

2550 Rail Vehicle Program

March 2009



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

March 2009

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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. These options are subject to specific U.S. Department Of Labor Producer Price Index escalation and will require future Metro Board approval in order to become a binding contract requirement. Per MTA Board Action in March 2009, staff was tasked to extend the expiration dates of both options to May 31, 2009, evaluate the merits of exercising the options and provide their recommendation to the Board on May 28, 2009.

As a result of the project status evaluation by the Project Team in 2008, AB made several changes to AB's Project Management staff organization and increased supervision of the project from US by the addition of new expert vehicle Engineers and technicians to AB's team. As of March 2009, nineteen vehicles have been Conditionally Accepted for operation on the Metro Gold Line.

Project accomplishments for this period:

1. As of March 2009, Metro Conditionally Accepted nineteen (19) vehicles for operation on Metro Gold Line. Accepted vehicles have been operating in revenue service since March 2008. However, some operational issues have been discovered as a result of experience gained in actual revenue operation. AB is addressing operational issues as they are encountered.
2. As of March 2009, Metro has received a total of twenty-two (22) vehicles at Los Angeles from the Pittsburg, CA Final Assembly Plant. Further six (6) assembled vehicles are at Pittsburg Plant. An additional 28 one half car shells are in Pittsburg, CA for a total of 14 additional vehicles for a grand total of 42 vehicles in U.S. The remaining eight vehicles (14 carshells and one complete car) are in Pistoia, Italy and should ship to U.S. by June/July 2009.
3. The Project Team continued evaluation of the overall project status. A series of critical technical items list, including field observed open items, were identified as a basis of discussions with AnsaldoBreda (AB). Numerous meetings (daily, weekly and monthly) have been held with AB engineers during the period to determine the status and to close engineering open items. The work is ongoing.
4. The Project Team is continuing meetings with the Project Director of AnsaldoBreda, and AB's senior project members regarding vehicle revenue operation issues. AnsaldoBreda has improved their on site technical staffing and has expedited resolution of operational issues.
5. The Project Team met with several PMOC staff to discuss Project issues and vehicle delivery issues.

MANAGEMENT ISSUES

Concern No. 1: The AnsaldoBreda proposed revised “worse-case” schedule displays a considerable slip in the Contract Schedule but still sufficient to meet the operational schedules of the next two light rail lines that are scheduled for substantial completion from 2009 onward.

Status/Action No. 1: With the acceptance of initial vehicles, AB was able to finalize vehicle configuration and finalized its delivery schedule for the remainder of vehicles. AB has agreed to present to Metro 20 vehicles for Conditional Acceptance by April 2009. Per AB’s schedule the 50th car will be delivered by July 2010. AB is on track per the revised schedule.

Concern No. 2: Resolution of remaining open items on Conditionally Accepted vehicles and vehicle configuration finalization.

Status/Action No. 2: Based on successful results achieved during Project Meeting in Pistoia, Italy in February 2008, a second major Project Meeting was held in Los Angeles in May 2008 to discuss, review and set Action Items on remaining critical open issues affecting vehicles. A third major Project Meeting was held in June 2008 in Pistoia/Naples to further pursue closure of remaining open items. Further MTA is meeting with AB on a weekly basis in Los Angeles to close field observed open items resulting from operating vehicles in revenue service. Project Team working with AB to address all field observed issues to insure vehicle revenue service reliability for the Eastside Extension ROD. A fourth project meeting with AB is being planned for May 2009.

Concern No. 3: Vehicle onboard signaling system final design and approval progress is delayed.

Status/Action No. 3: A series of working conference calls has been held with AB and its signaling subcontractor Ansaldo STS (formally US&S) to resolve open items. A series of tests have been conducted by Ansaldo STS in Los Angeles in March 2009 and further meeting and lab testing in Pittsburgh, Pennsylvania (at Ansaldo STS) is planned for April/May 2009.

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Quarterly Project Status Report**

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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)	UNAPPROVED DELIVERY SCHEDULE	ACTUAL DATE OF ARRIVAL AT METRO	CONDITIONAL ACCEPTANCE DATE	FINAL ACCEPTANCE DATE
1	701	24 MONTHS	JUNE/05	6/15/05	6/11/05	SEE NOTE 1	
2	702	24 MONTHS	JUNE/05	7/22/05	7/26/05	SEE NOTE 1	
3	705	26 MONTHS	AUGUST/05	10/31/06	1/09/07	SEE NOTE 1	
4	704	27 MONTHS	SEPTEMBER/05	11/30/06	1/30/07	8/6/08	
5	706	28 MONTHS	OCTOBER/05	12/31/06	2/28/07	3/5/08	
6	707	28 MONTHS	OCTOBER/05	12/31/06	5/31/07	SEE NOTES 1&2	
7	708	29 MONTHS	NOVEMBER/05	1/31/07	6/20/07	3/5/08	
8	709	29 MONTHS	NOVEMBER/05	1/31/07	7/31/07		
9	710	30 MONTHS	DECEMBER/05	2/28/07	8/30/07	6/13/08	
10	711	30 MONTHS	DECEMBER/05	2/28/07	5/30/08	7/15/08	
11	712	31 MONTHS	JANUARY/06	3/31/07	6/06/08	8/29/08	
12	713	31 MONTHS	JANUARY/06	3/31/07	6/24/08	11/25/08	
13	714	32 MONTHS	FEBRUARY/06	4/30/07	7/22/08	11/12/08	
14	715	32 MONTHS	FEBRUARY/06	4/30/07	8/5/08	10/31/08	
15	716	33 MONTHS	MARCH/06	4/30/07	8/26/08	3/31/09	
16	717	33 MONTHS	MARCH/06	5/31/07	9/23/08	10/24/08	
17	718	34 MONTHS	APRIL/06	5/31/07	9/30/08	11/20/08	
18	719	34 MONTHS	APRIL/06	5/31/07	11/6/08	3/23/09	
19	720	35 MONTHS	MAY/06	6/30/07	11/13/08	12/12/08	
20	721	35 MONTHS	MAY/06	6/30/07	11/19/08	12/23/08	
21	722	36 MONTHS	JUNE/06	6/30/07	12/2/08	1/23/09	
22	723	36 MONTHS	JUNE/06	7/31/07	12/16/08	2/20/09	
23	724	37 MONTHS	JULY/06	7/31/07	1/8/09	1/31/09	
24	725	37 MONTHS	JULY/06	7/31/07	1/28/09	2/27/09	
25	726	38 MONTHS	AUGUST/06	8/31/07	3/20/09		
26		38 MONTHS	AUGUST/06	8/31/07			
27		39 MONTHS	SEPTEMBER/06	8/31/07			
28		39 MONTHS	SEPTEMBER/06	9/30/07			
29		40 MONTHS	OCTOBER/06	9/30/07			
30		40 MONTHS	OCTOBER/06	9/30/07			
31		41 MONTHS	NOVEMBER/06	10/31/07			
32		41 MONTHS	NOVEMBER/06	10/31/07			
33		41 MONTHS	NOVEMBER/06	10/31/07			
34		42 MONTHS	DECEMBER/06	11/30/07			
35		42 MONTHS	DECEMBER/06	11/30/07			
36		42 MONTHS	DECEMBER/06	12/31/07			
37		43 MONTHS	JANUARY/07	12/31/07			
38		43 MONTHS	JANUARY/07	1/31/08			
39		43 MONTHS	JANUARY/07	1/31/08			
40		44 MONTHS	FEBRUARY/07	2/28/08			
41		44 MONTHS	FEBRUARY/07	2/28/08			
42		44 MONTHS	FEBRUARY/07	3/31/08			
43		45 MONTHS	MARCH/07	3/31/08			
44		45 MONTHS	MARCH/07	4/30/08			
45		45 MONTHS	MARCH/07	4/30/08			
46		46 MONTHS	APRIL/07	5/31/08			
47		46 MONTHS	APRIL/07	5/31/08			
48		46 MONTHS	APRIL/07	6/30/08			
49		47 MONTHS	MAY/07	6/30/08			
50		47 MONTHS	MAY/07	7/31/08			

NOTE 1: Vehicles 701, 702, 705 and 707 were returned to AB in Pittsburg for repair/upgrade.

NOTE 2: Vehicle 707 was returned to Los Angeles after repair/upgrade on 2/27/2009.

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:

This is a performance-based contract under which compensation is only paid when deliverables are received and approved by Metro. Compensation for contract milestone completion is an ongoing process and is directly related to Contractor performance. While progress is continuing, payments of Contract milestones lags behind. Performance improvement was promised by AnsaldoBreda Project Director, with the addition of more engineering staff at the Pittsburg, California Final Assembly Plant, Project Management staff at Pistoia Italy, and at Los Angeles Commissioning Facilities.

Subsequent to several meetings of Metro Management with AB Management, AB proposed a best effort schedule for delivery of two (2) vehicles (706 and 708) for Conditional Acceptance by Metro by mid-December 2007. However, due to lingering technical difficulties with Electro Magnetic Interference (EMI) and ATP/TWC Testing, the December schedule was postponed to March 2008. On March 5, 2008 the above two vehicles were Conditionally Accepted for Metro Gold Line operation only. To date seventeen (17) additional cars have been conditionally accepted by MTA for a total of nineteen (19) cars. AB's present schedule indicates that the 50th car will be delivered by July 2010 with the 29th car accepted by July 2009.

Some of the known time critical issues that remain to be resolved to achieve the final Acceptance are:

- **Vehicle Onboard Signaling System Final Design.** The final design approval of vehicle signaling system has not been completed. Metro is aggressively working with AB and its signaling supplier Ansaldo STS (formally US&S) to close remaining open items. Additional testing has been conducted in Los Angeles in March and additional lab testing as well as project meeting is being planned at Pittsburgh, Pennsylvania (at Ansaldo STS) in April/May 2009.
- **Vehicle Electro Magnetic Interference (EMI) Test.** AB reduced EMI levels of the vehicle for safe operation on the Metro Gold Line and its Eastside extension. AB pursued additional corrective measures to mitigate the remaining specification non-compliance items. Specifically EMI levels must be reduced for operation on the Metro Blue Line. AB has conducted the Metro Blue Line related EMI Testing and is in the process of submitting its final test report.

SCHEDULE ISSUES

- **4000 Mile Operational Test.** In order to complete the design review and approval cycle, the P2550 specification requires a 4000 mile revenue simulated test run of 3 cars. Testing has been rescheduled to accommodate vehicle acceptance testing and will be completed as soon as adequate vehicles are available for Eastside Extension revenue start up testing.
- **Vehicle Weight Issues Mitigation.** The vehicle weight issue is being reviewed by Metro. Various mitigation alternatives are being considered. Those alternatives are, but not limited to, the study of critical bridge structures and analysis , AB's investigation and proposal of feasible weight reduction measures , implementing vehicle passenger load increase monitoring capability with visual and audible annunciations of overweight conditions, and commercial considerations etc;

Cars 701, 702, 705 and 707 have been returned to Pittsburg for rework and upgrade. Car 707 was returned to Los Angeles after rework on 2/27/2009.

Presently twenty-two (22) vehicles are at the MTA shops. Nineteen (19) cars were Conditionally Accepted by Metro and placed in revenue service at Metro Gold Line. The remaining three (3) vehicles are located at Metro Gold Line Facilities and will be tested for acceptance. Vehicles 709 and 726 are the next candidates for conditional acceptance.

PROJECT BUDGET STATUS

ELEMENT	LRV PROJECT BUDGET FOR 800151 (40 LRV'S)	LRV PROJECT BUDGET FOR 800088 (10 LRV'S)	TOTAL LRV PROJECT BUDGET	COMMENTS
Base Buy 50 LRVs	\$119,734,000	\$29,933,500	\$149,667,500	
Base Buy Spare Parts	\$5,849,886	\$1,462,471	\$7,312,357	
Base Buy Special Tools & Test Equip	\$1,407,051	\$351,763	\$1,758,814	
Subtotals	\$126,990,937	\$31,747,734	\$158,738,671	
Contingency	\$12,699,094 *-3,110,093 \$9,589,001	\$3,174,773 *-777,523 \$2,397,250	\$15,873,867 *-3,887,616 \$11,986,251	
Subtotals	\$139,690,031	\$34,922,507	\$174,612,538	
Rail Consultant	\$6,870,830 *+3,110,093	\$1,717,707 *+777,523	\$8,588,537 *+3,887,616	Contract PS 8310-1267 for Rail Consultant staff technical services
Contingency	\$343,542	\$85,885	\$429,427	
Subtotals	*\$10,324,465	*\$2,581,115	*\$12,905,580	
MTA Staff	\$6,014,602	\$1,577,798	\$7,592,400	
TOTALS	\$152,919,004	\$38,303,898	\$191,222,902	

To be revised to show reduction in awarded Contractor value resulting from a sales tax exemption on rail cars and spare parts (Granted by the California State Board of Equalization).

Fiscal Year Cashflow Table (Milestone Payment) is currently under review.

* Revision due to extension and increase to Rail Consultant Contract approved at the July 2008 MTA Board Meeting.

FINANCIAL/GRANT STATUS

MARCH 2009		STATUS OF FUNDS BY SOURCE							
SOURCE	(A) ORIGINAL BUDGET	(B) TOTAL FUNDS ANTICIPATED	(C) TOTAL FUNDS AVAILABLE	(D) (D/B) COMMITMENTS		(E) (E/B) EXPENDITURES		in \$ millions (F) (F/B) 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	7.7	7.7	7.7	100%	0.0	0%	0.0	0%
FEDERAL - CMAQ	14.2	14.2	14.2	14.2	100%	0.0	0%	0.0	0%
STATE STIP	6.0	61.7	61.7	59.1	96%	28.1	46%	26.1	44%
STATE STA	15.6	15.6	15.6	15.6	100%	8.6	55%	8.6	55%
PROPOSITION A 35% BONDS	0.0	12.3	0.0	0.0	0%	0.0	0%	0.0	0%
UNBILLED ACRUALS									
TOTAL	152.9	152.9	140.6	137.9	90%	78.1	51%	76.0	50%

(1) Based on September 06 Regional Programming Funding Plan.
 Note: Expenditures are cumulative through February 2009.
 The 2550 Rail Vehicle Program 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 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.

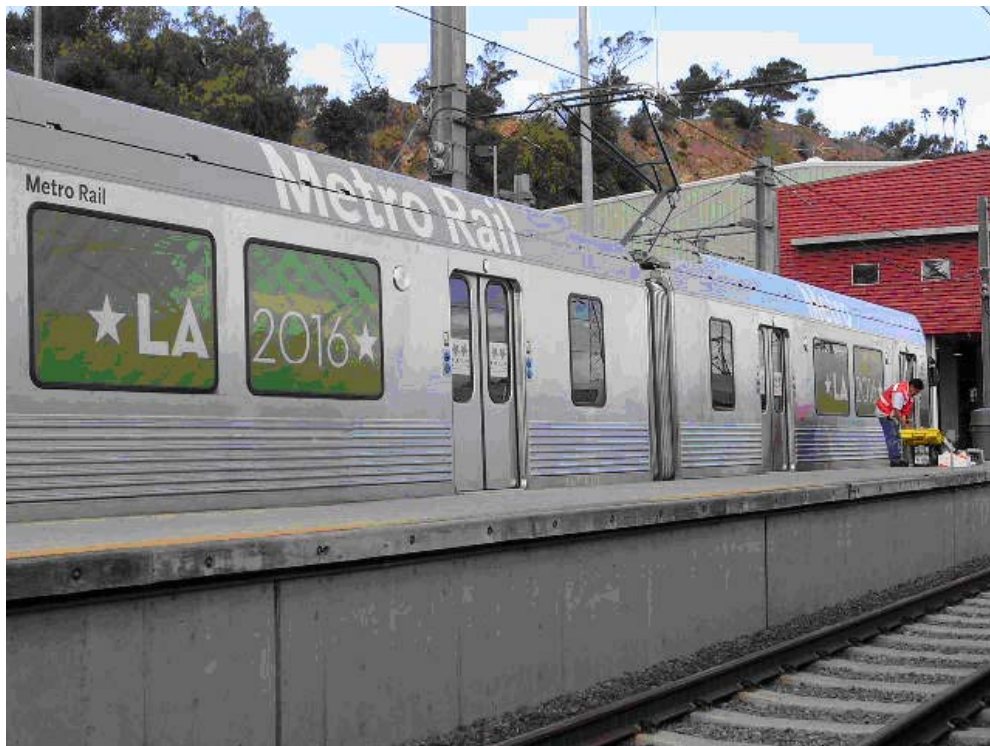
FEDERAL RSTP: A grant agreement for \$7.7 million was executed on April 7, 2005. Funds are available for drawdown.

FEDERAL CMAQ: A grant agreement for \$14.2 million was executed on August 25, 2005. Funds are available for 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**

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