

Los Angeles County  
Metropolitan Transportation Authority

QUARTERLY PROJECT STATUS REPORT

# 2550 Rail Vehicle Program

December 2013



Metro®

# **2550 RAIL VEHICLE PROGRAM**

## QUARTERLY PROJECT STATUS REPORT

THE PREPARATION OF THIS DOCUMENT HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL TRANSIT ADMINISTRATION (FTA), UNDER THE FEDERAL TRANSIT ACT OF 1964, AS AMENDED AND WITH FUNDS FROM THE STATE OF CALIFORNIA

December 2013

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## **PROJECT OVERVIEW**

***The 2550 Light Rail Vehicle Base Contract for a Base order of 50 LRVs was awarded to AnsaldoBreda, S.p.A. of Pistoia and Naples, Italy (A.B.). The 2550 Contract also includes two 50-LRV pre-priced options for future growth, expansions, and new lines. Per MTA Board Action in September 2009, staff was tasked to extend the expiration dates of both options to October 31, 2009, and finalize exercise of the options by that date. AnsaldoBreda, however, declined to accept Metro conditions for the options and the options expired. As of March 29, 2013, fifty (50) cars have been delivered and fifty (50) vehicles have been Final Accepted for operation on the Metro Gold Line.***

Project accomplishments for this period:

1. Accepted vehicles have been operating in revenue service since March 2008. During this period vehicle operational issues have been discovered as a result of experience gained in actual revenue operation. AB has addressed and continues to support resolution of operational issues as encountered and continue to support the warranty program. To date the P2550 fleet has accumulated approximately 14.1 million revenue service miles with average Mean Miles Between Failure MMBF (January – December) is 34,311 miles.
2. Liquidated Damages. Under the Contract, AB is obligated to reimburse MTA for delivery delays up to a maximum of \$14,677,487 (10% of the total contract price). To date, the maximum amount of \$14,677,487 has been withheld from AB progress payments to compensate for delays.
3. Metro's Project Team reported to the FTA Project Management and Oversight Committee progress status of the Modification 17 Settlement Agreement and provided updates to the remaining technical and project deliverables:
  - Finalize settlement agreement including milestone retention amounts and liquidated damages.
  - Final Running and Heavy Repair Manuals are under review by Metro staff with target completion date of April 2014.
  - The project was closed on December 31, 2013. The final invoice will be submitted once all deliverables have been received. The target date for submittal of the final invoice is April 2014.

## **MANAGEMENT ISSUES**

**Concern No. 1:** Resolution of remaining open items on Conditionally Accepted vehicles and vehicle configuration finalization.

**Status/Action No. 1:** This issue is closed; all cars have been Final Accepted. AB continues to work to ensure any remaining open items under the contract warranty provisions.

**Concern No. 2:** As of December 31, 2013 the basic warranty has expired on 43 cars.

**Status/Action No. 2:**

Five more vehicles will come out of warranty in 2014:

- Car 747 – 4/29/14
- Car 732 – 5/12/14
- Car 748 – 6/24/14
- Car 749 – 8/13/14
- Car 750 – 9/30/14

Two vehicles will come out of warranty into 2015:

- Car 701 – 7/31/15
- Car 702 – 9/20/15

**P2550 LIGHT RAIL VEHICLE CONTRACT & PROPOSED DELIVERY SCHEDULE**

No. Of Cars	VEHICLE NUMBER	CONTRACT DELIVERY REQUIREMENT - MONTHS AFTER JUNE 6, 2003 NTP	CONTRACT REQUIRED DELIVERY DATE (End of Month)	ACTUAL DATE OF ARRIVAL AT METRO	CONDITIONAL ACCEPTANCE DATE	FINAL ACCEPTANCE DATE
1	701	24 MONTHS	JUNE/05	4/11/12	7/31/12	9/26/12
2	702	24 MONTHS	JUNE/05	6/16/12	9/20/12	9/26/12
3	703	27 MONTHS	SEPTEMBER/05	7/28/10	10/20/10	12/30/11
4	704	26 MONTHS	AUGUST/05	1/30/07	8/6/08	12/30/11
5	705	28 MONTHS	OCTOBER/05	1/09/07	8/3/09	8/31/11
6	706	28 MONTHS	OCTOBER/05	2/28/07	3/5/08	12/30/11
7	707	29 MONTHS	NOVEMBER/05	5/31/07	9/10/09	6/30/11
8	708	29 MONTHS	NOVEMBER/05	6/20/07	3/5/08	12/30/11
9	709	30 MONTHS	DECEMBER/05	7/31/07	4/16/09	12/30/11
10	710	30 MONTHS	DECEMBER/05	8/30/07	6/13/08	12/30/11
11	711	31 MONTHS	JANUARY/06	5/30/08	7/15/08	12/30/11
12	712	31 MONTHS	JANUARY/06	6/06/08	8/29/08	12/30/11
13	713	32 MONTHS	FEBRUARY/06	6/24/08	11/25/08	10/31/11
14	714	32 MONTHS	FEBRUARY/06	7/22/08	11/12/08	10/31/11
15	715	33 MONTHS	MARCH/06	8/5/08	10/31/08	10/31/11
16	716	33 MONTHS	MARCH/06	8/26/08	3/31/09	8/31/11
17	717	34 MONTHS	APRIL/06	9/23/08	10/24/08	10/31/11
18	718	34 MONTHS	APRIL/06	9/30/08	11/20/08	10/31/11
19	719	35 MONTHS	MAY/06	11/6/08	3/23/09	10/31/11
20	720	35 MONTHS	MAY/06	11/13/08	12/12/08	10/31/11
21	721	36 MONTHS	JUNE/06	11/19/08	12/23/08	10/31/11
22	722	36 MONTHS	JUNE/06	12/2/08	1/23/09	10/31/11
23	723	37 MONTHS	JULY/06	12/16/08	2/20/09	10/31/11
24	724	37 MONTHS	JULY/06	1/8/09	1/31/09	9/29/11
25	725	38 MONTHS	AUGUST/06	1/28/09	2/27/09	9/29/11
26	726	38 MONTHS	AUGUST/06	3/20/09	4/30/09	9/29/11
27	727	39 MONTHS	SEPTEMBER/06	4/9/09	5/19/09	9/29/11
28	728	39 MONTHS	SEPTEMBER/06	5/1/09	5/29/09	9/29/11
29	729	40 MONTHS	OCTOBER/06	5/20/09	6/23/09	9/29/11
30	730	40 MONTHS	OCTOBER/06	5/29/09	6/29/09	9/29/11
31	731	41 MONTHS	NOVEMBER/06	6/12/09	12/20/09	9/29/11
32	732	41 MONTHS	NOVEMBER/06	6/30/09	5/12/11	8/31/11
33	733	41 MONTHS	NOVEMBER/06	7/31/09	12/31/09	8/31/11
34	734	42 MONTHS	DECEMBER/06	8/21/09	2/8/10	8/31/11
35	735	42 MONTHS	DECEMBER/06	10/21/09	4/14/10	8/31/11
36	736	42 MONTHS	DECEMBER/06	12/2/09	2/3/10	6/30/11
37	737	43 MONTHS	JANUARY/07	1/7/10	2/23/10	6/28/11
38	738	43 MONTHS	JANUARY/07	2/4/10	4/19/10	6/28/11
39	739	43 MONTHS	JANUARY/07	3/4/10	4/12/10	6/30/11
40	740	44 MONTHS	FEBRUARY/07	4/15/10	5/20/10	6/7/11
41	741	44 MONTHS	FEBRUARY/07	5/12/10	6/30/10	5/26/11
42	742	44 MONTHS	FEBRUARY/07	5/19/10	7/20/10	5/26/11
43	743	45 MONTHS	MARCH/07	7/8/10	8/31/10	5/20/11
44	744	45 MONTHS	MARCH/07	10/20/10	11/30/10	8/31/11
45	745	45 MONTHS	MARCH/07	12/10/10	12/31/10	8/31/11
46	746	46 MONTHS	APRIL/07	01/19/11	02/28/11	8/31/11
47	747	46 MONTHS	APRIL/07	03/03/11	4/29/11	8/31/11
48	748	46 MONTHS	APRIL/07	5/11/11	6/24/11	6/30/11
49	749	47 MONTHS	MAY/07	6/1/11	8/3/11	9/29/11
50	750	47 MONTHS	MAY/07	7/6/11	9/30/11	10/31/11

## SCHEDULE ISSUES

*Notice to Proceed was given June 6, 2003. The base contract engineering and assembly effort for the first vehicle was scheduled to take approximately two years and delivery of the first two cars was scheduled for June 2005. The 50 car base contract funding was divided between Metro (40 cars) and the FTA (10 cars). The last (fiftieth) base contract LRV was scheduled for delivery 48-months after NTP, or approximately May 2007.*

Status as of this writing follows:

A total of fifty (50) cars have been delivered and fifty (50) cars have been final accepted by MTA.

- **Warranty Extension:** Metro's Project Team negotiated extended warranty on 13 vehicles due to AB being late on delivery of e.g. final manuals, critical spare parts including traction motors and trucks, special tools and equipment. Without these deliverables Rail Fleet Services is not able to maintain the fleet; AB concurred and realized that the additional time is also needed by them to fulfill these requirements.
- **Warranty Parts Replacement:** AB will be replacing all truck mounted shock absorbers due to rubber fatigue the mounting base. The parts are ordered and work will commence in the next quarter. **Complete.**
- **Fleet Defect Investigation:** AB Engineering is investigating Center Truck Resilient Pin Bushing fatigue with consequential material knurling to the connector beam. A fleet wide inspection is ongoing and AB will replace worn components. Work is scheduled to commence upon parts delivery starting June 2013. **The project is 74% complete.**
- **Fleet Wide Modifications:** AB has completed all Metro requested modifications e.g. installation of ATP Bypass Switch, Door adjustments, and installation of additional stanchions near operator cab doors. **Complete.**

**PROJECT BUDGET STATUS**

<b>ELEMENT</b>	<b>LRV FINAL PROJECT BUDGET FOR 800151 (40 LRV'S)</b>	<b>LRV FINAL PROJECT BUDGET FOR 800088 (10 LRV'S)</b>	<b>TOTAL LRV FINAL PROJECT BUDGET</b>	<b>COMMENTS</b>
<b>Base Buy 50 LRVs &amp; Spare Parts/Special Tools</b>	\$95,832,596	\$23,768,374	\$119,600,969	
<b>Rail Consultant Total</b>	\$10,630,218	\$2,955,151	\$13,585,369	Contract PS 8310-1267 for Rail Consultant staff technical services
<b>Others</b>	\$6,489,001	\$1,514,429	\$8,003,430	MTA Staff, Warranty, Other Prof. Svc.
<b>TOTALS</b>				
	<b>\$112,951,815</b>	<b>\$28,237,954</b>	<b>\$141,189,768</b>	



**FINANCIAL/GRANT STATUS**

SOURCE	in \$ millions							
	(A)	(B)	(C)	(D)		(E)		
	ORIGINAL BUDGET	TOTAL FUNDS ANTICIPATED	TOTAL FUNDS AVAILABLE	COMMITMENTS \$	(D/B) %	EXPENDITURES \$	(E/B) %	
FEDERAL - STIP	71.1	15.4	15.4	15.4	100%	15.4	100%	
FED-SEC 5309 FIXED GUIDEWAY	38.3	25.9	25.9	25.9	100%	25.9	100%	
FEDERAL - RSTP	7.7	0.0	0.0	0.0	0%	0.0	0%	
FEDERAL - CMAQ	14.2	0.0	0.0	0.0	0%	0.0	0%	
STATE STIP	6.0	61.7	61.7	61.7	100%	61.7	100%	
STATE STA	15.6	8.6	8.6	8.6	100%	8.6	100%	
PROPOSITION A 36% BONDS	0.0	1.3	1.3	1.3	100%	1.3	100%	
UNBILLED ACRUALS								
<b>TOTAL</b>	<b>152.9</b>	<b>113.0</b>	<b>113.0</b>	<b>113.0</b>	<b>100%</b>	<b>113.0</b>	<b>100%</b>	

(1) Based on December 2013 Final Cost Report.

Note: Expenditures are cumulative through December 2013.

LRV Fleet Enhancement Project No. 800151 consists of 40 light rail vehicles (LRV) and associated costs.

The remaining 10 LRV's and associated costs under Contract P2550 are being charged directly against the Metro Gold Line Eastside Extension Proj

**STATUS OF FUNDS ANTICIPATED**

**STIP STATE:** LACMTA requests for STIP allocation have been approved. \$61.73 million have been spent.

**FEDERAL SECTION 5309:** LACMTA grant applications have been approved. \$25.9 million in section 5309 funds were approved. Funds have been drawdown.

## CURRENT PHOTOS



2550 LRV Coming Around the Curve into Union Station.



2550 LRV at Metro Gold Line Yard with Decals for LA Olympic Bid.

## **APPENDIX**

### **COST AND BUDGET TERMINOLOGY**

**COMMITMENTS:** The total of actual contract awards, executed change orders or amendments, approved work orders of Master Cooperative Agreements, offers accepted for purchase of real estate, and other Metro actions that will result in specific expenditures at a future time.

**INCURRED COST:** The total value of work performed to date of services received and acquired materials or properties.

**EXPENDITURES:** The total dollar amount of checks written by Metro's Accounting department for contractor or consultant invoices, third party invoices, staff salaries, and closing payments for escrow accounts that is reported in Metro's Financial Information System (FIS).

**CONSTRUCTION:** Includes guideways, yards and shops, systems equipment, stations, and vehicles.

**PROFESSIONAL SERVICES:** Includes general engineering, construction management services, consultant design support services during construction, legal counsel, and agency (Metro staff) costs.

**CONTINGENCY:** A fund established at the beginning of a project to provide for anticipated but unknown additional costs that may arise during the course of the project.

**SPECIAL CONDITIONS:** Includes utilities relocation, environmental compliance and mitigation, master cooperative agreements, insurance program, artwork, systems integration testing and pre-revenue operations.

**APPENDIX  
LIST OF ACRONYMS**

<b>ATP</b>	Automatic Train Protection
<b>CN</b>	Change Notice
<b>CO</b>	Change Order
<b>CMAQ</b>	Congestion Mitigation & Air Quality
<b>CTC</b>	California Transportation Commission
<b>FFGA</b>	Full Funding Grant Agreement
<b>FIS</b>	Financial Information System
<b>FTA</b>	Federal Transit Administration
<b>FY</b>	Fiscal Year
<b>HVAC</b>	Heating, Ventilation, Air Conditioning
<b>LACMTA</b>	Los Angeles County Metropolitan Transportation Authority (Metro)
<b>LNTP</b>	Limited Notice To Proceed
<b>LRV</b>	Light Rail Vehicle
<b>METRO</b>	Los Angeles County Metropolitan Transportation Authority
<b>MGLEE</b>	Metro Gold Line Eastside Extension
<b>N/A</b>	Not Applicable
<b>NTE</b>	Not to Exceed
<b>NTP</b>	Notice To Proceed
<b>PGL</b>	Pasadena Gold Line
<b>PMOC</b>	Project Management Oversight Consultant
<b>QPSR</b>	Quarterly Project Status Report
<b>RSTP</b>	Regional Surface Transportation Program
<b>SSPP</b>	System Safety Program Plan
<b>STIP</b>	State Transportation Improvement Program
<b>TBD</b>	To Be Determined
<b>TWC</b>	Train to Wayside Communications
<b>US&amp;S</b>	Formerly Union Switch and Signal