

# 2550 Rail Vehicle Program

September 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

September 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 12.3 million revenue service miles with average Mean Miles Between Failure MMBF (January - August 2013) is 29,421 miles.
2. Numerous meetings were held with AB engineers and management during the period to continue with project close-out activities.
3. 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.
4. Metro's project and contract administration staff are meeting on a regular basis to initiate project close out elements.
5. 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 to be submitted on or before December 2013.
  - Delivery of remaining contact spare parts (only handful remain) and return of loaned warranty parts.
  - The final settlement agreement is on schedule for contract closeout by December 31, 2013.

## **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 are addressed prior to project close-out.

**Concern No. 2:** As of September 27, 2013 the basic warranty has expired on 43 cars, AB is responsible for supporting the fleet with repairs and spare parts.

**Status/Action No. 2:** The Metro Project Team previously brought this concern to AB top management requesting full attention given to the warranty support parts shortage problems. AB has contacted their sub-suppliers and has also procured requisite parts for this purpose, when possible Metro loans AB parts to support the revenue fleet. Although AB is still borrowing parts, AB is also returning parts to Metro as they arrive from suppliers.

Metro's Project Management Team has focused attention on this matter by meeting with AB on a regular basis to get the parts returned to Metro as quickly as possible. *Ongoing.*

**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. *Work is in progress.*
- **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. *Project is progressing.*
- **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. *Completed.*

**PROJECT BUDGET STATUS**

<b>ELEMENT</b>	<b>LRV PROJECT BUDGET FOR 800151 (40 LRV'S)</b>	<b>LRV PROJECT BUDGET FOR 800088 (10 LRV'S)</b>	<b>TOTAL LRV PROJECT BUDGET</b>	<b>COMMENTS</b>
<b>Base Buy 50 LRVs</b>	\$88,647,263	\$22,161,816	\$110,809,079	
<b>Base Buy Spare Parts</b>	\$5,849,886	\$1,462,471	\$7,312,357	
<b>Base Buy Special Tools &amp; Test Equip</b>	\$1,407,051	\$351,763	\$1,758,814	
<b>Additional Tools</b>	\$1,400,000	\$350,000	\$1,750,000	
<b>Subtotals</b>	<b>\$97,304,200</b>	<b>\$24,326,050</b>	<b>\$121,630,250</b>	
<b>Rail Consultant Total</b>	\$10,868,759	\$2,717,190	\$13,585,949	Contract PS 8310-1267 for Rail Consultant staff technical services
<b>Contingency</b>	\$343,542	\$85,885	\$429,427	
<b>Subtotals</b>	<b>\$11,212,301</b>	<b>\$2,803,075</b>	<b>\$14,015,376</b>	
<b>MTA Staff</b>	\$6,073,920	\$1,518,480	\$7,592,400	
<b>TOTALS</b>	<b>\$114,590,421</b>	<b>\$28,647,605</b>	<b>\$143,238,026</b>	

**FINANCIAL/GRANT STATUS**

SEPTEMBER 2013		STATUS OF FUNDS BY SOURCE							
SOURCE	(A) ORIGINAL BUDGET	(B) TOTAL FUNDS ANTICIPATED	(C) TOTAL FUNDS AVAILABLE	(D)		(E)		(F)	
				(DB) COMMITMENTS		(EB) EXPENDITURES		(FB) BILLED to FUNDING SOURCE	
				\$	%	\$	%	\$	%
FEDERAL - STIP	71.1	15.4	15.4	15.4	100%	15.4	100%	15.4	100%
FED-SEC 5309 FIXED GUIDEWAY	38.3	25.9	25.9	25.9	100%	25.9	100%	25.9	100%
FEDERAL - RSTP	7.7	0.0	0.0	0.0	0%	0.0	0%	0.0	0%
FEDERAL - CMAQ	14.2	0.0	0.0	0.0	0%	0.0	0%	0.0	0%
STATE STIP	6.0	61.7	61.7	61.7	100%	61.7	100%	61.7	100%
STATE STA	15.6	8.6	8.6	8.6	100%	8.6	100%	8.6	100%
PROPOSITION A 35% BONDS UNBILLED ACRUALS	0.0	2.9	2.9	2.9	100%	1.7	57%	1.6	57%
<b>TOTAL</b>	<b>152.9</b>	<b>114.6</b>	<b>114.6</b>	<b>114.6</b>	<b>100%</b>	<b>113.3</b>	<b>99%</b>	<b>113.3</b>	<b>99%</b>

in \$ millions

(1) Based on September 06 Regional Programming Funding Plan.  
Revised to reflect August 2011 FTA approval of transferring out Federal RSTP and CMAQ funds to the P3010 LRV Project.  
Note: Expenditures are cumulative through September 2013.  
LRV Fleet Enhancement Project No. 800151 consists of 40 light rail vehicles (LRV) and associated costs.  
The remaining 10 LRVs and associated costs under Contract P2550 are being charged directly against the Metro Gold Line Eastside Extension Project.

**STATUS OF FUNDS ANTICIPATED**

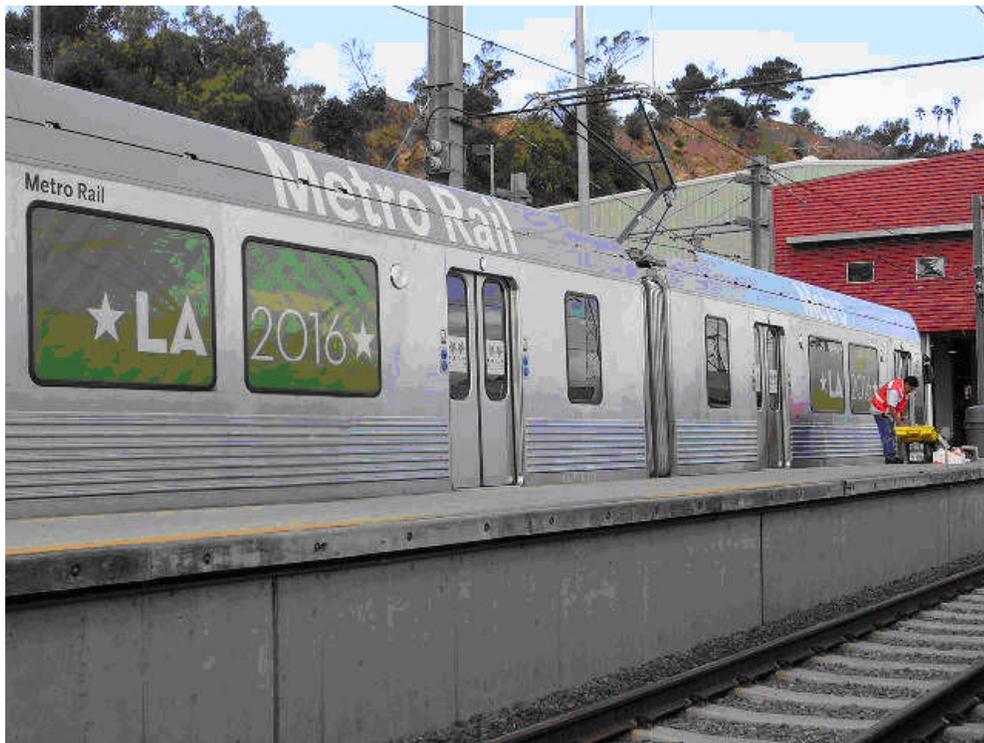
**STIP STATE:** LACMTA requests for STIP allocation have been approved. \$61.73 million is available for drawdown.

**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