

DATE: November 21, 2024

TO: Council Sustainability Committee

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SUBJECT: Municipal Operations Decarbonization Implementation Strategy

RECOMMENDATION

Receive information regarding the municipal decarbonization strategy and provide any feedback to staff. This is an informational item, and no action is required.

BACKGROUND

Task S1.8 from Sustainability Action Plan-4 (SAP) directs staff to work on municipal facility decarbonization projects. As the City continues to explore a more progressive decarbonization target year (e.g., 2035 or 2040), decarbonizing City buildings, vehicles, and equipment will play a vital role in demonstrating leadership to the community.

In the 2023 municipal greenhouse gas (GHG) inventory, the five primary sources of GHG emissions were: buildings (38%), vehicle fleet (33%), employee commutes (22%), solid waste (7%), and other miscellaneous sources (1%). This breakdown excludes emissions from the Shoreline Landfill. The Shoreline Landfill has been closed since the early 1990s and is anticipated to generate methane and other landfill gases at decreasing levels. The remaining categories provide a picture of the major ongoing emissions sources the City can continue to address.

This report serves as a roadmap to decarbonize municipal operations. The first priority is to focus efforts on the largest contributors to municipal GHG emissions: buildings and vehicle fleet (totaling 71% of ongoing emissions). This work will be undertaken in two phases described below. Staff is sharing the strategy with the Council Sustainability Committee (CSC) to provide a foundation for more detailed discussion and direction over the next year regarding municipal programs, policies, and funding that will support decarbonizing City operations.

ANALYSIS

Over the next 18 months (Phase I), the priority municipal decarbonization projects will include heat pump water heater installations, fleet electrification, and end-of-life Heating, Ventilation, and Air Conditioning (HVAC) system replacements. Some of these projects will allow the City to quickly achieve cost-effective GHG emissions reductions and can be described as “low-hanging fruit” projects. Other projects demonstrate an urgent need to plan to electrify gas-fired equipment that is at the end of its useful life.

Phase II will follow the completion of Phase I and will prioritize the replacement of remaining fossil fuel equipment in City operations. This phase also includes evaluating renewable microgrids that could result in further utility savings and provide operational continuity/resiliency during power grid outages. The phases are described in greater detail below.

It is important to highlight that there are several large decarbonization projects currently under way that include:

- Photovoltaic system installations at the Mountain View Sports Pavilion, Whisman Sports Center, and the Senior Center. Project completion is anticipated by spring 2026.
- The Senior Center kitchen and water heater electrification project with completion anticipated by summer 2026.
- The Rengstorff Park Aquatics Center’s all-electric pool, also nearing completion.

In addition, staff continues to decarbonize gas-powered landscaping equipment. Given these existing municipal decarbonization efforts, prioritizing additional projects through a phased approach will allow the City to efficiently allocate resources and staff time to achieve its goals.

Phase I Municipal Decarbonization Implementation Strategy (2024-2026)

Water Heater Project

The first category of priority projects is cost-effective, “low-hanging fruit” decarbonization projects which can be completed with little to no cost to the City while achieving GHG reductions and utility savings. Water heating is in operation all year-round, and electric heat pump water heaters are extremely efficient. Transitioning the City’s gas-fired water heaters to heat pumps will reduce emissions while securing bill savings.

The City is participating in a PG&E program (Government K-12 Energy Efficiency) to replace gas-fired water heaters at City facilities with heat pump water heaters at no cost. As a result, 20 heat pump water heaters have been installed at City facilities, replacing 14 gas water heaters at zero

capital cost to the City. The value is estimated to be \$336,600 in incentives from PG&E. In addition, utility bill savings are anticipated for these projects. The lifetime GHG emissions reductions from these projects is 4,024 carbon dioxide equivalent metric tons, which is equivalent to taking 958 gasoline-powered passenger vehicles off the road for one year.

Staff plans to continue using the program to transition remaining water heaters. The Mountain View Sports Pavilion and Whisman Sports Center are planned for heat pump installations this winter. Following that, staff will assess the few remaining harder-to-electrify gas water heating systems to plan for their eventual electrification.

Electrifying the City's Fleet

Fleet electrification is a priority identified in the SAP, with Tasks T7.10, T8.1, T8.3, and T8.5 directing staff to develop a clean fleet policy, pilot heavy-duty electric vehicles, and install electric vehicle (EV) chargers. In addition, the California Air Resources Board's (CARB) Advanced Clean Fleets Regulation focuses on medium- and heavy-duty vehicles, requiring that fleet owners progressively increase the percentage of zero-emission vehicles in their fleet over the next couple of decades. This is placing urgent pressure to ensure there is adequate EV charging infrastructure to transition to an all-electric or zero emission fleet.

A high-level fleet electrification strategic plan was completed in spring 2024. The plan includes an analysis of the most practical EV replacements for 250 City vehicles and preliminary electric vehicle charging plans for three City sites (the Municipal Operations Center, City Hall/Center for the Performing Arts, and the Shoreline Maintenance Facility). The information in the study will serve as a foundation for more detailed analyses on vehicle replacements and electric vehicle charging needs. The EV charging estimates will be used to develop a Capital Improvement Program (CIP) request for Fiscal Year 2025-26 to implement fleet electrification plans. This CIP will fund electric vehicle charging, which is needed to prepare for purchasing electric vehicles at a large scale. Sustainability and Public Works staff have assembled a cross-departmental working group to begin fleet electrification plan implementation.

In the next six months, Sustainability staff will be engaging with City departments to explore the concept of an Electric or Green Fleet Policy. The policy would target light-duty vehicles that are not regulated by CARB's current fleet requirements. While these policies vary widely, it generally requires staff to consider zero-emission vehicles as a priority option above fossil-fuel vehicles. This type of policy can assist in financial planning around fleet purchases for a city, such as addressing the cost differential between gasoline and electric vehicles, and accounting for the fuel savings and low maintenance cost of EVs. A policy can also help proactively plan for the electric vehicle charging. Electric or Green Fleet Policies tend to include flexibility for staff to purchase nonelectric vehicles, especially if an electric equivalent is unavailable or operationally impractical. Staff is researching policies adopted by other agencies, both in the Bay Area and nationwide. Sustainability staff anticipates bringing a draft policy to the CSC in spring 2025.

Public Works staff is already working with City departments on replacing existing vehicles with zero-emission vehicles. Fleet electrification is being prioritized in each vehicle replacement discussion with department managers. Further information on fleet purchases will be provided to the CSC with the proposed Electric or Green Fleet Policy in spring 2025.

Staff is also identifying opportunities to pilot EVs in the fleet. The Police Department and Sustainability staff are exploring various EVs for a patrol vehicle pilot. The Police Department does not have any EVs in its fleet as vehicles must meet certain standards for safety and operation and there is no on-site charging available. Recently, an EV was rated pursuit-worthy, which is a standard police departments across the country use to determine if a vehicle is fit for patrol use. Staff is working to secure two vehicles to pilot for patrol officers. If successful, the vehicles could replace upcoming purchases in future years.

The pilot will allow patrol officers to assess the vehicle's performance in real-world scenarios and find the right level of charging needed to perform their duties. It will also help officers become familiar with the advantages and limitations with EV technology. This initiative will support Police's operational needs and align with the City's clean fleet goals. In addition, the Police Department will be incorporating additional EVs in its nonpatrol fleet for the first time (e.g., Detectives, School Resource Officers). To support EV charging for this and other EV pilots, Sustainability and Public Works staff are working with various vendors to deploy mobile EV charging. Mobile charging allows flexibility to move chargers and reduce impacts on a building's electrical capacity.

Staff continues to seek funding opportunities to support fleet electrification. In April 2024, the City submitted a \$3.1 million grant application to the California Energy Commission's Charging Infrastructure for Government Fleets. Mountain View passed the scoring criteria and was a finalist but was not selected for a grant award. Staff continues to seek electric vehicle charging grants and is in the process of applying for federal tax credits for purchased electric vehicles. Silicon Valley Clean Energy will open grant opportunities early next year that may be used for fleet charging.

End-of-Life Heating, Ventilation, and Air Conditioning Systems (HVAC)

Another priority category is HVAC gas systems which are nearing their end of life. The Mountain View Sports Pavilion and Whisman Sports Center gymnasiums' HVAC systems have reached their end of life. On [March 26, 2024](#), the City Council adopted a resolution to apply for the United States Environmental Protection Agency's Climate Pollution Reduction Grant to fund the installation of a clean energy microgrid and heat pump HVAC system at the gymnasiums. While the grant was not awarded, staff is utilizing the information collected during the grant application process to advance the project. Preliminary cost estimates to replace the gas-fired systems with

heat pumps is significant. Staff will be assessing funding opportunities which are anticipated to become available early next year, such as grants from Silicon Valley Clean Energy.

Installing heat pump HVAC systems would have a notable benefit of adding air conditioning to these facilities, helping to keep temperatures down during extreme heat days. As the number and severity of extreme heat days increase with climate change, the need for cooling increases. A heat pump HVAC system would allow the gyms to serve as a cooling facility both for students and the public. Solar is planned for installation on the gyms by spring 2026, which will help provide power for the heat pump systems. The next step is to conduct feasibility analyses for heat pump HVAC, which will give staff information on design and budget parameters for the project.

Phase II Municipal Decarbonization Implementation Strategy (starting in 2026)

Public Works staff is implementing an updated asset management system, which can be used as a tool for long-term decarbonization planning. For example, the asset management system will track when various systems are expected to reach their end of life which will help staff plan for replacing gas with electric systems wherever feasible. This will support identification of priority projects and funding needs. Phase II will be able to begin once the asset management is completed.

Another aspect of Phase II is to review the potential utility impacts of electrification. As energy prices continue to rise for both gas and electricity, staff will evaluate ways the City can further save on its utility bill by exploring the feasibility of renewable microgrids at various City facilities. Typically, renewable microgrids consist of solar and battery storage infrastructure that allows a building to operate separately from the electrical grid. This would help the City continue to provide services when the electrical grid is down. Battery storage can also reduce utility costs at community centers that are open in the evening by storing the excess solar energy produced during the day for use during high-rate hours between 4:00 p.m. and 9:00 p.m. Microgrid technology is advancing quickly, and undertaking this project in the next few years will help position the City to implement the best technology available at a reasonable cost.

CSC and City Council Engagement

Staff plans to bring a draft Electric or Green Fleet Policy for CSC and Council consideration in spring 2025. Staff also plans to provide a progress update on municipal decarbonization initiatives in Q4 2025.

FISCAL IMPACT

There is no immediate fiscal impact associated with this informational report. However, projects that are approved and implemented over the next several years will have funding needs that will

be planned for. Most municipal decarbonization projects will be funded through the annual CIP process and/or grants.

For fleet EV charging, a return on investment is anticipated based on fuel savings and reduced maintenance cost associated with EVs. Staff plans to apply for Inflation Reduction Act incentives for vehicle purchases, which would support lowering the upfront cost for City vehicles. However, it is unclear whether these incentives will still be available under the new federal administration beginning in January 2025. Staff will monitor any changes to federal incentives closely.

Completed heat pump water heater projects have saved \$336,600 in capital costs for the City to date. Upcoming heat pump water heater installations at the Mountain View Sports Center and Whisman Sports Pavilion are anticipated to save \$118,000 in capital costs for the City and provide potential additional utility bill savings.

Staff will also continue to look for funding opportunities for municipal decarbonization projects. There are multiple Silicon Valley Clean Energy grants that will be opening in early 2025 that could support Phase I implementation projects if awarded.

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628-11-21-24M