



The goal of the **Electric Vehicle (EV) Ad Hoc Committee** is to develop an ambitious and equitable roadmap on vehicle electrification for the City of Phoenix. This Ad Hoc Committee will evaluate and develop recommendations to City Council that will create the conditions necessary for Phoenix to transition to electric vehicles and tackle some of the leading issues our city is facing, including climate change and poor air quality. The Ad Hoc Committee sunsets on June 30, 2022. Please refer to the *Electric Vehicle Key Terms and Acronyms* document for the broad types of technology associated with the term ‘electric vehicle.’

The following is a list of the Committee goals, including some of the important issues the Ad Hoc Committee may wish to consider as part of its scope:

1) Electric Vehicle Charging Infrastructure

a. City Fleet - EV Charging Infrastructure

- Primary need is charging infrastructure for light-duty vehicles (Limited need in the near term for charging infrastructure for medium- and heavy-duty equipment due to limited equipment availability.).
- The Ad Hoc Committee’s initial focus will be on light-duty vehicles as the preponderance of city vehicle types. Medium-duty and heavy-duty vehicles, and their charging infrastructure and/or propulsion technology, are much more complex and continue to experience frequent and rapid technology changes, depending on the vehicle use.
- Significant variance in the cost of charging infrastructure (\$5K-\$40K) per dual port charging stall, as it is impacted by:
 - venue (parking garages can mount cables on walls while many surface lots would require more costly trenching);
 - available space for such improvements to infrastructure;
 - distance of equipment from electrical panels (length of run);
 - charging equipment type (wall plug versus networked smart chargers);
 - electrical panel capacity (often only able to accommodate 1-4 new loads);
 - utility electrical transformer capacity (new transformer is \$25K-\$75K); and
 - mix of EV charging equipment (Level 1, 2, or DC Fast Charge) that is most efficient and effective for different fleet segments as well as the ability to capture usage data (i.e., non-networked provide minimal charging data while networked provide detailed data and time-of-use logs).
- Goals and timelines for procurement and installation.

b. Public – EV Charging Infrastructure

According to Forbes.com “Mass Adoption of Electric Vehicles Triggers Needed Infrastructure Changes” Jan. 27, 2021, lack of access to EV charging infrastructure is cited as a barrier to EV adoption by the public, particularly for residents in multi-family buildings. Some segments of the Phoenix population do not have access to public EV charging infrastructure.

- Review existing and forecasted EV growth data to identify EV charging infrastructure needs and develop a list of recommended areas for additional charging infrastructure installations on City-managed properties, including the potential for charging infrastructure adjacent to on-street parking.



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- Evaluate alternatives for payment structures (no cost vs. paid, and other variations) for public EV charging sessions inclusive/exclusive of current parking fees.
 - Identify installation costs and local, state, and federal funding opportunities to support capital and operating expenses.
 - Identify alternative funding strategies such as advertising-funded charging stations. (Currently, advertising is restricted in the rights of way.)
 - Consider “managed charging” to optimize time-of-use loads and demand charges.
 - Evaluate options for incentives/requirements of “EV Ready Building Codes” and streamlined permit process for new construction, retrofit and major upgrades of multi-family, single-family, and commercial properties.
 - Identify the parties responsible for the installation, operation, and maintenance in order to create an annual funding program.
 - Evaluate site-specific available spaces for the needed improvements to infrastructure.
 - Communicate and work with development stakeholders (home builders, multi-family and commercial developers groups) to gain their support and gather input regarding best practices for EV charging implementation.

c. Workplace – EV Charging Infrastructure

Workplace EV charging can help eliminate one of the major barriers to EV adoption — a lack of charging infrastructure and the associated “range anxiety.” Expanding workplace charging may improve access to EV charging where individuals with limited or no residential charging options can use their workplace as an additional charging location.

- Evaluate alternative payment structures (no cost vs. payment) for employee EV charging, considering return on investment, reimbursement of utility bills, and equipment maintenance. (Currently it is no-cost to the employee, when available, and at a reduced parking rate (\$10/month) for EVs parking in downtown garages.)
- Review infrastructure needs and recommend locations for additional charging infrastructure installations for workplace/employee charging.
- Consider an EV user etiquette policy to maximize use of charging infrastructure (i.e., vacate parking stall when charging session is complete).
- Evaluate level and type of charging to be installed (level 1-2, and networked or non-networked).
- Identify the parties responsible for the installation, operation, and maintenance in order to create an annual funding program.
- Evaluate available space for such improvements to infrastructure.

2) EV Education/Outreach Campaigns and Partnerships

EV education and outreach campaigns can increase public awareness and help to accelerate the transition to EVs. The City of Phoenix can continue to coordinate with public- and private-sector partners to increase EV use and ownership and charging station installations. Providing a consolidated source of EV information can help to dispel misconceptions about EV performance, cost, and the process of installing EV charging infrastructure.



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- Review existing partnerships with utility companies and other partners and recommend opportunities to leverage additional resources.
 - Support EV education and awareness campaigns.

3) EV Municipal Fleet Goals

Transitions from fossil-fueled fleet vehicles to EV replacements can save taxpayer dollars based on total cost of ownership, reduced emissions, and result in healthier outcomes for Phoenix residents. Fleet transitions should be considered for light, medium, and heavy-duty fleet segments. The City's draft Climate Action Plan has an initial goal for 200 light-duty EVs by 2030.

- Currently, city "fleet" includes many types of on-road and off-road equipment. EV Policy may wish to target only "Eligible Vehicles" as defined by the following criteria
 - i. Vehicles due, or nearly due, for replacement.
 - ii. Electric vehicles exist that meet business needs (i.e., required ranges to meet operational needs, miles travelled per day, sufficient non-use times available for charging, anticipated advances in technology for particular vehicles/industries).
 - iii. Similar in price to alternatives based on total cost of ownership (purchase price + lifetime operating and maintenance costs, to include the installation of necessary infrastructure).
- Recommend EV fleet goals, timelines, and metrics of success.
- Evaluate EV fleet transition purchasing policies that may require EV as a first-choice option, where applicable, and make and model availability meets the user needs.
- Identify local, state, and federal funding opportunities to support capital and operating expenses.

4) EV Equity

According to the Greenlining Institute, EVs can be a significant factor in reducing pollution and climate change, as they produce fewer carbon emissions than gasoline-powered vehicles. EVs also cost less to fuel up and maintain than conventional gasoline-powered vehicles, helping EV owners save money once the necessary infrastructure is in place. Such benefits make it important to help underserved communities' access EV technology – because they are the hardest hit by transportation-related pollution and spend a disproportionate amount of their income on gas and public transit fares.

- a. Review and identify underserved communities and develop/recommend a needs assessment survey to understand community mobility preferences.
 - Review demographic data in low income areas to determine zero- and one-car households. Transit-dependent communities may have different needs than electric vehicle charging stations.
 - Identify incentive programs such as vouchers, rebates, carsharing, and financing programs to bring EV cost of ownership down for low-income residents.
 - Recommend programs in underserved communities that help low income residents apply for financial incentives through technical assistance programs.

ELECTRIC VEHICLE AD HOC COMMITTEE

Electric Vehicle Charge and Goals



City of Phoenix

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- Recommend EV awareness campaigns and partner with local trusted community members to assist in building trust and ensuring EV messaging and materials are culturally sensitive, relevant, and available in key languages.
 - Consider zoning ordinance text amendments to support and incentivize electric charging for projects within low to moderate income census tracts.

5) Administrative Needs

Staff support will be needed to manage the Ad Hoc Committee's EV recommendations.

- a. Review staffing needs and budget resources, as needed.

Ad Hoc Committee Organization

Proposed Subcommittee Structure: (1) City Fleet and Charging Infrastructure; (2) Public/Workplace/Home Charging Infrastructure; (3) Education, Outreach, and Equity.

Subcommittees must have a minimum of 3 members and a maximum of 6 members, each.