



Board Report

File #: 2017-0643, File Type: Contract

Agenda Number: 30.

SYSTEM SAFETY, SECURITY AND OPERATIONS COMMITTEE NOVEMBER 16, 2017

**SUBJECT: P2000 LIGHT RAIL VEHICLE (LRV) MIDLIFE
MODERNIZATION PROGRAM**

ACTION: EXERCISE OPTIONS

RECOMMENDATION

AUTHORIZE the Chief Executive Officer to:

- A. EXERCISE system component Option #3 Communications - New Vestibule Information and Map Displays for the P2000 Light Rail Vehicle Midlife Modernization Program (Contract No. OPP2000) to Alstom Transportation Inc. in the firm fixed amount of \$2,803,953, increasing the total Contract Value from \$130,673,440 to \$133,477,394;
- B. EXERCISE system component Option #4 Communications - New Audio Communication System for the P2000 Light Rail Vehicle Midlife Modernization Program (Contract No. OPP2000) to Alstom Transportation Inc. in the firm fixed amount of \$3,054,526, increasing the total Contract Value from \$133,477,394 to \$136,531,920;
- C. AMEND and increase the FY18 Budget in Cost Center 3043 in the amount of \$31,404,998 for mobilization costs and accelerated project milestones from \$13,415,079 to \$44,820,077; and
- D. EXECUTE Contract Modifications under this Contract for up to \$1,000,000 per Contract Modification.

ISSUE

Contract No. OPP2000 approved by the Board in March 2017 with Alstom Transportation Inc. authorized performance of the midlife modernization and replacement of critical components on the fifty-two (52) Siemens P2000 vehicles in order to maintain a State of Good Repair. The recommended actions above authorize Alstom Transport Inc. to perform additional P2000 system component replacements that were defined as Contract Options in the original Contract, as follows:

Recommendation A: This action authorizes Alstom Transportation Inc. to replace the interior announcement signs with larger Thin Film Transistor monitors or a LACMTA approved equivalent, suitable for displaying graphic information as well as multiline, moving text.

Recommendation B: This action authorizes Alstom Transportation Inc. to replace the existing Audio Communication System that integrates identified LACMTA Furnished Equipment and provides the functionality specified as applicable per Technical Specification (TS) Section 13.4.1 Audio System (which shall include: Onboard Audio Controls, PA System, AADS, PIC System, Cab-to-cab Intercom, and LACMTA Furnished Equipment Radio System).

Recommendation C: Within the existing LOP of the project, shift money from the later years forward to FY18. The original FY18 budget was an estimate developed prior to contract award. Subsequent to contract award and Notice to Proceed (NTP) the contractor submitted a schedule which advances several milestones from the later years. To support the contractor's approach the FY18 budget needs to be increased by \$31,404,998 from \$13,415,079 to \$44,820,077; budgets for the later years will be reduced accordingly. Approval of this recommendation will ensure the rail fleet remains in a State of Good Repair by permitting early delivery of a modernized P2000 fleet.

Recommendation D: will allow Metro and the Contractor to negotiate future change orders in a timely manner to ensure that the maximum cost and schedule benefits can be realized. The P2000 Midlife Overhaul delivery schedule is very aggressive. This added delegation of authority will allow staff to mitigate impacts to the program schedule that may arise from change orders currently contemplated. The request for an increase in 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 Contracts for A650 Midlife Overhaul, P3010 and P2550, Light Rail Vehicles, and the 45-foot CNG Composite Buses. Staff does not seek any changes to the CMA for aggregate changes, which is 10% of the total Contract value.

DISCUSSION

The P2000 fleet currently operates on Metro's Green, Blue and Expo Lines. The primary objective of the project is to obtain safe, reliable, high quality overhauled LRVs on-time and within budget, and to create new jobs for Los Angeles County that can be tied directly to the Midlife Overhaul Program. This project also includes a training element through which Alstom Transportation will provide training to Metro staff on how to operate and maintain the modernized fleet.

The Scope of Work for the P2000 LRV Midlife Modernization Program is based on a conditioned based assessment (CBA) used to identify the critical systems and components impacting performance. The Scope includes the following critical systems and components: Vehicle Door Systems, Propulsion System, Friction Brake System, Trucks, Automatic Train Control (ATC)/Automatic Train Operation (ATO) System, Heating and Air Conditioning (HVAC) System, and Communication System.

Performing the Midlife Modernization Program is in accordance with the Rail Fleet Management Plan FY2015-FY2040 (Draft, May 24, 2016, v.8). The plan outlines the anticipated program to expand rail fleets to accommodate anticipated growth in ridership; line extensions; and to overhaul or replace vehicles reaching mid-life or end of life, as appropriate. Exercising these two options for the

Communication System during the preliminary design phase is extremely critical to ensure proper trainline integration of the Communication System with the remaining essential systems especially with those linked to passenger and operator interface. Delay in exercising these two (2) Options may potentially impact successful integration of these systems, delay vehicle delivery, and result in increased overhaul costs.

The Diversity and Economic Opportunity Department (DEOD) did not recommend a Disadvantaged Business Enterprise (DBE) goal for this procurement as it is not applicable (please refer to Attachment B). This procurement falls under the Federal Transit Administration's (FTA) Transit Vehicle Manufacturer (TVM) goal in accordance with 49 Code of Federal Regulations (CFR) Part 26.49. Alstom Transportation Inc. reported 9.23% TVM goal and qualifies under the FTA's eligible list.

DETERMINATION OF SAFETY IMPACT

The approval of this Contract award will have a direct and positive impact to system safety, service quality, system reliability, maintainability and overall customer satisfaction. The P2000 Light Rail Vehicle Midlife Modernization Program will permit Metro to maintain the SGR on the LRV fleet.

FINANCIAL IMPACT

The Project LOP not only includes funds for the LRV Midlife Modernization (\$140,079,867) Program; there are also funds allocated for Professional Services, Metro Labor, and Project Contingency, totaling \$160,800,000. The \$5,858,479 needed for Options 3 and 4 has already been included in the LRV Midlife Modernization project budget as options for exercising. The Project LOP is \$160,800,000 and will not change. The \$31,404,998 FY18 budget amendment is schedule related only and this amount will be redistributed based on updated milestone schedules and expenditure reforecasts reprogrammed during Metro's annual budget process.

The amendment amount will be added to the FY18 budget in Cost Center 3043, under CP 206044. Currently, there is \$13,415,079 budgeted in the FY18 budget in Cost Center 3043, under CP 206044, P2000 Light Rail Vehicle Modernization Program.

Since this is a multi-year contract, the cost center manager will be responsible for dispersing the cost for subsequent years.

Impact to Budget

The source of funds for this action is Federal Section 5337 State of Good Repair Funds provided under the Transportation Improvement Program (TIP). Other eligible source of funds include Proposition A 35% and Measure R 2% which is eligible for rail capital activities. Concurrently, staff is actively pursuing additional State and Federal sources such as FAST Act and other eligible federal sources to further supplement this project. Staff is also pursuing additional State and Local funding sources such as Cap and Trade and similar sources as they become available to meet the project funding needs.

ALTERNATIVES CONSIDERED

Staff considered using in-house Metro resources to perform this work. This approach is not recommended as Metro does not have sufficient resources and Subject Matter Experts available to perform this work.

The Board of Directors may choose not to authorize the Options award for this project; however, this alternative is not recommended by Metro staff because the fifty-two Siemens P2000 vehicles are approximately 14-17 years old. The Communication System is experiencing parts obsolescence issues, lack of vendor support and outdated technology. These deficiencies diminish the performance and maintainability of the fleet. Exercising these two options for the Communication System during the preliminary design phase is extremely critical to ensure proper trainline integration of the Communication System with the rest of the essential systems especially with those linked to passenger and operator interface. Delay in exercising these two (2) Options may potentially impact successful integration of these systems, delay vehicle delivery, and result in increased overhaul costs. It is critical to maintaining a SGR on the fifty-two Siemens P2000 LRVs and to enable the Maintenance department to effectively plan and schedule its work.

NEXT STEPS


Upon Board approval, the subject Options will be exercised with Alstom Transportation, Inc.

ATTACHMENTS

- Attachment A - Funding/Expenditure Plan
- Attachment B - Procurement Summary
- Attachment C - DEOD Summary

Prepared by: Annie Yang, Sr. Director, Project Control, Rail Vehicle Acquisition, (213) 922-3254
Jesus Montes, Sr. Executive Officer, Vehicle 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



Phillip A. Washington
Chief Executive Officer

ATTACHMENT A

CP206044 P2000 LIGHT RAIL VEHICLE MODERNIZATION PROGRAM
FUNDING / EXPENDITURE PLAN

Uses of Funds	ITD thru FY17	FY18	FY19	FY20	FY21	FY22	Total	% of Total
Midlife Overhaul 52 Siemens LRVs	\$7,808,823.09	\$43,012,877.02	\$19,093,724.17	\$30,395,862.82	\$33,204,685.90	\$6,563,894.00	\$140,079,867.00	87.11%
Professional Services	\$744,953.74	\$1,387,200.00	\$1,843,826.34	\$1,862,026.34	\$1,348,626.33	\$268,000.00	\$7,454,632.75	4.64%
MTA Administration	\$1,313,419.61	\$420,000.00	\$605,335.55	\$605,335.55	\$527,667.77	\$467,667.77	\$3,939,426.25	2.45%
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$9,326,074.00	\$9,326,074.00	5.80%
Total Project Cost	\$9,867,196.44	\$44,820,077.02	\$21,542,886.06	\$32,863,224.71	\$35,080,980.00	\$16,625,635.77	\$160,800,000.00	100.00%
Sources of Funds								
Local (PA Rail 35%) / State / Federal	\$9,867,196.44	\$44,820,077.02	\$21,542,886.06	\$32,863,224.71	\$35,080,980.00	\$16,625,635.77	\$160,800,000.00	100.00%
Total Project Funding	\$9,867,196.44	\$44,820,077.02	\$21,542,886.06	\$32,863,224.71	\$35,080,980.00	\$16,625,635.77	\$160,800,000.00	100.00%

PROCUREMENT SUMMARY

**OPTIONS FOR THE P2000 LIGHT RAIL VEHICLE (LRV)
MIDLIFE MODERNIZATION PROGRAM / OPP2000**

1.	Contract Number: OPP2000		
2.	Contractor: Alstom Transportation, Inc.		
3.	Mod. Work Description: Exercise Options : a) Option No. 3: Communications – New Vestibule Information and Map Displays b) Option No. 4: Communications – New Audio Communication System		
4.	Contract Work Description: This program is to maintain the light rail vehicles (LRVs) in a state of good repair where the overhaul and component replacement is priority to enhance safety, availability and reliability. The Contractor shall be responsible for transportation of the LRVs from Metro's property to its designated repair facility, performing all necessary tasks and activities described in the Contract Technical Specification and then returning the overhauled vehicles back to Metro ready for revenue service.		
5.	The following data is current as of October 13, 2017 :		
6.	Contract Completion Status		Financial Status
	Contract Awarded:	March 23, 2017	Contract Award Amount: \$130,673,440.72
	Notice to Proceed (NTP):	June 1, 2016	Total of Modifications Approved: None
	Original Complete Date:	August 1, 2021	Pending Modifications (including this action): \$ 5,858,479.70
	Current Est. Complete Date:	August 1, 2021	Current Contract Value (with this action): \$136,531,920.42
7.	Contract Administrator: Nicole Dang		Telephone Number: 213-922-7438
8.	Project Manager: Annie Yang		Telephone Number: 213-922-3454

A. Procurement Background

This Board Action is to approve Contract Modification No. 1 issued in support of exercising Option No. 3 for Communications – Vestibule Information Displays for a firm-fixed price of \$2,803,953.55, and Option No. 4 for Communications – New Audio Communications System for a firm-fixed price of \$3,054,526.15, increasing the total Contract Value from \$130,673,440.72 to \$136,531,920.51. The firm-fixed price amount for each option was competitively solicited during the procurement phase of the Base Contract Award.

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

This Contract with Alstom Transportation Inc. is for a 50 months term and was approved by the Board of Directors on March 23, 2017 under Agenda Number 7. The exercise of these Contract Options will not impact the 50 month term.

B. Cost/Price Analysis

The recommended firm-fixed price amount for these Contract Options was deemed fair and reasonable through adequate price competition and negotiations conducted during the initial solicitation. These Contract Options are being exercised within the validity of the Option price and are not subject to escalation.

DEOD SUMMARY

OPTIONS FOR P2000 LIGHT RAIL VEHICLE (LRV) MIDLIFE
MODERNIZATION PROGRAM / OPP2000

A. Small Business Participation

The Diversity and Economic Opportunity Department (DEOD) did not recommend a Disadvantaged Business Enterprise (DBE) participation goal for this procurement. The contract work will be performed by Alstom Transportation, Inc., Transit Vehicle Manufacturer (TVM). Alstom Transportation, Inc. submitted an FY17 TVM Certification with their proposal, and is currently on Federal Transit Administration's (FTA), T list of eligible TVMs. In compliance with 49 Code of Federal Regulation Part 26.49, TVMs report directly to FTA.

B. Living Wage and Service Contract Worker Retention Policy Applicability

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

C. Prevailing Wage Applicability

Prevailing wage is not applicable to this Contract.

D. Project Labor Agreement/Construction Careers Policy

Project Labor Agreement/Construction Careers Policy is not applicable to this Contract.



Overview of Items 23, 24, 25 and 30

System Safety, Security & Operations Committee



Metro

November 2017

Rail Vehicle Maintenance, Overhaul & Modernization

Maintenance

- Preserve level of performance

Overhaul

- Heavy maintenance repair/replacement at specific OEM intervals (age/mileage)
- No change to the design

Modernization

- Improve systems and performance
- Approximate mid-life
- Upgrade the system designs



Metro

Fleet Plan 10 Year Horizon

Series	Maintenance	Overhaul	Modernize	Retire	Replace
P865	Yes	No	No	In process	P3010
P2020	Yes	Yes	No	Future	P3010
P2000	Yes	Yes	Yes	Future	Future
P2550	Yes	Yes	Yes	Future	Future
P3010	Yes	To be Scheduled	2030 ±	Future	Future
A650 Base	Yes	No	No	Future	HR4000 Base
A650	Yes	Yes	Yes	Future	HR4000 Option

Fleet Plan

□ P2020 LRT Car Series

- Delivered: 15
- Lines : Blue and Expo Lines
- Overhaul Program
 - Ten components
 - Program LOP \$ 30,000,000
 - Contract for air hose replacement - Completed
 - Contract for axle assembly, gearbox/roller, cab slider, body repair, seat removal for bikes, wheelchair, cameras and propulsion – On-Going
 - Contract for Friction Brake– Nov 2017 (Item 23)

□ P2000 LRT Car Series

- Delivered: 52
- Lines: Green, Blue and Expo Lines
- Overhaul Program
 - Nine components
 - Program LOP \$ 26,360,100
 - Contracts for air hose replacement and non-power axle bearing replacement – Completed 2012
 - Contracts for power axle, car battery, couple, exterior and interior paint – On-going
 - Contracts for Friction Brake and Air Compressor – Nov 2017 (Item 25)
- Modernization
 - Renew systems:
 - Carbody; Door; HVAC; Electrical; Propulsion; Trucks; Braking Equipment; Communication; Automatic Train Control; Trainline; Destination Signs
 - Exercise optional features (Item 30)
 - Contract to Alstom
 - LOP \$160,800,000
 - Projected Completion August 2021

Fleet Plan

❑ P2550 LRT Car Series

- Delivered: 50
- Lines : Gold Line
- Overhaul Program
 - Nine components
 - Program LOP \$ 35,007,540
 - Contracts for axle assemblies, and coupler awarded – June & Sept 2017
 - **Contract for Friction Brake – Nov 2017 (Item 25)**
 - Contracts for propulsion, pantograph, battery, doors, truck and suspension systems – Anticipated 2018/2019
- Modernization
 - Renew systems:
 - Carbody; Door; HVAC; Electrical; Propulsion; Trucks; Braking Equipment; Couplers; Communication; Battery
 - Specification Prep Phase
 - **Contract to STV Incorporated (Item 24)**
 - **Consultant \$1,421,086 –Nov 2017**
 - Estimated LOP TBD
 - Projected Start 2020

❑ A650 Subway Car Series

- Delivered: 74
- Lines : Red Line
- Overhaul Program
 - Ten components
 - Program LOP \$ 30,000,000
 - Contracts for air compressor, HVAC compressor, passenger door, and car battery replacement – Completed
 - Contracts for friction brake, traction motor, gearbox, coupler, AC, and DC – On-Going
- Modernization
 - Renew systems:
 - Propulsion; Trucks; Friction Brakes; Doors; Communication; Interiors; Signal System, HVAC
 - Design and engineering phase
 - Contract to Talgo
 - LOP \$72,970,494
 - Projected Completion December 2021



Thank you



Metro®