

INTRADEPARTMENTAL CORRESPONDENCE

January 31, 2022
1.11

TO: The Honorable Board of Police Commissioners

FROM: Chief of Police

SUBJECT: LOS ANGELES POLICE DEPARTMENT'S RESPONSE TO THE INFORMATION, TECHNOLOGY, AND GENERAL SERVICES COMMITTEE ON IMPLEMENTING THE ZERO-EMISSION FIRST FLEET (CITY COUNCIL FILE NO. 21-0680)

RECOMMENDED ACTION

1. That the Board of Police Commissioners (BOPC) APPROVES the Los Angeles Police Department's (LAPD) response to the Information, Technology, and General Services Committee on Implementing the Zero-Emission First fleet and TRANSMITS the report to the City Council Committee on Information, Technology, and General Services.

DISCUSSION

On August 5, 2021, the Information, Technology, and General Services Committee directed the LAPD to report back on the LAPD's short, medium, and long-term plans to transition their fleets to zero-emission vehicles, inclusive of specialty and pursuit-rated vehicles.

This report addresses the Information, Technology, and General Services Committee matter.

If you have any questions, please contact Office of Support Services at (213) 486-8410.

Respectfully,



MICHEL R. MOORE
Chief of Police

Attachments

LOS ANGELES POLICE DEPARTMENT



MICHEL R. MOORE
Chief of Police

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ERIC GARCETTI
Mayor

January 31, 2022

Information, Technology and General Services Committee
C/O City Clerk
200 N. Spring Street, Room 395
Los Angeles, California 90012

Honorable Committee members:

Since 2015, the Department has supported the implementation of battery electric vehicles (BEV) into our fleet. Our fleet currently consists of approximately 5,200 vehicles of various types and purposes. These vehicle types are powered by diesel, gasoline, or electric batteries. The majority of the Department's fleet is gasoline powered.

The attached Fact Sheet details the Department's current status on the installation of electric vehicle (EV) chargers, deployment of our current BEV vehicles, and our short, medium, and long-term goals for the Department to transition to a zero-emission fleet.

For any questions concerning this matter, please contact Director of Police Transportation II Dirk Aubuchon, Commanding Officer, Motor Transport Division, at (213) 486-1020, or Police Administrator Sandra M. Russell, Commanding Officer, Facilities Management Division, at (213) 482-7320.

Respectfully,


MICHEL R. MOORE
Chief of Police

Attachment

FACT SHEET
TRANSITION TO A ZERO-EMISSION MUNICIPAL FLEET
January 31, 2022

BACKGROUND

The Los Angeles Police Department's (Department) fleet consists of approximately 5,200 vehicles of various types serving different purposes. These vehicles are powered by diesel, gasoline, or electric batteries. The majority of the Department's fleet is gasoline-powered and consists of the following vehicle types:

- Black and Whites (B&W) for patrol and traffic support;
- B&W Slick Tops;
- Dual-purpose, plain, and undercover vehicles;
- Motorcycles;
- Specialized vehicles for surveillance;
- Specialized vehicles for Department Canines (K-9);
- Specialized Bomb Squad vehicles;
- Specialized hazardous materials response (Haz Mat);
- Special Weapons and Tactics (SWAT);
- Command Post and other various specialized units; and,
- Generalized vehicles for administrative use.

In the event of a catastrophic and/or major event, the majority of the Department's fleet is designed to be utilized as emergency response vehicles.

In 2015, in preparation for receiving 100 leased 2016 BMW i3 electric vehicles, Facilities Management Division (FMD), on behalf of the Department, coordinated the installation of 100 Level-2 (6 kilowatt-hours) and four Level-3 (3-25 kilowatt-hours and 1-50 kilowatt-hours) battery electric vehicle (BEV) chargers at Motor Transport Division's (MTD) Main Street Facility.

Facilities Management Division, working in conjunction with the Bureau of Engineering (BOE), the Department of Water and Power (DWP), the City Administrative Officer (CAO), and the Mayor's Office developed a plan to install one Level-3 and three Level-2 electric vehicle (EV) chargers at various Department facilities to support deployment of the new EVs added to the fleet.

The planned EV installation phases are listed in chronological order as follows:

- Phase 1 - MTD Main Street Facility; **completed**
- Phase 2 - Seven Geographic Area (GA) stations, the Ahmanson Recruit Training Center, and the Davis Training Facility; **completed**
- Phase 3B – Nine GA stations and one traffic division; **completed**
- Phase 3A1 – Three GA stations; **completed**
- Phase 3A2 – Two GA stations and Elysian Park Police Academy; **in-progress**
- Phase 3C – Upgrade power at the Elysian Park Police Academy, installation at the new Evidence Warehouse and the Police Administration Building (PAB); **planned**
- Phase 4 – Projected to upgrade the power in the Phase 2 locations; and, **planned**
- Phase 5 – Projected to upgrade the power in the Phase 3B locations. **planned**

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In June 2016, the Department received delivery of an additional 100 leased BEV doubling the size of the Department's EV fleet. This established the City of Los Angeles as the national leader in the move to a cleaner and quieter vehicle fleet by having the largest fully battery-powered municipal fleet in the United States. At the time of the delivery, the first 100 BMW i3 had an 81-mile battery range and were designated to support administrative travel for Department personnel throughout the City. The second 100 BMW i3 had nearly double the battery range. Each lease was for 36 months.

The current Department BMW i3 have a 153-mile estimated battery range. The Department elected not to expand the BEV fleet beyond the 203 BEV currently in use due to charger installation delays, resulting from limitations at Department facilities. These limitations stem from both equipment availability and accessible power, and delays encountered during the DWP's electrical assessments of the facilities and the surrounding Geographic Area (GA) Stations.

To date, the one component needed to sustain the Department's BEV fleet operations that has not been resolved is an automated backup electrical power supply. The backup supply would either be a backup diesel generator or other electrical power source for each site capable of sustaining continuous Department operations for an extended period to fully power the recharging requirements of the Department's BEV fleet. This system should emulate the existing backup power system at each Department facility used to distribute petroleum fuel for Department vehicle operations and sustain Department facility operations.

FINDINGS

Short-Term Plan

In the short term, the Department's goal has been to maintain the 203 BEV currently in use to support Department operations and to identify the technology and systems required to support BEV usage. In addition, the required installation of the charging network infrastructure has continued at Department facilities to support the Department's current and future BEV operations.

Mid-Term Plan

The Mid-Term Plan is to procure current production BEV for administrative use. These vehicles will provide the opportunity for further testing of current technology to include vehicle ergonomics, range, and recharge requirements. For Fiscal Year 2022/23, the Department will submit a budget request to purchase 100 active Department 2019 BMW i3 at the termination of their existing lease. The Department will also submit a request for ten 2022 Ford Mustang Mach-E (Mach-E) electric vehicles to be tested and evaluated for administrative use. The Mach-E has an advertised 230-mile range and costs approximately \$56,000 per vehicle.

The acquisition and deployment of the Mach-E will:

- Facilitate further testing and determine the reliability of current battery technology;
- Validate the published extended range capability of the vehicle;
- Evaluate the vehicle's maintenance requirements and cost;
- Determine the charge rate and time required to return the vehicle to service; and

- Evaluate the Department's current BEV charging infrastructure with regards to the continued evolution in vehicle battery capacity and size.

Additional technology will also be required for BEV in the form of a telematics system and hardware to facilitate the gathering of vehicle charge data to capture all recharge events regardless of the charger network being utilized to recharge the vehicle. The telematic services are subscription-based and will incur a recurring monthly expense for each BEV. The expectation is for the system to capture and record each vehicle transaction like the current City of Los Angeles fuel site petroleum fueling system. The data captured will provide statistical information for analysis and tracking of vehicle usage, cost, and maintenance. As battery technology continues to evolve, batteries with increased size and capacity have resulted in increased range.

It should be noted that Department operations housed at leased properties will require compatible charging infrastructure and backup power supplies prior to the deployment of BEV.

Long-Term Plan

As vehicle manufacturers develop and release new vehicle models that meet the Department's operational needs, the continued purchasing of Hybrid (gasoline/electric) powered vehicles will advance the goal of reducing emissions produced by Department's vehicles. Further expansion of BEVs will be evaluated as vehicle manufacturers develop and market new vehicle platforms. In addition, continued expansion of the BEV charging systems, with the installation of backup power systems, will also be required for the future expansion of BEV and deployment. Furthermore, continued evaluation of the Department's existing BEV charging infrastructure and systems will be required to match the continued evolution in vehicle battery capacity and charging requirements. Lastly, it will also be necessary for the City's current or future EV Charging Network vendor to enhance the functionality of their network application to permit interdepartmental vehicle charging and stand-alone backup functionality, thus emulating the operability of the current City-wide fuel system. Currently, the Department of General Services, the Los Angeles City Fire Department, and the Los Angeles Police Department EV charging systems operate as stand-alone systems.

A key component for a successful BEV fleet operation will be the continuing requirement for a telematic solution as identified in the Mid-Term Plan.

Pursuit-Rated Vehicle (Emergency Response Vehicle)

There are currently no BEV pursuit-rated vehicles in production.

In the United States, there are two law enforcement agencies who test and evaluate vehicles and publish the test results and data: the Los Angeles County Sheriff's Department (LASD) and the Michigan State Police (MSP). The two law enforcement agencies are sponsored by the U. S. Justice Department's National Institute of Justice (NIJ) and the National Law Enforcement and Corrections Technology Center (NLECTC).

In 1974, LASD implemented a vehicle testing program to provide law enforcement agencies with the information they require to successfully evaluate vehicles currently being manufactured and

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offered for police service. The LASD and MSP publish this information via the internet. Testing is only conducted on vehicles offered with a factory “police package.” The testing process is designed to address the law enforcement officer’s operational requirements in terms of vehicle performance, safety, and comfort. Each test is designed and executed to simulate actual patrol and emergency operations which the law enforcement officer may encounter in the field. The vehicles being tested are driven by law enforcement personnel on city streets, interstate roads, and on the performance track.

In September 2021, the Ford Motor Company submitted the Mach-E for testing by the MSP. The MSP test results are pending. Ford Motor Company was also expected to submit the vehicle for emergency vehicle testing by LASD in October 2021, but the vehicle was not submitted for testing. The Mach-E GT is recommended by the Ford Motor Company to be utilized in applications that require additional 12-volt systems to be installed in the vehicle. This vehicle is projected to cost approximately \$69,000 per vehicle. Note that this is a different vehicle from the Ford Mach-E, which is recommended for administrative use by the Department. A gasoline-powered comparable vehicle is the Dodge Charger, which costs approximately \$31,000 per vehicle. The additional equipment required to outfit a police vehicle has not been developed for the Mach-E nor any other EV at this time. The third-party suppliers of specialized auxiliary law enforcement equipment will require time to design and fabricate vehicle-specific components for any new EV. The Ford Explorer Hybrid Sport Utility Vehicle (SUV) currently in use by the Department is a standard emergency response vehicle. This vehicle is purely hybrid and not a plug-in hybrid.

Operability

The current BEV charger operating system (OS) does not currently provide the ability to operate in an emergency backup or manual mode. If any or all of the Department facilities lose internet service or connectivity with the system host, the local system does not have the stand-alone capability to operate independently. This will result in the location not being able to charge the vehicles and capture critical vehicle data. To support Department operations, as referenced in the Long-Term Plan, the City-wide EV charging systems will require a stand-alone or backup operability that emulates the current City-wide fuel system.

Interoperability

Currently, the Department has the capability of sustaining outside agency vehicles during a localized mutual-aid request with gasoline and/or diesel fuel, as would be expected by the Department if vehicles were deployed to other areas or regions. If the Department expanded the use of BEV beyond administrative use, the operability of the Department’s vehicles would be contingent upon the charging infrastructure and local power supplies associated with other agencies or regions. The potential for charging incompatibility could also arise depending on the type of charging equipment used by an outside agency. For example, in the United States, Tesla’s proprietary chargers are not compatible with other vehicle manufacturers that mainly utilize the CHAdeMO charging connector.

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Fleet Size

Consideration and analysis will be required for the possibility of an increase in the size of the Department's emergency response vehicle fleet. This would be due to the deployment of field assets during a major event and that most returning vehicles would require recharging prior to redeployment. Future vehicle battery technology, in addition to the number and types of chargers at each GA will both be factors in the future assessment of the Department's emergency response vehicle fleet size.

Department Facilities

As many of the Department's facilities are currently at maximum parking capacity, the loss or reduction in available parking spots, due to the installation of additional EV chargers and associated equipment, will require future Department expansion.

Staffing Needs

The staffing requirements to support a BEV emergency response fleet at each GA are currently undetermined due to unknown factors as outlined in this Fact Sheet. To ensure the continuity of operations and emergency response vehicle availability, staffing requirements would need to be based on the number of vehicles per location and the number and types of chargers installed at each location. Staffing for fleet operations would monitor and rotate vehicles through the charging process 24 hours per day, 7 days per week, 365 days per year at the GA, if an insufficient number of charger-to-vehicle ratio exists. Without on-site MTD fleet operations, the Department will require similar monitoring and support to ensure the availability of emergency response vehicles.

RECOMMENDATIONS

As the Department moves towards the goal of a 100% zero-emission fleet to meet the Mayor's zero-carbon emissions goal, it will be essential that power always be available to charge the Department's BEV emergency response fleet as well as provide power to our facilities through emergency systems during any interruption to the utilities electrical power grid. In addition, we recommend automatic backup generators be installed and available during a power crisis to ensure the Department has a continuity of operations for emergency response 24 hours per day, 7 days per week, 365 days per year.

The community expects the Department to respond to calls for service for any crisis that requires police service. During times of crisis, the Department's emergency response vehicles are expected to perform under extreme conditions with limited resource support. At this time, the existing City, County, and State disaster planning and resources are designed to support petroleum powered vehicles.

The State of California has expressed serious concerns about the current condition of the State's electrical distribution power grid and its inability to accommodate additional power loads during peak times, especially during the heat of summer. The California Public Utilities Commission campaign to "Flex our power, save our power" demonstrated that if electrical consumption was

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not reduced through advertised Flex Alerts, the strain on the State's energy resources could result in power outages. The Department's BEV fleet operations will require the ability to charge at any time, without any constraints, which could impact emergency response vehicle deployment and would only be exacerbated during a large-scale emergency or unusual occurrence. Prior to a Department commitment to expand to a fully electric emergency response vehicle platform, the installation of backup systems to power a BEV fleet would have to be installed to ensure continuity of operations and public safety response. In addition, substantial increases in the number of BEV chargers at Department facilities would also be required.

The following areas are required for a Department commitment to transition to a zero-emissions fleet:

- A regional assessment of City and Department facilities to include their current electrical capacity;
- Develop a plan with DWP for future infrastructure requirements needed to meet the City's goal of a zero-emissions fleet;
- A reliable local and regional power grid;
- Enhanced and stabilized electric generation to sustain the increasing demands on the power grid;
- BEV charging equipment installed and widely available at both Department facilities and surrounding agencies for mutual aid events;
- Emergency power systems in place to support Department charging operations; and
- Regional coordination to ensure interoperability and compatibility of the supporting charging infrastructures.

Motor Transport Division recommends continued use of BEV for administrative transportation and the expansion of the hybrid vehicle fleet for emergency response vehicles. The gasoline, diesel, and hybrid vehicles currently meet the operational needs of the Department and are supported by the existing State and local emergency and disaster response plans and infrastructure. Continued collaboration with vehicle manufacturers and testing of new BEV, as they become available, is also recommended to evaluate their potential deployment within Department operations.

Prepared by: Motor Transport and Facilities Management Divisions

INTRADEPARTMENTAL CORRESPONDENCE

November 16, 2021
1.3

TO: Chief of Police

FROM: Director, Office of Support Services

SUBJECT: LOS ANGELES POLICE DEPARTMENT'S RESPONSE TO THE INFORMATION, TECHNOLOGY, AND GENERAL SERVICES COMMITTEE ON IMPLEMENTING THE ZERO-EMISSION FIRST FLEET (CITY COUNCIL FILE NO. 21-0680)

On August 5, 2021, the Information, Technology, and General Services Committee directed the LAPD to report back on the LAPD's short, medium, and long-term plans to transition their fleets to zero-emission vehicles, inclusive of specialty and pursuit-rated vehicles (excluding aerial equipment).

This report addresses the Information, Technology, and General Services Committee matter.

Should you have questions regarding this matter, please contact the Office of Support Services, at (213) 486-8410.



DOMINIC H. CHOI, Assistant Chief
Director, Office of Support Services

Attachment

RECEIVED-6
NOV 22 2021
OFFICE OF THE
CHIEF OF POLICE

From the desk of ...



Police Administrator III Annemarie Sauer
Commanding Officer
Administrative Services Bureau
Phone: (213) 486-7060, Fax: (213) 486-7036

November 15, 2021

TO: Assistant Chief Dominic H. Choi
Director, Office of Support Services

RE: TRANSITION TO ZERO-EMISSION VEHICLES (UPDATED) (OSS 066-2021)

Chief,

In response to the City Council's request, Facilities Management Division (FMD) and Motor Transport Division (MTD) worked together to provide a Fact Sheet for the Department's transition to an all-electric fleet.

Attached for your review are the following documents:

- 15.2 from the Chief of Police to the Board of Police Commissioners
- Letter from the Chief of Police to the Information, Technology and General Services Committee
- Fact Sheet prepared by FMD and MTD

Please feel free to contact me at your convenience if there are any questions or concerns.



Annemarie

Attachments