



DATE: June 17, 2025

TO: Mayor and City Council

FROM: Director of Public Works & Director of Maintenance Services

SUBJECT Update on City Fleet Electrification and Electric Vehicle Charging

RECOMMENDATION

That the City Council receives this informational report.

SUMMARY

This report presents a summary of a study analyzing the costs and charging infrastructure needed to electrify the City's fleet, including all non-emergency light, medium and heavy-duty vehicles. The report shows that the costs to acquire electric vehicles are currently approximately 60 to 80 percent more than those for vehicles with internal combustion engines. This report also addresses the charging infrastructure needed for the City's fleet as well as charging infrastructure for use by City employees. Transitioning to a fleet of electric vehicles, including the required charging infrastructure, will require significant City resources. To support a 15-year replacement cycle, the City currently budgets \$3.2M annually on its non-emergency fleet, including new vehicle purchases and the operation and maintenance of existing vehicles, the actual annual expenditure spent on replacement varies year to year based on available dollars. Even with a reduction in maintenance costs (approximately 40%), transitioning to electric vehicles is estimated to cost approximately \$5.5M per year, or \$2.3M more per year.

The first significant installation of EV charging infrastructure to support the City's EV fleet will be at the Corporation Yard where a solar carport and battery storage will be installed in partnership with Ava Community Energy. Combining these projects presents an opportunity to reduce total overall costs.

BACKGROUND

In June 2020, the City Council adopted ambitious goals to reduce greenhouse gas (GHG) emissions 55% below 2005 levels by 2030 and to work with the community to develop a plan that may result in the reduction of community-based GHG emissions to achieve carbon neutrality by 2045. Of Hayward's total GHG emissions, the transportation sector accounts for close to 65%. While active transportation (walking, biking, etc.), ridesharing, public

transit, and other strategies will be important to achieving needed reductions in Hayward's transportation emissions, the electrification of cars and trucks will also be a key part of reducing overall emissions.

In 2020, Council adopted, as part of its Strategic Roadmap, a goal of transitioning 15% of the City's fleet to EV or hybrid models by June 2023. While this goal is not listed in the current Strategic Roadmap, staff continues to strive to add more EV and hybrid models to the City's fleet. Of the City fleet of 333 vehicles, 53 (16%) are EV or Hybrid. Uncertainty in global EV production, regulatory changes and supply chain issues have continued to make EV acquisition more difficult and cost prohibitive than traditional combustion engine vehicles. In 2024, staff had ordered eight hybrid police patrol vehicles, but the manufacturer had supply chain problems and could not deliver. Unfortunately, those vehicles had to be purchased as conventional internal combustion engine (ICE) vehicles. Shifts in government incentives, tariffs and the availability of critical minerals continue to contribute to this instability.

Advanced Clean Fleet Regulations – In October 2022, the California Air Resources Board (CARB) adopted new rules for medium- and heavy-duty vehicles. The regulations require that, effective January 1, 2024, at least 50 percent of annual vehicle purchases must be zero-emission vehicles (ZEV) and beginning January 1, 2027, 100 percent must be ZEV. Emergency vehicles are exempt from the rules. In addition, exemptions may be approved by CARB if a required ZEV is not available to purchase in the same configuration as a vehicle needing to be replaced. CARB also maintains a ZEV Purchase Exemption List¹ with common vehicle body configurations that are not available. The list would allow fleet owners to purchase new ICE vehicles without applying for an exemption in advance. Since January 2024, the City has purchased three electric medium-duty vehicles, including a Ford Lightning pickup truck and two Ford E-Transit vans. There are several specialized trucks used by City staff on a daily basis that are currently not available as electric vehicles. Nonetheless, staff expects to comply with the ACF regulations in the foreseeable future.

Council Sustainability Committee – On January 8, 2024², staff presented to the Council Sustainability Committee (CSC) a report summarizing the fleet electrification study completed with Ava Community Energy. The Committee requested that the report be presented to the full City Council. Since the CSC meeting, to fund the installation of EV chargers, staff explored opportunities including potential financing through Ava Community Energy as well as a grant opportunity with the California Energy Commission. Unfortunately, the Ava financing did not come to fruition and the CEC grant was not successful.

Critical Municipal Facilities Projects – On October 15, 2024³, the City Council authorized a power purchase agreement with Ava Community Energy to install solar and battery storage at four City facilities. The project includes a solar carport and battery storage at the Corporation Yard. After several delays and funding modifications, Ava Community Energy

¹ <https://www2.arb.ca.gov/resources/fact-sheets/advanced-clean-fleets-regulation-exemptions-and-extensions-overview>

² <https://hayward.legistar.com/LegislationDetail.aspx?ID=6465958&GUID=F6A51C0F-7AA5-4ED3-88F5-C69519C4047C&Options=&Search=>

³ <https://hayward.legistar.com/LegislationDetail.aspx?ID=6892959&GUID=3604BC5C-F8EB-40B1-873F-2BCCB9FB1CC7&Options=&Search=>

has selected a new engineering and construction contractor and construction is scheduled to begin this fall.

DISCUSSION

In 2023, staff worked with Ava Community Energy and their consultants to prepare the *City of Hayward Fleet Electrification Assessment* (see Attachment II). The report, prepared by a consultant team led by Frontier Energy with support from Ava Community Energy, analyzed the impacts of electrifying the City’s fleet of 240 light-, medium- and heavy-duty vehicles located at various City facilities. The report includes the following sections:

- 10-year cost summary
- Charging equipment for fleet vehicles
- Charging equipment for employees
- Fleet Transition Planner
- Advanced Clean Fleet (ACF) Compliance
- Fuel/Maintenance Cost Savings
- Greenhouse Gas Emission Reduction Benefits.

The report presents the cost of electrification (“EV Transition”) compared to current costs (“Baseline”). The analysis shows that, over the next 10 years, transitioning the City’s municipal fleet to electric vehicles would increase the City’s net costs by about \$22.5M. This includes a decrease in operating expenses by approximately \$3M when compared to the Baseline scenario over a ten-year period. These costs include the charging equipment needed to support the new fleet of EVs. More detail regarding these costs is provided in Table 1 below.

Table 1. 10-Year Summary of Costs (2024 – 2034)

	Baseline	EV Transition	
	Cost	Cost	\$ Above Baseline
Vehicle Capital Expenditures	\$22,185,934	\$39,365,958	\$17,180,024
Vehicle Operational Expenditures	\$2,070,319	\$1,279,137	-\$791,182
Insurance	\$1,408,555	\$3,477,358	\$2,068,803
Registration	\$894,784	\$1,483,173	\$588,389
Fuel Costs	\$5,478,678	\$3,227,646	-\$2,251,032
Fleet Chargers Capital Expenditures		\$4,848,700	\$4,848,700
Fleet Charger Operational Expenditures		\$898,390	\$898,390
Total	\$32,038,270	\$54,580,362	\$22,542,092

It is important to note that the electrification costs in this report are preliminary estimates. After construction-level documents are prepared for charger installations, it is possible that costs will change if additional infrastructure upgrades (transformers, electrical panels, etc.) are found to be necessary. Operational costs, including fuel, electricity and maintenance, are also estimates. The costs of procuring electric vehicles are based on market conditions

as of the fall of 2023. The attached report is a 10-year plan. It assumes that the City will continue its practice of replacing most of its non-emergency vehicles every 15 years. Therefore, depending on vehicle availability, the complete transition to an all-electric fleet is expected to take at least 15 years.

Compliance with CARB's Advanced Clean Fleet Regulations will be very expensive. In addition to the high cost of EVs that are currently available, charging equipment will be expensive and may take a long time to install. New transformers can take many months to receive and coordination with PG&E can also result in significant delays. Staff cannot purchase new electric cars and trucks until the charging infrastructure is installed and funds to install charging infrastructure are limited.

Charging Equipment for Fleet Vehicles – The report recommends 146 Level 2 chargers and 6 direct current fast chargers (DCFC). While some infrastructure, such as service and transformer upgrades would need to be installed in the near term, chargers would be installed in phases as electric vehicles are added to the fleet. All recommended chargers would be dual-port chargers so they would provide charging for 304 fleet vehicles. Preliminary analysis shows that several facilities would need electrical upgrades (transformers, switchgear, etc.). These improvements are likely to require long lead times to procure the necessary equipment and schedule installations with PG&E. Table 2 below lists the number of chargers recommended for each location as well as the need for electrical upgrades.

Table 2. Recommended Fleet Chargers by Location

Location	Existing Chargers		Number of chargers ⁴ recommended		Electrical Upgrades Needed?
	L2	Fast	L2	Fast	
Airport	2		3		Yes. May be completed along other electrical upgrades planned for the Airport.
Animal Shelter			3		No
City Hall Garage			23	2	Yes. electrical service upgrade and new service panel
Corp Yard			68	2	Yes, new pad-mounted utility transformer; new switchboard; and service panels
Facilities & Landscape Maintenance	1		4		No

⁴ Types of EV chargers:

- Level 1 – 15-20 Amps, providing a driving distance of 3-4 miles/hour of charge.
- Level 2 – 40 Amps, providing a driving distance of 25-30 miles/hour of charge.
- Direct Current Fast Charger (DCFC) – 80 – 400 Amps, providing a driving distance of 125-1,000 miles/hour of charge.

Fire Station 1			3		No
Fire Station 2			2		Yes, new service panel
Fire Station 6	3		1		No
Fire Station 7			1		Likely no, but further analysis needed.
Fire Station 9			1		No
Police Dept			18	2	Yes, new step-down transformer and sub-panel
North District Police			4		Yes, new step-down transformer and sub-panel
Utilities Center	2		8		No
Water Resource Recovery Facility	2		6		No (New Admin building will provide new infrastructure.)
Weekes Library			1		No
Total	7	0	146	6	

The cost to install the chargers is estimated to be approximately \$4.8 million and the cost to operate the chargers is estimated to be approximately \$90,000 per year.

Installing solar photovoltaic (PV) systems along with the chargers, would reduce operational costs and provide covered parking opportunities for the City's fleet which would protect the vehicles and improve comfort for staff. As noted above, staff is working with Ava Community Energy to install solar and battery storage at some facilities to improve resiliency to grid outages. Even with solar and batteries, staff may need to upgrade existing diesel generators to keep fleet vehicles charged during an extended grid outage.

EV Procurement – The cost of procuring EVs over the next ten years is projected to be \$39.4M compared to \$22.2M if the City were to only purchase internal combustion engine vehicles. However, because most vehicles are replaced every 15 years, full electrification of the City's fleet is expected to take approximately 15 years. As noted above, the ACF requires, effective January 1, 2024, at least 50 percent of medium- and heavy-duty purchases must be zero-emission vehicles (ZEV) and beginning January 1, 2027, 100 percent must be ZEV. The consultant team prepared an ACF compliance tool to help plan medium- and heavy-duty vehicle purchases to ensure compliance with the ACF CARB rule and to ensure enough chargers are installed and operational before the delivery of EVs.

Current costs for electric vehicles are much higher than comparable vehicles with internal combustion engines (ICE). The difference in cost for medium and heavy-duty (MD/HD) vehicles is even more significant. For example, the cost of an ICE street sweeper is approximately \$375,000, whereas an EV street sweeper is approximately \$850,000. Production of MD/HD EV trucks continues to be slow-paced. Chassis manufacturers have focused on hauler-type chassis like flatbeds, grain and car haulers and buses. Many of the City's MD/HD trucks require power take-off (PTO) to enable dump bodies, hydro-excavator, sewer vacuum trucks, grapple buckets and cranes. None of the traditional major manufacturers are producing a chassis that supports this type of service-body in full EV models. It is vital that the City acquire trucks and chassis that are ZNE/EV from reputable manufacturers that will support service needs and parts over the full 15-year life-cycle of

the vehicle. Staff recommends procurement solely from reputable manufacturers that have a long history of quality chassis production and service/parts support.

Fuel/Maintenance Cost Savings – A significant benefit of transitioning to electric vehicles is the reduced fuel and maintenance costs. Maintenance costs for EVs are estimated to be 50% of the equivalent ICE vehicle maintenance cost. While Low Carbon Fuel Standard (LCFS) credits can reduce charging costs, the costs to fuel an electrified fleet would still be lower than a conventionally powered fleet, even without LCFS credits. Over the next 10 years, if the recommended EVs are purchased and charging equipment installed, total savings on maintenance and fuel are expected to be approximately \$3M.

Charging Equipment for City Employees – While transitioning the City’s fleet to zero emission or electric vehicles is required by state regulations, Council has also expressed interest in providing EV charging for employees. Such an amenity may help to attract and retain employees and may also help to incentivize employees to purchase EVs. Staff recommended to the CSC the installation of 145 dual-port Level 2 chargers, which would provide 290 parking spaces for charging vehicles. However, given the current lack of funding and that most EVs have sufficient range to handle a daily round-trip commute, staff recommends that the City prioritize charging infrastructure for fleet vehicles and consider the possibility of chargers for employee vehicles after necessary fleet charging is installed. If or when the City installs EV charging for employees, staff would recommend the chargers as identified in Table 3.

Table 3. Proposed EV Chargers for Employees

Location	# of Employees	# of Employees on Largest Shift	Existing # of Level 2 Chargers	Recommended # of Level 2 Chargers
Airport	11	11	2	3
Animal Shelter	19	16		5
City Hall Parking Structure*	293	271		68
Corp Yard	69	69	1	17
Fire Station 1	21	7		5
Fire Station 2	15	5		4
Fire Station 3	9	3		2
Fire Station 4	9	3		2
Fire Station 5	9	3		2
Fire Station 6	9	3	4	2
Fire Station 7	21	7		5
Fire Station 8	9	3		2
Fire Station 9	9	3		2
Landscape & Facilities	27	27	1	7
Police Department – Main**	259	77		0
Police Department - North	10	10		3
Utilities Center	29	29		7

Water Pollution Control Facility	26	20	2	7
Weekes Library	6	6		2
Totals	860	496	10	145

* Employee count for City Hall parking structure includes City Hall and main Library staff.

** Given the uncertainty of the long term use of the Police Department building, staff proposes a small number of chargers to be shared among fleet and employee vehicles.

While the costs for chargers for employees can be considered separately from the chargers for fleet vehicles, they need to be considered collectively prior to preparing detailed construction plans. When possible, the electrical infrastructure at each site will be sized to handle all the chargers at a given location. The cost to install the chargers for employees is estimated to be approximately \$3.5 million and the cost to operate the chargers is estimated to be approximately \$78,000 per year.

Staff recommends that employees pay some amount to help offset electricity costs. Determining the actual cost of electricity may require additional metering infrastructure, so staff recommends developing a nominal time-based fee for employees. In a survey of other public agencies, staff found that most require their employees to pay for charging, however most do not have rates that cover the full cost. For agencies that do provide free charging, they only have a small number of chargers.

EV Charger Installations at Corp Yard – With the construction of the solar carport, battery and associated equipment scheduled to begin this fall, staff recommends coordinating the installation of EV chargers. At a minimum, staff would like to install the underground electrical conduit for the EV chargers at the same time other conduit is installed for the solar carport and battery. This approach would save money and avoid the need to repair asphalt or repave the yard multiple times. Staff will work with an engineering contractor to prepare the necessary plans.

FISCAL IMPACT

The recommended FY26 Capital Improvement Program includes \$50,000 in FY25 and \$200,000 in FY26, for a total of \$250,000 for Citywide EV Charging Upgrades (Project 06923). Upon the completion of a detailed engineering design, staff will return to Council with a cost estimate for EV charger installations for the Corp Yard.

As noted above, over the next ten years, transitioning the City's fleet to electric vehicles is estimated to increase overall fleet costs by approximately \$22.5M. This cost includes vehicles, charging infrastructure and operations. While fuel and maintenance costs are expected to decrease by approximately \$3M, registration and insurance costs will increase so that overall operating costs will increase approximately \$500K when compared to the Baseline scenario over the next 10 years. It is important to note that these costs are only for the first 10 years of the planned transition to electric vehicles. Fleet vehicles are replaced every 15 years, so the complete transition will take at least 15 years. The operating budget currently includes approximately \$2.2M per year for non-emergency vehicle replacements.

The transition to only purchasing electric vehicles will require approximately \$4M per year.

In addition to the cost to install fleet EV charging infrastructure, providing charging equipment for City employees would cost approximately \$3.5M. The annual cost to operate the employee chargers would be approximately \$78,000 and may be offset by rates paid by employees.

Light-duty EVs may be eligible for a Qualified Plug-in Electric Drive Motor Vehicle Credit of up to \$7,500. The credit, available under Section 30D of the Internal Revenue Code, was modified with the passage of the Inflation Reduction Act. Guidance from the IRS indicates that the City should be able to benefit from the tax credit even though it doesn't have federal tax liability. Staff will monitor actions of the federal government to see if this credit remains available. Finally, staff had expected that the Federal Infrastructure Bill could support development of the City's EV charging infrastructure, however, new federal grants are not likely under the current administration.

ECONOMIC IMPACT

Electrification of the City's fleet and providing EV charging for City employees are not expected to significantly impact the Hayward economy.

STRATEGIC ROADMAP

This agenda item relates to the Strategic Priority of *Champion Climate Resilience and Environmental Justice*. This item specifically relates to the following Projects:

Reduce Greenhouse Gases and Dependency on Fossil Fuels

Project CP1: Implement Year 1 Programs from the adopted GHG Roadmap (Climate Action Plan)

Project CP3: Present a plan on EV charging for city facilities to CIC (for fleet and employee commuters)

This agenda item also relates to the following actions in Hayward's Climate Action Plan:

T 7.1 Establish and adopt Zero-emission Fleet Conversion and Purchase Policy that requires new, and replacement municipal fleet vehicle purchases are EVs or ZEVs. The policy will also include a schedule for replacement of fleet vehicles to meet a 100% carbon neutral fleet by 2040.

T 7.2 Conduct feasibility and cost assessment to determine the number of EV/ZEV chargers and funds needed to support the fleet transition to 50% EV/ZEV by 2030. Expand EV/ZEV charging infrastructure for city fleet and employees in alignment with feasibility study.

SUSTAINABILITY FEATURES

Electrification of the City's fleet and vehicles throughout the community is necessary to meet the City's long-term greenhouse gas (GHG) emissions reduction goals. According to the fleet electrification assessment, it is estimated that the City can reduce its GHG

emissions by approximately 45% (from 16,040 to 8,857 metric tons of carbon dioxide equivalent) over the next 10 years by converting the City's fleet to all electric vehicles.

PUBLIC CONTACT

No public contact was made for this agenda item.

NEXT STEPS

Staff will continue to seek external funding for EV charging and will purchase electric or zero emission vehicles when possible. In the near term, staff will proceed with installation of EV chargers at the City's Corporation Yard.

Prepared by: Erik Pearson, Environmental Services Manager
Justin Temores, Fleet Maintenance Manager
Allen Koscinski, Facilities and Building Maintenance Manager
Rodney Affonso, JR., Deputy Director of Maintenance Services

Recommended by: Alex Ameri, Director of Public Works
Todd Rullman, Director of Maintenance Services

Approved by:



Michael S. Lawson, J.D.
Acting City Manager