

**Board Report**

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**File #:** 2018-0488, **File Type:** Contract**Agenda Number:** 14.

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**OPERATIONS, SAFETY AND CUSTOMER EXPERIENCE COMMITTEE  
OCTOBER 18, 2018****SUBJECT: ARTICULATED ZERO EMISSION TRANSIT BUSES****ACTION: APPROVE RECOMMENDATIONS****RECOMMENDATION**

AUTHORIZE the Chief Executive Officer to:

- A. EXECUTE Modification No. 3 to Contract No. OP28367-001, Part D, awarded to New Flyer of America, for the acquisition of sixty foot Zero Emission Buses (ZEB), to upgrade and increase the onboard bus battery capacity in the firm fixed price amount of \$2,792,074, for a total contract amount of \$70,970,417; and
- B. NEGOTIATE AND EXECUTE with New Flyer of America future contract modifications to Contract No. OP28367-001, Part D, for a not to exceed amount of \$1,000,000 for each contract modification.

**ISSUE**

Consistent with Metro Board direction, motion by Directors Garcetti, Krekorian and Antonovich on Oct 27, 2016 Regular Board Meeting Item 42 (File ID 2016-0852), Metro is in the process of converting the Metro Orange Line (MOL) from 100% Compressed Natural Gas (CNG) operation to 100% Zero Emission Buses (ZEB) operation by 2020.

Contract No. OP28367-001, Part D, requires the delivery of buses, depot chargers and on-route chargers. Due to the rapidly changing improvement in battery density, Metro has an option to transition to a battery configuration with more capacity and still maintain the high charge rates. New Flyer has proposed to upgrade the battery capacity from 250 kW-hr to 320 kW-hr. This option was not available during the solicitation of the contract award; and the final battery configuration has recently been designed. Approval of Recommendation A authorizes the increase in battery capacity.

The project delivery schedule is very aggressive and challenging in part due to the long lead times associated with designing and installing charging equipment at multiple locations and the coordination required with outside organizations such as the Los Angeles Department of Water and Power. Recommendation B will allow Metro and the Contractor to negotiate future change orders in a timely manner to ensure that the maximum cost and schedule benefits are realized. The request

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for an increase in Contract Modification Authority (CMA) from \$500,000 to \$1,000,000 for individual changes is consistent with Board authorized CMA's for other Rolling Stock programs, such as for the light rail vehicle Contracts P3010 and P2550, and the 45-foot CNG Composite Buses under Contract OP33202082.

## **BACKGROUND**

In November 2017, Metro issued notice to proceed (NTP) on Contract No. OP28367-001, Part D for 35 (subsequently increased to 40 buses in the March 2018 Board Meeting under File #2016-0836) zero emission battery electric buses, on-route and depot charging equipment. At the time of the award, New Flyer proposed a battery capacity of 250 kW-hr.

## **DISCUSSION**

During the March 1, 2018 Advanced Transit Vehicle Consortium (ATVC) board meeting, New Flyer mentioned that as a result of improvements to energy density their standard battery capacity was increasing in 2019. In response to staff's inquiry, New Flyer confirmed that an increase from 250 kW-hr to 320 kW-hr would be available for Metro's deliveries beginning in 2019. The higher capacity translates directly to an increase in bus range; e.g., permitting an increase from 1.5 to 2 roundtrips between the Chatsworth and North Hollywood stations. Approval of Recommendation A offers Metro further operational flexibility, such as deferring charging of buses when electrical rates are cheaper, reducing charging times at layovers, and mitigation of any risk if a charger is inoperable.

Approval of Recommendation B increases the CEO's Contract Modification Authority, allows for unforeseen changes to be successfully negotiated and addressed with New Flyer in an expedited manner, minimizing impact to the project schedule.

## **DETERMINATION OF SAFETY IMPACT**

There are not any anticipated impacts to safety from this action.

## **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

Approval of this recommendation supports the following Metro Strategic Plan Goal: Transform Los Angeles County through Regional collaboration and national leadership. This action will advance Metro's goal of converting the Metro Orange Line (MOL) from 100% Compressed Natural Gas (CNG) operation to 100% Zero Emission Buses (ZEB) operation by 2020.

## **FINANCIAL IMPACT**

Funding of \$40,980,229 for this contract is included in the FY19 budget in project 201073. Because this is a multi-year contract, the Cost Center Manager will be responsible for ensuring that future year funding is programmed.

### **Impact to Budget**

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There is no anticipated impact to the FY19 budget for this action. Current year funding is Proposition C 40% Discretionary. Future funding for this procurement may come from various eligible available federal, state and local funding sources including financing options and grants that are eligible for bus capital projects. Staff will pursue all sources of funding maximizing their use for these activities.

**ALTERNATIVES CONSIDERED**

Staff considered remaining with 250 kW-hr battery capacity. This alternative was not considered due to improvements in battery technology and the fleet operational flexibility offered by increased battery capacity.

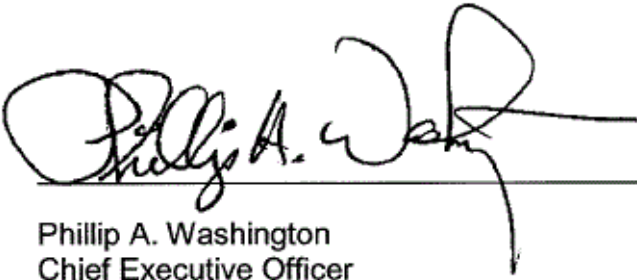
**NEXT STEPS**

Upon Board approval, staff will execute the Contract Modification with New Flyer of America.

**ATTACHMENTS**

- Attachment A - Procurement Summary
- Attachment B - Contract Modification/Change Order Log
- Attachment C - DEOD Summary
- Attachment D - Regular Board Meeting Motion Item 42 (File ID 2016-0852)

Prepared by: Steve Schupak, Sr. Manager, Project Control, (213) 617-6294  
Jesus Montes, Sr. Executive Officer, Vehicle Engineering & Acquisition, (213) 418-3277  
Reviewed by: James T. Gallagher, Chief Operations Officer, (213) 418-3108  
Debra Avila, Chief Vendor/Contract Management Officer, (213) 418-3051



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Phillip A. Washington  
Chief Executive Officer

## PROCUREMENT SUMMARY

## 60' LOW FLOOR ZERO EMISSION TRANSIT BUSES/OP28367-001

1.	<b>Contract Number:</b> OP28367-001		
2.	<b>Contractor:</b> NEW FLYER OF AMERICA, INC.		
3.	<b>Mod. Work Description:</b> Upgrade battery capacity from 250kW-hr to 320kW-hr for 37 units of production buses		
4.	<b>Contract Work Description:</b> Manufacture and delivery of 40 60-foot zero emission buses		
5.	<b>The following data is current as of:</b> 09/02/18		
6.	<b>Contract Completion Status</b>		<b>Financial Status</b>
	<b>Contract Awarded:</b>	07/27/17	<b>Contract Award Amount:</b> \$60,050,097
	<b>Notice to Proceed (NTP):</b>	11/15/17	<b>Total of Modifications Approved:</b> \$8,128,246
	<b>Original Complete Date:</b>	09/16/19	<b>Pending Modifications (including this action):</b> \$2,792,074
	<b>Current Est. Complete Date:</b>	09/16/19	<b>Current Contract Value (with this action):</b> \$70,970,417
7.	<b>Contract Administrator:</b> Elizabeth Hernandez		<b>Telephone Number:</b> (213) 922-7334
8.	<b>Project Manager:</b> Steven Schupak		<b>Telephone Number:</b> (213) 922-6652

**A. Procurement Background**

This Board Action is to approve Contract Modification No. 3 issued in support of Metro's bus fleet replacement plan for the manufacture and delivery of 40 units of 60' zero emission buses from New Flyer of America Inc. This Modification is to upgrade the 37 production buses to higher density battery capacity from 250kw-hr to 320kw-hr for increased bus range and operational flexibility benefits.

This Contract Modification will be processed in accordance with Metro's Acquisition Policy and the contract type is firm fixed price.

- On July 27, 2017, Contract No. OP28367-001 was awarded to New Flyer America Inc. for the manufacture and delivery 60' zero emission transit buses in the amount of \$51,211,033, including charging equipment, taxes and delivery.
- An additional not-to-exceed amount of \$8,839,064 was awarded for Optional Vehicle Features, Spare Parts, and Training Aids for a total combined contract amount not-to-exceed \$60,050,097.
- At the ATVC (Advanced Transit Vehicle Consortium) board meeting in March 2018, New Flyer indicated that battery capacity for the 60' ZE bus

configuration could be increased from 250 kW-hr to 320 kW-hr and will be available for Metro's base buy order. On August 29, 2018, Vehicle Engineering and Acquisition staff recommended the upgrade of battery capacity for increased bus range and operational capability. Based on Metro staff's delegated contract authority, Contract Modification No. 2 was issued for the upgrade of battery capacity for 3 pilot buses in the amount of \$226,384.

- The recommended Contract Modification would increase the battery capacity for 37 production buses.

## **B. Cost/Price Analysis**

The recommended price of \$2,792,094 has been determined to be fair and reasonable based upon MAS audit findings, an independent cost estimate, cost analysis, technical evaluation, fact finding, and negotiations.

The cost differential between Metro's ICE was caused by differences in statement of work requirements and assumptions made by the ICE. The ICE did not account for a complete redesign of the battery pack configuration utilizing higher capacity battery cells, or an increase in the number of battery strings necessary to increase the battery capacity to 320 kWh. Metro's ICE also did not include an extended 12-year warranty.

<b>Proposal Amount</b>	<b>Metro ICE</b>	<b>Negotiated Amount</b>
\$2,792,074	\$2,125,520	<b>\$2,792,074</b>

## CONTRACT MODIFICATION/CHANGE ORDER LOG

## 60' LOW FLOOR ZERO EMISSION TRANSIT BUSES/OP28367-001

<b>Mod. no.</b>	<b>Description</b>	<b>Status (approved or pending)</b>	<b>Date</b>	<b>\$ Amount</b>
1	Increase: 1) Base buy from 35 to 40 vehicles; 2) On Route/Opportunity Chargers from 7 to 8; and 3) Shop/ Division chargers from 1 to 2, including applicable delivery charges and taxes	Approved	3/22/18	\$ 7,901,862
2	Upgrade battery capacity from 250 kWh to 320 kWh for the 3 pilot buses	Approved	8/31/18	\$ 226,384
3	<b>Upgrade battery capacity from 250 kWh to 320 kWh for 37 buses</b>	<b>Pending</b>	<b>9/27/18</b>	<b>\$ 2,792,074</b>
	<b>Modification Total:</b>			<b>\$10,920,320</b>
	<b>Original Contract:</b>			<b>\$60,050,097</b>
	<b>Total:</b>			<b>\$70,970,417</b>

DEOD SUMMARY

60' LOW FLOOR ZERO EMISSION TRANSIT BUSES/ OP28367-001

**A. Small Business Participation**

New Flyer of America is a Transit Vehicle Manufacturer (TVM) and is on the Federal Transit Administration's (FTA) list of eligible TVMs. New Flyer of America reported that it submitted its overall Disadvantaged Business Enterprise (DBE) goal of 4.20% to FTA for FY18, in compliance with 49 Code of Federal Regulations (CFR) Section 26.49(a)(1). TVMs submit overall DBE goals and report participation directly to FTA annually.

**B. Living Wage and Service Contract Worker Retention Policy Applicability**

The Living Wage and Service Contract Worker Retention Policy is not applicable to this Modification.

**C. Prevailing Wage Applicability**

Prevailing wage is not applicable to the Modification.

**D. Project Labor Agreement/Construction Careers Policy**

Project Labor Agreement/Construction Careers Policy is not applicable to this Contract. PLA/CCP is applicable only to construction contracts that have a construction related value in excess of \$2.5 million.

**E. Local Employment Plan Program**

Local Employment Plan (LEP) Program is applicable on this contract. Staff will be monitoring progress on all LEP commitments, including the contractual commitments in creating employment opportunities in the State of California and the 40% commitment to hire disadvantaged workers.

Local Employment Plan Commitment:

LEP Commitment for Base + All Options	\$ 227,991
LEP Actuals to Date	\$0.00
Balance of LEP to be attained	\$ 227,991
Disadvantaged Workers attainment	\$0.00

The manufacturer has advised that the LEP achievements and Disadvantaged Worker participation will commence in Q4-FY19.



**Board Report**

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**File #:** 2016-0852, **File Type:** Motion / Motion Response

**Agenda Number:** 42.

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**REGULAR BOARD MEETING  
OCTOBER 27, 2016**

**Motion by:**

**GARCETTI, KREKORIAN and ANTONOVICH**

October 27, 2016

**Relating to File ID 2016-0778**

**APPROVE Motion by Directors Garcetti, Krekorian and Antonovich** that the Board direct the CEO to report back on the following:

- A. Develop an implementation plan to use all electric buses for the Orange Line Bus Rapid Transit Line by 2020. The plan shall include, but not limited to, the following:
  - 1. Total cost of electrification
  - 2. Eligible funding sources to address the costs
  - 3. Federal and State grant opportunities
  - 4. A schedule and transition plan
  
- B. Report back on the feasibility to use all electric buses for the Silver Line. The report shall include, but not be limited to, the following:
  - 1. Type of electric bus
  - 2. Range requirements
  - 3. Charging and infrastructure needs
  - 4. A recommended schedule and transition plan