City of Mountain View

MEMORANDUM

City Manager's Office

DATE: April 29, 2025

TO: Council Sustainability Committee

FROM: Denise Lin, Sustainability Analyst II

VIA: Danielle Lee, Chief Sustainability and Resiliency Officer
Audrey Seymour Ramberg, Assistant City Manager/Chief Operating Officer

SUBJECT: **Greenhouse Gas-Free Fleet and Landscaping Equipment Purchasing Policy**

RECOMMENDATION

Review and consider the Greenhouse Gas-Free Fleet and Landscaping Equipment Purchasing Policy (Attachment 1 to this memorandum) and recommend the Policy for City Council adoption.

BACKGROUND

The City's vehicle fleet represents 33% of greenhouse gas (GHG) emissions from City operations. The City's Sustainability Action Plan 4 (SAP),adopted on October 22, 2019, calls for development of a clean-fleets policy under Task T8.1. In addition, the SAP also directs staff to address off-road equipment emissions by expanding the use of electric landscaping equipment and testing new equipment models under Task P3.1.

The City has already taken numerous steps to move its fleet and landscaping equipment toward being GHG-free, such as electrifying several City vehicles. A fleet electrification study was completed in September 2024 to help inform the development of a clean-fleet policy. The proposed policy in Attachment 1 would streamline implementation of these specific SAP recommendations, continue to reduce City operational GHG emissions, and provide leadership to the community.

The City's current Purchasing policies require staff to purchase equipment and vehicles at the lowest cost available. Vehicles and equipment that use GHG-free fuels (e.g., electric) can cost more than their fossil fuel (gasoline and diesel) counterparts. City Council adoption of the proposed policy would augment existing purchasing procedures to accelerate the transition to clean vehicles and equipment. In addition, a policy would provide a consistent and strategic framework for staff to evaluate the financial, environmental, and operational trade-offs when considering fossil fuel versus GHG-free options in purchasing decisions.

ANALYSIS

Greenhouse Gas-Free Fleet and Landscaping Equipment Purchasing Policy

Clean fleet and equipment purchasing policies generally consider GHG-free vehicles or equipment (e.g., electric)[1] as a priority option before fossil fuel vehicles or equipment that use gasoline or diesel. Staff evaluated 19 clean fleet policies across the Bay Area region, the state, and country to inform the draft policy. Seven policies evaluated were local to the Bay Area, including the cities of Menlo Park, Palo Alto, San Jose, Berkeley, Dublin, Richmond, and City/County of San Francisco.

When evaluating these policies, several common themes emerged. These policies promote, when possible, the purchase of zero-emission vehicles to replace the end-of-life light- and heavy-duty fleet vehicles. When a fully electric or zero-emission option is not suitable, the next preferred choice is a hybrid electric vehicle, when applicable. In situations where electric or hybrid vehicles are not feasible, some policies encourage the use of renewable diesel as an alternative, which the City currently uses.

The proposed policy for the City of Mountain View (Attachment 1) takes into consideration these findings and models its requirements and exceptions after similar jurisdictions. In addition, the proposed policy incorporates input from all City departments to ensure feasibility of implementation.

In short, the proposed policy states that GHG-free vehicles and equipment will be prioritized in City purchases unless there are operational, financial, or charging infrastructure issues that cannot be resolved. The proposed policy covers the entire City on-road vehicle fleet, which is comprised of approximately 250 active vehicles, about 5% of which are already electric. About 60% of the fleet is light-duty,[2] and 40% of the fleet is medium-[3] and heavy-duty.[4] The proposed policy also covers off-road vehicles and landscaping equipment to reduce emissions as well as improve local air quality for the health of City workers and the public. The policy also aligns with state regulations regarding fleet electrification, the most recent being the California Air Resources Board (CARB) Advanced Clean Fleet Regulations as adopted in late 2023 and effective January 1, 2024.

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1 Electricity for City of Mountain View operations is provided by Silicon Valley Clean Energy (SVCE), which is largely carbon-free. Vehicles and equipment operating on SVCE electricity have a small carbon footprint compared to using fossil fuel equipment.

2 Light-duty vehicles have a gross vehicle weight rating (GVWR) less than 8,500 pounds, such as sedans, SUVs, and smaller trucks.

3 Medium-duty vehicles have a GVWR between 8,501 and 10,000 pounds and include vehicles such as trucks and vans.

4 Heavy-duty vehicles have a GVWR greater than 10,001 pounds and include vehicles such as street sweepers and other large specialty vehicles.

In some instances, fossil fuel vehicles and equipment may still be needed due to safety and performance issues of newer/innovative GHG-free technology. It may also require that the City pilot GHG-free equipment and vehicles before deploying for full service or making a bulk purchase. In addition, a GHG-free alternative may not exist in the market at the time of purchase, or the City's infrastructure may not be sufficient to support the transition within a time frame that is adequate for vehicle replacement needs. Thus, the proposed policy may allow exceptions under certain circumstances. The exception process requires review of alternatives and review and input from multiple departments, including the Sustainability Division, before making a final decision to purchase fossil fuel vehicles or equipment.

California Air Resources Board Regulations for Government Fleets and Landscaping Equipment

The current regulation in place governing light-duty vehicle purchases is CARB's Advanced Clean Cars II initiative, which bans the sale of gas vehicles after 2035. **The proposed policy in Attachment 1 would promote the accelerated replacement of light-duty vehicles in the City fleet in advance of the 2035 deadline.**

Medium- and heavy-duty vehicles purchases are governed by the California Air Resources Board (CARB's) Advanced Clean Fleets Regulation. This regulation is considered extremely ambitious and pushes boundaries of available models available in the market. Suitable electric alternatives for these weight classes can be difficult to find or unavailable. Staff recommends including medium- and heavy-duty vehicles in the proposed policy as a longer-term approach to achieving a clean fleet. Staff anticipates that under the proposed policy, the vast majority (97%) of the fleet will be clean by 2045. The handful of specialty heavy-duty vehicles remaining which are the most challenging to electrify will be transitioned by 2049. However, due to the state regulation, it is likely that CARB's regulation will be the primary force accelerating the conversion of the medium- and heavy-duty vehicles in the City's fleet to electric and other clean alternatives.

Landscape equipment purchases are regulated by CARB's Small Off-Road Engine Regulations, which prohibit the sale of gas-powered equipment, such as leaf blowers and mowers, starting in 2024. The proposed policy is in line with this regulation by calling out a transition to electric equipment as a priority and providing a framework to operationalize these purchases.

It is important to note that the current federal administration may take actions that impact the state's ability to enact CARB's rules. Thus, local action such as adopting the proposed policy, demonstrates the City's continued leadership in the community.

Fleet Study Results

As mentioned earlier, a fleet electrification study was completed in September 2024 by Optony, a consultant firm that specializes in renewable microgrids and fleet electrification. The study provided electric vehicle replacement recommendations for the fleet, in addition to electric

vehicle charging needs for three primary City sites: the Municipal Operations Center (MOC), City Hall, and Shoreline Maintenance Facility. The recommendations in the study were developed to comply with state regulations and accelerate additional electric vehicle purchases where feasible. This effectively translates into electrifying all light-duty vehicles by 2035 and all medium- and heavy-duty vehicles by 2045.

Total Cost of Ownership Under Different Electrification Scenarios

The fleet study included a Total Cost of Ownership (TCO) analysis which encompasses all costs associated with owning and operating an asset or system throughout its entire life cycle, including purchase price, fueling costs, and operations and maintenance costs. It does not include the cost of upgrading electrical infrastructure to accommodate EV charging, which is a separate one-time cost to transition to an electric fleet. It also does not include an estimated dollar value for the public health benefits from reduced pollution and greenhouse gas emissions.

The fleet study analyzed electric vehicle versus gasoline and diesel TCO, calculating the total cumulative cost from now through 2042. The electric vehicle TCO assumes that the City will replace fossil fuel vehicles at end of life with electric vehicle equivalents. The fossil fuel TCO assumes that the City will replace fossil fuel vehicles at end of life with the same fossil fuel vehicles. There were different purchasing conditions analyzed in the study. For example, one scenario included the electrification of emergency vehicles like Police and Fire vehicles while another excluded it.

The study found that the total cost of ownership of light-duty electric vehicles in the Mountain View fleet is generally similar to fossil fuel vehicles. The total cost of ownership of medium- and heavy-duty trucks can be significantly higher for EVs. Medium- and heavy-duty vehicles have high vehicle purchase costs due, in part, to low-production levels, limited availability, and large batteries. In contrast, light-duty vehicles have lower purchase costs, supporting greater total life-cycle cost savings. Total cost of ownership is also dependent on vehicle usage; high-mileage vehicles result in greater cost savings when transitioning to EVs due to greater potential savings on fuel and maintenance costs.

The analysis found that the City can minimize total costs of electrifying its fleet by not initially focusing on electrification of emergency response vehicles (except for the PD's pilot of electric patrol and school resource vehicles). Emergency vehicles, in general, are more expensive compared to other vehicles, and there is an added electric "premium" on these purchases contributing to the higher total cost of ownership. It should be noted that Fire trucks contribute disproportionately to the higher cost of the emergency vehicle segment, compared to passenger vehicles, such as Fire and Police SUVs, which are much more cost-effective. Future analysis delving into the emergency vehicle sector with greater nuance could assist in City-purchase decision making. In Table 1 below, Scenario 1 shows the total cost of ownership excluding

emergency response vehicles, while Scenario 2 shows the total cost of ownership including emergency response vehicles.

Table 1: Total Cost of Ownership for Entire City Fleet, Comparing Electrification versus Business As Usual Under Two Scenarios

Scenario 1 Prioritize broad electrification for light-duty vehicles and electrification of medium- and heavy-duty vehicles based on state regulations, *excluding* emergency response vehicles	
City's total cost of fleet electrification by 2042	$20.5 million
City's total cost of "business as usual" (replacing fossil fuel vehicles with new fossil fuel vehicles) by 2042	$11.5 million
Scenario 2 Prioritize broad electrification for light-duty vehicles and electrification of medium- and heavy-duty vehicles based on state regulations, *including* emergency response vehicles	
City's total cost of fleet electrification by 2042	$43 million
City's total cost of "business as usual" (replacing fossil fuel vehicles with new fossil fuel vehicles) by 2042	$25 million

It should be noted that in both scenarios, the cost premium for fleet electrification TCO above "business as usual" TCO is largely due to a higher cost for medium- and heavy-duty vehicles. The table below compared the total cost of fleet electrification to "business as usual" for the light-duty vehicle fleet only.

Table 2: Total Cost of Ownership for Light-Duty Vehicle Fleet Only, Comparing Electrification versus Business As Usual

Short-Term Total Cost of Ownership for Light-Duty Vehicle Fleet (2025-2030)	
City's total cost of light-duty fleet electrification by 2030	$5.5 million
City's total cost of "business as usual" (replacing fossil fuel vehicles with new fossil fuel vehicles) by 2030	$4.8 million
Long Term Total Cost of Ownership for Light-Duty Vehicle Fleet (2025-2042)	
City's total cost of light-duty fleet electrification by 2042	$10.2 million
City's total cost of "business as usual" (replacing fossil fuel vehicles with new fossil fuel vehicles) by 2042	$8.5 million

Further Study of Fire Vehicles Required to Consider Accelerated Electrification

In the TCO analyses, the transition to electric Fire vehicles, in particular, was studied only at a high level and warrants further study. Fire passenger vehicles have suitable replacements in some cases and were included in the TCO and electric vehicle charging needs assessments. Due to the unique nature of fire engines and the especially large cost differential between electric and fossil fuel vehicles and its distorting effects on TCO calculations, fire engines were not included in the final TCO calculations mentioned in this report. The City recently purchased several new fire engines, which would not be due for replacement for the next 15 years. It is anticipated that the City will need to conduct a thorough analysis on vehicle costs, operational needs, electric infrastructure upgrade costs, technical feasibility, and charging station availability specifically for fire engines when it comes time to replace these assets, in order to determine whether electric options would work for the City's needs.

<u>City Charging Infrastructure Needs</u>

The study estimates that 113 new charging ports need to be installed by 2040 across all of the City's facilities to support the electrification of the City's fleet, resulting in a cost of $3.978 million.

This includes a high level of investment at the three main charging sites (City Hall/Mountain View Center for the Performing Arts, Municipal Operations Center, and Shoreline Maintenance Facility), which totals $3.176 million for the installation of 78 new charging ports by 2040.

Over the next five years, 29 total charging ports (five existing charging ports plus 24 new charging ports) will need to be installed at the three main charging locations at a cost of $755,800:

- City Hall/Mountain View Center for the Performing Arts: Four existing Level 2 ports, four new Level 3 ports

- Municipal Operations Center: One existing level two port, 10 new Level 2 ports, and eight new Level 3 ports

- Shoreline Maintenance Facility: Two new Level 2 ports

The TCO calculation does not include electrical infrastructure upgrade costs.

Progress Update on Initiatives Supporting the Clean Fleet and Equipment Transition

Electric Vehicle and Equipment Purchases

In parallel to developing the proposed policy, staff continues to work towards the transition to a GHG-free fleet and equipment stock, replacing existing vehicles with zero-emission vehicles where feasible.

The Community Services Department (CSD) purchased three heavy-duty EVs in the past few months to electrify its Parks operations. The City is leasing four electric community shuttles that will go into service later this spring. The City was also awarded a federal grant to purchase an additional four electric community shuttles that are anticipated to arrive in 2027. Additional electric vehicle purchases are planned in the Mountain View Police Department (MVPD), including piloting electric patrol vehicles and School Resource Officer vehicles.

Staff will also apply for Inflation Reduction Act (IRA) direct pay incentives, which provide up to $7,500 for an electric light-duty vehicle and up to $40,000 for electric medium- and heavy-duty vehicles. These incentives are anticipated to remain for the next two years.

The City has had success in electrifying landscape equipment in the Parks and Open Space Division. Approximately half of the City's handheld landscape equipment, such as push mowers, weed whackers, and blowers, has been transitioned to electric. The City recently purchased, and is waiting for, two electric ride-on mowers for use in parks. Two new City parks under planning, Evelyn Park and Villa-Chiquita Park, will use all-electric landscaping equipment. Including landscape equipment in the proposed policy helps the City to continue on this leadership path, plan for charging needs of electric landscaping equipment, and consider any other safety or infrastructure needs to fully transition.

Electric landscape equipment tends to be about 30% to 35% more expensive than fossil fuel equipment. As new technology emerges, proactive deployment of landscape equipment allows staff to familiarize themselves with equipment usage and gather data, such as equipment and battery lifespans. Furthermore, some operational techniques, such as battery storage, can support longer equipment life.

Charger Installations and Funding/Partnership Efforts

In the next few months, mobile EV chargers will be installed at the MVPD (a unit with three charging ports) and the MOC (a unit with two ports) for a total cost of $193,000. These stations are powered by solar and battery energy storage and are not tied to the building's electrical infrastructure. The chargers will support new EVs for park maintenance and Police patrol vehicle pilots. The MVPD currently does not have charging stations installed, so the mobile chargers will fill a gap in infrastructure needs and support two patrol EVs being purchased. The mobile nature

of the charging stations, which can be moved via forklift or trailer, makes them a good fit for MVPD as the administration building will be demolished and rebuilt in the next few years. While the fleet study did not look at MVPD charging needs in depth, it was estimated that 22 charging ports will be ultimately needed for full electrification of MVPD vehicles.

Staff has also proposed funding in the Fiscal Year 2025-26 Capital Improvement Program (CIP) to begin installation of the necessary chargers and to purchase electric vehicles over the next few years. The funding would be used primarily to support electric vehicle charging at the MOC as this is the primary site for parking and charging City vehicles.

The City has submitted grant applications to try to reduce the cost to install charging stations. Last year, staff applied for a $3.1 million grant from the California Energy Commission (CEC) but was not awarded.

Staff is in the process of applying for Pacific Gas & Electric's (PG&E's) EV Fleets program with assistance from Optony and Silicon Valley Clean Energy (SVCE). This program fully pays for a dedicated meter to charge medium- and heavy-duty vehicles along with additional incentives for electrical panel upgrades and wiring up to the point of the electric vehicle charger. This is anticipated to result in installing a dedicated EV charging meter at the MOC. Additional sites, such as the Shoreline Maintenance Facility, are also being considered. Under the program, the City can secure $112,000 in PG&E infrastructure incentives. This does not include the value of the meter itself and the design support from PG&E. For comparison, a comparable but smaller city in the Bay Area received a value of approximately $200,000 from the program, so a comparable or higher project value for Mountain View is anticipated.

A CEC program is offering grant-funded municipal fleet charging optimization software to public agencies and subsidized EV chargers. The program is being implemented locally through the EV-charging software company, BetterFleet. The City is exploring sites for participation, such as the MOC. The CEC grant funding is aimed at helping cities shift EV charging from peak hours, such as 4:00 p.m. to 9:00 p.m. to other times, to reduce strain on the local electricity grid while providing utility bill savings. Staff is working with BetterFleet to finalize a draft scope of work and consider launch of a partnership in the coming months.

Next Steps

If the proposed policy is approved by the CSC, it would be brought to Council for adoption in June.

FISCAL IMPACT

While adopting the GHG-free fleet and landscaping equipment purchasing policy does not have a fiscal impact for the City, there are additional costs associated with its implementation. For light-duty electric vehicle purchases, switching from a fossil fuel vehicle to a clean vehicle can

result in operational and total cost of ownership savings in some cases. For medium- and heavy-duty vehicles, it is possible that an electric vehicle may be more expensive than its fossil fuel counterpart, based on the initial capital cost and the cost of electricity (or other clean fuel). The total cost of ownership for electrification of the fleet by 2042 is approximately $20.5 million, compared to $11.5 million for replacing fossil fuel vehicles "like for like" with fossil fuel vehicles. For the light-duty vehicle segment, the fossil fuel TCO is $8.5 million, whereas the electric TCO is $10.2 million.

The total estimated cost to install EV charging for the fleet is $3.978 million with about $1 million needed for charging in the next five years to transition to a clean fleet. Staff has proposed CIP funding to begin installation of the infrastructure. Staff may also return to the CSC to strategize additional funding mechanisms for implementing the purchasing policy and fleet electrification goals.

The PG&E EV Fleets program will help reduce the cost to install EV chargers by potentially paying for new electrical meters, panel, and wiring at the MOC, and potentially additional sites, such as the Shoreline Maintenance Facility. However, the City would still need to pay for the costs of the electric vehicle charging stations.

There will likely be additional funding needs to support the transition to electric operations, such as to update the Fleet Building at the MOC. There are certain requirements for electric vehicle maintenance which will require the building to be significantly expanded and staffing models to be updated to support safe operations. A cost analysis would be needed to quantify the full cost of these additional funding needs.

Electric landscaping equipment is, on average, 30% to 35% more expensive than fossil fuel equipment. An analysis of potential fuel savings of transitioning from gas to electric has not been completed yet, but staff will report on the impacts of the policy as a part of the Local Government Operations Greenhouse Gas Emissions Inventory if adopted. It should be noted that fossil fuel landscaping equipment creates harmful air pollution, which has a public health cost, although this dollar amount is not easily quantifiable. Transitioning to electric equipment is expected to improve local air quality and public health.

The costs stated in this report reflect the most accurate calculations Optony was able to make based on currently available information. If the proposed policy were adopted, the next step would be to integrate anticipated costs and savings into the City's operation of the Equipment Replacement Fund (ERF). The ERF was established to stabilize the annual funding required for the replacement of certain City equipment, and it receives consistent annual contributions from various sources, helping to absorb fluctuations in annual expenditures for equipment replacement from fiscal year to fiscal year. Following adoption of the policy, staff would integrate anticipated costs and savings into the ERF's operations, aligning with the City's financial needs and accounting standards.

CONCLUSION

The proposed policy would complete SAP tasks directed by the City Council and streamline the purchasing and infrastructure needs to transition to vehicles and equipment that use GHG-free fuels. Exceptions may be granted under certain circumstances, and staff will provide updates to the CSC and/or City Council as appropriate. There is a fiscal impact to transitioning to equipment and vehicles that use GHG-free fuels. In the case of light-duty vehicles, there may be total cost of ownership savings, and staff anticipates this segment will be the most significant area impacted by this policy given that 60% of the City's fleet is light-duty. Electric heavy- and medium-duty vehicles tend to have a higher total cost of ownership than their fossil fuel counterparts. Electric landscape equipment also has a moderate-cost premium that would need be covered. However, due to state regulations that require medium- and heavy-duty fleet vehicles to be electric and prohibit the sale of gas landscape equipment moving forward, the additional cost is in some cases unavoidable even without the proposed City policy.

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Attachment: 1. Greenhouse Gas-Free Fleet and Landscaping Equipment Purchasing Policy