

# MEMORANDUM

**DATE:** August 18, 2023

**TO:** Chris Macon, City Manager | City of Laguna Woods

**FROM:** Terry Madsen, Principal Consultant | ClearSource Financial Consulting  
Email: tmadsen@clearsourcefinancial.com | Phone: 831.288.0608

**SUBJECT:** Cost of Service Analysis and Proposed Rate Structure for the City of Laguna Woods' Level 2 Electrical Vehicle Charging Stations

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## OVERVIEW

As the use of electric vehicles becomes more prevalent, California municipalities are seeking to offer access to charging facilities. Accordingly, the City of Laguna Woods has recently completed the installation of two Level 2 charging stations that will be available for use outside City Hall.

The City has two primary objectives, as it develops a structure for electrical vehicle charging rates:

- 1) Recover the cost of electricity
- 2) Encourage efficient use of limited charging stations by implementing a parking rate that applies after reasonable use of the system

Electric vehicle charging practices are required to comply with California Senate Bill 454 ("Electric Vehicle Charging Stations Open Access Act") (Corbett, Chapter 418, Statutes of 2013) and implementing regulations established by the California Air Resources Board.

### Recovery of the cost of electricity

Electric costs may vary by season and time of use; however, a reasonable estimate of electrical cost recovery has been determined via information provided by ChargePoint and Southern California Edison rate schedules. ChargePoint provides ongoing support of the City's electrical vehicle charging system and is the world's largest network of electric vehicle (EV) charging stations in North America and Europe. Southern California Edison is the City's electric service provider.

### Encourage efficient use of limited charging stations

The U.S. Department of Transportation indicates that using a Level 2 charger, a vehicle should be able to receive a significant charge within 4 hours. Adding a parking rate that applies after at least 4 hours encourages efficient use of charging stations and is intended to free up charging stations for others to use. To avoid being overly burdensome, a maximum daily parking charge is proposed. Maximum daily parking charges are not anticipated to be collected since users receive no benefit from the use of charging stations once a vehicle's battery is fully charged and, therefore, have no reason aside from convenience to continue to occupy charging station parking. In the case of City Hall, a substantial amount of other parking exists around the charging station for users to move their fully charged vehicles.

## RECOMMENDATION

The following rate structure is intended to meet the City's primary objectives for use of vehicle charging stations.

- Rates for Level 2 Stations
  - Up to 4 hours:
    - Energy Rate = \$0.30 per kWh
    - Parking Rate = No charge
  - After 4 hours:
    - Energy Rate = \$0.30 per kWh
    - Parking Rate = \$2 per hour; \$30 maximum per day

### Rate structure alignment to cost of service, regional municipal agencies, and Laguna Woods Village

- The proposed rate structure is primarily intended to offset the City's cost of electricity.
- Although rates for use of City property are not subject to the same cost of service limitations as user and regulatory fees, the City has prepared an analysis that indicates the City may collect parking rates assuming unlimited use of parking spots without exceeding the City's annual cost of service associated with providing electrical vehicle charging stations (non-electricity costs). Please refer to [Appendix A](#) of this memorandum to view the cost of service analysis.
- The proposed rate structure aligns to the rate structure currently used by Laguna Woods Village for Level 2 charging stations by the general public and aligns well to rates for charging and station use throughout the region. Please refer to [Appendix B](#) of this memorandum to view a sample of regional rates for use of electrical vehicle charging stations as of August 18, 2023.

## COST OF SERVICE ANALYSIS

City of Laguna Woods  
 Cost of Service Analysis for Electrical Vehicle Charging Stations

**Statistical Information**

Description	Per kW	Note
Break-Even Electricity Cost	\$0.30	[a]

**City Administrative Support Costs for EV Charging (Non-Electricity Costs)**

Description	Hours	Rate	Cost	Note
Annual Labor Effort	78	\$167	\$13,026	[b]

**EV Charging Capital Replacement Costs (Non-Electricity Costs)**

Description	Total Cost	Useful Life	Annual Cost	Note
EV Charging Stations and Installation	\$105,795	10	\$10,579	[c]

**Annual Costs of Service (Non-Electricity Costs)**

Description	Total Cost	Note
Total	\$23,605	

**Proposed Non-Electricity Rates Associated with Vehicle Charging at City Stations**

Description	Parking Rate Per Hour	Max Daily Charge	Note
Up to 4 hours	No Charge	No Charge	[d]
After 4 hours	\$2	\$30	[d]

**Annual Parking Rates Generated Assuming Maximum Daily Parking Charge by One Vehicle per Station per Day**

Description	Max Daily Rate	# of Stations	Total	Days Per Year	Total	Note
Parking Charges Assuming Constant Use of Stations (Non-Electricity Costs)	\$30	2	\$60	365	\$21,900	[d]

**Cost Recovery Analysis Assuming Daily Maximum Parking Rates Charged**

Description	Total	Note
Parking Charges Assuming Constant Use of Stations (Non-Electricity Costs)	\$21,900	[d]
Annual Costs (Non-Electricity)	\$23,605	
Cost Recovery	93%	[e]

[a] Source: Amount intended to serve as reasonable estimate. Amount will vary based on time of use. Per ChargePoint, Statewide average is \$0.26 per kW.

[b] Assumes 1.5 hours per week of administrative support associated with facilitating vehicle charging at City Hall (e.g., fielding questions regarding charging procedures, administration of vendor contract, financial administration, etc.).

[c] Estimated initial costs of charging stations, design, and installation equal to \$75,000 adjusted for annual inflation of 3% and 10-year useful life. Amount is intended to serve as reasonable estimate. Although initial system costs were covered in part by grant funding, amount shown assumes future replacement of the system. Original system costs are not intended to be recovered from charges.

[d] The U.S. Department of Transportation indicates that using a Level 2 charger, a vehicle should be able to receive a significant charge within 4 hours. Adding a parking rate that applies after at least 4 hours encourages efficient use of charging stations and is intended to free up charging stations for others to use. To avoid being overly burdensome, a maximum daily use charge is proposed. Maximum daily use charges are not anticipated to be collected since users receive no benefit from the use of charging stations once a vehicle's battery is fully charged and, therefore, have no reason aside from convenience to continue to occupy charging station parking. In the case of City Hall, a substantial amount of other parking exists around the charging station for users to move their fully charged vehicles.

[e] Although rates for use of City property are not subject to the same cost of service limitations as user and regulatory fees, this analysis indicates the City may collect parking rates assuming unlimited use of parking spaces without exceeding the City's annual cost of service associated with providing electrical vehicle charging stations (non-electricity costs).

# APPENDIX B

## REGIONAL RATE COMPARISON AS OF AUGUST 18, 2023

### **Laguna Woods Village (Level 2 Stations)**

- Details: <https://chargehub.com/en/full-details-page.html?locId=56938>
- Rates for Level 2 Stations
  - Up to 4 hours:
    - Energy Rate = \$0.30 per kWh for general public  
(\$0.17 per kWh for members and employees; \$0.00 per kWh for Golden Rain Foundation of Laguna Woods fleet vehicles)
    - Parking Rate = No charge
  - After 4 hours:
    - Energy Rate = \$0.30 per kWh for general public  
(\$0.17 per kWh for members and employees; \$0.00 per kWh for Golden Rain Foundation of Laguna Woods fleet vehicles)
    - Parking Rate = \$2 per hour; \$30 maximum per day

### **City of Aliso Viejo (Level 2 Stations)**

- Details: <https://chargehub.com/en/full-details-page.html?locId=90430>
- Rates for Level 2 Stations
  - Up to 4 hours:
    - Energy Rate = No Charge
    - Rate for Parking Without Charging = \$5 per hour; billed in 15-minute increments
  - Between 4 hours and 5 hours:
    - Energy Rate = No Charge
    - \$25 per hour; billed in 15-minute increments
  - More than 5 hours:
    - Energy Rate = \$0.42 per kWh
    - \$25 per hour; billed in 15-minute increments

### **City of Laguna Beach (Level 2 Stations)**

- Details: <https://chargehub.com/en/full-details-page.html?locId=50654>
- Rates for Level 2 Stations
  - Energy Rate = No Charge
  - Parking Rate = \$3 per hour

### **City of Laguna Hills (Level 2 Stations)**

- Details: <https://chargehub.com/en/full-details-page.html?locId=102615>
- Rates for Level 2 Stations
  - Up to 30 minutes:
    - Energy Rate = \$0.21 per kWh
    - Rate for Parking Without Charging = No charge
  - More than 30 minutes:
    - Energy Rate = \$0.21 per kWh
    - \$10 per hour

### **City of Laguna Niguel (Level 2 Stations)**

- Details: <https://chargehub.com/en/full-details-page.html?locId=116393>
- Rates for Level 2 Stations
  - Energy Rate = No Charge
  - Parking Rate = No Charge

### **City of Lake Forest (Level 2 Stations)**

- Details: <https://chargehub.com/en/full-details-page.html?locId=85454>
- Rates for Level 2 Stations
  - Up to 5 minutes:
    - Energy Rate = \$0.30 per kWh
    - Rate for Parking Without Charging = No charge
  - After 5 minutes:
    - Energy Rate = \$0.30 per kWh
    - \$6 per hour

### **Saddleback College (Level 2 Stations)**

- Details: <https://chargehub.com/en/full-details-page.html?locId=112344>
- Rates for Level 2 Stations
  - Up to 45 minutes:
    - Energy Rate = \$0.25 per kWh
    - Rate for Parking Without Charging = No charge
  - More than 45 minutes:
    - Energy Rate = \$0.25 per kWh
    - \$3 per hour