## STAFF REPORT

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| **Agenda Item:** | 9 | **Name:** | Jenny Giambattista |
| **Proposed No**.: | 2019-0435 | **Date:** | January 22, 2020 |

**SUBJECT**

An Ordinance requiring the implementation of a strategy to accelerate the adoption of electric vehicles.

**SUMMARY**

Proposed Ordinance 2019-0435 would add a new chapter to the King County Code Title 18, Environmental Sustainability Program. It would require the Executive to implement a “jump start” vehicle electrification strategy that seeks to accelerate the adoption of electric vehicles by Metro, other county agencies and residents.

The ordinance requires actions across county agencies. Most notably, it would require Metro to accelerate the transition to a one-hundred percent zero-emission bus fleet by 2035. Metro reports that meeting the 2035 target would require significant near term budget investments such that service reductions would be required. The proposed ordinance includes several other ambitious targets related to the adoption of electric vehicles by King County and the installation of charging infrastructure in county facilities.

Additionally, Proposed Ordinance 2019-0435 includes requirements intended to facilitate access to electric vehicles by low-income residents and to encourage the installation of charging infrastructure in new multi-family and commercial developments.

Proposed Ordinance 2019-0435 was discussed in the Mobility and Environment Committee on November 19, 2019.

Striking Amendment

The striker (Attachment 2) would delete language requiring electrification by certain dates and instead establish goals for electrification. The target dates for electrification would not change. The striker would also move requirements related to Metro to the Public Transit section of the King County Code, Title 28.94. Staff have also prepared a corresponding Title amendment (Attachment 3).

The attached striking amendment is discussed in detail at the end of this staff report.

**BACKGROUND**

Transportation accounts for nearly half of all greenhouse gas emissions (GHG) in Washington. In King County, fossil fuel use for transportation is one of the top two sources of GHG emissions.[[1]](#footnote-1) By taking cars off the road, reducing traffic congestion, and facilitating more efficient land use, Metro displaces roughly four times more GHG emissions than it generates. Nonetheless, Metro’s bus fleet is a large consumer of fuels. Metro consumes about 10 million gallons of diesel fuel annually and emits approximately 80 percent of King County government’s GHG emissions from diesel fuels.[[2]](#footnote-2)When accounting for all of King County government’s emissions from all sources[[3]](#footnote-3), Metro’s bus fleet emits approximately 29 percent of King County government operational emissions in 2017.

*Strategic Climate Action Plan*

The King County Strategic Climate Action Plan (SCAP) is the blueprint that guides the county’s actions in reducing GHG emissions and preparing for the impacts of climate change. King County’s first SCAP was adopted in 2012 and updated in 2015, consistent with K.C.C. chapter 18.25. The 2015 SCAP commits King County to reducing transportation emissions by setting targets to increase the number of Transit riders, and reduce emissions in its bus fleet and in other vehicles used in county operations.

Key adopted transportation targets in the SCAP include:

* Metro will achieve 127 million passenger boardings a year
* Reduce Metro’s normalized fuel use per boarding by at least 10 percent by 2020 compared to a 2014 baseline
* Reduce by 10 percent the energy use of all vehicle operations, excluding Metro fleet
* Reduce vehicle miles traveled by 20 percent below 2012 levels by 2030
* Concentrate 97 percent of new construction in Urban Growth Area

The SCAP is required by King County Code[[4]](#footnote-4) to be updated and adopted by the King County Council at least every five years. Executive staff are currently working to update and revise the SCAP for 2020-2025 and expect to transmit it in June 2020.

*METRO CONNECTS*

In January 2017 the Council adopted Metro Connects, the long range plan for improving transit service through service expansion and innovation. Metro Connects is projected to remove 300,000 cars on King County’s roadways daily and reduce GHG emissions by 1.7 million metric tons annually.

*2017 Carbon Neutral or Zero Emission Fleet Feasibility Study Includes 2040 ZEV Target*

In response to Motion 14633, Metro transmitted a report in March 2017 on the feasibility of achieving a carbon neutral or zero-emission vehicle (ZEV) fleet. The report considered three options for achieving a carbon neutral fleet:

1. Accounting approach that considers Metro’s efforts to increase ridership or purchasing offsets in order to achieve
2. Purchasing carbon offsets from external providers
3. Transitioning to a ZEV fleet powered by renewable energy

Metro concurred with the report recommendation and committed to achieving a 100 percent ZEV fleet powered by renewable energy no later than 2040 and a 56 percent ZEV fleet by 2030. The 2017 report also prioritizes deployment of new zero-emission buses on service operating from South King County, improving air quality first in communities where people are disproportionately affected by pollution.

The feasibility analysis did identify significant risk factors with a transition to a ZEV fleet. The analysis noted the battery bus industry is still in the development stages and at the time of the analysis the 60-foot battery bus had not yet been tested. (Testing is now underway.) Additionally, the feasibility report noted risks to scheduling and service reliability. To address these risks, Metro assumed a phased approach to transitioning the fleet and committed to continuously evaluate the industry and the implementation of the transition as it moves forward.

*2019 Carbon Neutral Implementation Plan*

As required by the 2016 Comprehensive Plan, in March 2019 the Executive transmitted an implementation plan for making King County government carbon neutral (Proposed Motion 2019-0115 not yet adopted by Council). The Carbon Neutral Implementation Plan recommends an approach and targets that focus on making deep reductions in direct emissions, rather than achieving carbon neutrality through the purchase of carbon offsets or through accounting methodologies. Building on the 2015 SCAP, this Plan recommends that King County adopt stronger GHG reduction targets to reduce operational GHG emissions by 50 percent by the year 2025 and 80 percent by 2030.

To achieve the additional recommended emissions reductions, Executive staff developed a set of technically feasible, yet uncommitted strategies for achieving reductions beyond those identified in the SCAP. Executive staff report that additional analysis is needed to further assess the cost and feasibility of implementing the strategies identified in the Carbon Neutral Implementation Plan. This analysis will be completed as part of the 2020 SCAP Update.

Many of the targets in Proposed Ordinance 2019-0435 also appear in the Carbon Neutral Implementation Plan. These targets will be discussed in the analysis section for the corresponding provisions of Proposed Ordinance 2019-0435.

*Metro’s Current Battery Bus Fleet*

Beginning in 2016, Metro piloted three fast charge battery buses in Bellevue, manufactured by Proterra. Metro currently operates and owns eight shorter range (25 miles) Proterra battery buses in operation in Bellevue. As of September 2019, about 12 percent of Metro’s bus fleet is expected to be all-electric by fall 2020. The majority of all-electric vehicles are in the trolley bus fleet.[[5]](#footnote-5)

Metro is currently leasing ten extended range buses (both 40-foot and 60-foot) for testing with an extended range capability of 140 miles. All of the buses have charging capability for slow or fast charging and for plug-in as well as overhead charging rails to meet new interoperability standards and enhance reliability and flexibility in design of charging options. Extended range buses take longer to fully charge than the fast charge buses that Metro currently operates in Bellevue, but they can travel much farther on a full charge. The 2017 Feasibility report assumed that if 60-foot available slow charge buses meet Metro’s performance standards, battery buses could meet the service needs of nearly 70 percent of Metro’s current operations.

*2019 Budget Omnibus Ordinance 19021*

In November 2019, the Council adopted Ordinance 19021 which addresses vehicle electrification in several ways.

Battery buses

Ordinance 19021 includes several appropriations related to battery buses. Key appropriations related to this effort include $2 million for battery electric bus and non-revenue vehicle electrification planning, $6 million for designing and prototyping electric bus charging infrastructure at Metro’s South Campus interim base, and approximately $52 million towards an overall purchase of 120 battery electric buses to be delivered between 2021 and 2022 and operating out of the South Campus interim base.

Funding for the capital costs of implementing the charging infrastructure necessary to support the 120 battery buses to be deployed in 2021 at the interim base has been not yet been appropriated. Metro reports it will request full appropriation for final design and implementation in future budget submittals when costs are more certain. Metro reports it will likely need more budget authority for this project prior to the 2021-2022 budget.

In order to provide more information to the Council on long range plans and costs associated with battery buses Ordinance 19021 included a proviso requirement: (P9) for a battery bus implementation plan due September 14, 2020 that includes the following:

* Identification of major milestones through the 2021-2022 biennium related to planning, testing, procurement, and deployment of battery buses and the installation of charging infrastructure;
* A preliminary fleet procurement plan by type of bus through 2040;
* A high-level schedule through 2040 for the anticipated installation of charging infrastructure at new, existing and interim bases as well as in-route charging;
* A summary of the results of any studies or evaluations related to zero emission battery bus implementation completed after December 1, 2019, and a summary of the scope of any on-going studies or evaluations;
* Updated cost projections comparing the cost of a zero emission fleet and continuing Metro transit department's current fleet practice; and
* A preliminary high-level financing plan for transition to zero emission bus fleet by 2040 that evaluates financing options.

Additionally, Proviso P8 for the Local Services Administration requires a report due September 14, 2020 on options to require, incentivize or otherwise ensure electric vehicle charging infrastructure in new multifamily construction and other development proposals that include expansion of parking areas in the unincorporated area and an ordinance that would establish requirements to ensure that new parking areas are designed to include some amount of electric vehicle charging infrastructure to account for increased use of electric vehicles in the future.

County Parks

Proposed Ordinance 19021 also included $25,000 to develop an initial feasibility study for the installation of electric vehicle charging infrastructure for public use at county parks. Proviso P1 requires that the initial feasibility study be transmitted by October 1, 2020 and include:

* Best practices or findings identified by the city of Seattle and by county agencies with experience in electric vehicle charging infrastructure;
* Identification of at least two county parks for a public electric vehicle charging pilot. The selection of sites shall be based on the potential availability of electrical infrastructure, the park's accessibility using public transit and the opportunity to offer charging access in those areas currently underserved by charging infrastructure; and

* Identification of any opportunities to partner with utilities in the financing, installation, or maintenance of the charging infrastructure.

County DES Fleet

$25,000 shall be expended or encumbered solely to support install or upgrade of electric vehicle-chargers for county fleet.

***Washington State Vehicle Electrification Efforts***

HB 2042

In 2019 the state legislature passed a Green Transportation bill, HB 2042, that was signed by Governor Inslee on May 7, 2019. The legislation included several major provisions aimed at transitioning the state to cleaner transportation options. It included tax breaks on electric vehicle sales, construction of charging infrastructure, studies and pilots for EV car-shares and low-income EV adoption, incentives to local transit agencies to buy electric vehicles, and a Green Transportation Capital Grants Program for public agencies.

The legislation also adopts expanded authority for the [Utilities & Transportation Commission](https://www.utc.wa.gov/Pages/Default.aspx) (UTC) to review and approve EV infrastructure and incentive plans for Washington’s regulated investor-owned utilities (IOUs). The legislation requires IOUs submitting electrification of transportation plans to align those plans with their existing planning horizon and broadly authorizes the deployment of EV charging infrastructure, incentives for EV adoption, and other services such as education. The UTC is given equally broad authority to acknowledge the electrification of transportation plans submitted by the IOUs.

The legislation also directs the WSU Extension Energy program to provide technical assistance and education to public agencies to assist them in acquiring and operating alternative-fueled vehicle fleets.

The new law also includes a $75 increase in the Alternative Fuels Vehicles fee to support these initiatives.

Washington’s Electric Vehicle Charger Network

Washington State Department of Transportation manages a program to strengthen and expand the network of fast chargers along Washington’s chargers by deploying fast chargers along Interstate 5, US 2, and parts of I-90 in Washington state.

**ANALYSIS**

Proposed Ordinance 2019-0435 would add a new chapter to the King County Code Title 18. It would require the Executive to implement a “jump start” vehicle electrification strategy that seeks to accelerate the adoption of electric vehicles by Metro, other county agencies and residents. The ordinance requires actions across county agencies. This staff report will discuss each of the major provisions of Proposed Ordinance 2019-0435.

**Accelerates Metro’s goal of achieving a zero-emission fleet to 2035** (Lines 110-116)

Metro’s current target identified in the 2017 Feasibility Report is a ZEV fleet no later than 2040. Proposed Ordinance 2019-0435 would require Metro to accelerate the transition to a one-hundred percent ZEV bus fleet by 2035. It further requires Metro to develop a battery bus infrastructure charging plan and identify budget appropriations necessary to support a ZEV bus fleet and to evaluate impacts on base capacity, service delivery, and ability to meet service expansion commitments in Metro Connects.

As will be discussed in this section of the staff report, there is still much uncertainty in the feasibility and costs of achieving a ZEV fleet by 2040. Metro reports that in order to achieve a 2035 target, operate buses for the 12 years minimum required by the Federal Transit Administration[[6]](#footnote-6), and meet transit service needs, charging infrastructure would be needed starting in 2023 to ensure all newly accepted bus fleets can be zero- emission. Metro’s current fleet and infrastructure planning do not align with the accelerated timeline and would likely require retiring buses from the hybrid fleet earlier than 12 years and/or accelerating electrification of an existing bus base, which has the potential to impact the agency’s capacity to maintain or expand transit service. Metro also notes that meeting the 2035 target would require significant near term budget investments such that without additional funding, service reductions would be required

Metro has not done a comprehensive battery bus infrastructure plan as would be required by this ordinance. Currently, detailed planning efforts are focused on developing a transition plan for battery bus infrastructure and vehicle deployment through 2025 in South King County.

As will be discussed later in this section, Metro has not yet incorporated the costs of transitioning to a ZEV fleet into its ten-year financial plan.

*Updated Timeline for Battery Bus Implementation*

Based on additional experience and available technology, Metro has revised near term targets set in 2017 and now expects that by 2025 any new buses put in operation will be zero-emission (the previous target year was 2020). In January 2017 Metro announced a plan to purchase up to an additional 73 battery buses from Proterra. At this time, Metro’s initial order of 40-foot and 60-foot battery buses will be placed with New Flyer of North America rather than Proterra, ‘piggy backing’ on contracts issued by the State of Washington.

Metro plans to use its existing appropriation authority to purchase 120 battery buses for arrival beginning in fall 2021 for operation from the interim base at South Campus. The remaining buses will be phased in through September 2022. Metro reports that in 2025 it expects to add up to 250 additional battery electric buses to South Annex base and in 2030 Metro will open a new bus base in South King County for between 250 and 300 buses. This is anticipated to bring Metro’s fleet to 51 percent battery or electric by 2030.

*Cost Estimates for Battery Bus Transition Uncertain*

Metro has not yet developed a long range plan for how to finance the transition to a ZEV fleet, nor has Metro yet incorporated the estimated costs of the transition into the agency’s ten-year financial plan. Additionally, planning level financial analysis completed during the 2015/2016 development of Metro Connects, projected that Metro’s anticipated revenue could fund only 30 percent of the additional capital costs and 50 percent of the additional service hours called for in Metro Connects by 2040. That financial analysis did not include the costs of moving to a ZEV fleet.

The 2017 Feasibility Report included a life-cycle cost analysis which found that over the next 30 years transitioning to a ZEV fleet would come at an incremental cost of about 6 percent, or about $194 million in 2016 dollars, when compared to the existing fleet replacement plan. The incremental cost is two percent higher for transitioning to battery-electric bus fleet when the societal costs from emissions and noise pollution are considered. According to the 2017 report, if this incremental cost of $194 million is assumed to be evenly spread out from 2016 to 2047, it is comparable to the fully loaded costs to deliver 55,000 service hours annually.

The feasibility analysis uses a life-cycle cost analysis approach to look not only at initial capital costs of bus purchases, but also at the costs over the multi-decade life-cycle of the fleet. The analysis included both the cash costs to Metro (i.e. capital, operating, maintenance, and disposal) and the societal costs from environmental pollutants (i.e. GHG emissions, air pollutants, and noise). Several investments in supporting systems, including back-up power generation, upgrading power supply to bases, and workforce training and development, would be required as part of a transition to a zero-emission fleet but were not included in the analysis.

The feasibility report notes that forecasting costs, inflation, and price fluctuations for over a multi-decade time frame is difficult and requires numerous assumptions. In this analysis, the difficulty was compounded by the relatively young state of the battery-electric bus industry and the lack of actual data. For example, the transit industry has limited experience with large scale deployments of charging infrastructure, so the costs of implementation are less certain. Additionally, while there was high confidence in the data for diesel-hybrid operations based on years of experience and a large fleet, it was more difficult and less certain to extrapolate the costs from the fleet of only three battery-electric buses over only a few months of operation.

In preparing this staff report, Council staff asked Metro to what extent the 2017 cost estimates have changed based on new data and market information. Metro did not have an update of the 2017 Feasibility of Achieving a Carbon-Neutral or Zero-Emission Fleet report, however during the November 12, 2019 Budget and Fiscal Management Committee briefing, Metro staff noted the incremental costs of transitioning to a zero emission fleet are $1 to $2 billion higher and there is still much uncertainty around the costs.

**Accelerates transition to zero-emissions for ADA paratransit fleet services** (Lines 117-122)

Proposed Ordinance 2019-0435 would require Metro accelerate the transition of Americans with Disabilities Act (ADA) paratransit services such that 67 percent of the ADA paratransit service fleet are ZEV electric vehicles by 2030. The legislation identifies the challenges with achieving this target and states on lines 119 to 122. “The Executive shall further evaluate and recommend strategies for overcoming current barriers to ADA paratransit services electrification, which include lack of current vehicle technology to meet service needs and lack of county ownership and control over property where paratransit vehicles would need to be charged.”

Metro signed a contract with a new ACCESS paratransit service provider in 2019 for a term of five years with options for two ten year extensions.  The contract states that the contractor is to use and maintain Metro’s Access vehicles but may be asked to purchase additional vehicles. In order to transition to a zero emission ACCESS fleet, Metro would need to identify how to work with their contracted service partner to achieve the targets in Proposed Ordinance 2019-0435. Metro recently released an RFP[[7]](#footnote-7) in order to provide guidance to Metro in transitioning the agency’s non-bus fleets to zero emission, including ACCESS paratransit and rideshare vehicles. This RFP also requests analysis for a strategy for Metro’s support and deployment of EV charging infrastructure for non-bus fleets.

The proposed target of 67 percent ZEV rideshare fleet by 2030 is also included in the Carbon Neutral Implementation Plan described earlier in this staff report. As noted earlier, the targets in the Carbon Neutral Plan are considered technically feasible, yet uncommitted targets because the costs and benefits of achieving those targets have not yet been evaluated.

**One-hundred percent zero-emission transit rideshare fleet by 2030.** (Lines 123-130)

Proposed Ordinance 2019-0435 would require Metro to work to achieve a 100 percent ZEV transit rideshare fleet by 2030 and develop options by engaging with the Transportation Electrification Stakeholder Working Group[[8]](#footnote-8) (TESWG) to develop supportive policies and recommendations related to vehicle charging, financial incentives, and recommending code changes to provide greater flexibility for cost recovery for rideshare services.

The proposed target of 100 percent ZEV rideshare fleet by 2030 is also included in the Carbon Neutral Implementation Plan described earlier in this staff report.

According to executive staff, the current availability of electric vehicles for the rideshare fleet is limited and vehicles are generally expected to be more costly upfront. Currently, Metro has 24 Nissan Leafs in its vanpool fleet and six in its vanshare fleet. According to Metro, it is currently piloting 10 plug-in hybrid electric Chrysler Pacificas in the vanpool program this year to evaluate operational considerations and costs. According to Executive staff, the Pacifica is currently the only hybrid van option available and the cost is nearly double that of a comparable conventional minivan.

Executive staff note the current code provisions in KCC 4A.700.130 limit the ability of King County to subsidize a more expensive electric vehicle because the code requires full cost recovery for the operating and capital costs of the rideshare fleet. Lines 129-130 of the Proposed Ordinance would require Metro to develop recommendations for code changes to provide greater flexibility for cost recovery for rideshare services.

**Increase the number of Level-Two[[9]](#footnote-9) 240 volt electric chargers at King County operated Park and Rides** (Lines 131-133)

Proposed Ordinance 2019-0435 would require Metro Transit to increase the number of Level-Two chargers at King County operated Park and Rides with the goal of increasing the current number of installed chargers by 500 percent by 2030.

King County currently operates 37 chargers at Park and Rides. Metro recently updated a contract with ChargePoint to replace 28 out-of-date chargers with upgraded chargers. The new chargers will have dual head dispensers to replace single head dispensers so two vehicles can be charged at once. The annual subscription for a dual port charger is $1650 per year. The cost includes the installation and maintenance of the charger.

Metro reports there is an average of 42 charging sessions per weekday across all of King County’s 60 publicly accessible chargers. (Only 38 of the 60 chargers are at Park and Rides.) This relatively low number of uses per day may, in part, be due to the nature of Park and Ride users who typically occupy parking spaces for the duration of a workday.

Overall, Metro has not had specific policies regarding its role in support for EV charging and providing them for different user groups that could include internal fleets, employees, transit users, shared use vehicles and the general public. Metro published an RFP which among other deliverables is intended to provide policy recommendations for supporting publicly accessible EV charging.[[10]](#footnote-10)

**Executive Services County Fleet** (Lines 135-148)

The Department of Executive Services (DES) manages the vehicle fleet for all county departments except Transit, Solid Waste, and the Airport. Proposed Ordinance 2019-0435 includes several requirements related to the electrification of the county fleet managed by DES.

As shown below, the fleet managed by DES is currently comprised of mostly gasoline and diesel powered vehicles.

**Table 1. County DES Fleet by Fuel Type**

|  |  |  |  |
| --- | --- | --- | --- |
| **Vehicle Type** | **Fuel Type** | **Count** | **Percent by Vehicle Type** |
| Car/Auto | CNG | 2 | 0% |
| Hybrid | 298 | 53% |
| Electric | 15 | 3% |
| Gasoline | 241 | 43% |
| Motorcycle | Gasoline | 4 | 100% |
| SUV | Hybrid | 48 | 8% |
| Gasoline | 571 | 92% |
| Truck | Diesel | 29 | 7% |
| Gasoline | 390 | 89% |
| Propane | 15 | 3% |
| Van | Diesel | 1 | 0% |
| Gasoline | 193 | 98% |
| Propane | 3 | 2% |
| **Total** |  | **1810** |  |
|  |  |  |  |

**Accelerate the electrification of King County’s light duty fleet** (Lines 135-137)

About one percent[[11]](#footnote-11) of King County’s light duty[[12]](#footnote-12) (cars and SUVs) fleet is electric. Proposed Ordinance 2019-0435 would require the electrification of the county fleet so that 50 percent of light duty vehicles are transitioned to electric by 2025 and 100 percent by 2030. This target is similar to the target in the 2019 Carbon Neutral Implementation Plan. Additionally, according to Executive staff, electric vehicles could serve the passenger vehicle needs for many departments. The proposed target is similar to the target included in the Carbon Neutral Implementation Plan described earlier in this staff report. However, as noted in the Carbon Neutral Implementation Plan, the feasibility challenges include funding to cover the incremental costs of EVs and funding for additional charging infrastructure in county operated spaces and the availability of charging infrastructure in leased spaces.

**Accelerate the electrification of King County’s medium and heavy duty vehicles** (Lines 137-139)

Proposed Ordinance 2019-0435 would require that 50 percent of medium[[13]](#footnote-13) duty vehicles are transitioned to electric by 2028 and 100 percent by 2033 and that 50 percent of heavy duty vehicles are transitioned to electric vehicles by 2030 and 100 percent by 2035. Executive staff report this will be very challenging given the limited availability of vehicles in this category, cost and lack of charging infrastructure.

**Increase the number of Level Two chargers installed in King County facilities and develop an electric vehicle infrastructure plan** (Lines 140-142)

Proposed Ordinance 2019-0435 would require DES increase the number of Level Two electric vehicle chargers installed in county facilities with the goal of increasing the number of installed chargers by 500 percent by 2030. To accelerate the electrification of the King County fleet, the Proposed Ordinance requires DES develop an electric vehicle infrastructure plan that supports the fleet goals identified in the proposed ordinance. The plan is required to outline the financial investment, financing options, and technical resources needed.

Additionally, Proposed Ordinance 2019-0435 (Lines 163-164) would require the Executive transmit to Council revisions to KCC that facilitate the electrification of the King County fleet. Council staff have asked Executive staff for more information on the code revisions necessary to facilitate fleet electrification.

There are currently 25 chargers located at non Park and Ride facilities including seven at King Street Center and six at Goat Hill Garage. The Facilities Management Division is seeking to conduct an EV infrastructure expansion feasibility study and develop an implementation masterplan. This effort is intended to strategically inform the SCAP update and 2021-2022 budget and beyond to strategically build out charging infrastructure. This effort is currently scoped to include analysis of Goat Hill Garage, King Street Center, Chinook, Maleng Regional Justice Center, Black River Office Building, and Regional Communications and Emergency Coordination Center.

**Low-Income Communities**

The legislation includes several provisions related to facilitating access to electric vehicles by low-income residents.

**King County investments in affordable housing are required to consider opportunities to provide access to electric vehicles** (Lines 149-151)

Proposed Ordinance 2019-0435 would require the Department of Community and Human Services (DCHS) to require any King County investments in affordable housing consider opportunities to provide access to electric vehicles.

**Pilot program to facilitate access to electric vehicles including shared mobility services, by low-income residents of King County** (Lines 165-167)

Proposed Ordinance 2019-0435 includes a requirement for the Executive to partner with utilities and community organizations on a pilot program to facilitate access to electric vehicles and electric vehicle infrastructure, including shared mobility services, by low income residents of King County.

As reported in the 2018 Puget Sound Clean Air Agency (PSCAA) report, Facilitating Low Income Utilization of Electric Vehicles: A Feasibility Study, electric vehicles can reduce air pollution and save money, however there is unequal access to the technology. The Puget Sound Clean Air Agency undertook the feasibility study to identify opportunities and barriers pertaining to the use and purchase of electric vehicles by low-income residents of Washington State, and to design a pilot project to address these barriers. The PSCAA is now developing a low-income electric vehicle car share project in South Park as a continuation of a low-income electric vehicle feasibility study conducted by the Agency in 2018. This neighborhood-led initiative will help reduce transportation emissions and will be located at Villa Comunitaria (Villa), formerly South Park Information and Resource Center.

Villa Comunitaria will host and manage the electric vehicles, and participate in the multi-partner effort with the Puget Sound Clean Air Agency, the Environmental Coalition of South Seattle, Mujer Al Volante, and the City of Seattle to co-create a community-centered electric car sharing program model.  The pilot project is estimated to be completed by summer 2020.  According to the Puget Sound Clean Air Agency, this pilot project will be the first of its kind in Washington and will offer a learning opportunity for similar projects across the Puget Sound.

The only current program that King County participates in this area is a State (Department of Commerce) incentive program where developers can get an additional two points as part of their application for funding if they have car sharing programs that meet the Evergreen Sustainable Development Standard. This is an incentive program that is currently in place, but DCHS does not believe any projects have actually used it to date.

DCHS reports one of King County’s recent developments, 30 Bellevue, does have one EV charging station onsite. There may have been a City of Bellevue incentive for that, but DCHS has not been able to verify this yet. According to DCHS, the King County Housing Authority is trying to incorporate EV stations at new housing sites if the cost is reasonable, but is not adding them to existing properties.

**Increase chargers at King County operated parks** (Lines 152-154)

Proposed Ordinance 2019-0435 would require the Parks and Recreation Division to increase the number of Level Two chargers at King County operated parks with the goal of increasing the current number by 500 percent by 2030. According to Executive staff, there are two existing chargers at Marymoor Park. There are eight new chargers planned for the future at the new Parks Central Maintenance Facility as part of a green building certification process.

**Siting charging infrastructure** (Lines 159-160)

The proposed ordinance requires the Executive transmit code revisions that would provide for consistency in the requirements for siting electric vehicle charging infrastructure. Such consistency may facilitate the installation of more chargers.

The Department of Local Services (DLS) does not do electrical permitting; it is done by the state Office of Labor and Industry.

**Charging infrastructure in new multi-family and commercial developments** (Lines 161-162)

The proposed ordinance would require the Executive to transmit code revisions to require new multi-family housing and commercial developments include charging infrastructure for electric vehicles. This provision is intended to increase the number of chargers particularly in multi-family units where options for charging at home may be limited. However, this may also increase construction costs. In April 2019 the City of Seattle adopted Ordinance 125815 requiring new buildings in Seattle provide EV charging infrastructure.

In November 2019 Executive staff reported that additional staff capacity would be needed for code development to support vehicle electrification. Subsequently, DLS received $136,000 and a TLT in the Omnibus Ordinance 19021 to support additional green building code development capacity in DLS.

**Additional requirements**

Proposed Ordinance 2019-0435 includes several other requirements for the Executive including:

* Participating in existing forums that convene regional stakeholders who are developing a regional electric vehicle infrastructure plan. (Lines 156-158)
* Developing policies to encourage the adoption of electric vehicles by transportation network companies. (Lines 168-169)
* Working with cities within King County to share best practices and policies for encouraging the adoption of electric vehicles for their fleet and by residents. (Lines 170-171)

Lastly, Proposed Ordinance 2019-0435 would update the SCAP reporting requirements to include reporting on the implementation of the jump start transportation electrification strategy required by this ordinance. (Lines 198-199)

**Follow-up Questions from ME Committee on November 19th, 2019**

During the committee meeting on November 19th, several councilmembers asked questions related to calculating the GHG reduction benefits and costs of electrifying the fleet and transit service in general.

Executive staff did not provide specific quantitative responses to these questions. Metro reports it has just begun the process to develop updated incremental costs for fleet electrification. Metro anticipates that the costs are likely to be greater than estimated in the 2017 feasibility report. Additionally, Metro did note that the agency is expecting to have updated cost and GHG emission reduction estimates as part of the Metro Connects update, as well as for the September 2020 proviso response.

Metro reports that the analysis comparing the GHG benefits of fleet electrification to expanding service is complex involving many assumptions, modeling, and caveats. For example, to determine the impact of additional transit service on GHG emissions, Metro would follow the model developed by the American Public Transportation Association and the Transit Cooperative Research Program. This model has been used by Metro to estimate that Metro avoided 598,110 tons of GHG in 2017.

This model estimates displaced emissions based on three factors: mode shift, congestion relief, and land-use change

* Mode shift emissions are based on the passenger miles traveled on Metro buses, the percent of passengers that would otherwise travel by car, and the emissions from the avoided car trips based on average vehicle occupancy, average vehicle fuel efficiency, and vehicle emissions.
* Congestion relief from public transportation reflects improved fuel efficiency from reduced road congestion.
* Land use emissions reflect shorter and reduced trips as more compact land-use reduces commute distances. Land use impacts represent by far the largest impacts, but also take the most time to realize.



The above Figure is from a 2009 report published by APTA, Recommended Practice for Quantifying Greenhouse Gas Emissions from Transit**.**

**STRIKING AMENDMENT**

The attached striking amendment makes the following substantive changes to Proposed Ordinance 2019-0435:

*Metro Electrification Targets Changed to Goals, Not Requirements.*

The striker would delete language requiring electrification by certain dates and instead establish goals for electrification. However, most of the target dates for electrification are not changed from Proposed Ordinance 2019-0435. The target dates for heavy duty vehicles are extended consistent with the 2019 Carbon Neutral Implementation Plan[[14]](#footnote-14). The following vehicle electrification target dates are included in the striker on lines 113-124:

* A one-hundred-percent zero-emission revenue bus fleet by 2035
* A sixty-seven-percent zero-emission ADA paratransit fleet by 2030
* A one-hundred-percent zero-emission rideshare fleet by 2030
* Installation of one hundred twenty-five chargers at King County-owned park and rides by 2030
* Fifty percent of light-duty vehicles are transitioned to electric by 2025 and one hundred percent by 2030
* Fifty percent of medium-duty vehicles are transitioned to electric by 2028 and one hundred percent by 2033
* Fifty percent of heavy-duty vehicles are transitioned to electric vehicles by 2038 and one hundred percent by 2043
* Installation of 150 chargers by 2030 in county facilities.

*Moves Many Metro Transit Requirements to Title 28 of the King County Code*

At the request of Metro, the striker would move requirements related to Metro to the Public Transit section of the King County Code, Title 28.94.

*Adds Omnibus Report Requirements and Makes Other Reporting Changes*

The striker would make the following changes related to reporting:

* Aligns the reporting requirements related to the development of a battery bus implementation plan (Striker lines 240-270) and a report on charging infrastructure in new developments (Striker lines 162-173) with the reporting requirements adopted as provisos as part of the Omnibus Ordinance 19021.
* Moves the requirement for the evaluation of zero-emission ADA paratransit (Striker lines 258-260) to a component of the battery bus implementation plan.
* Adds a requirement for an evaluation of options for increasing electric charging or other zero-emission vehicle technologies at King County-owned park and rides. (Striker lines 261-265)
* Adds a transmittal due date of September 14, 2020 for the evaluations and reports in the proposed ordinance. The transmittal date is consistent with the proviso due dates in Ordinance 19021.
* Modifies the biennial reporting requirements for progress reports on the Jump Start electrification strategy to specify that the progress reports are required to include updates on the battery bus implementation plan. These updates are to occur beginning in 2021.
* Clarifies that the Biennial SCAP progress report already required in code is not transmitted in years in which the SCAP is transmitted

*Establishes Requirement to Purchase Light-Duty Electric Vehicles*

At the suggestion of Executive staff, the striker would add a requirement that all new light-duty vehicles purchased are electric unless the customer agency can demonstrate that there are no feasible alternatives that meet business needs and support delivery of county services. Executive staff note that in the near term, significant shortages of charging options will limit the ability to purchase light duty vehicles.

*Deletes References to “Level Two” Chargers*

Proposed Ordinance 2019-0435 includes several references to “Level Two” chargers. The striker removes those references to provide the executive flexibility in selecting the most appropriate charging infrastructure.

*Deletes Requirements for Specific Number of Chargers at Park and Rides and County Parks*

The striker would remove the requirements for a specific number of chargers at park at rides (Striker lines 261-265) and county parks (Striker lines 149-152). The striker would require the Parks and Recreation increase the number of chargers at county-operated parks, but does not specify the number by which it needs to increase. The striker would remove the requirement for to increase chargers at park and rides (Striker lines 261-265) and instead requires an evaluation (Striker lines 261-265).

*Deletes Requirement for Transmittal of Ordinance for Permitting the Siting of Electric Vehicle Charging Infrastructure.*

This EV charging stations requires an electrical permit from the State Department of Labor and Industries.  Adding parking spaces, EV or not, does not require a building permit from King County unless triggered for another reason. King County Code has no specific standards or requirements for installing the charger.  Unlike some cities, such as Seattle, King County does not perform electrical review in any building permits; the state does this.

**INVITED**

* Rachel Brombaugh, Energy Policy and Partnership Specialist, Office of King County Executive
* Diane Carlson, Director Capital Division, Metro Transit
* Tom Koney, Deputy Director, Department of Executive Services
* Matt Kuharic, Climate Change Program Coordinator, Department of Natural Resources and Parks

**ATTACHMENTS**

1. Proposed Ordinance 2019-0435
2. Striking Amendment S1
3. Title Amendment
1. King County, 2016. Green gas emissions in King County. Climate change response. Available at: http://www.kingcounty.gov/services/environment/climate/strategies/emissions-inventories.aspx [↑](#footnote-ref-1)
2. King County, 2017. Feasibility of Achieving a Carbon-neutral or Zero-Emission Fleet [↑](#footnote-ref-2)
3. Includes emissions from electricity, natural gas, vehicle fuel, and landfill/wastewater treatment methane emissions [↑](#footnote-ref-3)
4. K.C.C. 18.25.010A2 [↑](#footnote-ref-4)
5. September 2019 Metro Fleet Plan [↑](#footnote-ref-5)
6. Metro uses Federal Transit Administration (FTA) grant funds towards the purchase of the agency’s bus fleet, obligating the agency to a federal requirement to repay FTA funding if a bus is not kept in revenue service for a minimum of 12 years. [↑](#footnote-ref-6)
7. RFP# 1219-19-LSM Transitioning Metro Non-Bus Fleets to Zero-Emission Feasibility Study [↑](#footnote-ref-7)
8. The Washington State Utilities and Transportation Commission has directed investor owned utilities to convene a Transportation Electrification Stakeholder Working Group to identify and develop polices and investments that accelerate access to electric vehicles, with particular emphasis on reducing barriers for low-income residents. [↑](#footnote-ref-8)
9. Level Two charging is 240 volts which is about the same voltage required for a clothes dryer. Level Two charging can add 10-25 miles of range in an hour and is at least twice as fast as Level One charging. Level One charging uses a conventional three-prong plug that goes into any properly grounded standard household 120 volt outlet. Level one charging requires an overnight charge. <https://www.pse.com/pages/electric-cars/electric-cars-charging> [↑](#footnote-ref-9)
10. RFP#1219-19-LSM [↑](#footnote-ref-10)
11. Based on the data in Table One provided by the Department of Executive Services. [↑](#footnote-ref-11)
12. Light duty vehicles are defined by the Environmental Protection Agency as passenger vehicles and trucks with a Gross Vehicle Weight of 8,500 pounds and under. Most passenger vehicles are considered light duty. <https://www.epa.gov/emission-standards-reference-guide/vehicle-weight-classifications-emission-standards-reference-guide> [↑](#footnote-ref-12)
13. Medium duty vehicles are defined by the U.S. Department of Transportation Federal Highway Administration as having a gross vehicle weight of between 10,000 and 26,000 pounds. [↑](#footnote-ref-13)
14. King County Carbon Neutral Implementation Plan. Feb 2019. <https://www.kingcounty.gov/~/media/services/environment/climate/documents/190228-operational-carbon-neutral-plan.ashx?la=en> [↑](#footnote-ref-14)