FORM GEN. 160 (Rev. 8-12)

CITY OF LOS ANGELES

INTER-DEPARTMENTAL CORRESPONDENCE

DATE: September 13, 2022

TO: Honorable Mitch O'Farrell, Chair
Honorable Paul Koretz
Honorable Gil. A. Cedillo
Honorable Kevin de León
Honorable Paul Krekorian

FROM: Keith Mozee, Executive Director and General Manager
Bureau of Street Services (StreetsLA)

SUBJECT: **STREETSLA ELECTRIC VEHICLE (EV) FLEET UPDATE CITY OF LOS ANGELES ELECTRIC VEHICLE MASTER PLAN, STREETSLA RESPONSE TO CF 21-0890**

Pursuant to Council File No. 21-0890, The Bureau of Street Services (StreetsLA) has been instructed to report on the Bureau's electric vehicle fleet efforts to date, and a plan forward towards meeting the City of Los Angeles' (City's) goal of zero carbon transportation by 2050, in compliance with LA's Green New Deal. The Bureau is aggressively driving improvements through operational changes and piloting zero emissions vehicles, along with fuel flexible strategies, to obtain its goal of zero carbon transportation by 2050, with some caveats delineated in Challenge No. 6 - Page 6. An innovative, fuel-flexible strategy can significantly reduce emissions during the transition to an all-electric, zero-emissions fleet. StreetsLA is proud of its efforts to date but understands the need to be up-to-date on innovative technologies that are rapidly becoming available to meet the City's goals.

Background

In April 2020, the Bureau hired a FUSE Fellow to assess, measure and reduce StreetsLA's carbon and air pollution emissions. Based on findings the Bureau developed a baseline model to evaluate the environmental impacts of its 1,300 vehicle fleet. Utilizing the life cycle assessment (LCA) methodology, we adapted the Argonne National Laboratory AFLEET tool to reflect local conditions in Southern California and the variety of vehicle types operated by our Bureau.

Environmental impacts were measured across the lifecycle of each vehicle class-from the fuel used through to the end of service life. In addition to evaluating greenhouse gas (GHG) emissions, the tool measured criteria pollutants such as particulate matter (PM) and the total cost to human health and the environment. The project scope separately evaluated an additional 1,000 extra-large equipment that are trailered to each work location, and smaller powered hand tools, batteries, trailers, and other stationary materials processing equipment and separately evaluated the asphalt,

concrete and tree waste used and reused in our city street operations. The study showed that 1,080 vehicles in the fleet use over 1.25, gallon fuel emitting 13k metric tons of CO2e per year.

In 2020, the Department of General Services (GSD) conducted a pilot for the use of Renewable Diesel (RD) from Tac Energy at the Reseda, Southwest, and Harbor Street Services Yards. This led to a 12% reduction in fleet emissions and there were no adverse impacts to the engines of the vehicles or operations. In February 2021, GSD switched back to conventional diesel fuel. StreetsLA worked with GSD to help secure another one-year pilot and currently all fueling stations will receive RD as part of this pilot program through 2023. In line with LA's Green New Deal, GSD should procure long term contracts.

Additionally, StreetsLA is using Compressed Natural Gas (CNG) and RD as clean fuels for 52% of its fleet vehicles. These clean fuel alternatives reduce carbon-monoxide and nitrogen-oxide emissions. Of the 1,388 vehicles in StreetsLA fleet, 33% are operating with RD and 19% of the fleet is being operated by CNG.

EV Charging Stations at StreetsLA Yards/Facilities

Charging Options

There are three types of charging stations for electric vehicles (EVs): Level 1, Level 2 and Direct Current (DC), referred to as Level 3. Level 1 charging station can be plugged into a standard household 110-volt grounded wall outlet and usually requires no upgrade to the utility panel. A Level 1 charging station will deliver about 5 miles per hour of charge. Level 2 charging stations are four times faster than Level 1 and can provide about 25 miles per hour of charge. Level 2 stations require a professionally installed 240-volt outlet on a dedicated circuit. Level 3 charging stations are the fastest type of charging available and can recharge an EV at a rate of 3 to 20 miles of range per minute. These commercial grade charging stations require high voltage.

Current EV Charging Station locations:

- North Hollywood Yard (2 hard wire and 2 stand-alone Beam solar chargers procured by StreetsLA in 21/22)
- Various Investigation and Enforcement Division (IED) Yard/Facility locations:
    - 19040 Vanowen Street
    - 7166 W. Manchester Boulevard
    - 2222 E. 7th Street
    - 1400 N. Gaffey Street

Proposed EV Fleet Charging Station locations:

Currently all chargers are Level 2 chargers. Installing a combination of Level 2 (L-2) and Level 3 (L-3) at our yards will provide broad charging options. Below is a cost estimate for the installation of chargers at nine of our yards. The cost estimate for L-3 charging stations is $50,000 per unit and $30,000 for L-2. StreetsLA's success of these upgrades will require the coordination and collaboration of General Services, Bureau of Engineering and Department of Water and Power.

StreetsLA Yard	Total number of chargers	Electrical Upgrade Cost	L-3	L-2
Wilshire Yard	10	$200,000.00	$250,000.00	$150,000.00
Van Nuys	10	$200,000.00	$250,000.00	$150,000.00
Topanga	10	$200,000.00	$250,000.00	$150,000.00
Southeast	10	$200,000.00	$250,000.00	$150,000.00
Reseda	10	$200,000.00	$250,000.00	$150,000.00
Hollywood	10	$200,000.00	$250,000.00	$150,000.00
Granada Hills	10	$200,000.00	$250,000.00	$150,000.00
East Yard	10	$200,000.00	$250,000.00	$150,000.00
North Hollywood Yard**	21	$1,600,000.00	included	included
Total per column		$3,200,000.00	$2,000,000.00	$1,200,000.00
Total				$6,400,000.00*

*All figures are estimates and need to be further evaluated.
**Depending on when these yards can be updated, there may be a 5-10% inflation factor.
*** Facility upgrades subject to Council adoption of CF 21-0890 and Electric Vehicle Master Plan

StreetsLA EV Fleet Accomplishments

With the rapidly advancing technologies at hand, StreetsLA has been leading the effort in acquiring and testing electric vehicles and equipment for the City and learning more about best practices in utilizing this technology. This has prompted the Bureau to engage in several pilot projects by leveraging our relationships with various automotive companies to borrow, rent and purchase vehicles to keep up with the latest sustainable technologies.

In collaboration with the Department of Water and Power (DWP), GSD, StreetsLA has begun its path to zero emissions. To date, we have acquired the following EV and equipment:

1- Nissan Leaf EV
10- Honda Clarity plug-in Hybrids
1- Chevy Volt EV
1- Ford Lightning EV
2- Hyundai Kono EV (rental)
1-Volvo mini-excavator (rental)
1-Electric Delevo Mini Sweeper
2-Beam portable stand-alone solar chargers

Due to the infrastructure challenges and in support of accessing off the grid electricity, StreetsLA has procured two stand-alone Beam solar powered charging stations. These stations each charge two vehicles at a time. They are portable and can be moved to different yards if needed. The Bureau

is currently assessing the efficacy of these units and may procure additional units (or something comparable) in the upcoming fiscal year.

Field Accomplishments using EV's

- All Street Vending-assigned Investigators in the Bureau's Investigation and Enforcement Division (IED) are now using Honda Clarity plug-in hybrids, making this team the first 100% clean-air team at StreetsLA.
- The Nissan LEAF is also used by IED for the Hollywood Walkability program.
- The electric Delevo mini-sweeper was purchased for sweeping the 1,100 lane miles of bike lanes throughout the City.
- The Volvo mini-excavator has been rented for use by the Urban Forestry Division (UFD). This equipment is being used to dig for tree plantings and breaking-up of hard surfaces.
- The ROUSH-650 eclectic stake bed was taken on loan and used by UFD in transporting trees and equipment.
- Two Beam portable solar chargers have been purchased and installed at our North Hollywood Yard for Green Innovations.
- Using alternative modes of transportation, StreetsLA partnered with Cake Bikes. Street Maintenance Division (SMD) took on-loan four electric mopeds and conducted an inspection of 1,100 lane miles of bike lanes throughout the City.
- The Bureau has taken possession of 1 out of the 16 Ford F-150 Lightnings procured by GSD to be used by the SMD Supervisor for pothole inspections.

The following table includes a listing of all purchased EV Fleet. StreetsLA is working closely with GSD to expedite the procurement of the following EV Fleet in 22/23:

MICLA EV FLEET PURCHASES			
Quantity	Description	Unit Cost	Total
1	Sweeper, Hybrid, CNG/Electric	$ 806, 000	$ 806,000
6	Truck, <10,000#GVWR	$ 60,000	$ 360,000
7	Truck, 10,001 - 26,000#GVWR	$ 100,000	$ 700,000
3	Sweeper, Bicycle Lane	$ 305,000	$ 915,000
4	Truck, Stake Bed	$ 200,000	$ 800,000
4	Van, Box	$ 240,000	$ 960,000
16	Ford F-150 Pickup Truck, 1/2 Ton (1 received, 15 additional on order)	$ 65,000	$ 1,040,000
		TOTAL	**$5,581,000**

StreetsLA EV Fleet Funding

Historically, StreetsLA has received vehicles and equipment procured by GSD with Municipal Improvement Corporation of Los Angeles (MICLA) funds. $5.6M was allocated to the Bureau for FY 22/23 for all purchases. The FY22/23 Adopted Budget has earmarked an additional $3.4M exclusively to be used for EV purchases.

$2M has been allocated in the FY 22/23 Capital and Technology Improvement and Expenditure Program (CTIEP) for upgrades to StreetsLA facilities to support EV technologies.

StreetsLA has identified its North Hollywood Yard as the "Center for Green Innovations" where its electric fleet is being housed. Due to the age of this Yard, extensive work is required to upgrade the electrical service along with the other necessary construction. Staff is currently working with Shell Recharge Solutions (SRS), a GSD vendor, on developing a cost proposal to upgrade the electrical service (new transformer & electrical conduits/cables), replace outdated electrical service panels, and add electric vehicle charging infrastructure along with (5) Level 3 chargers and (16) Level 2 chargers at the North Hollywood Yard. SRS is in contact with DWP on gathering information for the required service upgrade.

StreetsLA EV Fleet Goals

StreetsLA is proud to be in the forefront of accomplishing sustainability goals. Pilot projects are continuously being performed for feedback on use of equipment. Our team is in constant communication with industry leaders to purchase and/or rent EV equipment. The Bureau continues to use its buying power to request fabrication of vehicles and equipment that best meets Bureau needs. Most of the projects listed below have been launched but not yet completed.

- The Urban Forestry Division (UFD) has acquired a Volvo mini-excavator to be used for digging for the tree planting crews. The goal is to create a zero-emissions tree planting crew so when we plant trees, it will be a complete net positive for the City.
- The Bureau's long-term goal is to have all the pothole inspection crews use EV trucks, such as the F-150. We have started this process by acquiring 16 EV trucks that will be used by pothole inspection crews out of our Center for Green Innovations in North Hollywood.
- In collaboration with DWP, StreetsLA is exploring building out a charging island for heavyweight trucks at the Van Norman Yard. Funding for this project could be derived via DWP reimbursement program and/or variety grants offered for such projects.
- StreetsLA was loaned two (2) UBCO Electric Mopeds to be used for the inspection of Cool Neighborhood projects recently completed. We will compile data on how well the new material used for this project is holding up. Using alternative modes of transportation to accomplish our goals.

StreetsLA EV Fleet Challenges

The biggest challenges in achieving citywide EV goals are as follows:

1) The competition for obtaining EVs in California is a challenge for the City due to high demand for such equipment.
2) Electric powertrain options for most StreetsLA vehicle types are still not yet commercially available. The industry has not yet perfected EV technologies for all Bureau fleet and equipment.
3) There is insufficient supporting infrastructure and funding for this type of EV equipment at our StreetsLA Yards. To continue to successfully enhance this program, all of the Yards' electrical infrastructure will need to be updated to support Level 2 (L-2) and Level 3 (L-3) charging stations.

4) Fluctuating increase in cost for procurement of electric vehicles and supporting equipment.
5) Coordination and collaboration with other Departments who may have conflicting priorities.
6) StreetsLA must take into consideration that an emergency situation may cause a break in electricity due to power outages. The inability to recharge EV vehicles would cause a breach in service. Charging times will also be an issue in case of emergency situations. If all the Bureau's fleet were electric, the Bureau would not be able to respond to critical emergencies during power failures because our fleet couldn't be adequately charged. The Bureau should develop guidelines on what percentage of its fleet should be converted to electric to ensure it can respond to all emergencies. The desire to be a net zero Bureau and the obligation to perform duties as first responders must be balanced.
7) Procurement of long-term clean fuel contracts.