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A resolution declaring the intent of the Toledo City Council to replace the City Fleet's oldest, least efficient vehicles with efficient and cost-effective Electric Vehicles

BACKGROUND:

While the purchasing price of Electric Vehicles (EVs) is quickly finding parity with gasoline-fueled vehicles, already their lower maintenance and fuel costs can yield significant savings over time, and furthermore, the operation of an EV greatly reduces carbon emissions that are correlated with negative global environmental effects and air quality reduction in the Toledo region. Automakers are sensing the shift in America's market for new fuel-efficient vehicles as consumers are purchasing according to their environmental and financial priorities, and lowering the overall cost of purchasing an EV as they become more available. From 2010 to 2022, the number of light-duty EV models for sale in the United States grew from one single model to over 130 models. There are also tax credits available through the 2022 Inflation Reduction Act (IRA) which strongly incentivize the purchasing of EVs. Taken together, there are a myriad of reasons why Electric Vehicles are beneficial from financial, environmental, and public health lenses.

1. **Efficiency**
   a. EVs take advantage of the inherent high efficiency of electric motors, making the average EV 3.6 times more energy efficient than a similar conventional vehicle.
   b. Because EVs are more efficient than conventional vehicles, they use far less energy and, considering the lower cost of electricity compared to gasoline, have substantially lower operating costs. Efficiency for EVs is typically expressed in miles per gallon of gasoline equivalent (MPGe), which represents the number of miles a vehicle can travel using a quantity of electricity with the same energy content as a gallon of gasoline (33 kilowatt-hours [kWh]).
   c. While the cost of charging will depend on the cost of electricity in particular areas, the high fuel economy of EVs leads to lower fueling costs compared to gasoline or diesel vehicles. For example, the electricity required to drive an EV 15,000 miles in a year costs an average of $600, while the gasoline required to drive the same distance averages $2,700, representing a savings of over $2,100 per year. (The analysis assumes 55% city driving and 45% highway driving, and fuel costs of $3.999/gallon.)

d. Total Cost of Ownership (TCO) tests performed by the State non-profit Power a Clean Future Ohio (PCFO) and the Electrification Coalition on our existing fleet in Toledo versus their electric equivalents showed the potential for cost savings that begin immediately, for certain classes of vehicles. Our minivans' TCO per mile is $1.29, while the EV cost per mile would be $1.00. For motorcycles, the TCO per mile drops from $0.43 to $0.31, and for SUV's, the TCO per mile drops from $4.25 to $3.87 when switching to electric vehicles. The analysis concluded that the biggest potential savings exist with our sedan class, which constitutes a larger part of the fleet than other vehicles (51%). The TCO per mile for sedans is $0.74 and $0.54 for EV's.

2. Emissions

a. The transportation sector is responsible for 29 percent of all U.S. greenhouse gas (GHG) emissions, more than any other U.S. sector, and approximately 60 percent of these emissions come from passenger vehicles. Compared to conventional vehicles, EVs have significantly lower GHG emissions, especially if electricity is generated with renewable energy sources like hydroelectric, solar, or wind.

b. In 2024, the EPA Air Quality Stakeholders Meeting made clear that Lucas County is non-compliant with new VOC and NOx standards, which directly correlate to ozone pollution. Noncompliance with Ozone standards negatively impacts economic development opportunities, as new companies and some existing businesses will be subject to stricter emissions regulations and will be required to eliminate their VOC and NOx emissions through air pollution control infrastructure or proof of greenhouse gas emission offsets.

c. The Ohio EPA confirmed that Ozone pollution is non-point source, meaning it cannot be traced to a source; it is from atmospheric mixing of air pollutants. The largest single air pollution category in Toledo/Lucas County are vehicle operation and idling.

d. Fleet vehicles are tracked through the Samsara technology, allowing us to quantify wasted fuel from idling vehicles. In 2024, wasted fuel amounted to 76,000 gallons of gasoline in City of Toledo vehicles. The annual cost of that waste is $512,341.23. The total emissions produced from this wasted fuel are 676 metric tons of CO_2e.

3. Quality of Life

a. The tailpipe emissions from internal combustion engine vehicles cause air pollution, which leads to adverse health impacts. These impacts are predominant in urban areas, which encompass most areas designated to be in nonattainment with Federal air quality standards. Urban residents experience significantly more unhealthy air-quality days than rural residents, including about 12 times more excessive ozone days and 12 times more excessive PM2.5 days per year.

b. Urban areas have an average background noise level of 60 decibels, with regular spikes up to 85 decibels or more, and the two largest sources of this environmental noise are transportation and industrial activity. The World Health Organization has found that traffic noise is second only to air pollution in impacting public health, and various studies have linked noise exposure to increased risk for insomnia, high stress levels, cardiometabolic diseases, and cardiovascular diseases and strokes.

c. In contrast to an internal combustion engine vehicle, EVs, including electric buses, can be virtually inaudible due to a lack of engine noise. This is especially true in urban centers and residential areas, where most vehicle noise is created by engines and not by wind and tire noise, as on highways. The reduction of noise levels through the introduction of EVs offers community benefits by reducing general noise pollution, as well as individual benefits for the driver of the vehicle, potentially lowering stress level.

4. Maintenance and Longevity

a. In addition to fuel savings, average maintenance and repair costs for an EV are up to 50 percent lower than a conventional vehicle, as EVs are free of many vehicle components that require regular maintenance (e.g., engine oil, spark plugs, air filter, transmission fluid). The use of regenerative braking also reduces brake maintenance costs. These cost savings are important for urban households, for which transportation is a significant part of the household budget, as seen in the table below. Drivers who switch to an EV could potentially save thousands of dollars in maintenance costs over the vehicle's lifetime.

b. The Electric Vehicle Infrastructure Training Program (EVITP) provides training and certification for electricians installing EVSE. The EVITP is the only EV charging-specific, brand-neutral training program that exists today and is utilized by both large and small contractors. It was created through a collaboration of many stakeholders to provide qualified electricians for the installation, operations, and maintenance of EVSE.

5. Charging

a. While EV charging takes longer than refueling a vehicle with gasoline, convenient at-home and workplace charging is sufficient to support most urban travel and eliminates the need to drive to a gas station, saving time and money. In fact, more than 80 percent of EV drivers rely on home charging.

b. Some EVs can themselves serve as a power source for electrical tools, equipment, and lighting for commercial and recreational purposes. When coupled with bidirectional chargers, EV batteries can even power homes during blackouts and extreme weather events in place of diesel generators. Several automakers have released EVs with bidirectional charging capability. While the amount of time that an EV could offer backup power depends on the size of the battery, at least one recent model could power a house for up to three days based on daily average usage of 30 kWh. EVs can be complementary to residential renewable energy generation like rooftop solar by providing battery storage capacity, acting as a backup power source for homes and potentially selling energy back to the grid at high-demand times.

c. Given the time required even when using fast charging infrastructure, EV drivers may also be inclined to combine their refueling stops with other activities, including visits to local stores, restaurants, parks, and attractions in the vicinity. Providing EV charging stations can thus enable urban communities to draw regional travelers driving EVs and to stay connected to the broader EV charging network, benefiting both local residents and outside visitors alike, as well as bringing in revenue for local businesses.

d. For site planners pursuing a networked charging station—a charging station that is connected to the Internet through cellular or wired broadband service to enable payment, access management, and usage monitoring—a charging network can be a logical partner to engage early in the site-level planning process. As partners, charging networks can bring technical expertise and facilitate connections to other important project stakeholders, such as architects, engineers, and contractors. They also develop training resources, such as specifications and installation guides, for EV installers.

e. Once charging stations are installed and activated, the network can help a site owner or tenant set up the charging station policies, including pricing, access control, administration rights, and advertisements. Note that chargers installed with most Federal funding sources will be subject to 23 CFR 680, which establishes minimum standards for many of these types of policies. In addition, a charging network can provide advice to the charging infrastructure site planner on best practices for running the charging station based on experience with other sites, including those in similar contexts or geographic locations.

f. TMACOG contracted with Burgess & Niple to develop the Electric Vehicle Infrastructure Implementation Plan. This plan outlines the strategy for enhancing EV charging infrastructure in the TMACOG region which includes the counties Lucas, Wood, Sandusky, and Ottawa in Ohio and Monroe County in Michigan. Additionally, the plan offers implementation guidance and financial analysis to support the development and operation of EV charging stations.

THEREFORE BE IT RESOLVED: By the City Council of Toledo, that we will prioritize the replacement of existing gas-powered vehicles with cost effective and environmentally friendly EV alternatives.

Part 1: Fleet must analyze the operating list of VIN numbers listed in the PCFO DRVE report to find the most replaceable vehicles and bring forth to council those that can be switched to EVs. Fleet must prioritize vehicles beginning with full electric, then plug-in hybrid, hybrid, and last internal combustion engines.

Part 2: We must prioritize the installation of EV chargers in the downtown and at City-owned properties throughout Toledo.

Part 3: The City must allocate funding for Fleet & Facility employees to be EVSE trained through the EVITP and for EV maintenance and operation training as recommended by the Fleet Manager.

Part 4: The Sustainability Manager shall monitor and report annually on implementation status, including number of vehicles converted, charging costs, maintenance costs, equipment costs, and the mass of greenhouse gas emissions avoided through EV conversions.

Part 5: Until the conversion is completed, The City must utilize the Samsara system or equivalent to implement anti-idling capabilities through telematics in the fleet, where possible.