

Rural Electric Vehicle Program

Board of Supervisors, 11/7/2023
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Analyst, Sustainability Program

Outline:

Intro

Background

Funding Gap Discussion

Title Explanation

Conclusion

Background

Grant Source: California Energy Commission

Partner: FreeWire Technologies- Applicant

County- Site-host at 3 Library sites:

- Castroville Library
- Greenfield Library
- San Lucas Library

Board approved 6/27/2023

Timeline:

- Purchase Order by 12/1/2023
- Infrastructure upgrades complete and Final installation 8/31/2023



Boost Charger

Level 3 Fast Charger with 160 kw of Battery Storage and 150 kwh output

Charges 2 EVs at a time

Charging speeds of up to 100 miles in 10 minutes

Payment platform enabled

Potential Resiliency Benefit



Funding Gap Discussion

Main driver: Differing estimates for infrastructure upgrades from FreeWire and PWFP

Other cost drivers:

Increased shipping costs

L2 equipment

Storage fees

35% Contingency

County Libraries Electric Vehicle Fast Chargers

CURRENT FINANCING

Grant Revenue in CAO	\$	534,969
Capital Projects Fund 404	\$	385,000
Total Current Financing	\$	919,969

PROJECT EXPENSES

Equipment		
EV Charger with Integrated Storage, Qty: 3	\$	392,850
Limited Warranty for 3 Years	\$	79,589
Warranty Extension to 5 years	\$	52,701
Installation of Boost Chargers	\$	9,900
Installation of L2	\$	1,800
Shipping	\$	15,000
Sales Tax	\$	37,776
Storage	\$	2,250
Additional Shipping	\$	15,000
L2 Hardware	\$	4,500
Equipment Subtotal	\$	611,366

Infrastructure		
A&E/ Environmental	\$	74,820
Land Acquisition & Utilities	\$	10,000
Construction Management	\$	26,480
Construction	\$	273,700
Contingency	\$	26,739
Infrastructure Subtotal	\$	411,739

Total Expenses	\$	1,023,105
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DEFECIT	\$	(103,136)
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Title:

- a. Authorize the Auditor-Controller to amend the Fiscal Year 2023-24 Adopted Budget for the Capital Project Fund (404-3200-PFP057-8564) to increase appropriations and estimated revenues in the amount of \$103,136 financed by an operating transfer-in from Other Financing Uses (001-1050-CAO017-8038) to install Level 3 Electric Vehicle Fast Chargers at the County libraries in Castroville, Greenfield, and San Lucas (4/5th vote required); and,
- b. Authorize the Auditor-Controller to amend the Fiscal Year 2023-24 Adopted Budget for Other Financing Uses (001-1050-CAO017-8038) to increase appropriations in the amount of \$103,136 financed by the Cannabis Tax Assignment (001-3132) (4/5th vote required); and,
- c. Authorize the Auditor-Controller to transfer \$103,136 from Other Financing Uses (001-1050-CAO017-8038) to the Capital Project Fund (404-3200-PFP057-8564) (4/5th vote required); and,
- d. Authorize the Auditor-Controller to amend the Fiscal Year 2023-24 Adopted Budget for the Capital Project Fund (404-3200-PFP057-8564) to increase appropriations and estimated revenues in the amount of \$534,969 financed by a decrease in appropriations and estimated revenue in the amount of \$534,969 in the County Administration Office Sustainability (001-1050-CAO004-8587) (4/5th vote required).

Questions and Comments

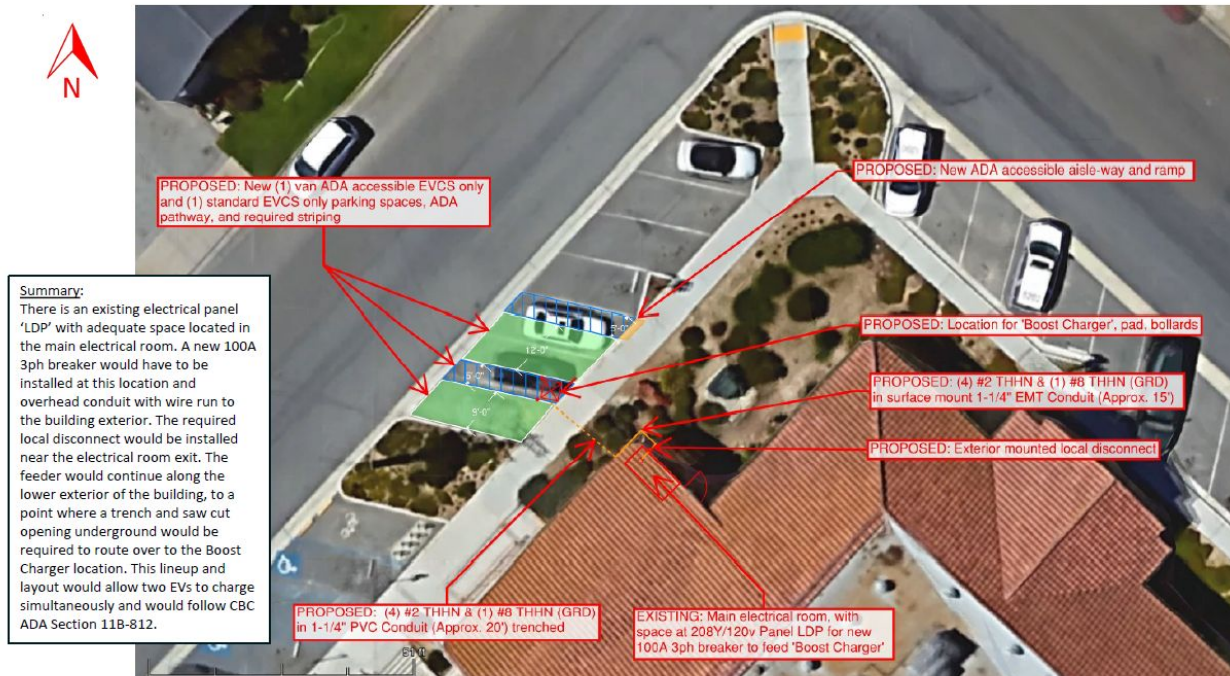


Charging Level	Vehicle Range Added per Charging Time and Power	Supply Power
AC Level 1	4 mi/hour @ 1.4kW 6 mi/hour @ 1.9kW	120VAC/20A <i>(12-16A continuous)</i>
AC Level 2	10 mi/hour @ 3.4kW 20 mi/hour @ 6.6kW 60 mi/hour @ 19.2 kW	208/240VAC/20-100A <i>(16-80A continuous)</i>
DC Fast Charging	24 mi/20minutes @24kW 50 mi/20minutes @50kW 90 mi/20minutes @90kW	208/480VAC 3-phase <i>(input current proportional to output power; ~20-400A AC)</i>

Figure 4. Description of charging level supply power and charging times. The power coming from the EVSE depends on the voltage from the electrical service and the EVSE amperage rating.

Castroville Site

Site Layout – Electrical Infrastructure



Greenfield Site

Site Layout – Electrical Infrastructure



Summary:

There is an existing 208Y/120v main electrical panel with adequate space located in on the exterior of the facility, at the northwest corner. A new 100A 3ph breaker would have to be installed at this location and overhead conduit with wire run to the into the disposal area. The feeder would continue via a trench and saw cut opening underground over to the Boost Charger location. One parking space would require modification to widen and allow for ADA van parking, and an additional ADA pathway and ramp would also have to be added. This lineup and layout would allow two EVs to charge simultaneously and would follow CBC ADA Section 11B-812.

San Lucas Site

Site Layout – Electrical Infrastructure



Summary:

There is an existing 200A 120/240v electrical panel located at the northeast corner of the facility. The main service and panel may require an upgrade to support EV charging infrastructure. A new 150A 2-pole breaker would have to be installed at this location and overhead conduit with wire run to the building exterior. The feeder would continue out to the local disconnect and Boost Charger through a trench. This lineup and layout would allow two EVs to charge simultaneously and would follow CBC ADA Section 11B-812.