete/asphalt. 480V, three-phase transformer is > 20 feet from EV space	Path to furthest proposed EV parking space is fully dirt or grass. 480V, three-phase transformer is > 20 feet from EV space	480V, three-phase transformer is within 20 feet of furthest proposed EV parking space.
SITING FOR DISADVANTAGED COMMUNITIES								
23. **CalEnviroScreen top PG&E quartile**	Top quartile of Cal EnviroScreen2.0 Score within PG&E's territory	Min. Condition for Disad. Comm. Score (24 or 25 must be Y, otherwise Disad. Comm. Score = 0)	Y/N	Data is pre-filled. Potential site's census tract is in the top quartile of Cal EnviroScreen2.0 scores within PG&E's territory				
24. **CARE top quartile**	Top quartile of PG&E's CARE rate eligibility		Y/N	Data is pre-filled. Potential site's census tracts is in the top quartile of CARE-eligible census tracts, established by ranking census tracts by number of CARE eligible customers, and taking the top 25% of the ranked census tracts				
25. **Near non-luxury MUD**	Near non-luxury multi-unit dwelling/s	5	Y/N	Within 2 minutes' drive of at least one non-luxury multi-unit dwelling. Note: the user need only fill this field for a give site if at least one of fields 23. or 24. above are 'Y'				
26. **Minority-owned**	Minority-owned business	5	Y/N	Data is pre-filled. Site is a minority-owned business.				

Site types included in Tool, by dwell time category

Dwell time	Site type
Short dwell time	Bakery
	Bank
	Drug store
	Gas station
	Grocery or convenience store
	Health food store
	Post office
Medium dwell time	Clothing store
	Court
	Department store
	Electronics store
	Environmental agency
	Furniture, home appliances
	Government building
	Gym or health club
	Hospital
	Library
	Medical office
	Movie theater
	Museum, performing arts, or art gallery
	Parking lot
	Restaurant or café
	Retail store
	Sports field or stadium
	Supermarket
	Tourist attraction or recreation site
	Utility regulator
Long dwell time	Airport
	Botanical garden, zoo, or aquarium
	College or university
	Lodging
	Railway station
Not classified	Existing DCFC, not elsewhere classified
	Existing Level 2, not elsewhere classified

One-mile radius bubble location | Number of new public EVSEs needed in bubble by 2025 | Site Data | Existing infrastructure at site

SITING TO MINIMIZE COST (Higher score = lower cost)

SITING FOR DISADVANTAGED COMMUNITIES

If 23. and 24. are both "N", Disad. Comm. Score = 0. If 23. or 24. If at least one of 23. or 24. are "Y," Disad. Comm. Score is increased by 25 points

WEIGHTING | SCORING (For each Score: Min= 0, Max = 100)

FINAL WEIGHTED SCORE TIER
0: Non-viable site
1 - 39: Poor quality site
40 - 74: Medium quality site
75+: High quality site

NOTES

These Static Values were pasted in by SLOCAPCD and are from the equations from the original PG&E Spreadsheet

Bubble number (of 300 total)	Longitude of Bubble center	Latitude of Bubble center	Under ZEV Goal adoption scenario (1.45M vehicles by 2025)	Under Affordability adoption scenario (2.4M vehicles by 2025)	Bubbles, if any, that overlap with this bubble	Site ID	Bubble Nu	Site type	Name	Address	City	Zip code	Site longitude	Site latitude	# existing L2 chargers at site	Network for existing L2 chargers (where available)	# existing DC fast chargers at site	Network for existing DCFC chargers (where available)	No. of new DCFCs that can be served by excess transformer capacity	Approx. kW of new DCFC(s) that can be served by excess transformer capacity (Added by SLOCAPCD)	Approx. No. of sites that can serve upto 65 kW worth of DCFC(s) by the excess transformer capacity (Added by SLOCAPCD)	Approx. No. of sites that can serve between 130 and 195 kW worth of DCFC(s) by the excess transformer capacity (Added by SLOCAPCD)	Approx. No. of sites that can serve between 2060 and 325 kW worth of DCFC(s) by the excess transformer capacity (Added by SLOCAPCD)	Approx. No. of sites that can serve at least 390 kW worth of DCFC(s) by the excess transformer capacity (Added by SLOCAPCD)	WEIGHT FOR CRITERIA WITHIN COST SCORE (min 1, max 5) >>>	Transformer capacity: 20. Sufficient available capacity on a 480V, three-phase transformer to install planned # of new DCFC EVSEs shown in Instructions tab Step 2	Distance: 21. Distance from transformer to furthest proposed EV space at site	Surface: 22. Surface material b/w transformer and furthest proposed EV space	WEIGHT FOR CRITERIA WITHIN DISADVANTAGED COMMUNITIES SCORE (min 1, max 5) >>>	CalEnviroScreen top PG&E quartile: 23. Top quartile of Cal EnviroScreen2.0 Score within PG&E's territory	CARE top quartile: 24. Top quartile of PG&E's CARE rate eligibility	Near non-luxury MUD: 25. Near non-luxury multi-unit dwelling/s	Minority-Owned: 26. Minority-owned business	ALL MINIM	EV ADOPTI	COST SCOR	DISADVANTAGED COMMUNITIES SCORE	FINAL WEIGHTED SCORE	FINAL WEIGHTED SCORE TIER	NOTES	Dwell time	Disdvantaged community?	existing EVSEs?	Bubble num	No. of new DCFCs that can be served by excess transformer capacity (transformed to a single number)
																										5	1	1				5	5		0.33	0.33	0.33								
																					225	13	5	71	Data format >>>	Y/N	1 - 5	1 - 5	Data format >>>	Y/N	Y/N	Y/N	Y/N												
19	-120.669	35.2752	4	7		19-1	019	Bakery	Breaking Bread Bakery Inc	1074 Higuera St	San Luis Obispo	93401-3626	-120.660188	35.281678	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	19	6
						19-2	019	Bank	Heritage Oaks Bank	1144 Morro St	San Luis Obispo	93401-3399	-120.660984	35.280001	0		0		2 - 3	130 to 195 kW		1				Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	19	2
						19-3	019	Bank	Mufg Union Bank Na	995 Higuera St	San Luis Obispo	93401-3601	-120.660823	35.28097	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	19	6
						19-4	019	Bank	Pacific Western Bank	1001 Marsh St	San Luis Obispo	93401-3629	-120.659864	35.28033	0		0		2 - 3	130 to 195 kW		1				Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	19	2
						19-5	019	Bank	Slo Credit Union	1220 Osos St	San Luis Obispo	93401-3620	-120.659865	35.280322	0		0		2 - 3	130 to 195 kW		1				Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	19	2
						19-6	019	Bank	Union Bank Company	995 Higuera St	San Luis Obispo	93401-3601	-120.660823	35.28097	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	19	6
						19-7	019	Bank	US Bank National Association	201 Madonna Rd	San Luis Obispo	93405-5401	-120.676378	35.263811	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	19	6
						19-8	019	Clothing store	Abercrombie & Fitch Stores Inc	980 Higuera St	San Luis Obispo	93401-3602	-120.661064	35.281167	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-9	019	Clothing store	Banana Republic LLC	990 Higuera St	San Luis Obispo	93401-3602	-120.661035	35.281183	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-10	019	Clothing store	Chicos Fas Inc	1080 Court St	San Luis Obispo	93401-3203	-120.661157	35.281241	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-11	019	Clothing store	Live Local Apparel	978 Monterey St	San Luis Obispo	93401-3205	-120.661643	35.281831	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-12	019	Clothing store	Urban Outfitters Inc	962 Monterey St	San Luis Obispo	93401-3205	-120.661659	35.281822	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-13	019	Department store	Kohls Department Stores Inc	205 Madonna Rd	San Luis Obispo	93405-5401	-120.676402	35.263793	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-14	019	Existing Level 2, not elsewhere classified	Best Western Plus Royal Oak Hotel	214 Madonna Rd San Luis Obispo	San Luis Obispo	93405-3405	-120.678337	35.263252	1	Sun Country	0		<2	At least 65 kW	1					N				N	N		N/A	N	0	14	0	0	Data not yet filled		N/A	N	Y	19	0
						19-15	019	Existing Level 2, not elsewhere classified	Cole Value Center	1371 Monterey St San Luis Obispo	San Luis Obispo	93401-3401	-120.655869	35.284786	1	Non-networked	0		<2	At least 65 kW	1					N				N	N		N/A	N	0	14	0	0	Data not yet filled		N/A	N	Y	19	0
						19-16	019	Existing Level 2, not elsewhere classified	Marcum, Copp, Barbieri DDS	1129 Pacific Street	San Luis Obispo	93401-3401	-120.657433	35.280594	1	Non-networked	0		<2	At least 65 kW	1					N				N	N		N/A	N	0	14	0	0	Data not yet filled		N/A	N	Y	19	0
						19-17	019	Furniture, home appliances	Best Appliance Guy	893 Marsh St Ste 496	San Luis Obispo	93401-3699	-120.661055	35.279619	0		0		2 - 3	130 to 195 kW		1				Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	2
						19-18	019	Furniture, home appliances	Pottery Barn Inc	1060 Court St	San Luis Obispo	93401-3203	-120.661233	35.281328	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-19	019	Gas station	James Pfeil	204 Madonna Rd	San Luis Obispo	93405-5409	-120.676127	35.264361	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	19	6
						19-20	019	Government building	County of San Luis Obispo	1150 Osos St Ste 202	San Luis Obispo	93401-3692	-120.660296	35.280826	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-21	019	Medical office	Richard J Macias MD	1235 Osos St Ste 100	San Luis Obispo	93401-3619	-120.659924	35.279928	0		0		2 - 3	130 to 195 kW		1				Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	2
						19-22	019	Medical office	Veterans Health Administration	1288 Morro St Ste 200	San Luis Obispo	93401-6302	-120.660397	35.279349	0		0		2 - 3	130 to 195 kW		1				Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	2
						19-23	019	Parking lot	Marsh St. Garage	881 Marsh St.	San Luis Obispo	93401-3401	-120.661385	35.278706	4	Non-networked	0		<2	At least 65 kW	1					N				N	N		N/A	N	0	14	0	0	Data not yet filled		Medium	N	Y	19	0
						19-24	019	Post office	United States Postal Service	893 Marsh St	San Luis Obispo	93401-3699	-120.661055	35.279619	0		0		2 - 3	130 to 195 kW		1				Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	19	2
						19-25	019	Restaurant or café	Bello Mundo Cafe	980 Monterey St	San Luis Obispo	93401-3205	-120.661641	35.281832	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-26	019	Restaurant or café	Blue	998 Monterey St	San Luis Obispo	93401-3205	-120.661624	35.281842	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-27	019	Restaurant or café	Giuseppes	1010 Court St	San Luis Obispo	93401-3203	-120.661427	35.281552	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-28	019	Restaurant or café	Liberty Cafe	1074 Higuera St	San Luis Obispo	93401-3626	-120.660188	35.281678	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-29	019	Restaurant or café	Louisas Place	964 Higuera St	San Luis Obispo	93401-3602	-120.661525	35.280895	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-30	019	Restaurant or café	Mos Smokehouse Bbq	1005 Monterey St	San Luis Obispo	93401-3237	-120.661157	35.281773	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-31	019	Restaurant or café	Que Pasa Mexican Cafe	1009 Monterey St	San Luis Obispo	93401-3256	-120.661157	35.281773	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-32	019	Restaurant or café	Thai Palace	1015 Court St	San Luis Obispo	93401-3203	-120.66155	35.281219	0		0		6+	At Least 390 kW				1		Y				N	N		Y	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-33	019	Restaurant or café	Woodstocks Pizza LLC	1000 Higuera St	San Luis Obispo	93401-3626	-120.660188	35.281678	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
						19-34	019	Supermarket	Ralphs Grocery Company	201 Madonna Rd	San Luis Obispo	93405-5401	-120.676378	35.263811	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	19	6
51	-120.436	34.9556	3	5		51-1	051	Bakery	Cookie Cookery Inc	239 Town Ctr E	Santa Maria	93454-5130	-120.434214	34.952139	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	51	6
						51-2	051	Bakery	Ginas Piece of Cake	307 Town Ctr E	Santa Maria	93454-5139	-120.434818	34.95215	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	51	6
						51-3	051	Bank	Bank America National Assn	300 Town Ctr E	Santa Maria	93454-5180	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	51	6
						51-4	051	Clothing store	Claires Boutiques Inc	130 Town Ctr E Spc D42	Santa Maria	93454-5129	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-5	051	Clothing store	Fashion Max	181 Town Ctr E	Santa Maria	93454-5158	-120.433784	34.952036	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-6	051	Clothing store	Foot Locker Retail Inc	110 Town Ctr E	Santa Maria	93454-5129	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-7	051	Clothing store	Foot Locker Retail Inc	274 Town Ctr E	Santa Maria	93454-5140	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-8	051	Clothing store	Leenee Clothing Inc	181 Town Ctr E	Santa Maria	93454-5158	-120.433784	34.952036	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-9	051	Clothing store	Maxx Plus	118 Town Ctr E	Santa Maria	93454-5129	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-10	051	Clothing store	Pacific Sunwear California Inc	166 Town Ctr E	Santa Maria	93454-5131	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-11	051	Clothing store	Payless Shoesource Inc	261 Town Ctr E	Santa Maria	93454-5130	-120.434426	34.952148	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-12	051	Clothing store	Sandbox Kids	118 Town Ctr E Ste D	Santa Maria	93454-5129	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-13	051	Clothing store	Styles For Less Inc	118 Town Ctr E D-44	Santa Maria	93454-5129	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-14	051	Clothing store	Trendsetter Fashions	176 Town Ctr E	Santa Maria	93454-5131	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-15	051	Department store	Fallas Discount Stores	201 Town Ctr W	Santa Maria	93458-5075	-120.436705	34.95123	0		0		6+	At Least 390 kW				1		Y				Y	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	51	6
						51-16	051	Department store	Macys West Stores Inc	302 Town Ctr E	Santa Maria	93454-5160	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-17	051	Department store	Sears Roebuck and Co	200 Town Ctr E	Santa Maria	93454-5161	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-18	051	Drug store	Alliance For Phrm Access	237 Town Ctr W 122	Santa Maria	93458-5075	-120.437054	34.950948	0		0		4 - 5	260 to 325 kW			1			Y				Y	Y		N	N	0	71	33	0	Data not yet filled		Short	Y	N	51	4
						51-19	051	Environmental agency	Santa Maria City of	419 S McClelland St	Santa Maria	93454-3454	-120.43445	34.949679	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-20	051	Furniture, home appliances	Merlos Cutlery Inc	138 Town Ctr E	Santa Maria	93454-5129	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-21	051	Government building	Santa Maria City of	204 E Cook St	Santa Maria	93454-5136	-120.434111	34.949725	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-22	051	Government building	Santa Maria City of	110 E Cook St	Santa Maria	93454-5163	-120.435039	34.949718	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-23	051	Health food store	General Nutrition Centers Inc	222 Town Ctr E	Santa Maria	93454-5131	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Short	N	N	51	6
						51-24	051	Library	Santa Maria City of	421 S McClelland St	Santa Maria	93454-5116	-120.434451	34.949633	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-25	051	Medical office	Angeline Deguzman MD	301 E Cook St Ste K	Santa Maria	93454-5134	-120.432864	34.950012	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-26	051	Medical office	Frank D Gnzales MD A Prof Corp	301 E Cook St Ste C	Santa Maria	93454-5133	-120.432864	34.950012	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-27	051	Museum, performing arts, or art gallery	Museum of Natural History	412 S McClelland St	Santa Maria	93454-5117	-120.434115	34.949721	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-28	051	Restaurant or café	Cafe Steinbecks	421 S McClelland St	Santa Maria	93454-5116	-120.434451	34.949633	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-29	051	Restaurant or café	Mikado Japanese Restaurant	209 Town Ctr W	Santa Maria	93458-5075	-120.436783	34.951167	0		0		6+	At Least 390 kW				1		Y				Y	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	51	6
						51-30	051	Restaurant or café	Red Robin Restaurant	101 Town Ctr E	Santa Maria	93454-5128	-120.433643	34.952292	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-31	051	Restaurant or café	Sake Sushi	194 Town Ctr E	Santa Maria	93454-5131	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-32	051	Restaurant or café	Semplici Italian Eatery	198 Town Ctr E	Santa Maria	93454-5131	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-33	051	Restaurant or café	Subway	193 Town Ctr E	Santa Maria	93454-5158	-120.43384	34.952049	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-34	051	Restaurant or café	Taqueria El Buen Gusto	241 Town Ctr W	Santa Maria	93458-5075	-120.437093	34.950917	0		0		4 - 5	260 to 325 kW			1			Y				Y	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	51	4
						51-35	051	Restaurant or café	Teriyaki Bowl	194 Town Ctr E	Santa Maria	93454-5131	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		Y	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
						51-36	051	Restaurant or café	Vera Pizzeria La	239 Town Ctr W	Santa Maria	93458-5075	-120.437074	34.950933	0		0		4 - 5	260 to 325 kW			1			Y				Y	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	51	4
						51-37	051	Tourist attraction or recreation site	Motionz Inc	218 Town Ctr E	Santa Maria	93454-5131	-120.433996	34.951802	0		0		6+	At Least 390 kW				1		Y				N	N		N	N	0	71	0	0	Data not yet filled		Medium	N	N	51	6
64	-120.623	35.1216	3	4		64-1	064	Bakery	Panaderia Carmelita	1051 S 13th St Ste A	Grover Beach	93433-3105	-120.61619	35.111112	0		0		<2	At least 65 kW	1					N				N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	64	0
						64-2	064	Bakery	Payo Laboratories Inc	680 Farroll Rd	Grover Beach	93433-2660	-120.623467	35.114052	0		0		<2	At least 65 kW	1					N				N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	64	0
						64-3	064	Bakery	Wilson Cupcake Company	1630 Longbranch Ave	Grover Beach	93433-2577	-120.611253	35.11886	0		0		<2	At least 65 kW	1					N				N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-4	064	Bank	Heritage Oaks Bank	1530 E Grand Ave	Arroyo Grande	93420-2406	-120.606817	35.120984	0		0		<2	At least 65 kW	1					N				N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-5	064	Bank	Jpmorgan Chase Bank Nat Assn	1758 W Grand Ave	Grover Beach	93433-2293	-120.609648	35.120843	0		0		<2	At least 65 kW	1					N				N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-6	064	Bank	Rabobank National Association	899 W Grand Ave	Grover Beach	93433-2133	-120.620386	35.121635	0		0		<2	At least 65 kW	1					N				N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	64	0

						64-7	064	Bank	Wells Fargo Bank National Assn	1580 W Grand Ave	Grover Beach	93433-2261	-120.611777	35.12094	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-8	064	Clothing store	Bella Tutta	1750 El Camino Real Ste E	Grover Beach	93433-1416	-120.61558	35.132967	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-9	064	Clothing store	Diamond Adult World 5	984 W Grand Ave	Grover Beach	93433-2136	-120.619195	35.12131	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-10	064	Clothing store	KB Horseshoes Inc	1053 Highland Way	Grover Beach	93433-3102	-120.619105	35.109075	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-11	064	Clothing store	Mr Glenn House of Fashion	551 W Grand Ave	Grover Beach	93433-2031	-120.624459	35.121836	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-12	064	Clothing store	Studio of Performing Arts	805 W Grand Ave	Grover Beach	93433-2133	-120.621313	35.121679	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-13	064	Drug store	CVS Pharmacy Inc	1435 E Grand Ave	Arroyo Grande	93420-2423	-120.606501	35.120696	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-14	064	Drug store	Rite Aid Drug Palace Inc	1690 E Grand Ave	Arroyo Grande	93420-2469	-120.60877	35.121077	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-15	064	Electronics store	Avila Electronic	947 Huber St	Grover Beach	93433-3098	-120.622159	35.112425	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-16	064	Electronics store	Radioshack Corporation	1548 W Grand Ave	Grover Beach	93433-2238	-120.612188	35.12096	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-17	064	Environmental agency	City of Oceano	928 Pacific Blvd	Oceano	93445-9649	-120.626625	35.114006	0		0		4 - 5	260 to 325 kW			1		Y			N	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	64	4
						64-18	064	Furniture, home appliances	California Millwork	461 Leoni Dr	Grover Beach	93433-3028	-120.623833	35.11347	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-19	064	Furniture, home appliances	Cole Linen Company	360 W Grand Ave	Grover Beach	93433-1941	-120.626969	35.121685	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-20	064	Furniture, home appliances	Mattress Store	1800 E Grand Ave	Grover Beach	93433-5223	-120.60879	35.120803	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-21	064	Furniture, home appliances	Model Home Furnishings Inc	1030 Huston St Ste E	Grover Beach	93433-3117	-120.619561	35.112806	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-22	064	Furniture, home appliances	Pryor Industries Inc	45 Newport Ave	Grover Beach	93433-1508	-120.630323	35.125991	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-23	064	Gas station	Grover Beach Petroleum Inc	1284 W Grand Ave	Grover Beach	93433-2247	-120.615487	35.121121	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-24	064	Gas station	Paso Robles Seventy Six	684 W Grand Ave	Grover Beach	93433-2079	-120.622896	35.121481	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	64	0
						64-25	064	Government building	City of Pismo Beach	154 S 8th St	Grover Beach	93433-2073	-120.621684	35.120996	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-26	064	Government building	County of San Luis Obispo	286 S 16th St	Grover Beach	93433-2245	-120.611867	35.119248	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-27	064	Government building	Grover Beach City Hall	154 8th St.	Grover Beach	93433-3433	-120.621506	35.120895	1	Non-networked	0		<2	At least 65 kW	1				N			N	N		N/A	N	0	14	0	0	Data not yet filled		Medium	N	Y	64	0
						64-28	064	Grocery or convenience store	Ajjan Salem	601 S 13th St	Grover Beach	93433-2834	-120.615511	35.116017	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-29	064	Grocery or convenience store	Corner Tree Inc	1328 W Grand Ave	Grover Beach	93433-4226	-120.614725	35.121083	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-30	064	Grocery or convenience store	Gary Grieb	390 W Grand Ave	Grover Beach	93433-1941	-120.626585	35.12167	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	64	0
						64-31	064	Grocery or convenience store	Gill Food Mart	1490 E Grand Ave	Arroyo Grande	93420-2452	-120.606482	35.120969	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-32	064	Grocery or convenience store	Guadala Market	1400 W Grand Ave	Grover Beach	93433-4221	-120.613963	35.121045	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-33	064	Grocery or convenience store	Lady Luck Enterprises	1986 Brighton Ave	Grover Beach	93433-1816	-120.606667	35.12311	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-34	064	Grocery or convenience store	Lickety Split	1544 W Grand Ave	Grover Beach	93433-2238	-120.61224	35.120963	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-35	064	Grocery or convenience store	Market Express	1051 S 13th St Ste C	Grover Beach	93433-3105	-120.61619	35.111112	0		0		<2	At least 65 kW	1				N			N	N		Y	N	0	14	0	0	Data not yet filled		Short	N	N	64	0
						64-36	064	Grocery or convenience store	Okuis Strawberry N Frt Stand	1234 Highland Way	Grover Beach	93433-3133	-120.617004	35.108793	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	64	0
						64-37	064	Grocery or convenience store	Pocket Book Grocery	294 N 4th St	Grover Beach	93433-1926	-120.626083	35.124105	0		0		<2	At least 65 kW	1				N			N	N		Y	N	0	14	0	0	Data not yet filled		Short	N	N	64	0
						64-38	064	Grocery or convenience store	Tapatia Market & Deli No 2	646 S 13th St	Grover Beach	93433-2835	-120.615845	35.11603	0		0		<2	At least 65 kW	1				N			N	Y		Y	N	0	14	67	0	Data not yet filled		Short	Y	N	64	0
						64-39	064	Gym or health club	Pacific Flips	998 Huston St	Grover Beach	93433-3114	-120.619561	35.112806	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-40	064	Health food store	Expert Nutrition By RDS	1690 Brighton Ave	Grover Beach	93433-1812	-120.610292	35.123277	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-41	064	Health food store	Natural Edge	555 S 13th St Ste F	Grover Beach	93433-2866	-120.615495	35.11629	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-42	064	Health food store	Quota Intl Atscdero Chrtble Tr	1606 W Grand Ave	Grover Beach	93433-2229	-120.610859	35.120897	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	64	0
						64-43	064	Library	Black Gold Cooperative Lib Sys	391 Front St Ste F	Grover Beach	93433-1553	-120.630592	35.125086	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-44	064	Library	Grover Beach Community Library	240 N 9th St	Grover Beach	93433-2124	-120.619946	35.122885	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-45	064	Lodging	Baney Corporation	651 Five Cities Dr	Pismo Beach	93449-4099	-120.619731	35.134402	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	64	0
						64-46	064	Lodging	County of San Luis Obispo	1001 Pacific Blvd	Oceano	93445-9635	-120.625073	35.111423	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Long	Y	N	64	0
						64-47	064	Lodging	Grover Beach Motel	123 N 13th St	Grover Beach	93433-2204	-120.615471	35.121392	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Long	Y	N	64	0
						64-48	064	Lodging	Oxford Suites	651 Five Cities Dr	Pismo Beach	93449-4099	-120.619731	35.134402	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	64	0
						64-49	064	Lodging	Pismo Beach Vacation Rentals	935 W Grand Ave Ste 101	Grover Beach	93433-2135	-120.619602	35.121601	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	64	0
						64-50	064	Lodging	Sky River Rv Inc	444 S Dolliver St	Pismo Beach	93449-2910	-120.631725	35.128616	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	64	0
						64-51	064	Museum, performing arts, or art gallery	Arroyo Arts	191 S Oak Park Blvd Ste 4	Grover Beach	93433-2265	-120.609019	35.120818	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-52	064	Museum, performing arts, or art gallery	Central Coast Exploration Stn	867 Ramona Ave	Grover Beach	93433-2113	-120.620295	35.122696	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-53	064	Museum, performing arts, or art gallery	Central Coast Western Indian	965 N 6th St	Grover Beach	93433-1346	-120.621279	35.13078	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-54	064	Museum, performing arts, or art gallery	San Luis Obispo RR Museum	141 Grandview Dr	Grover Beach	93433-1339	-120.622044	35.130063	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-55	064	Museum, performing arts, or art gallery	Systems & Marketing Solution	191 S Oak Park Blvd Ste 7	Grover Beach	93433-2265	-120.609019	35.120818	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-56	064	Museum, performing arts, or art gallery	Tim Pacheco	1511 Ramona Ave B	Grover Beach	93433-2221	-120.612411	35.122317	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-57	064	Post office	United States Postal Service	917 W Grand Ave	Grover Beach	93433-9998	-120.619841	35.121611	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	64	0
						64-58	064	Restaurant or café	A J Spurs Inc	1760 El Camino Real	Grover Beach	93433-1411	-120.61626	35.133346	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-59	064	Restaurant or café	Best Lovin Bbq & Grill LLC	1572 W Grand Ave	Grover Beach	93433-2261	-120.61188	35.120945	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-60	064	Restaurant or café	Dennys Inc	611 Five Cities Dr	Pismo Beach	93449-4099	-120.622004	35.135537	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-61	064	Restaurant or café	Dougboys Pizzeria	1800 E Grand Ave	Grover Beach	93433-5223	-120.60879	35.120803	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-62	064	Restaurant or café	Fattes Pizzas	1741 W Grand Ave Ste D	Grover Beach	93433-4216	-120.609923	35.121129	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-63	064	Restaurant or café	Fins	25 W Grand Ave	Grover Beach	93433-1934	-120.634165	35.122339	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-64	064	Restaurant or café	Golden Gong Restaurant	1591 W Grand Ave	Grover Beach	93433-2254	-120.611757	35.121214	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-65	064	Restaurant or café	Grand Deli	1187 W Grand Ave	Grover Beach	93433-2149	-120.616876	35.121462	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-66	064	Restaurant or café	Harry Mason Restaurant Corp	581 Five Cities Dr	Pismo Beach	93449-3005	-120.622492	35.13572	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-67	064	Restaurant or café	Jalapenos Mexican Restaurant	1010 W Grand Ave	Grover Beach	93433-4108	-120.618863	35.121294	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-68	064	Restaurant or café	Jersey Mikes Subs	1540 E Grand Ave Ste B	Arroyo Grande	93420-2445	-120.608203	35.121049	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-69	064	Restaurant or café	John Steel	1511 W Grand Ave	Grover Beach	93433-2226	-120.612678	35.121258	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-70	064	Restaurant or café	Juanitas Home Made Mexic	350 W Grand Ave	Grover Beach	93433-1941	-120.627097	35.12169	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-71	064	Restaurant or café	Kenneth Chiang Kou Pu	1591 W Grand Ave	Grover Beach	93433-2254	-120.611757	35.121214	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-72	064	Restaurant or café	La Pizza Senza Glutenata	1800 E Grand Ave Ste N	Grover Beach	93433-5222	-120.60879	35.120803	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-73	064	Restaurant or café	Lilbits Cafe	151 N 7th St	Grover Beach	93433-2046	-120.622878	35.121754	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-74	064	Restaurant or café	Little Caesars	1530 E Grand Ave Ste A	Arroyo Grande	93420-2406	-120.606817	35.120984	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-75	064	Restaurant or café	Los Berros Market Deli & Cafe	380 Dover CT	Grover Beach	93433-2588	-120.612777	35.118184	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-76	064	Restaurant or café	Margarita Oregon	967 W Grand Ave	Grover Beach	93433-2135	-120.619178	35.121584	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-77	064	Restaurant or café	Mongos Saloon & Coffee Bar	359 W Grand Ave	Grover Beach	93433-1940	-120.627017	35.121961	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-78	064	Restaurant or café	Orcutt Burgers	1771 W Grand Ave	Grover Beach	93433-2230	-120.609923	35.121129	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-79	064	Restaurant or café	Pizza Express Grover Beach	960 W Grand Ave	Grover Beach	93433-2121	-120.619301	35.121315	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-80	064	Restaurant or café	Rendezvous	940 Ramona Ave	Grover Beach	93433-2155	-120.619534	35.122383	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-81	064	Restaurant or café	Rib Line By Beach	228 W Grand Ave	Grover Beach	93433-1939	-120.628636	35.121756	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-82	064	Restaurant or café	Ruby Picilino	1550 W Grand Ave	Grover Beach	93433-2235	-120.612163	35.120959	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-83	064	Restaurant or café	S & M Restaurant Inc	1773 W Grand Ave	Grover Beach	93433-2230	-120.609631	35.121116	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-84	064	Restaurant or café	Sams Giant Manhattan Pizza	1514 W Grand Ave	Grover Beach	93433-2209	-120.612626	35.120981	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-85	064	Restaurant or café	Starbucks Corporation	1421 E Grand Ave Ste A2	Arroyo Grande	93420-2423	-120.606264	35.120684	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-86	064	Restaurant or café	Station Grill	170 W Grand Ave Ste 101	Grover Beach	93433-1960	-120.630557	35.12189	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-87	064	Restaurant or café	Subway Restaurant	1427 E Grand Ave	Arroyo Grande	93420-2423	-120.606366	35.120689	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-88	064	Restaurant or café	Sugar Rush Candy Buffets	1385 ATL Cy Ave APT 104	Grover Beach	93433-3433	-120.6137	35.127	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-89	064	Restaurant or café	Surfside Deli	191 S Oak Park Blvd Ste 1	Grover Beach	93433-2265	-120.609019	35.120818	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-90	064	Restaurant or café	Sushi Kokku	581 Five Cities Dr	Pismo Beach	93449-3005	-120.622492	35.13572	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-91	064	Restaurant or café	Taco Bell	1500 W Grand Ave	Grover Beach	93433-2209	-120.612806	35.12099	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-92	064	Restaurant or café	Taco Rico	1800 E Grand Ave Ste M	Grover Beach	93433-5222	-120.60879	35.120803	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-93	064	Restaurant or café	Tacos Acapulco	1051 S 13th St Ste E	Grover Beach	93433-3105	-120.61619	35.111112	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-94	064	Restaurant or café	Taqueria Guerrero No 2	1800 E Grand Ave	Grover Beach	93433-5223	-120.60879	35.120803	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-95	064	Restaurant or café	Thai Dheva	501 W Grand Ave	Grover Beach	93433-2031	-120.625011	35.121866	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	64	0
						64-96	064	Restaurant or café	Umi Teriyaki & Sushi	1319 W Grand Ave	Grover Beach	93433-2248	-120.614961	35.12137	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
						64-97	064	Restaurant or café	Yamato Japanese Restaurant	1741 W Grand Ave Ste E	Grover Beach	93433-4216	-120.609923	35.121129	0		0		<2	At least 65 kW	1				N			N	Y		Y	N	0	14	67	0	Data not yet filled		Medium	Y	N	64	0
						64-98	064	Supermarket	Vons Companies Inc	1758 W Grand Ave	Grover Beach	93433-2293	-120.609648	35.120843	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	64	0
92	-120.649	35.4623	2	4		92-1	092	Bakery	Dks Donuts Inc	8550 El Camino Real Ste A	Atascadero	93422-5397	-120.653893	35.472596	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-2	092	Bakery	Sister Cakes	11195 El Cmino Real APT A	Atascadero	93422-3422	-120.639734	35.455398	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-3	092	Bank	Golden 1	8727 El Camino Real	Atascadero	93422-5368	-120.653296	35.472022	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-4	092	Bank	US Bank National Association	189 Niblick Rd	Paso Robles	93422-5215	-120.654765	35.474706	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-5	092	Botanical garden, zoo, or aquarium	Central Coast Zoo Society	9965 El Camino Real Ste B	Atascadero	93422-5562	-120.646456	35.46372	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Long	Y	N	92	0
						92-6	092	Clothing store	Abybella Boutique	8803 Arcade Rd	Atascadero	93422-5303	-120.653158	35.474576	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-7	092	Drug store	Albertsons LLC	8200 El Camino Real	Atascadero	93422-5215	-120.654765	35.474706	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-8	092	Drug store	CVS Pharmacy Inc	8320 El Camino Real	Atascadero	93422-5354	-120.654683	35.474511	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-9	092	Drug store	Longs Drug Stores Cal Inc	8320 El Camino Real	Atascadero	93422-5354	-120.654683	35.474511	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-10	092	Drug store	New Albertsons Inc	8200 El Camino Real	Atascadero	93422-5215	-120.654765	35.474706	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-11	092	Electronics store	Jerrys Wholesale Car Stereos	8396 El Camino Real	Atascadero	93422-5357	-120.654422	35.473886	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-12	092	Furniture, home appliances	Colony Carpets	8305 El Camino Real	Atascadero	93422-5323	-120.654447	35.474794	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-13	092	Furniture, home appliances	Everrest Inc	8784 Plata Ln Unit B	Atascadero	93422-5340	-120.654426	35.472205	0		0		2 - 3	130 to 195 kW		1			Y			N	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	92	2
						92-14	092	Furniture, home appliances	Steam Pro Carpet Care	8981 La Linia Ave Ste A	Atascadero	93422-5322	-120.653117	35.469802	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-15	092	Gas station	Atascadero Shell Food Mart	9155 San Gabriel Rd	Atascadero	93422-5855	-120.648082	35.463073	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0

						92-16	092	Grocery or convenience store	A-Town Deli	8300 El Camino Real Ste 3	Atascadero	93422-5358	-120.654765	35.474706	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-17	092	Grocery or convenience store	Paloma Creek Mini Mart	11250 Viejo Camino	Atascadero	93422-6012	-120.639242	35.454676	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-18	092	Grocery or convenience store	Spencers Fresh Markets	8665 El Camino Real	Atascadero	93422-5329	-120.65339	35.472245	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-19	092	Health food store	Naturalypure Health Pdts LLC	8793 Plata Ln	Atascadero	93422-5338	-120.653902	35.472578	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-20	092	Library	Logan Library	10333 El Camino Real	Atascadero	93422-5808	-120.644219	35.461055	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	92	0
						92-21	092	Lodging	Guest House Grill LLC	8783 El Camino Real	Atascadero	93422-5331	-120.653211	35.47182	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Long	Y	N	92	0
						92-22	092	Lodging	H & S Hospitality LLC	9010 W Front Rd	Atascadero	93422-5403	-120.652173	35.465956	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	92	0
						92-23	092	Lodging	Motel 6 Operating LP	9400 El Camino Real	Atascadero	93422-5514	-120.650075	35.467139	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Long	Y	N	92	0
						92-24	092	Medical office	Dawn E Santos	10333 El Camino Real	Atascadero	93422-5808	-120.644219	35.461055	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	92	0
						92-25	092	Medical office	Frances M Saponaro	10333 El Camino Real	Atascadero	93422-5808	-120.644219	35.461055	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	92	0
						92-26	092	Medical office	Lee Psychiatric Medical Gr	9330 Maduro Ln APT 8	Atascadero	93422-6838	-120.638381	35.456147	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-27	092	Medical office	Vishkautsan Polina Dvm	9575 El Camino Real	Atascadero	93422-5577	-120.648788	35.466352	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-28	092	Museum, performing arts, or art gallery	Atascadero Art Assoc		Atascadero	93423-3423	-120.64729	35.46433	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-29	092	Post office	United States Postal Service	9800 El Camino Real	Atascadero	93422-9990	-120.647114	35.464014	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Short	Y	N	92	0
						92-30	092	Restaurant or café	Atascadero State Hosp Canteen	10333 El Camino Real	Atascadero	93422-5808	-120.644219	35.461055	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	92	0
						92-31	092	Restaurant or café	Bravo Pizza Plus	8731 El Camino Real	Atascadero	93422-5331	-120.65329	35.472007	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-32	092	Restaurant or café	Burger King	8304 El Camino Real	Atascadero	93422-5354	-120.654749	35.474667	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-33	092	Restaurant or café	Davids Kitchen	9975 El Camino Real	Atascadero	93422-5572	-120.646265	35.463495	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-34	092	Restaurant or café	Desi Enterprises Inc	8789 El Camino Real	Atascadero	93422-5331	-120.653202	35.471798	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-35	092	Restaurant or café	Dominos Pizza	8307 El Camino Real	Atascadero	93422-3422	-120.654435	35.474767	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-36	092	Restaurant or café	Garcias Restaurant	9550 El Camino Real	Atascadero	93422-5565	-120.6494	35.466494	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-37	092	Restaurant or café	Jack In Box	9000 W Front Rd	Atascadero	93422-5403	-120.652329	35.466183	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	92	0
						92-38	092	Restaurant or café	Nardonnes La Famiglia Pizzeria	8501 El Camino Real	Atascadero	93422-5367	-120.653743	35.473095	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-39	092	Restaurant or café	Outlaws Bar & Grill Inc	9850 E Front Rd	Atascadero	93422-3422	-120.649147	35.463956	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-40	092	Restaurant or café	Pedros Don Mexican Food Rest	8550 El Camino Real	Atascadero	93422-5397	-120.653893	35.472596	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-41	092	Restaurant or café	Pizza Express	8220 El Camino Real	Atascadero	93422-5215	-120.654765	35.474706	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-42	092	Restaurant or café	Players Pizza & Pasta	8845 El Camino Real	Atascadero	93422-5333	-120.652788	35.470863	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-43	092	Restaurant or café	Royal Restaurants Group Inc	8789 El Camino Real	Atascadero	93422-5331	-120.653202	35.471798	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-44	092	Restaurant or café	Surf Mamma	9316 Bocina Ln	Atascadero	93422-6857	-120.635667	35.455293	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-45	092	Restaurant or café	Taco Stand	9965 El Camino Real	Atascadero	93422-5562	-120.646456	35.46372	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-46	092	Supermarket	Grocery One Inc	8360 El Camino Real	Atascadero	93422-5324	-120.65452	35.47412	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
						92-47	092	Supermarket	Haggen Inc	8200 El Camino Real	Atascadero	93422-5215	-120.654765	35.474706	0		0		<2	At least 65 kW	1				N			N	Y		N	N	0	14	33	0	Data not yet filled		Medium	Y	N	92	0
122	-120.687	35.6254	2	3		122-1	122	Gas station	Paso Robles Unocal 76	1441 Spring St	Paso Robles	93446-2143	-120.691817	35.629624	0		0		6+	At Least 390 kW				1	Y			N	Y		N	N	0	71	33	0	Data not yet filled		Short	Y	N	122	6
						122-2	122	Lodging	Bpo Paso Robles Lodges 2364	1420 Park St	Paso Robles	93446-2160	-120.690148	35.629119	0		0		6+	At Least 390 kW				1	Y			N	Y		N	N	0	71	33	0	Data not yet filled		Long	Y	N	122	6
						122-3	122	Lodging	Htl Cheval LLC	1021 Pine St	Paso Robles	93446-2537	-120.688887	35.624879	0		0		2 - 3	130 to 195 kW		1			Y			N	Y		N	N	0	71	33	0	Data not yet filled		Long	Y	N	122	2
						122-4	122	Lodging	Paso Robles Inn	1103 Spring St	Paso Robles	93446-3446	-120.692101	35.625526	2	Sun Country, Tesla Destination	0		<2	At least 65 kW	1				N			N	Y		N/A	N	0	14	33	0	Data not yet filled		Long	Y	Y	122	0
						122-5	122	Medical office	Dr Gwen Pillow	1502 Spring St Ste B	Paso Robles	93446-2168	-120.691503	35.629916	0		0		6+	At Least 390 kW				1	Y			N	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	122	6
						122-6	122	Post office	United States Postal Service	800 6th St	Paso Robles	93446-9990	-120.688941	35.620423	0		0		6+	At Least 390 kW				1	Y			N	Y		N	N	0	71	33	0	Data not yet filled		Short	Y	N	122	6
						122-7	122	Railway station	Paso Robles Park and Ride	624 Pine St	Paso Robles	93446-3446	-120.688042	35.621822	2	ChargePoint	0		<2	At least 65 kW	1				N			N	Y		N/A	N	0	14	33	0	Data not yet filled		Long	Y	Y	122	0
						122-8	122	Restaurant or café	Dantes Benzina LLC		Paso Robles	93447-3447	-120.68928	35.62059	0		0		6+	At Least 390 kW				1	Y			N	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	122	6
						122-9	122	Restaurant or café	Kobys Kitchen Inc	1401 Park St Ste 105	Paso Robles	93446-2173	-120.69047	35.628956	0		0		6+	At Least 390 kW				1	Y			N	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	122	6
						122-10	122	Restaurant or café	La Casa De Amayah Mexican Rest	1510 Park St	Paso Robles	93446-2162	-120.690232	35.630082	0		0		6+	At Least 390 kW				1	Y			N	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	122	6
						122-11	122	Restaurant or café	Losrobles Cafe	1420 Spring St	Paso Robles	93446-2144	-120.691446	35.629207	0		0		6+	At Least 390 kW				1	Y			N	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	122	6
						122-12	122	Restaurant or café	Pizza Planet	717 6th St	Paso Robles	93446-2871	-120.690234	35.620627	0		0		6+	At Least 390 kW				1	Y			N	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	122	6
						122-13	122	Restaurant or café	Restaurant 4 Hermanos	709 6th St	Paso Robles	93446-2871	-120.690234	35.620627	0		0		6+	At Least 390 kW				1	Y			N	Y		N	N	0	71	33	0	Data not yet filled		Medium	Y	N	122	6
						122-14	122	Tourist attraction or recreation site	Herman Story Winery	1227 Paso Robles Street	Paso Robles	93446-3446	-120.685878	35.62736	2	Non-networked	0		2 - 3	130 to 195 kW		1			Y			N	Y		N/A	N	0	71	33	0	Data not yet filled		Medium	Y	Y	122	2
216	-120.278	34.7427	1	1		216-1	216	Bakery	Bob's Well Bread Bakery	550 Bell Street	Los Alamos	93440-3440	-120.276886	34.743786	2	Non-networked, Tesla Destination	0		<2	At least 65 kW	1				N			N	N		N/A	N	0	14	0	0	Data not yet filled		Short	N	Y	216	0
						216-2	216	Gas station	Los Alamos Chevron Inc	605 Bell St	Los Alamos	93440-3440	-120.274873	34.743828	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	216	0
						216-3	216	Lodging	Skyview Motel	9150 Highway 101	Los Alamos	93440-3440	-120.272743	34.74444	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	216	0
						216-4	216	Restaurant or café	Cafe Quackenbush	458 Bell St	Los Alamos	93440-3440	-120.27841	34.743905	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	216	0
						216-5	216	Restaurant or café	Charlies	97 Den	Los Alamos	93440-3440	-120.283221	34.745397	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	216	0
						216-6	216	Restaurant or café	Ghostriders Tavern	550 Bell	Los Alamos	93440-3440	-120.276882	34.743843	2		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	Y	216	0
						216-7	216	Restaurant or café	Los Alamos Valley Mens Club	429 Leslie	Los Alamos	93440-3440	-120.27933	34.744946	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	216	0
233	-121.083	35.5637	1	1		233-1	233	Bakery	French Corner Bakery	2214 Main St	Cambria	93428-3018	-121.082455	35.563878	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	233	0
						233-2	233	Bank	Heritage Oaks Bank	2255 Main St	Cambria	93428-3025	-121.082387	35.564189	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	233	0
						233-3	233	Bank	Rabobank National Association	1070 Main St	Cambria	93428-2822	-121.095066	35.563725	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	233	0
						233-4	233	Clothing store	Gowa Creative Arts	4009 West St	Cambria	93428-3024	-121.083373	35.562889	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-5	233	Clothing store	Marybels Clothes & Accessories	2106 Main St	Cambria	93428-3016	-121.083374	35.563623	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-6	233	Clothing store	Ocean Heir	2024 Main St	Cambria	93428-3014	-121.08394	35.563507	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-7	233	Clothing store	Place	2336 Main St Ste A	Cambria	93428-3404	-121.08133	35.564261	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-8	233	Clothing store	Porte Hse Gllery of Wrable Art	4015 West St	Cambria	93428-3024	-121.083355	35.562842	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-9	233	Drug store	Cambria Drug & Gifts	2222 Main St	Cambria	93428-3018	-121.082455	35.563878	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	233	0
						233-10	233	Existing Level 2, not elsewhere classified	Cambria Pine	2950 Burton Dr Cambria	Cambria	93428-3428	-121.080154	35.558788	3	Non-networked, Tesla Destination	0		<2	At least 65 kW	1				N			N	N		N/A	N	0	14	0	0	Data not yet filled		N/A	N	Y	233	0
						233-11	233	Furniture, home appliances	Personal Touch Woodworks	2419 Village Ln Ste C	Cambria	93428-3416	-121.07981	35.56221	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-12	233	Furniture, home appliances	Pine Tree Patchworks	815 Main St Ste A	Cambria	93428-2832	-121.099174	35.566836	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-13	233	Furniture, home appliances	Shepherds Carpet Service Inc	2501 Village Ln Ste H	Cambria	93428-3439	-121.078741	35.563299	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-14	233	Furniture, home appliances	Windancer Gallery	815 Main St	Cambria	93428-2832	-121.099174	35.566836	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-15	233	Gas station	Cambria Chevron	2194 Main St	Cambria	93428-3016	-121.082773	35.563785	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	233	0
						233-16	233	Gas station	Cambria General Store	850 Main St	Cambria	93428-2818	-121.098651	35.566128	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	233	0
						233-17	233	Gym or health club	Cambria Community Fitness Inc	1241 Knollwood Dr Pmb 996	Cambria	93428-3322	-121.092006	35.563616	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-18	233	Hospital	Sierra Vista Hospital Inc	2150 Main St Ste 1	Cambria	93428-3022	-121.083066	35.563702	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-19	233	Library	County of San Luis Obispo	1043 Main St	Cambria	93428-2821	-121.095998	35.564643	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-20	233	Lodging	Bluebird Motel	1880 Main St	Cambria	93428-3010	-121.08493	35.563326	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	233	0
						233-21	233	Lodging	Bridge Street Inn	4314 Bridge St	Cambria	93428-2104	-121.081682	35.565187	1		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	Y	233	0
						233-22	233	Lodging	Bridge Street Inn	4314 Bridge Street	Cambria	93428-3428	-121.08181	35.565729	1	Non-networked	0		<2	At least 65 kW	1				N			N	N		N/A	N	0	14	0	0	Data not yet filled		Long	N	Y	233	0
						233-23	233	Lodging	Bruce Black	4063 Burton Dr	Cambria	93428-3001	-121.082379	35.56262	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	233	0
						233-24	233	Lodging	Burton Drive Inn Sylvias	4022 Burton Dr	Cambria	93428-3002	-121.081749	35.561816	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	233	0
						233-25	233	Lodging	Cambria Palms Motel	2662 Main St	Cambria	93428-3410	-121.0773	35.566433	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	233	0
						233-26	233	Lodging	J Patrick House	2990 Burton Dr	Cambria	93428-4002	-121.07904	35.558049	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	233	0
						233-27	233	Lodging	Litco LLC	2618 Main St	Cambria	93428-3410	-121.07818	35.566238	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	233	0
						233-28	233	Lodging	Monterey Htl/Hsing Owners Assn	2905 Burton Dr	Cambria	93428-4001	-121.078679	35.558232	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	233	0
						233-29	233	Lodging	Olallieberry Inn Inc	2476 Main St	Cambria	93428-3406	-121.079538	35.565697	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	233	0
						233-30	233	Lodging	Pri LLC	2905 Burton Dr	Cambria	93428-4001	-121.078679	35.558232	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	233	0
						233-31	233	Lodging	Squibb House	4063 Burton Dr	Cambria	93428-3001	-121.082379	35.56262	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Long	N	N	233	0
						233-32	233	Movie theater	Pewter Plough Playhouse	824 Main St	Cambria	93428-2818	-121.099075	35.566418	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-33	233	Museum, performing arts, or art gallery	Amphora Gallery	4070 Burton Dr	Cambria	93428-3000	-121.082084	35.562778	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-34	233	Museum, performing arts, or art gallery	Griffin Ptricia Studio Gallery	880 Main St	Cambria	93428-2818	-121.098286	35.565874	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-35	233	Museum, performing arts, or art gallery	Joanne Yenshaw	4044 Burton Dr Ste 1	Cambria	93428-3002	-121.081904	35.56225	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-36	233	Museum, performing arts, or art gallery	Lily Painted	2026 Main St	Cambria	93428-3014	-121.083926	35.56351	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-37	233	Museum, performing arts, or art gallery	Lulu Gallerie	2450 Main St	Cambria	93428-3426	-121.079904	35.565461	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-38	233	Museum, performing arts, or art gallery	Riccardo Artist Gallery	836 Main St	Cambria	93428-2818	-121.098822	35.566247	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-39	233	Museum, performing arts, or art gallery	Seekers Group Inc	4090 Burton Dr	Cambria	93428-3021	-121.082222	35.563185	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-40	233	Museum, performing arts, or art gallery	Vault Gallery	2289 Main St	Cambria	93428-3017	-121.081781	35.564382	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-41	233	Post office	United States Postal Service	4100 Bridge St	Cambria	93428-9990	-121.081275	35.564001	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Short	N	N	233	0
						233-42	233	Restaurant or café	Bonis Tacos	2405 Village Ln	Cambria	93428-3435	-121.079927	35.561998	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-43	233	Restaurant or café	Dragon Bistro	2150 Center St	Cambria	93428-3020	-121.083004	35.562996	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-44	233	Restaurant or café	Forever Wemple LLC	2336 Main St	Cambria	93428-3404	-121.08133	35.564261	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-45	233	Restaurant or café	Ginger Wild Cafe	2380 Main St Ste G	Cambria	93428-3431	-121.080718	35.564743	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-46	233	Restaurant or café	JB JS Round Up Pizza & Grub	815 Main St	Cambria	93428-2832	-121.099174	35.566836	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-47	233	Restaurant or café	Jenifer Thieme	1053 Main St	Cambria	93428-2821	-121.095516	35.564328	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-48	233	Restaurant or café	Jjs Pizza	2380 Main St	Cambria	93428-3431	-121.080718	35.564743	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-49	233	Restaurant or café	Lilys Coffee House	2028 Main St	Cambria	93428-3014	-121.083912	35.563512	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-50	233	Restaurant or café	Linns Fruit Bin Inc	2415 Village Ln Ste A	Cambria	93428-3434	-121.079843	35.562149	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-51	233	Restaurant or café	Linns Fruit Bin Inc	2277 Main St	Cambria	93428-3428	-121.081901	35.56434	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-52	233	Restaurant or café	Linns Home Style	4249 Bridge St	Cambria	93428-2101	-121.082167	35.565605	1		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	Y	233	0
						233-53	233	Restaurant or café	Linns Restaurant & Bakery	2531 Village Ln	Cambria	93428-3427	-121.078674	35.563337	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0
						233-54	233	Restaurant or café	Lombardis Pasta Familia	4158 Bridge St	Cambria	93428-3402	-121.081275	35.564001	0		0		<2	At least 65 kW	1				N			N	N		N	N	0	14	0	0	Data not yet filled		Medium	N	N	233	0

						233-55	233	Restaurant or café	Mike Molnar	841 Main St	Cambria	93428-2828	-121.098603	35.566455	0		0		<2	At least 65 kW
						233-56	233	Restaurant or café	Oscars Restaurant	4090 Burton Dr	Cambria	93428-3021	-121.082222	35.563185	0		0		<2	At least 65 kW
						233-57	233	Restaurant or café	Pizza Garden	2114 Main St	Cambria	93428-3016	-121.08332	35.563634	0		0		<2	At least 65 kW
						233-58	233	Restaurant or café	Redwood Cafe	2094 Main St	Cambria	93428-3014	-121.083456	35.563605	0		0		<2	At least 65 kW
						233-59	233	Restaurant or café	Robishan Inc	4095 Burton Dr	Cambria	93428-3001	-121.082546	35.563112	0		0		<2	At least 65 kW
						233-60	233	Restaurant or café	Sows Ear Cafe Inc	2248 Main St	Cambria	93428-3018	-121.08209	35.563985	0		0		<2	At least 65 kW
						233-61	233	Restaurant or café	Tea Cozy	4286 Bridge St	Cambria	93428-2102	-121.081602	35.56495	1		0		<2	At least 65 kW
						233-62	233	Restaurant or café	Woodies Pizza & Subs	1069 Main St	Cambria	93428-2821	-121.094848	35.563936	0		0		<2	At least 65 kW
						233-63	233	Tourist attraction or recreation site	Joslyn Adult Recreation Center	950 Main St	Cambria	93428-2820	-121.097434	35.565282	0		0		<2	At least 65 kW
283	-120.191	34.6124	1	1		283-1	283	College or university	Santa Barbara Pipetrades Train	93 Thomas Rd	Buellton	93427-9657	-120.187254	34.62155	0		0		4 - 5	260 to 325 kW
						283-2	283	Existing DCFC, not elsewhere classified	Buellton Supercharger	555 McMurray Road	Buellton	93427-3427	-120.188484	34.614552	0		1	Tesla Supercharger	6+	At Least 390 kW
						283-3	283	Furniture, home appliances	Stewarts Woodworking Inc	83 Thomas Rd	Buellton	93427-9657	-120.187334	34.620986	0		0		6+	At Least 390 kW
						283-4	283	Government building	Buellton City Hall	331 Park St Buellton	Buellton	93427-3427	-120.195778	34.614735	1	ChargePoint	0		<2	At least 65 kW
						283-5	283	Library	Buellton Branch Library	140 W Highway 246	Buellton	93427-7001	-120.196021	34.614151	1		0		2 - 3	130 to 195 kW
						283-6	283	Lodging	Days Inn Windmill	114 E W Hwy 246	Buellton	93427-3427	-120.196021	34.614151	1		0		2 - 3	130 to 195 kW
						283-7	283	Lodging	Santa Ynez Valley Marriott	555 McMurray Rd	Buellton	93427-3427	-120.18856	34.615452	0		1	ChargePoint	6+	At Least 390 kW
						283-8	283	Movie theater	Parks Plaza Theatre	515 McMurray Rd	Buellton	93427-9559	-120.187886	34.616655	0		0		6+	At Least 390 kW
						283-9	283	Post office	United States Postal Service	140 W Highway 246	Buellton	93427-9990	-120.196021	34.614151	1		0		2 - 3	130 to 195 kW
284	-119.679	34.9457	1	1		284-1	284	Grocery or convenience store	C & H Market	4859 Primero St	New Cuyama	93254-3254	-119.688483	34.947425	0		0		<2	At least 65 kW
						284-2	284	Post office	United States Postal Service	4855 Primero St	New Cuyama	93254-9700	-119.688354	34.947378	0		0		<2	At least 65 kW
300	-120.698	35.6956	1	1		300-1	300	Grocery or convenience store	Magnolia Produce	35 Wellsona Rd	Paso Robles	93446-7642	-120.701243	35.695817	0		0		<2	At least 65 kW
						300-2	300	Lodging	Paso Rbles R V Rnch Campground	398 Exline Rd	Paso Robles	93446-9675	-120.699591	35.681739	0		0		<2	At least 65 kW
						300-3	300	Lodging	Vines Rv Resort	88 Wellsona Rd	Paso Robles	93446-7642	-120.696348	35.695975	0		0		<2	At least 65 kW

233-55	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Medium	N	N	233	0
233-56	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Medium	N	N	233	0
233-57	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Medium	N	N	233	0
233-58	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Medium	N	N	233	0
233-59	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Medium	N	N	233	0
233-60	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Medium	N	N	233	0
233-61	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Medium	N	Y	233	0
233-62	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Medium	N	N	233	0
233-63	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Medium	N	N	233	0
283-1			1		Y			N	N		N	N	0	71	0	**0**	**Data not yet filled**		Long	N	N	283	4
283-2				1	Y			N	N		N/A	N	0	71	0	**0**	**Data not yet filled**		N/A	N	Y	283	6
283-3				1	Y			N	N		N	N	0	71	0	**0**	**Data not yet filled**		Medium	N	N	283	6
283-4	1				N			N	N		N/A	N	0	14	0	**0**	**Data not yet filled**		Medium	N	Y	283	0
283-5		1			Y			N	N		N	N	0	71	0	**0**	**Data not yet filled**		Medium	N	Y	283	2
283-6		1			Y			N	N		N	N	0	71	0	**0**	**Data not yet filled**		Long	N	Y	283	2
283-7				1	Y			N	N		N/A	N	0	71	0	**0**	**Data not yet filled**		Long	N	Y	283	6
283-8				1	Y			N	N		N	N	0	71	0	**0**	**Data not yet filled**		Medium	N	N	283	6
283-9		1			Y			N	N		N	N	0	71	0	**0**	**Data not yet filled**		Short	N	Y	283	2
284-1	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Short	N	N	284	0
284-2	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Short	N	N	284	0
300-1	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Short	N	N	300	0
300-2	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Long	N	N	300	0
300-3	1				N			N	N		N	N	0	14	0	**0**	**Data not yet filled**		Long	N	N	300	0

APPENDIX D-1:
Summary of Task 4 Key Conclusions

Project Purpose

EV Alliance researched issues related to fleets transition to electric vehicles (EV) and provided recommendations to accelerate adoption. On the Central Coast, very few fleets utilize EV's due to several key factors including:

- Upfront cost, both of EVs and charging infrastructure
- Lack of appropriate EV models
- Lack of familiarity with EVs and their benefits
- Reluctance to try new technologies and uncertainty about long term operational savings
- Inertia and lack of time to devote to exploring EV options

Overcoming Barriers to Fleet Electrification

The overall recommendation to accelerate adoption of EVs is to advertise benefits to fleet managers, such as the reduction in fuel and maintenance costs. Other recommendations for fleets include:

1. Monetize Federal Tax Credits: public or non-profit fleets should utilize the $7,500 federal tax credit. Most fleets were aware of the $2,500 California Clean Vehicle Rebate and found it easy to claim.
2. Monetize the Low Carbon Fuel Standard (LCFS) Credits: For all fleet vehicles and for public charging stations that fleet's own.
3. Prioritize Use of Battery EV Fleets to Increase Electric Miles Traveled: Assign drivers or routes an EV if traveling at least 30-60 miles per day.
4. Include Longer-Range EVs in Fleet Deployments: Invest in longer range EVs such as Chevrolet Bolts (238-mile range) and use vehicle assignments to make sure these vehicles are routinely maximized.
5. Develop Fleet EV Mandates or "Green Fleet Policies": When public and private fleets develop fleet EV mandates or "Green Fleet Policies" they provide specificity to sustainability goals. Examples include:
    a. The California Department of General Services goal is to purchase 25% electric light-duty fleet vehicles by 2020, and 50% by 2025, driving early EV adoption to help meet the California goal of 5 million zero emission vehicles on the road by 2030. Another example is the City of Santa Monica's administrative instruction to consider EVs first in procurement, a policy that can help agencies meet their e-fleet transition goals.

EV Alliance sent information on these goals to all fleets contacted, but it will require ongoing advocacy on the part of Electric Drive 805 and local leaders to move these goals forward.

6. Develop comprehensive Fleet Electrification plans to provide a clear timeline and strategy for acquiring EVs and building out charging infrastructure.
7. Utilize Existing Incentive Programs: Increase awareness and utilize incentive programs including SoCal Edison's Charge Ready program and PG&E's EV Charge Network program and local air district grant programs.

Impact of Model Availability

- Many public fleets have significant numbers of light-duty trucks. While there are currently no light-duty pick-up truck options on the market, brands like Ford, Workhorse, Havelaar, and Rivian have committed to delivering light-duty electric trucks in the early 2020s.
- Many fleet managers are hesitant to deploy vehicles from smaller start-up companies because of high pricing and uncertainty if the company will survive into future years and honor warranties.
- Lack of appropriate EV models was a large barrier for many fleets, especially in the medium and heavy-duty sectors. However, due to the California Air Resources Board's Innovative Clean Transit measures, all California transit districts will ramp up purchases of 100% EV buses by 2029.
- School and transit buses are the most mature of medium- and heavy-duty EV technologies and are a "beachhead" sector.

Lessons Learned and Next Steps

Public versus private fleets

- Private fleets were less likely to respond to initial outreach and very few fleet spreadsheets were received after conversing with private fleets.
- Large companies are primarily focused on fleet electrification in large urban centers. The smaller outposts on the Central Coast have not yet been prioritized for EV deployment.

School Bus, transit, paratransit and county fleets should be prioritized

- School districts were particularly interested to learn more from EV Alliance because of the Energy Commission Grant ARV-16-015 which aims to put hundreds of EV school buses on California's roads. Many Central Coast school districts applied for the Energy Commission funding, and several will likely receive EV buses from the solicitation.
- Research and conversations determined significant opportunity to downsize some vehicles to EV sedans for ambulatory paratransit customers, which would have significant capital and operational savings.

- To maximize electric VMT per incentive dollar expended, local counties should be prioritized for EV resources, EV-friendly policies, and EV action plans because of their large fleet vehicle count.

Workplace charging for the "employee fleet"

- Local agencies are some of the largest employers in the region. Government workers with long commutes are prime targets for switching to EVs, as they can easily harvest the operating savings of high mileage EV use.

APPENDIX D-2:
Fleet Sheet Copy

See next 3 pages.

Fleet Sheet - Funding Options and Vehicles Available

Electric Vehicle Funding Opportunities

Category	Name	Sponsor	Details	Link
Light Duty	CALIFORNIA CLEAN VEHICLE REBATE PROJECT	California Air Resources Board	$1,500 PHEV $2,500 EV	https://cleanvehiclerebate.org
	IRS Federal Tax Credit	IRS	$7,500 tax credit – Seller can pass to gov't agencies	https://www.fueleconomy.gov/feg/taxevb.shtml
	CALIFORNIA AIR RESOURCES BOARD Low Carbon Fuel Standard Credits	California Air Resources Board	Fleets can sell credits	https://www.arb.ca.gov/fuels/lcfs/lcfs.htm
Medium / Heavy-Duty	CALIFORNIA HVIP Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)	California Air Resources Board	First Come, First Served Up to $150,000+ $30,000 charger	https://www.californiahvip.org/
	SLO COUNTY apcd SLOCAPCD on-road truck grants	San Luis Obispo County Air Pollution Control District	Various programs for medium/heavy duty, contact district for more information	https://www.slocleanair.org/community/grants/onroadtrucks
	Volkswagen Volkswagen Mitigation Trust	Volkswagen	$130 million available for transit/school/ shuttle EV Buses. 50% for DACs. Available soon	https://www.arb.ca.gov/msprog/vw_info/vsi/vw-mititrust/vw-mititrust.htm
Transit / Schools	CALIFORNIA AIR RESOURCES BOARD Carl Moyer Funds / AB 923 / AB 617	Air Resource Districts	Funding allocation varies by ACMD, recommend connecting with your Air District rep	
	DEPARTMENT OF TRANSPORTATION UNITED STATES OF AMERICA NoLo and 5310 grants	US Department of Transportation	Can fund 80-90% costs, only for qualified vehicles	https://bit.ly/2mtjWeT, https://bit.ly/2LQKkf9

Available Electric Vehicles (1/2)

Cat	Model	Manufacturer	Fuel Type	Class/GVWR	Electric Range	Battery Size	Retail Price	HVIP	Currently available?	Lease option	Link
LDVs	W-15	Workhorse	PHEV	7,200 lbs	80mi	60 kWh (Panasonic Li-Ion)	$52,000	N/A	2019-2020		http://workhorse.com/pickup/
	Bison	Havelaar	BEV					N/A	TBD		http://www.havelaarcanada.com/bison/
Work/Single Unit Truck											
Class 6		Motiv	BEV	26,000 lbs	Up to 90mi	106 / 127 kWh (Motiv EPIC)		$80-95K			http://www.motivps.com/motivps/portfolio-items/work-truck/
Class 4	Electric Utility Vehicle-Zeus	Phoenix	BEV	14,500lb	Up to 100 mi	105 kWh (Chasis: Ford E450)	~$212K	$80,000	Yes	Lease available	http://www.phoenixmotorcars.com/products/#1505308785414-38579dc5-df17
Box trucks											
Light Duty	eCanter	FUSO	BEV	~15,000lb	100 mi	90 kWh					https://www.daimler.com/products/trucks/fuso/ecanter.html
Class 4		Motiv	BEV	14,500lb	75mi	106 kWh (Motiv EPIC)		$80,000			http://www.motivps.com/motivps/portfolio-items/box-truck/
Class 5	T5	BYD	BEV	16,000lbs GVWR	155 mi	145 kWh (Iron-Phosphate)	$165,000	$80,000			http://en.byd.com/usa/wp-content/uploads/2017/06/t5-final.pdf
Class 6	T7	BYD	BEV	23,600lbs GVWR	124 m	175 kWh (Iron-Phosphate)	$195,000	$90,000			http://en.byd.com/usa/wp-content/uploads/2017/06/t7-final.pdf
Passenger Van											
		Zenith	BEV	10,050 lbs	80-135	51.8 - 70 kWh (LiFePO4)		$50,000	Yes		http://www.zenith-motors.com/wp-content/uploads/2013/05/Brochure12 2017.pdf
Step/Walk-in Van											
Class 4	E-Gen	Workhorse	PHEV	19,500 lbs	60 Miles	60 kWh (Panasonic Custom)		NA	Q1 2019		http://workhorse.com/stepvans
Class 5	E-100	Workhorse			100 Miles		$133,000	80,000.00$	Tes	Yes	
Class 4-6		Motiv	BEV	14,500 – 26,000 lbs	Up to 90mi	106 – 127 kWh		$80-95K			http://www.motivps.com/motivps/portfolio-items/walk-in-van/
	E Step Van	Zenith	BEV	22,000 lbs	90 mi	100 kWh (LiFePO4)		N/A			http://www.zenith-motors.com/wp-content/uploads/2013/05/Brochure12 2017.pdf
Panel Van											
MDV	N-Gen	Workhorse	PHEV		100 mi						http://workhorse.com/ngen
	E Cargo Van	Zenith	BEV	10,050 lbs	80-135 mi	51.8 - 70 kWh (LiFePO4)		$50,000			http://www.zenith-motors.com/wp-content/uploads/2013/05/Brochure12 2017.pdf
	V8100	Chanje	BEV	6,000 lbs	150 mi	13.2 kWh (onboard charger)	$145-170K	$80,000	Yes	$1,000-$1,500/m	https://chanje.com/vehicles/
Yard tractors											
	Terminal	BYD	BEV	102,000 lbs GCWR	15 hours	209 kWh (Iron-Phosphate)		$150,000			http://en.byd.com/usa/wp-
	T Series	Orange EV	BEV	81K lbs GCVW		Sized to meet the needs of your site.		$150,000			https://orangeev.com/t-series-new/
Combination Tractors											
Sleeper	TBD	Tesla	BEV	Class 8					No		
	Nikola	Nikola	Hydrogen	Class 8					No		
Daycab	T9	BYD	BEV	Class 8, 120KGCVW	92 mi	188 kWh (Iron-Phosphate)	$300,000	$150,000			http://en.byd.com/usa/wp-content/uploads/2017/06/t9-final.pdf
	Nikola	Nikola	Hydrogen	Class 8					No		
Transit buses											
30 Ft		BYD	BEV					$101,000	Yes		
	EV250	GreenPower	BEV		175 mi	210 kWh (LiFePO4)					http://www.greenpowerbus.com/product-line/
35 Ft		BYD	BEV					$126,000	Yes		
	XE35	New Flyer		29,300 lb (Curb Weight)		(Rapid Charge) 100 kWh - 200 kWh (Long Range Charge) 280 kWh - 454 kWh		$122,000			https://www.newflyer.com/buses/xcelsior-charge/
	BE35	Proterra	BEV	up to 31,690 (Curb Weight) depending on configuration	Up to 251, depending on configuration	up to 440 kWh depending on configuration		$120,000	Yes		https://www.proterra.com/products/35-foot-catalyst/
	EV300	GreenPower	BEV		175 mi	260 kWh (LiFePO4)					http://www.greenpowerbus.com/product-line/
40 Ft	XE40	New Flyer		30,500 lb (Curb Weight)		(Rapid Charge) 100 kWh - 200 kWh (Long Range Charge) 280 kWh - 545 kWh		$152,000			https://www.newflyer.com/buses/xcelsior-charge/
		BYD	BEV					$150-156K	Yes		
	BE40	Proterra	BEV	up to 31,000 (Curb Weight) depending on configuration	Up to 350 depending on configuratoin	up to 660 kWh depending on configuration		$150,000	Yes		https://www.proterra.com/products/40-foot-catalyst/
	EV350	GreenPower	BEV	31,320 lbs (Curb Weight)	185 mi	320 kWh (LiFePO4)		$150K			http://www.greenpowerbus.com/product-line/
45 Ft	EV400	GreenPower	BEV		185 mi	320 kWh (LiFePO4)					http://www.greenpowerbus.com/product-line/
60 Ft		BYD	BEV					$175-181K	Yes		
	XE60	New Flyer		45,500 lb (Curb Weight)		(Rapid Charge)250 kWh (Long Range Charge) 640 kWh - 818 kWh					https://www.newflyer.com/buses/xcelsior-charge/
40-45ft Double	EV550	GreenPower	BEV		240 mi	478 kWh (PG Porous Polymer Graphene)		$150K	Yes		http://www.greenpowerbus.com/product-line/
Buses - shuttle											
Class 4		Motiv	BEV	14,500 lbs	75 mi	106 kWh		80,000.00$			http://www.motivps.com/motivps/portfolio-items/shuttle-bus/
36.5 Ft	Synapse Shuttle	GreenPower	BEV		75 -140 mi	100 kWh - 200 kwh Li-Ion, (NMC or LiFePO4)		$120,000			http://www.greenpowerbus.com/product-line/
27 Ft	EV27	AVM	BEV	24k GVWR; 17,645 curb weight	200 mi	46-210 kWh		NA			https://static1.squarespace.com/static/5a131611d74cff363a3cc76b/t/5ade5f4a70a6ad52326b8528/1524522828365/AVM_Spec+Sheet_Website_2+18+18+style+guide+update040b8b1482d87894d83e0b58005745308d023bd2c38fba1cfc2bec8027c44f1f.compressed.pdf
Class 4	Zeus	Phoenix	BEV	14,500 lbs.	100 mi	105 kWh (Chasis: Ford E450)		$80,000		Lease available	http://www.phoenixmotorcars.com/products/#1504526529831-d1c9ab72-86fe
Buses - motor coach											
23 Ft		BYD	BEV					$80,000			
25 Ft	EV Star	GreenPower			125 - 200 mi	70 kWh - 95 kWh Li-Ion (NMC)					http://www.greenpowerbus.com/product-line/
40 Ft		BYD	BEV					$150,000			
45 Ft		BYD	BEV								
Buses - school											
Type A	EPIC 4	Motiv	BEV	Class 4, 14,500 lbs.	75mi	106 kWh		NA	Yes		http://www.motivps.com/motivps/portfolio-items/typeaschoolbus/
	Micro Bird G5	Blue Bird/Adomani/EDI	BEV		100mi						https://blue-bird.com/blue-bird/Press-Releases/Blue-Bird-Introduces-AllNew-Electric-School-Bus-So-104.aspx

Available Electric Vehicles (2/2)

Type C		Blue Bird/Adomani/ EDI			100 mi	118 kWh		220,000.00$	Yes		https://www.businesswire.com/news/home/20180407005037/en/Blue-Bird-Electric-School-Buses-Road-Orders
	Synapse 72	GreenPower	BEV		75 -140 mi	100 kWh - 200 kwh Li-Ion, (NMC or LiFePO4)		220,000.00$			http://www.greenpowerbus.com/product-line/
	Saf-T-Liner	Thomas Built/EDI	BEV		100 mi	100-160 kWh			Production scheduled for 2019		https://thomasbuiltbuses.com/bus-news-and-events/news/thomas-built-buses-debuts-new-saf-t-liner-2017-11-04/
	e-Quest	Motiv/Trans Tech		Class 6, 26,000 lbs	up to 90 miles	127 kWh		150,000			http://www.motivps.com/motivps/portfolio-items/typecschoolbus/
	eLion	Lion	BEV	30,000 lbs.	50-100mi	LG Chem - Lithium-ion (NMC)		220,000.00$	Yes		https://thelionelectric.com/documents/en/technical%20spec.pdf
Type D	All American	Blue Bird/Adomani/ EDI	BEV								https://www.blue-bird.com/Uploads/Public/Documents/electric-re-spec-sheet1.pdf
	Synapse 72	GreenPower	BEV		75 -140 mi	100 kWh - 200 kwh Li-Ion, (NMC or LiFePO4)		220,000.00$			http://www.greenpowerbus.com/product-line/

Other

Complete Coach works - Convert vehicles to Evs http://completecoach.com/

Orange EV also refurbishes yard tractors

APPENDIX E-1:
Expanded Table of Completed Site Assessments

See next page.

County	City	Entity Name	Project Address	Charger Use	Point-of-Contact	Phone Number	Email Address
San Luis Obispo	San Luis Obispo	SLO County General Hospital	2180 Johnson Ave	Fleet	Rocky Buoy	(805) 788-2459	rbuoy@co.slo.ca.us
San Luis Obispo	San Luis Obispo	Cal Poly University San Luis Obispo	1 Grand Ave	Fleet	Trevor Ray	(805) 756-2982	tray02@calpoly.edu
San Luis Obispo	San Luis Obispo	San Luis Obispo City Corporation Yard	29 Prado Road	Fleet	Chris Read	(805) 781-7151	cread@slocity.edu
San Luis Obispo	San Miguel	San Miguel Laundry	1141 Mission St	Public	Paolo Pecora	(415) 238-2244	paolo108@gmail.com
San Luis Obispo	Paso Robles	Paso Robles Joint Unified	2910 Union Road	Fleet	Kelly Stainbrook	(805) 769-1160	kstainbrook@pasoschools.org
San Luis Obispo	San Luis Obispo	SLO Guild Hall	2880 Broad St	Public	Angela Tahti	(805) 438-4452	ajtahti@gmail.com
Santa Barbara	Santa Barbara	El Escorial Villas	240 Por La Mar Cir	Multi-Unit Dwelling	Tim Martin	(805) 452-5527	elescorialsb1@yahoo.com
Santa Barbara	Santa Maria	City of Santa Maria	110 S. Pine St	Public	Eric Riddough	(805) 325-0951	eriddiough@cityofsantamaria.org
Santa Barbara	Santa Barbara	La Cumbre Jr. High School	2255 Modoc Road	Public	Steve Vizzolini	(805) 963-4338	svizzolini@sbunified.org
Santa Barbara	Santa Barbara	Cachuma Lake Recreation Area	2225 Highway 154	Public	Frank Chen	(805) 568-3557	fchen@co.santa-barbara.ca.us
Santa Barbara	Santa Barbara	UC Santa Barbara	522 University Road	Public	James Wagner	(805) 893-5475	james.wagner@tps.ucsb.edu
Santa Barbara	Santa Barbara	The Koto Group	525 E. Micheltorena St	Multi-Unit Dwelling	James Knapp	(805) 973-7077	jp@kotogroup.com
Ventura	Oxnard	Oxnard Elementary School District	514 West Wooley Road	Fleet	Tony Briscoe	(805) 385-1501	abriscoe@oxnardsd.org
Ventura	Oxnard	Ocean View School District	4200 Olds Road	Fleet	Bob Brown	(805) 986-6718	bbrown@oceanviewsd.org
Ventura	Port of Hueneme	Port of Hueneme	105 Hueneme Road	Public	Giles Pettifor	(805) 488-3677	gpettifor@portofh.org
Ventura	Camarillo	Cal State University Channel Islands	1 University Dr	Public	Tom Hunt	(805) 437-3507	thomas.hunt@csuci.edu
Ventura	Moorpark	Moorpark Unified	5297 Maureen Lane	Fleet	Jemal Chavez	(805) 378-6344	jlchavez@mrpk.org
Ventura	Oxnard	Oxnard Union High School District	3400 W. Gonzales Road	Fleet	Joshua Brown	(805) 278-3162	joshua.brown@oxnardunion.org

APPENDIX E-2:
SLO County Hospital Permit-Ready Documents

See next 12 pages.

ABM Electrical Power Services
14201 Franklin Ave,
Tustin, CA 92780
Office 866.226.2838
Mobile 949.343.2929
van.wilkins@abm.com

EV Charging Station Infrastructure Proposal

Proposal # TCB021819-6
Date: February 18, 2019
Customer: CHHC (County Hospital Health Campus)
2180 Johnson Ave
San Luis Obispo, CA 93401

Site ID: CHHC (County Hospital Health Campus
2180 Johnson Ave
San Luis Obispo, CA 93401
Jon Griesser
(805) 781-5611
jgriesser@co.slo.ca.us rbuoy@co.slo.ca.us

QTY		DESCRIPTION OF WORK	PRICE EA.	EXTENDED
1		This quotation includes all electrical work including material and labor during straight time hours Monday through Friday for a complete installation as outlined below: Per initial site visit and communications with facilities manager. Specifically included are the following: 1. Permit and associated fees. 2. Install (1) ABM provided CT4000 two port charge station, charging station understood to be delivered direct to customer and we will not be responsible for receiving or transportation to charging location. 3. Provide and install conduit and conductors. 4. Provide and install 40/2 breaker for each charge station port. 5. Provide and install "EV Charging" parking sign at each parking stall, stripe stall with green paint. 6. Provide excavation, backfill and surface replacement for required trenching. Specifically excluded are the following: 1. Changes to discussed charger location during site visit as portrayed on drawings. 2. Repairs to unmarked utilities during excavation. 3. Any additional work not clearly outlined in plans. 4. ABM is not responsible for re-allocating of parking stalls to meet parking lot requirements for ADA or city/county requirements. 5. Owner responsible to locate all utilities not located by USA 811 Dig Alert.	$41,912.82	$41,912.82
4	CT4011 GW1	Single Port Bollard Gateway	$4,075.00	$16,300.00
4	CPCLD-COMMERCIAL-3	CT4000 3 Year Commercial Cloud Plan (per port)	$705.00	$2,820.00
4	CT4000 ASSURE-3-PM-2	CT4000 3 Years Assure (per station)	$2,314.00	$9,256.00
4	SHIIPPING	AC Charger Shipping Bosch and Innogy 9.6kW Wall mtd shop/pdi unit	$341.25	$1,365.00
		Subtotal All options		**$71,653.82**
	TAXES	Sales, use or other indirect pass-through taxes will be imposed as required by municipal statutes in accordance with laws covering separated charges for materials, installation labor, optional warranty coverage and software updates.	7.75%	$5,553.17
		Grand Total	**USD**	**$77,206.99**

Exclusions/Clarifications: (PRICING VALID FOR 120-DAYS)

1) EV CHARGING EQUIPMENT NOT INCLUDED, CUSTOMER TO PURCHASE EQUIPMENT DIRECTLY FROM PORSCHE. We will compile the parts list for the Porsche supplied parts list and submit the order to Porsche, the parts will be billed to the Dealer under its parts consignment.

2) Job will be done in three phases, A) initial underground and concrete installation for ChargeBox and Kiosks, B) L2 Installation, C) ChargeBox/systems & 19.2kW L2 Chargers final Installation/startup, (either late 2018 or Early 2019).

3) Charges or Fees from the Utility Company for Service Connect/Disconnect/Upgrade or Demand increase fees

4) Construction permitting does not include additional requirements from zoning issues or previous site problems with the municipalities

ABM Electrical Power Services (ABMEPS)
Terms and Conditions

Terms of Payment: **1**. Terms are net thirty (30) days. Any invoice not paid within thirty (30) days from the date of invoice will be subject to a service charge equal to the lesser of One and One-half percent (1.5%) per month on account balances or the maximum percentage permitted by law. **2.** At ABMEPS's option, customers may be invoiced on a monthly basis for services provided over more than one month. **3**. All pricing and payment terms contained herein are contingent upon a favorable Credit Report for the customer/client to whom this quotation is provided. Upon receipt of a less than favorable credit report ABMEPS reserves the right to withdraw this proposal, modify the pricing, or require payment when services are rendered, or advance payment of the total job quotation before providing services. **4.** For material purchases in excess of $50,000, ABMEPS reserves the option to invoice 50% of the total at the time of material order and the remaining 50% at the time of material delivery. **5.** Customer agrees to pay ABMEPS, to the extent permitted by applicable law, all costs and expenses, including but not limited to reasonable attorney's fees, incurred by ABMEPS in connection with any collection activities or actions to collect unpaid invoices under this quotation.

Delays: ABMEPS shall not be liable for delays or performance resulting from causes beyond its reasonable control, acts of God, acts or omissions of Buyer, fire, strike or other labor difficulty. Should there be a delay, the date of delivery or performance shall be extended.

Cancellation: Notice of cancellation of services to be performed must be received thirty-six (36) hours prior to the agreed upon date and time. Unless such notification is provided, charges will be incurred. These charges will be ABMEPS's cost plus ten percent (10%) and will include any rental equipment for the Project.

Disclaimer: ABMEPS assumes no responsibility for any damage or injury to any property caused directly or indirectly as a result of ABMEPS performing its duties under this agreement except such damage or injury that may be held to result solely and directly from or out of: Any grossly negligent performance by ABMEPS in its obligations under this Agreement or any willful misconduct on the part of ABMEPS, its agents or employees.

Responsibility: All services are performed in accordance with industry standards, project specifications and/or NETA specifications. Where remediation is beyond the scope of normal reliability testing, and where corrective action is required, such services will be quoted separately.

Assignment: ABMEPS reserves the right to assign this project in part or in total to an affiliated entity.

Termination: An order may be terminated only by mutual written agreement between Buyer and ABMEPS and only upon payment of costs and expenses already incurred by ABMEPS.

Safety: ABMEPS agrees to comply with all applicable federal, state, local, National Electric Codes and project safety rules and regulations. ABMEPS reserves the right not to perform work that in its opinion violates OSHA Electrical Safety-Related Work Practices; Final Rule or other safety rules and regulations.

Standby Time: When ABMEPS service personnel are on the job site but unable to perform services requested because of circumstances beyond ABMEPS's control, the customer will be charged standby time at the applicable rate for each such ABMEPS service person (up to a maximum of eight (8) hours per day per person).

Liability: ABM Electrical Power Services and its contractors and suppliers of any tier, shall not be liable in contract, in tort or otherwise for damage or loss of property or equipment, loss of profits or revenue, loss of use of equipment or power system, cost of capital, cost of purchased or replacement power or temporary equipment (including additional expenses incurred in using existing facilities), claims of customers of Buyer, or for any special, indirect, incidental, or consequential damages of any kind, whether arising in or based on contract, tort, statute, strict liability, warranty or otherwise.

Warranties: All material and equipment delivered and/or installed will be the products of reputable manufacturers. ABMEPS MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE HEREBY EXPRESSLY EXCLUDED, CONCERNING MATERIAL AND EQUIPMENT MANUFACTURED BY OTHERS. ABMEPS sells and delivers all materials and equipment not manufactured by it "AS IS," but ABMEPS will use its best reasonable efforts to obtain from the manufacturer, in accordance with the manufacturer's customary practices, the repair or replacement of any material or equipment which may prove defective in workmanship or material. The foregoing shall be the exclusive remedy of Buyer and the sole obligation of ABMEPS with respect to material and equipment manufactured by others. To the extent permitted by law, ABMEPS warranties its labor for one (1) year and any materials obtained from ABMEPS's inventory carry a ninety (90) day warranty.

Unforseen underground issues: The estimate does not include any costs or contingencies for rock or other abnormal ground conditions, and Owner/Customer shall be responsible for the costs of correcting any such conditions. Should such abnormal conditions be encountered on the site in connection with excavation or installation of sewer lines, water lines, or other utility services, ABM shall promptly inform Owner/Customer of same and estimated costs of the additional work. Such costs may include, but are not necessarily limited to jack hammer, backhoe and/or rock drill operations. The actual costs will be reflected in an increase in the actual invoicing. If we are not able to complete any bore due to rock or abnormal conditions, an attempt/mobilization fee of $3,000.00 USD, plus the cost to return materials will apply.

Unforseen hazardous materials: This project agreement does not include costs or responsibility for any hazardous material abatement that is discovered by ABM or others during the course of the project.

We instruct ABM Electrical Power Services, LLC (ABMEPS) or subsidiaries to proceed with scheduling and performing the work described in the attached proposal.

* **ABMEPS Proposal Number:** _____

Project Site Address(es): _____

* **Authorized Project Amount:** $_____ Proposed Date to Begin Work: _____

Project Comments/Notes: _____
Site Contact Name: _____ Site Contact Phone: _____

AUTHORIZATION TO PROCEED REQUIRED

* **Customer Authorization Signature:** _____

Printed Name & Title: _____
Date: _____ Phone: _____ Email: _____

BILLING INFORMATION REQUIRED

ABMEPS is instructed to bill this project per the pricing outlined in the proposal accordingly:

* **Purchase/Service Order or Contract Number is (Mark One):** ☐ Required on invoice ☐ Not Required

If Required, Provide Number Here: _____

Full Billing Name: _____

Billing Address: _____

Billing City, State, Zip Code: _____
Accounts Payable Contact: _____

AP Phone Number: _____ AP Email Address: _____

Email Address For Invoice Processing: _____

* Please help streamline invoicing by providing an email address for invoice processing

* **ABMEPS Project Authorization Signature:** _____

Terms and Conditions:
The attached ABM Electrical Power Services, LLC Terms and Conditions will apply. Authorization to proceed with the work outlined in this quotation shall constitute Site Host ("Buyer's") acceptance of these terms and conditions in full. Oral authorizations to proceed must be confirmed to ABMEPS in writing (Fax or e-mail) before project start. If there is a conflict or discrepancy between terms and conditions in the Buyer's purchase authorization and this quotation, this quotation shall prevail unless specifically authorized, in writing, by ABM Electrical Power Services, LLC.

Sincerely,

Van D. Wilkins, Jr.

National Accounts Manager

Health Campus

SCOPE: INSTALL FOUR - CT4000 SINGLE PORT CHARGERS.

AC LEVEL 2 CHARGER PORT

SHEET INDEX:

EVG-250.1 General

Where provided, electrical vehicle charging stations shall comply with EVG-250.

ADVISORY: EVG-250.1 General Existing conditions, terrain, electric infrastructure and other factors dictate that not every electric vehicle charging station can be fully accessible. With electric vehicle charging station being functionally similar to and usually intergraded with parking, the ratios of accessible to standard electric vehicle charging stations in these guidelines are the same as those for accessible to standard parking in the 2010 ADA standards and the 2013 California Building Code. The numbers of required accessible electric vehicle charging stations for both on-site and public rights-of-way locations are shown in Tables EVG-250.2 On-site Electric Vehicle Charging Stations and EVG-250.3 On-street Electric Vehicles Charging Stations

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DESIGNED James Pierson

DRAWN James Pierson

CHECKED

ABM Building Value

Electricraft Inc. Electrical Contractors

ABM ELECTRICAL POWER SERVICES
14201 FRANKLIN AVE.
TUSTIN, CA 92780

HEALTH CAMPUS

HEALTH CAMPUS
2180 JOHNSON AVENUE
SAN LUIS OBISPO, CA

DATE	11/28/18
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JOB #	NTS
SHEET	1
SHEET #	9

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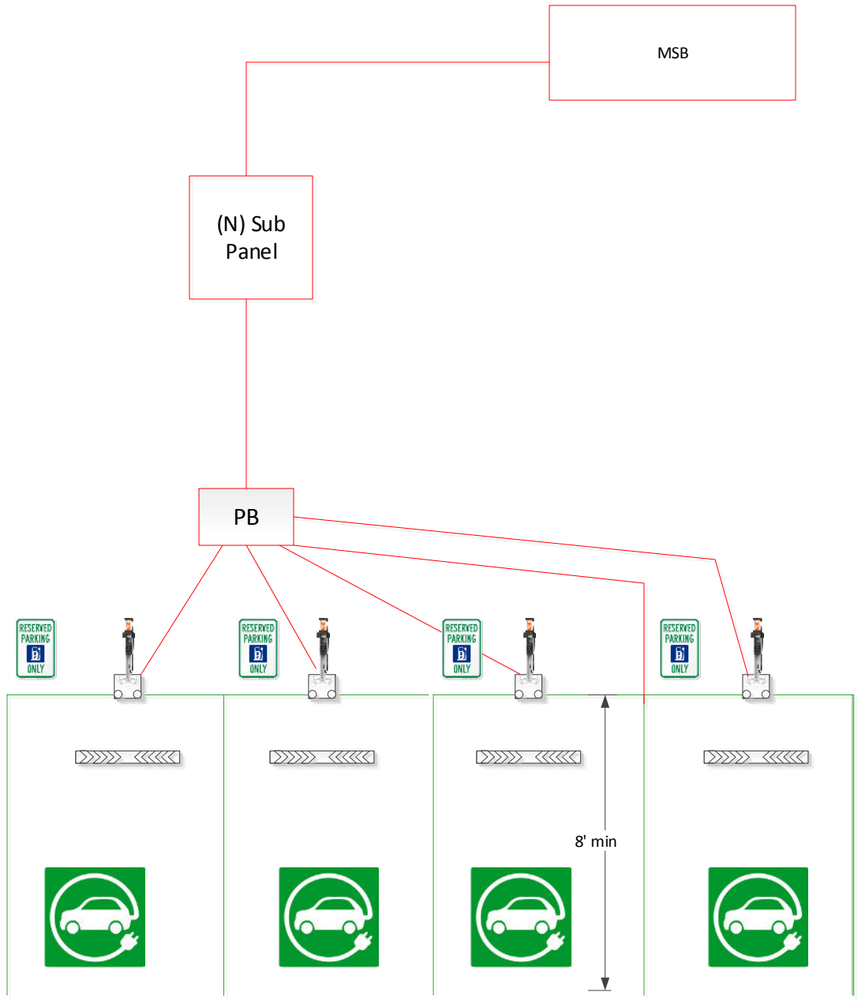
SHEET #	9



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SHEET	3
SHEET #	9

NOTES:

1. 1-1/4" PVC CONDUIT W/ (10) #8 AND (1) #10 GND COPPER THHN CONDUCTORS
2. TWO 40AMP 2POLE 208 VOLT CIRCUIT BREAKERS W/ BREAKER TIE BAR AND GROUNDING BAR KIT
3. 1" PVC CONDUIT W/(2)#8 AND (1)#10 GND COPPER THHN CONDUCTORS
4. 2" EMT W/(3)3/0 AND (1)#6 GND COPPER CONDUCTORS

ELECTRICAL SUB PANEL SCHEDULE

PANEL MSB

120/208 VOLT (1600) AMP (3) PH (4) W

L.C.L	CK	LOAD	OUTLET			BRKR		PHASE			PHASE			BRKR		OUTLET			LOAD	CK	L.C.L
			LTG	REC	MISC	POLE	AMP	A	B	C	A	B	C	AMP	POLE	MISC	REC	LTG			
	1	SPACE									1109			20	3					2	
	3											1109		20	3					4	
	5	SPACE											1109	20	3					6	
	7					3	90	4992			8875			200	2				New Sub Panel	8	
	9					3	90		4992			8875		200	2					10	
	11					3	90			4992			8875	200	2					12	
	13					3	800	44373												14	
	15					3	800		44273											16	
	17					3	800			44273										18	
	19					3	200	11093			6656			80	3					20	
	21					3	200		11093			6656		80	3					22	
	23					3	200			11093			6656	80	3					24	
	25					3	400	22186			22186			400	3					26	
	27					3	400		22186			22186		400	3					28	
	29					3	400			22186			22186	400	3				SPACE	30	

PER PHASE & TOTAL LOAD			TOTAL LOAD	364210 W
A	121470		L.C.L	364210
B	121370	ACTUAL LOAD AMPS 1012	L.C.L @ 125%	455263
C	121370		L.C.L. WATTS (Additional)	91053
TOTAL OF PHASE LOADS	364210		TOTAL LOAD	455263
			TOTAL AMPS	1406

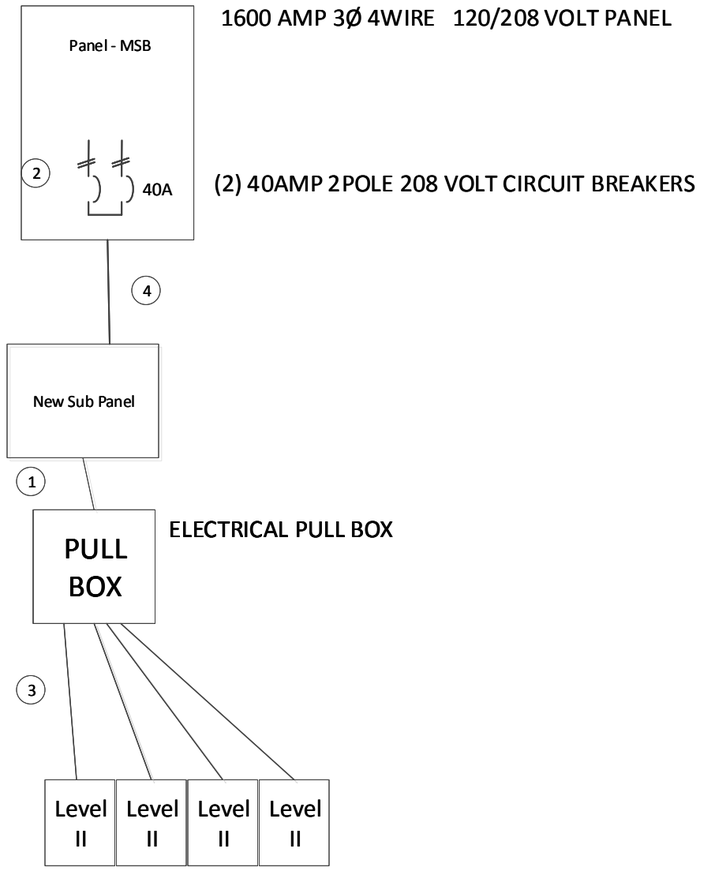
ELECTRICAL SUB PANEL SCHEDULE

NEW SUB PANEL

120/208 VOLT (200) AMP (3) PH (4) W

L.C.L	CK	LOAD	OUTLET			BRKR		PHASE			PHASE			BRKR		OUTLET			LOAD	CK	L.C.L
			LTG	REC	MISC	POLE	AMP	A	B	C	A	B	C	AMP	POLE	MISC	REC	LTG			
	1	CT4021 (N)		X		2	40	3328											SPACE	2	
	3			X		2	40		3328										SPACE	4	
	5	CT4021 (N)				2	40			3328									SPACE	6	
	7					2	40	3328											SPACE	8	
	9	CT4021 (N)				2	40		3328										SPACE	10	
	11					2	40			3328									SPACE	12	
	13	CT4021 (N)				2	40	3328											SPACE	14	
	15					2	40		3328										SPACE	16	
	17	SPACE																	SPACE	18	
	19	SPACE																	SPACE	20	
	21	SPACE																	SPACE	22	
	23	SPACE																	SPACE	24	
	25	SPACE																	SPACE	26	
	27	SPACE																	SPACE	28	
	29	SPACE																	SPACE	30	

PER PHASE & TOTAL LOAD			TOTAL LOAD	26624 W
A	9984		L.C.L	26624
B	9984	ACTUAL LOAD AMPS 74	L.C.L @ 125%	33280
C	6656		L.C.L. WATTS (Additional)	6656
TOTAL OF PHASE LOADS	26624		TOTAL LOAD	33280
			TOTAL AMPS	103



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DESIGNED James Pierson

DRAWN James Pierson

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ABM Building Value

Electricraft Inc. Solar Power Electrical Contractors

ABM ELECTRICAL POWER SERVICES
14201 FRANKLIN AVE.
TUSTIN, CA 92780

HEALTH CAMPUS

HEALTH CAMPUS
2180 JOHNSON AVENUE
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Electrical Input

	Single Port (AC Voltage 208/240V AC)			Dual Port (AC Voltage 208/240V AC)		
	Input Current	Input Power Connection	Required Service Panel Breaker	Input Current	Input Power Connection	Required Service Panel Breaker
Standard	30A	One 40A branch circuit	40A dual pole (non-GFCI type)	30A x 2	Two independent 40A branch circuits	40A dual pole (non-GFCI type) x 2
Standard Power Share	n/a	n/a	n/a	32A	One 40A branch circuit	40A dual pole (non-GFCI type)
Power Select 24A	24A	One 30A branch circuit	30A dual pole (non-GFCI type)	24A x 2	Two independent 30A branch circuits	30A dual pole (non-GFCI type) x 2
Power Select 24A Power Share	n/a	n/a	n/a	24A	One 30A branch circuit	30A dual pole (non-GFCI type)
Power Select 16A	16A	One 20A branch circuit	20A dual pole (non-GFCI type)	16A x 2	Two independent 20A branch circuits	20A dual pole (non-GFCI type) x 2
Power Select 16A Power Share	n/a	n/a	n/a	16A	One 20A branch circuit	20A dual pole (non-GFCI type)
Service Panel GFCI	Do not provide external GFCI as it may conflict with internal GFCI (CCID)					
Wiring - Standard	3-wire (L1, L2, Earth)			5-wire (L1, L1, L2, L2, Earth)		
Wiring - Power Share	n/a			3-wire (L1, L2, Earth)		
Station Power	8W typical (standby), 15W maximum (operation)					

Electrical Output

Standard	7.2kW (240V AC @ 30A)	7.2kW (240V AC@30A) x 2
Standard Power Share	n/a	7.2kW (240V AC@30A) x 1 **or** 3.8kW (240V AC@16A) x 2
Power Select 24A	5.8kW (240V AC@24A)	5.8kW (240V AC@24A) x 2
Power Select 24A Power Share	n/a	5.8kW (240V AC@24A) x 1 **or** 2.9kW (240V AC@12A) x 2
Power Select 16A	3.8kW (240V AC@16A)	3.8kW (240V AC@16A) x 2
Power Select 24A Power Share	n/a	3.8kW (240V AC@16A) x 1 **or** 1.9kW (240V AC@8A) x 2

Functional Interfaces

Connector(s) Type	SAE J1772™	SAE J1772™ x 2
Cable Length - 1830 mm (6') Cable Management	5.5 m (18')	5.5 m (18') x 2
Cable Length - 2440 mm (8') Cable Management	n/a	7 m (23')
Overhead Cable Management System	Yes	
LCD Display	145 mm (5.7") full color, 640x480, 30fps full motion video, active matrix, UV protected	
Card Reader	ISO 15693, ISO 14443, NFC	
Locking Holster	Yes	Yes x 2

Hardware

Description		Order Code
Model	1830 mm (6') Single Port Bollard Mount 1830 mm (6') Dual Port Bollard Mount	CT4011 CT4021
	1830 mm (6') Single Port Wall Mount 1830 mm (6') Dual Port Wall Mount	CT4013 CT4023
	2440 mm (8') Dual Port Bollard Mount 2440 mm (8') Dual Port Wall Mount	CT4025 CT4027
Options	Integral Gateway Modem - USA Integral Gateway Modem - Canada	-GW1 -GW2
Misc	Power Management Kit Bollard Concrete Mounting Kit	CT4000-PMGMT CT4001-CCM

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ABM™ Building Value

Electricraft INC. Electrical Contractors

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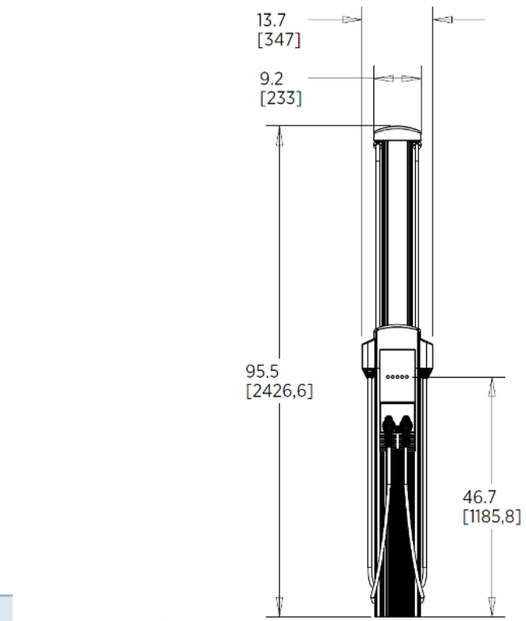
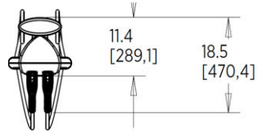
Safety and Connectivity Features

Ground Fault Detection	20mA CCID with auto retry
Open Safety Ground Detection	Continuously monitors presence of safety (green wire) ground connection
Plug-Out Detection	Power terminated per SAE J1772™ specifications
Power Measurement Accuracy	+/- 2% from 2% to full scale (30A)
Power Report/Store Interval	15 minute, aligned to hour
Local Area Network	2.4 GHz Wi-Fi (802.11 b/g/n)
Wide Area Network	3G GSM, 3G CDMA

Safety and Operational Ratings

Enclosure Rating	Type 3R per UL 50E
Safety Compliance	UL listed for USA and cUL certified for Canada; complies with UL 2594, UL 2231-1, UL 2231-2, and NEC Article 625
Surge Protection	6kV @ 3000A. In geographic areas subject to frequent thunder storms, supplemental surge protection at the service panel is recommended.
EMC Compliance	FCC Part 15 Class A
Operating Temperature	-30°C to +50°C (-22°F to 122°F)
Storage Temperature	-30°C to +60°C (-22°F to 140°F)
Non-Operating Temperature	-40°C to +60°C (-40°F to 140°F)
Operating Humidity	Up to 85% @ +50°C (122°F) non-condensing
Non-Operating Humidity	Up to 95% @ +50°C (122°F) non-condensing
Terminal Block Temperature Rating	105°C (221°F)
Charging Stations per 802.11 Radio Group	Maximum of 10. Each station must be located within 45m (150') "line of sight" of a gateway station





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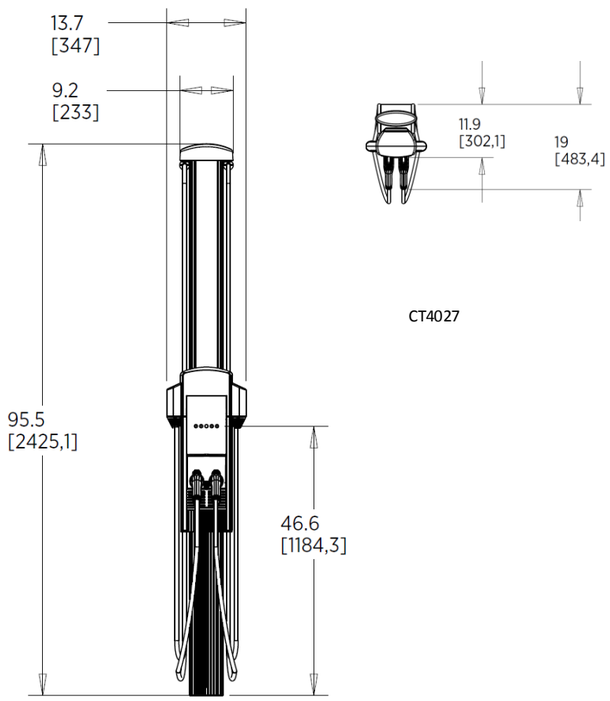

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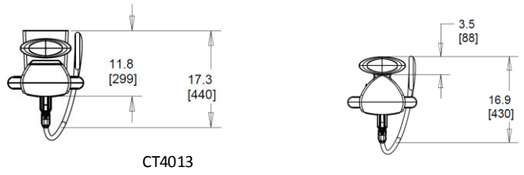

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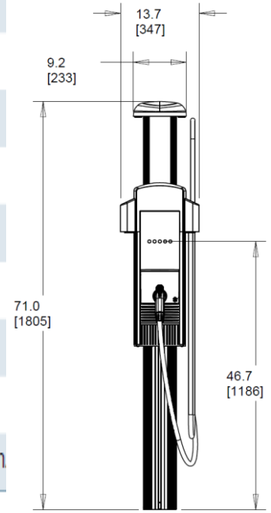

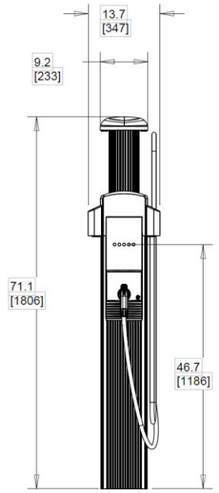

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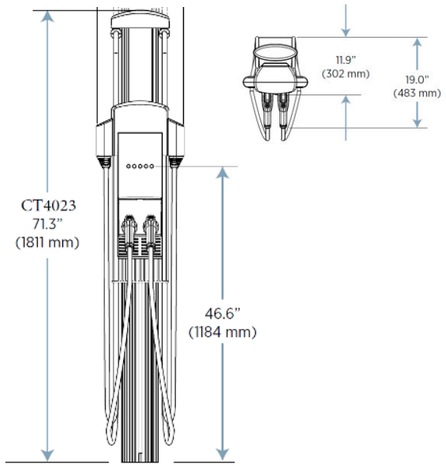

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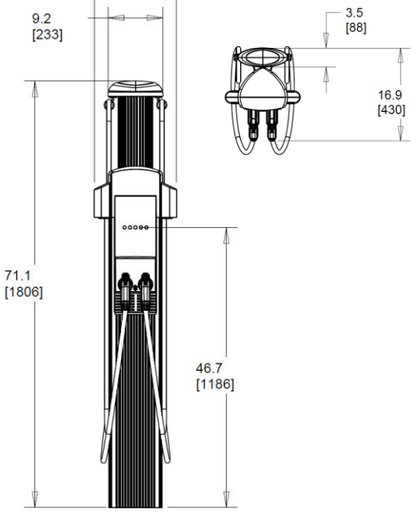

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DESIGNED James Pierson

DRAWN James Pierson

CHECKED

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STRUCTURAL NOTES:

GENERAL:

1. ALL WORK SHALL COMPLY WITH THE INTERNATIONAL BUILDING CODE – CURRENT EDITION, AND ALL OTHER APPLICABLE CODES AND REGULATIONS OF AGENCIES HAVING JURISDICTION.
2. ALL REFERENCED STANDARDS REFER TO THE EDITION IN FORCE AT THE TIME THESE PLANS AND SPECIFICATIONS ARE ISSUED FOR PERMIT.
3. JOB SAFETY AND PROCEDURES FOR SAFE CONSTRUCTION ARE OF UTMOST IMPORTANCE, AND SHALL BE THE RESPONSIBILTY OF THE CONTRACTOR.
4. WORK NOT EXPRESSLY SHOWN ON SPECIIFIC PARTS OF THE DRAWINGS OR SPECFICATIONS, BUT REASONABLEY IMPLIED BY SIMLAR WORK SHOWN, SHALL BE REPEATED.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEMBERS AND MATERIALS TO CONFORM TO ACTUAL SITE CONDITIONS, CONTRACTOR SHALL REPORT DIFFERING SITE CONDITIONS AND DEVIATIONS IN NOTED PROCEDURE TO THE ENGINEER FOR REVIEW.
6. CONTRACTOR SHALL TAKE CARE TO PROTECT ALL EXISTING STRUCTURES AND UTILITIES FROM DAMAGE.
7. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. THE CONTRACTOR SHALL REFER TO THE SPECIFICATIONS FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR THE STRUCTURAL DRAWINGS. DRAWINGS SHALL TAKE PRECEDENCE OVER SPECIFICATIONS.
8. IF THERE APPEARS TO BE A CONFLICT BETWEEN NOTES, DETAILS, OR SPECIFICATIONS, CONTRACTOR SHALL APPLY THE MOST RIGID REQUIREMENTS TO THE WORK. CONTRACTOR SHALL NOT DEVIATE FROM DRAWINGS WITHOUT APPROVAL OF THE ENGINEER.
9. IT IS THE INTENTION OF THIS SET OF DESIGN DRAWINGS TO PRODUCE CONSTRUCTION SHOP DRAWINGS FOR THE FABRICATION AND ASSEBLY OF THE BUILDING SYSTEMS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY REMAINING COORDINATION, DETAILING AND MISCELLANEOUS DESIGN NOT INCLUDED HEREIN AND SHALL VERIFY CONFORMANCE TO ALL LOCAL BUILDING CODES AND PROFESSIONAL FILING REQUIREMENTS.

STRUCTURAL DESIGN DATA:

ALL DEAD AND LIVE LOADS ARE PER THE INTERNATIONAL BUILDING CODES, CURRENT EDITION

1. DEAD LOADS:
   ALL DEAD LOADS ARE REPRESENTATIVE OF ACTUAL, MATERIAL WEIGHT PER SQ. FT.

   CHARGER STAND .....450 BS
   CONCRETE PAD SW/300PSF

2. LIVE LOADS:
   ALL LIVE LOADS ARE PER IBC 1607.8.3; CONTRACTOR TO CONFIRM COMPLIANCE WITH LOCAL BUILDING CODES.

   VEHICULAR IMPACT .....6,000 LBS @ 2'-3" FROM BASE

FOUNDATIONS:

1. FOOTINGS ARE TO BEAR ON MIN, 3,000 PSF SUITABLE BEARING MATERIAL.
2. NO FOOTINGS ARE TO BE CAST ON UNCONTROLLED FILL, SOIIL, ORGANIC MATERIAL, FROZEN GROUND, MUD, SOFT CLAYS OR OTHER OBJECTIONABLE OR UNAPPROVED MATERIALS.

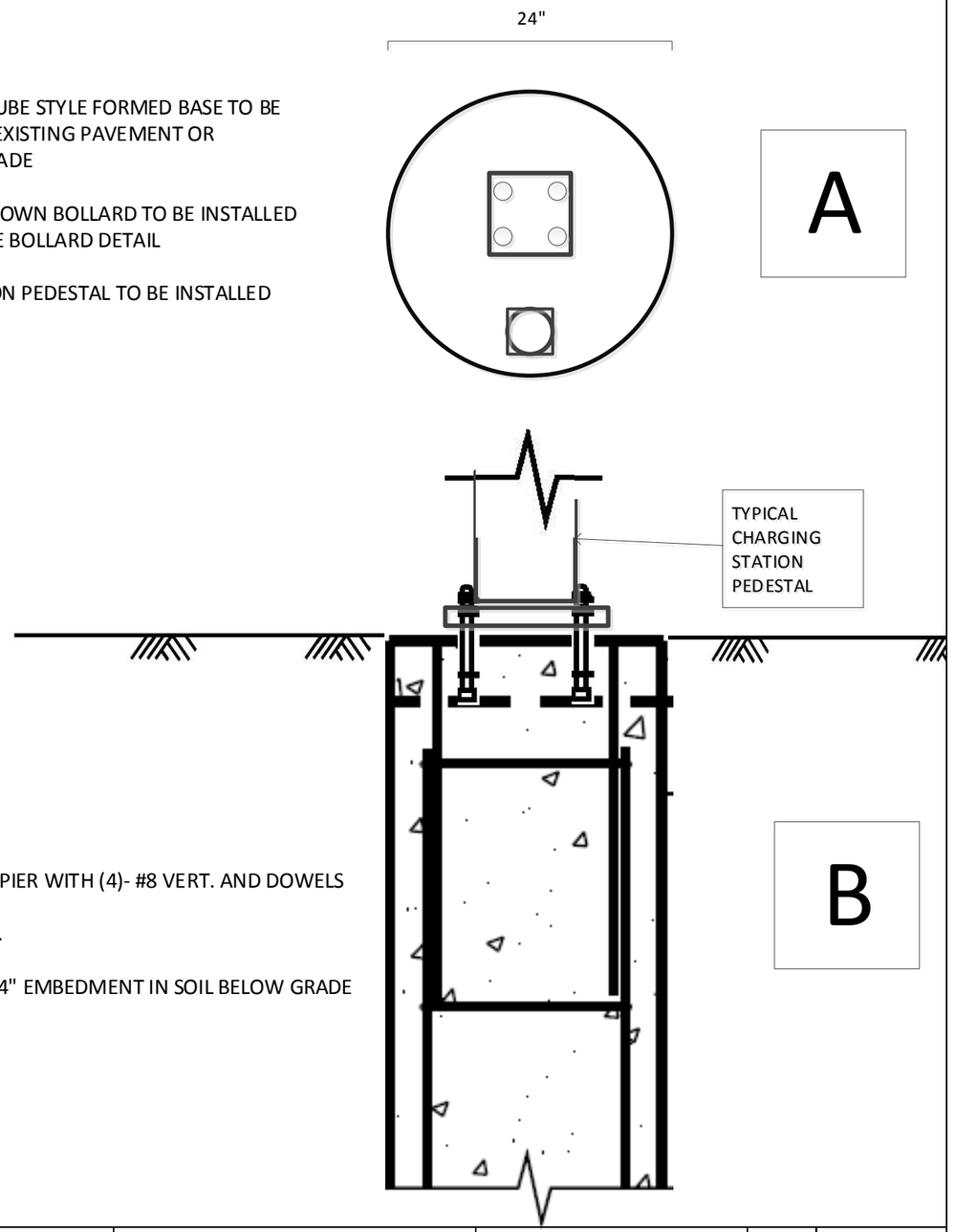
CAST IN PLACE CONCRETE:

1. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE ACI BUILDING CODE, AC1 318, LATEST EDITION, THE INTERNATIONAL BUILDING CODE, AND ALL OTHER APPLICABLE CODES AND REGULATIONS OF AGENCIES HAVING JURISDICTION, DETAILS SHALL BE IN ACCORDANCE WITH ACI-315, LATEST EDITION.
2. ALL CONCRETE FOR CAST IN PLACE WORK SHALL BE STONE CONCRETE WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
3. NO ADMIXTURES SHALL BE ALLOWED WITHOUT PRIOR REVIEW AND ACCEPTANCE BY THE ENGINEER.
4. ALL REQUIREMENTS FOR BATCHING, MIXING, FINISHING, CURING ETC. SHALL BE AS PER ACI 301.
5. ALL REINFORCEMENT SHALL CONFIRM TO ASTM A615 GRADE 60 AND BE SECURELY TIED IN PLACE AND ADEQUATELY SUPPORTED. ALL BARS MARKED CONTINUOUS' (CONT.) SHALL BE LAPPED 40 BAR DIAMETERS UNLESS OTHERWISE NOTED. IF REQUIRED, CONTRACTOR SHALL PROVIDE ADDITIONAL BARS OR STIRRUPS TO ADEQUATELY SUPPLORT ALL BARS.
6. SHOP DRAWINGS SHALL INDICATE THE FOLLOWING: ALL NECESSARY REINFORCING, LOCATIONS OF ALL CONSTRUCTION AND CONTROL JOINTS. DETAILING AND AMOUNT OF REINFORCING FOR CONDITIONS NOT SHOWN SHALL BE PROVIDED AS SHOWN IN SIMILAR CONDITIONS. ALL INSERTS AND OTHER OBJECTS WHICH MAY AFFECT PLACING OF REINFORCING BARSSHALL BE INDICATED ON THE SHOP DRAWINGS.
7. MINIMUM CLEAR CONCRETE COVER SHALL BE 3", THIS DIMENSIONS ARE TYPLICAL, UNLESS OTHERWISE NOTED ON PLANS AND DETAILS.
8. CONTRACTOR SHALL PROVIDE REINFORCING STEEL ERECTOR WITH A SET OF STRUCTURAL PLANS FOR FIELD USE.
9. CONTRACTOR SHALL VERIFY DIMENSIONS AND LOCATIONS OF ALL OPENINGS, PIPE SLEEVES, CURBES, ETC. AS REQUIRED BY OTHER TRADES BEFORE CONCRETE IS PLACED.
10. CONTRACTOR SHALL COORDINATE LOCATION OF SLOTTED INSERTS, WELDED PLATES, AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE WITH CHARGING STATION MAUFACTURER.
11. CONTRACTOR SHALL USE RIGID TEMPLATES TO INSTALL ANCHOR BOLTS.
12. PIPES OR CONDUITS PLACED IN SLABS SHALL NOT BE SPACED CLOSER THAN 3 TIMES THE DIAMETER ON CENTER. PIPES AND CONDUITS PLACED IN SLABS SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN 1/3 OF THE SLAB THICKNESS. ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE. NO CONDUITS SHALL BE PLACED IN THE SLAB WITHIN 12 INCHES OF ANY COLUMN FACE.

DETAIL NOTES:
A.1- 2' ROUND SONOTUBE STYLE FORMED BASE TO BE POURED FLUSH WITH EXISTING PAVEMENT OR EXISTING FINISHED GRADE

A.2- STANDARD BOLTDOWN BOLLARD TO BE INSTALLED ON FRONT OF PAD, SEE BOLLARD DETAIL

A.3- CHARGING STATION PEDESTAL TO BE INSTALLED PER PEDESTAL DETAILS



DETAIL NOTES:
B.1- 24" SONOTUBE PIER WITH (4)- #8 VERT. AND DOWELS AND #4
TIES@ 16" O.C. VERT.

B.2- PROVIDE MIN. 24" EMBEDMENT IN SOIL BELOW GRADE

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DESIGNED James Pierson
DRAWN James Pierson
CHECKED

ABM Building Value
Electricraft Inc. Electrical Contractors

ABM ELECTRICAL POWER SERVICES
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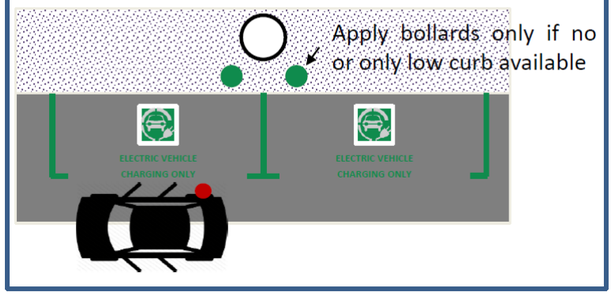
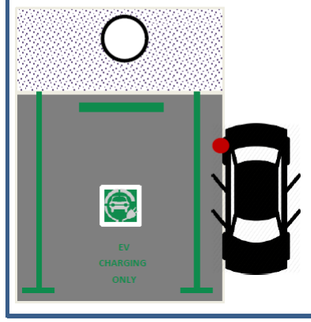
Parking Site Guidelines and Layout

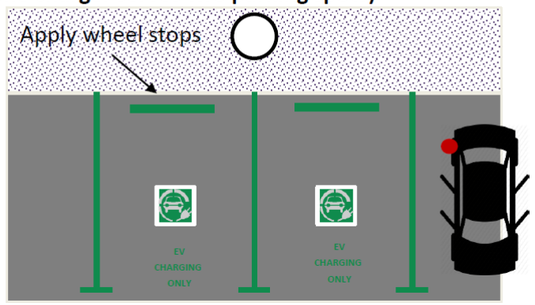
Two Parallel Parking Space Location
(One charger serves two parking spots)

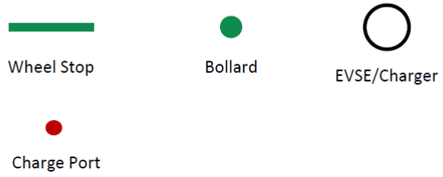


Angled or straight Single Parking Location

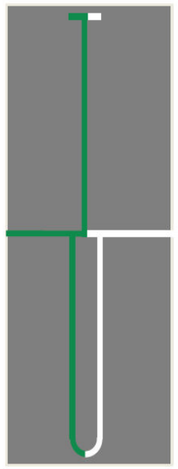


Angled or straight Parking
(one charger serves two parking spots)



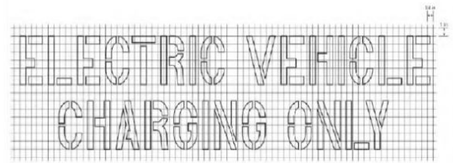


- Pavement marking, wheel stops and bollards and, if it fits into the overall site appearance, also curbs have to be painted in RAL 6026 (opal green).
- The marking of the EV-Charging parking spot has to be prioritized over existing markings.
- If there is any striping in different colors, it has to be painted over with the opal green color.
- Stencils to be used for marking to be found below.
- Dimensions:
  - EV-Symbol: 36 in x 36 in on a 38 in x 38 in green background frame
  - 'EV Charging only' and 'Electrical Vehicle Charging only' according to California Code: Figure 3B-108 (CA) Electric Vehicle Charging Station Pavement Marking Details (Sheet 1 & 2)



Pavement marking example

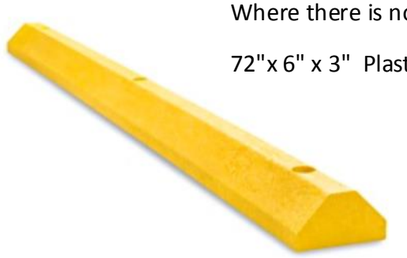
EV-Symbol; to be marked in white on green background



For parallel parking bays

For angled or straight parking bays

36" Fixed Carbon Steel Bollard rounded top, with 4-3/4" Outside Dia.



Where there is no curb, wheel stops are an alternative.

72"x 6" x 3" Plastic, 20 lbs, maintenance free, no painting

WALL MOUNTED OR POST MOUNTED EV PARKING SIGNAGE

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ELECTRICAL - BASIC REQUIREMENTS

1. Provide all labor, materials, necessary equipment and services to complete all required Electrical Work including all additional items required for a complete and proper installation as indicated on the Drawings or as required. Work includes but is not limited to the following.

A. Service entrance system.
B. All wiring and components to the charging systems

2. Installation shall be in accordance with the latest edition of the National Electrical Code and all applicable regulations of governing Local, State, County and Federal Codes including Utility Companies special requirements.

3. In the event of a conflict between equipment as drawn and these Specifications, the more stringent requirements will be applicable.

4. Coordinate delivery and installation of equipment required under this Section with the construction schedule.

5. Coordinate work with other trades and drawings.

6. All materials shall be new, free of defects and shall be U.L. listed, bearing U.L. label or be labeled or listed with an approved, nationally recognized Electrical Testing Agency.

7. Make final connections between all equipment furnished under this Contract.

8. The Contractor shall check all dimensions and verify all conditions pertaining to these Drawings at the building and site and shall report any discrepancies or conditions that are detrimental to proper completion of work to the Engineer at once.

9. Carefully examine all Project Drawings included for this Contract and those included under other contracts and report any discrepancies to Engineer and Architect.

10. Due to small scale of Drawings, it is not possible to indicate all offsets, fittings, access panels and similar parts which may be required. Drawings are generally indicative of work to be installed. Carefully examine structural and finish conditions affecting work and arrange all work accordingly, furnishing necessary parts and equipment as may be required to meet actual field conditions.

11. Lay out work from dimensions of Architectural and Structural Drawings and actual dimensions of equipment being installed. Layouts in congested areas shall not be scaled from Mechanical and Electrical Drawings. Do not make final layouts until Shop or Equipment Drawings are approved and job conditions verified.

12. The right is reserved to make any reasonable change in locations of equipment and similar items within the building and at building exterior prior to installation without involving additional compensation.

13. All concrete saw cutting, removal and patching to be included.

14. All work shown on Drawings shall be supplemented by all Laws, Ordinances and Codes governing the work of these Divisions, which Laws, Ordinances or Codes shall take precedence in the event of any conflict between same, except where methods or materials shown are superior to the legal requirements.

15. Obtain all required certificates from Governing Agency and turn over to the Owner at completion of Work. Obtain exact charges for fees, permits and other costs required and include such amounts in Bid Price.

16. Contractor shall provide a warranty substantiating that all materials are as herein specified, and that he shall repair or replace any defective materials or workmanship in an acceptable manner, without cost to the Owner. Warranty period shall be for one (1) year unless specified longer for specific equipment. Date of warranty start shall be from substantial completion and beneficial use.

17. Contractor will obtain a building permit for his portion of the work.

18. Contractor to provide pitch pans and penetrations required for electrical items which pierce roof whether or not shown on Drawings.

19. Contractor to Furnish and install reinforced concrete pads for equipment as required.

20. In general, all similar equipment is to be supplied and manufactured by same Manufacturer, but must be submitted and approved equal to that specified.

21. Locate all openings required for work performed under this section. Provide sleeves, guards or other approved methods to allow passage of items installed under this section.

22. Provide switched supply with-in 36" of equipment supplied and installed by other contractors. Motor starters and controls will be provided by others (except where noted) to be installed by the Electrical Contractor.

23. Wherever the Contractor provides power consuming equipment which differs from Contract Documents, the wiring and associated circuit components for such equipment shall be changed to proper sizes to match at additional expense to Owner.

24. It is the Contractor's responsibility to coordinate the exact required location of floor outlets, floor ducts, floor stub-ups, etc., with Owner and Architect and receive approval prior to rough in. Locations shown on plans are only approximate locations.

ELECTRICAL - GENERAL REQUIREMENTS

1. Wire sizes are #12 THWN unless noted otherwise on Drawings or Schedules or if larger size is required for equipment furnished.

2. Code sized green grounding conductor is to be provided for all branch circuits.

3. Provide cable strain relief for feeders in risers. Install access panels where required.

4. Coordinate power locations with owner.

5. Coordinate with other subs if required for complete, proper operation and installation of all equipment.

6. Multi-section branch circuit panelboards are shown as individual panels on panel schedules. Circuit numbering indicated on drawings reflect consecutive numbering for single panel.

ELECTRICAL - GENERAL CONSTRUCTION NOTES

1. Electrical Contractor shall coordinate his work with other trades in order to avoid conflicts.

2. The minimum conduit size shall be 1/2".

3. Voltage drop minimum wire sizing (20A circuit) use -

1. 120V circuit over 100' use #10 minimum
2. 208V circuit over 200' use #10 minimum
3. 277V circuit over 200' use #10 minimum

Minimum branch circuit wire size shall be #12.

4. All openings in fire rated walls, floor and partitions for conduits shall be sealed with fire resistant foam or UL approved "Fire Stop" system to maintain the fire rating.

5. All wiring will be in "MC" cable as by code. Underground conduit will be Sched 40 PVC with fittings, conduit above grade installed is to be EMT.

6. Electrical Contractor shall have the option of grouping homeruns in one conduit, per the requirements of Section 310 of the National Electrical Code.

ELECTRICAL - GENERAL REQUIREMENTS

8. Utility company fees by others.

9. All circuits indicated on these drawings are 20A, 1P circuit breakers in panels unless otherwise noted.

10. No conduit shall be installed exposed in area open to the public.

11. Outlet boxes for receptacles shall be mounted 18" above finish slab, unless noted otherwise.

12. All dimensions indicated are to centerline of junction boxes, floor boxes, etc., unless otherwise noted. Refer to Interior Drawings for all dimensions.

13. The work "provide" shall mean "to furnish and install".

16. A.F.F. = Above Finished Floor
U.N.O. = Unless Noted Otherwise
B.E.C. = Building Electrical Contractor
F.C. = Fixture Contractor

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APPENDIX E-3:
EVSE Accessibility Requirements

See next 7 pages.

Community Environmental Council
www.cecsb.org

2016 California Building Code Accessibility Requirements for Electric Vehicle Charging Station

Intro

This document includes excerpts from the 2016 California Building Code (CBC) updates that pertain to new accessibility regulations for Electric Vehicle Charging Station (EVCS) installations. The information was compiled from the guidance document released for Federal Resources, which covers applicable codes for public buildings, public accommodations, commercial buildings (including workplaces), and public housing. Additional resources are available here:
http://www.dgs.ca.gov/dsa/Programs/progAccess/evcs.aspx

The excerpts in this document are not comprehensive. We strongly encourage reviewing the full CBC guidelines for accessibility requirements related to EVCS installations and designs. Some of the codes in in this document reference broader ADA requirements that are not included in the excerpts. We therefore recommend referring to **Chapter 11B** of the 2016 CBC as well since it is the authoritative source of information about EVCS accessibility requirements.

The full text from Chapter 11B is available here:
https://codes.iccsafe.org/public/public/chapter/content/10003/

2016 CBC Excerpts for EVCS Accessibility Requirements & Designs

***11B*-207.1 General.** Means of egress shall comply with *Chapter 10, Section 1009*.
Exceptions:
1. Where means of egress are permitted by local building or life safety codes to share a common path of egress travel, accessible means of egress shall be permitted to share a common path of egress travel.
2. Areas of refuge shall not be required in detention and correctional facilities.

***11B*-207.2 Platform lifts.** Standby power shall be provided for platform lifts permitted by *Chapter 10, Section 1009.5* to serve as a part of an accessible means of egress. *To ensure continued operation in case of primary power loss, platform lifts shall be provided with standby power or with self-rechargeable battery power that provides sufficient power to operate all platform lift functions for a minimum of five upward and downward trips.*

***11B*-208.1 General.** Where parking spaces are provided, parking spaces shall be provided in accordance with *Section 11B*-208. *For the purposes of this section, electric vehicle charging stations are not parking spaces; see Section 11B-228.*

***11B*-208.2.3 Residential facilities.** Parking spaces provided to serve residential facilities shall comply with *Section 11B*-208.2.3.
***11B*-208.2.3.1 Parking for residents.** Where at least one parking space is provided for each residential dwelling unit, at least one parking space complying with *Section 11B*-502 shall be provided for each

residential dwelling unit required to provide mobility features complying with *Sections 11B*-809.2 through *11B*
809.4. *Where fewer than one parking space is provided for each residential dwelling unit, parking spaces complying with Section 11B-502 shall be provided in accordance with Table 11B-208.2.*

***11B*-203.9 Employee *workstations*.** *Employee workstations shall be on an accessible route complying with Division 4. Spaces and elements within employee workstations shall only be required to comply with Sections 11B-207.1, 11B-215.3*

***11B*-208.2.3.3 Parking for guests, employees, and other non-residents.** Where parking spaces are provided for persons other than residents, parking shall be provided in accordance with Table *11B*-208.2.
Note: *When assigned parking is provided, Chapter 11A indicates designated accessible parking for the adaptable residential dwelling units shall be provided on requests of residents with disabilities on the same terms and with the full range of choices (e.g., off-street parking, carport or garage) that are available to other residents*

TABLE *11B*-208.2 PARKING SPACES

TOTAL NUMBER OF PARKING SPACES PROVIDED IN PARKING FACILITY	MINIMUM NUMBER OF REQUIRED ACCESSIBLE PARKING SPACES
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000

11B*-228 Depositories, vending machines, change machines, mail boxes, fuel dispensers*, and electric vehicle charging stations.
***11B*-228.1 General.** Where provided, at least one of each type of depository, vending machine, change machine, and fuel dispenser shall comply with *Section 11B*-309. *Electric vehicle charging stations shall comply with Section 11B-228.3.*

11B-228.3 Electric vehicle charging stations
11B-228.3.1 General. *Where electric vehicle charging stations (EVCS) are provided, EVCS shall be provided in accordance with Section 11B-228.3.*

11B-228.3.1.1 Existing facilities. *Where new EVCS are added to a facility with existing EVCS, the requirements of Section 11B-812 shall apply only to the new EVCS installed. Alterations to existing EVCS shall comply with Section 11B-228.3.*

11B-228.3.1.2 Operable parts. *Where EV chargers are provided, operable parts on all EV chargers shall comply with Section 11B-309.4.*

11B-228.3.2 Minimum number. *EVCS complying with Section 11B-812 shall be provided in accordance with Section 11B-228.3.2. Where EVCS are provided in more than one facility on a site, the number of EVCS complying with Section 11B-228.3.2 provided on the site shall be calculated according to the number required for each facility. Where an EV charger can simultaneously charge more than one vehicle, the number of EV chargers provided shall be considered equivalent to the number of electric vehicles that can be simultaneously charged.*

Exceptions:

1. *EVCS not available to the general public and intended for use by a designated vehicle or driver shall not be required to comply with Section 11B-228.3.2. Examples include, but are not limited to, EVCS serving public or private fleet vehicles and EVCS assigned to an employee.*
2. *In public housing facilities, EVCS intended for use by an EV owner or operator at their residence shall not be required to comply with Section 11B-228.3.2.*

11B-228.3.2.1 Public use or common use EVCS.

Where EVCS are provided for public use or common use, EVCS complying with Section 11B-812 shall be provided in accordance with Table 11B-228.3.2.1. Where new EVCS are installed in facilities with existing EVCS, the "Total Number of EVCS at a Facility" in Table 11B-228.3.2.1 shall include both existing and new EVCS.

Exception: *All drive-up EVCS shall comply with Section 11B-812.*

TABLE 11B-228.3.2.1 ELECTRIC VEHICLE CHARGING STATIONS FOR PUBLIC USE AND COMMON USE

TOTAL NUMBER OF EVCS AT A FACILITY *(1)*	***MINIMUM NUMBER (by type) OF EVCS REQUIRED TO COMPLY WITH SECTION 11B-8121***		
	Van Accessible	***Standard Accessible***	***Ambulatory***
1 to 4	*1*	*0*	*0*
5 to 25	*1*	*1*	*0*
26 to 50	*1*	*1*	*1*
51 to 75	*1*	*2*	*2*
76 to 100	*1*	*3*	*3*
101 and over	*1, plus 1 for each 300, or fraction thereof, over 100*	*3, plus 1 for each 60, or fraction thereof, over 100*	*3, plus 1 for each 50, or fraction thereof, over 100*

(1) Where an EV charger can simultaneously charge more than one vehicle, the number of EVCS provided shall be considered equivalent to the number of electric vehicles that can be simultaneously charged.

11B-812 Electric vehicle charging stations

11B-812.1 General. *Electric vehicle charging stations (EVCS) shall comply with Section 11B-812 as required by Section 11B-228.3. Where vehicle spaces and access aisles are marked with lines, measurements shall be made from the centerline of the markings.*

Exception: *Where vehicle spaces or access aisles are not adjacent to another vehicle space, access aisle, or parking space, measurements shall be permitted to include the full width of the line defining the vehicle space or access aisle.*
11B-812.2 Operable parts. *Operable parts shall comply with Section 11B-309.*

11B-812.3 Floor or ground surfaces. *Vehicle spaces and access aisles serving them shall comply with Section 11B-302. Access aisles shall be at the same level as the vehicle space they serve. Changes in level, slopes exceeding 1:48, and detectable warnings shall not be permitted in vehicle spaces and access aisles.*

11B-812.4 Vertical clearance. *Vehicle spaces, access aisles serving them, and vehicular routes serving them shall provide a vertical clearance of 98 inches (2489 mm) minimum. Where provided, overhead cable management systems shall not obstruct required vertical clearance.*

11B-812.5 Accessible routes
11B-812.5.1 Accessible route to building or facility.
EVCS complying with Section 11B-812 that serve a particular building or facility shall be located on an accessible route to an entrance complying with Section 11B-206.4. Where EVCS do not serve a particular building or facility, EVCS complying with Section 11B-812 shall be located on an accessible route to an accessible pedestrian entrance of the EV charging facility.
Exception: *EVCS complying with Section 11B-812 shall be permitted to be located in different EV charging facilities if substantially equivalent or greater accessibility is provided in terms of distance from an accessible entrance or entrances, charging fee, and user convenience.*
11B-812.5.2 Accessible route to EV charger. *An accessible route complying with Section 11B-402 shall be provided between the vehicle space and the EV charger which serves it.*
11B-812.5.3 Relationship to accessible routes. *Vehicle spaces and access aisles shall be designed so that when the vehicle space is occupied the required clear width of adjacent accessible routes is not obstructed. A curb, wheel stop, bollards, or other barrier shall be provided if required to prevent encroachment of vehicles over the required clear width of adjacent accessible routes.*
11B-812.5.4 Arrangement. *Vehicle spaces and access aisles shall be designed so that persons using them are not required to travel behind vehicle spaces or parking spaces other than the vehicle space in which their vehicle has been left to charge.*
Exceptions:

1. *Ambulatory EVCS shall not be required to comply with Section 11B-812.5.4.*
2. *Vehicle spaces installed in existing facilities shall comply with Section 11B-812.5.4 to the maximum extent feasible.*

11B-812.5.5 Obstructions. *EVCS shall be designed so accessible routes are not obstructed by cables or other elements.*

11B-812.6 Vehicle spaces. *Vehicle spaces serving van accessible, standard accessible, ambulatory and drive-up EVCS shall be 216 inches (5486 mm) long minimum and shall com ply with Sections 11B-812.6.1 through 11B-812.6.4 as applicable. All vehicle spaces shall be marked to define their width.*
Exceptions:

1. *Where the long dimension of vehicle spaces is parallel to the traffic flow in the adjacent vehicular way, the length of vehicle spaces shall be 240 inches (6096 mm) minimum.*

2. *Vehicle spaces at drive-up EVCS shall be 240 inches (6096 mm) long minimum and shall not be required to be marked to define their width.*

11B-812.6.1 Van accessible. *Vehicle spaces serving van accessible EVCS shall be 144 inches (3658 mm) wide minimum and shall have an adjacent access aisle complying with Section 11B-812.7.*
11B-812.6.2 Standard accessible. *Vehicle spaces serving standard accessible EVCS shall be 108 inches (2743 mm) wide minimum and shall have an adjacent access aisle complying with Section 11B-812.7.*
11B-812.6.3 Ambulatory. *Vehicle spaces serving ambulatory EVCS shall be 120 inches (3048 mm) wide minimum and shall not be required to have an adjacent access aisle.*
11B-812.6.4 Drive-up. *Vehicle spaces serving drive-up EVCS shall be 204 inches (5182 mm) wide minimum and shall not be required to have an adjacent access aisle.*

11B-812.7 Access aisle. *Access aisles shall adjoin an accessible route. Two vehicle spaces shall be permitted to share a common access aisle. Access aisles shall be 60 inches (1524 mm) wide minimum and shall extend the full required length of the vehicle spaces they serve.*
11B-812.7.1 Location. *Access aisles at vehicle spaces shall not overlap the vehicular way and may be placed on either side of the vehicle space they serve except for van accessible spaces which shall have access aisles located on the passenger side of the vehicle spaces.*
11B-812.7.2 Marking. *Access aisles at vehicle spaces shall be marked with a painted borderline around their perimeter. The area within the borderlines shall be marked with hatched lines a maximum of 36 inches (914 mm) on center. The color of the borderlines, hatched lines, and letters shall contrast with that of the surface of the access aisle. The blue color required for identification of access aisles for accessible parking shall not be used. Access aisle markings may extend beyond the minimum required length.*
11B-812.7.3 Lettering. *The words "NO PARKING" shall be painted on the surface within each access aisle in letters a minimum of 12 inches (305 mm) in height and located to be visible from the adjacent vehicular way.*

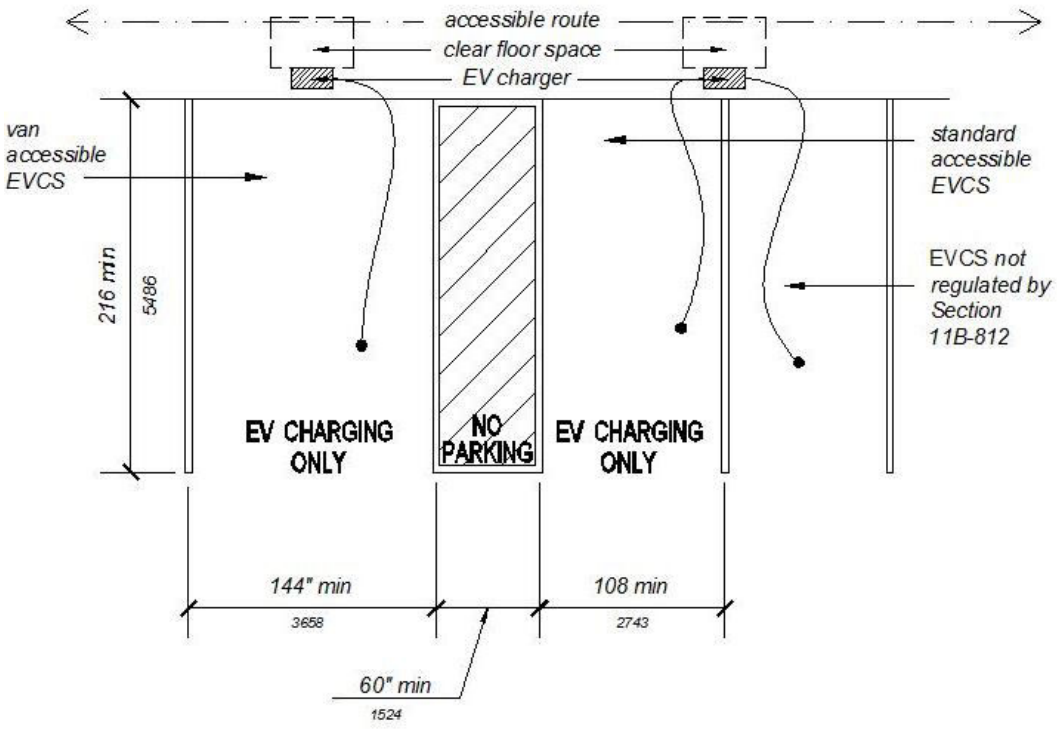
11B-812.8 Identification signs. *EVCS identification signs shall be provided in compliance with Section 11B-812.8.*
11B-812.8.1 Four or fewer. *Where four or fewer total EVCS are provided, identification with an International Symbol of Accessibility (ISA) shall not be required****11B-812.8.2 Five to twenty-five.*** *Where five to twenty-five total EVCS are provided, one van accessible EVCS shall be identified by an ISA complying with Section 11B*
703.7.2.1. The required standard accessible EVCS shall not be required to be identified with an ISA.
11B-812.8.3 Twenty-six or more. *Where twenty-six or more total EVCS are provided, all required van accessible and all required standard accessible EVCS shall be identified by an ISA complying with Section 11B-703.7.2.1.*
11B-812.8.4 Ambulatory. *Ambulatory EVCS shall not be required to be identified by an ISA.*
11B-812.8.5 Drive-up. *Drive-up EVCS shall not be required to be identified by an ISA.*
11B-812.8.6 Finish and size. *Identification signs shall be reflectorized with a minimum area of 70 square inches (45 161 mm^2).*
11B-812.8.7 Location. *Required identification signs shall be visible from the EVCS it serves. Signs shall be permanently posted either immediately adjacent to the vehicle space or within the projected vehicle space width at the head end of the vehicle space. Signs identifying van accessible vehicle spaces shall contain the designation "van accessible." Signs shall be 60 inches (1525 mm) minimum above the finish*

floor or ground surface measured to the bottom of the sign. Signs located within an accessible route shall be 80 inches (2032 mm) minimum above the finish floor or ground surface measured to the bottom of the sign. Signs may also be permanently posted on a wall at the interior end of the vehicle space.

11B-812.9 Surface marking. *EVCS vehicle spaces shall provide surface marking stating "EV CHARGING ONLY" in letters 12 inches (305 mm) high minimum. The centerline of the text shall be a maximum of 6 inches (152 mm) from the centerline of the vehicle space and its lower corner at, or lower side aligned with, the end of the parking space length.*

11B-812.10 Electric vehicle chargers
11B-812.10.1 General. *EV chargers shall comply with Section 11B-812.10.*
11B-812.10.2 Operable parts. *Operable parts and charging cord storage shall comply with Section 11B-309.*
11B-812.10.3 Point-of-sale devices. *Where provided, pointof-sale devices shall comply with Sections 11B-707.2, 11B707.3, 11B-707.7.2, and 11B-707.9.*
11B-812.10.4 Location. *EV chargers shall be adjacent to, and within the projected width of, the vehicle space being served.*
Exceptions:
1. *EV chargers serving more than one EVCS shall be adjacent to, and within the combined projected width of, the vehicle spaces being served.*
2. *For alterations at existing facilities where an accessible route or general circulation path is not provided adjacent to the head end of the vehicle space or access aisle, the EV charger may be located within the projected width of the access aisle 36 inches (914 mm) maximum from the head end of the space.*
3. *Where the long dimension of a vehicle space is parallel to the vehicular way, the EV charger shall be adjacent to, and 48 inches (1219 mm) maximum from the head end or foot end of the vehicle space or access aisle being served.*

FIGURE 11B-812.9. SURFACE MARKING



APPENDIX F-1:
Summary of Task 6 Outreach Activities

See next 10 Pages.

Appendix F-1 ZEV Awareness Events

ZEV Showcases (Static Displays) Event Summary

Event #	County	DAC/LIC	Event Date	ZEV Showcase Location	Test Drive	Workshop	Outreach Contacts	Number of Vehicles
1	Santa Barbara		09/17/2017	California Lemon Festival 7050 Phelps Rd Goleta, CA 93117	No	No	250	8
2	San Luis Obispo	Yes - LIC	01/18/2018	Veteran's Hall 801 Grand Ave San Luis Obispo, CA 93401	Yes	Yes	30	7
3	San Luis Obispo		04/21/2018	2018 SLO Earth Day Festival Laguna Lake Park Dalidio Dr San Luis Obispo, CA 93405	No	No	200	10
4	Santa Barbara		04/21/2018 04/22/2018	Santa Barbara Earth Day Festival Alameda Park 1400 Santa Barbara St Santa Barbara, CA 93101	Yes	No	15,000	24

Event #	County	DAC/LIC	Event Date	ZEV Showcase Location	Test Drive	Workshop	Outreach Contacts	Number of Vehicles
5	Ventura		04/28/2018	Earth Arbor Day Festival 1401 East Janss Road Thousand Oaks, CA 91362	Yes	Yes	60	7
6	San Luis Obispo		05/18/2018	Paso Robles Joint Unified School District 2910 Union Road Paso Robles, CA 93446	Yes	Yes	30	3
7	Ventura	Yes - DAC	07/04/2018	Ventura 4th of July Street Fair60 S California StVentura, CA 93001	No	No	3,000	11
8	Santa Barbara		09/13/2018	UC Santa Barbara NDEW Design, Facilities & Safety Services Building 594 Santa Barbara, CA 93106-1030	No	Yes	26	9
9	Santa Barbara		09/13/2018	UC Santa Barbara NDEW 2400 Bren Hall, Rm 1424 Santa Barbara, CA 93106-5131	No	Yes	39	9
10	Santa Barbara		09/13/2018	UC Santa Barbara NDEW Housing, Dining & Auxiliary Enterprises 1501 Residential Services Santa Barbara, CA 93106	No	Yes	13	9

Event #	County	DAC/LIC	Event Date	ZEV Showcase Location	Test Drive	Workshop	Outreach Contacts	Number of Vehicles
11	San Luis Obispo	Yes -LIC	09/13/2018	San Luis Obispo Farmer's Market 1022 Morro Street San Luis Obispo, CA 93401	No	No	300	18
12	Santa Barbara	Yes - LIC	09/16/2019	2018 Fiesta Patrias 142 Town Center W Santa Maria, CA 93458	No	No	250	8
13	Ventura	Yes - DAC	10/06/2018	Multicultural Festival Plaza Park 500 S C St Oxnard, CA 93030	Yes	No	50	4

ZEV Test Drive Event Summary

Event #	County	DAC/LIC	Date	ZEV Test Drive Location	Static Display	Workshop	Number of Participants	Number of Test-Drives	Vehicle Makes & Models
1	San Luis Obispo		09/21/2017	San Luis Obispo APCD 3433 Roberto Court San Luis Obispo, CA 93401	No	Yes	18	5	Toyota Mirai (3) Honda Clarity (1)
2	San Luis Obispo	Yes - LIC	01/18/2018	Veteran's Hall 801 Grand Ave San Luis Obispo, CA 93401	Yes	Yes	25	8	Chevrolet Bot (1) Chevrolet Volt (1) BMW i3 (1) Honda Clarity PEV (2)
3	Santa Barbara		4/21/2018 4/22/2018	Santa Barbara Earth Day Festival Alameda Park 1400 Santa Barbara St Santa Barbara, CA 93101	Yes	No	248	Day 1: 115 Day 2: 133 **Total: 248**	Toyota Mirai (2) Toyota Prius Plug-In (1) Nissan LEAF (1) Chrysler Pacifica (1)
4	Ventura		04/28/2018	Earth Arbor Day Festival 1401 East Janss Road Thousand Oaks, CA 91362	Yes	Yes	28	32	Toyota Mirai
5	San Luis Obispo		05/18/2018	Paso Robles Joint Unified School District 2910 Union Road Paso Robles, CA 93446	Yes	Yes	30	3	Lion electric bus Type C (1) Green Power Synapse (1)

Event #	County	DAC/LIC	Date	ZEV Test Drive Location	Static Display	Workshop	Number of Participants	Number of Test-Drives	Vehicle Makes & Models
6	Ventura	Yes - DAC	10/06/2018	Multicultural Festival Plaza Park 500 S C St Oxnard, CA 93030	Yes	No	15	15 *Ride-alongs only*	Nissan LEAF Chevy Volt

ZEV Workshop Event Summary

Event #	County	DAC/LIC	Date	Location	Static Display	Test Drive	Number of Attendees	Focus
1	San Luis Obispo		9/21/2017	San Luis Obispo APCD 3433 Roberto Court San Luis Obispo, CA 93401	No	Yes	18	Hydrogen & FCEVs
2	Ventura		11/17/2017	Oxnard Lions Club Noontimers Meeting 600 E Esplanade Dr Oxnard, CA 93036	No	No	33	ZEV Awareness
3	San Luis Obispo	Yes - LIC	1/18/2018	Veteran's Hall 801 Grand Ave San Luis Obispo, CA 93401	Yes	Yes	25	ZEV Fleets
4	Ventura		4/28/2018	Earth Arbor Day Festival 1401 East Janss Road Thousand Oaks, CA 91362	Yes	Yes	25	ZEV Awareness
5	San Luis Obispo		5/18/2018	Paso Robles Joint Unified School District 2910 Union Road Paso Robles, CA 93446	Yes	Yes	30	ZEV School Buses
6	Santa Barbara		8/1/2018	UC Santa Barbara Santa Barbara, CA 93106	No	No	49	ZEV Awareness
7	Santa Barbara	Yes - LIC	8/8/2018	COAST General Meeting 11 East Carrillo Street Santa Barbara, CA 93101	No	No	15	ZEV Awareness

Event #	County	DAC/LIC	Date	Location	Static Display	Test Drive	Number of Attendees	Focus
8	Santa Barbara		09/13/2018	UC Santa Barbara NDEW Design, Facilities & Safety Services Building 594 Santa Barbara, CA 93106-1030	Yes	No	26	ZEV Awareness
9	Santa Barbara		09/13/2018	UC Santa Barbara NDEW 2400 Bren Hall, Rm 1424 Santa Barbara, CA 93106-5131	Yes	No	39	ZEV Awareness
10	Santa Barbara		09/13/2018	UC Santa Barbara NDEW Housing, Dining & Auxiliary Enterprises 1501 Residential Services Santa Barbara, CA 93106	Yes	No	13	ZEV Awareness
11	Santa Barbara	Yes - LIC	3/19/2019	WebEx Webinar	NA	NA	11	EV Charging Infrastructure
12	San Luis Obispo	Yes - LIC	3/26/2019	WebEx Webinar	NA	NA	12	EV Charging Infrastructure
13	Ventura	Yes - DAC	3/28/2019	Zoom Webinar	NA	NA	10	EV Charging Infrastructure

Appendix F-4 Direct Stakeholder Engagement Impact by City & County

The complete list of more than 400 candidate sites for EVSE infrastructure development is available for download at: https://www.dropbox.com/s/hd5s87swx559rc1/Appendix6.4_Data-NO_CONTACT_INFO.xlsx?dl=0

This linked list omits the personal information collected for direct outreach to comply with the Information Practices Act (IPA), as codified in California Civil Code sections 1798 et seq. Personal Information is defined in the IPA at Civil Code section 1798.3(a).

To download the list, follow the link and click on the "…" in the upper right-hand corner of the webpage (next to the blue "Share" button). If you have any issues accessing the list via Dropbox or would like to submit a request for a version of the list that includes personal information for site contacts, please call or email:

Cameron Gray
Transportation & Climate Program Manager
Community Environmental Council
cgray@cecmail.org
(805) 963-0583 Ext. 111

Number of EVSE Outreach Counts by County and City

County City	Employer/Workplace	Fleet	Government	MUD	School	Public/Commercial Destination	Grand Total
San Luis Obispo	**11**	**4**	**5**	**4**	**5**	**6**	**35**
Arroyo Grande	2			1		1	4
Atascadero	1						1
Baywood-Los Osos					1		1
Cambria							
Cayucos							
Grover Beach							
Los Osos	1						1
Morro Bay					1		1
Oceano							

Paso Robles	2			1	1	2	6
Pismo Beach	1						1
San Luis Obispo	3	3	5	2	2	2	17
San Miguel						1	1
San Simeon		1					1
Shandon							
Templeton	1						1
Santa Barbara	**4**	**5**	**10**	**5**	**10**	**3**	**37**
Carpinteria							
Goleta	1	1	2	1			5
Guadalupe			1	1	1	1	4
Lompoc	1		1		1	2	5
Los Olivos							
New Cuyama			1				1
Orcutt					1		1
Santa Barbara	1	2	2	3	5		13
Santa Maria	1	2	2		2		7
Santa Ynez							
Solvang			1				1
Vandenberg AFB							
Ventura	**25**	**2**	**7**		**17**		**51**
Camarillo	4		1		3		8
Fillmore					1		1
Moorpark	2				2		4
Newbury Park	1						1
Oak View							
Ojai	1						1
Oxnard	5	1	2		5		13
Point Mugu							
Port Hueneme	1		1				2

Santa Paula					2		2
Simi Valley	3				1		4
Thousand Oaks	3		1		1		5
Ventura	4	1	2		2		9
Westlake Village	1						1
Grand Total	**40**	**11**	**22**	**9**	**32**	**9**	**123**

APPENDIX F-2:
Multilingual Outreach Materials

See next page.

Appendix F-2 Multilingual Outreach Materials

Available to view or download at: https://www.dropbox.com/sh/6t3bwy81xmjihxk/AAATt6CYygdIFLnQXaPF7hZ8a?dl=0

To download the print martials via Dropbox, follow the link and click on the "…" in the far left-hand column of each PDF file's row. If you have any issues accessing the PDF files via Dropbox, please contact:

Cameron Gray
Transportation & Climate Program Manager
Community Environmental Council
cgray@cecmail.org
(805) 963-0583 Ext. 111

APPENDIX F-3:
Sample Workshop Presentation

See next page.

Appendix F-3 Sample Workshop Presentation

Available for download at: https://www.dropbox.com/s/6g3ck01y5bfil0z/09-13-2018_FINAL-UCSB_ElectricDrive805.pptx?dl=0

To download the presentation via Dropbox, follow the link and click on the "…" in the upper right-hand corner of the webpage (next to the blue "Share" button). If you have any issues accessing the slides, please contact:

Cameron Gray
Transportation & Climate Program Manager
Community Environmental Council
cgray@cecmail.org
(805) 963-0583 Ext. 111

APPENDIX F-4:
Direct Stakeholder Engagement Impact by City & County

See next 3 pages.

Appendix F-4 Direct Stakeholder Engagement Impact by City & County

The complete list of more than 400 candidate sites for EVSE infrastructure development is available for download at: https://www.dropbox.com/s/hd5s87swx559rc1/Appendix6.4_Data-NO_CONTACT_INFO.xlsx?dl=0

This linked list omits the personal information collected for direct outreach to comply with the Information Practices Act (IPA), as codified in California Civil Code sections 1798 et seq. Personal Information is defined in the IPA at Civil Code section 1798.3(a).

To download the list, follow the link and click on the "…" in the upper right-hand corner of the webpage (next to the blue "Share" button). If you have any issues accessing the list via Dropbox or would like to submit a request for a version of the list that includes personal information for site contacts, please call or email:

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Number of EVSE Outreach Counts by County and City

County City	Employer/Workplace	Fleet	Government	MUD	School	Public/Commercial Destination	Grand Total
San Luis Obispo	**11**	**4**	**5**	**4**	**5**	**6**	**35**
Arroyo Grande	2			1		1	4
Atascadero	1						1
Baywood-Los Osos					1		1
Cambria							
Cayucos							
Grover Beach							
Los Osos	1						1
Morro Bay					1		1
Oceano							

Paso Robles	2			1	1	2	6
Pismo Beach	1						1
San Luis Obispo	3	3	5	2	2	2	17
San Miguel						1	1
San Simeon		1					1
Shandon							
Templeton	1						1
Santa Barbara	**4**	**5**	**10**	**5**	**10**	**3**	**37**
Carpinteria							
Goleta	1	1	2	1			5
Guadalupe			1	1	1	1	4
Lompoc	1		1		1	2	5
Los Olivos							
New Cuyama			1				1
Orcutt					1		1
Santa Barbara	1	2	2	3	5		13
Santa Maria	1	2	2		2		7
Santa Ynez							
Solvang			1				1
Vandenberg AFB							
Ventura	**25**	**2**	**7**		**17**		**51**
Camarillo	4		1		3		8
Fillmore					1		1
Moorpark	2				2		4
Newbury Park	1						1
Oak View							
Ojai	1						1
Oxnard	5	1	2		5		13
Point Mugu							
Port Hueneme	1		1				2

Santa Paula					2		2
Simi Valley	3				1		4
Thousand Oaks	3		1		1		5
Ventura	4	1	2		2		9
Westlake Village	1						1
Grand Total	**40**	**11**	**22**	**9**	**32**	**9**	**123**

APPENDIX G-1:
Compiled Emergency Response Manuals

Compiled emergency response manuals are available on the SLOCAPCD website https://www.slocleanair.org/community/zev.php.

APPENDIX G-2:
Training Materials Used and Course Reports

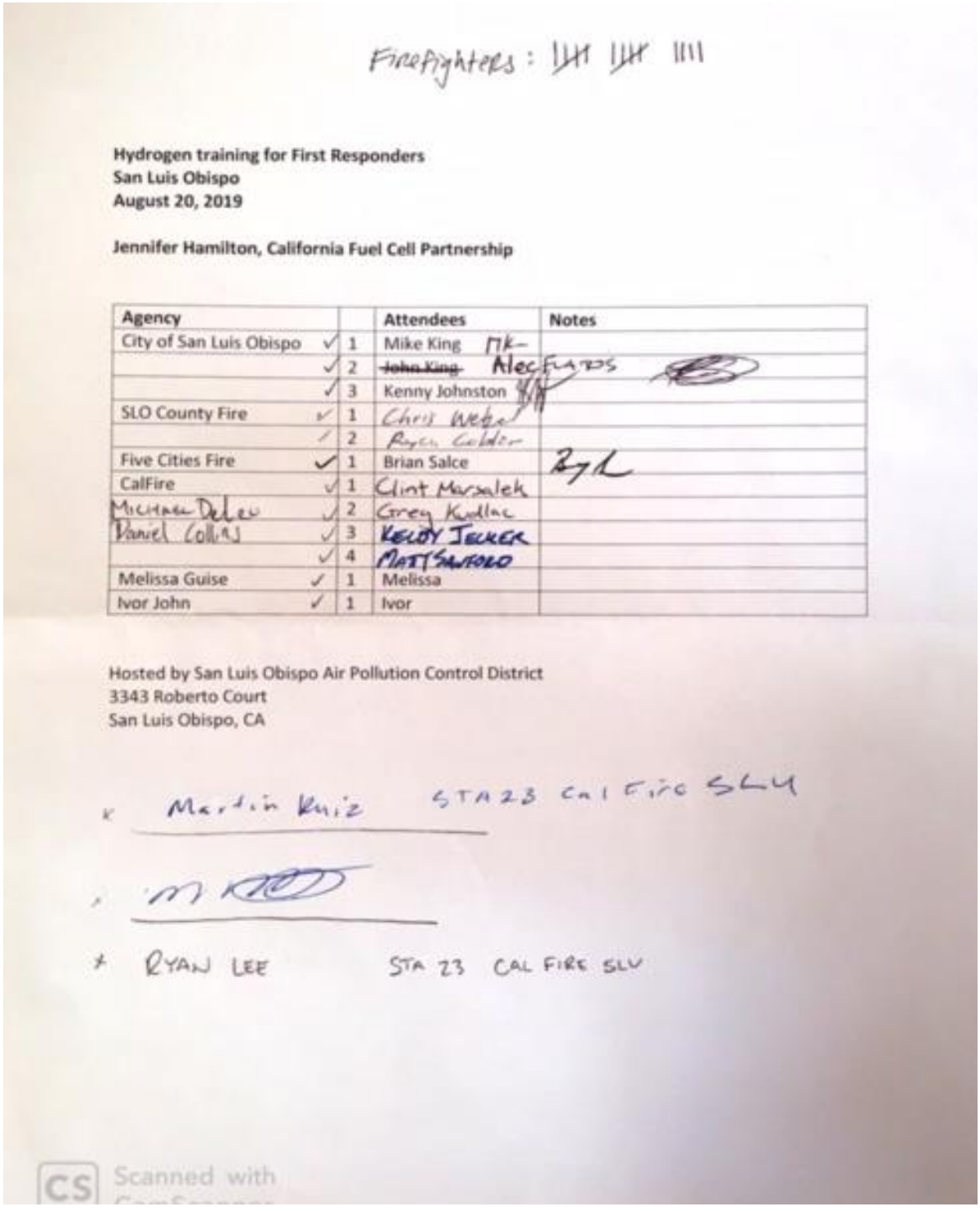
Training materials can be accessed through the following link: h2tools.org/training-materials.

See next three pages for Course Reports.

Hydrogen Training for First Responders
San Luis Obispo
Tuesday, August 20, 2019

Jennifer Hamilton - CaFCP

Attendees included 14 Firemen, and two independent Consultants



Firefighters : |||| |||| ||||

Hydrogen training for First Responders
San Luis Obispo
August 20, 2019

Jennifer Hamilton, California Fuel Cell Partnership

Agency			Attendees	Notes
City of San Luis Obispo	✓	1	Mike King MK-	
	✓	2	~~John King~~ Alec FLATOS	
	✓	3	Kenny Johnston KJ	
SLO County Fire	✓	1	Chris Webb	
	✓	2	Ryan Calder	
Five Cities Fire	✓	1	Brian Salce	BJL
CalFire	✓	1	Clint Marsalek	
Michael Dolen	✓	2	Grey Kudlac	
Daniel Collins	✓	3	KELLY JELKER	
	✓	4	MATT SALADO	
Melissa Guise	✓	1	Melissa	
Ivor John	✓	1	Ivor	

Hosted by San Luis Obispo Air Pollution Control District
3343 Roberto Court
San Luis Obispo, CA

* Martin Ruiz STA 23 Cal Fire SLO

*

* RYAN LEE STA 23 CAL FIRE SLO

10/29/19

Hydrogen Safety Training for First Responders

Name	
Alex Economou	Santa Barbara County APCD
~~Jack Armstrong~~	~~AZ Safety~~
Brooke Farrell	Sundance Sustainability

Santa Barbara APCD Office
10/29/19

Train-the-Trainer
led by Ivor John, Phd
Independent Environmental Consultant

Task 7: CEC GFO - AVR-16-015
GFO-16-601

Hydrogen Safety Training for First Responders

BACKGROUND

Hydrogen awareness and hydrogen emergency response capabilities are becoming increasingly important as more hydrogen (fuel-cell) cars are added to our roads, and more hydrogen stations are being built across the country. A suitably trained emergency response force is critical to support expand the fuel cell infrastructure. These essential personnel need to understand how to respond to a hydrogen incident. In addition, firefighters and other emergency responders are highly respected in their communities and can positively influence the introduction of hydrogen and fuel cell vehicles into local markets.

LOCAL TRAINING

Through funding from the California Energy Commission, the local Air Pollution Control Districts (APCDs) have contracted with Jennifer Hamilton of Frontier Energy (and the California Fuel Cell Partnership) to provide two one-day "Train the Trainer" sessions in San Luis Obispo and Santa Barbara on Tuesday and Wednesday, August 20th and 21st, respectively. The training is intended for first responder personnel from Santa Barbara, Ventura and/or San Luis Obispo Counties, but is also open to other trainers and agency personnel if interested.

TRAINING COURSE

The basis for the Train the Trainer presentation is the National Hydrogen and Fuel Cells Emergency Response Training Resource, and is available for download on h2tools.org. At least one fuel cell electric vehicle will be available for viewing, and a tour of the Santa Barbara hydrogen station is being planned for the Santa Barbara training.

- **Classroom Portion (4 hours)** – this will provide in-depth information on the properties of hydrogen, how fuel cells work, how the vehicles and stations operate, safety elements of the vehicles and the stations, and response considerations including incident scenarios. The goal is to provide sufficient training and the resources needed for attendees to conduct further training locally as the need arises.

- **Fuel Cell Vehicle Display and Orientation (1 hour)** – this will include a walk around a Toyota Mirai to provide an orientation to the fuel cell vehicle and its essential safety features.

- **Hydrogen Station Visit (Santa Barbara only) (1 hour)** – this portion of the training is optional and will provide a walk-through of the station on La Cumbre at Five Points (to be confirmed).

San Luis Obispo	**Santa Barbara**
Tuesday, August 20, 2019 **9:00am to 3:00pm**	**Wednesday, August 21, 2019** **9:00am to 3:00pm**
San Luis Obispo County APCD 3433 Roberto Court San Luis Obispo, CA 93401	Santa Barbara County APCD 260 N San Antonio Rd, Suite A Santa Barbara, CA 93110-1315

This is a FREE class, and a light lunch will be provided. To sign up, please email Ivor John at ivorjohn@cox.net indicating which day you plan to attend, or call Ivor at 805-451-8162.

SLO COUNTY apcd

APPENDIX H:
List of Interested Station Owners and Installers Expressing Interest of Hydrogen Infrastructure

See next 2 pages.

Table of Fuel Stations in San Luis Obispo County Indicating Ownership Interest

List #	Facility_Name	Site_Addr	City	Zip	Proximity to Freeway	Forecourt Space	Appearance/ Neighborhood	Ease of Acccess	Ownership
1	Mission Station, Inc.	328 Marsh Street	San Luis Obispo	93401	Excellent	Sufficient	Good	Excellent	Chevron brand, independent, previous application to CEC (Hygen)
2	Chevron # 98169 (Trett's)	3180 S. Broad Street	San Luis Obispo	93401	Bit far	Plenty	Excellent	Excellent	Chevron, Corporate (San Ramon)
3	Refuel	2211 Broad Street	San Luis Obispo	93401	Bit far	Sufficient	Good	Good	Same Owner as Santa barbara station (favorable)
4	Shell/Tesoro Station No. 68613	296 Santa Rosa Street	San Luis Obispo	93405	Excellent	Plenty	Good	Excellent	Complex - Shell brand but property owned by Tesoro/Conoco
5	Chevron - BNB Gas & Mart	12424 Los Osos Valley Rd	San Luis Obispo	93405	Excellent	Limited	Okay	Fair	Independent Owner/operator (Chevron brand)
6	Chevron # 91717 (Foothill)	151 N Santa Rosa Street	San Luis Obispo	93405	Good	Ample	Good	Excellent	Chevron, Corporate (San Ramon)
7	Conserv Fuel	254 Santa Rosa Street	San Luis Obispo	93405	Excellent	Plenty	Excellent	Excellent	Same Owner as Santa barbara station (favorable)
8	Edna Valley Shell	4021 Broad Street	San Luis Obispo	93401	Bit far	Plenty	Excellent	Excellent	Shell brand, independent owner
9	Laguna Shell	11590 Los Osos Valley Rd	San Luis Obispo	93405	Bit far	Ample	Good	Excellent	Shell brand, independent ownership (same as #10)
10	Madonna Shell	204 Madonna Road	San Luis Obispo	93401	Excellent	Ample	Excellent	Excellent	Shell brand, independent ownership (same as #9)
11	San Luis Chevron dba Coast Investments, Inc.	2000 Monterey Street	San Luis Obispo	93401	Good	Very Limited	Okay	Fair	Chevron brand, independent, set back issues
12	Shell/Tesoro Station No. 68614	3 Santa Rosa Street	San Luis Obispo	93405	Good	Ample	Good	Excellent	Complex - Shell brand but property owned by Tesoro (same as #4)
13	Broad St. 76 Express	2015 Broad Street	San Luis Obispo	93401	Fair	Limited	Okay	Good	Independent, no interest
14	University Spirit Gas & Mini Mart	1756 Monterey Street	San Luis Obispo	93401	Good	No Space	Tight	Fair	Shell brand, no follow up as site is inworkable
15	John's 66 (Valero)	157 Higuera Street	San Luis Obispo	93401	Excellent	Ample	Okay	Good	Valero brand, owner motivated if money can be made
16	ARCO - Arroyo Grande AM/PM	100 Barnett Street	Arroyo Grande	93420	Close	Good	Good	Good	
17	Mobil (Petro Grande)	525 Traffic Way	Arroyo Grande	93420	Close	OK	OK	Good	
18	Atascadero 76	6305 Morro Road	Atascadero	93422	Close	Good	Good	Good	
19	Chevron - Kautz	1284 Grand Avenue	Grover Beach	93433	No	Good	Good	Good	
20	Grover Beach Flyers	684 West Grand Avenue	Grover Beach	93433	Distant	Good	Good	Good	
21	Five Cities Chevron	340 Five Cities Drive	Pismo Beach	93449	Close	Good	Good	Good	
22	Spyglass Shell (AU Energy)	2699 Shell Beach Road	Pismo Beach	93449	Close	Good	Fair	Good	

List of Hydrogen Station Installers interested in Tri-Counties Opportunities

				Phone #	Interest	
1	ITM	sj@itm-power.com	Steve Jones	714-453-8141	High	definite interest
1	Nel/Everfuel	enupo@nelhydrogen.com	Eddie Nupoort	916-841-7262	High	Positive - Eddy plans to join webinar
1	Proton Onsite	szymanski@protononsite.com	steve zymanski	203-678-2338	High	Acquired by Nel - supplier of electrolyzers
1	Stratos	JMA@stratosfuel.com	John Avila	909-261-2632	High	Also Jonathon Palacos-Avila; planning to call in for webinar
2	Hydrogenics	rdelcore@hydrogenics.com	Rob Del Core	858-386-8930	Mid	Now part owned by Air Liquide
2	First Element	Shane.stephens@firstelementfuel.com	Shane Stevens	949-205-5553	Mid	Talked with Mike Strada - he says he'll be sure to let Shane know
2	Iwatani	jscappello@iwatani.com	Joseph Cappello	713-965-9970	Mid	office number
3	Air Liquide	bob.fourie@airliquide.com	Bob Fourie	713-624-8354	Low	Business Development for North America
3	Air Products	heydorec@airproducts.com	Brian Bonner		Low	Brian Bonner was on CEC Workshop 2/12/19; Ed Heydorn
3	Hygen	h24u@hygen.com	Paul Staples		Low	No contact details for owner
3	Linde	nitin.natesan@linde.com	Nitin Natesan		Low	sold California interest to Iwatani
3	Shell-Equillon	W.leighty@shell.com	Wayne Leighty	(907) 223-1684	N/A	"Shell Hydrogen" hydrogen business development manager
3	United Hydrogen	Joe.gagliano@unitedhydrogen.com	Joe Gagliano	949-382-9517	Low	Joe is planning to join webinar
3	H2B2 USA LLC	joaquin.alarcon@h2b2.es	Joaquin Alarcon	314-478-7331	Low	CEC award for renewable hydrogen in SJV; office in Newport Beach
3	Advanced Emissions Ctrl	bgaffney@advancedemission.com	Bob Gaffney	559-472-7301	Low	Fresno
3	Advanced Emission Control Sc	sdavis@advancedemission.com	Stephen Davis	559-472-7301	Low	Fresno
3	Simple Fuel (Ivy's, Inc.)	darryl.pollica@ivysinc.com	Darryl Pollica -		Low	"Simple Fuel"
3	Simple Fuel (PDC Machines)	J.Petrecky@pdcmachines.com	Jim Petrecky -		Low	"Simple Fuel"
3	IMS	CGreth@imsinfo.com	Connor Greth		Low	Design firm
3	Trillium (Loves Truck Stops)	Ryan.Forrest@loves.com	Ryan Forrest		Low	
3	Cal State Los Angeles	michael.dray@calstatela.edu	Michael Dray	323.343.5293	Low	