#### ELECTRIC VEHICLE FAST CHARGING HUB FEASIBILITY ANALYSIS

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A Program of the City of San José

# **COUNCIL DIRECTION**

- On April 26, 2022, Council adopted memo from Mayor Liccardo, Councilmember Jimenez, and Councilmember Peralez that directed staff to return with a feasibility analysis of deploying pilot public fast-charging hubs for EVs in Fiscal Year (FY) 2022-23 located at City-owned parking lots, wherein SJCE will control variable retail pricing to encourage mid-day charging
- Recommendation: Authorize City Manager or her designee to negotiate and execute tolling agreement(s) with vendor(s) to deploy 1-3 fast charging hubs at City-owned and/or privately-owned sites in low-income and disadvantaged communities in FY 2023-24 or FY 2024-25



### **LEADER IN ELECTRIC VEHICLE (EV) ADOPTION**



 In August, California Air Resources Board mandated 100% of cars and light truck sales to be electric by 2035

Chart includes battery electric and plug-in hybrid



# **DECREASING EV COSTS**

- Manufacturers now introducing new EVs priced under \$30,000
- Used EV market expected to grow in 2023-2024 and prices to return to normal in early 2023
  - Inflation Reduction Act: \$4,000 tax credit for used EVs for income-qualified filers
- Stackable incentives plus lower fuel and maintenance costs can make EVs more affordable than gas cars for low-income households
  - Charging off-peak is like paying \$2/gallon at the pump



## **STACKABLE INCENTIVES**





CARVANA CERTIFIED

2015 Nissan LEAF

S • 59,014 miles

\$14,990

#### **New EV**

Low-income Stackable Incentives	Amount	
Federal: New EV tax credit	Up to \$7,500	
State: Clean Vehicle Rebate Program	Up to \$4,500	
Local: Clean Cars 4 All	Up to \$9,500	
Total new, base model Chevy Bolt*	\$5,100	

#### Used EV

Low-income Stackable Incentives	Amount
Federal: Used EV tax credit	Up to \$4,000
Local: Clean Cars 4 All	Up to \$9,500
Total used Nissan Leaf*	\$1,500
	USE VIZ

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\*Before taxes, fees, and registration

### **MORE EVS = INCREASED ELECTRICITY DEMAND**

Shifting EV charging from evening & overnight to the middle of the day

- Reduces carbon emissions
- Reduces the cost of electricity





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## **EQUITY CONCERNS**

- More private investment in charging infrastructure in areas with high EV adoption
- Low-income and communities of color are more likely to be charging "deserts"



Data sources: US DOE, San José Equity Atlas



### **RECOMMENDATION: FAST CHARGING HUBS PILOT PROGRAM**

- Pay-for-performance tolling agreement with vendor(s) to deploy one to three hubs in lowincome and disadvantaged communities
  - Each hub would accommodate 10 EVs
  - Operational for 10 years
  - Sited at private and/or City-owned sites
  - If approved, estimated completion in late 2023
- Goals
  - Provide affordable and reliable charging to neighboring communities
    - Same price or lower than off-peak home charging
  - Increase midday charging
  - Learning opportunity



#### **DC FAST CHARGING**

Charge Time: 80% charge in 20-30 minutes Installation: found in public places; not installed in homes

Voltage: 208V or 480V 3-phase AC

Charging Loads: <350 kW



# **TOLLING AGREEMENT**

#### SJCE

- Pays monthly payment
- Provides energy for chargers
- Sets retail rates
  - Examples: unlimited charging subscriptions, discounts for low-income customers
- Collects customer payments for charger usage

#### Vendor(s)

- Own the fast-charging infrastructure
- Responsible for siting, financing, design, engineering, procurement, permitting, construction, installation, interconnection, operation, maintenance, the load management system, and back-office services (e.g., communications, user account management, billing, reporting, and utility interface applications)



### **HUB FINANCIALS**

• Estimated net loss of \$1.0M to \$1.5M per hub over 10-year contract term

- Depends on utilization and grant funding
- Estimated annual tolling payment of \$245,000 per hub projected to begin in late 2023 or early 2024 after SJCE reserves are mostly funded

Scenarios	Utilization Start	Utilization End	Utilization Growth	Grant Funding	10 Year Revenue	10 Year Cost	10 Year Net Loss*
1	1%	2%	9%	\$0	\$1,004,000	\$2,454,000	(\$1,450,000)
2	1%	4%	14%	\$0	\$1,208,000	\$2,578,000	(\$1,370,000)
3	1%	4%	14%	\$400,000	\$1,208,000	\$2,178,000	(\$970,000)
4	5%	19%	14%	\$400,000	\$3,873,000	\$3,862,000	\$11,000 SAN JOSE
							CLEAN ENERGY

# **ANNUAL COSTS**

Year	Estimated annual fixed tolling costs
1: Late 2023	\$245,400
2: 2024	\$245,400
3: 2025	\$245,400
4: 2026	\$245,400
5: 2027	\$245,400
6: 2028	\$245,400
7: 2029	\$245,400
8: 2030	\$245,400
9: 2031	\$245,400
10: 2032	\$245,400

 Monthly tolling payments would begin upon commercial operation in late 2023 or early 2024, after SJCE's reserves are mostly funded



#### **SELECTION PROCESS FOR CITY-OWNED SITES**

Community Energy staff evaluate bids from Sept. 2022 Request for Offers and make recommendations based on price, vendor experience, and site location. Preference for sites in low-income and communities of color and charging deserts.

Community Energy staff refer vendor(s) with winning bid(s) to the Department that administers the site for final site selection.

The winning bidder(s) in the pilot will not receive any advantage in the City's selection of a vendor to use a Cityowned site. The Department that administers the site and staff from the City Attorney's Office, Finance, and Real Estate will perform a **legal site review** to understand permitted site uses.



# **COMMUNITY OUTREACH**

- Once site is cleared for use: CED staff inform surrounding neighborhoods of proposed hubs
- Once hubs are operational: CED hires community-based organizations to conduct in depth multilingual education and outreach campaign
  - Ride & drives, workshops, one on one assistance navigating rebates and incentives





# **QUESTIONS?**

#### Recommendation

 Authorize City Manager or her designee to negotiate and execute tolling agreement(s) with vendor(s) to deploy 1-3 fast charging hubs at Cityowned and/or privately-owned sites in low-income and disadvantaged communities in FY 2023-24 or FY 2024-25

#### • Staff

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