



Memorandum

TO: HONORABLE MAYOR
AND CITY COUNCIL

FROM: Lori Mitchell

SUBJECT: SEE BELOW

DATE: September 18, 2019

Approved

D. D. S. L.

Date

9/26/19

SUBJECT: CALIFORNIA ELECTRIC VEHICLE INFRASTRUCTURE PROJECT FUNDING

RECOMMENDATION

Adopt a resolution:

- (a) Approving the implementation of the California Electric Vehicle Infrastructure Project in San José;
- (b) Approving participation of San José Clean Energy in the California Energy Commission's current round of funding of the California Electric Vehicle Infrastructure Project for load-serving entities in San Mateo and Santa Clara counties; and
- (c) Authorizing the Director of Community Energy or designee, in consultation with the City Attorney, to negotiate and execute an agreement with the Center for Sustainable Energy to administer San José Clean Energy funds as part of the implementation of the California Electric Vehicle Infrastructure Project in an amount not to exceed \$4,000,000 through December 31, 2023, subject to the appropriation of funds.

OUTCOME

Approving the recommendation will allow the City of San José to implement the California Electric Vehicle Infrastructure Project in San José and participate in the current round of California Electric Vehicle Infrastructure Project ("CALeVIP") funding that the California Energy Commission ("CEC") granted to several load-serving entities in San Mateo and Santa Clara counties. Approving the recommendation will also allow the Director of Community Energy to sign an agreement with the Center for Sustainable Energy ("CSE") to formally launch this program. The agreement would require San José Clean Energy ("SJCE") to contribute \$4 million over the next 2 to 4 years, as a condition for the CEC to disburse \$10 million to SJCE's program under a grant awarded to SJCE and other public entities. The combined funds (\$14 million) would be used as incentives for the installation of electric vehicle charging infrastructure in San José.

If approved by Council, SJCE expects to contribute approximately \$85,000 in Fiscal Year 2019-2020, \$915,000 in Fiscal Year 2020-2021, and \$3.0 million in Fiscal Year 2021-2022. The exact monthly outlay of funds to CSE depends on CALeVIP applicant demand, project completions, documentation review, and approval by CSE. The agreement would include not to exceed amounts of its contributions for each fiscal year.

These combined investments are expected to result in approximately 100 new Direct Current Fast Charging (“DCFC”) ports and 1,400 new Level 2 charging ports in San José by the end of 2022. For reference, San José currently has 142 DCFC ports and 1,062 Level 2 charging ports.

BACKGROUND

On August 8, 2017, City Council approved an ordinance establishing a Community Choice Aggregation program to be named SJCE and amending Title 26 of the San José Municipal Code to create the Community Energy Department of the City of San José to manage the Community Choice Aggregation. Under the adopted Title 26, SJCE may provide any programs as approved by the City Council.

In February 2018, the City of San José was one of the first U.S. cities to adopt a Paris Agreement-aligned climate action plan, named Climate Smart San José (“Climate Smart”). This is a data driven plan with goals and actions focused on three components: energy, mobility, and water. It details not only ways to reduce the city's carbon footprint but also to improve quality of life for those who live and work in San José.

On May 15, 2019, SJCE provided an update to the Transportation and Environment Committee on the Community Energy Programs planning process. SJCE advised that vehicle electrification was likely to be one of the sectors that will be recommended as a primary area of program focus.

ANALYSIS

CALeVIP Program Introduction

The CALeVIP is a CEC electric vehicle (“EV”) charging infrastructure incentive program. The CEC co-funds the program with a participating organization. Typically, the incentives are cost shared with a local government entity, utility, or Community Choice Aggregation. Program implementation and administration is managed by the CSE, which was competitively selected by the CEC.¹ The incentives are focused on:

¹ California Energy Commission Contract number ARV-16-017

- **Level 2 Chargers:** Requires a dedicated 240-volt circuit, similar to an electric dryer or oven. Charging loads are normally 7 kilowatt (“kW”) but can go up to 19.2 kW. Level 2 chargers can charge an EV at roughly 20-40 miles per hour. Level 2 chargers are typically installed at single family homes, multi-family dwellings, or workplaces.
- **Direct Current Fast Chargers (“DCFC”):** Also called supercharging, provides the fastest available charging times. Higher powered chargers require a 480-volt connection. Charging loads are in the range of 50 to 150 kW. This results in around 100 miles of range in 30 minutes. DCFCs are typically installed at shopping centers, rest stops, gas stations or other shorter stay locations.

Under CALeVIP, these charging stations can be public or private for workplaces, multi-family dwellings, destination centers, and shopping centers, but are not available for single family homes. Incentives will cover a portion of the costs of both the charging station as well as the electrical infrastructure upgrades needed to install the charging stations. Property owners who install chargers that receive incentives through the CALeVIP program are responsible for any ongoing operational expenses for the chargers. CALeVIP funds may only be used for chargers at existing buildings. SJCE is negotiating to allow the incentives to be used for new affordable housing. Incentives are structured as described in the tables below.

Level 2 Incentives

Table 1. Proposed Level 2 Charger Incentive Design.

Rebate Per Connector	Rebate Adders Per EV Charging Connector		
	MUD	DAC	Low Income
\$5,000	\$1,000	\$500	\$500

Proposed Level 2 Incentive Design

MUD = Multi-unit Dwelling.

DAC = Disadvantaged Community

DCFC Incentives

Table 2. Proposed DCFC Incentive Design

Proposed DCFC Incentive Design

DCFC Type	Non-Disadvantaged Community/Low Income Rebate	Disadvantaged Community/Low Income Rebate
50 kW+	Up to \$50,000 or 75% of the total project cost, whichever is less	Up to \$60,000 or 80% of the total project cost, whichever is less
100 kW+	Up to \$70,000 or 75% of the total project cost, whichever is less	Up to \$80,000 or 80% of the total project cost, whichever is less

San Mateo and Santa Clara County Collaboration

A coalition was formed among San Mateo and Santa Clara County electrical load-serving entities to apply for CEC funding under the CALeVIP program. The coalition included: SJCE, Peninsula Clean Energy, Silicon Valley Clean Energy, City of Palo Alto Utilities, and City of Santa Clara/Silicon Valley Power. CALeVIP is operated on a county-wide level. Therefore, it was important that the majority of load serving entities in the county submitted a joint application to receive matching CEC funding. This was a unique opportunity for Community Choice Aggregations and Publicly Owned Utilities to obtain funding that would benefit both counties. If any of the entities had not participated, the application may have been less compelling to the CEC.

Agreement with Center for Sustainable Energy

CSE is a nonprofit energy organization that provides administration and advisory services.² As indicated above, the CEC (a state public agency) selected CSE through a competitive solicitation to implement the CALeVIP program.³ CSE is the only entity authorized by the CEC to administer any CEC grants under the program.⁴ For these reasons, SJCE did not engage in competitive procurement to award a contract to CSE.⁵

Under the standard services agreement with CSE, SJCE would contribute an amount not to exceed \$4,000,000 for the design and implementation of an EV charger incentive program through December 31, 2023. This amount would include a fee, payable in several installments, to compensate CSE for services related to the development and administration of the program in a not to exceed amount of \$280,000. The scope of work for this project will require CSE to meet

² <https://energycenter.org/about-us>

³ <https://calevip.org/about-calevip>

⁴ California Energy Commission Contract number ARV-16-017

⁵ See San José Municipal Code, [Section 4.12.225](#) (public agencies purchases) and [Section 4.12.235](#) (unique services purchases).

certain deliverables and submit regular reports that would allow SJCE to ensure that SJCE's funding is properly invested and monitor the progress of the program.

City of San José Electric Vehicle Goals

Climate Smart San José set an ambitious target of 61% of passenger vehicles (includes SUVs) or 153,200 vehicles are electric by 2030. The Climate Smart plan identified one of the key challenges in meeting that goal is “creating an EV charging infrastructure” to support 61% EV's in the city. The Climate Smart plan also includes a clear action (2-3-A) “to partner strategically to expand the network of publicly available charging stations”.⁶

The standard definition for EV's include both battery electric vehicles and plug-in hybrid electric vehicles. A battery electric vehicle runs fully on power from the battery, while a plug-in hybrid electric vehicle runs on both a gasoline engine and a battery. As of October 2018, the City of San José had approximately 23,170 registered EV's according to the California Department of Motor Vehicles. EV's represent around 2.8% (23,170) of total registered passenger vehicles in San José in 2018. This means that San José will need to increase the number of EV's by 561% to meet the Climate Smart goal of 153,200 EV's by 2030. In the near-term, San José will need 63,100 EV's by 2025 to meet Climate Smart goals for that year. This represents a 171% increase or replacing 39,930 vehicles with EVs by 2025. The CALeVIP incentives and \$10.0 million in funding from the CEC will help the City meet these ambitious goals.

City of San José Electric Vehicle Charging Infrastructure

Studies have shown a strong statistical link between EV uptake and charging infrastructure availability.⁷ Although correlation does not imply causality, the statistical correlation implies that if San José does not have enough available charging infrastructure, EV uptake will be negatively impacted. Thus, it is important that the City of San José has available and accessible electric vehicle charging infrastructure to meet Climate Smart's ambitious EV goals.

Currently, the City of San José's landscape for charging infrastructure includes 1,062 Level 2 and 142 DCFC planned or installed charging ports. Using research estimates,^{8,9} San José will need 5,409 Level 2 charging ports and 258 DCFC ports to service the 63,100 EVs called for in Climate Smart in 2025. This implies the City of San José will need to increase the Level 2 charging ports by 4,347 ports (409%) and increase DCFC ports inventory by 116 ports (82%) in just 5 years to meet Climate Smart goals for 2025. The 1,400 Level 2 charging ports CALeVIP could provide represent 32% of 2025 incremental requirements, while 100 DCFC ports represent 86% of 2025 incremental need. Figure 1 provides more details on the projected charging gaps in 2025.

⁶ “Climate Smart San Jose, A People-Centered Plan for a Low-Carbon City”, page 163

⁷ International Council on Clean Transportation (“ICCT”) EV Charging Best Practices, 04-10-2017

⁸ *California Plug-In Electric Vehicle Infrastructure Projections: 2017- 2025*, California Energy Commission staff report, March 2018 (<https://www.nrel.gov/docs/fy18osti/70893.pdf>)

⁹ Quantifying the Electric Vehicle Charging Gap Across U.S Markets, January 2019, ICCT, https://theicct.org/sites/default/files/publications/US_charging_Gap_20190124.pdf

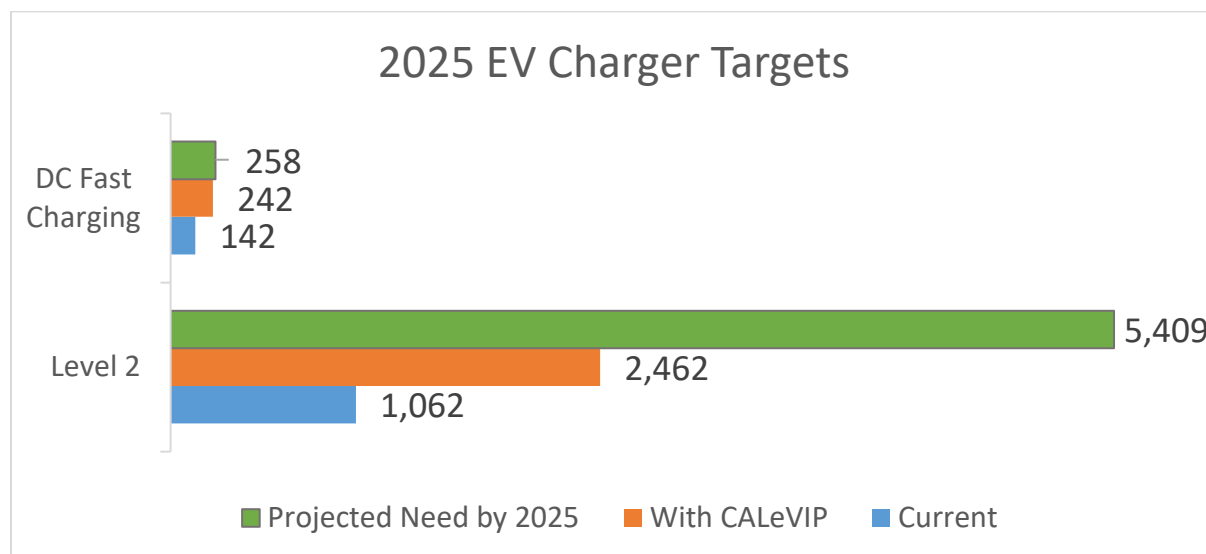


Figure 1. Charging port needs to achieve 2025 Climate Smart EV deployment targets^{10,11}

Equity Considerations

The latest analysis of EV adoption and EV charging infrastructure in the City of San José shows spatially that communities in the City with lower household income, also have lower rates of EV adoption and lower access to EV charging stations.¹² Figure 2 shows EV adoption by census tracts.¹³ The black grid line layers represent where low income communities are located. The low income and disadvantaged communities were determined by guidelines in AB 1550 and SB 535. In general, the areas in San José with lower rates of EV adoption shown below correspond with the locations of low income and disadvantaged communities.

¹⁰ California Plug-In Electric Vehicle Infrastructure Projections: 2017- 2025, California Energy Commission staff report, March 2018 (<https://www.nrel.gov/docs/fy18osti/70893.pdf>)

¹¹ Quantifying the Electric Vehicle Charging Gap Across U.S Markets, January 2019, ICCT, https://theicct.org/sites/default/files/publications/US_charging_Gap_20190124.pdf

¹² Dept of Motor Vehicles, California Motor Vehicles Fuel Types by City, October 1, 2018. (https://www.dmv.ca.gov/portal/wcm/connect/1949a1b2-be57-4024-a921-5eb00babea68/MotorVehicleFuelTypes_City_102018.pdf?MOD=AJPERES&CVID=)

¹³ Dept of Motor Vehicles, California Motor Vehicles Fuel Types by City, October 1, 2018.

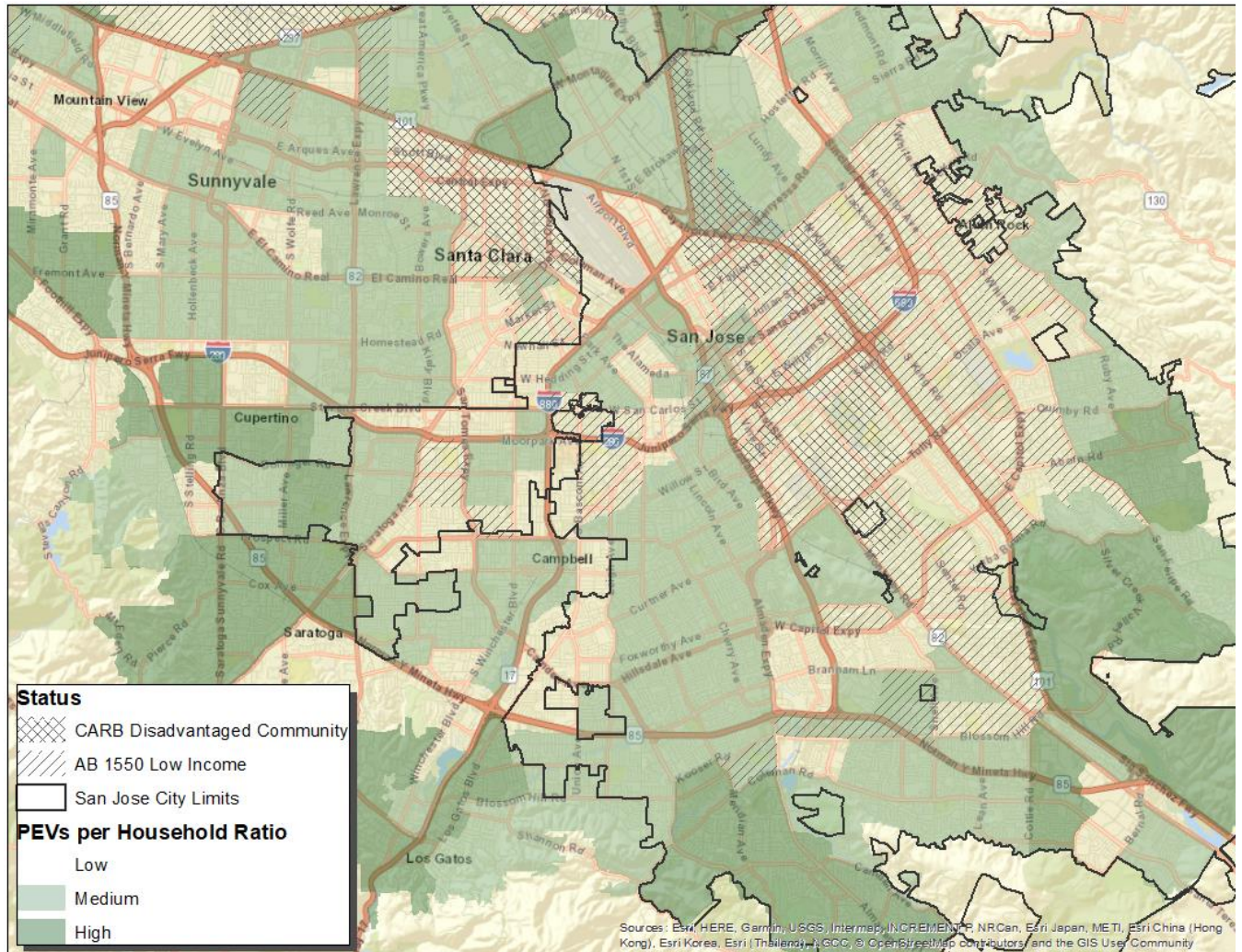


Figure 2. Electric Vehicle adoption and Low Income/Disadvantaged Communities¹⁴

¹⁴ Dept of Motor Vehicles, California Motor Vehicles Fuel Types by City, October 1, 2018.

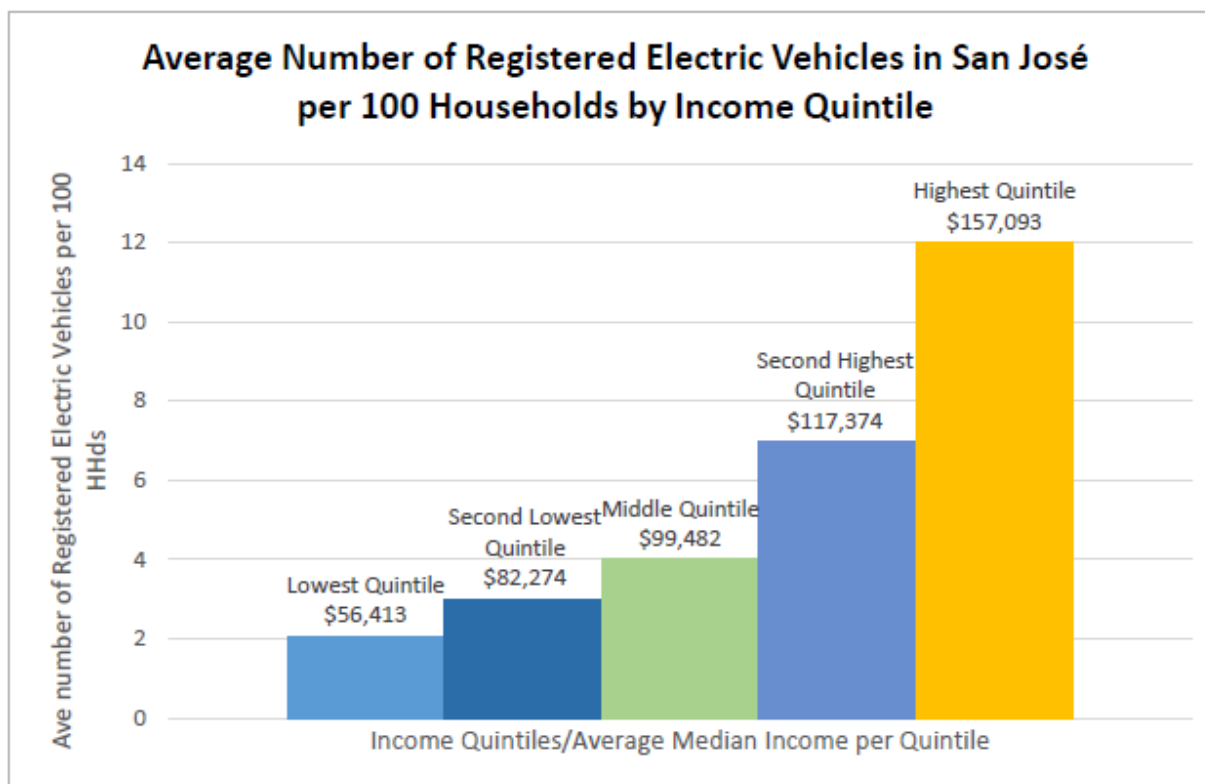


Figure 3. EV adoption by Household Income¹⁵

Figure 3 highlights the concentration of EV adoption within higher income households in San José. To address these inequities, staff recommends that SJCE’s implementation of CALeVIP requires that 25% of total rebates dispersed (\$3.5 million) go to communities designated at the top 25% of disadvantaged communities (i.e. the most disadvantaged communities) as defined by the California Environmental Protection Agency through CalEnviroScreen 3.0 tool per SB 535. SJCE also recommends that census tracts and households that are at or below 80 percent of the statewide median income, or at or below the threshold designated as low-income by the California Department of Housing and Community Development’s 2016 State Income Limits per AB 1550 be included. If Council approves staff’s recommendation, staff will negotiate provisions that include a reference to these proposals in the agreement with CSE.

The census tracts defined either by SB 535 or AB 1550 also show the lowest quantity of EV charging infrastructure installation. Figure 4 shows current Level 2 and DCFC locations based off data on Plugshare.com. In general, it shows a lower penetration of stations in the AB 1550 (orange) and SB 535 (green) communities. Directing 25% of the rebates toward these communities could serve as mechanism to drive up the currently low EV adoption rate in our disadvantaged and low-income communities.

¹⁵ California Department of Motor Vehicles and 2017 American Community Survey

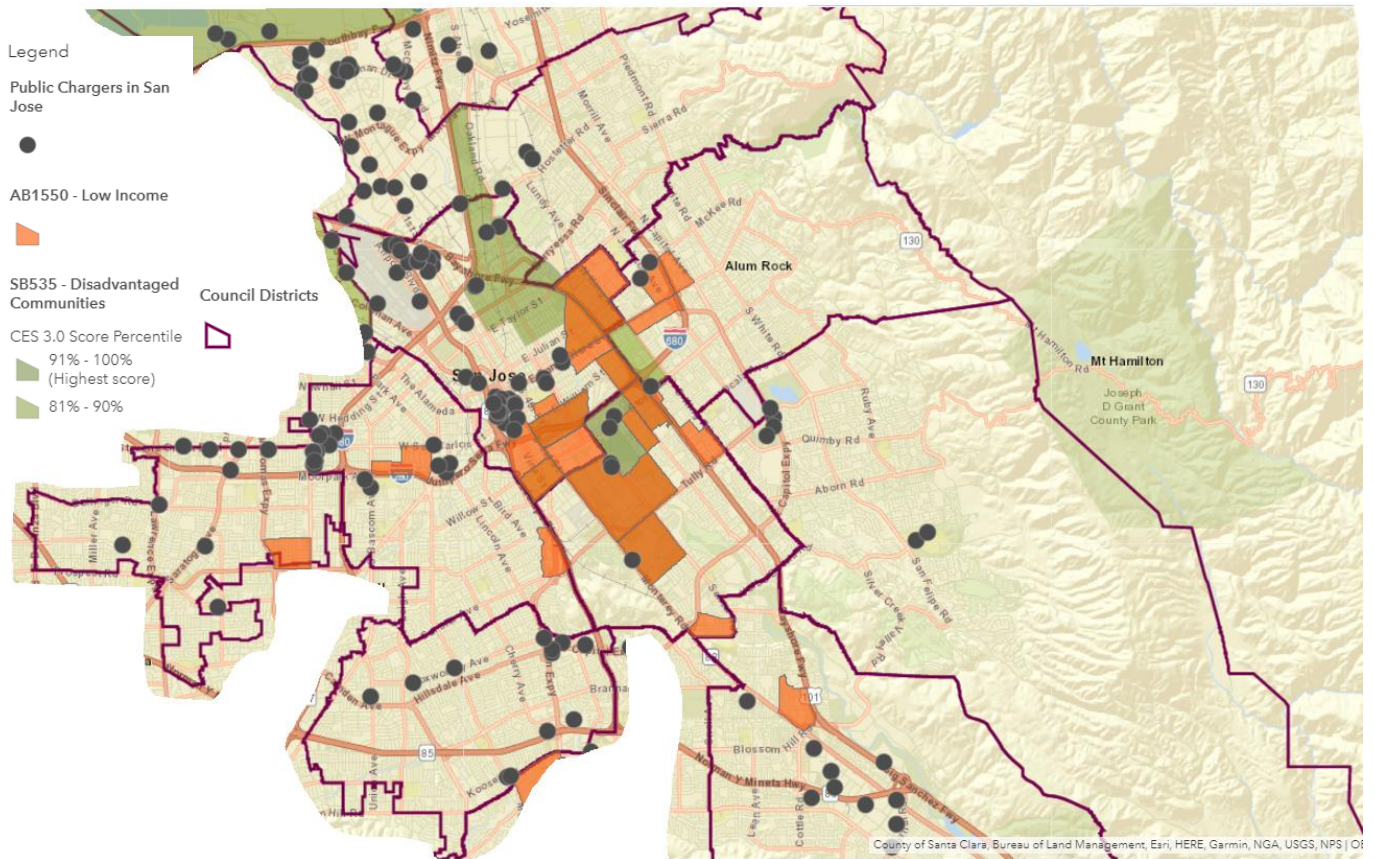


Figure 4. Level 2 and DCFC charger locations in San José¹⁶

Electric Vehicle Benefits

Greenhouse Gas Emission Reductions

The City of San José’s latest Greenhouse Gas Inventory report for 2017 emissions calculated that transportation and mobile sources, which includes passenger vehicles, contributed to 63% of the City of San José’s emissions.

By enabling wider electric vehicle adoption through greater charging availability, CALeVIP could be an important factor in providing the 265,100 metric tons of annual CO₂ reductions specified per the Climate Smart model in 2025 through the addition of 39,930 electric vehicles. The reduced annual emissions of 265,100 metric tons associated with roughly 39,930 more electric vehicles represents around 7.4% of the 2017 transportation and mobile source emissions (3,589,159 metrics tons) in San José.

¹⁶ The Shared-Use Mobility Center created this map with data primarily derived from the National Renewable Energy Laboratory’s (NREL) Alternative Fuel Data Center. NREL continuously updates this dataset through submissions to a public, online portal and through collaboration with the Clean Cities Initiative, infrastructure equipment providers, original equipment manufacturers, and industry groups. The inventory includes funded sites for non-Tesla, public electric vehicle chargers that will be constructed before 2021 through partnerships with Pacific Gas & Electric and Electrify America.

Health Benefits

Gas powered vehicles produce smog-forming pollutants such as nitrogen oxide, as well as other pollutants harmful to human health including particulate matter, carbon monoxide, and sulfur dioxide.¹⁷ These pollutants lead to lung irritation, weaken the body's defenses against respiratory infections, and pose health risks to young children and asthmatics.¹⁸

EVs produce clear health benefits by offering zero exhaust emissions at the street level, leading to cleaner and healthier communities, with particular benefits to the most vulnerable who tend to live close to freeways and major roadways. Though electric vehicles still emit particulate matter from road, tire, and brake wear, their overall air pollutants are fewer than gasoline or diesel fueled vehicles.¹⁹

Economic Benefits

While most EVs tend to have higher upfront costs compared to traditional gas vehicles, the significant rebates and incentives available at both the Federal and state level are bringing many EV models at or close to cost parity with gas vehicles. Depending on the vehicle brand, EV owners can receive up to a \$7,500 federal tax credit on a new EV. On a state level, the California Air Resource Board's Clean Vehicle Rebate Project offers adopters of a new EV a \$2,500 rebate (\$4,500 rebate for income qualified residents). These incentives can bring down the cost of EV adoption by \$10,000 to \$12,000 per vehicle. The Clean Vehicle Assistance program and Clean Cars for All program offers incentives for used EVs for income-qualified residents.

EVs have lower annual costs when compared to gas powered vehicles.²⁰ An average EV driver will save around \$1,000 per year on fuel costs, based on current residential EV rates from SJCE and latest gas prices from the U.S. Department of Energy. The CALeVIP program could bring potential economic benefits to San José residents from fuel cost savings that total approximately \$39.9 million annually. San José residents may also save money through lower annual maintenance costs when driving an EV compared to a gas vehicle. The American Automobile Association ("AAA") estimates that an EV driver can save around \$204 per year in maintenance compared to driving a gas vehicle. In total San José residents could save up to \$8.2 million annually on maintenance costs by 2025.

¹⁷ U.S. Department of Energy, <https://www.energy.gov/eere/electricvehicles/reducing-pollution-electric-vehicles>

¹⁸ Union of Concerned Scientists, <https://www.ucsusa.org/clean-vehicles/vehicles-air-pollution-and-human-health/cars-trucks-air-pollution>

¹⁹ European Environment Agency, <https://www.eea.europa.eu/highlights/eea-report-confirms-electric-cars>

²⁰ AAA, <https://newsroom.aaa.com/tag/cost-to-own-a-vehicle/>

SJCE Benefits

In addition to the other benefits enumerated above, converting more drivers of gas vehicles to EVs is a revenue growth opportunity for SJCE through the increased electrical load. The approximately 13,420 new EVs estimated to be serviced by the new charging infrastructure from CALeVIP is expected to increase SJCE’s annual load by approximately 47 GWh and annual revenue by \$3.1 million.

Table 3. Impact of CALeVIP program. (Source: DMV, internal estimates)

	Present	After CALeVIP	% Increase projected by 2023 supported by CALeVIP
Total Electric Vehicles	23,170	36,590	58%
Level 2 and DCFC chargers	1,204	2,704	125%
Energy used by EVs (GWh)	81	128	58%

The CALeVIP program requirements stipulate that the installation of networked chargers in public places will shift charging to occur generally during the day when prices are low and when solar capacity is available. This will help SJCE reduce electric supply costs by reducing the amount of EV’s that are charging in the evening when electric supply costs are high. It will also help reduce emissions as carbon emitting natural gas generation is typically used in the evening to meet this demand.²¹ The estimated additional annual revenue of \$3.1 million and net revenues (after power costs of \$1.9 million) of approximately \$1.2 million will help ensure SJCE is financially stable and can be used to support future programs in San José.

EVALUATION AND FOLLOW-UP

A status update of the CALeVIP implementation (including status on outreach efforts, early applicants, and updated funding timing) will be included as part of SJCE’s program roadmap update to the Transportation & Environment Committee in February 2020.

POLICY ALTERNATIVES

Alternative #1: City Council does not approve the implementation of the CALeVIP program and participation of SJCE in CEC’s CALeVIP funding. City Council does not approve the authority to negotiate and execute an agreement with CSE and SJCE’s cost sharing for the CALeVIP program.

Pros: SJCE does not launch the CALeVIP program or fund \$4.0 million in program costs and instead increases funding in SJCE’s operating reserve.

Cons: The City of San José loses an opportunity to receive and leverage \$10.0 million in CEC funding to support EV charging infrastructure in San José. The other Santa Clara County entities

²¹ <http://www.caiso.com/TodaysOutlook/Pages/emissions.aspx>

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with whom the City applied for CALeVIP funding may also lose some or all of the matching funds from the CEC.

Reason for not recommending: Investing in this program now, while earlier than SJCE had planned and in advance of a full program review with Council, is a unique opportunity for the City of San José to receive significant State funding to meet EV charging infrastructure needs. The participation of SJCE is also important to the CEC selection process and the other entities in Santa Clara and San Mateo Counties receiving funding.

PUBLIC OUTREACH

On August 13, 2019, the CEC hosted a workshop on the Santa Clara County CALeVIP project to elicit public input on the proposed funding allocations, rebate amounts and structure, and eligibility requirements. The CEC also enlisted public comments to be submitted either through their website or by mail.

This memorandum will be posted on the City's website for the October 8, 2019 City Council's Agenda website.

COORDINATION

This memorandum has been coordinated with the Department of Transportation, the Environmental Services Department, the City Manager's Budget Office, and City Attorney's Office.

COMMISSION RECOMMENDATION/INPUT

The Clean Energy Community Advisory Commission decided on September 5, 2019 to support the staff recommendations to Council as stated above.

FISCAL/POLICY ALIGNMENT

The recommended actions support the Climate Smart Plan (City Action 2.3-A/2.3-C) and the Envision San José 2040 General Plan (Action TR-1.16 and Appendix C: Greenhouse Gas Reduction Strategy)

COST SUMMARY/IMPLICATIONS

1. AMOUNT OF RECOMMENDATION/COST OF PROJECT:

Total Program Costs: \$4,000,000

2. COST ELEMENTS OF AGREEMENT/CONTRACT:

Program Incentive Payments: \$3,720,000

Center for Sustainable Energy Service Fees: \$280,000 (7% of total funds invested)

TOTAL AGREEMENT/CONTRACT AMOUNT: \$4,000,000

3. FISCAL IMPACT:

The total estimated fiscal impact is based on the estimated number of customer applications and timing to install charging infrastructure. Projected program expenditures by fiscal year are as follows:

Fiscal Year	Estimated Expense	Payment Description
2019-2020	\$85,000 (not to exceed)	Initial program launch service fees (including marketing and operating costs - May 2020)
2020-2021	\$915,000 (not to exceed)	Program incentive payments to customers + Service fees
2021-2022	\$3,000,000 (not to exceed)	Program incentive payments to customers + Service fees
2019-2022	\$4,000,000 (not to exceed)	Total Program Costs

4. SOURCE OF FUNDING:

All program costs will be funded in the San José Clean Energy Fund (Fund 501) and most costs will occur after SJCE meets its financial obligations that include a \$20,000,000 Operating Reserve per its agreement with Barclays Bank that is anticipated to be achieved by December 2019; and the full repayment of its \$10,000,000 commercial paper loan that is anticipated in June 2020.

In March 2020, when expenses for the CALeVIP program begin to be incurred, SJCE expects to have an operating reserve of \$29,100,000. At the conclusion of the program in July 2022, SJCE’s reserve levels are projected to grow to an estimated \$79,600,000 inclusive of the total projected CALeVIP program costs.

The \$4,000,000 total program expenditure is an investment being made in consideration of SJCE’s financial obligations and goals, that include building an Operating Reserve equivalent to 180 days of operations that SJCE anticipates reaching by January 2026. This level of reserves is important to mitigate the impact to customers of energy market factors such price volatility, regulatory risk, and changes to the Power Charge Indifference Adjustment.

BUDGET REFERENCE

The table below identifies the appropriation that will fund the CALeVIP program costs in FY 2019-2020. Program funding in FY 2020-2021 and FY 2021-2022 are subject to the appropriation of funds in those fiscal years.

Fund #	APPN #	Appn. Name	2019-2020 Program Cost	Current Year Appn	2019-2020 Proposed Operating Budget Page	Last Budget Action (Date, Ord. No.)
501	0782	Community Energy Non-Personal/Equipment	\$85,000	\$8,787,801	X-74	06/18/2019 Ord. No. 30286

CEQA

Not a Project, File No. PP17-008, General Procedure & Policy Making resulting in no changes to the physical environment; and File No. PP17-003, Agreements/Contracts (New or Amended) resulting in no physical changes to the environment.

/s/
LORI MITCHELL
Director, Community Energy Department

For questions please contact Zach Struyk, Deputy Director of Account Management and Marketing of Community Energy, at (408) 535-4868.