

City of Flagstaff Fleet Electrification Policy

And supporting guidance



The City of Flagstaff will transition our fleet to electric vehicles (EVs) through a strategic and supportive **EV-first approach**.

This document outlines policy and expectations for City of Flagstaff fleet vehicle purchases and provides guidance for researching, monitoring, and ultimately choosing electric vehicles. Sections include:

1. Goals, policies and strategies
2. Benefits of electrification
3. Vehicle replacement evaluation steps
4. Considerations when purchasing electric vehicles

Goals, Policies and Strategies

Electrification goals

The City of Flagstaff will capitalize on the sustainability, financial and leadership benefits of electric vehicles (EVs) through an EV-first approach for vehicle replacements.

Policies by vehicle type

Sedans and SUVs	Starting in 2022, all new sedans and SUVs purchased by the City of Flagstaff will be EVs. *
Other light-duty vehicles	When replacing pick-up trucks and other light-duty vehicles, the City will consider EVs as the first option, followed by plug-in hybrid and hybrid options.
Medium-duty and heavy-duty vehicles	The City will monitor, test, evaluate, and, where feasible, acquire EVs for medium-duty and heavy-duty fleet vehicles and equipment categories.

Electrification strategies

1. The City will strengthen its efforts to right-size the fleet and to extend the life of fleet vehicles, prior to purchasing new electric vehicles.
2. EVs will predominantly be brought into the City fleet when existing vehicles reach their end of useful life.
3. The City will strategically prioritize Sedans, SUVs, and vehicles that drive a high number of miles annually, as the first candidates for transitioning to electric vehicles.
4. The City will monitor changes in technology and vehicle availability over time, allowing it to take advantage of the rapidly-advancing EV market.
5. The City will demonstrate regional leadership by educating, encouraging, and helping to facilitate partnerships with regional institutions and businesses.

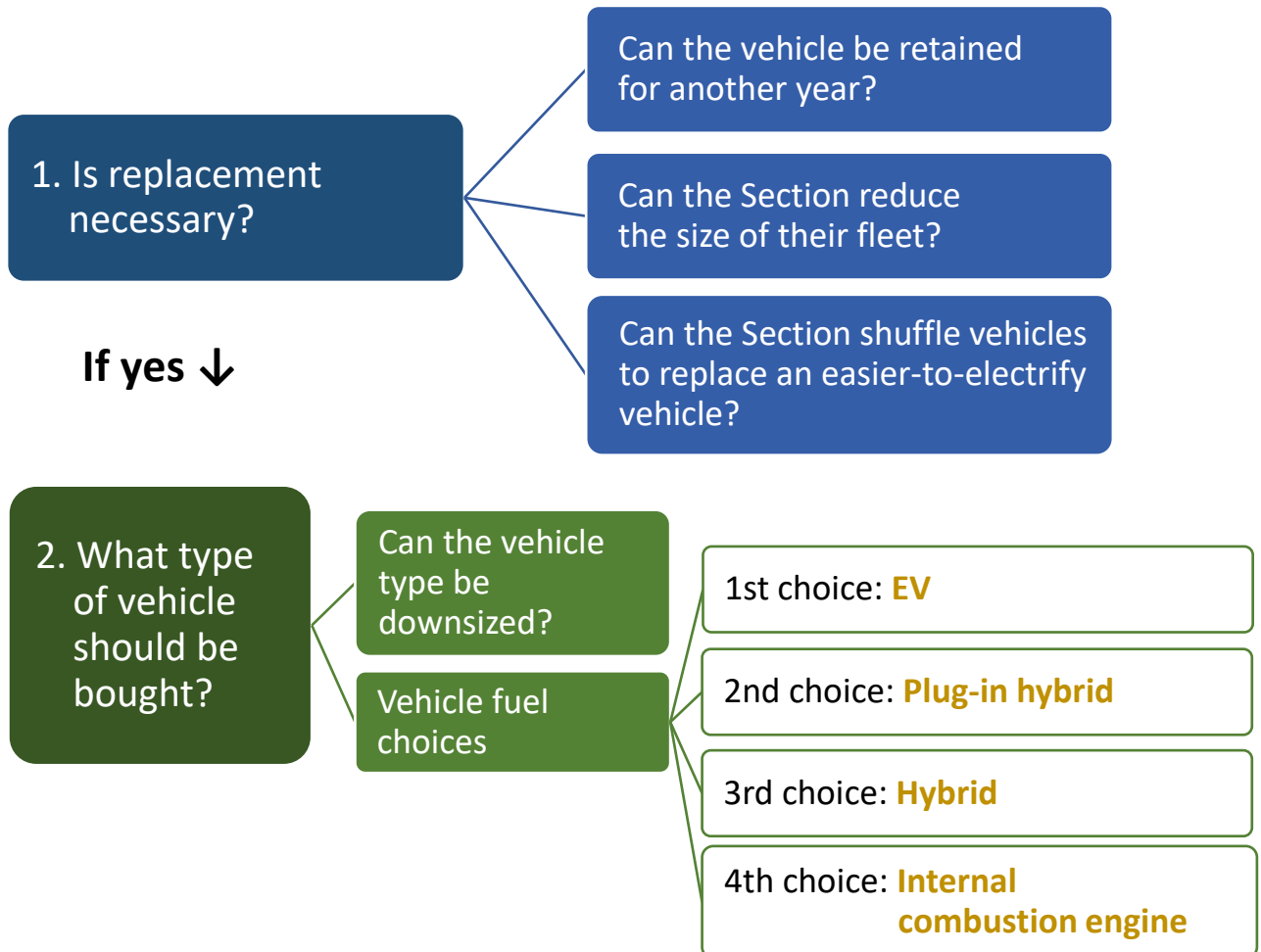
*Exceptions to this policy will be made on a case-by-case basis. The Division Director will need to submit a written justification for the exception request to the Fleet Services team and the City Manager's Office

Benefits of Electrification

The City is transitioning to electric vehicles to take advantage of the many benefits of electrification.

- **Economic:** Fueling an EV costs around 1/3 of the price of fueling a traditional vehicle. EVs are simpler, more energy-efficient machines, requiring minimal maintenance and reduced downtime.
- **Health:** EVs contribute to cleaner air quality in Flagstaff, as they do not release tailpipe emissions into the air. EVs in Flagstaff are powered by electricity that is over 1/3 clean, meaning that portion of our electricity produces zero emissions.
- **Leadership:** EV adoption positions the City to be an early-adopter in Northern Arizona, demonstrating the benefits of EVs to residents, businesses and regional institutions.
- **Alignment:** The Flagstaff Carbon Neutrality Plan, adopted in June 2021, sets goals for the City's transition to EVs. The City's leadership in electrification can help catalyze the EV transition throughout the community, another Carbon Neutrality Plan goal.
- **Operator benefits:** Electric motors provide increased torque, smooth acceleration, and an extremely quiet running car.
- **Environment and Alignment:** EVs produce significantly lower greenhouse gas (GHG) emissions than internal combustion engines (ICEs). GHG emissions are the primary contributor to climate change, which is a global emergency. The Flagstaff Carbon Neutrality Plan, adopted in June 2021, sets aggressive goals for reducing greenhouse gas emissions caused by the City of Flagstaff, and establishes goals for the City's transition to EVs. The City's leadership in electrification can catalyze the EV transition throughout the Flagstaff community, supporting another Carbon Neutrality Plan goal.

Vehicle replacement evaluation steps



Vehicle purchasing considerations

The City of Flagstaff fleet will transition to electric motors through a deliberate progression where electric vehicles replace retiring fleet vehicles or are purchased for new fleet needs. To ensure this transition attains maximum benefits for the City, the following factors should be weighed during each vehicle retirement/purchase.

- **Timeline:** The transition to EVs will be a multi-year process requiring sustained commitment.
 - o Electric vehicles will be purchased for new fleet needs or upon a fleet vehicle retirement. This means that the fleet will be electrified *slowly*: because the City does not upgrade vehicles prior to their retirement, it takes many years for the composition of the City's fleet to change.
- **Vehicle retention:** Retaining vehicles for longer time periods is often the most sustainable option.
 - o Is a new vehicle truly required? If the vehicle is operationally and financially acceptable, it is sometimes more sustainable to retain a vehicle, and either continue its current use or repurpose the vehicle.
 - The manufacturing of new vehicles consumes significant resources and creates significant environmental impact. The City will not retire vehicles early solely to purchase EVs: vehicle retirements are based on financial and operational considerations, and are carefully planned by the Fleet Committee and staff leads to balance vehicle life, financial considerations, and operational needs.
 - o The EV market is evolving rapidly, and more and more affordable and versatile EVs are becoming available each year. Sometimes waiting one year can translate to a greater selection of EVs that may meet a section's operational needs, and a better long-term investment for the City.
- **Vehicle availability:** Limited EV availability calls for staff creativity and flexibility, and may open up opportunities for fleet rightsizing and efficiencies.
 - o While the options grow each year, EVs are currently only available in select models and vehicle types. An EV version will not be available for every internal combustion engine (ICE) vehicle model currently driven: City staff will need to look beyond the vehicles they currently utilize when a replacement is needed.
 - o Currently, EVs are more likely to be offered for sedan and small SUV models. Staff are encouraged to consider downsizing their requested vehicle type to allow for the use of an EV, while also accruing other benefits to the City due to lower fuel use and a lower purchase price.
 - o Sometimes, available EVs will not meet the operational needs of the section; neither will plug-in hybrid nor hybrid options, and a conventional vehicle will need to be purchased. This is expected for medium- and heavy-duty vehicles over the next few years.
 - o Fleet and Sustainability staff are able to support staff in reviewing and selecting available EV, plug-in hybrid, or hybrid models.
- **Operational needs:** While some City fleet needs are well-suited for EVs, other City operations are not appropriate for EVs at this time.
 - o We anticipate that medium- and heavy-duty vehicles will not have appropriate EV options in the next two years. Trucks and other light-duty vehicles also currently have limited options, though the next two to three years will see significant expansions in options. EV appropriateness will be evaluated on a vehicle-by-vehicle basis.
 - o City staff will continue to monitor the evolving EV landscape and will investigate new EV offerings for trucks, medium- and heavy-duty equipment. We do anticipate that

eventually most fleet vehicles will be electric, as the market transitions over the coming decades.

- **Exceptions to the EV policy:** Sections are strongly encouraged to work through anticipated obstacles from replacing fleet with an EV sedan or SUV with Fleet Services and Sustainability staff.
 - o If a section would like to purchase a sedan or an SUV that is non-electric, the Division director must submit a memo to the Fleet Committee and City Manager's Office explaining why the Division operations are incompatible with an electric vehicle.
- **Return on investment:** While EVs may have a higher purchase price than conventional ICE vehicles, they offer operational savings through lower fuel and maintenance costs.
 - o EVs are usually a higher price when compared to the same ICE model, though EV options may provide cost-savings if the vehicle is appropriate for downsizing. For example, replacing an ICE Ford Explorer (full-size SUV) with a Toyota Rav-4 Plug-in hybrid (small SUV) will achieve savings both in up-front purchase price and fueling costs.
 - o Additional costs may be incurred through the installation of charging infrastructure at a City facility. Fleet Services will help the Section plan for this investment, and may be able to assist with funding.
 - o Fueling a vehicle with electricity is cost-effective and energy-efficient: powering an EV with electricity is like buying gas for around \$1.10 per gallon.¹
 - o Electric vehicles require significantly less maintenance, due to fewer parts and a less complex mechanical set-up. Oil changes are not necessary.
- **Charging infrastructure:** The City will add charging infrastructure at City Facilities strategically, first on an as-needed basis, upon the procurement of an EV, and then methodically ensuring all City facilities eventually have charging infrastructure.
 - o Currently, five City facilities have EV charging infrastructure:
 - City Hall
 - Water Services – East Commerce Shop
 - Main library (garage – employee use only)
 - Core Services
 - Aquaplex
 - o Staff are currently working to develop charging infrastructure at the airport. Other locations are also being considered for APS-funded charging stations.
 - o As new EVs are purchased, Fleet Services and Sustainability will work with the Section to install EV charging infrastructure at the appropriate City of Flagstaff facility.
- **Charging operations:** EVs require different fueling practices that may require operational adjustments.
 - o It takes longer to fuel an EV than a conventional vehicle. However, fueling can be done at the workplace, rather than at one of the City's fueling stations or a gas station, and is a passive activity – the presence of a City employee is not required beyond the initial plug-in. In this way, it's possible that EVs will provide operational efficiencies.
 - o Most new sedan and SUV EVs now offer driving ranges of between 150 and 250 miles. As new vehicle types and models become electric, they may offer lower ranges. Plug-in hybrids offer between 20 and 40 miles per charge, allowing most daily miles to be driven on the electric battery.
 - o Due to the range of EV batteries and the small geographic size of Flagstaff, most daily City operations will not approach the limits of the EV battery. Most daily EV usage does not

¹ <https://www.energy.gov/articles/egallon-how-much-cheaper-it-drive-electricity>

approach the limits of the battery, and therefore daily charging is simply a 'top off.' Some EV users charge just once a week.

- For most sections, EV charging will not require major changes to operations: EVs will be able to meet daily operational needs without a charge during the day. Charging can be done in the evening, after work hours, by simply plugging in the vehicle.
- Some section operations will present barriers to EV usage due to high mileage days, low range available for the vehicle type, or other obstacles. Potential operational barriers can be identified prior to purchase, and we will support staff in creating a plan to make acceptable changes to operations.
- **Take-home vehicles:** The City is exploring options for using EVs as take-home vehicles.
 - Eventually, The City will electrify the entire fleet, including take-home vehicles. Take-home vehicles present challenges with charging/fueling that ICE vehicles do not. City Fleet and Sustainability staff are working to develop solutions based on national best practices.
 - Staff receive take-home vehicles because it optimizes operations for the City. Staff will endeavor to maintain take-home vehicle arrangements, and will work to avoid changing a take-home vehicle arrangement due to electrification needs.
 - Considerations include the potential charging equipment, charging operations, reimbursements for electricity use, and more. Dialogue on this topic is ongoing and will include feedback from Risk, HR, and other sections.
 - This program will likely start with a pilot launch to test take-home vehicle charging, using one or two vehicles and City staff who volunteer to help us lead and learn. Take home vehicles will be considered for electrification on a case by case basis.
- **Fleet rightsizing:** EV procurement will support the City's ongoing efforts to optimize the size of the City fleet.
 - The Fleet Management Committee analyses fleet utilization each year, and identifies potential reductions to the number of vehicles required to complete the city's duties. Optimization can be achieved by eliminating or reassigning unused or under-utilized equipment and by promoting the use of pool vehicles and shared vehicle use across sections.
 - The City encourages the selection of vehicles of a smaller class size whenever possible to achieve increased miles per gallon, lower emissions (regardless of fuel type), and lower costs. Fleet or Sustainability staff will work City sections to evaluate if a proposed vehicle could be downsized and still fulfill its required functions.

Support for City staff

Fleet Services, Sustainability and Procurement staff will work to support other sections in EV purchases:

1. **Vehicle availability research**
 - A supporting document to this policy provides introductory information on electrification and electric vehicles.
2. **Vehicle selection support**
 - Financial analysis for cost-savings from reduced fuel costs
3. **Charging planning:**
 - Evaluating optimal charging locations
 - Developing EV charging infrastructure at City facilities
 - Evaluating and assisting with operational changes needed to ensure efficient charging
4. **Updated vehicle replacement/procurement forms for the Fleet Management Committee**