



CITY OF GLENDALE, CALIFORNIA REPORT TO THE CITY COUNCIL

AGENDA ITEM

Report: Fleet Electrification Study Update

1. Motion to Note and File the Report on the Update to the Fleet Electrification Study and Provide Direction to Staff.

COUNCIL ACTION

Item Type: Action Item

Approved for January 14, 2025 **calendar**

EXECUTIVE SUMMARY

The Public Works Department (PWD) is charged with maintaining 820 motorized vehicles used to support all city operations. In September 2022, the not-for-profit consulting firm Center for Transportation and the Environment (CTE) prepared a Fleet Electrification Study for review by the City Council that provided a plan to electrify the fleet by 2035 or 2040. The Council directed staff to implement the plan to transition the city's fleet to electric vehicles by 2040. Additionally, direction was given for annual updates on the study; to look at a true 100% zero-emission goal; to examine other zero-emission technologies, specifically hydrogen; and delaying the scheduled replacement of vehicles to wait for emerging electric technology. Additionally, it was suggested that the Fleet Electrification Study be updated every two years to account for changes in operations and vehicle technology.

The updated Fleet Electrification Study attached as Exhibit 1 provides a revised roadmap to transition the city's fleet to zero-emission. Most notably, Electric Vehicle (EV) technology and availability has significantly changed over the past two years and reflected in the market analysis in the study. Additionally, the new study provides extra focus on the daily use patterns of individual vehicles to refine the infrastructure needs assessment to support these vehicles and reduce the projected costs of the transition. The new study also addresses new state regulations impacting the transition plan.

RECOMMENDATION

Approve a motion to note and file the Update to the Fleet Electrification Study, and to provide any additional direction to staff related to fleet electrification.

ANALYSIS

On January 30, 2024, the City Council authorized a Professional Services Agreement (PSA) with CTE for \$102,200 for the Update of the Glendale Fleet Electrification Study. During the remainder of 2024, CTE prepared this update with fresh data and input from city staff.

While this update was being prepared, the city has continued with the implementation of the 2022 plan. The City Council was previously provided with a status update on this implementation when this PSA was authorized in January 2024.

Fleet Electrification Implementation Update

Staff continues to aggressively seek out EV replacement vehicles in compliance with the study. The table below illustrates the status of the EV procurement plan after 3 years:

| Fiscal Year | EVs Planned | EVs Budgeted | EVs Ordered |
|-------------|-------------|--------------|-------------|
| 2023 | 8 | 10 | 8 |
| 2024 | 20 | 31* | 17 |
| 2025 | 35 | 21 | 19 |
| 2026 | 36 | | |
| 2027 | 24 | | |
| 2028 | 34 | | |
| 2029 | 54 | | |
| 2030 | 98 | | |
| 2031 | 133 | | |

*Originally 31 were budgeted for EV; however, only 20 were pursued due to a lack of OEM vehicles in the compact pickup vehicle class.

The Fleet Electrification Study also sets annual EV procurement targets designating the percentage of new vehicle purchases being EV each year. The targets for FY 2022-23, through FY 2024-25 have all been met. The EV procurement targets as percentages of annual fleet procurement are shown in the table below.

| Fiscal Year | 2040 EV Procurement Target | EV Procurement Achieved |
|-------------|----------------------------|-------------------------|
| 2023 | 10% | 11% |
| 2024 | 10% | 15% |
| 2025 | 25% | 37% |

| | | |
|-------|------|--|
| 2026 | 50% | |
| 2027 | 50% | |
| 2028 | 75% | |
| 2029 | 75% | |
| 2030+ | 100% | |

The planned quantities for EV replacement have not been met for the past two years because the city has replaced fewer total vehicles per year than recommended by the study. This is due to a lack of availability of some EV replacements and our belief that ideal replacements may be available in the next few years. For example, new EV minivan options are expected to be available later in 2025. Some replacements were delayed due to the current exorbitant cost of EV replacements such as for heavy-duty street sweepers. Staff chose to not recommend other vehicles for replacement due to their better-than-expected current physical and mechanical condition and our belief that keeping these older vehicles operating for the next few years is in the city's best financial interests.

For many vehicle classes, EV availability has improved significantly over the past two years. For example, ½ ton pickup trucks were not available to municipalities two years ago but are now available from multiple manufacturers. The city has added Ford Lightnings to the fleet and ordered Chevrolet Silverado EVs. Unfortunately, there is still no EV compact pickup truck model available which is popular for government fleets. Comparable ¾ ton or 1 ton EV work truck alternatives are still limited.

The city's first EV compact sweeper was delivered in November 2024. This unit will be used predominately to clean the city's protected bike lanes and alleys. The California Air Resources Board (CARB) grant-funded construction equipment has been ordered and will arrive soon. Staff expects the final unit of this work group to be delivered in May 2025.

Thirteen level 2 EV chargers were installed to supplement the numerous level one chargers throughout the city. There are 72 GWP public chargers also available for city use. A new project was established in FY 2024-25 for \$250,000 for the installation of EV chargers for city use.

GWP established the Acacia/Tropico Substation Upgrade project to accommodate the growing demand for electricity in south Glendale including from the Public Works Corporation Yard, Integrated Waste Management Facility, and Beeline Maintenance Facility as well as the City Fleet/Bus Electrification project for electric infrastructure improvements to support the planned electrification of the city's fleet. Additionally, GWP continues to invest \$1,000,000 annually in their public EV charger program.

Advanced Clean Fleet Regulation

Since the 2022 Fleet Electrification Study, California adopted the Advanced Clean Fleet (ACF) regulation that requires for specified classes of vehicles that 50% of annual purchases be zero emission starting January 1, 2024, and 100% of annual purchases be zero emission starting January 1, 2027. This regulation applies to on road vehicles over

8,500 lbs. and exempts public safety vehicles. CTE analyzed this regulation in the study update and how compliance can be achieved. The 2024 study update identified several vehicle classes the city should be aware of that could potentially cause future compliance issues. In August 2025, the California Air Resources Board (CARB) certified that Glendale is compliant with this new regulation. Due in large part to the 2022 study and efforts by staff, city is well-positioned to maintain ACF compliance going forward.

Fleet Assessment

CTE performed an updated market analysis of the city's fleet and prepared a new suitability index of the city's classes of vehicles. They researched the classes of vehicles used by the city and spoke with representatives of various vehicle manufacturers. CTE spoke with representatives from several city departments to learn about their fleet needs and impressions of EV alternatives available.

The EV replacement schedule was revised based on this updated data; however, the 2040 completion date was maintained. Over the past two years, advances in EV technology now shows EV alternatives to some vehicle classes such as street sweepers, refuse trucks and most light-duty classes to be imminent. Unfortunately, for a few classes such as ladder trucks, there appears to be no EV alternatives in development. For fire engines, a truck with a primary EV engine and diesel backup engine appears to be the only EV option that will be available between now and 2040.

Despite strategies used by staff to minimize costs, EV alternatives are still generally more expensive than Internal Combustion Engines (ICE). For EV procurements, the cumulative cost increase over the entire transition schedule is \$87.8 million. This represents the difference between cumulative transition procurements (EV) of \$264,568,000 and Cumulative Baseline Procurements (ICE) of \$176,706,000. The incremental cost of only the initial first-time EV replacement vehicles is \$42.6 million. Staff intends to use the study to calculate revised fleet charge-back rates to city departments to cover these costs.

Facilities Assessment

As part of the updated Fleet Electrification Study, need use patterns of the fleet were assessed with the goal of scaling down charging infrastructure and project costs. Instead of a 1:1 charger to vehicle ratio, the updated plan calls for the sharing of EV chargers by multiple vehicles as much as possible based on use patterns. This strategy has reduced the projected cost of charging equipment, including design and installation, by approximately \$24.2 million compared to the previous study.

In the 2022 original study, GWP provided an analysis of the electric infrastructure upgrades needed to support fleet electrification. For the 2024 study update, PWD requested and GWP provided a revised analysis. In addition to upgrades to distribution and transmission infrastructure, an overhaul of the Acacia Substation will be needed. The Acacia Substation is over 50 years old and serves the load of the Ginger Bremberg Integrated Waste Facility, Public Works Corporation Yard and Beeline Maintenance Facility.

The projected cost of the GWP infrastructure upgrades increased by \$10.6 million to \$32.5 million primarily due to an increase in the project scope recommended to improve the reliability of the system. The projected cost was also adjusted up due to increases to equipment and materials costs such as for power transformers and other components.

The implementation schedule for the EV chargers was adjusted to match the EV vehicle transition schedule. For the GWP infrastructure upgrades, the schedule was updated to match GWP's project schedules for these improvements. The GWP upgrades are expected to be completed in 2030-31 which is soon enough to support the fleet electrification transition timeline.

Maintenance Assessment

The updated Fleet Electrification Study continues to project fewer costs associated with fleet maintenance for EV vehicles over ICE. EVs don't experience maintenance costs related to internal combustion engines such as oil changes, air filter replacements and tune-ups. There are fewer automotive parts supporting an EV battery compared to ICE. These savings over the entire transition schedule are \$30.2 million. For these savings to be realized; however, organizational changes in the city's fleet maintenance operation would likely have to be implemented near the end of the transition period. This may include staffing reductions and the closure of a fleet maintenance shop.

Fuel Assessment

In the 2022 Fleet Electrification Study, the fuel costs of EVs compared to ICE were generally comparable. In the update, due to a few factors, CTE now projects a \$71.2 million increase in fuel costs over the course of the transition of EVs over ICE. The primary driver of this cost increase projection is the GWP Electric rate increases which weren't in place in 2022. Secondly, these electric rates are compared to the cost of diesel, unleaded and CNG fuel which the city buys in bulk at wholesale prices. The updated fuel assessment is based on current prices the city pays for these commodities which is lower than the basis of the study two years ago.

To partially mitigate this cost increase, CTE recommends reducing vehicle charging during peak demand periods with a charge management system or battery storage system. Fleet Services staff will work the GWP on these and other strategies to minimize these fuel costs. Transit recently began discussions with GWP on electrification costs for the Beeline fleet which is further along in the process than for our other large municipal operation fleets. Based on their progress, staff expects these costs can be substantially mitigated by implementing measures to limit EV charging during the day. This may require the city to adjust some operations to better optimize these strategies.

Emissions Assessment

The primary driver of electrification the city's fleet is the reduction in greenhouse gases (GHG) and pollutants harmful to human health. EVs produce zero tailpipe emissions. Even accounting for the use of fossil fuels in producing electricity, the transition plan projects a reduction of 53 million lbs. in GHG from 2025-2040. This is in addition to significant reductions in carbon monoxide, nitrogen oxides, and particulate matter. The

transition plan projects a small increase sulfur emissions from electricity generated from coal combustion. However, and GWP shift its energy generation away from coal and towards renewable sources, the emission benefits of fleet electrification will steadily improve.

Implementation

Staff will immediately begin implementation of the revised Fleet Electrification Study for a zero-emission fleet by 2040. Additionally, the recommendations and strategies described in the revised study will also be considered.

STAKEHOLDERS/OUTREACH

As the Updated Fleet Electrification Study only applies to Glendale's municipal fleet, no public outreach is planned. The study includes input from multiple city departments including GWP, Fire and Police. Staff intends to organize public demonstrations of EV equipment to show off this emerging technology and comply with grants.

FISCAL IMPACT

There is no fiscal impact associated with accepting this report. However, the continued implementation of the Fleet Electrification Study is expected to result in costs projected at \$154 million over the course of this transition as described in the study associated with the acquisition of vehicles, EV chargers, facility upgrades and improvements to GWP's existing electrical infrastructure that are anticipated to impact both the city's General Fund and Enterprise Funds. However, unlike in the previous plan, electrification for many of the city's vehicle classes is now required due to new state regulations. This is approximately \$60 million less than the estimate from the 2022 study.

As part of the annual calculation of the city's internal service provider fleet rates, staff plans to have our consultant prepare a model for EV costs that may impact the existing rate structures.

ENVIRONMENTAL REVIEW (CEQA/NEPA)

This item is considered ministerial activity and therefore, not subject to CEQA review.

CAMPAIGN DISCLOSURE

This item is exempt from campaign disclosure requirements.

ALTERNATIVES TO STAFF RECOMMENDATION

Alternative 1: The City Council may consider any other alternative not proposed by staff.

ADMINISTRATIVE ACTION

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Prepared by:

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Approved by:

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EXHIBITS/ATTACHMENTS

Exhibit 1 – 2024 Update to the Glendale Fleet Electrification Study