

HOW ONE NORTH TEXAS FLEET FOUND SUCCESS WITH ELECTRIC VEHICLES

Summer 2020



Fleet electrification has become an ever-increasing hot topic in the last few years. Data supporting fuel and maintenance savings and available funding for electric vehicles (EV) have many fleet managers considering incorporating EVs into their fleet for the first time. However, the idea of fleet electrification can also invoke a lot of anxiety for fleet managers.

Many fleet managers worry that an EV may not be well suited to crucial fleet operations, and that charging infrastructure and charging time may be a hassle.

However, one North Texas fleet has found great success in using light-duty EVs in various applications.

The City of Lewisville first began exploring ways to improve sustainability in 2013, when Internal Services Manager Francis Mascarenhas was tasked by City Management with improving sustainability in the city's fleet.

Following a detailed city data audit on all fleet and facilities as part of the Lewisville 2025 plan, a report was released on ways the Lewisville's fleet could improve is sustainability. Mascarenhas then approached city management and the city council to discuss EVs.

"I went to a couple of departments," says Mascarenhas. "The answer I got was 'these are small, there's no legroom, there's no storage.'"

In spite of initial concerns, after test driving two Nissan LEAFs for two weeks through a local Nissan dealer, the city found that full EV best served departments such as Neighborhood, Environmental and Health Services.

As of 2020, Lewisville now owns and operates ten battery EVs, including both Nissan LEAFs and Chevy Bolts, as well as 14 hybrid-electric vehicles.



City of Lewisville's DCFC Charging Station on Their Fleet Lot.

Lewisville's fully electric fleet has traveled a total of 91 thousand miles since their implementation in March 2016, and experiences with the vehicles have been overwhelmingly positive.

"Based on staff response, things have gone pretty well, and they seem pretty happy with the maintenance part," says Chris McGinn, Director of Neighborhood and Inspection Services.

Lewisville's EV Fleet by the Numbers



10

Battery Electric Vehicles in 2020



\$1000+

Annual Savings on Maintenance



91,000

Vehicle Miles Traveled




2¢

per mile in Charging Costs



150-260

Miles of Range per Charge



Maintenance on conventional gasoline-powered vehicles can be frequent and costly. In Lewisville, EVs have proven to be easier to maintain – saving the city over a thousand dollars annually in maintenance costs.

“Otherwise, normally, any standard gas truck – every three months, it’s an oil change, fluid change,” says Mascarenhas. “So [the EVs] don’t have to come every time to the shop. No, they come once a year. It saves their time, mechanics’ time and shop time.” For more complex repairs, the vehicles are to be taken to the nearby dealership. Fortunately, Lewisville hasn’t run into any major issues with their EVs, and when it comes to the smaller repairs, Nissan provided training for fleet mechanics.

Range has also improved drastically over the years as newer EVs equipped with better mileage have come out. Today, Lewisville’s EV fleet get between 150 and 260 miles per charge. Because of the positive experience, the city is even considering implementing electric vehicles in other departments. “The Chevy Bolt gets 260 miles, so we eventually would like to buy one for police for their parking enforcement officers,” says Mascarenhas.

Apart from range, many fleet managers worry about charging infrastructure acquisition and costs. For Lewisville, this was one of the easiest parts of the transition. “Basically we got all these chargers free from Nissan,” says Mascarenhas. “Every time we bought two or three [vehicles], they said ‘we’ll give you one charger, two chargers.’ So, we got all of these for free.” All in all, the city was able to acquire a Level I charger for each vehicle, two Level II chargers and one DC fast charger, which can fully charge a vehicle in just 30 minutes.

Additionally, driver feedback has been entirely positive. Drew Christ, Economic Development Specialist, drives a fleet Nissan LEAF regularly, and says that aside from being reliable, clean and quiet, the vehicles generate quite a bit of community interest and support for the city on his outings.

“The homeowners are always curious,” says Christ. “I go to interview them for whatever grant they’re applying for, and then it always turns into ‘can I come see your car?’ And I have the conversation with them that I’m having with you. We cannot project an expectation on our community about sustainability and efficiency if we’re not choosing to walk the walk and show that it can be done.”

After an exceedingly positive overall experience with EVs, Lewisville’s future plans include the acquisition of more EVs, as well as the installation of some public chargers for EV-driving citizens.

To learn more about electric vehicles and infrastructure, visit Electric Vehicles North Texas Initiative through DFW Clean Cities at www.dfwcleancities.org. *The Dallas-Fort Worth (DFW) Clean Cities Coalition is hosted within the NCTCOG. DFW was one of the first regions to be designated as part of the Department of Energy Clean Cities initiative in 1995 to reduce transportation energy use and improve air quality.*