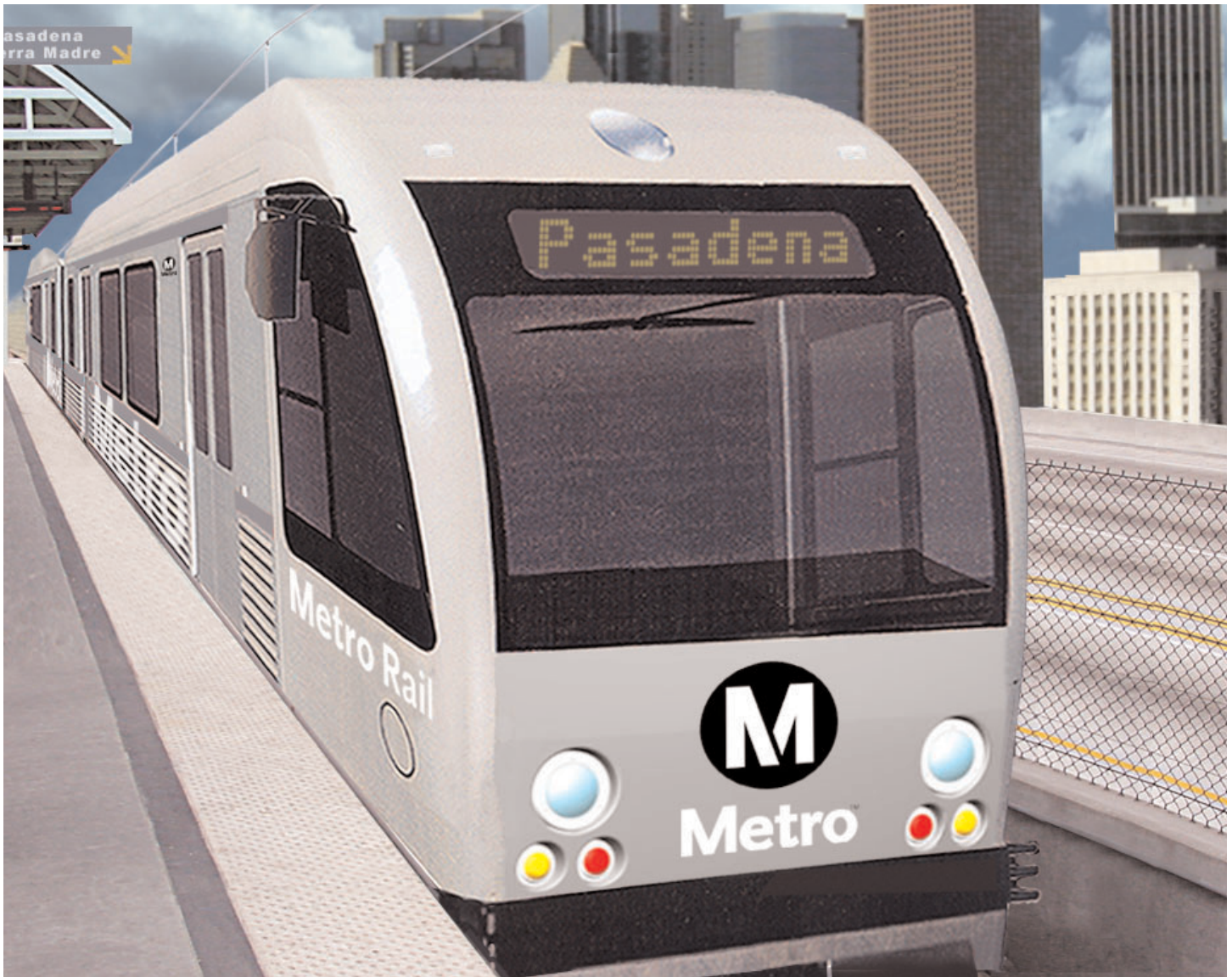


# 2550 Rail Vehicle Program

June 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

June 2009

## **TABLE OF CONTENTS**

	<b>Page No.</b>
<b>Project Overview.....</b>	<b>1</b>
<b>Management Issues.....</b>	<b>2</b>
<b>Project Status</b>	
• <b>Schedules</b>	
• <b>P2550 Vehicle Contract &amp; Proposed Delivery Schedule.....</b>	<b>3</b>
• <b>Schedule Issues as of June 26, 2009.....</b>	<b>4-5</b>
• <b>Project Budget Status.....</b>	<b>6</b>
• <b>Financial/Grant Status.....</b>	<b>7</b>
• <b>Current Photos.....</b>	<b>8</b>
<b>Appendices.....</b>	<b>9-10</b>

## **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 May 2009, staff was tasked to extend the expiration dates of both options to July 31, 2009, evaluate the merits of exercising the options and provide their recommendation to the Board on June 23, 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 June 2009, twenty-five vehicles have been Conditionally Accepted for operation on the Metro Gold Line.***

Project accomplishments for this period:

1. As of June 2009, Metro Conditionally Accepted twenty-five (25) 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 has addressed all operational issues as they have been encountered. As of to date the P2550 fleet has accumulated over 500,000 miles of revenue service.
2. As of June 2009, Metro has received a total of twenty-nine (29) vehicles in Los Angeles from the Pittsburg, CA Final Assembly Plant. Further five (5) assembled vehicles are at Pittsburg Plant. An additional 16 one half car shells are in Pittsburg, CA for a total of 8 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 awaiting shipment to U.S. Due to limited space at Metro Gold Line Shop (MGDL) only 27 of the 29 cars shipped to Los Angeles are stationed at MGDL. The remaining two cars and all future shipments will be stationed at Metro Green and Blue Lines. Metro Management is evaluating vehicle distribution plan amongst various Metro shops at this time.
3. Numerous meetings (daily, weekly and monthly) have been held with AB engineers during the period to determine the status, to close engineering open items and improve revenue operational issues. The work is ongoing.
4. The Project Team met with PMOC staff to discuss Project issues and vehicle delivery and acceptance progress.

## **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 been able to deliver to Metro two cars per month for acceptance per AB’s revised schedule. Per AB’s schedule the 50<sup>th</sup> car will be delivered by July 2010. This item will be removed from this Management Issues list as AB is on track per the revised AB schedule but will be tracked under Schedule Issues section.

**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. The Project Team is working closely 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 September 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 have been held with AB and its signaling subcontractor Ansaldo STS (formally US&S) to resolve open items. A series of new tests have been scheduled by Ansaldo STS in Los Angeles and in Pittsburgh, Pennsylvania (at Ansaldo STS) in July 2009. Acceptable progress has been achieved to date.

**Concern No. 4:** Options for additional 100 LRV’s is due to expire.

**Status/Action No. 4:** At the May 2009 MTA Board Meeting a motion was passed directing the CEO to perform an analysis and report back to the June 2009 Board on whether to exercise the options.

**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 NOTES 1 & 2	
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	4/30/09	
26	727	38 MONTHS	AUGUST/06	8/31/07	4/9/09	5/19/09	
27	728	39 MONTHS	SEPTEMBER/06	8/31/07	5/1/09	5/29/09	
28	729	39 MONTHS	SEPTEMBER/06	9/30/07	5/20/09	6/23/09	
29	730	40 MONTHS	OCTOBER/06	9/30/07	5/29/09	6/29/09	
30	731	40 MONTHS	OCTOBER/06	9/30/07	6/12/09		
31	732	41 MONTHS	NOVEMBER/06	10/31/07	6/30/09		
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 and vehicle 705 was returned on 6/17/09.

## **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 twenty-three (23) additional cars have been conditionally accepted by MTA for a total of twenty-five (25) cars. AB's present schedule indicates that the 50<sup>th</sup> car will be delivered by July 2010.

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 scheduled in Los Angeles in July.
- **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. AB must finalize its test at Metro Blue and Metro Gold Line and submit its final EMI Test reports.

## **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 a 3 cars consist. 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.
- **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; AB has made several recommendations of weight mitigation proposals for Metro Management's consideration.



**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>	\$119,734,000	\$29,933,500	\$149,667,500	
<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>Subtotals</b>	\$126,990,937	\$31,747,734	\$158,738,671	
<b>Contingency</b>	\$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	
<b>Subtotals</b>	<b>\$139,690,031</b>	<b>\$34,922,507</b>	<b>\$174,612,538</b>	
<b>Rail Consultant</b>	\$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
<b>Contingency</b>	\$343,542	\$85,885	\$429,427	
<b>Subtotals</b>	<b>*\$10,324,465</b>	<b>*\$2,581,115</b>	<b>*\$12,905,580</b>	
<b>MTA Staff</b>	<b>\$6,014,602</b>	<b>\$1,577,798</b>	<b>\$7,592,400</b>	
<b>TOTALS</b>	<b>\$152,919,004</b>	<b>\$38,303,898</b>	<b>\$191,222,902</b>	

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**

JUNE 2009		STATUS OF FUNDS BY SOURCE							
SOURCE	(A) ORIGINAL BUDGET	(B) TOTAL FUNDS ANTICIPATED	(C) TOTAL FUNDS AVAILABLE	(D) COMMITMENTS		(E) EXPENDITURES		in \$ millions (F) 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	59.3	96%	32.4	53%	31.6	53%
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									
<b>TOTAL</b>	<b>152.9</b>	<b>152.9</b>	<b>140.6</b>	<b>138.1</b>	<b>90%</b>	<b>82.4</b>	<b>54%</b>	<b>81.5</b>	<b>53%</b>

(1) Based on September 06 Regional Programming Funding Plan.  
 Note: Expenditures are cumulative through May 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.

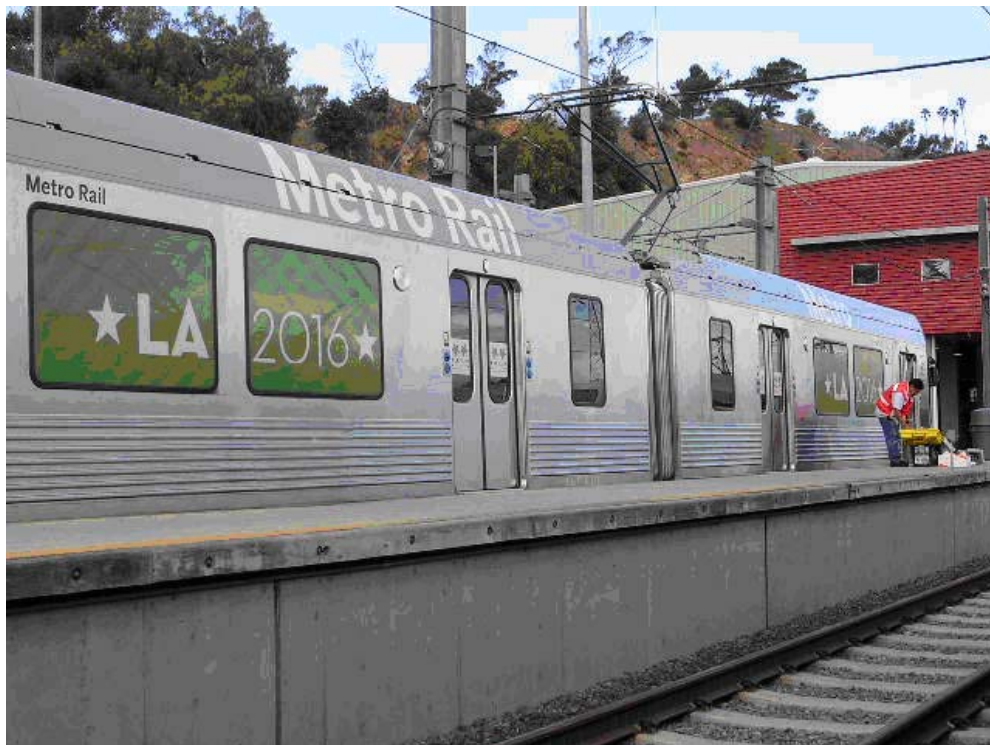
**FEDERAL RSTP:** A grant agreement for \$7.7 million was executed on April 7, 2005. Funds are available for drawdown.

**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**

<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