

Memorandum

Date: 4/13/2021

To: County Council

From: Ken Klein, Executive Director

Subject: Budget Note for Green Fleet Implementation Plan

cc: JaNae Nelson, Director of Facilities and Fleet Department
Tom Teigen, Director of Conservation and Natural Resources Department
Lisa Dulude, Energy and Environmental Sustainability Manager
Roy Scalf, Fleet Services Division Director

The purpose of this Memo is to respond to Council's budget note that the "County Executive launch a collaborative workgroup comprised of County departments/offices that will include, at a minimum, the Fleet Division and the Office of Energy and Sustainability (OES) for the purposes of developing a full and comprehensive Green Fleet Implementation Plan", and "Council requests that a report be prepared and presented to the Council at a public hearing on or before May 31, 2021."

Developing this plan is a large undertaking that requires significant staff resources, data gathering, analysis, and planning to make it usable and effective. Staff have begun work on an electrification and clean fuels plan for county buildings and fleet, however a completed plan will not be available by May 31, 2021. If Council would like this plan to be completed in a short time frame, additional resources are needed to scope, manage, and implement this effort.

The Department of Facilities and Fleet, and Office of Energy and Sustainability, have started work to develop a Clean Energy Plan for county facilities, fleet, and equipment, which is a specific action item identified in the county's [Clean Energy Joint Resolution 19-006](#). A Green Fleet Implementation Plan must be integrated with the county's capital facilities improvements and part of a larger Clean Energy Plan. Key considerations for a Clean Energy Plan, particularly regarding fueling infrastructure, are outlined below.

Electrification of county buildings and county fleets are interdependent. Planning and installing EV or other fueling infrastructure is one of the more complex and costly components for transitioning buildings and fleets to clean fuels. The county needs to plan for, and upgrade, electrical infrastructure to accommodate the increase in electrical load and consumption for electric vehicles and the electrification of buildings. Identifying the type of fueling infrastructure needed and where to put that fueling infrastructure will be key components of the Clean Energy Plan. These considerations may be different depending on the department and/or service being provided. Information needed to plan for fueling infrastructure includes:

- **Trip distances, routes, origination points, and destination points:** Trip routes, travel distance, and trip origination/destination points are a few examples of data that needs to be gathered in order to install EV charging infrastructure in the appropriate locations for the respective use. For county-owned light duty passenger vehicles where trips originate and end at a county-owned facility, Level 2 charging is assumed to suffice for an all-electric or plug-in hybrid electric vehicle. However, many county fleet vehicles and/or trips do not originate at a county-owned facility. Pursuit vehicles in the Sheriff's office, and vehicles used by PDS, Assessor, Human Services, and other departments often originate and end at an employee's home. It is unlikely that the county could use taxpayer dollars to install EV charging capabilities at employee homes, as this would result in a personal benefit which goes against county code. Information gathering with each County department is needed to plan for the addition of fueling stations at county-owned facilities or other locations. There may be opportunities to share the cost and use of electric or clean fuel infrastructure with other municipalities and stakeholders across the county, and this information should be gathered and considered for the Clean Energy Plan.
- **Fuel Type and/or EV feasibility:** For the majority of the county's medium and heavy-duty diesel vehicles, a viable electric alternative will likely not be available in the next 5-10 years. Plans to install fueling infrastructure for these fleet vehicles will most likely need to include short-term and long-term clean fueling options. Long-term infrastructure planning for medium and heavy-duty vehicles should include DC fast charging (480v) to accommodate large batteries (approximate 10+ year time horizon). Short-term infrastructure planning for medium and heavy-duty vehicles should include renewable diesel which will likely be a more viable immediate diesel alternative until EVs are available for these vehicle classes. Renewable diesel, which is different from biodiesel, is a drop-in fuel for standard diesel. Renewable diesel is a cleaner burning fuel with a lower carbon intensity when compared to standard diesel. However, obtaining renewable diesel in WA has proven difficult due to the high demand in Oregon and California as these states have a low carbon fuel standard. If SHB 1091 and/or SB 5126 passes in the current WA legislative session, then transitioning to EV infrastructure and renewable diesel infrastructure will be accelerated.
- **Coordination with building electrification:** Integrating the county's facilities capital investment program with electrification efforts will help to save time and resources. Plans to electrify space and water heating in county facilities with fleet electrification will help ensure that wiring, power, and electrical capacity upgrades are completed for future power needs, rather than in a piecemeal manner. OES and the Facilities and Fleet Department are collecting data for a select number of county-owned buildings and sites for this purpose. Example data points include: useful life left of HVAC equipment, rated power capacity for each piece of equipment, electrical panel capacity, anticipated number of EV charging stations needed and level of charging (i.e. 240v or 480v). Once this data survey is complete, a mechanical engineering firm will be hired to help identify all-electric HVAC equipment replacements, estimate the total power needs, and provide a cost estimate to electrify equipment and meet future EV charging needs at each site. Ideally, the electrical upgrades at each site and/or facility would be upgraded once in order to reduce costs associated with multiple upgrades.
- **Electric vehicles:** Fleet Services continues to replace older gasoline-powered vehicles with hybrid-electric vehicles. Presently there are 54 hybrid-electric passenger vehicles in the fleet, with another 10 coming into service in 2021. There are five all-electric passenger vehicles in the fleet at this time. In late 2019, an all-electric heavy-duty off-highway truck/yard tractor was purchased for use by Solid Waste to move large refuse containers at a transfer station. After more than a year in service, it has been determined to be a success, and more will be coming in 2021, eventually replacing all diesel yard-tractors with electric. Fleet is also working with Solid Waste to replace an on-highway box van with an all-electric box van. Challenges to expanding electrification at this time include limited charging infrastructure, lack of purpose-built vehicles such as pickup trucks, vans and patrol vehicles for those jobs which require them (Public Works, Parks, Sheriff patrol). Additionally, because Snohomish County is large geographically, and because there are very few county business functions which are route based, sufficient battery capacity and recharging opportunities are challenges to overcome. Electric vehicles work well in a route-based assignment where battery capacity can be matched to an assigned

route, and charging can be done overnight at a base station. For business functions that are response driven and that occur over a large geographic area, electrification is more challenging.

As staff continues work on the Clean Energy Plan, Council could consider starting a clean energy 'savings fund' which will help pay for electrification and infrastructure costs once the plan is completed. This is an action item that is already identified in the county's Clean Energy Joint Resolution 19-006.

Please let me know if you would like to schedule a meeting to discuss this further with OES and Fleet Division staff.