

BPC # 18-0124
2C

INTRADEPARTMENTAL CORRESPONDENCE

REVIEWED

April 4, 2018
1.10


RICHARD M. TEFANK
EXECUTIVE DIRECTOR
4/4/18
DATE

TO: The Honorable Board of Police Commissioners

FROM: Chief of Police

SUBJECT: PUBLIC SAFETY MOTION ON LAPD BMW i3 PROJECT

RECOMMENDED ACTION

1. That the Board review and approve the attached response to Councilmember Mitchell Englander's request for the Department to report on the success/failures of the BMW i3 electric vehicle fleet.
2. That the Board transmits this report to the Public Safety Committee in response to the Motion.

DISCUSSION

On January 24, 2018, the Public Safety Committee requested that the Los Angeles Police Department report back to them concerning the success and/or failures of the lease agreement with BMW on the use of the i3 fully electric vehicles intended for non-emergency transportation for officers and community outreach initiatives.

Administrative Services Bureau prepared a Fact Sheet on the implementation of the BMW i3 fully electric vehicles used to replace the older, less economic internal combustion engine (gas-powered) vehicles. The Fact Sheet is an analysis of the electric vehicle program that was established in three phases and is managed by Motor Transport Division. It is attached for your review.

Should you have any questions, please contact Police Administrator Vartan Yeghyan, Administrative Services Bureau, at (213) 486-7060.

Very truly yours,


CHARLIE BECK
Chief of Police

Attachment

BOARD OF
POLICE COMMISSIONERS
Approved April 10, 2018
Secretary Maria Silva

INTRADEPARTMENTAL CORRESPONDENCE

April 3, 2018
1.10

TO: Chief of Police

FROM: Director, Office of Administrative Services

SUBJECT: PUBLIC SAFETY MOTION ON LAPD BMW i3 PROJECT

On January 24, 2018, the Public Safety Committee requested that the Los Angeles Police Department report back to them concerning the success and/or failures of the lease agreement with BMW on the use of the i3 fully electric vehicles intended for non-emergency transportation for officers and community outreach initiatives.

Attached for your review is a Fact Sheet on the implementation of the BMW i3 fully electric vehicles used to replace the older, less economic internal combustion engine (gas-powered) vehicles. The Fact Sheet is an analysis of the electric vehicle program that was established in three phases and is managed by Motor Transport Division.

Also attached is a 15.2 addressed to the Board of Police Commissioners, requesting that the information be forwarded to the Public Safety Committee.

Should you have any questions, please have your staff contact Police Administrator Vartan Yeghyan, Administrative Services Bureau, at (213) 486-7060.

A handwritten signature in blue ink, appearing to read "Jorge A. Villegas" followed by "FOR:".

JORGE A. VILLEGAS, Assistant Chief
Director, Office of Administrative Services

Attachment

FACT SHEET
PUBLIC SAFETY COMMITTEE MOTION LAPD BMW i3
April 3, 2018

BACKGROUND:

In 2015, Mayor Garcetti's Executive Order Number 7 established the City's Sustainable plan. The plan includes vehicle purchase and lease programs designed to ensure that by 2017, 50% of the City's annual light-duty vehicle purchases are Electric Vehicles. The plan also includes a long-term goal of increasing the number to 80% by 2025.

The Los Angeles Police Department owns and operates approximately 5,200 vehicles. The fleet is categorized into three groups: emergency response vehicles; specialized vehicles; and plain or non-emergency response vehicles. The plain/non-emergency group primarily consists of vehicles used for undercover and surveillance operations and vehicles used for routine administrative duties. There are approximately 500 vehicles available for administrative use.

The Department's current fleet of gas-operated administrative vehicles is currently being phased-out and replaced by BEVs. While administrative vehicles are used daily, most trips are within the local area, resulting in frequent but low mileage trips. In general, these vehicles are driven between 2,000 and 6,000 miles annually. Due to the short distances, BEVs are ideally suited for administrative use.

Ultimately, the Department's goal is to obtain 300 BEVs to replace the older, less economic internal combustion engine (gas-powered) vehicles.

The LAPD's BEV program is managed by Motor Transport Division (MTD), and is divided into two major parts: establishing the charging station infrastructure and obtaining BEVs suitable for LAPD administrative operations.

The Department adopted a three-phase strategy for the assignment and utilization of BEVs. The three phases focus on expanding the BEV program by increasing the number of charging stations, obtaining a quality product, and increasing the number of BEVs, allowing for greater usage.

SUCSESSES:

Vehicle Replacement and Utilization:

The initial implementation phase began on April 1, 2015. The plan included leasing 100 BEVs and installing 104 charging stations at the Main Street Facilities (MSF), adjacent to the Police Administrative Building (PAB). Implementation was completed on June 16, 2016, when the Department received the balance of the initial order. The majority of the vehicles are housed at the MSF. The remaining fleet is parked at various downtown facilities where the vehicles are easily accessible to personnel for short-term administrative duties. The average vehicle utilization was expected to range from 2,000 to 3,000 miles annually. This estimate is based on the average usage of the small to mid-size sedans with conventional internal combustion engines that the BEVs will replace.

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The installation of the charging stations and the vehicle leasing program was completed, and all 100 vehicles delivered during the implementation phase were successfully deployed. The BEV average annual vehicle utilization is 2,529 miles, which is within the projected estimate of 2,000 to 3,000 miles.

The second phase began on December 14, 2016. The plan included leasing another 100 BEVs and installing 36 new charging stations in nine LAPD facilities. The implementation was completed on September 21, 2017. Most of the vehicles were assigned to nine LAPD facilities equipped with charging stations. Some of the BEVs were distributed to LAPD facilities that do not have dedicated charging stations. The average vehicle utilization for this phase was expected to range from 3,000 to 5,000 miles annually. This estimate is based on the average usage of the small to mid-size sedans with internal combustion engines which the BEVs replaced.

The phase two charging station and vehicle leasing program was successfully completed; however, the charging station infrastructure installation was delayed by six months in order to upgrade the power capacity of some older buildings. The vehicle delivery date was also delayed partially to match the charging station completion timelines. All 100 vehicles delivered during the phase two implementation were successfully deployed and replaced older gas-powered vehicles.

The phase two average annual vehicle utilization is 3,374 miles, which is within the projected estimate of 3,000 to 5,000 miles. While the utilization miles are within the initial projection, the actual mileage is estimated to be significantly higher.

The third phase began on July 1, 2017, and is on track to install 66 additional charging stations in 15 LAPD facilities. The order also includes a plan to lease an additional 100 vehicles upon completion of the new charging stations. The average vehicle utilization is expected to range from 5,000 to 6,000 miles annually, based on the usage of the small to mid-size sedans which the BEVs will ultimately replace.

Time Tables	Vehicle Delivery Goal	Vehicles Delivered	Annual Per Vehicle Utilization Goal	Annual Per Vehicle Utilization Measured	BEV Charger Installation Goal	BEV Charger Installation Measured
4/1/2015 to 6/16/2016	100	100, on time	2,000 to 3,000 miles	2,529 miles	104 chargers, single locations	104, on time
12/14/2016 to 9/21/2017	100	100, six month delay	3,000 to 5,000 miles	3,374 miles	36 chargers in nine locations	36, six-month delay
7/1/2017 to 4/1/2018	100	Pending	5,000 to 6,000 miles	Pending	66 chargers in 15 locations	Project started

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Cost Comparison:

The BEV vehicle eFuel cost is 83% less than conventional gas-powered vehicles. This figure is based on LAPD's vehicle utilization patterns and cost of fuel and energy. The average small and mid-size sedan fuel usage is 16 miles per gallon (MPG) for administrative vehicles. The average gas-powered vehicle utilization is 5,324 miles per year with a fuel cost of \$1,064, compared to a utilization cost of \$178 per year for a BEV.

Vehicle Type	Annual Average Miles Traveled	Average MPG	Average KW/h Per Mile	Cost Per Gallon and Per KW/h	Annual Estimate Per Vehicle Requirement in Gallons of Fuel and KW/h	Total Annual Fuel Cost Per Vehicle
Non-BEV	5,324	16	N/A	\$3.20	332.75	\$1,064.80
BEV	5,324	N/A	4.5	\$0.15	1,183.11	\$177.47
Cost Efficiency rate of BEV eFuel over Non-BEV Gasoline Fuel						83%

Furthermore, the BEV annual vehicle maintenance and repair cost per vehicle is measured at \$401 compared to \$1,369 for a gas-powered vehicle. The BEV vehicle repairs and maintenance are 71% less expensive than gas-powered vehicles. The \$401 per BEV cost includes safety checks, damage, and tire replacement that is not covered by the manufacturer's lease program. Naturally, gas-powered vehicles are older technology and have been in service longer; however, the BEV lease program includes routine maintenance and repairs, ensuring that the cost savings per vehicle will remain low.

Vehicle Type	Measured Period	Number of Vehicles	Total Maintenance and Repair Cost	Annual Average Maintenance and Repair Cost Per Vehicle
Non-BEV	7/1/2016 to 6/30/2017	688	\$941,872	\$1,369
BEV	7/1/2016 to 6/30/2017	151	\$60,560	\$401
BEV maintenance cost efficiency over Not-BEV				71%

CHALLENGES:

Fifty vehicles received during the second phase arrived late due to a delay in installing the charging stations and have been in service for approximately five to seven months. Consequently, their average vehicle utilization negatively affected the overall utilization rate. It is estimated that if the vehicles had been introduced into the fleet on time, the utilization rate would be 4,603 miles annually.

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STATUS AND FUTURE ACTIONS:

The Department will continue to replace gas-powered vehicles with the more efficient BEVs.

The BEVS represent the newest technology available with respect to motor vehicles, which includes telematics. Telematics enhance vehicle utilization studies by providing mileage utilization rates, the duty cycle of vehicles, and the frequency of use. The availability and use of telematics technology allows managers to maintain a fleet appropriate for the size of the Department by constantly monitoring and improving overall vehicle utilization.

Moving forward, future BEVs will be equipped with increased battery capability allowing for greater range. The availability of vehicles with greater range will expand the functionality of the BEVs. As consumer demand increases, BEVs will be offered in greater selections of makes, models, and body types. Improvements in BEVs and vehicle battery technology will also serve to lower the vehicle costs.

The BEV plan is a stepping stone to a fleet of battery powered patrol cars in the near future. Implementing the BEV plan with non-emergency vehicles will allow the Department to evaluate real-time data and make the necessary adjustments to create a successful strategy for introducing battery-powered patrol vehicles. The BEV program compared to gas-powered options is not only cost effective; the technologically advanced vehicles provide better performance and, most importantly, offer a clean and sustainable solution for our community and future generations.

Prepared by:
Administrative Services Bureau

MOTION

In June of 2016, the Los Angeles Police Department entered into a lease agreement with BMW for 100 of their fully electric i3 vehicles. The vehicles are intended to be non-emergency fleet vehicles for use throughout the department as transportation vehicles for officers as well as for community outreach initiatives.

Over halfway through the initial lease agreement, it is important to receive an update from the LAPD as to the program's successes and/or failures as well as an overall status report on the LAPD electric vehicle fleet.

I THEREFORE MOVE that the Los Angeles Police Department be instructed to report back to the Public Safety Committee within 30 days with an update and a status report on the department's BMW i3 electric vehicle fleet.

PRESENTED BY _____

MITCHELL ENGLANDER
Councilmember, 12th District

SECONDED BY _____

JAN 2 2018