CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

Date: September 30, 2022

To: Honorable City Council
c/o City Clerk, Room 395
Attention: Honorable Mitch O'Farrell, Chair, Energy, Climate Change, Environmental Justice, and Los Angeles River Committee

From: Connie Llanos, Interim General Manager
Department of Transportation

Subject: **EV CONVERSION EFFORTS, CHALLENGES, AND NEEDS**

SUMMARY

In response to Council File (CF) 21-0890, this report provides an update on the Los Angeles Department of Transportation's (LADOT) effort to electrify its vehicle fleet, bus fleet, and infrastructure to support EV conversion by 2035.

RECOMMENDATION

That the City Council RECEIVE AND FILE this report.

BACKGROUND

The Los Angeles Department of Transportation (LADOT) vehicle fleet serves many functions, including parking enforcement, traffic control, engineering, signal installation and repair, sign installation and repair, parking meter maintenance, lane striping, and transit operations. There are approximately 1,200 vehicles in the fleet. The majority are sedans, but nearly half are larger heavy duty vehicles and specialized units.

Fleet Composition - 1,207 Units

- Specialized Units (stripers, pre-melters, crane trucks, aerial lifts) - 22%
- Sedans - 61%
- Jeeps to Large Capacity Vans - 3%
- Light to Heavy Duty Trucks - 14%

In addition to these fleet vehicles, LADOT is electrifying its buses that serve DASH, Commuter Express, and LANow. The Department also installs vehicle chargers in the right of way for its low-income carshare program BlueLA, and works with the Bureau of Street Lighting (BSL) to install publicly available chargers at new streetlight poles.

LADOT is enthusiastic about the future of vehicle electrification as directed by the City's Energy, Climate Change, Environmental Justice, and River Committee. We look forward to continuing to partner with our City departments, stakeholders, and communities to ensure Los Angeles achieves 100% carbon-free energy by 2035.

DISCUSSION

Fleet Electrification

LADOT works closely with GSD to identify opportunities to increase the number of Electric Vehicles (EV) within its fleet. Our highest priority is converting the Parking Enforcement and Traffic Control (PETC) fleet with the largest number of sedans that can be replaced by readily available EVs, specifically the Chevy Bolt. To date, the PETC fleet consists of approximately 68 EVs or approximately 12 percent of the fleet.

Increasing that percentage is challenging. PETC operates across the City 24 hours a day, with very little downtime between vehicle use. This demand requires frequent, fast charging access to keep the fleet in service. Unfortunately, the City's facilities do not yet have adequate charging infrastructure to meet this demand. Most available charging stations - whether City-owned or publicly available - are Level 2 charging that requires several hours to fully charge a vehicle.

The cost of electric vehicles is also considerably higher than the replacement rate for a salvaged City vehicle, which makes it difficult to procure new EVs while maintaining our necessary fleet size. In order to fully electrify its fleet, LADOT will need additional funding to replace its aging gas-powered fleet with electric vehicles, paired with more readily available DC fast charging stations.

LADOT Transit Program

Mayor Garcetti's Executive Directive 25 directs LADOT to transition the City's bus fleet to 100% zero-emission in time for the Olympic and Paralympic Games in 2028. Council further directed LADOT to fully electrify by 2030 in CF 17-0739.

LADOT's bus vehicle fleet consists of 406 total vehicles, with an average of 326 vehicles in daily service and 80 vehicles available as back-ups. LADOT allocates 346 heavy-duty buses to DASH and Commuter Express Programs and 60 Cutaway vehicles to the Cityride and LAnow Programs. Currently, the Fleet consists of 297 Compressed Natural Gas (CNG) buses, 49 Propane buses, 30 Electric Buses, and 30 gasoline buses.

Service	**Length**	**Fuel Type**	**Total Buses**
Commuter	40ft	CNG	98
Commuter	45ft	CNG	20
DASH	**30 & 35ft**	**Electric**	**26**
DASH	**35ft**	**Electric**	**4**
DASH	30 & 35ft	CNG	149
DASH	32ft	Propane	49
CityRide	24ft	CNG	30
CityRide	24ft	Gasoline	30
		Total Fleet	406

To fully electrify the bus fleet, LADOT will procure only battery electric buses moving forward. LADOT's largest electric bus procurement to date is the order of 130 DASH buses expected to arrive within the remainder of the calendar year. To support bus electrification, LADOT installed 13 sequential DC 150kW chargers at the Downtown bus yard that charges 25 DASH and one Commuter Express bus, and four AC 80kW chargers at the Washington Yard to charge five additional Commuter Express buses. Purchasing additional electric buses in order to meet 2028 100% electrification target will cost an additional estimated $350 million. The transit industry is also subject to pandemic related supply chain and labor challenges that are causing significant delay to deploying electric buses.

Charging Infrastructure continues to be a challenge to achieving a fully electric bus fleet. In South LA, the City leases a yard in Compton. Leasing does not allow LADOT to install the necessary infrastructure to support electrification for these routes. LADOT searched for many years to find an available property with the right size, zoning, and location in South LA. The Department is in the process of acquiring a property but it will require significant environmental clean up, which will delay completion of the electric bus yard and conversion of the bus fleet to electric in South LA.

In addition to securing this new yard, LADOT estimates that electrifying its four existing bus facilities will cost approximately $150 million. To date, the Department secured $41 million ($20 million in Prop A and $21 million in grants) for facility electrification, which will enable LADOT to establish and operate electric chargers for approximately 190 buses.

Additional information about LADOT's transit electrification can be found in the attached report from CF 21-0860.

Other Electrification Efforts

In addition to electrifying its own fleet (City vehicles) and buses, LADOT operates a low-income electric carshare program, and partners with BSL to make charging more publicly accessible.

The California Air Resources Board awarded LADOT nearly $5 million to install 500 on-street vehicle chargers and deploy a 300-vehicle electric carshare fleet available to the public. To date, the BlueLA electric carshare fleet program consists of 100 vehicles and chargers, and has 3,932 memberships, including 1,498 low income memberships. The Program is currently expanding into SouthLA with an additional 116 chargers.

BSL and LADOT also installed 456 chargers at un-metered locations and 108 chargers at locations with meters. In addition, LADOT installed 105 Level 2 Chargers and 49 DCFC L3 off-street chargers. Challenges stalled progress in this sector which include vandalism, increased infrastructure costs to deliver power due to its limited availability, time for design, approval, construction material, and inspection.

FISCAL IMPACT

There is no fiscal impact from this informational report.

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Attachments

CITY OF LOS ANGELES
INTER-DEPARTMENTAL MEMORANDUM

Date: June 16, 2022

To: Honorable City Council
c/o City Clerk, Room 395
Attention: Honorable Nithya Raman, Chair, Information, Technology, and General Services Committee

From: Seleta J. Reynolds, General Manager
Department of Transportation

Subject: **Zero-Emission First Procurement Policy / Original Equipment Manufacturers / Light-Duty Vehicles / L.A. Green New Deal**

SUMMARY

As directed by the City Council (Council) in Council File 21-0680, this report details the Los Angeles Department of Transportation's (LADOT) progress toward meeting the bus-electrification targets previously established by Council, including challenges faced and next steps.

RECOMMENDATION

That the City Council, subject to approval by the Mayor, RECEIVE and FILE this report.

BACKGROUND

LADOT's vehicle fleet currently consists of 406 vehicles total, including an average of 326 vehicles in daily service with 80 vehicles acting as spares. LADOT allocates 346 heavy-duty buses to DASH and Commuter Express Programs and 60 Cutaway vehicles to the Cityride and LAnow Programs. Currently, the Fleet consists of 297 Compressed Natural Gas (CNG) buses, 49 Propane buses, 30 Electric Buses, and 30 gasoline buses.

Table 1: LADOT Existing Vehicle Fleet (2022)

Service	Length	Fuel Type	Total Buses
Commuter	40ft	CNG	98
Commuter	45ft	CNG	20
DASH	30 & 35ft	Electric	26
DASH	35ft	Electric	4
DASH	30 & 35ft	CNG	149
DASH	32ft	Propane	49
CityRide	24ft	CNG	30
CityRide	24ft	Gasoline	30

Total Fleet	**406**

LADOT is electrifying its fleet in response to the June 2017 Council directive to transition to an all-electric fleet by 2030 (CF 17-0739), to meet sustainability goals set under the Mayor's Executive Directive No. 25, adopting the goals of the 2019 Green New Deal for Los Angeles and directing that LADOT transition the City's bus fleet to 100 percent zero-emission in time for the Olympic and Paralympic Games in 2028. To fully electrify its fleet by 2028, LADOT will procure only battery electric buses moving forward.

In June 2021, Council directed LADOT and other Departments to report on plans and progress towards meeting the City's fleet electrification goals.

DISCUSSION

Existing Electric Fleet

LADOT Transit's fleet currently includes 30 electric buses. These buses are stored at the Washington and Commercial St. yards and currently operate on DASH routes. In 2021, LADOT received its first electric Commuter Express coach bus, which will operate out of the Compton bus yard.

LADOT currently owns 13 sequential DC 150kW chargers (of which it operates 11) at the Downtown bus yard, which provides charging for the 25 Proterra buses and one BYD Commuter Express bus. The Washington bus yard houses four AC 80kW chargers, to charge 5 BYD buses.

LADOT Transit Electrification Progress

LADOT first purchased four DASH battery electric buses (BEB) from BYD Motors Inc. (BYD) in 2017. In 2019, LADOT used the Federal Transit Agency (FTA) Low- or No-Emission grant to procure 25 DASH BEBs and 13 chargers from Proterra. LADOT's largest BEB procurement to date is the order of 130 BYD DASH BEBs, which BYD is currently building with delivery expected to begin in Summer 2022. LADOT purchased the 130 BEBs through a mixture of Federal, State, and Local funding sources, with the majority of the funding coming from the State's Transit and Intercity Rail Capital Program (TIRCP). LADOT currently operates four AC Chargers and 11 DC Chargers for electric buses at its Commercial St. and Washington bus yards.

BYD recently delivered the City's first electric Commuter Express coach and, after final safety checks and additional safety accessories are installed, the vehicle will be placed into service. LADOT is applying for Low- or No-emission grant funds to procure 16 electric Commuter coaches from Motor Coach Industries, Inc. (MCI), and is in the early stages of procuring an additional 34 BYD DASH BEBs.

Table 2: Electric Vehicles Purchased by LADOT

Number Purchased	Make	Model	Dimensions	Charging Type	Passenger Capacity	Range
25	Proterra	E-2 35’	36’ L x 102’ W x 135’ H	DC	40	180 mile
4	BYD	K9S 35’	35’ L x 102’ W x 134’ H	AC	35	145 mile
30	BYD	K7M 30’	29.9’ L x 102’ W x 134’ H	AC	27	135 mile
100	BYD	K7M 30’	29.9’ L x 102’ W x 134’ H	DC	27	135 mile
1	BYD	C10M 45’	45’ L x 102’ W x 134’ H	DC	57	185 mile

LADOT will receive 130 BYD K7M electric buses beginning in Summer 2022 until the end of this calendar year. Originally planned for 2020 and 2021, recent manufacturer and labor delays due to the pandemic and the infrastructure implementation delays have significantly pushed back the acquisition and delivery of new electric vehicles to the second half of 2022.

Challenges to Electrification

Building out the necessary infrastructure to support our electrification goals requires coordination between property acquisition, bus delivery schedules, standardization of charging equipment, and the implementation of charging infrastructure. All of these elements also require sequencing between private (i.e., bus manufacturers, and battery and charging manufacturers) and public (i.e., City Departments such as Building and Safety, Water and Power, General Services, Bureau of Engineering and Fire) entities.

Additionally, in order to fully electrify and operate the transit fleet, the City must secure additional maintenance and electrification facilities. Given the expense and time invested in electric infrastructure, the transit industry is moving toward owning the maintenance and electrification facilities, instead of leasing them. LADOT is investigating other electrification models, including portable equipment that can be used with existing or minimal utility changes, that meet temporary BEB charging needs while we complete permanent electrification upgrades at our bus yards. LADOT is also open to pursuing shared maintenance facilities that support Citywide electrification efforts, including the electrification of all City fleets.

Citywide contracting restrictions during the COVID-19 pandemic prohibited progress on contracts for yard electrification. Since contracting resumed, staff shortages in key departments combined with a high demand for contracted services extended the process for executing contracts. Additionally, the BYD factory in Lancaster experienced shutdowns due to COVID-19 cases, which delayed the production of buses and impacted the bus delivery schedule.

Coupled with supply chain issues, these challenges delayed the build out of electric charging infrastructure at LADOT transit yards. Once a contract is executed, a yard can take between 1 and 2.5 years to be fully operational. This timeline accounts for site design, LADWP energization, other utility relocation and coordination, construction, and testing. Smaller projects that tap into existing power resources may be operational sooner, while larger projects that require power upgrades take longer to reach operation.

Next Steps

LADOT is finalizing contracts for six electric charging projects at bus facilities in 2023 and 2024, including the Compton Bus Maintenance Yard, Commercial St. Bus Maintenance Yard, 16th and Maple Bus Layover Facility, 1950 Washington Bus Maintenance Yard, and Sylmar Bus Maintenance Yard . Table 3 describes the six projects by bus facility, the communities served by the facility, and the projected operational date of the project. LADOT will pursue additional charging projects to meet future charging needs as it fully electrifies the fleet.

Table 3: LADOT Electric Bus Charging Installation Projects

Bus Facility	Yard Transit Service Area	Projected Operational Date
Compton Bus Maintenance Yard	South LA	2023
Commercial St Bus Maintenance Yard	Downtown	2023
16th and Maple Bus Layover Facility	Community DASH/Commuter Express	2023
1950 Washington Bus Maintenance Yard (Phase 1)	Central LA, Northeast LA, Boyle Heights	2023
1950 Washington Bus Maintenance Yard (Phase 2)	Central LA, Northeast LA, Boyle Heights	2024
Sylmar Bus Maintenance Yard	San Fernando Valley	2024

LADOT's next priority for vehicle purchases is to replace older Commuter Express vehicles in the fleet with electric vehicles. LADOT submitted a successful application in early 2022 to use a portion of the FTA Section 5307 funds allocated by Metro towards the purchase of three electric buses to replace CNG buses currently operating on Commuter Express service. On March 31, 2022, LADOT also applied for FTA's 2022 Low-No Emission 5339(a) grant program to procure 16 electric Commuter Express buses and 16 chargers to support zero-emission Commuter Express operations at the Sylmar Bus Maintenance Yard. LADOT's ability to purchase additional electric buses leading up to the 2028 Olympic Games will depend on the increase in charging capacity at its facilities, as well as availability of federal and other funding sources for vehicles. LADOT is also exploring new federal funding opportunities for other electrification investments such as site procurement and upgrades.

FINANCIAL IMPACT

LADOT currently leverages FTA grant funding to purchase and maintain new electric vehicles. Electric vehicle charging installation at the bus yards will be funded by Prop A, Caltrans State of Good Repair funds (SB-1), the California Energy Commission, the California State Transportation Agency TIRCP, and Federal Transit Administration 5339 funds.

To date, there is no impact to the General Fund. Additional funding may be required in future budget years, with approval from the Mayor and Council, to expand transit electrification and associated infrastructure to meet our Citywide goals.

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