



# LIGHT RAIL PROGRESS REPORT

Central Phoenix/East Valley Light Rail Transit Project







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## 1. Executive Summary

The Central Phoenix/East Valley (CP/EV) Light Rail Transit Project includes the design and construction of a 19.6 mile, double track, Minimum Operable Segment that extends from 19th Avenue near Bethany Home Road in North Central Phoenix through the downtown area to and through the City of Tempe, then crosses into the City of Mesa where the project terminates at Main Street and Sycamore. The track alignment is mostly in-street median and includes 27 passenger stations and eight surface parking lots, seven of which are newly constructed, and one existing lot owned by the City of Tempe near an LRT station site that will be dedicated to transit use at no cost to the Project. An initial fleet of 36 LRVs is part of the Project. The Project also includes an Operations and Maintenance Center (formally known as the Maintenance and Storage Facility) to support the 36 light rail vehicles located South of Washington Street and East of 48th Street in Phoenix. Propulsion power for the LRVs will be delivered by a Traction Electrification System consisting of wayside substations distributing propulsion power through an Overhead Catenary System (OCS). The Project will also include a Signals and Communications System consisting of both wayside and traffic signals. The entity responsible for project delivery, Valley Metro Rail (METRO), is a sub-recipient to the grantee, the City of Phoenix. The Project has a budget of \$1,412,000,000, with a Revenue Operations Date of December 2008.

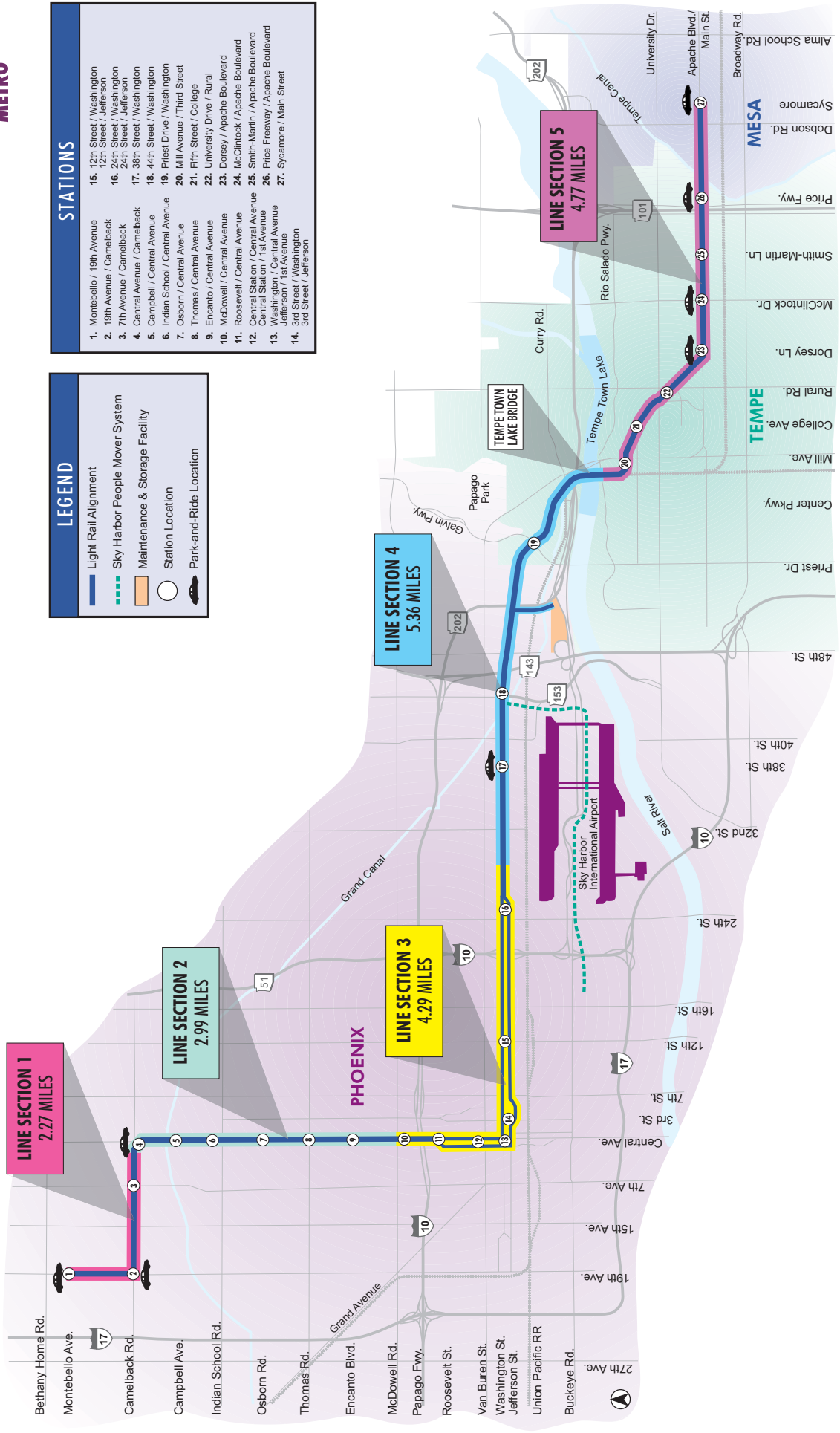
During the month of May, the project surpassed 57 percent construction completion with over 128,000-feet of guideway completed. Line Sections 1 and 2 continued to progress utility and roadway widening construction in support of guideway construction. Line Section 3 has begun utility relocation on the north end of their project. Line Section 3 is also working on guideway construction along Washington and Jefferson east of downtown Phoenix. Line Section 4 reached a milestone in May with the paving and striping of the roadway from 44<sup>th</sup> Street to 56<sup>th</sup> Street. Line Section 4 also continues to build guideway west of 44<sup>th</sup> Street with an anticipated guideway construction complete date of mid-October. Line Section 5 has substantially completed work from 1<sup>st</sup> and Ash to Rural Road. Their efforts are now focused on Apache Boulevard/Main Street with roadway widening and guideway construction.

During the month of May the Station Finishes contract made significant progress on Station structural steel installation. Of the 16 station platforms available to the contractor, structural steel has been placed at seven of these stations. Other station finishes works in progress this month include work at three transit centers; 19<sup>th</sup> and Montebello, 44<sup>th</sup> Street and Washington and Sycamore and Main Street.

Systems work continued to progress outside the recently completed test track and yard. OCS poles have been placed further to the east heading toward Line Section 5. Signals and Communications have begun placing variable message boards, cameras, and communications cabinets at the station platforms.

The Community Advisory Boards continue to be a success. To date the program has averaged and award rate of 93 percent across the five civil contracts, with Line Sections 1 and 5 continuing with 100 percent awards. Also to date, the Construction Signage/Banner Program has produced and handed out 985 signs and banners to assist businesses with exposure during construction.

# LIGHT RAIL STARTER SEGMENT



### LEGEND

- Light Rail Alignment
- Sky Harbor People Mover System
- Maintenance & Storage Facility
- Station Location
- Park-and-Ride Location

### STATIONS

1. Montebello / 19th Avenue	15. 12th Street / Washington
2. 19th Avenue / Camelback	16. 24th Street / Washington
3. 7th Avenue / Camelback	17. 38th Street / Jefferson
4. Central Avenue / Camelback	18. 44th Street / Washington
5. Campbell / Central Avenue	19. Priest Drive / Washington
6. Indian School / Central Avenue	20. Mill Avenue / Third Street
7. Osborn / Central Avenue	21. Fifth Street / College
8. Thomas / Central Avenue	22. University Drive / Rural
9. Encanto / Central Avenue	23. Dorsey / Apache Boulevard
10. McDowell / Central Avenue	24. McClintock / Apache Boulevard
11. Roosevelt / Central Avenue	25. Smith-Martin / Apache Boulevard
12. Central Station / Central Avenue	26. Price Freeway / Apache Boulevard
13. Washington / Central Avenue	27. Sycamore / Main Street
14. Jefferson / Washington	
14. 3rd Street / Washington	
14. 3rd Street / Jefferson	



**METRO  
CONTRACT LOG - MAY 2007**

ITEM	CONTRACT NUMBER	CONTRACT DESCRIPTION	CONTRACTOR
<b>1. PROGRAM MANAGEMENT &amp; ENGINEERING</b>			
1	LRT-99-001	GEC - DEIS/FEIS/PE	Parsons Brinckerhoff Quade & Douglas
2	LRT-02-001	GEC - Final Design	Parsons Brinckerhoff Quade & Douglas
3	LRT-02-001	GEC - DSDC	Parsons Brinckerhoff Quade & Douglas
4	LRT-98-001-PMC	Project Management Consultant	S.R. Beard & Associates LLC and Parsons Transportation Group, Inc., a Joint Venture
5	LRT-03-005-CAC	Construction Administration Services	Post, Buckley, Schuh & Jernigan, Inc., and PGH Wong Engineering, Inc., a Joint Venture
<b>2. CONSTRUCTION</b>			
6	LRT-03-007-B48	48th Street Bridge Replacement	FNF Construction, Inc.
7	LRT-04-017-MSF	Maintenance & Storage Facility (MSF)	Sundt/Stacy & Witbeck, Joint Venture
8	LRT-04-020-LS1	Line Section 1	Kiewit Western Co
9	LRT-04-019-LS2	Line Section 2	Herzog Contracting Corp
10	LRT-04-021-LS3	Line Section 3	Archer Western Contractors
11	LRT-04-018-LS4	Line Section 4	Sundt/Stacy & Witbeck, Joint Venture
12	LRT-04-022-LS5	Line Section 5	Sundt/Stacy & Witbeck, Joint Venture
13	LRT-05-042-PNR	Park and Rides	<i>Undetermined</i>
14	LRT-04-028-SF	Station Finishes	Archer Western Contractors
15	LRT-04-040-TLB	Town Lake Bridge	PCL Civil Constructors, Inc.
16	LRT-05-036-WPM	Wheel Profiling Machine	Simmons Machine Tool Corp
<b>3. SYSTEM ELEMENTS</b>			
17	LRT-03-001	Light Rail Vehicles (LRV)	Kinkisharyo International, L.L.C. and Mitsui & Co. (U.S.A), Inc., CPEV Joint Venture
18	LRT-04-039-S&C	Signals and Communications	Mass Electric Corp.
19	LRT-04-014-TES	Traction Electrification System	Mass Electric Corp.
20	LRT-06-053-FCS	Fare Collection System	Scheidt & Bachmann USA, Inc.
21	LRT-06-071-LCM	Light Rail Car Mover	Brandt Road Rail Corp
22	LRT-07-076-MSFF	Modular Furniture for MSF	Southwest Business Furnishings
23	LRT-06-060-MMIS	Maintenance Management Information System	Mincom, Inc.
<b>4. PUBLIC ART</b>			
24	02-002-04	LS4 Design Team Artist/Station Artist	Laurie Lundquist
25	02-002-03	LS2 Design Team Artist/Station Artist	Ilan Averbuch
26	02-002-04	LS1 Design Team Artist/Station Artist	Robert Adams
27	02-002-05	LS5 Design Team Artist/Station Artist	Norie Sato/Bill Will
28	02-002-01	LS3 Design Team Artist	Janet Zweig
29	05-041-ART	Bridge Design Team Artist	Buster Simpson
30	02-002-07	LS3 Design Team Artist	Laurie Lundquist
31	02-002-08	LS3 Design Team Artist	Robert Adams
32	02-002-09	44th Street Station Artist	Mona Higuchi
33	02-002-10	38th Street Station Artist	Stuart Keeler/Michael Machnic
34	02-002-11	Central / Roosevelt Station Artist	Peter Richards
35	02-002-12	Central / McDowell Station Artist	Michael Maglich
36	02-002-13	First Street Station Artist	Stephen Farley
37	02-002-14	Third Street Station Artist	Cliff Garten
38	02-002-15	Central Station, Station Artist	Ries Niemi
39	02-002-16	12th Street Station Artist	Victor Zaballa
40	02-002-17	Fifth Street / College Station Artist	Tad Savinar
41	02-002-18	Central / Campbell Station Artist	Al Price
42	02-002-19	Central / Indian School Station Artist	Mary Lucking
43	02-002-20	Central / Osborn Station Artist	Thomas Sayre
44	02-002-21	Central / Thomas Station Artist	Brian Goldbloom
45	02-002-23	Third Street / Mill Station Artist	Catherine Widgery
46	02-002-24	Apache Stations - Lighting Artist	Dan Corson
47	02-002-25	Apache Stations - Cultural Weave Artist	Christine Bourdette
48	02-002-26	Apache Stations - Vertical Objects Artist	Suikang Zhao
49	02-002-27	Apache Stations - Paving Artist	Benson Shaw
50	02-002-28	Longmore Station Artist	Brad Konick
51	02-002-29	19th Avenue / Camelback Station Artist	Josh Garber
52	02-002-30	7th Avenue / Camelback Station Artist	Nubia Owens
53	02-002-31	24th Street Station Artist	Kevin Berry
54	02-002-32	Central / Encanto Station Artist	Jamex & Einar de la Torre



**METRO  
CONTRACT LOG - MAY 2007**

ITEM	CONTRACT NUMBER	CONTRACT DESCRIPTION	CONTRACTOR
<b>5. MISC. CONSTRUCTION &amp; SERVICES</b>			
55	LRT-05-046-ERS	Environmental Remediation Service	Environmental Response Inc
56	LRT-04-031-PCS	Power Consulting Services	RW Beck
57	LRT-06-052-MF	Modular Furniture	Facilitec, Inc.
58	LRT-06-065-TCS	Telecom Carrier Services	Time Warner Telecom
59	LRT-06-057-WLI	WAN/LAN and IPT Voice Sys Equipment	Calence, Inc.
60	LRT-04-034-SPC	Strategic Planning Consulting Services	Davis Consulting
61	LRT-05-045-DCS	Document Control Services	LKG-CMC, Inc
62	LRT-05-037-ACS	Audit Consulting Services	Clifton Gunderson LLP
63	LRT-05-038-RMS	Risk Management Services	Ashton Tiffany, LLC
64	LRT-06-069-SSC	Safety & Security Certification Services	Booz Allen Hamilton, Inc.
65	LRT-06-067-ITS	Info Technology-Office Network Support	World Wide Technology, Inc.
66	LRT-07-082-TCS	Telecommunications Services for MSF	Qwest Communications
67	LRT-07-073-TS	Transportation Services	Alternate Concepts, Inc.
68	LRT-07-086-MSFM	Interim Maintenance Services for MSF	DMS Facility Services
<b>6. OWNER FURNISHED MATERIALS</b>			
69	LRT-04-009-MP1	Rail (MP1)	Progress Rail Corporation
70	LRT-04-010-MP2	Concrete Crossties (MP2)	CXT Inc
71	LRT-04-030-MP5	Ballasted Special Trackwork (MP5)	VAE Nortrak North America Inc
72	LRT-04-032-MP8	Girder Rail (MP8)	VAE Nortrak North America Inc
73	LRT-04-033-MP9	Girder Rail Special Trackwork (MP9)	VAE Nortrak North America Inc
74	LRT-04-015-MP3	Traffic Signal Hardware (MP3)	Various
75	LRT-06-072-SE	Shop Equipment for Maintenance Facility	Wissota Supply Company, Inc
76	LRT-07-078-MLE	Spray Paint Booth Manlifts at MSF	MGM Equipment Source
<b>7. FUTURE LIGHT RAIL EXTENSIONS</b>			
77	LRT-06-050-DCS	Design Criteria & Standards	Stantec Consulting
78	LRT-06-055-PSS	Planning Support Services	HDR Engineering, Inc.
79	LRT-07-077-PCES	Planning, Conceptual Engineering & Environmental Studies for Future Light Rail Extensions - Mesa-Tempe	HDR / S.R. Beard & Associates
80	LRT-07-077-PCES	Planning, Conceptual Engineering & Environmental Studies for Future Light Rail Extensions - I-10/Glendale	URS Corporation



## **2. Cost Overview**

### **Federal 5309 Project**

The project budget for the Federal 5309 program is \$1,412,125,346. Known pending and executed change orders are valued at \$37,208,436 of the available \$81,642,771 planned contingency.

Including Project Reserve, this leaves \$54,153,700 of contingency funds available to the project.

The project is 63.8 percent complete. Construction is 57.9 percent complete.

Since the last reporting period, the contingency for facilities increased by \$6,200,000.

### **Program Management and Administration**

Forecast is within budget.

### **Program Management Consultant**

Staffing plan for fiscal years 2008 and 2009 is within the overall forecast of this contract unit.

### **City Administration**

Forecasts are per agreements with the cities.

### **Right of Way Acquisition**

No forecast change this period.

### **PE/FEIS Engineering**

Activity is complete.

### **Engineering**

The Board approved \$4,400,000 to fund the scope of work for the fiscal year 2008 staffing plan.

### **Owner Furnished Equipment/Materials**

Forecasts are within budget.

### **Light Rail Vehicles**

Contingency appears to be sufficient to fund the work remaining.

### **Facilities**

Facilities work is 59.2 percent complete. Executed and pending change orders are expected to utilize \$21,000,000 of the \$41,400,000 available contingency. Additional expected change orders for required acceleration, additional work and expected requests for equitable adjustment are challenging the available balance of contingency.



In this period, \$8,800,000 was transferred from Project reserve to the contingencies for line sections 2, 3, 5 and the OMC.

### **Systems**

Systems work is 43.7 percent complete. Remaining contingency will be required for unforeseen conditions and to accelerate the systems work.

### **Construction Administration Services**

Budget and forecast for work through fiscal year 2008 are in sync. The Board approved \$10,500,000 to fund fiscal year 2008 staffing plan based scope of work.

### **Testing and Startup**

Forecast continues to show an underrun to the budget.

### **Art Program**

Forecast appears sufficient to complete the work.

### **Unallocated Design Contingency**

Budget was utilized to fund variances between bid amounts and original budgets.

### **Project Reserve**

The budget is currently \$31,608,514. Adjustments this period included a transfer of \$30,900,000 from Phoenix finance costs, \$3,400,000 to line section 2, \$2,200,000 to line section 3, \$2,200,000 to line section 5 and \$1,000,000 to OCM.

### **Financing Costs**

The budget and forecast is \$130,000,000 after \$30,900,000 of Phoenix finance costs were transferred to the Project Reserve.

### **Concurrent Non Project Activities Project**

The budget for Concurrent Non Project Activities is \$103,012,860, based on the January 2007 Valley Metro Rail Board approved amount.

During the reporting period twelve change orders were initiated at a cost of \$474,820 to the CNPA budget. The forecasts for ASU, City of Mesa and City of Tempe were unchanged. Phoenix Public Transit had one change order processed for \$9,215. Public Transit's forecast increased by \$319,575 due to the change order and escalating right of way costs. In some cases, we've reduced the forecast for Project reserve to offset the real estate increases. But this was not possible for the Washington/Jefferson Street CNPA. Phoenix Streets Department forecast increased by \$26,352 due to escalating right of way costs for the 6<sup>th</sup> Lane on Camelback. Phoenix Water Services had eleven change orders processed for a net cost of \$465,605 and the forecast increased by \$415,669.

**Valley Metro Rail Program Control  
CP/EV LRT Project  
Project Budget Status  
Federal 5309 Project**

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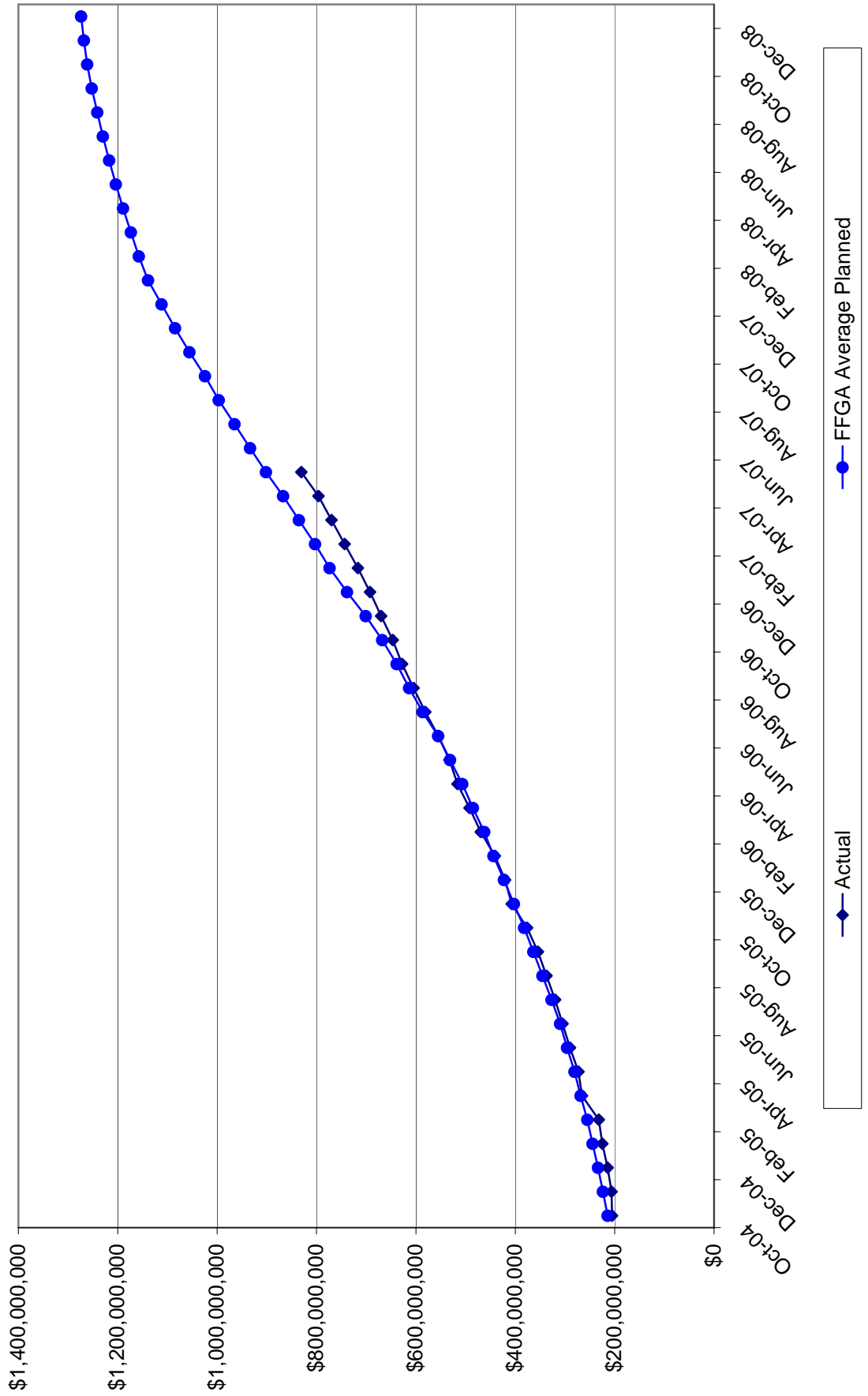
Element	Description	FFGA Attachment 3	Board Revised Budget	Current Actual \$ (To Date)	Forecast	Variance
50	LS1 19th Ave/Bethany - Camelback/Central	\$27,130,856	\$38,485,229	\$14,980,638	\$38,535,228	(\$49,999)
51	LS2 Camelback/Central - McDowell Road	\$38,004,059	\$50,337,273	\$21,049,102	\$52,706,077	(\$2,368,804)
52	LS3 McDowell Road - 28th Street	\$63,981,654	\$80,813,307	\$49,536,290	\$81,159,255	(\$345,948)
53	LS4 28th Street - N Approach to Town Lake	\$46,622,020	\$51,817,124	\$40,094,685	\$51,364,210	\$452,914
54	LS5 1st Street - Sycamore	\$49,680,435	\$69,601,826	\$48,803,576	\$69,632,830	(\$31,004)
55	Station Finishes	\$38,701,950	\$52,398,188	\$11,478,891	\$52,422,440	(\$24,252)
56	Park and Ride Facilities	\$15,104,339	\$15,104,339	\$0	\$20,907,699	(\$5,803,360)
57	Miscellaneous Construction	\$7,505,200	\$4,176,234	\$0	\$750,000	\$3,426,234
5K	Archaeological Investigations/Hazardous Material Removal	\$0	\$5,507,014	\$4,062,942	\$6,929,136	(\$1,422,122)
58	MSF Construction/Equipment Installation	\$57,637,721	\$64,474,643	\$64,219,078	\$64,184,272	\$290,371
5G	MSF Underfloor Wheel Profiling System	\$0	\$980,107	\$784,086	\$980,107	\$0
59	48th Street Bridge Restoration	\$2,014,013	\$2,824,232	\$2,824,232	\$2,824,232	\$0
5A	Town Lake Bridge	\$15,529,600	\$21,759,752	\$21,759,752	\$21,759,752	\$0
5B	Prior Rights Utility Relocations	\$22,938,000	\$25,316,961	\$28,046,273	\$31,353,326	(\$6,036,365)
81	Contingency	\$37,491,841	\$22,478,825	\$0	\$22,326,806	\$152,019
	<b>Facilities</b>	<b>\$422,341,688</b>	<b>\$506,075,054</b>	<b>\$307,639,545</b>	<b>\$517,835,370</b>	<b>(\$11,760,316)</b>
4A	Rail Procurement	\$1,306,200	\$1,271,080	\$1,251,101	\$1,271,080	\$0
4B	Concrete Crosstie Procurement	\$900,000	\$751,492	\$718,285	\$751,492	\$0
4C	Traffic Signal Hardware	\$8,060,100	\$8,060,100	\$6,833,096	\$8,060,100	\$0
4D	Ballasted Special Trackwork Procurement	\$2,532,414	\$2,291,497	\$2,253,875	\$2,291,497	\$0
4E	Crossing Panel Procurement	\$380,100	\$360,096	\$0	\$0	\$360,096
4F	Girder Rail Procurement	\$15,079,742	\$14,726,085	\$14,497,970	\$14,726,085	\$0
4G	Girder Rail Special Trackwork Procurement	\$0	\$5,712,656	\$2,823,209	\$5,712,656	\$0
81	Contingency	\$1,412,863	\$666,194	\$0	\$647,194	\$19,000
	<b>Owner Furnished Materials/Equipment</b>	<b>\$29,671,419</b>	<b>\$33,839,200</b>	<b>\$28,377,536</b>	<b>\$33,460,104</b>	<b>\$379,096</b>
5D	Automated Fare Collection System	\$10,755,800	\$7,100,012	\$0	\$7,101,612	(\$1,600)
5E	Traction Power Substations/Overhead Catenary System	\$62,141,100	\$57,739,633	\$31,255,972	\$57,699,791	\$39,842
5F	Communications/Signals	\$38,220,002	\$38,729,373	\$16,076,364	\$38,729,373	\$0
81	Contingency	\$8,674,000	\$4,292,294	\$0	\$4,330,536	(\$38,242)
	<b>Systems</b>	<b>\$119,790,902</b>	<b>\$107,861,312</b>	<b>\$47,332,336</b>	<b>\$107,861,312</b>	<b>\$0</b>
	<b>Sub Total, Construction</b>	<b>\$571,804,009</b>	<b>\$647,775,566</b>	<b>\$383,349,417</b>	<b>\$659,156,786</b>	<b>(\$11,381,220)</b>
4K	Vehicle Contract	\$115,501,823	\$116,875,456	\$45,799,763	\$116,875,456	\$0
4N	LRT Vehicle Contract Contingency	\$5,775,001	\$2,547,109	\$0	\$2,547,109	\$0
	<b>LRT Vehicles</b>	<b>\$121,276,824</b>	<b>\$119,422,565</b>	<b>\$45,799,763</b>	<b>\$119,422,565</b>	<b>\$0</b>
22	ROW Acquisition	\$116,214,150	\$116,786,065	\$127,585,209	\$134,000,000	(\$17,213,935)
23	ROW Contingency	\$20,081,000	\$19,509,087	\$0	\$0	\$19,509,087
20	<b>ROW</b>	<b>\$136,295,150</b>	<b>\$136,295,152</b>	<b>\$127,585,209</b>	<b>\$134,000,000</b>	<b>\$2,295,152</b>

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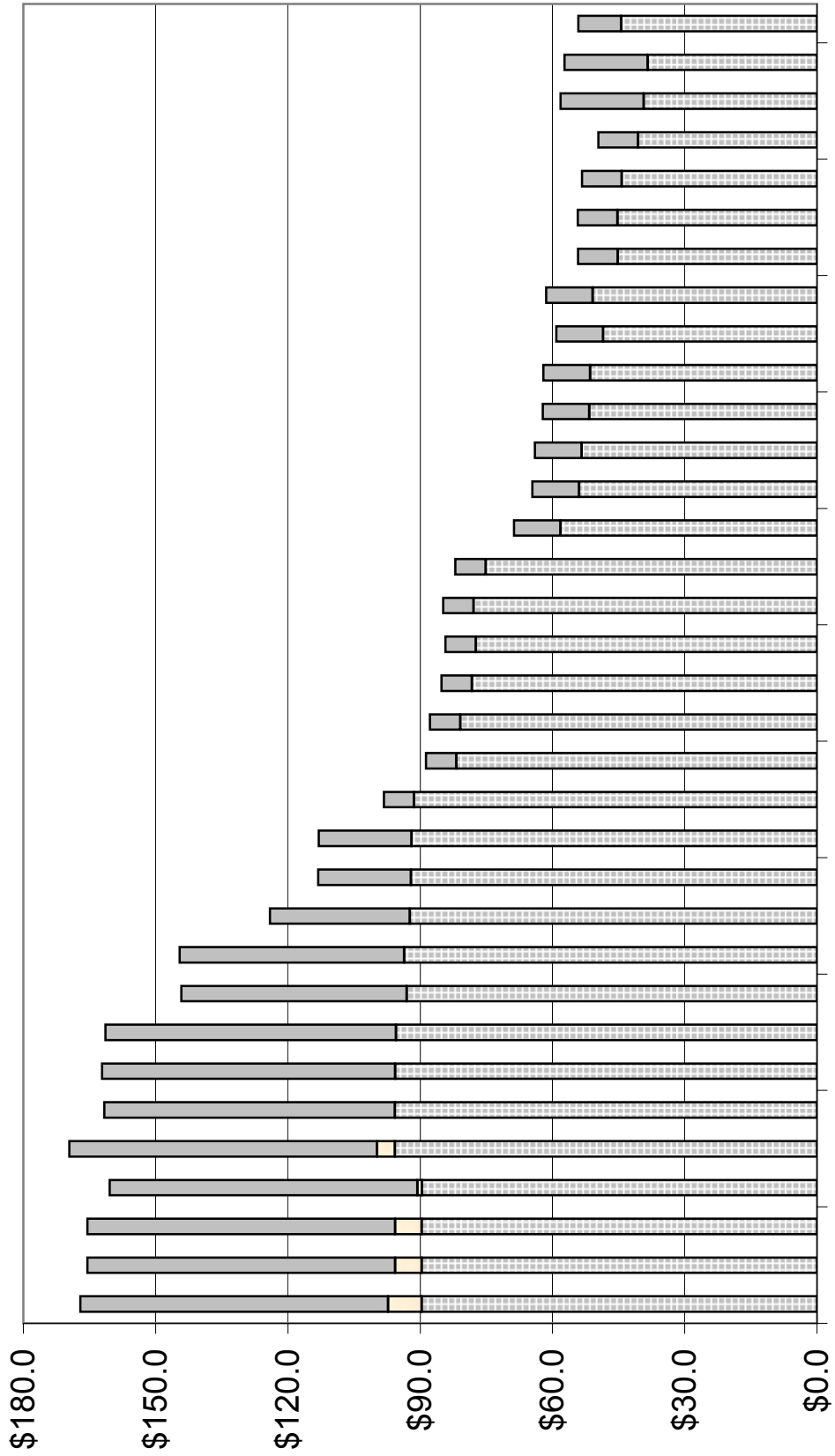
Element	Description	FFGA Attachment 3	Board Revised Budget	Current Actual \$ (To Date)	Forecast	Variance
<b>30</b>	<b>PE/FEIS Engineering</b>	<b>\$25,054,938</b>	<b>\$25,054,938</b>	<b>\$25,054,938</b>	<b>\$25,054,938</b>	<b>\$0</b>
31	Engineering	\$76,780,935	\$76,346,254	\$75,990,220	\$76,678,480	(\$332,226)
4L	Vehicle Engineering	\$5,432,358	\$6,255,358	\$5,857,389	\$6,255,358	\$0
20	ROW Engineering	\$1,016,370	\$1,321,163	\$1,386,172	\$1,386,172	(\$65,009)
32	Design Services During Construction	\$14,160,426	\$17,680,180	\$16,636,749	\$23,442,984	(\$5,762,804)
33	Engineering Contingency	\$0	\$0	\$0	\$0	\$0
34	DSDC Contingency	\$0	\$0	\$0	\$0	\$0
	<b>Engineering</b>	<b>\$97,390,089</b>	<b>\$101,602,955</b>	<b>\$99,870,530</b>	<b>\$107,762,994</b>	<b>(\$6,160,039)</b>
						<b>\$0</b>
60	Construction Administration Services	\$37,759,127	\$41,778,693	\$35,595,570	\$54,504,334	(\$12,725,641)
61	CAC Contingency	\$15,244,622	\$0	\$0	\$0	\$0
	<b>Construction Administration Services</b>	<b>\$53,003,749</b>	<b>\$41,778,693</b>	<b>\$35,595,570</b>	<b>\$54,504,334</b>	<b>(\$12,725,641)</b>
10	PE Administrative/Management Costs	\$4,363,526	\$4,363,526	\$4,363,526	\$4,363,526	\$0
11	Administrative/Management - VMR	\$43,915,047	\$44,228,316	\$28,507,873	\$43,894,975	\$333,341
62	Construction Administration Services - VMR	\$1,697,232	\$3,087,589	\$963,721	\$1,779,589	\$1,308,000
67	CAB Program	\$0	\$2,500,000	\$1,455,713	\$2,500,000	\$0
21	Administrative ROW Costs	\$696,712	\$696,712	\$586,456	\$696,712	\$0
76	Administrative/Management Art Program Costs	\$414,632	\$414,632	\$0	\$414,632	\$0
16	Administrative/Management - ADOT	\$420,000	\$930,000	\$510,365	\$1,269,053	(\$339,053)
17	Agency Insurance Cost	\$7,000,000	\$7,000,000	\$5,352,460	\$7,000,000	\$0
18	Administrative/Management Contingency	\$0	\$5,388,523	\$0	\$4,608,212	\$780,311
	<b>Program Management</b>	<b>\$58,507,149</b>	<b>\$68,609,298</b>	<b>\$41,740,114</b>	<b>\$66,526,699</b>	<b>\$2,082,599</b>
10	PE Administrative/Management Costs	\$12,832,472	\$12,832,472	\$12,832,472	\$12,832,472	\$0
21	Administrative ROW Costs	\$1,016,571	\$1,016,571	\$793,865	\$981,934	\$34,637
76	Administrative/Management Art Program Costs	\$549,061	\$549,061	\$234,041	\$501,189	\$47,872
12	Administrative/Management - PMC	\$32,736,326	\$32,736,326	\$27,540,906	\$33,748,721	(\$1,012,395)
4M	Administrative Vehicle Costs	\$1,337,322	\$1,337,322	\$561,908	\$1,273,192	\$64,130
63	Construction Administration Services - PMC	\$4,581,527	\$5,081,527	\$2,539,229	\$4,215,771	\$865,756
	<b>Program Management Consultant</b>	<b>\$53,053,279</b>	<b>\$53,553,279</b>	<b>\$44,502,421</b>	<b>\$53,553,279</b>	<b>\$0</b>
10	PE Administrative/Management Costs	\$3,158,439	\$3,158,439	\$3,158,439	\$3,158,439	\$0
13	Administrative/Management - COP	\$2,986,000	\$5,448,000	\$5,730,284	\$5,870,680	(\$422,680)
64	Construction Administration Services - COP	\$8,347,000	\$5,885,000	\$5,281,970	\$5,462,320	\$422,680
14	Administrative/Management - COT	\$6,797,000	\$6,797,000	\$5,146,515	\$6,797,000	\$0
15	Administrative/Management - COM	\$897,000	\$897,000	\$263,164	\$897,000	\$0
	<b>City Administration</b>	<b>\$22,185,439</b>	<b>\$22,185,439</b>	<b>\$19,580,372</b>	<b>\$22,185,439</b>	<b>\$0</b>
75	Public Art Contracts	\$5,284,133	\$6,083,177	\$3,187,783	\$6,083,177	\$0
77	Art Program Contingency	\$999,000	\$199,956	\$0	\$199,956	\$0
	<b>Public Art</b>	<b>\$6,283,133</b>	<b>\$6,283,133</b>	<b>\$3,187,783</b>	<b>\$6,283,133</b>	<b>\$0</b>
<b>70</b>	<b>Start-Up and Testing</b>	<b>\$31,000,000</b>	<b>\$30,000,000</b>	<b>\$4,272,375</b>	<b>\$26,000,000</b>	<b>\$4,000,000</b>
<b>80</b>	<b>Unallocated Design Contingency</b>	<b>\$7,575,241</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>85</b>	<b>Project Reserve</b>	<b>\$69,829,000</b>	<b>\$31,608,514</b>	<b>\$0</b>	<b>\$9,719,365</b>	<b>\$21,889,149</b>
<b>SUBTOTAL</b>		<b>\$1,253,258,000</b>	<b>\$1,284,169,532</b>	<b>\$830,538,492</b>	<b>\$1,284,169,532</b>	<b>\$0</b>
<b>90</b>	<b>Financing Costs</b>	<b>\$158,867,346</b>	<b>\$127,955,814</b>	<b>\$5,717,401</b>	<b>\$127,955,814</b>	<b>\$0</b>
<b>TOTAL CP/EV PROJECT</b>		<b>\$1,412,125,346</b>	<b>\$1,412,125,346</b>	<b>\$836,255,893</b>	<b>\$1,412,125,346</b>	<b>\$0</b>

### Plan versus Actual Costs



# CP/EV LRT Contingency Drawdown

**\$ Million**



Aug-04 Nov-04 Feb-05 May-05 Aug-05 Nov-05 Feb-06 May-06 Aug-06 Nov-06 Feb-07 May-07



Valley Metro Rail Program Control  
 CPIEV LRT Project  
 Project Budget Status  
 CNPA Project

Element	Description	Board Approved Total	Revised Budget/Estimate	Current Actual \$ (To Date)	Forecast	Variance
A1	Bus Bays (LS2)	\$963,403	\$984,756	\$632,828	\$1,013,138	(\$28,382)
A2	Phoenix Art Museum Left Turn Signal	\$99,083	\$108,770	\$5,200	\$99,083	\$9,687
A5	19th/Montebello Transit Center (SF)	\$5,555,929	\$6,344,742	\$5,367,444	\$7,035,332	(\$690,590)
A6	117 Central/Camelback Transit Center (SF)	\$7,022,524	\$6,968,745	\$2,737,905	\$5,594,282	\$1,374,463
A7	44th Street/Washington Transit Center Real Estate	\$4,900,509	\$4,649,580	\$4,398,289	\$4,872,992	(\$223,412)
B1	Washington Street Bike Lane (LS4)	\$930,293	\$912,714	\$570,733	\$941,519	(\$28,805)
F4	Civic Plaza Track Support System	\$2,595,811	\$2,297,669	\$269,000	\$401,289	\$1,896,380
F5	Additional Water Services to the Pueblo Grande Museum - LS4	\$89,285	\$89,285	\$62,262	\$89,285	(\$0)
F6	Central/Camelback Bus Bays Relocation	\$192,720	\$193,065	\$0	\$193,065	\$0
F7	COP Landscape Irrigation Restoration Central Ave	\$101,414	\$90,750	\$69,943	\$113,153	(\$22,403)
H2	Fiber Optic COP	\$602,233	\$476,896	\$76,492	\$650,593	(\$173,697)
J6	Washington/Jefferson 16th to 26th Street, Property Access	\$2,628,002	\$3,845,895	\$2,885,748	\$3,562,889	\$283,006
K7	11th Street Loop Track	\$4,377,606	\$4,352,606	\$151,813	\$4,352,606	\$0
	<b>Sub Total Public Transit Department</b>	<b>\$30,058,812</b>	<b>\$31,315,473</b>	<b>\$17,227,657</b>	<b>\$28,919,226</b>	<b>\$2,396,247</b>
A3	6th Lane - Camelback (LS1)	\$9,820,210	\$9,883,190	\$7,822,494	\$8,954,921	\$928,269
D1	Additional Street/Pedestrian Lighting (LS3)	\$509,602	\$509,602	\$398,594	\$509,602	\$0
E3	Seal Coat versus Rubber Overlay (LS 1 )	\$264,342	\$264,342	\$17,104	\$264,342	\$0
E4	Seal Coat versus Rubber Overlay (LS 3)	\$1,479,814	\$1,485,876	\$90,509	\$1,482,845	\$3,031
E5	Seal Coat versus Rubber Overlay (LS 4)	\$430,896	\$430,896	\$10,832	\$430,896	\$0
K3	Red Light Enforcement	\$79,667	\$61,067	\$31,098	\$79,667	(\$18,600)
	<b>Sub Total Streets Department</b>	<b>\$12,584,531</b>	<b>\$12,634,973</b>	<b>\$8,370,631</b>	<b>\$11,722,273</b>	<b>\$912,700</b>
A7	44th Street/Washington Transit Center (SF)	\$2,822,429	\$2,821,531	\$1,665,833	\$2,821,531	\$0
C6	APM Utility Connections	\$22,997	\$22,997	\$19,440	\$22,997	\$0
D2	44th Street Station People Mover Foundation (LS4)	\$783,003	\$783,003	\$606,608	\$781,038	\$1,965
D6	People Mover - APS Duct Bank @ 40th Place	\$214,035	\$216,000	\$115,997	\$216,000	\$0
E9	10 <sup>th</sup> Water Line at 42nd/Washington LS 4	\$61,269	\$61,269	\$47,020	\$61,269	\$0
F3	Archaeological/Hazardous Material Testing (CAC)	\$60,000	\$50,100	\$54,844	\$50,100	\$0
	<b>Sub Total Aviation Department</b>	<b>\$3,963,733</b>	<b>\$3,954,900</b>	<b>\$2,509,742</b>	<b>\$3,952,935</b>	<b>\$1,965</b>
B3	LS 1 Water/Sanitary Sewer	\$9,887,790	\$9,718,406	\$3,025,870	\$9,691,601	\$26,805
B4	LS 2 Water/Sanitary Sewer	\$6,255,348	\$5,628,177	\$2,876,583	\$5,869,103	(\$240,926)
B5	LS 3 Water/Sanitary Sewer	\$15,367,099	\$14,944,373	\$10,983,363	\$14,999,697	(\$55,324)
B6	LS 4 Water/Sanitary Sewer	\$5,325,583	\$5,927,940	\$5,390,167	\$6,672,613	(\$744,673)
B7	Water and Sanitary Sewer Lines - 48th St. Bridge Replacement Contract	\$415,420	\$155,767	\$155,767	\$155,767	\$0
J1	Catholic Protection for Waterlines LS1	\$1,099,400	\$739,855	\$100,975	\$739,855	\$0
J2	Catholic Protection for Waterlines LS2	\$1,094,162	\$979,408	\$190,407	\$608,835	\$370,573
J3	Catholic Protection for Waterlines LS3	\$29,192	\$0	\$0	\$29,192	\$0
J5	Catholic Protection for Waterlines LS4	\$350,000	\$435,620	\$85,620	\$435,620	\$0
	<b>Sub Total Water Services Department</b>	<b>\$39,823,994</b>	<b>\$38,529,546</b>	<b>\$22,808,752</b>	<b>\$39,202,283</b>	<b>(\$672,737)</b>
	<b>Total - Phoenix</b>	<b>\$86,431,070</b>	<b>\$86,434,892</b>	<b>\$50,916,762</b>	<b>\$83,796,717</b>	<b>\$2,638,175</b>

Valley Metro Rail Program Control  
 CPI/EV LRT Project  
 Project Budget Status  
 CNPA Project

Element	Description	Board Approved Total	Revised Budget/Estimate	Current Actual \$ (To Date)	Forecast	Variance
A8	5th/College Transit Center	\$500,000	\$752,738	\$658,992	\$752,738	\$0
AA	COT SRP Prior Rights TC Relocation	\$244,080	\$235,400	\$0	\$117,831	\$117,569
B8	Terrace / Apache Waterline Coordination (Design Only)	\$54,639	\$37,999	\$35,287	\$54,534	(\$16,535)
C1	Additional Communications Conduits	\$32,499	\$32,499	\$24,271	\$30,747	\$1,752
C2	COT ASU Pedestrian Signal	\$114,338	\$122,000	\$55,976	\$122,000	\$0
C7	Parking Facility 5th/Farmer	\$110,701	\$116,990	\$110,781	\$117,070	(\$80)
C8	COT Waterline @ Cremery Route	\$94,081	\$94,081	\$67,264	\$94,081	\$0
D4	COT Additional Street Lighting (LS5)	\$345,014	\$345,014	\$221,597	\$345,014	\$0
D7	COT Additional Conduit @ McClintock/Apache	\$0	\$7,990	\$7,990	\$7,990	\$0
E6	Rubberized Asphalt LS5	\$624,874	\$624,874	\$18,258	\$624,874	\$0
E7	COT CNPA - Additional Conduits for Missions Palms	\$0	\$8,243	\$8,243	\$8,243	\$0
F2	McClintock / Apache Storm Drain	\$75,345	\$72,419	\$57,041	\$72,419	\$0
F9	Rubber Asphalt - Tempe	\$610,983	\$523,603	\$15,221	\$523,603	\$0
H3	Fiber Optic COT	\$427,239	\$421,934	\$103,963	\$441,978	(\$20,044)
J4	Catholic Protection of Waterline LS4 CO#15	\$158,638	\$158,638	\$110,538	\$158,638	\$0
J9	University Drive Station Bus Interface	\$509,186	\$509,186	\$0	\$509,186	\$0
K1	Veteran's Way- 5th/College TC	\$7,645	\$7,645	\$6,689	\$7,645	\$0
K2	Bus Shelter Electrification	\$11,076	\$11,076	\$7,315	\$11,076	\$0
K4	Washington/Center Parkway Station	\$4,989,270	\$4,919,490	\$898,141	\$4,919,490	\$0
N4	Tempe Market Analysis	\$44,378	\$44,378	\$43,577	\$44,378	\$0
XX	Tempe Miscellaneous Force Account Work LS5	\$20,000	\$20,000	\$10,708	\$20,000	\$0
	<b>Sub Total Tempe</b>	<b>\$8,973,986</b>	<b>\$9,066,197</b>	<b>\$2,461,852</b>	<b>\$8,983,535</b>	<b>\$82,662</b>
A9	Main Sycamore Transit Center	\$5,532,721	\$5,519,839	\$2,976,924	\$5,653,132	(\$133,293)
H4	Fiber Optic Backbone LS-4 (Mesa portion)	\$847,325	\$836,798	\$52,986	\$847,328	(\$10,530)
N3	Mesa Market Analysis	\$18,542	\$18,542	\$13,890	\$18,542	\$0
XX	Mesa Miscellaneous Force Account Work LS5	\$5,000	\$5,000	\$2,738	\$5,000	\$0
	<b>Sub Total Mesa</b>	<b>\$6,403,588</b>	<b>\$6,380,179</b>	<b>\$3,046,538</b>	<b>\$6,524,002</b>	<b>(\$143,823)</b>
C9	ASU Logo Additions	\$86,463	\$59,039	\$0	\$81,280	(\$22,241)
E2	ASU Steam Line	\$0	\$8,189	\$8,189	\$8,189	\$0
H1	Fiber Optic ASU	\$959,445	\$1,188,930	\$349,647	\$1,198,300	(\$9,370)
	<b>Sub Total ASU</b>	<b>\$1,045,908</b>	<b>\$1,256,158</b>	<b>\$357,836</b>	<b>\$1,287,769</b>	<b>(\$31,611)</b>
E1	(APS) Duct Bank at 48th St. Utility Bridge, Archaeological Support	\$76,309	\$74,344	\$57,870	\$76,309	(\$1,965)
F8	Rojo Lofts Property	\$81,999	\$14,786	\$0	\$81,998	(\$67,212)
	<b>Sub Total Other</b>	<b>\$158,308</b>	<b>\$89,130</b>	<b>\$57,870</b>	<b>\$158,307</b>	<b>(\$69,177)</b>
	<b>Grand Total CNPA</b>	<b>\$103,012,860</b>	<b>\$103,226,556</b>	<b>\$56,840,878</b>	<b>\$100,750,330</b>	<b>\$2,476,226</b>



### 3. Schedule Overview

The current status of the Master Schedule is based on a data date of June 1, 2007. The current forecast continues to be an on-time Program completion date of Saturday, December 27, 2008.

Line Section Contracts 2 and 5 continue to work through utility relocation issues. To date, the Program has been successful in mitigating the delays with a minimum of acceleration to the Civil Contracts.

Partnering and detailed scheduling meetings with all of the Major Contract Project Managers and the Resident Engineers have continued to facilitate a phased startup plan and to integrate access milestones.

Steel Erection is complete on 6 of the 27 Stations

Over 128,000 linear feet (24.3 miles) of track has been placed in Line Sections 1, 2, 3, 4, 5 and OMC. Over 780 of the 1400 OCS Foundations have been placed and pole setting by the TES Contractor is ongoing.

OCS Poles and OCS Wire are being installed for wire runs 39 and 40, roughly from 56<sup>th</sup> Street to Center Parkway.

Signals and Communications work in the stations is starting in Early June.

Light Rail Vehicles are now on-site and being assembled at the OMC.

Track Installation								
Line Section	Bid Quantity		Installed		Remaining		% Complete	Placed MAY 07
	LF	Miles	LF	Miles	LF	Miles		
M&SF	19,261	3.65	19,261	3.65	0	0.00	100.0%	0
Line Section 1	23,454	4.44	6,400	1.21	17,054	3.23	27.3%	1,800
Line Section 2	30,752	5.82	5,950	1.13	24,802	4.70	19.3%	970
Line Section 3	44,629	8.45	29,530	5.59	15,099	2.86	66.2%	2,510
Line Section 4	56,054	10.62	45,370	8.59	10,684	2.02	80.9%	9,366
Line Section 5	50,818	9.62	21,550	4.08	29,268	5.54	42.4%	3,930
Total	224,968	42.61	128,061	24.25	96,907	18.35	56.9%	18,576

#### Major Milestones

##### Civil:

Line Section 1 Completion:	April, 2008
Line Section 2 Completion:	March, 2008
Line Section 3 Completion:	March, 2008
Line Section 4 Completion:	December, 2007
Line Section 5 Completion:	March, 2008



Station Finishes: October, 2008

Park and Ride October, 2008

**Systems:**

Signals and Communications: October, 2008

Fare Collection: November, 2008

Traction Electrification: August, 2008

**Startup:**

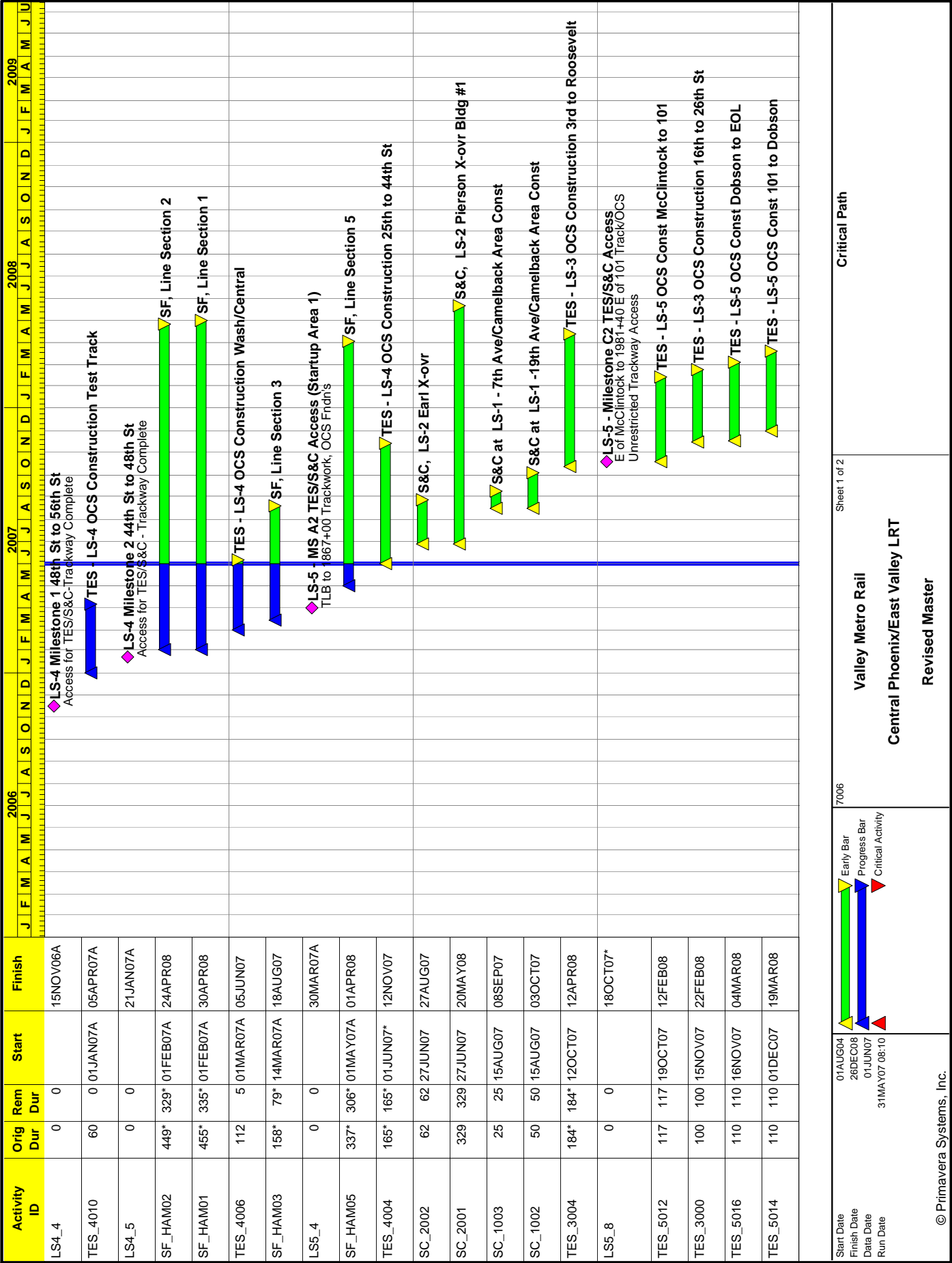
Start Integrated Testing Area 1 (majority of LS-4 and part of LS-5): March, 2008

Start Integrated Testing Area 2 (LS-3 and Balance of LS-4 and 5): June, 2008

Start Integrated Testing Area 3 (All of LS-2 and LS-1): July, 2008

**Critical Path(s):**

The Program critical Paths run through Utility relocations in the Line Sections to the completion of the Station Foundations in the Line Sections, through the Completion of the stations to a point that the Signals and Communications Contractor can install the signals equipment and wiring, through the completion of the track-way in the Line Sections, thru the installation of the Overhead Contact System (OCS) to the Phased Integrated Testing, to the Completion of the Safety Certification, to Pre-Revenue Operations to the Revenue Service date of late December, 2008.



2009  
2008  
2007  
2006

J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D

Sheet 1 of 2

Valley Metro Rail  
Central Phoenix/East Valley LRT  
Revised Master

7006

Start Date: 01AUG04  
Finish Date: 26DEC08  
Data Date: 01JUN07  
Run Date: 31MAY07 08:10

Legend:  
 Early Bar  
 Progress Bar  
 Critical Activity

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Procurement Bid Status Report as of 5/31/07						
Title	Issue Date	Pre-Bid Conf	Bid Opening	Board Award	NTP (Anticipated)	
<b>PART I – CP/IEV LRT PROJECTS</b>						
Park and Rides	04/23/07	05/02/07	06/05/07	07/18/07	08/13/07	
LRT Systems and Facilities Maintenance - RFP	04/02/07	04/18/07	06/05/07	10/17/07	12/01/07	
Power Consulting Services	TBD	TBD	TBD	TBD	TBD	
Marketing & Public Relations Consultant	06/25/07	TBD	TBD	TBD	TBD	
Broker Services	TBD	TBD	TBD	TBD	TBD	
Event Planning Consultant – System Opening	TBD	TBD	TBD	TBD	TBD	
<b>PART II – LONG RANGE DEVELOPMENT PROJECTS</b>						
Policy & Advisory Legal Services	12/18/06	N/A	01/26/07	04/10/07	05/26/07	
Northwest LRT Extension Engineering Services	10/16/06	10/31/06	11/20/06	07/03/07	07/16/07	
Construction Manager at Risk for Northwest Extension Light Rail Transit Project	04/30/07	05/14/07	06/06/07	09/19/07	10/02/07	
Artist for Northwest Extension Light Rail Transit Project	TBD	TBD	TBD	TBD	TBD	
Architectural/Engineering On-Call Consultant Services - Future Extension Projects	TBD	TBD	TBD	TBD	TBD	
Public Involvement On-Call Support Services – Future Extension Projects	04/23/07	N/A	05/07/07	07/03/07	07/03/07	
Non-Engineering On-Call Consultant Services – Future Extension Projects	TBD	TBD	TBD	TBD	TBD	



## 4. Quality Assurance

### Description

The METRO Quality Assurance Manager is responsible for the establishment and implementation of a Quality Assurance Program for the METRO organization that meets the requirements of the Federal Transit Administration and provides adequate confidence that procured materials and services meet the technical and quality requirements of the project. The METRO Quality Assurance Manager is assisted by the Quality Assurance Managers for the GEC for design, the GEC for LRT Vehicle procurement and the CAC for construction, installation, inspection and testing.

Individually and collectively, the Quality Assurance Managers are responsible for ensuring the effective implementation of the Quality Assurance Programs for their respective organizations and contractors. The Quality Assurance Managers are responsible for approval of quality programs, assessment of compliance with quality programs through inspections, audits and surveillances and for identifying nonconforming materials, parts and services and assuring effective corrective action.

### Progress

#### METRO Activities

##### Civil and Systems:

- Attended weekly Resident Engineer meetings.
- Attended various Line Section weekly re-sequencing and coordination meetings.
- Participated in pre-bid meeting for Park and Ride contracts.
- Conducted Surveillance Report of Line Section 1 Contractor Work Plans.
- Conducted audit for Traction Electrification System, Resident Engineer's (RE) compliance with selected sections of the RE Manual. Audit closed.
- Accompanied the Construction Administration Consultant's Quality Assurance and Quality Control managers during audits of Line Section 4 and Station Finishes contracts.

##### Light Rail Vehicle:

- Audits
  - Engineering Change Notice books for the light rail vehicles.
  - Buy America audit report.
- Inspections
  - Car wash building and equipment.
  - High-pot, continuity and megger testing on the center truck.
  - Dimensional, continuity, and megger testing, and visual inspection of power trucks.



- Witness Elin inspection and spin testing of traction motors.
- Vehicle interface with sanding platform and pumps.
- Car 109, body assembly.
- Car 101, low and high speed testing.

#### Construction Administration Consultant Activities

##### Quality Manuals Reviewed:

- A revised Automated Fare Collection Quality Manual was received and is currently in the review process.

##### Quality Assurance Audits/Surveillances:

- Attended weekly Resident Engineer meetings.
- Attended various Line Section weekly coordination meetings.
- Performed an audit on Line Section 4 and Station Finishes CAC Resident Engineers
- Nonconformance Report Log (NCR), 43 open items
  - Five items were closed in May.
  - Six items are projected to be closed in June.
  - 37 outstanding NCR's in process.
- Quality Action Request Log (QAR), 32 open items
  - Zero items were closed in May.
  - Three items are projected to be closed in June.
  - 29 outstanding NCR's in process.

#### **Cost and Schedule – Variance Analysis**

- Quality Assurance activities remain within budget and on schedule.

#### **Issues and Solutions**

- Mass Electric Corp. provided a third response to Quality Action Request (QAR) S2006-001, dated May 18, 2007, outlining the steps that they have implemented to correct the issues associated with this QAR, i.e. lack of inspection and surveillance reports, lack of inspection, and failure to implement an internal and external audit program. Their latest response is being evaluated.

## 5. Public Involvement



### Description

The Public Involvement Section is responsible for sharing information on the Project with stakeholders along the light rail alignment, documenting questions and concerns expressed by these stakeholders and ensuring that appropriate Project staff addresses them, and providing answers and feedback to those stakeholders on the outcome. At this stage of the Project, PI Area Coordinators are working with stakeholders in their respective line sections to provide the latest information on the design plans with regard to right-of-way requirements, traffic circulation, landscaping, and locations for traction power substations and signal houses. They are also sharing information on business assistance programs with the owners and managers of businesses located along the light rail corridor.

### Progress

- Monica Hernandez, Line Section 3 Community Outreach, wrapped-up the Turn-around Track outreach process in conjunction with the Environmental Assessment requirement. Ms. Hernandez and METRO staff met with stakeholders adjacent to the proposed turnaround track to solicit input on METRO's proposal. Approximately ten Stakeholders submitted feedback that will be incorporated into the Final submittal to the Federal Transit Administration.
- Line Section 3 will also be hosting an opportunity to interact with the METRO station artist, Victor Mario Zaballa, to view progress of the art planned for the 12<sup>th</sup> Street/Washington and 12<sup>th</sup> Street/Jefferson light rail stations on Thursday, June 7, 2007.

Business Assistance



- Order and delivery of Courtesy Signage Program continues in all Line Sections. Through May, **620** signs and **365** banners (**985** totals) have been issued for businesses in all five Line Sections. The following table illustrates the current distribution for this program:

**METRO  
Construction Signage/Banner Program  
Overall Distribution**

Line Section	Signs	Banners	Total
Line Section One (LS1)	62	65	127
Line Section Two (LS2)	90	55	145
Line Section Three (LS3)	232	75	307
Line Section Four (LS4)	41	35	76
Line Section Five (LS5)	195	135	330
<b>Totals</b>	<b>620</b>	<b>365</b>	<b>985</b>

METRO Business Outreach Program

The following is a break down of **Phoenix** business outreach statistics as of June 1, 2007:

- METRO Max Program Participants – **275** businesses
- Construction Signage Program – **985** ( 620 signs and 365 banners)
- City of Tempe Asset Assistance Program – **1**
- City of Mesa/U.S. Bank Asset Assistance Program – Outreach continues
- Management Technical Assistance (MTA) Program – **300** businesses
- ASU Market Needs Assessment – **112** businesses (101 Complete / 11 In-Progress)

- SELF Seminars / Micro Loan Assistance – **22** Businesses
- SBDC One-on-One Consultation - **17** Businesses
- Prestamos – Chicanos Por La Causa – **3** Businesses

COMMUNITY ADVISORY BOARDS (CAB) - Meetings are scheduled on a monthly basis to evaluate the contractor's efforts to go "above and beyond" the contract specifications during light rail construction.



### LS1

- METRO's Community Advisory Board (CAB) for Line Section 1 held their monthly meeting on Tuesday, May 8th at AmeriSchools Academy. Richard J. Simonetta, METRO Chief Executive Officer, provided a status update on the METRO system. He noted the overall project is 62 percent complete and updated the members on the vehicles, Operations and Maintenance Center, and construction progress in the five line sections. Mr. Simonetta explained the test track area, why testing is conducted, the safety campaign for the test track, and shared a picture of the vehicle being tested. During the contractor's presentation, Kiewit showed progress photos and provided an update on the schedule. Kiewit received an overall rating of 100 percent, for their effort going "above and beyond" the contract specifications. The next LS1 CAB meeting is scheduled for Tuesday, June 12, 2007.

### LS2

- LS2 held their monthly meeting Tuesday, May 15th, at Brophy College Preparatory. A stakeholder made an inquiry about traffic set-up for upcoming construction of the guideway across Central Avenue from the Camelback station. Mr. Marty Spong, METRO Resident Engineer, explained plans were being finalized, but noted traffic and access would be maintained for businesses on the west side of the road from Camelback to Highland. City of Phoenix Councilman Tom Simplot, District 4 spoke to the CAB and thanked them for their service. Councilman Simplot noted CAB Members responsibilities and challenged CAB Members to ensure accountability for impacts during construction. Mr. Al Landis, Herzog Chief Operating Officer, emphasized Herzog's primary responsibility in constructing Line Section 2. Mr. Pat Gray updated the members on progress in the past month and the upcoming schedule. Herzog received an overall rating of 90 percent, for their effort going "above and beyond" the contract specifications. The



next LS2 CAB meeting is scheduled for Tuesday, June 19, 2007 at Brophy College Preparatory.

### LS3

- LS3 conducted their monthly meeting on Tuesday, May 8, 2007 at the METRO Operations and Maintenance Center. Members of the general public addressed the CAB on the condition of barricades following the storms from the last few weeks, and Archer Western Contractors (AWC) efforts to replace the barricades. Handicapped access issues along Washington Street were also discussed. Brian Buchanan, METRO's Director of Design and Construction, presented to the members details on station design and construction. AWC delivered the contractor presentation, highlighting the progress and successes they have achieved during the past month and displayed examples of AWC going "above and beyond" contract specifications. AWC received an overall rating of 80 percent, for their effort going "above and beyond" contract specifications. The next LS3 CAB meeting is scheduled for Tuesday, June 12, 2007 at the METRO offices.

### LS4

- LS4 held their monthly CAB Meeting on Wednesday May 9, 2007, at the METRO Operations and Maintenance Center. Richard J. Simonetta, METRO Chief Executive Officer, presented the LS4 Community Advisory Board (CAB) a system update which included an overall project construction update, construction progress on individual line sections, vehicle testing activities, and information regarding planning for future extensions. The presentation was followed by a thorough question and answer session. A contractor presentation provided a visual and detailed review of the rubberized asphalt paving. Erik Yingling, Sundt/Stacy and Witbeck (SSWJV) LS4 Project Manager, apprised the meeting attendees of similar paving activities in Tempe. Mr. Yingling also provided information on roadway widening and guideway construction activities. SSWJV received an overall rating of 100 percent for the month of May. The next LS4 CAB Meeting is scheduled for Wednesday, June 13, 2007 at the METRO Operations and Maintenance Center.

### LS5

- LS5 conducted it's CAB meeting on Thursday, May 10, 2007 at the Escalante Center. Richard J. Simonetta, METRO Chief Executive Officer, presented the LS4 Community Advisory Board (CAB) a system update which included an overall project construction update, construction progress on individual line sections, vehicle testing activities, and information regarding planning for future extensions; followed by a thorough question and answer session. SSWJV staff communicated information and fielded questions on rail pulls during the previous month. SSWJV staff also apprised the board of upcoming construction activities including SSWJV's recent approach to technical work to be completed, accelerated guideway and track installation at Terrace Road and Apache Boulevard intersection, and roadway widening on Apache, and various utility work in Mesa. Sundt/Stacy and Witbeck received an overall rating of 100 percent. The next LS5 meeting is scheduled for Thursday, June 14, 2007 at the Escalante Community Center.



### Cost Status

- Scheduled CAB Disbursement remains the same as the previous month:

Total Available Incentive: **\$2,500,000.00** (10 Quarterly disbursements)

Total Miles of Street with LRT: 23.53 miles

Allocation per Mile: \$106,247.34

Total CAB Disbursement through April is at **\$ 1,524,989**

Line Section	Total Amount Available	Available for Award to Date	Total Award to Date	% Award to Date
LS1	\$241,181.00	\$120,591	\$120,591	100%
LS2	\$317,680.00	\$190,608	\$177,901	93%
LS3	\$865,916.00	\$606,141	\$484,913	80%
LS4	\$567,361.00	\$453,889	\$436,858	96%
LS5	\$507,862.00	\$304,717	\$304,717	100%

### Schedule Status

- Public Involvement activities remain on schedule.

### Issues and Solutions

- Issue:** May 23<sup>rd</sup> meeting with individual Business' in Line Sections 1, 2 and 3 voicing concern with METRO's Business Outreach Programs and ineffectiveness to provide mitigation during construction.

**Solution:** METRO will work closely with City of Phoenix staff to follow-up on issues communicated by business attendees. METRO Board Chair, City of Phoenix Councilman Tom Simplot, suggested this group work together to speak as one voice to the METRO board and Phoenix Council to work on potential solutions.



## 6. Disadvantaged Business Enterprise Program

### Description

It is the Disadvantaged Business Enterprise (DBE) Program Section's responsibility to administer the DBE participation requirements mandated by the Federal Government as a condition of the receipt of funding. These participation requirements are established by the City of Phoenix Equal Opportunity Department through the DBE Program Plan and are conveyed to Valley Metro Rail, as a sub-recipient, through the Civil Rights Office of the Public Transit Department.

The DBE Program Section is responsible for ensuring that procurement and contract language, specific to the program, accurately reflects current requirements. During the procurement process, the DBE Program Section is responsible for responding to Requests for Information, presenting the DBE documentation requirements at pre-bid conferences, and conducting contractor and DBE subcontractor training sessions. At Bid Opening, the accuracy of DBE documentation submitted with each bid must be verified and each bidder must be found either responsive or non-responsive. Upon contract execution, pre-construction meetings are held and reporting/compliance requirements are addressed in more detail. Monthly utilization reports are submitted by each prime contractor and are reviewed by the DBE Program Section. Field issues and variances in the planned utilization are addressed on an on-going/as-needed basis. In order to ensure adequate DBE participation and the availability of DBE contractors, on-going outreach activities are also conducted to facilitate networking of DBEs with prime contractors and to encourage DBE certification of non-certified small businesses.

### Progress

- Overall DBE participation based on amounts originally awarded is 14.85 percent, participation including change order work is at 14.98 percent and DBE's have been paid 13.51 percent of construction dollars to date.

### Procurement Activities

- The Systems and Facilities Maintenance procurement is scheduled for release in late March, 2007. The DBE participation goal is 6.8 percent. The Proposal opening dated is June 5, 2007. There will be no further DBE program activity related to this procurement until the contract price has been negotiated and DBE documents have been submitted for review.
- The Park-N-Ride bid deadline is June 5, 2007. A procurement-specific networking session was hosted by METRO on May 10, 2007 to assist DBEs in meeting with potential primes. Approximately fifty people were in attendance to meet with the six general contractors who had expressed interest in bidding.

### Contract Compliance

The summary below does not include DBE participation for professional services contracts related to future extensions or METRO's DBE vendors.

- Line Section 1 (LS1) - Kiewit Western Contractors
  - 12.10 percent Minimum DBE Participation



- 13.77 percent Committed at Bid
- 13.64 percent Current DBE Participation (based on adjusted contract amounts)
- \$7,645,822 Total DBE Subcontracted Amount
- Line Section 2 - Herzog
  - 12.10 percent Minimum DBE Participation
  - 15.69 percent Committed at Bid
  - 20.20 percent Current DBE Participation (based on adjusted contract amounts)
  - \$11,484,648 Total DBE Subcontracted Amount
- Line Section 3 - Archer Western Contractors
  - 12.30 percent Minimum DBE Participation
  - 13.59 percent Committed at Bid
  - 14.91 percent Current DBE Participation (Based on adjusted contract amounts)
  - \$14,854,404 Total DBE Subcontracted Amount
- Line Section 4 - Sundt/Stacy and Witbeck
  - 11.50 percent Minimum DBE Participation
  - 14.47 percent Committed at Bid
  - 12.08 percent Current DBE Participation (based on adjusted contract amounts)
  - \$7,294,677 Total DBE Subcontracted Amount
- Line Section 5 - Sundt/Stacy and Witbeck
  - 14.90 percent Minimum DBE Participation
  - 16.73 percent Committed at Bid
  - 19.94 percent Current DBE Participation (based on adjusted contract amounts)
  - \$14,323,014 Total DBE Subcontracted Amount
- Station Finishes - Archer Western Contractors
  - 12.20 percent Minimum DBE Participation
  - 12.98 percent Committed at Bid
  - 14.41 percent Current DBE Participation (based on adjusted contract amounts)
  - \$9,055,998 Total DBE Subcontracted Amount



- Operations and Maintenance Center - Sundt/Stacy and Witbeck
  - 7.34 percent Minimum DBE Participation
  - 7.54 percent Committed at Bid
  - 8.21 percent Current DBE Participation (based on adjusted contract amounts)
  - \$4,73,643 Total DBE Subcontracted Amount
- Traction Electrification - Mass Electric
  - 10.00 percent Minimum DBE Participation
  - 10.20 percent Committed at Bid
  - 10.57 percent Current DBE Participation (based on adjusted contract amounts)
  - \$6,045,566 Total DBE Subcontracted Amount
- Signals and Communications - Mass Electric
  - 11.00 percent Minimum DBE Participation
  - 11.67 percent Committed at Bid
  - 11.24 percent Current DBE Participation (based on adjusted contract amounts)
  - \$4,512,729 Total DBE Subcontracted Amount
- Tempe Town Lake Bridge - PCL Civil Constructors
  - 12.00 percent Minimum DBE Participation
  - 14.49 percent Committed at Bid
  - 20.80 percent Current DBE Participation (based on adjusted contract amounts)
  - \$4,559,765.58 Total DBE Subcontracted Amount
- Construction Administration Consultant - PBS&J/PGH Wong Joint Venture
  - 21.00 percent Minimum DBE Participation
  - 25.35 percent Committed at Bid
  - 32.29 percent Current DBE Participation (based on adjusted contract amounts)
  - \$12,390,770 Total DBE Subcontracted Amount
- Program Management Consultant - SRBA/Parsons Joint Venture
  - 1.5 percent Minimum DBE Participation (established post contract award)
  - 0 percent Committed at Bid



- 4.25 percent Current DBE Participation (based on adjusted contract amounts)
- \$1,704,758 Total DBE Subcontracted Amount
- General Engineering Consultant - Parsons Brinckerhoff
  - 13.00 percent Minimum DBE Participation
  - 13.89 percent Committed at Bid
  - 16.06 percent Current DBE Participation (based on adjusted contract amounts)
  - \$11,392,061 Total DBE Subcontracted Amount
- Fare Collection System - Scheidt Bachmann
  - 8.20 percent Minimum DBE Participation
  - 8.39 percent Committed at Bid
  - 8.39 percent Current DBE Participation (based on adjusted contract amounts)
  - \$627,000 Total DBE Subcontracted Amount
- Material Procurements - Multiple Suppliers
  - 3.00 percent Minimum DBE Participation
  - 3.00 percent Committed at Bid
  - 3.00 percent Current DBE Participation (based on adjusted contract amounts)
  - \$1,770,322.77 Total DBE Subcontracted Amount

#### Outreach Activities

- The DBE Outreach Advisory Committee met May 15, 2007. Given the current reduced level of contracting opportunities, the Advisory Committee will start meeting on a quarterly basis effective June 2007.
- METRO is revisiting the schedule and focus of outreach activities. Activities will be scheduled to coincide with large procurement opportunities.

#### **Cost and Schedule – Variance Analysis**

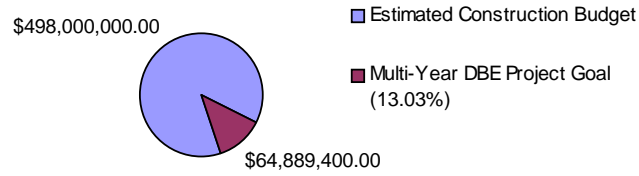
- DBE activities remain within budget and on schedule.

#### **Issues and Solutions**

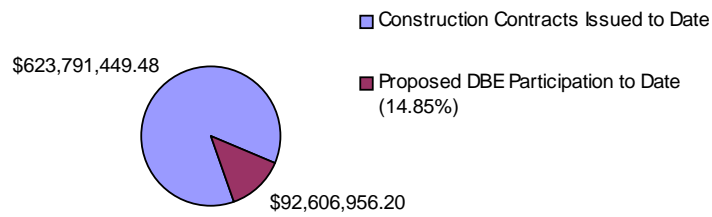
- There are no issues to report this period.



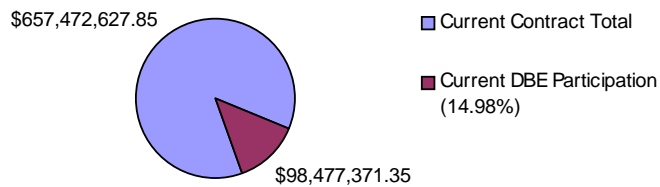
### DBE Program Overview



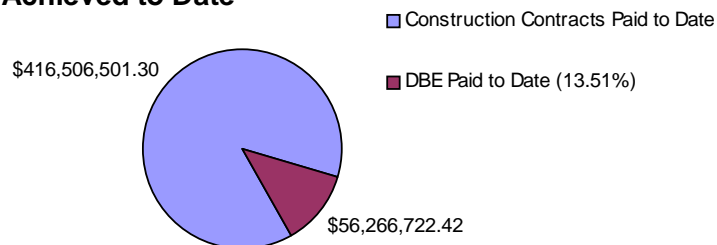
### Original Contract Amounts



### Current Participation



### Achieved to Date





## 7. System Safety and Security

### Description

The System Safety and Security Department is responsible for establishing requirements for the identification, evaluation, and minimization of safety and security risks throughout all phases of the project, including revenue operations.

The Section has developed and is administering provisions of the System Safety Program Plan, the System Security Program Plan, and the Safety and Security Certification Plan.

### Progress

- Conducted Track Access Training for 361 METRO, consultant, contractor, utility company, and City of Phoenix personnel.
- Participated in the low speed testing of car 101 under its own power in the Operations and Maintenance Center yard and on the test track, and the high speed testing on the test track.
- Revised the System Safety Program Plan to conform to the ADOT System Safety Program Standard, Revision 1.
- Prepared a draft of Test Operation Rules for LRV testing.
- Completed the Off-Duty Officer Work Agreement with the Tempe Police Department for officers to work the traffic control detail at Washington and 56<sup>th</sup> St. during LRV testing.
- Completed the City of Phoenix After Hours Noise Permit for LRV testing.
- Completed the METRO Briefing for Emergency Services Personnel training program to be distributed to all police and fire departments in the METRO service area.
- Continued with the process to develop light rail codes and ordinances for traffic, public conduct, and fare inspection enforcement with the City of Phoenix Law Department.
- Continued working with the safety and security certification support consultant to develop checklists and monitor implementation of the program.
- Continued review and comment process for METRO Standard Operating Procedures.
- There was no Fire/Life Safety and Security Committee meeting (every other month schedule).
- There was no Safety and Security Certification Review Committee meeting.

### Cost and Schedule – Variance Analysis

- Safety and Security activities remain within budget and on schedule.

### Issues and Solutions

- None.



## 8. Environmental Management

During design and construction, the Environmental Manager is responsible for overseeing the compliance with federal and State environmental laws/regulations, the Project's environmental/historic preservation obligations, implementing the requirements of the Final Environmental Impact Statement (FEIS), Record of Decision (ROD), and Section 106 Memorandum of Agreement.

The Environmental Manager is also responsible for review of all proposed Project changes to determine if the proposed change is consistent with the Project Definition as stated in the FEIS and to determine if the change presents any environmental impact not addressed in the FEIS/ROD. If a proposed change results in potential new impacts, the Manager shall document those impacts and secure FTA concurrence with the change, definition of impacts and proposed mitigation.

### Progress

#### Archaeology

- Provided archaeological monitoring in LS 2, 3, 4 and 5 for all ground disturbance activities. Ground disturbing construction has been completed in La Plaza and Pueblo Grande. Therefore monitoring is complete.
- No significant resources were discovered this month.
- ACS has been providing 2 field archaeologists and one half-time supervisor.
- ACS completed inventory of recovered resources and prepared draft work plan for data analysis and report preparation.

#### Contaminated and Hazardous Materials

- Removed discovered underground tank and associated soils from Camelback Road just west of 7<sup>th</sup> Avenue;
- Provided containers for disposal of ACP line section 4.

#### Regulator Compliance

- Conducted field observation for contractor compliance with SWPPP. No substantial problems were identified.

### Cost and Schedule – Variance Analysis

#### Archaeology (Includes invoicing to CAC and METRO)

Original Contract Value (CAC)	\$1,500,064
Approved Change Orders (CAC)	\$2,137,936
METRO Contract Monitoring FY 07	\$325,000
Contract Value to date (CAC + METRO)	\$3,963,000



Invoiced through February 28, 2007 to CAC	(\$3,634,795)
Invoice to METRO March 1 – April 30, 2007	(\$187,243)
Estimated cost May '07 through June '07	\$137,757
Estimated cost for construction monitoring FY'08	\$175,000
Contingency for data recovery through end of construction	\$100,000
Total estimated costs for field archaeology	\$4,243,795

Hazardous Materials Assessment (CAC) (To be updated upon receipt of invoices)

Original Contract Value	\$499,488
Contract Value to date	\$499,488
Invoiced as of April 30, 2006	(\$422,076)
Task orders open	(\$31,331)
Expended or Committed	\$453,407
Estimated Cost to Complete	45,000
Estimated total Cost	\$498,407

Remediation and Treatment Fund (METRO)

Budget	\$1,004,000
Expended or Committed	(\$188,680)
Data Recovery Report	(\$84,956)
ERI	(\$103,724)
Transferred to Archaeology Monitoring-Data Recovery	\$650,000
Funds Available	\$165,320

**Issues and Solutions**

- None.



## 9. Real Estate

### Description

The LRT Project travels down main business arterials in the cities of Phoenix, Tempe and Mesa and approximately 777 parcels of property are affected. The number of right-of-way certifications required within this 20-mile corridor is in excess of 2,500. This number includes all easements required by the project, such as utility, irrigation, sidewalk, traffic, slope, landscape and temporary construction. Real Estate staff members from the project cities are responsible for obtaining all of the necessary property rights required to construct and operate the LRT system. Oversight and coordination of the cities' activities is provided by METRO Real Estate staff.

### Progress

- Presently, 99 percent of the required properties are now under city control and 95 percent of the properties are available for construction. Extensive coordination between METRO and City staff has enabled the project to obtain these properties in a manner sufficient to support construction.
- In Line Section 1, all 183 relocations have been completed. One-hundred, forty-nine (149) parcels are under City control and a total of 132 parcels are available for construction. Line Section 1 contains 150 parcels.
- In Line Section 2, all 29 relocations have been completed. A total of 89 parcels are under city control and 83 parcels are available for construction. Line Section 2 contains 92 parcels.
- In Line Section 3, all 36 relocations have been completed. All parcels are under City control and 247 parcels are available for construction. Line Section 3 contains 259 parcels.
- In Line Section 4, all 28 relocations have been completed. All parcels are under City control and are available for construction. Line Section 4 contains 109 parcels.
- In Line Section 5, all 40 relocations have been completed. All parcels are under City control and all but one parcel is available for construction. Line Section 5 contains 168 parcels.
- In Line Sections 1, 2, 3 and 4; eighteen building cut and re-faces were identified; seventeen have been completed and one is currently underway. These building modifications required a structural engineering analysis, architectural and utility modifications, the procurement of relevant contractors and an extensive permitting process.
- The FTA Real Estate Program Compliance Review cited nine areas of noncompliance. Presently, five of these citations have been resolved and accepted by the FTA. As of May 1, 2007, the remaining four issues have been fully addressed and are being reviewed and certified by METRO prior to FTA review and approval.



- An updated Real Estate Acquisition Summary sheet is included at the end of this section.

	<b>5309</b>	<b>CNPA</b>	<b>Total</b>
Budget	\$116,214,150	\$22,221,205	\$138,435,355
Available Contingency	\$ 19,509,087	\$ 1,753,931	\$ 21,263,018
Total	\$135,723,237	\$23,975,136	\$159,698,373
Spent To Date	\$127,063,747	\$22,310,611	\$149,374,358
Balance Available	\$ 8,659,490	\$ 1,664,525	\$ 10,324,015

### **Cost and Schedule – Variance Analysis**

- A focused real estate effort was initiated to accelerate the acquisition process and thus eliminate a negative impact to the project schedule. The Cities worked diligently with METRO to improve and streamline processes wherever possible.
- The overall real estate forecast is still within the budget and actual costs are within the budget plus contingency for the real estate contract unit.

### **Issues and Solutions**

- The parcels that were negatively impacting the schedule have been eliminated. The energy of the project team is focused where it is needed most. In Line Sections 1, 2 and 3, a few parcels remain unavailable for construction. Efforts are focused to acquire and/or clear these parcels.



**CENTRAL PHOENIX / EAST VALLEY  
LIGHT RAIL TRANSIT PROJECT  
REAL ESTATE ACQUISITION SUMMARY**

May 31, 2007

ACTIVITY	1 PHX	2 PHX	3 PHX	4 PHX	4 TEMPE	5 TEMPE	5 MESA	Totals
Full Takes	40	0	9	2	0	12	0	<b>63</b>
Partial Takes	110	92	250	106	1	109	46	<b>714</b>
<b>Total Affected Parcels</b>	<b>150</b>	<b>92</b>	<b>259</b>	<b>108</b>	<b>1</b>	<b>121</b>	<b>46</b>	<b>777</b>
Projected Relocations	183	29	36	28	0	40	0	<b>316</b>
Title Reports Completed	150	92	259	108	1	121	46	<b>777</b>
Legals sent to City	150	92	259	108	1	121	46	<b>777</b>
Appraisals Requested	150	92	259	108	1	121	46	<b>777</b>
Appraisals Completed	150	92	259	108	1	121	46	<b>777</b>
Offers Made	150	92	259	108	1	121	46	<b>777</b>
Offers Accepted	109	65	224	85	1	90	36	<b>610</b>
<b>Escrow Closed Acquisition Complete</b>	<b>107</b>	<b>66</b>	<b>227</b>	<b>87</b>	<b>1</b>	<b>98</b>	<b>39</b>	<b>625</b>
Condemnation Filed	26	12	25	11	0	29	17	<b>120</b>
OIP Received	24	8	20	9	0	21	7	<b>89</b>
ROE Signed	18	15	12	12	0	2	0	<b>59</b>
Relocations Underway	0	0	0	0	0	0	0	<b>0</b>
Relocations Completed	183	29	36	28	0	40	0	<b>316</b>
<b>Parcels Under City Control</b>	<b>149</b>	<b>89</b>	<b>259</b>	<b>108</b>	<b>1</b>	<b>121</b>	<b>46</b>	<b>773</b>
Parcels Available for Construction	132	83	247	108	1	121	45	<b>737</b>
Parcels Pending Release for Construction	17	6	12	0	0	0	1	<b>36</b>



## 10. Utilities

### Description

The METRO Utility Manager is responsible for managing and overseeing the relocation of all privately owned utilities (irrigation, natural gas, nitrogen lines, fiber optics, power, private force mains, private communication lines, private irrigation lines, cable television, and telecommunications) necessary to allow LRT construction, including those with and without prior rights. Utilities with prior rights include SRP Power, SRP Irrigation, Qwest (local and long distance), Southwest Gas, WiTel, MCI and APS. Relocation of privately owned utilities is performed by private utility companies and their contractors, preferably prior to beginning LRT construction. Relocation of publicly-owned utilities is accomplished within the civil construction contracts by METRO contractors.

### Progress

- Line Section 1
  - Solutions for utility issues are addressed weekly in the LS1 Utilities Coordination meeting held at the Kiewit field office.
  - Kiewit continues to work on Salt River Project Irrigation (SRPI) facilities.
  - SRP - Power has mobilized crews to start trenching/pulling wire for Job Number KJC-3002 on the north side of Camelback Road from 19<sup>th</sup> Avenue to 15<sup>th</sup> Avenue. The work is tentatively scheduled to be completed by the first week of July 2007.
  - Kiewit continued trenching along the west side of 19th Avenue from Camelback Road to Missouri Avenue (SRP Job Numbers KJC-5001 and KJC-3000). SRP is ready to mobilize crews to start pulling and splicing new cable. Once SRP is done Qwest and Cox Communication can start pulling and splicing new cable and fiber.
  - SRP Power Job Numbers KJC-5000 and KJC-3001 for joint trenching along the west side of 19th Avenue from Missouri Avenue to Bethany Home Road is tentatively scheduled to start mid-June 2007.
  - Cox needs to pull and splice fiber at 17<sup>th</sup> Avenue and 15<sup>th</sup> Avenue and Camelback Road, but is waiting on the joint trench to be completed.
- Line Section 2
  - Utility conflicts and coordination issues are being addressed on a case-by-case basis in the field. Utility meetings are now being held bi-weekly in the Herzog office. These meetings increase contractor communication and utility company accountability.
  - SRP Water Irrigation facilities at Central Avenue and Encanto Boulevard will be constructed by the LS2 Contractor in July 2007.
  - METRO has established a punch list for utility companies to address:
    - Field adjustment of equipment, J-Boxes, Pull Boxes, manholes, etc



- The project team continues to work with APS, the COP and Herzog on design modifications for street lights and traffic signals. The COP, METRO and APS representatives have been instrumental in facilitating the necessary changes of this work.
- Line Section 3
  - Utility conflicts and coordination issues are being addressed on a case by case basis in the field.
  - METRO has established a punch list for utility companies to address:
    - Removal of power poles, abandoned aerial cables, field adjustment of equipment, J-Boxes, Pull Boxes, etc.
  - The project team continues to work with APS, COP, METRO and Archer Western representatives to implement design modifications on street lights and traffic signals. The weekly coordination meeting is held and has been instrumental in facilitating the necessary changes to this work.
- Line Section 4
  - Utility conflicts and coordination issues are being addressed on a case by case basis in the field.
  - METRO has established a punch list for utility companies to address:
    - Removal of power poles, abandoned aerial cables, field adjustment of equipment, J-Boxes, Pull Boxes, etc.
  - Installation of microduct was successful installed at Washington Street from Priest Drive to east of Center Parkway to 44<sup>th</sup> Street.
- Line Section 5
  - Solutions for utility issues are addressed weekly in the LS5 Utilities Coordination meeting.
  - The Contractor continues to face challenges with existing utilities along the alignment eastward from Tempe Canal and Main Street to Sycamore. The Agency is working to expedite these third-party utility relocations.
  - The Union Pacific Railroad work has been completed.
  - SRP Job Number KEC-5000 is approximately 95 percent complete with all trenching on north side and south side of Main Street.
  - SRP Water (Irrigation) relocation is near completion on Apache Boulevard from River Drive to Price Freeway. SRP has mobilized four crews to expedite relocation.
  - SRP Water (Irrigation) relocation in Mesa from Main Street and Dobson to Sycamore; there are several utilities that need to be lowered due to the proposed SRP Irrigation. SRP is ready to mobilize crews once the utility conflicts have been addressed.



- Cox Communication is expediting placement of fiber on Main Street from Roosevelt to May. Splicing should be complete by June 11, 2007 so SRP can demo and pull poles.
- Traction Power Substations
  - APS is in the process of writing Legals and Easements for Traction Power Substations Numbers 4, 6, 8, 10 and 11.
    - Easements for Numbers 5 and 7 were identified in Right-of-Way. No easement is required.
  - SRP is in process of writing Legals and Easements for Traction Power Substations Numbers 1, 2, 12, and 14.
  - TPSS Numbers 9 and 15 and Signal Building Number 4 are energized.
- New Electric Services Accounts are now set up with APS and SRP

### **Cost and Schedule – Variance Analysis**

- Costs incurred to-date for prior rights utilities are within the Utility Budget. We are concerned that the budget for SRP Irrigation and SRP Power will run over budget due to material costs and the fact that traffic control costs have increased.

### **Issues and Solutions**

- Utility relocation is a big concern for this project to be on schedule. METRO has requested that utility companies accelerate their relocation even if it includes providing additional resources. Much progress has been made project-wide to eliminate this concern.
- Need to define the remaining APS and SRP Power easements for TPSS Site Numbers 1, 2, 4, 6, 8, 10, 11, 12 and 14.

### Construction Photographs



SRP Water installing irrigation pipe on Apache Boulevard from River to Price Freeway in LS5



SRP Water installing irrigation structure Price Freeway and Apache Boulevard in LS5



UPRR removing Signal Cabinet, Gate and Cantilever at 1<sup>st</sup> Street and Ash in LS5



SRP Water setting a manhole at Rivers and Apache Boulevard in LS5

**Prior Rights Utility Cost Status  
Federal 5309 Project**

	Percent	Budget	Earned	Cost to Date	Forecast
Line Section 1	76%	\$6,344,834	\$4,801,865	\$7,935,247	\$7,680,640
Line Section 2	85%	\$1,905,951	\$1,623,855	\$635,041	\$1,455,049
Line Section 3	99%	\$3,067,860	\$3,024,582	\$3,113,208	\$3,306,438
Line Section 4	98%	\$4,780,945	\$4,662,248	\$2,826,036	\$5,068,383
Line Section 5	85%	\$7,747,141	\$6,592,345	\$12,275,612	\$12,980,554
Maintenance Storage Facility	100%	\$320,230	\$320,230	\$452,132	\$452,132
Town Lake Bridge	100%	\$1,150,000	\$1,150,000	\$808,997	\$850,348
	<b>88%</b>	<b>\$25,316,961</b>	<b>\$22,175,125</b>	<b>\$28,046,273</b>	<b>\$31,793,544</b>
<b>Sub Total</b>	<b>88%</b>	<b>\$50,633,922</b>	<b>\$44,350,250</b>	<b>\$56,092,546</b>	<b>\$63,587,088</b>
Contingency	0%	\$1,062,331	\$0	\$0	\$474,466
<b>Total Prior Rights Utilities</b>	<b>84%</b>	<b>\$26,379,292</b>	<b>\$22,175,125</b>	<b>\$28,046,273</b>	<b>\$32,268,010</b>

## 11. Architecture

### Public Art



### Description

Public art projects will be a part of all Station Finishes listed in Section 4.1.3 with the exception of the platform at 19<sup>th</sup> Avenue and Camelback. Additional artworks will be placed at the 19<sup>th</sup> Avenue and Camelback Park-and-Ride and at the Tempe Town Lake Bridge. Artworks will include stand alone sculptures, integrated architectural finishes, entryway canopies, lighting, paving and landscaping elements. Artists will install their work in conjunction with the Station Finishes, Park-and-Ride, and Town Lake Bridge construction schedule.

### Progress

- Line Section 1
  - Montebello: Installation issues resolved, waiting for new shop drawings from artist.
  - Camelback/7<sup>th</sup> Avenue: Test pavers from Advanced Terrazzo are expected in June
- Line Section 2
  - Camelback: Stone and steel fabrication is almost complete and art is in storage.
  - Osborn: Bronze footprint casting complete; water-jet-cut pavers in progress.
  - Encanto: Bronze sculpture and boxes are carved and waiting to be cast. The entry way is blocked out for Canterra Stone.



- Line Section 3
  - McDowell: Approximately one half of the bronze books are cast.
  - Van Buren: Fabrication is 90 percent complete.
  - Central/Washington – 1st Avenue/Jefferson: Porcelain tile in production.
  - Third Street: Steel fabrication begun.
  - Twelfth Street: Paver fabrication is complete and artist will be coming out for a community meeting June 7<sup>th</sup> to preview his hand-painted photo tiles and his metal railing designs.
  - Twenty-Fourth Street: Steel panel fabrication is complete and final bronze fabrication is ongoing.
- Line Section 4
  - Forty-Fourth Street: Lighting issues are being resolved.
  - Priest/Washington: Fabrication has begun and installation issues are being resolved.
- Tempe Town Lake
  - Artwork has been completed except for the final programming of the bridge lighting. The artist will be coming out in July for programming in conjunction with the 4th of July bridge light-up.
- Line Section 5
  - Mill/3rd Avenue: The lighting issues have been resolved, and the art canopies are completed.
  - College/5th Avenue: The bronze models are three-fourths completed.
  - Apache Boulevard Stations – Sculpture: Bronze models for “Hands” are approximately 50 percent complete. The hands will not be ready for installation until late summer 2008 due to a complex casting process that can only be done during the winter months.
  - Sycamore/Main: Fabrication has begun.
- General Progress
  - Working with Archer Western Contractors (AWC) to resolve the foundation installation and scheduling issues.
  - Working with artists and GEC to resolve the outstanding request for information issues.

### **Cost and Schedule – Variance Analysis**

- Working with AWC to install artwork at the Priest/Washington station and the Dorsey/Apache station. Work will be performed out of sequence with their construction schedule due to art fabrication delays. Public Art activities remain within budget.

### **Issues and Solutions**

- Continuing to monitor contract schedule issues. Except for the stations noted above, artwork installation is on schedule within the latest AWC construction schedule.

### **Construction Photographs**



Central/Camelback  
“Landmark” and “Water Trough” sculptures in fabrication

## Station Finishes



### Description

The METRO Station Finishes (SF) Contract includes twenty-eight stations, four transit centers and installation of art pieces by twenty-seven artists. Amenities within the fully accessible stations include shading trellises with overhead canopies, irrigated trees and landscape, patron seating and leaning rails, drinking fountains, map cases, directional signage and trash receptacles. Types of art pieces include stand-alone sculptures, paving treatments, lighting treatments and integrated art within the station structures.

The SF architects prepared the construction drawings in five separate packages that correspond to each civil line section. These documents along with an art reference volume have been combined together and are currently under construction by Archer Western Contractors, the METRO Station Finishes Contractor.

System elements that are located in the station areas include surveillance cameras (CCTV), a public address system (PA), emergency call boxes (ECB), variable message boards (VMB) automated ticket vending machines (TVM) and Stand-alone Validators (SAV)

### Progress

- Work continues on the walkways at the 19<sup>th</sup> Avenue and Montebello Transit Center south of the realigned Montebello Avenue. Spectrum Mall management is being regularly updated on METRO construction activities in the vicinity of their facility.
- Central Avenue and Camelback Transit Center: The Contractor re-mobilized at this location on April 28, 2007. Work on underground utilities is ongoing.



- Washington and 44<sup>th</sup> Street Transit Center: Construction of curb/gutter, grading and site utility work is ongoing. Archer Western and Sundt/Stacey Witbek, (Line Section 4 Contractor), are continuing to coordinate access and sequencing of their respective work. Masonry block work of the Operator Building (OPF-3) at the 44th Street and Washington Transit Center is complete.
- Sycamore and Main Street Transit Center: Installation of underground utilities is ongoing. Contractor completed installation of structural steel for the bus shelters. Site grading and curb/gutter construction is underway. Masonry block work of the Operator Building (OPF-4) at the Sycamore and Main Street Transit Center is complete.
- Structural steel installation has been completed at 1<sup>st</sup> Avenue/Van Buren, Central Avenue/Van Buren, Central Avenue/Washington, 3<sup>rd</sup> Street/Jefferson, 1<sup>st</sup> Street/Jefferson, 3<sup>rd</sup> Street/Washington, and Priest Avenue/Washington Stations. Electrical and communications cabinets have been set at the 1<sup>st</sup> Avenue/Van Buren, Central Avenue/Van Buren, and Central Avenue/Washington Stations. Utility power has been established at the 1<sup>st</sup> Avenue/Van Buren Station. Electrical and other utility work is ongoing at the aforementioned stations.
- A total of sixteen station foundations have been substantially completed by Line Section Contractors and made available to the Station Finishes Contractor for Area Access.
- A proposal for rotating concrete pads at various stations for the Ticket Vending Machines (TVM's) due to further revisions in machine design and required maintenance access is under review from Archer Western by METRO. Provisions for new Stand-alone Validator (SAV) concrete pads and power connections to the system for six stations are also included in this upcoming change order.
- The pad locations at all other stations have been notated in Agency approved design sketches and are ready for inclusion in another Change Notice to the SF Contractor upon METRO's determination of their funding source (see Issues and Solutions below).

### **Cost and Schedule – Variance Analysis**

- A revised schedule has been prepared and reviewed by METRO. Substantial agreement has been reached between METRO and Archer Western Contractors, and the revised schedule is nearly ready to be implemented.

### **Issues and Solutions**

- Building department comments related to received Station Finishes Permit approvals from the Cities of Phoenix and Mesa resulted in additional changes at all Transit Center sites. METRO and Archer Western are continuing to resolve any potential cost and schedule impacts due to these Contract revisions.

**Construction Photographs**



Sycamore/Main Street Transit Center



1<sup>st</sup> Avenue/Jefferson Station



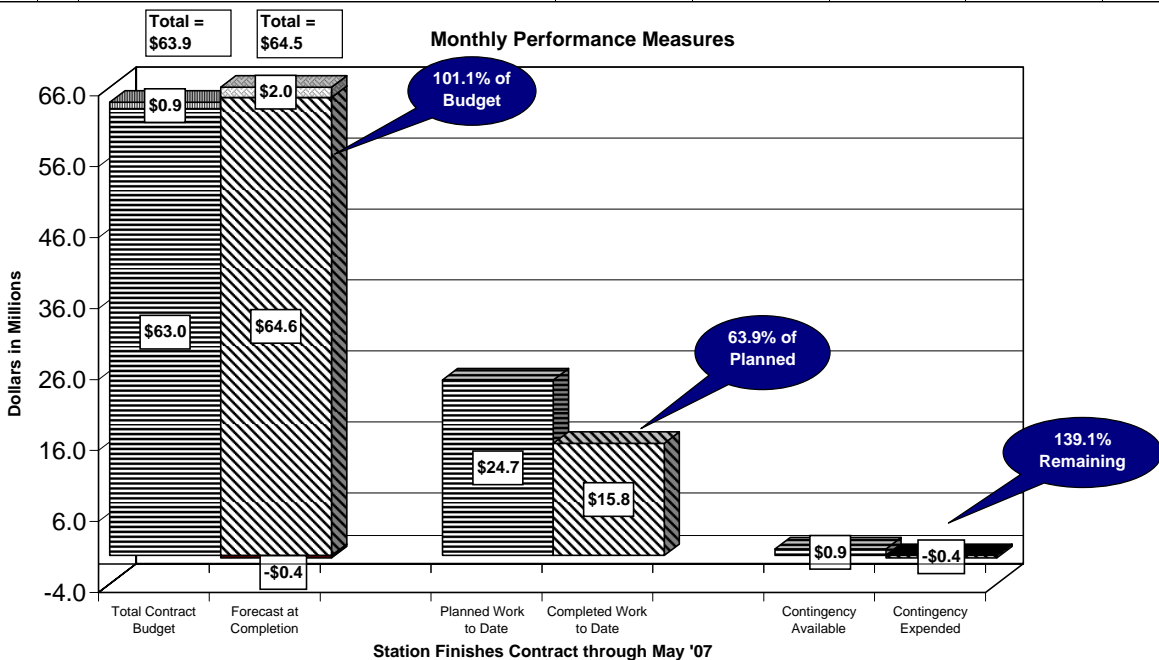
OPF 4 Facility



Priest Avenue/Washington Station

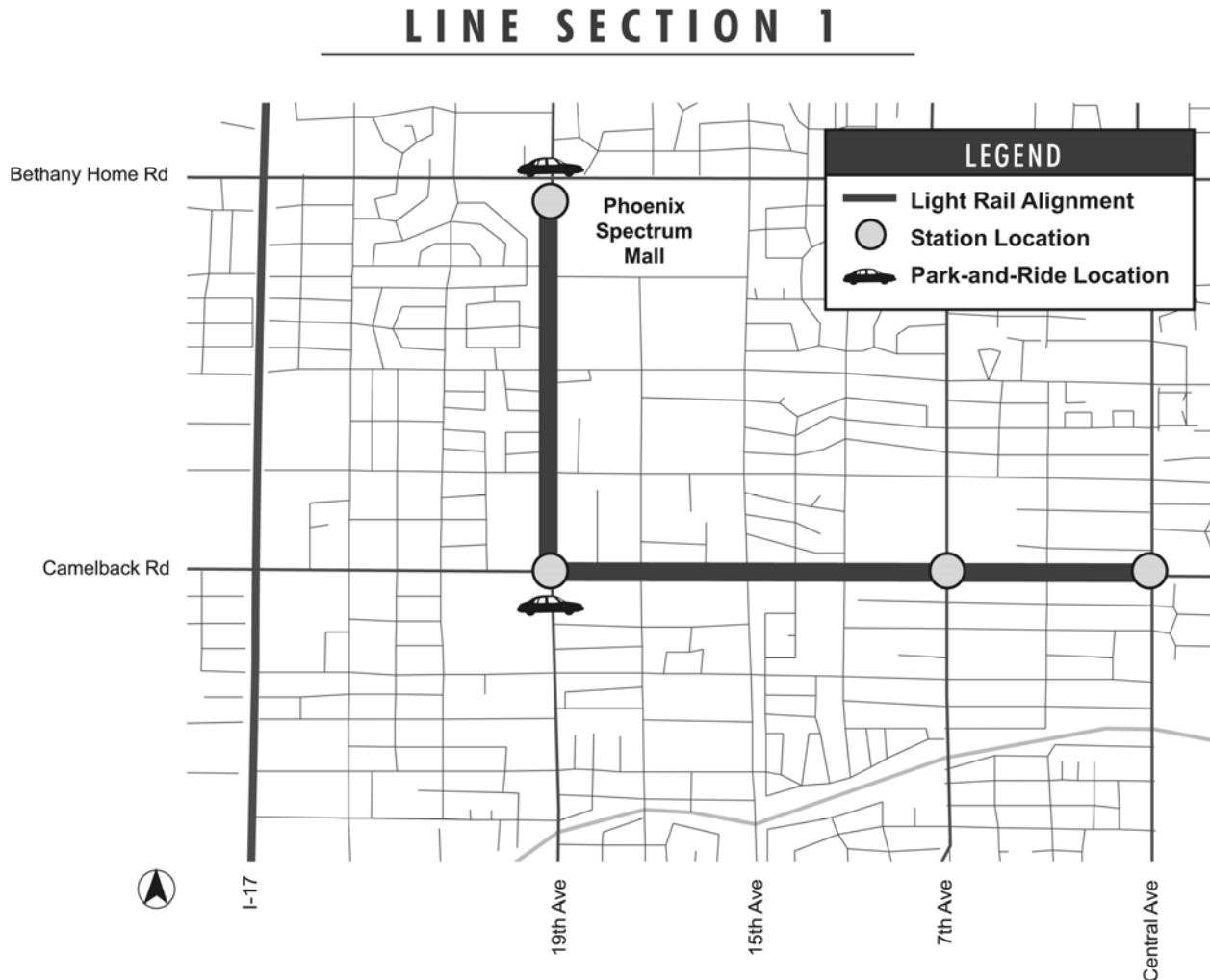


<b>Description:</b>		<b>3.2.1 Station Finishes</b>			
<b>PE/PA:</b>					
<b>Contractor:</b>		<b>Archer Western Contractors</b>			
<b>Resident Architect:</b>		<b>Doaa Aboul-Hosn</b>			
<b>Data Through:</b>		<b>April 30, 2007</b>			
		<b>Cumulative</b>	<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Original Budget		\$52,985,000	\$9,988,000	\$62,973,000
2	Executed Change Orders		-\$580,812	\$221,829	-\$358,983
3	Budget Transfers		\$0	\$0	\$0
4	Current Budget (1+2+3)		\$52,404,188	\$10,209,829	\$62,614,017
5	Work Scheduled		\$20,571,026	\$4,148,320	\$24,719,346
6	Work Earned		\$11,629,833	\$4,158,576	\$15,788,409
7	Actual Expenditures		\$11,478,891	\$4,150,874	\$15,629,765
8	Forecast to Complete Base (4-7)		\$40,925,297	\$6,058,955	\$46,984,252
9	Change Orders Pending Execution		\$24,252	\$1,928,971	\$1,953,223
10	Forecast at Completion (7+8+9)		\$52,428,440	\$12,138,800	\$64,567,240
11	Percent Budget Expended (7/4)		21.9%	40.7%	25.0%
12	Percent Planned (5/4)		39.3%	40.6%	39.5%
13	Earned Percent Complete (6/4)		22.2%	40.7%	25.2%
14	Schedule Performance (6/5)		0.57	1.00	0.64
15	Cost Performance (6/7)		1.01	N/A	1.01
16	Contingency Budget		\$546,000	\$371,603	\$917,603
17	Remaining Contingency		\$1,126,812	\$149,774	\$1,276,586
18	Percent Contingency Remaining (17/16)		206.4%	40.3%	139.1%
		<b>Period</b>			
1	Original Budget		N/A	N/A	N/A
2	Executed Change Orders		\$156,000	\$22,956	\$178,956
3	Budget Transfers		\$0	\$0	\$0
4	Current Budget (1+2+3)		\$52,404,188	\$10,209,829	\$178,956
5	Work Scheduled (Cumm - Last Period)		\$1,870,654	\$550,619	\$2,421,273
6	Work Earned (Cumm - Last Period)		\$1,211,465	\$1,019,472	\$2,230,937
7	Actual Expenditures (Cumm - Last Period)		\$1,067,929	\$1,017,056	\$2,084,985
8	Forecast to Complete Base (4-7)		\$51,336,259	\$9,192,773	\$60,529,032
9	Change Orders Pending Execution		\$0	-\$21,741	-\$21,741
10	Forecast at Completion (7+8+9)		\$52,404,188	\$10,188,088	\$62,592,276
11	Percent Budget Expended (7/4)		2.0%	10.0%	3.3%
12	Percent Planned (5/4)		3.6%	5.4%	3.9%
13	Earned Percent Complete (6/4)		2.3%	10.0%	3.6%
14	Schedule Performance (6/5)		0.65	1.85	0.92
15	Cost Performance (6/7)		1.13	N/A	1.07
16	Contingency Budget				
17	Remaining Contingency				
18	Percent Contingency Remaining (17/16)				



## 12. Facilities

### Line Section 1



### Description

Line Section 1 is 2.27 miles in length, and begins on 19th Avenue south of Bethany Home Road to a point west of the Central Avenue and Camelback Road Station. The construction work in this contract includes demolition, relocation of public utilities, roadway and drainage modifications, systems ductbank installation to the substation site interface, station foundations, signing and marking, irrigation, landscaping, et cetera.

There are three stations in Line Section 1. They are at 19th Avenue and Montebello, 19th Avenue and Camelback Road, and 7th Avenue and Camelback Road.

### Progress

- Asphalt paving has been successfully completed on the south side of Camelback from 7<sup>th</sup> Avenue to 18<sup>th</sup> Avenue and the traffic switch was completed successfully. The 24-inch sewer line installation on 19<sup>th</sup> Avenue continues working north from the



Camelback intersection. The present plan is to tie into the previously installed 24-inch line at Missouri Avenue around mid July.

- The 7<sup>th</sup> and Camelback station foundation work has been completed and the 19<sup>th</sup> Avenue and Camelback station foundation should be completed by early June.
- Traffic control continues to be coordinated between all participants on the project and as a consequence has been successful with few formal complaints from the various stakeholders or the traveling public. Kiewit has restructured traffic flow on both Camelback and 19th Avenue to one lane in each direction and COP has agreed to allow pre-approved nighttime full closures of the Camelback and 19th Avenue intersection. This traffic restructuring is ongoing and coordination with COP continues to work satisfactorily. COP Transit has rerouted the Buses so that they no longer stop at the intersection of 19<sup>th</sup> Avenue and Camelback Road and have suspended bus operations on 19<sup>th</sup> Avenue.
- Guideway and systems civil work on Camelback is virtually complete from Central, at the beginning of eastern limits of the job, west to 11<sup>th</sup> Avenue.

### **Cost and Schedule – Variance Analysis**

- The revised project schedule should be ready for review and subsequent submittal by the first week of June. An REA Meeting to review the schedule will occur during this time-frame, establishing new LS1 Milestones. The revised Milestone dates will be reflected in next month's report.

### **Issues and Solutions**

- Presently there are no known issues that should adversely impact the revised contract completion date. At this time it appears that the real estate, cost-to-cure, and utility easement concerns that have been noted as major past concerns no longer pose a major problem for future construction operations.

**Construction Photographs**



Guideway Curb - RGG crews preparing to place slip form Guideway Curb from R Sta. 1099+05 to 1099+75+/-



Guideway - P&CS crew performing the Holiday testing on the Rail Boot in the Guideway section from R Sta. 1077+35 to 1074+95, Rt and Lt track



CTB Removal-KWC crews removing the CTB from Sta. 312+00 to 315+00 on 19th Avenue

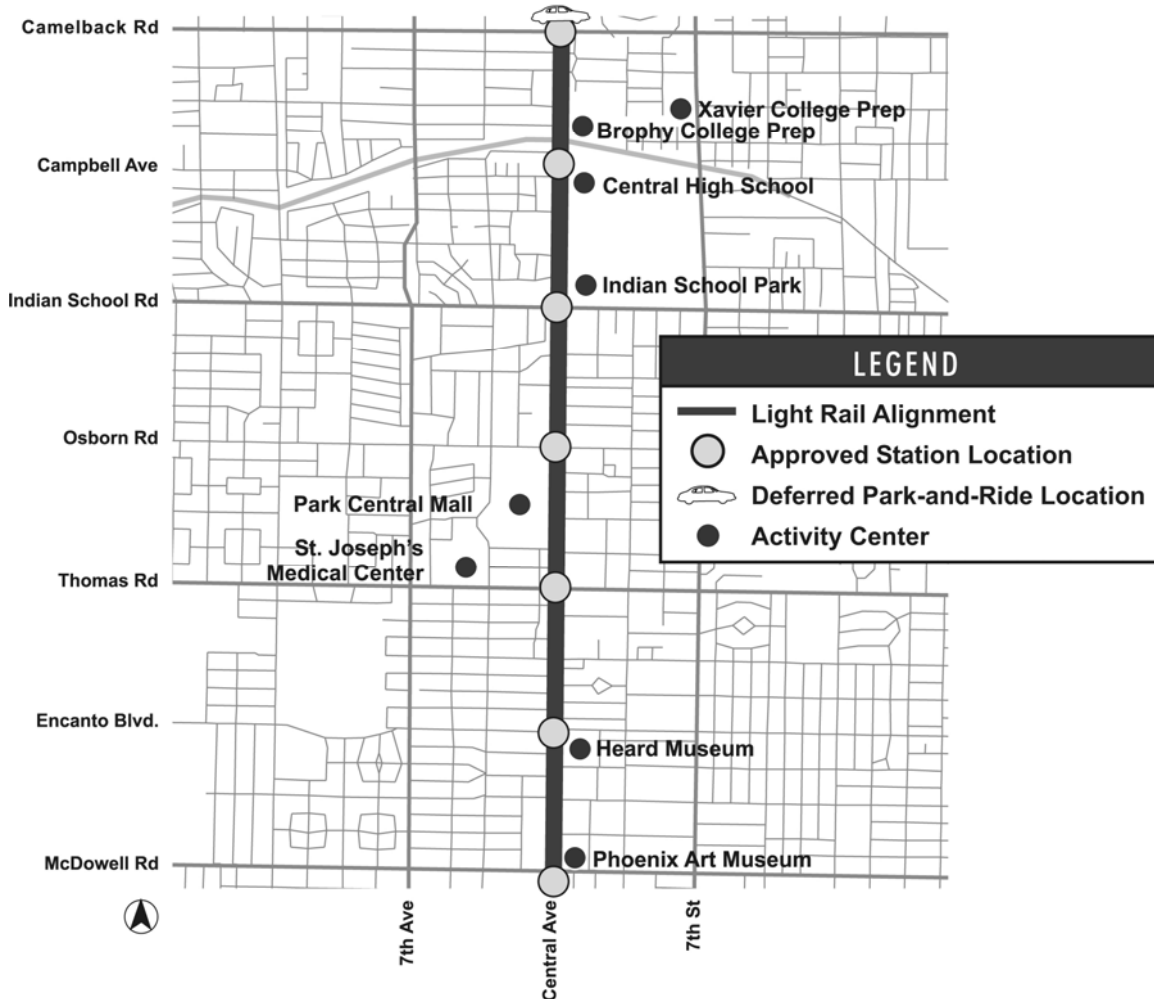


AC Paving - QT check rolling pattern using nuclear gauge



Line Section 2

**LINE SECTION 2**



**Description**

Line Section 2 begins at a point on Camelback Road just west of the Central Avenue/Camelback Road Station, and continues south on Central Avenue to a point approximately 200 feet north of the Central Avenue/McDowell Road intersection. The construction work in this contract includes demolition, relocation of public utilities, roadway improvements, drainage modifications, systems ductbank installations, station foundations, installation of systems ductbank and conduits, streetlights, traffic signals, OCS pole foundations, preparation of trackbed, and installation of embedded track. It also includes replacement of the Grand Canal Bridge on Central Avenue.

This Line Section will have six stations at the following locations: Central/Camelback, Central/Campbell, Central/Indian School, Central/Osborn, Central/Thomas and Central/Encanto.



## Progress

- Herzog continues to install infrastructure from Glenrosa to McDowell in various states of completion, including storm drainage, off set manholes, catch basin installation/relocations, and sanitary sewer installations from Indian School to Virginia.
- Change Orders were issued to Herzog for acceleration of water mains and storm drain installation between Osborn Road and McDowell Road. This work is approximately 95 percent complete.
- Herzog, GEC, and Brown and Caldwell developed the redesign for the amended sewer installation at Mitchell per the City's request and HCC continues with the installation. Herzog completed the additional water main installations at Thomas intersection.
- Herzog placed a total of 6000-feet of guideway to date. Guideway curbs and devil strip have been placed and layout of additional guideway through Central into the Camelback Station continues. Completed forming and placement of the bath tubs for special track work. Placed the Glenrosa/Farrington intersection guideway. Herzog continues to work on guideway grading, duct bank installation, placement of OCS Foundations and Rail installation between Indian School and Columbus.
- Herzog has completed the North and Southbound Camelback Stations and screen walls.
- Herzog continues to work on the roadway widening, clear/grub, demolition of curb/gutter, sidewalks and placing new curb and gutter, sidewalks, walls, water services, street lights and traffic signals from Camelback Road, south to McDowell.
- Herzog continues to work on installing sidewalk, sandstone borders, tree wells, and is currently working on the installation of landscaping, relocation of Palm Trees, planting trees and shrubs at various locations. They also continue to amend existing irrigation systems to facilitate the new irrigation system interface.

## Cost and Schedule – Variance Analysis

- The contractor is developing a new schedule to reflect re-sequencing the work to support overall Program Milestones.

## Issues and Solutions

- Utility conflicts continue to occur. METRO is working diligently with Herzog and the City in a proactive coordinated effort to resolve impacts in an expedited manner.
- METRO and Herzog are discussing a re-sequencing of infrastructure to improve the schedule for guideway turnover.
- Several major design adjustments, including waterline conflicts from Indian School to Encanto remain a challenge on LS2. METRO Design is working with the City of Phoenix to resolve ongoing conflicts. Variances have been issued and Change Notices issued to resolve some of the conflicts.

**Construction Photographs**



Installing water main north of Virginia



Installing 24" Water main Central/Thomas Intersection  
Weekend Closure of Central



Forming and placing Walls at crossover bathtubs



MH Number 14 Off Set Manhole



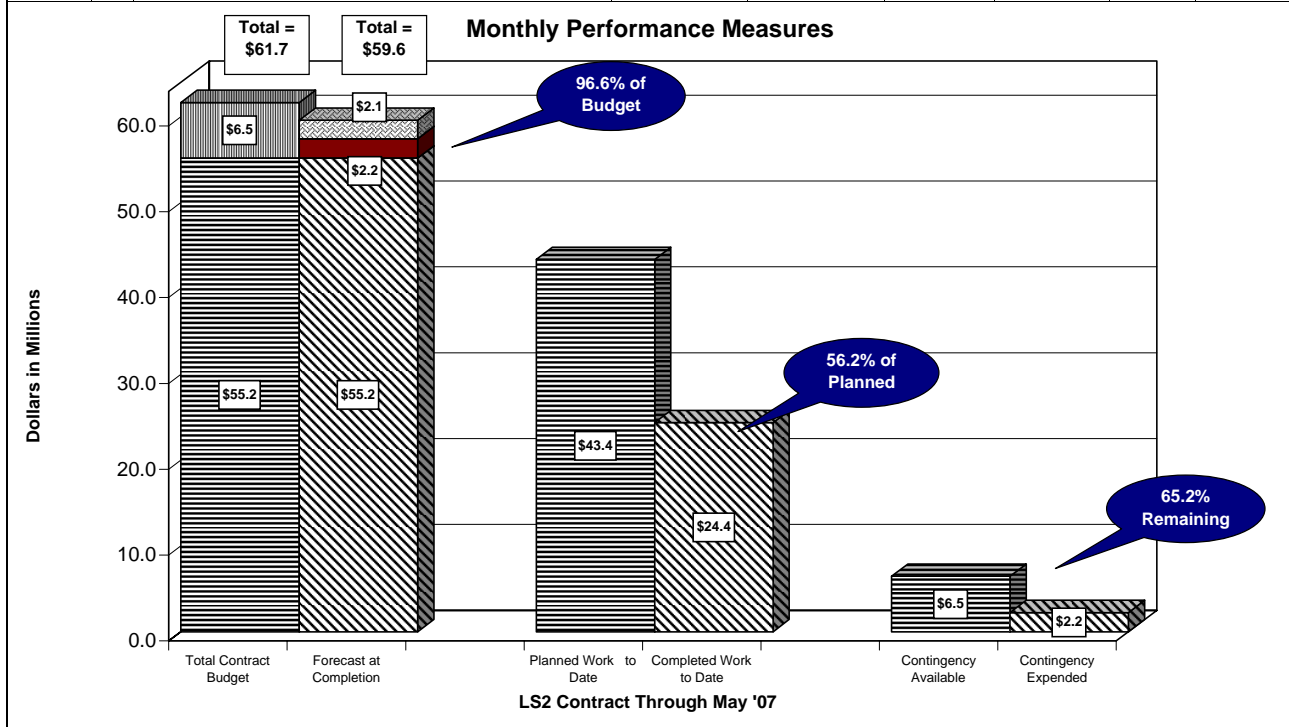
Placing guideway curb North of Highland



Installation of Track Drainage system

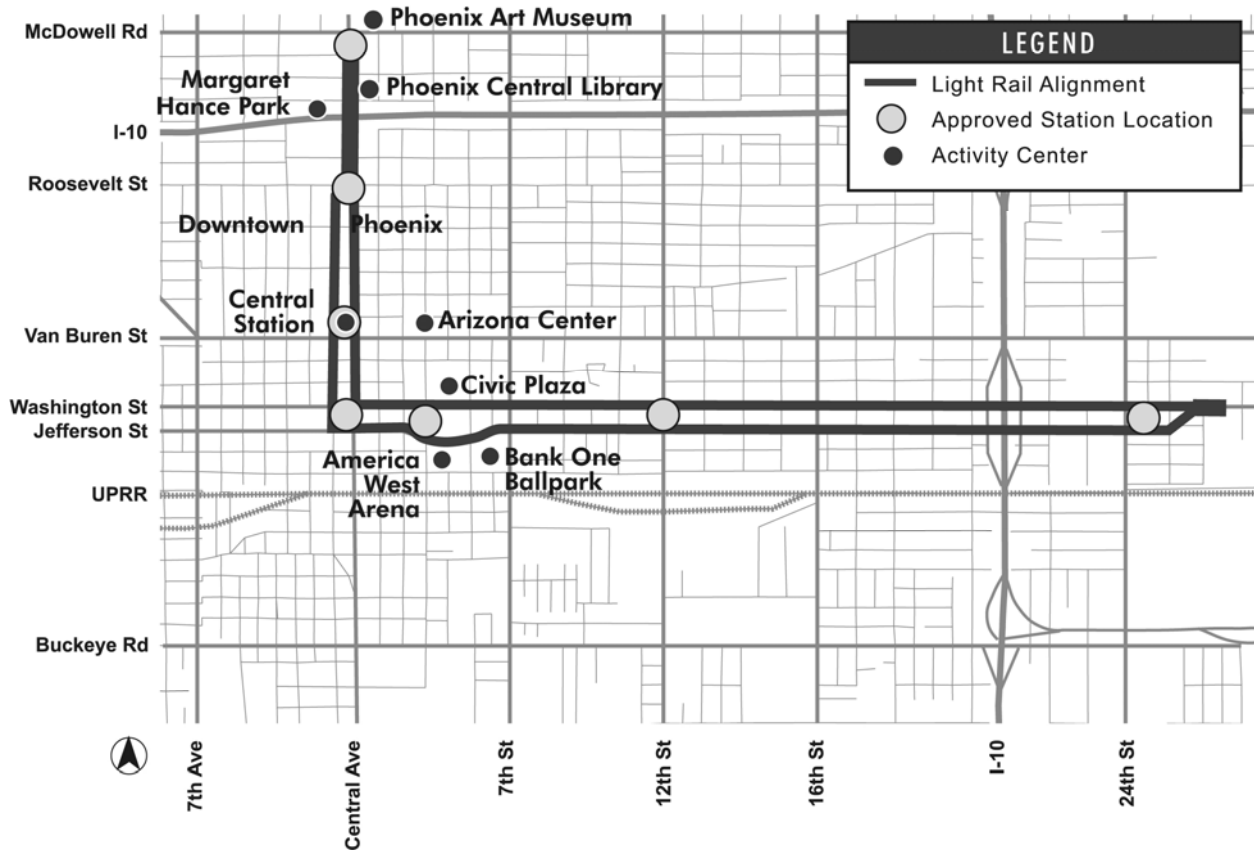


<b>Description:</b>		<b>3.1.2 Line Section 2</b>		
<b>PE/PA:</b>		<b>Alvin Livingstone</b>		
<b>Contractor:</b>		<b>Herzog Contracting Corporation</b>		
<b>Resident Engineer:</b>		<b>Marty Spong</b>		
<b>Data Through:</b>		<b>March 31, 2007</b>		
<b>Cumulative</b>		<b>5309</b>	<b>CNPA/Other</b>	<b>Total</b>
1	Budget	\$48,425,124	\$6,762,248	\$55,187,372
2	Executed Change Orders	\$1,911,876	\$65,668	\$1,977,544
3	Budget Transfers		\$269,573	\$269,573
4	Current Budget (1+2+3)	\$50,337,000	\$7,097,489	\$57,434,489
5	Work Scheduled	\$37,585,371	\$5,786,624	\$43,371,995
6	Work Earned	\$21,048,203	\$3,313,088	\$24,361,291
7	Actual Expenditures	\$21,049,102	\$3,245,073	\$24,294,175
8	Forecast to Complete Base (4-7)	\$29,287,898	\$3,852,416	\$33,140,314
9	Change Orders Pending Execution	\$2,368,804	-\$224,525	\$2,144,279
10	Forecast at Completion (7+8+9)	\$52,705,804	\$6,872,964	\$59,578,768
11	Percent Budget Expended (7/4)	41.8%	45.7%	42.3%
12	Percent Planned (5/4)	74.7%	81.5%	75.5%
13	Earned Percent Complete (6/4)	41.8%	46.7%	42.4%
14	Schedule Performance (6/5)	0.56	0.57	0.56
15	Cost Performance (6/7)	1.00	1.02	1.00
16	Contingency Budget	\$6,450,401	\$13,293	\$6,463,694
17	Remaining Contingency	\$4,538,525	\$13,293	\$4,216,577
18	Percent Contingency Remaining (17/16)	70.4%	100.0%	65.2%
<b>Period</b>				
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	\$122,830	\$0	\$122,830
3	Budget Transfers	\$0	\$11,772	\$11,772
4	Current Budget (1+2+3)	\$50,337,000	\$7,097,489	\$57,434,489
5	Work Scheduled (Cumm - Last Period)	\$2,925,696	\$352,053	\$3,277,749
6	Work Earned (Cumm - Last Period)	\$2,745,658	\$851,275	\$3,596,933
7	Actual Expenditures (Cumm - Last Period)	\$4,054,311	\$623,777	\$4,678,088
8	Forecast to Complete Base (4-7)	\$46,282,689	\$6,473,712	\$52,756,401
9	Change Orders Pending Execution	\$2,288,440	-\$216,648	\$2,071,792
10	Forecast at Completion (7+8+9)	\$52,625,440	\$6,880,841	\$59,506,281
11	Percent Budget Expended (7/4)	8.1%	8.8%	8.1%
12	Percent Planned (5/4)	5.8%	5.0%	5.7%
13	Earned Percent Complete (6/4)	5.5%	12.0%	6.3%
14	Schedule Performance (6/5)	0.94	N/A	1.10
15	Cost Performance (6/7)	0	0	0
16	Contingency Budget			
17	Remaining Contingency			
18	Percent Contingency Remaining (17/16)			



Line Section 3

LINE SECTION 3



**Description**

Line Section 3 is 4.29 miles in length with approximately eight miles of in-street track. It begins at Central Avenue and McDowell Road and extends south on Central Avenue to Portland Avenue where the line splits into single-track alignment on the one-way streets of Central Avenue and 1st Avenue. It continues south on one-way 1st Avenue to Jefferson Street and then east on one-way Jefferson Street to its end at 26th Street. It continues on one-way Central Avenue to Washington Street and then east on one-way Washington Street to 26th Street. The eastbound leg is on 1st Avenue and Jefferson Street and the westbound leg is on Washington Street and Central Avenue. The Section traverses downtown Phoenix crossing the Deck Park Bridge and passes near America West Arena, Bank One Ballpark, the Symphony Hall, Civic Plaza and Arizona Science Center.

The work anticipated in this construction contract includes demolition, relocation of public utilities, corrosion control facilities, roadway and drainage modifications, station platform foundations, installation of systems duct bank and conduits, streetlights, traffic signals, OCS pole foundations, irrigation, landscaping, traffic signing, pavement marking, preparation of track bed and installation of embedded track. It also includes modifications of existing structures at the Deck Park Bridge, Renaissance II Garage, Arizona Science Center/CPEG Pedestrian Bridge and ADOT I-10 Washington-Jefferson Interchange.



The seven stations with 13 platforms located within Line Section 3 are McDowell Road/Central Avenue, Roosevelt Street/Central Avenue, Roosevelt Street/1st Avenue, Van Buren Street/Central Avenue, Van Buren Street/1st Avenue, Washington Street/Central Avenue, Jefferson Street/1st Avenue, 3rd Street/Washington Street, 3rd Street/Jefferson Street, 12th Street/Washington Street, 12th Street/Jefferson Street, 24th Street/Washington Street and 24th Street/Jefferson Street.

For Right-of-Way availability and order of construction or sequencing, Line Section 3 has been divided into 15 segments. The segments are paired on the one-way street couplets with Segments 1 and 2 extending from Polk to Washington on Central and 1<sup>st</sup> Avenue, 3 and 4 from 1<sup>st</sup> Avenue to 3<sup>rd</sup> Street on Washington and Jefferson, 5 and 6 from 3<sup>rd</sup> Street to 9<sup>th</sup> Street on Washington and Jefferson, 7 and 8 from Portland to Polk on Central and 1<sup>st</sup> Avenue, 9 and 10 from 9<sup>th</sup> Street to 14<sup>th</sup> Street on Washington and Jefferson, 11 and 12 from 14<sup>th</sup> to 20<sup>th</sup> Street on Washington and Jefferson, 13 and 14 from 20<sup>th</sup> to 26<sup>th</sup> Street on Washington and Jefferson, and Segment 15 on Central Avenue from McDowell to Portland.

## Progress

- Archer Western Contractors (AWC) is continuing utility construction in segments 9 through 15 installing storm sewer, sanitary sewer and water service. AWC is continuing to install traffic features and wiring on traffic signals in segments 9 through 15. Additionally, AWC is proceeding with OCS foundations, street lighting conduits and foundations, irrigation work as required along ROW and stations.
- AWC is working their day and night crews four ten-hour shifts a week.
- The 3<sup>rd</sup> Street/Washington station foundation has been completed; 12<sup>th</sup> Street/Jefferson station foundation east ramp will be completed next month as a concrete encasement of a 48-inch water line required completion prior to the ramp installation. The McDowell station foundation completion has been pushed to July/August 2007. Eleven of the twelve station foundations have been substantially completed and the Station Finishes contractor has started work on the majority of them.
- AWC currently has six rail headings in progress throughout the alignment and has installed approximately 30,000 linear feet of guideway throughout the Downtown area. Embedded track has been completed on Central and 1<sup>st</sup> Avenue from Washington/Jefferson to the Deck Park Bridge, Washington/Central to west of 11<sup>th</sup> Street, Jefferson to west of 11<sup>th</sup> Street, Washington from 16<sup>th</sup> Street to 26<sup>th</sup> Street and Jefferson from 23<sup>rd</sup> Street to 26<sup>th</sup> Street. 11<sup>th</sup> Street loop modification change negotiations are being completed.
- APS continues with street light pole installations throughout the alignment. COP Water Services contractor is continuing with installation of 12-inch water line on Central from Roosevelt to Fillmore to accommodate the demands of the proposed ASU facilities.
- AWC is placing roadway paving and sidewalk throughout the downtown portion of the alignment and is approaching substantial completion in the downtown area this summer.

### Cost and Schedule – Variance Analysis

- AWC and METRO continue negotiations concerning the master schedule milestone revision change order. The current progress schedule indicates the contractor has completed 63 percent of the work.

### Issues and Solutions

- Bi-weekly meetings with system integration contractor to address any design conflicts and coordination issues. Meetings are being held at the field office to better effect contractor communication with Line Section 3 contractor and TES/S&C contractor.

### Construction Photographs



Roadway Paving on 1<sup>st</sup> Avenue



Completed Guideway on 1<sup>st</sup> Avenue



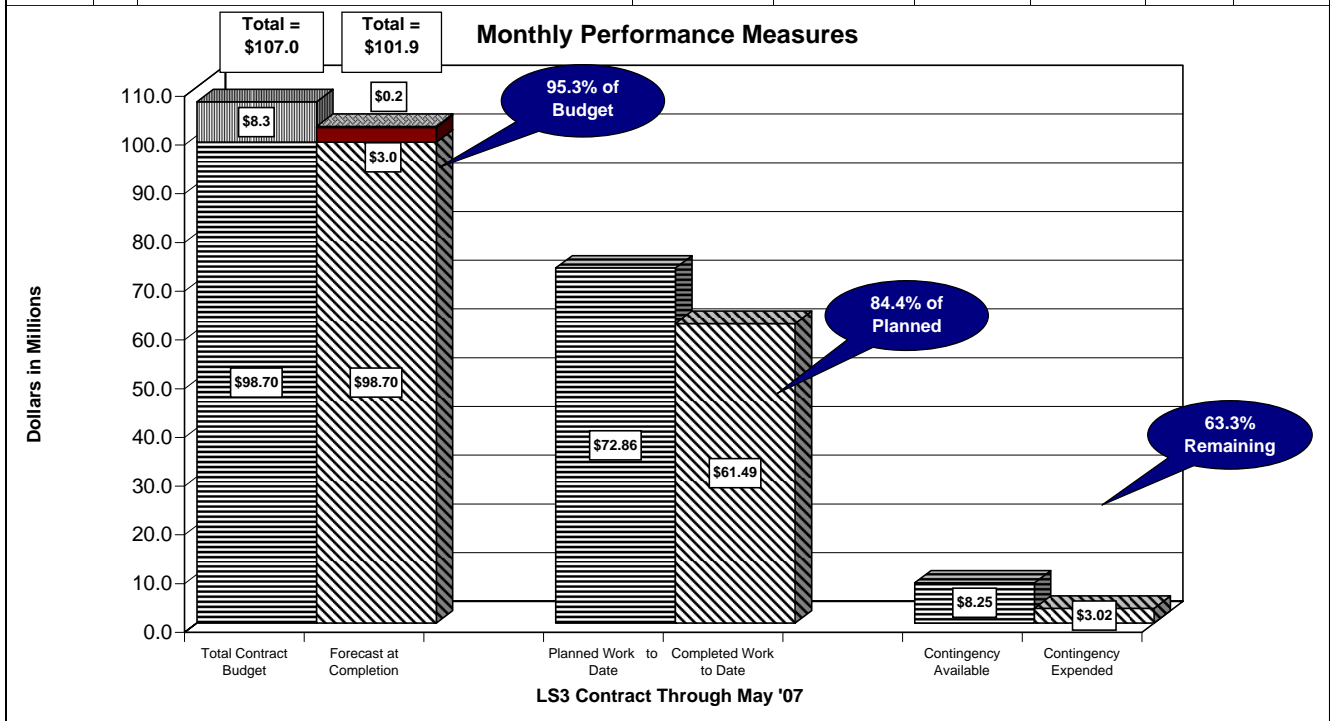
Roadway Paving on 1<sup>st</sup> Avenue



OCS Eyebolt Support Installation at Orpheum Building

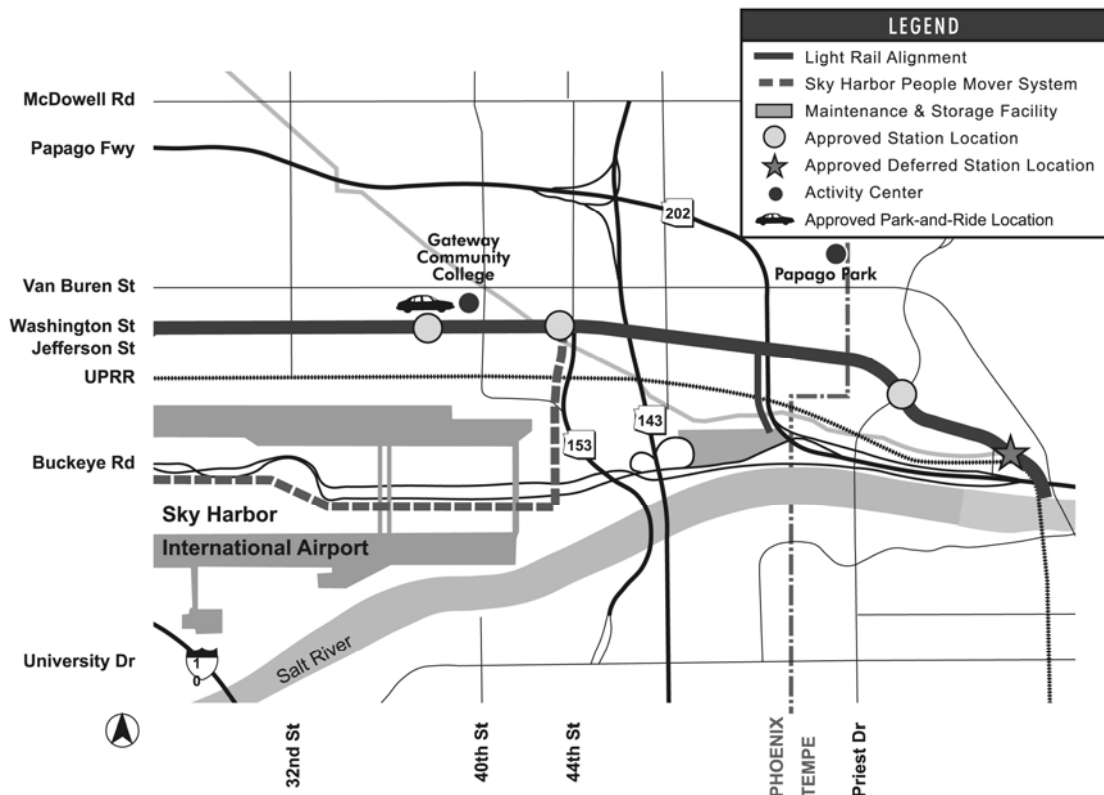


<b>Description:</b>		<b>3.1.3 Line Section 3</b>		
<b>PE/PA:</b>		<b>William Gustafson</b>		
<b>Contractor:</b>		<b>Archer Western</b>		
<b>Resident Engineer:</b>		<b>William Atesis</b>		
<b>Data Through:</b>		<b>April 27, 2007</b>		
	<b>Cumulative</b>	<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Budget	\$79,248,617	\$19,452,352	\$98,700,969
2	Executed Change Orders	\$1,574,529	\$340,277	\$1,914,806
3	Budget Transfers	\$0	\$1,109,325	\$1,109,325
4	Current Budget (1+2+3)	\$80,823,146	\$20,901,954	\$101,725,100
5	Work Scheduled	\$58,835,799	\$14,025,291	\$72,861,090
6	Work Earned	\$49,081,317	\$12,408,838	\$61,490,155
7	Actual Expenditures	\$49,536,290	\$12,391,945	\$61,928,235
8	Forecast to Complete Base (4-7)	\$31,286,856	\$8,510,009	\$39,796,865
9	Change Orders Pending Execution	\$88,373	\$122,536	\$210,909
10	Forecast at Completion (7+8+9)	\$80,911,519	\$21,024,490	\$101,936,009
11	Percent Budget Expended (7/4)	61.3%	59.3%	60.9%
12	Percent Planned (5/4)	72.8%	67.1%	71.6%
13	Earned Percent Complete (6/4)	60.7%	59.4%	60.4%
14	Schedule Performance (6/5)	0.83	0.88	0.84
15	Cost Performance (6/7)	0.99	1.00	0.99
16	Contingency Budget	\$7,848,232	\$402,730	\$8,250,962
17	Remaining Contingency	\$6,273,703	\$377,445	\$5,226,831
18	Percent Contingency Remaining (17/16)	79.9%	93.7%	63.3%
	<b>Period</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	-\$24,152	\$0	-\$24,152
3	Budget Transfers	\$0	\$35,000	\$35,000
4	Current Budget (1+2+3)	\$80,823,146	\$20,901,954	\$101,725,100
5	Work Scheduled (Cumm - Last Period)	\$3,441,089	\$699,732	\$4,140,821
6	Work Earned (Cumm - Last Period)	\$3,256,402	\$694,165	\$3,950,567
7	Actual Expenditures (Cumm - Last Period)	\$3,548,265	\$695,029	\$4,243,294
8	Forecast to Complete Base (4-7)	\$77,274,881	\$20,206,925	\$97,481,806
9	Change Orders Pending Execution	\$29,166	-\$1,058	\$28,108
10	Forecast at Completion (7+8+9)	\$80,852,312	\$20,900,896	\$101,753,208
11	Percent Budget Expended (7/4)	4.4%	3.3%	4.2%
12	Percent Planned (5/4)	4.3%	3.3%	4.1%
13	Earned Percent Complete (6/4)	4.0%	3.3%	3.9%
14	Schedule Performance (6/5)	0.95	0.99	0.95
15	Cost Performance (6/7)	0.00	0.00	0.00
16	Contingency Budget	\$6,398,232	\$1,231,072	\$7,629,304
17	Remaining Contingency	\$6,422,384	\$1,196,072	\$7,618,456
18	Percent Contingency Remaining (17/16)	100.4%	97.2%	99.9%



Line Section 4

LINE SECTION 4



Description

Line Section 4 guideway is approximately 5.4 miles from 26th and Washington Street to the northern limit of Tempe Town Lake. The work includes demolition, relocation of water and sewer lines, roadway improvements, drainage modifications, sidewalk and landscaping, streetlights, installation of traffic control signals, LRT station platform foundations, systems duct bank and conduits, OCS pole foundations, preparation of the tracked and sub drains, installations of track and special trackwork including the portion of the LRT Tempe Town Lake Bridge, and replacement of the Washington Street Bridge over the Grand Canal. There are three light rail stations located on Washington Street at 38th Street, 44th Street and Priest Drive.

Progress

- Tempe Town Lake Bridge: Direct fixation rail on both tracks has been installed, excluding the track expansion joints that are still in fabrication. The punch-list items are almost complete.
- Town Lake Bridge to 44<sup>th</sup> Street: Landscape planting and irrigation work is nearing completion. The rubberized asphalt overlay has been completed as well as the first pass of pavement markings. Temporary traffic barricades have been removed and all lanes are now opened to traffic with the exception of a few work zones where the



landscape work is ongoing. Traffic signal punch list work has begun and is progressing well. The signing installation has been completed.

- Forty-Fourth Street to 40th Street: Installation of the track embedded in elastomeric grout across the Washington Street Bridge over the Grand Canal is still ongoing.
- 40th Street to 34<sup>th</sup> Street: Curb/gutter, driveway, sidewalk, and catch basin construction is still in progress on the north side of Washington Street from 38<sup>th</sup> to 34<sup>th</sup> Streets. The curb/gutter and sidewalk was demolished on the south side of Washington Street between 40<sup>th</sup> and 38<sup>th</sup> Streets and a new curb/gutter, curb return and bus stop has been constructed. The guideway slab construction was completed from 38<sup>th</sup> to 34<sup>th</sup> Streets and the 38<sup>th</sup> Street Station foundation is nearing completion. The added 12-inch waterline replacement work between 38<sup>th</sup> and 37<sup>th</sup> Streets as well as water service connections in that work zone has been completed. The four new curb returns at the 40<sup>th</sup> Street intersection were constructed and the north half of the street intersection was completed. The guideway slab construction across 34<sup>th</sup> Street is in progress.
- Thirty-fourth Street to 26<sup>th</sup> Street: The added 12-inch waterline relocation work from 26<sup>th</sup> Street to 30<sup>th</sup> Streets is nearing completion. The guideway slab construction is complete between 32<sup>nd</sup> and 30<sup>th</sup> Streets and guideway slab construction is in progress between 34<sup>th</sup> and 30<sup>th</sup> Streets. Curb/gutter and sidewalk has been demolished on the south side of Washington Street between 28<sup>th</sup> and 26<sup>th</sup> Streets and new curb/gutter and driveways are being constructed.

### **Cost and Schedule – Variance Analysis**

- Line Section 4's successful on time completion of Milestones 1, 2 and 3A have been integrated into the follow-on contractor's schedules to determine forecasts for train and line testing and overall project completion in December 2008.
- Milestone Number 3B (44<sup>th</sup> to 26<sup>th</sup> streets) will be subdivided to reflect portions of the line with early completion of track guideway. This will allow early starts by follow-on contractors.
- Milestone 3C for completion of track guideway from 44<sup>th</sup> to 26<sup>th</sup> streets will complete ahead of the scheduled milestone of October 5, 2007.
- Milestone Number 4 for the 38<sup>th</sup> Street station foundation is on schedule for completion June 15, 2007.
- Overall project completion Milestone F is on schedule for a timely completion December 27, 2007.

### **Issues and Solutions**

- None.

### Construction Photographs



Placing rebar for grade beams at 38<sup>th</sup> Street Station



Checking rail alignment during an embedded track concrete placement



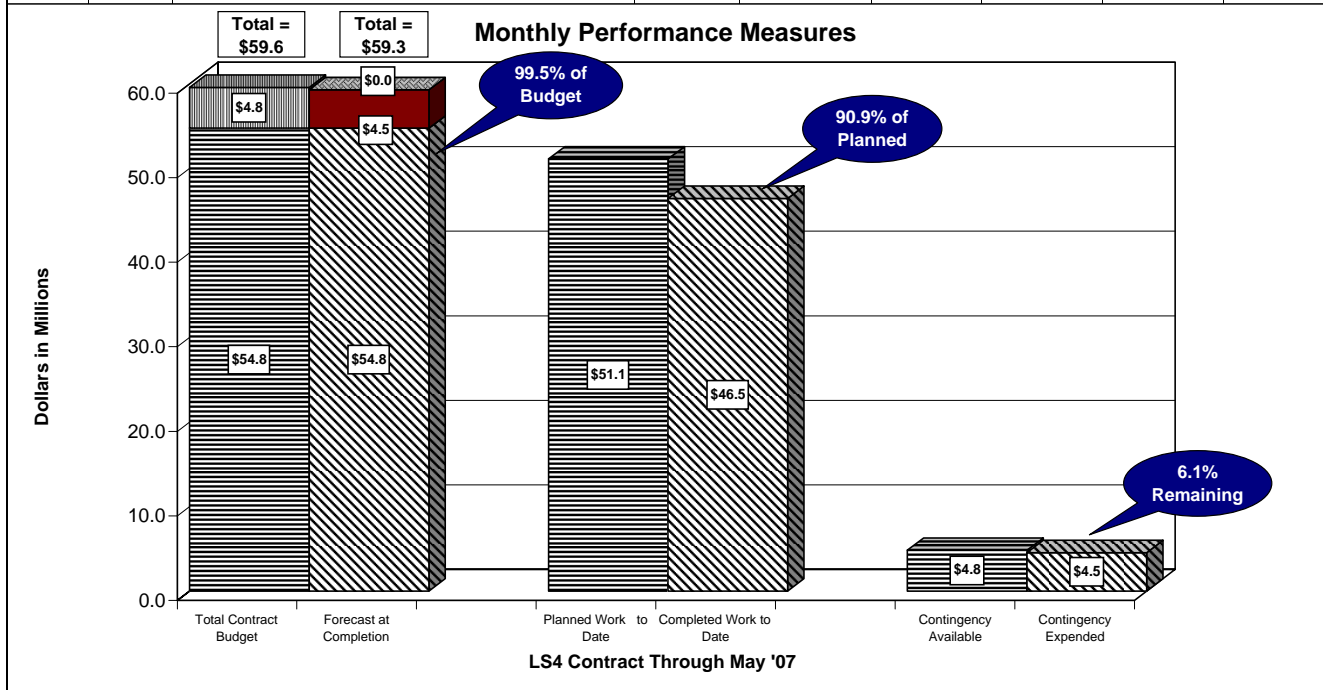
Placing concrete curb/gutter at 28<sup>th</sup> Street



Aerial view of the Tempe Town Lake Bridge with track work complete

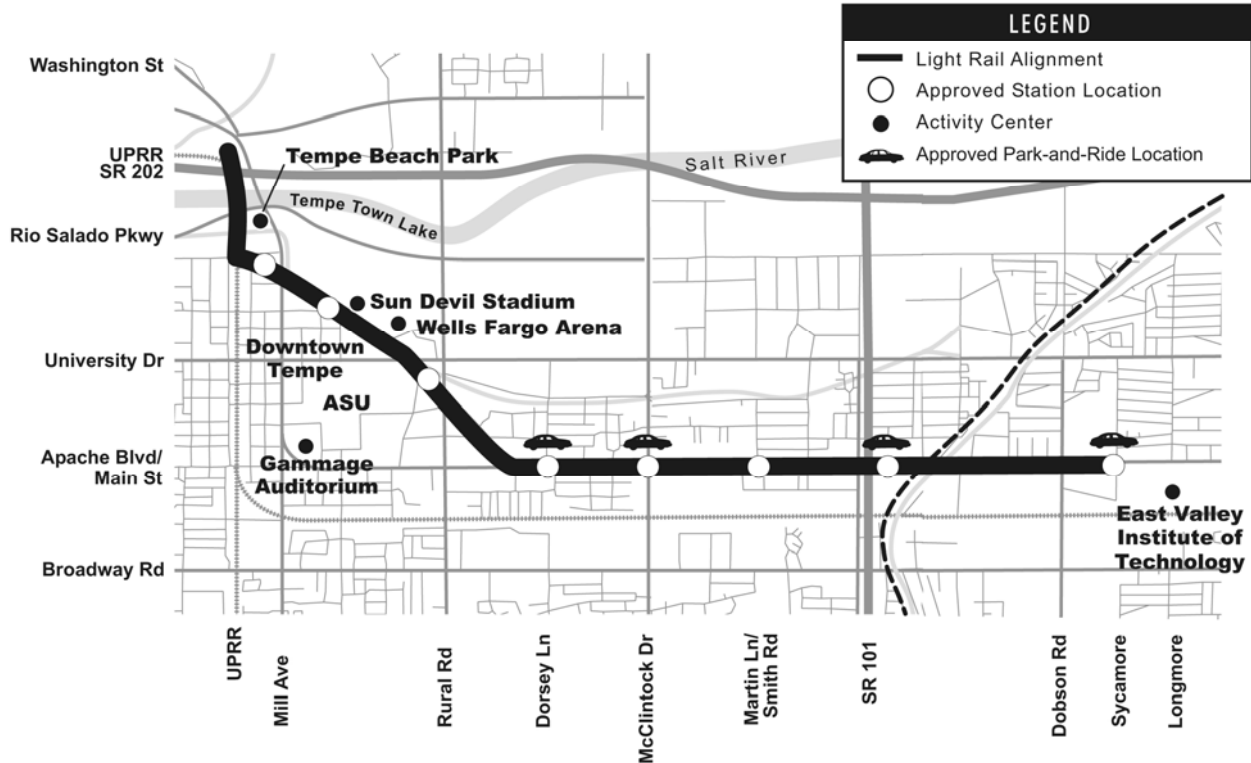


<b>Description:</b>		3.1.4 Line Section 4		
<b>PE/PA:</b>		Avrum Loewenstein		
<b>Contractor:</b>		Sundt/Stacey Witbeck		
<b>Resident Engineer:</b>		Frank Aber		
<b>Data Through:</b>		April 30, 2007		
<b>Cumulative</b>				
		<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Budget	\$47,869,894	\$6,880,853	\$54,750,747
2	Executed Change Orders	\$4,519,654	\$1,238,336	\$5,757,990
3	Budget Transfers	-\$625,000	\$1,557,561	\$932,561
4	Current Budget (1+2+3)	\$51,764,548	\$9,676,750	\$61,441,298
5	Work Scheduled	\$42,805,770	\$8,318,278	\$51,124,048
6	Work Earned	\$38,992,498	\$7,460,492	\$46,452,990
7	Actual Expenditures	\$40,094,685	\$7,317,240	\$47,411,925
8	Forecast to Complete Base (4-7)	\$11,669,863	\$2,359,510	\$14,029,373
9	Change Orders Pending Execution	\$22,463	\$731,737	\$754,200
10	Forecast at Completion (7+8+9)	\$51,787,011	\$10,408,487	\$62,195,498
11	Percent Budget Expended (7/4)	77.5%	75.6%	77.2%
12	Percent Planned (5/4)	82.7%	86.0%	83.2%
13	Earned Percent Complete (6/4)	75.3%	77.1%	75.6%
14	Schedule Performance (6/5)	0.91	0.90	0.91
15	Cost Performance (6/7)	0.97	1.02	0.98
16	Contingency Budget	\$4,662,188	\$172,633	\$4,834,821
17	Remaining Contingency	\$120,071	\$172,633	\$292,704
18	Percent Contingency Remaining (17/16)	2.6%	100.0%	6.1%
<b>Period</b>				
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	\$927,423	\$0	\$927,423
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$51,764,548	\$9,676,750	\$61,441,298
5	Work Scheduled (Cumm - Last Period)	\$1,721,178	\$80,406	\$1,801,584
6	Work Earned (Cumm - Last Period)	\$2,934,130	\$157,552	\$3,091,682
7	Actual Expenditures (Cumm - Last Period)	\$2,263,819	\$163,490	\$2,427,309
8	Forecast to Complete Base (4-7)	\$11,669,863	\$2,359,510	\$14,029,373
9	Change Orders Pending Execution	-\$902,837	\$729,772	-\$173,065
10	Forecast at Completion (7+8+9)	\$13,030,845	\$3,252,772	\$16,283,617
11	Percent Budget Expended (7/4)	4.4%	1.7%	4.0%
12	Percent Planned (5/4)	3.3%	0.8%	2.9%
13	Earned Percent Complete (6/4)	5.7%	1.6%	5.0%
14	Schedule Performance (6/5)	1.70	1.96	1.72
15	Cost Performance (6/7)	1.30	0.96	1.27
16	Contingency Budget			
17	Remaining Contingency			
18	Percent Contingency Remaining (17/16)			



Line Section 5

**LINE SECTION 5**



**Description**

Line Section 5 is 4.7 miles in length, beginning at the 1st Street grade crossing in Tempe and progressing down the former Creamery Branch of the UPRR in Tempe, across Mill Avenue, and behind the Mission Palms resort. From there, it runs along Stadium Drive across Rural Road down Terrace Road to Apache Boulevard. It then proceeds east on Apache Boulevard and enters the City of Mesa, where it terminates in the vicinity of Main Street and Sycamore near the Tri-city Mall property.

The construction work in this contract includes demolition, relocation of public utilities, roadway and drainage modifications, station platform foundations, installation of systems duct bank and conduits, street lights, traffic signals, OCS pole foundations, preparation of track bed, and installation of embedded track. Stations are located in Tempe at 3<sup>rd</sup> and Mill, 5<sup>th</sup> and College, University and Rural, Apache and Dorsey, Apache and McClintock, Apache and Smith-Martin, Apache and Price Freeway; and in Mesa at Main and Sycamore.

**Progress**

- The Contractor has installed approximately 25,790 track feet of embedded track, with scheduled weekly placements until completion.
- The Contractor is coordinating with follow-on contractors in various locations in Milestone A2, which has achieved substantial completion.



- The Contractor is prepared to install the track crossing installation at First Street, in coordination with Union Pacific Railroad and the Metro Signals and Communications contractor during early June.
- The Contractor has completed the track along Terrace Road, and is progressing with track placements eastward toward McClintock Drive.
- The Contractor has placed grade beam foundations and walls at the Apache Boulevard/Dorsey Road Station.
- The Contractor has placed the grade crossing at McClintock Drive, and is completing the roadwork in the Apache Boulevard/McClintock Drive intersection.
- The Contractor completed street widening in the Apache Boulevard and McClintock Drive Station and Smith-Martin Station areas.
- The Contractor continued work on the south side and approaches of the Apache Bridge over 101 Loop Bridge.
- The Contractor continued street widening and street light placement from Price Road to the Tempe Canal Bridge.
- The Contractor continued utility relocations and street light and traffic signal foundation installations eastward from the Tempe Canal Bridge to Sycamore Street in the City of Mesa.

### **Cost and Schedule – Variance Analysis**

- Milestone A2 is substantially complete. Milestone B2 has been revised to August 28, 2007, and is on schedule. Milestones C2 and D2 are being challenged by utility relocation delays. The Contractor has submitted an acceleration proposal to offset these delays.

### **Issues and Solutions**

- Utility relocation and coordination issues with Union Pacific Railroad have delayed the installation of the First Street crossing. This is being resolved by coordinating trackwork at that location with the placement of the light rail signal system during June. The Contractor has been given relief from his Milestone A requirement at this location to facilitate this arrangement.
- The Contractor continues to face significant challenges with existing utilities along the alignment eastward from McClintock Drive. Significant lengths of a water main, an electric line, and a gas line have had to be lowered to meet clearance requirements; these utility relocations were not previously noted in the drawings, or planned for in the schedule. The Agency is working to expedite the third-party utility relocations, as the relocations continue.
- Utility relocations by SRP-Power along Apache Boulevard in Tempe, and Main Street in Mesa, have delayed street widening efforts and trackway work along this corridor. SRP irrigation relocations were delayed due to design and easement issues, but the irrigation work has begun. The Contractor has altered scheduled work sequences to enable the utilities to complete their work expeditiously.



- The Contractor's significant additional support work to facilitate third party utility relocations, and to resolve unexpected conflicts with city and private utilities, continues to draw significant Contractor resources from guideway production. Maintaining contingency funding in the project budget is critical for resolution of utility issues. Resolution of specific utility issues and coordination of work are addressed weekly in the Line Section 5 Utilities Coordination meeting.
- Maintenance of traffic flow while performing major project work, such as major grade crossings, bridgework, and utility relocations, continues to be a challenge. The scope of work at present requires significant traffic control measures along the entire project alignment, and coordinating barrier and closure plans with the numerous special events in this area requires major effort. Close coordination with local cities and ADOT for closures and for shifting traffic patterns has, thus far, resulted in workable production schemes.
- Public support for the project remains reasonably good. In Mesa, many new stakeholders are being impacted. The Contractor has continued positive efforts to assure stakeholder support through advance notices and rapid resolution of stakeholder concerns, resulting in his receiving 100 percent of the Community Advisory Board incentive award for each quarter of the project. Additionally, the METRO public involvement personnel assigned to the Project are providing excellent and critical support in conflict avoidance and resolution.

**Construction Photographs**



East End of ASU Promenade, Milestone G



Track Placement at Apache Boulevard, Milestone B2



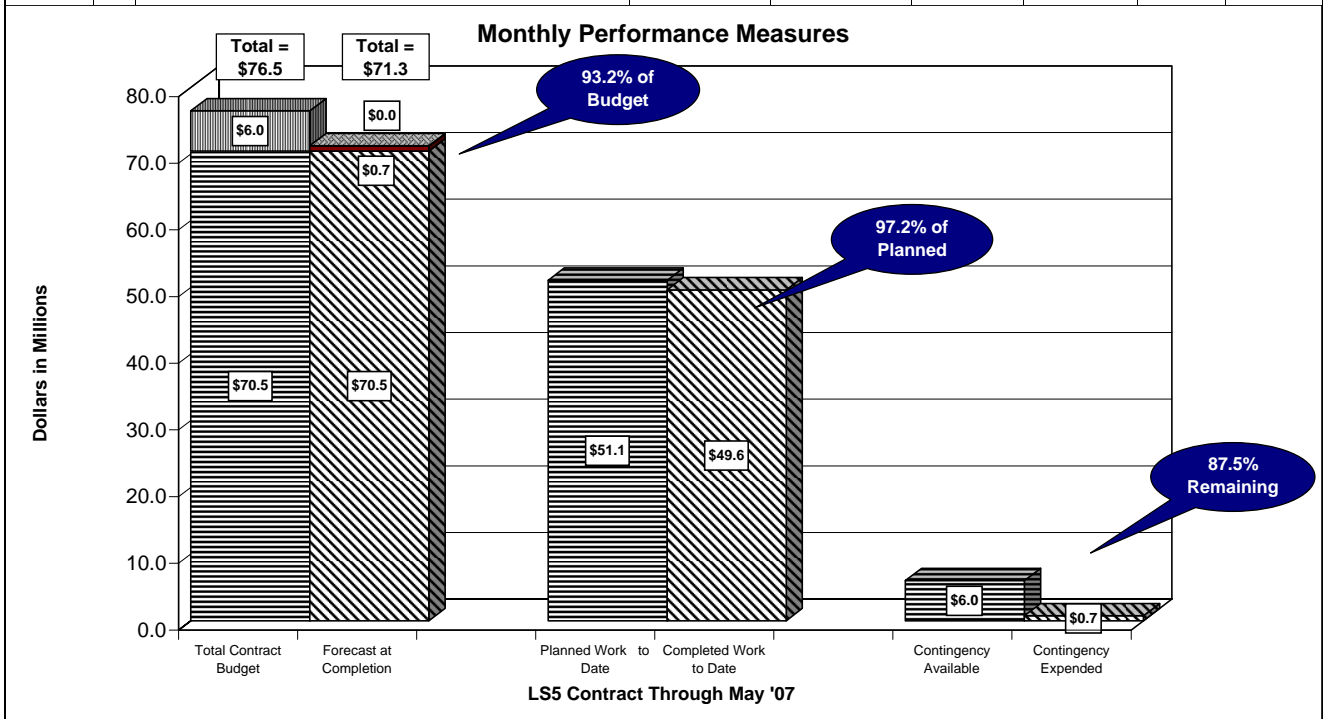
Roadway Work on Apache Boulevard, Milestone D2



Utility Work in Mesa, Milestone E2



<b>Description:</b>		3.1.5 Line Section 5		
<b>PE/PA:</b>		Brian Buchanan		
<b>Contractor:</b>		Sundt/Stacey Witbeck		
<b>Resident Engineer:</b>		Sam Graham		
<b>Data Through:</b>		May 15, 2007		
	<b>Cumulative</b>	<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Budget	\$68,882,969	\$1,573,317	\$70,456,286
2	Executed Change Orders	\$748,524	\$240,242	\$988,766
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$69,631,493	\$1,813,559	\$71,445,052
5	Work Scheduled	\$49,497,337	\$1,563,305	\$51,060,642
6	Work Earned	\$48,646,974	\$974,179	\$49,621,153
7	Actual Expenditures	\$48,803,576	\$719,800	\$49,523,376
8	Forecast to Complete Base (4-7)	\$20,827,917	\$1,093,759	\$21,921,676
9	Change Orders Pending Execution	\$31,004	\$16,535	\$47,539
10	Forecast at Completion (7+8+9)	\$69,662,497	\$1,830,094	\$71,492,591
11	Percent Budget Expended (7/4)	70.1%	39.7%	69.3%
12	Percent Planned (5/4)	71.1%	86.2%	71.5%
13	Earned Percent Complete (6/4)	69.9%	53.7%	69.5%
14	Schedule Performance (6/5) (SPI)	0.98	0.00	0.97
15	Cost Performance (6/7) (CPI)	1.00	0.00	1.00
16	Contingency Budget	\$5,908,135	\$107,679	\$6,015,814
17	Remaining Contingency	\$5,159,611	\$106,767	\$5,266,378
18	Percent Contingency Remaining (17/16)	87.3%	99.2%	87.5%
	<b>Period</b>			
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	\$63,333	\$24,422	\$87,755
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$69,631,493	\$1,813,559	\$71,445,052
5	Work Scheduled (Cumm - Last Period)	\$3,039,254	\$81,108	\$3,120,362
6	Work Earned (Cumm - Last Period)	\$2,851,527	\$8,990	\$2,860,517
7	Actual Expenditures (Cumm - Last Period)	\$2,996,952	-\$12,338	\$2,984,614
8	Forecast to Complete Base (4-7)	\$66,634,541	\$1,825,897	\$68,460,438
9	Change Orders Pending Execution	-\$27,130	\$0	-\$27,130
10	Forecast at Completion (7+8+9)	\$69,604,363	\$1,813,559	\$71,417,922
11	Percent Budget Expended (7/4)	4.3%	-0.7%	4.2%
12	Percent Planned (5/4)	4.4%	4.5%	4.4%
13	Earned Percent Complete (6/4)	4.1%	0.5%	4.0%
14	Schedule Performance (6/5)	0.94	0.00	0.92
15	Cost Performance (6/7)	0.00	0.00	0.00
16	Contingency Budget			
17	Remaining Contingency			
18	Percent Contingency Remaining (17/16)			



## 48<sup>th</sup> Street Bridge Replacement



### Description

The 48th Street Bridge Replacement Contract consists of the replacement of one concrete vehicular and one utility bridge over the SRP Grand Canal, construction of underground utilities including water mains and APS ductbanks, jack and bored utility pipe casings under UPRR railroad track, curb and gutter, sidewalk and driveways, grading and fencing of the METRO rail material storage yard, and removal and replacement of asphalt concrete pavement.

### Progress

- The punch list has been completed and the work has been accepted by METRO and the City of Phoenix (COP).

### Cost and Schedule – Variance Analysis

- This contract was closed out after final completion, final acceptance and final payment.

### Issues and Solutions

- None.

### Construction Photographs



View of the 48<sup>th</sup> Street Vehicular and Utility Bridges



View of the 48<sup>th</sup> Street Utility Bridge

## Town Lake Bridge



### Description

The Town Lake Bridge consists of an 11-span structure with concrete deck and steel deck truss superstructure on concrete piers. The structure has an overall length of 1,546 feet. The North and South approaches to the bridge are of retained earth fill and are approximately 1,654 feet in total length. The construction work includes cast-in-place drilled shaft pier foundations to bedrock, cast-in-place concrete pier caps, concrete abutments, concrete retaining walls, a steel truss superstructure, cast-in-place concrete deck, specialty lighting, demolition, relocation of public utilities, roadway and drainage modifications, systems duct bank conduits, streetlights, OCS pole foundations, preparation of track embankment and installation of concrete track slab. Installation of direct fixation rail for both the approaches and the bridge is included in Line Section 4 contract.

### Progress

- The Project is complete and the Contract has been closed.

### Cost and Schedule – Variance Analysis

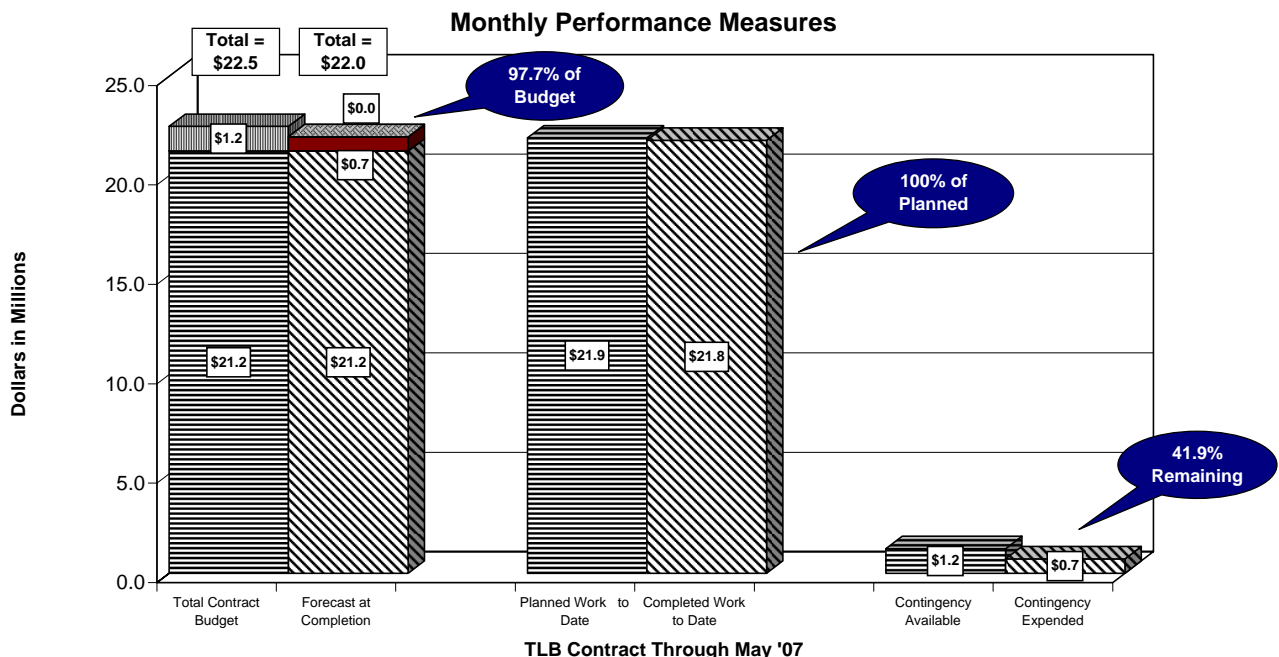
- This Contract has been closed.

### Issues and Solutions

- None.



<b>Description:</b>		<b>3.6.1 Town Lake Bridge</b>		
<b>PE/PA:</b>		<b>Bill Gustafson</b>		
<b>Contractor:</b>		<b>PCL Contractors</b>		
<b>Resident Engineer:</b>		<b>Joel Mona</b>		
<b>Data Through:</b>		<b>September 30, 2006</b>		
		<b>5309</b>	<b>CNPA</b>	<b>Total</b>
<b>Cumulative</b>				
1	Budget	\$21,219,861	\$17,523	\$21,237,384
2	Executed Change Orders	\$722,891	\$0	\$722,891
3	Budget Transfers	-\$183,000	\$0	-\$183,000
4	Current Budget (1+2+3)	\$21,759,752	\$17,523	\$21,777,275
5	Work Scheduled	\$21,884,369	\$17,523	\$21,901,892
6	Work Earned	\$21,759,752	\$15,771	\$21,775,523
7	Actual Expenditures	\$21,759,752	\$15,771	\$21,775,523
8	Forecast to Complete Base (4-7)	\$0	\$1,752	\$1,752
9	Change Orders Pending Execution	\$0	\$0	\$0
10	Forecast at Completion (7+8+9)	\$21,759,752	\$17,523	\$21,777,275
11	Percent Budget Expended (7/4)	100.0%	90.0%	100.0%
12	Percent Planned (5/4)	100.0%	100.0%	100.6%
13	Earned Percent Complete (6/4)	100.0%	90.0%	100.0%
14	Schedule Performance (6/5)	0.99	0.90	0.99
15	Cost Performance (6/7)	1.00	1.00	1.00
16	Contingency Budget	\$1,242,400	\$1,402	\$1,243,802
17	Remaining Contingency	\$519,509	\$1,402	\$520,911
18	Percent Contingency Remaining (17/16)	41.8%	0.0%	41.9%
<b>Period</b>				
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	\$0	\$0	\$0
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$21,759,752	\$17,523	\$21,777,275
5	Work Scheduled (Cumm - Last Period)	\$0	\$0	\$0
6	Work Earned (Cumm - Last Period)	\$0	\$0	\$0
7	Actual Expenditures (Cumm - Last Period)	\$0	\$0	\$0
8	Forecast to Complete Base (4-7)	\$21,759,752	\$17,523	\$21,777,275
9	Change Orders Pending Execution	\$0	\$0	\$0
10	Forecast at Completion (7+8+9)	\$21,759,752	\$0	\$21,759,752
11	Percent Budget Expended (7/4)	0.0%	0.0%	0.0%
12	Percent Planned (5/4)	0.0%	0.0%	0.0%
13	Earned Percent Complete (6/4)	0.0%	0.0%	0.0%
14	Schedule Performance (6/5)	0.00	0.00	0.00
15	Cost Performance (6/7)	1.00	1.00	1.00
16	Contingency Budget	\$1,242,400	\$0	\$1,242,400
17	Remaining Contingency	\$519,509	\$0	\$519,509
18	Percent Contingency Remaining (17/16)	41.8%	0.0%	41.8%



Note: Contractor submitted final schedule update during previous reporting period

## Operations and Maintenance Center



### Description

The Operations and Maintenance Center (OMC) contract includes construction of Maintenance of Equipment (MOE) building, Maintenance of Way (MOW) building, Car Wash facility, Service and Cleaning facility, maintenance equipment and tools, entry station, track installation in the yard and shop areas, construction of yard lead track from the LRT mainline in Washington Street to the OMC site including a bridge over the UPRR railroad track and SRP Grand Canal, retaining walls and embankment, fill materials for site preparation, grading and drainage, drain channel and swales, culverts and underground drainage pipes, roadways, parking lots, landscaping, fencing, water mains for fire protection and domestic services, utility services, electrical ductbanks, OCS pole foundations, and systems ductbanks.

### Progress

- Final City of Phoenix (COP) approval of the spray paint booth is contingent on a special mechanical inspection which is now in progress.
- Testing of the LRV wash equipment and sand distribution system has been scheduled.
- The site entrance lift gates have been installed. Permanent power and testing are pending.
- The Contractor continues to work on the remaining Completion List items.

### Cost and Schedule – Variance Analysis

- The contract closeout and final acceptance activities are in progress.



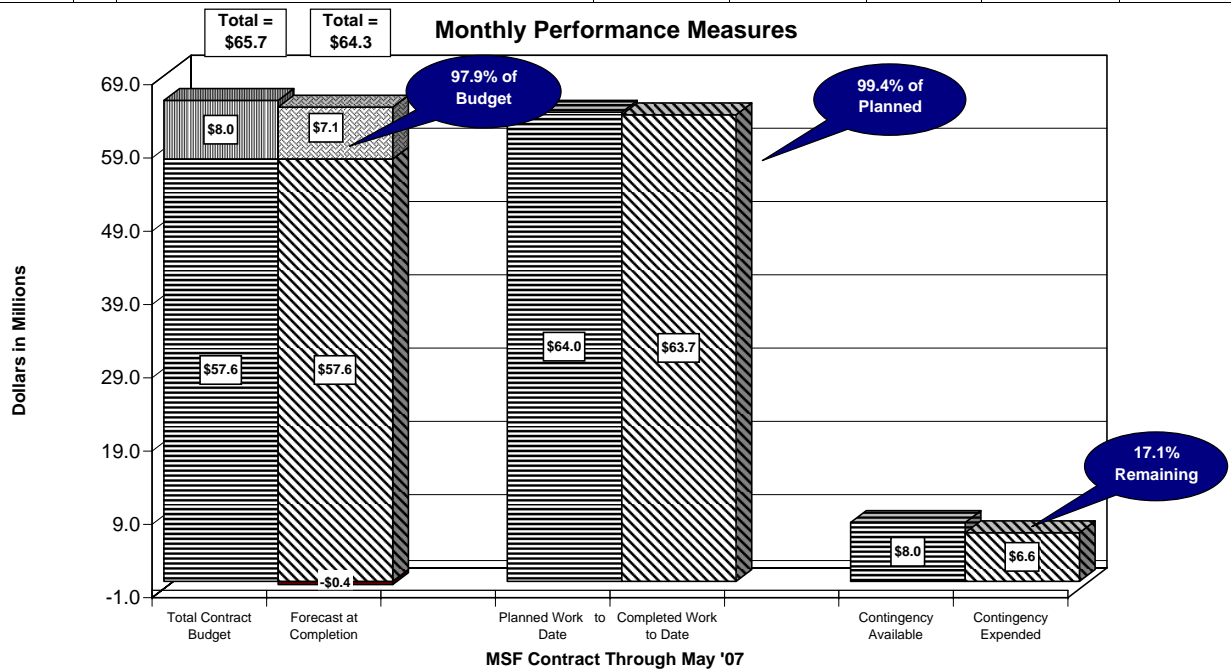
## **Issues and Solutions**

- None.



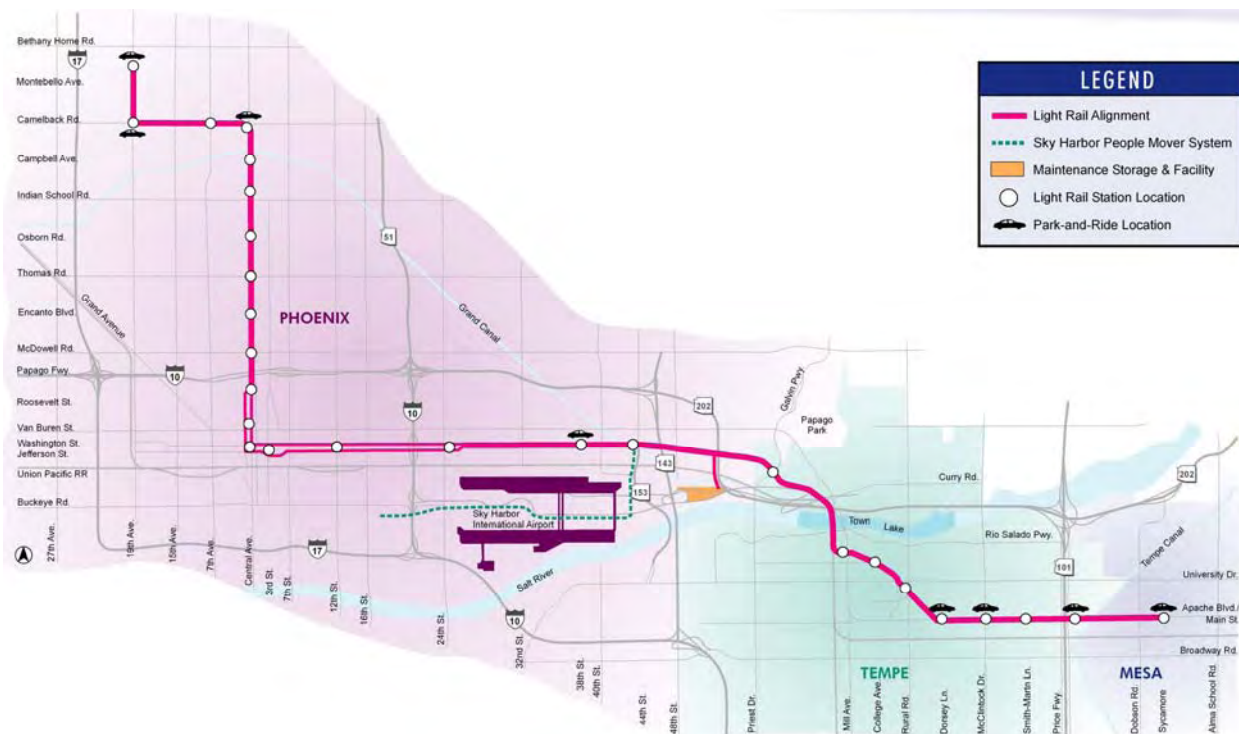
MAY 2007 RAIL PROGRESS REPORT

<b>Description:</b>		3.5.1 Maintenance Support Facility/Operations and Maintenance Center	
<b>PE/PA:</b>		Avrum Loewenstein	
<b>Contractor:</b>		Sundt/Stacy Witbeck	
<b>Resident Engineer:</b>		Brian Mason	
<b>Data Through:</b>		March 31, 2007	
		<b>Cumulative</b>	
		<b>5309</b>	<b>Total</b>
1	Budget	\$57,637,721	\$57,637,721
2	Executed Change Orders	\$7,094,906	\$7,094,906
3	Budget Transfers	-\$257,984	-\$257,984
4	Current Budget (1+2+3)	\$64,474,643	\$64,474,643
5	Work Scheduled	\$64,042,938	\$64,042,938
6	Work Earned	\$63,663,665	\$63,663,665
7	Actual Expenditures	\$64,219,078	\$64,219,078
8	Forecast to Complete Base (4-7)	\$255,565	\$255,565
9	Change Orders Pending Execution	-\$449,550	-\$449,550
10	Forecast at Completion (7+8+9)	\$64,025,093	\$64,025,093
11	Percent Budget Expended (7/4)	99.6%	99.6%
12	Percent Planned (5/4)	99.3%	99.3%
13	Earned Percent Complete (6/4)	98.7%	98.7%
14	Schedule Performance (6/5)	0.99	0.99
15	Cost Performance (6/7)	0.99	0.99
16	Contingency Budget	\$8,020,263	\$8,020,263
17	Remaining Contingency	\$1,374,907	\$1,374,907
18	Percent Contingency Remaining (17/16)	17.1%	17.1%
		<b>Period</b>	
1	Budget	N/A	N/A
2	Executed Change Orders	\$0	\$0
3	Budget Transfers	\$0	\$0
4	Current Budget (1+2+3)	\$64,042,938	\$64,042,938
5	Work Scheduled (Cumm - Last Period)	\$0	\$0
6	Work Earned (Cumm - Last Period)	\$0	\$0
7	Actual Expenditures (Cumm - Last Period)	\$0	\$0
8	Forecast to Complete Base (4-7)	\$64,042,938	\$64,042,938
9	Change Orders Pending Execution	\$0	\$0
10	Forecast at Completion (7+8+9)	\$64,042,938	\$64,042,938
11	Percent Budget Expended (7/4)	0.0%	0.0%
12	Percent Planned (5/4)	0.0%	0.0%
13	Earned Percent Complete (6/4)	0.0%	0.0%
14	Schedule Performance (6/5)	#N/A	#N/A
15	Cost Performance (6/7)	#N/A	#N/A
16	Contingency Budget		
17	Remaining Contingency		
18	Percent Contingency Remaining (17/16)		



Note: No update submitted during the reporting period

## Park-and-Ride



## Description

Surface Park-and-Rides (PNR) are proposed at eight sites along the alignment, 3,439 spaces are currently provided. Sites are located at 19th Avenue and Montebello, 19th Avenue and Camelback Road, Central Avenue and Camelback Road, 38th Street and Washington Street, Dorsey Lane and Apache Boulevard, McClintock Road and Apache Boulevard, Price Freeway and Apache Boulevard, and Sycamore Drive and Main Street. The lots are adjacent to Transit Centers at 19th Street and Montebello, Central and Camelback and Sycamore and Main Street. On site security buildings are provided at 19th Avenue and Montebello, 19th Avenue and Camelback Road, McClintock Road and Apache Boulevard, Price Freeway and Apache Boulevard, and Sycamore Drive and Main Street.

The PNR construction package includes work for demolition, grading, drainage, concrete curbs, concrete sidewalks, asphalt concrete pavement, lighting, irrigation, landscaping, a security building, signing and pavement marking. CCTV security cameras and emergency telephones will be installed under the Signals and Communication construction package.

## Progress

- The IFB documents were made available to prospective bidders on April 23, 2007. Six sites including 19th Avenue and Montebello, 19th Avenue and Camelback Road, Central Avenue and Camelback Road, 38th Street and Washington Street, Price Freeway and Apache Boulevard, and Sycamore Drive and Main Street are included for the base bid. The seventh site, McClintock Road and Apache Boulevard, is included as an alternative or option.



- Permitting for the 19th Avenue and Montebello site is complete except for the selection of the Contractor.
- Permitting for the 19<sup>th</sup> Avenue and Camelback site is complete except for the selection of the Contractor.
- Preliminary Site Plan approval has occurred for the Central Avenue and Camelback site. Building and Safety permitting plans are being processed and the site is expected to be permitted by notice to proceed.
- The Dorsey and Apache site continues to be developed by the City of Tempe (COT) and is not part of this Contract. The COT is developing a second site at this location that would provide an additional 100 parking spaces. METRO is providing the security systems for the sites.
- Permitting for the 38th Street and Washington Street PNR site is complete except for the selection of the Contractor.
- The McClintock and Apache PNR surface site is in the final permitting review process with the COT. Permitting is expected to be available by notice to proceed date for this site. The COT and METRO continue to work with the Developer for the design and construction of an equivalent parking garage. The garage is currently scheduled for completion by March 2008. The surface lot, bid as an option, will be constructed if the garage fails to proceed in a timely manner.
- The Price Freeway and Apache PNR site is in the final permitting review process with the COT. Permitting is expected to be available by the notice to proceed date for this site.
- The Sycamore Drive and Main PNR site is in the final permitting review process with the City of Mesa (COM). Permitting is expected to be available by notice to proceed.

### **Cost and Schedule – Variance Analysis**

- The budget for all sites is \$15,104,339 with a contingency of \$1,208,300.
- A recent construction cost estimate and projections indicate a base cost (without soft costs) of \$21,400,000. A transfer of the McClintock/Apache cost to the private Developer would reduce the construction estimate for the six remaining sites to approximately \$17,700,000.
- The Bid Opening date is June 5, 2007.
- Anticipated notice to proceed is August 13, 2007. Some sites will have delayed starts due to their use as construction yards by the Line Section contractors.

### **Issues and Solutions**

- Monitoring of the private Developer's progress for the McClintock/Apache site to assure that there are no less than 300 parking spaces available in December 2008.



**Park and Ride Construction Data**

No.	Park and Ride Site	Number of Spaces	Notice to Proceed Date	Notes
1	Montebello/19 <sup>th</sup> Ave.	794	December 31, 2007	*
2	19 <sup>th</sup> Ave./Camelback	410	December 31, 2007	*
3	Central/Camelback	135	November 28, 2007	*
4	38 <sup>th</sup> St./Washington	189	August 14, 2007	
5	Dorsey/Apache (2-Sites)	190	August 2007, Tentative	By City of Tempe
6	McClintock/Apache--Garage	300	July 2007, Tentative	By Developer
7	Price Freeway/Apache	693	March 3, 2008	*
8	Sycamore/Main	802	August 14, 2007	
	<b>Opening Day Total</b>	3,513		

\* Notice to Proceed Date is delayed due to a site's current use as a Line Section construction yard.

## Track Material Procurement



### Description

The track materials are broken down into five separate procurements as follows:

- Ballasted Special Trackwork – includes ballasted turnouts and concrete switch ties for the OMC and direct fixation fasteners for the OMC, Town Lake Bridge (TLB) and Deck Park Bridge.
- Girder Rail – rail needed for the embedded trackwork.
- Girder Rail Special Trackwork – turnouts needed for the embedded trackwork.
- Concrete Crossties – concrete crossties needed for the OMC.
- T Rail – rail for the OMC, TLB including approaches and Deck Park Bridge.

### Progress

- Girder Rail
- Embedded Special Trackwork
  - The Contractor continues to produce special trackwork castings and other miscellaneous materials for this contract.
  - A final price has been successfully negotiated with the contractor on the 11<sup>th</sup> Street Wye Track Equilaterals for Line Section 3. This price has been approved by TRAC and the 4C/CCB.

- This change was negotiated within this contract's overall Board approved budget. A change order will be issued to the Contractor.
- Two material deliveries were made during this month. The Contractor delivered a 50 Meter Turnout for Line Section 3 and a 100 Meter single crossover for Line Section 5.

### Cost and Schedule – Variance Analysis

- Track material procurement activities remain on schedule and within budget at this time.

### Issues and Solutions

- There are no significant issues at this time.

### Construction Photographs



Delivery of a 100 Meter single crossover to the Contractor's rail yard at Line Section 5



Delivery of a 100 Meter single crossover to the Contractor's rail yard at Line Section 5

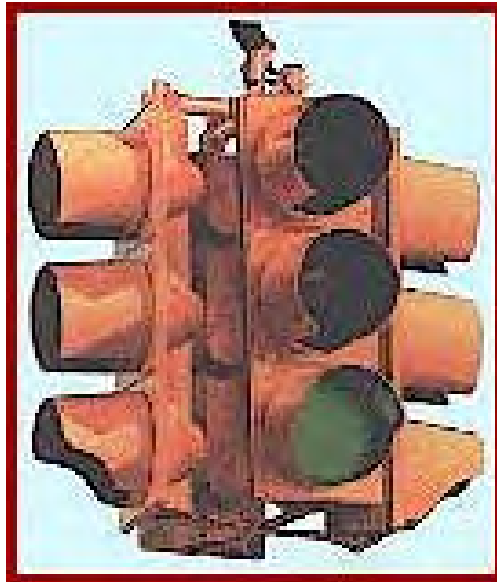


Delivery of a 100 Meter single crossover to the Contractor's Yard at Line Section 5



Delivery of a 100 Meter single crossover to the Contractor's Yard at Line Section 5

## Traffic Signal Procurement



### Description

These Purchase Orders include the system-wide procurement of traffic signal poles, controllers, controller cabinets, and traffic central system upgrades for the City of Phoenix and Tempe.

### Progress

- All of traffic signal equipment for the five Line Section contracts initially ordered under these Purchase Orders has been delivered to METRO or directly to the Line Section contractors' storage yards.

### Cost and Schedule – Variance Analysis

- No Change for this month, traffic signal procurement activity has been completed.
- A table showing the status of costs incurred to-date versus budget is shown below:

Description	Contract/Budget Amount	Total Payments
COP Traffic System Upgrades	\$ 965,112.00	\$ 668,893.30
COT Traffic System Upgrades	\$ 350,347.00	\$ 189,612.00
Traffic Signal Controller/Cabinets	\$ 2,910,916.75	\$ 2,629,229.26
LS 1 Traffic Signal Poles/Mast Arms (Phoenix -PO is completed)	\$ 209,144.33	\$ 209,144.31
LS 2 Traffic Signal Poles/Mast Arms (Phoenix - PO is completed)	\$ 309,685.98	\$ 309,685.97
LS 3 Traffic Signal Poles/Mast Arms (Phoenix -PO is completed)	\$ 1,425,604.91	\$ 1,321,686.32
LS 4 Traffic Signal Poles/Mast Arms (Phoenix - PO is completed)	\$ 369,069.21	\$ 360,469.21

Description	Contract/Budget Amount	Total Payments
LS 4 Traffic Signal Poles/Mast Arms (Tempe - PO is completed)	\$ 337,883.00	\$ 336,247.85
LS 5 Traffic Signal Poles/Mast Arms (Tempe - PO is completed)	\$ 941,912.82	\$ 859,942.43

**Issues and Solutions**

- None.

**Construction Photographs**



Traffic Signal Poles and Mast Arms being issued to Line Section 3 Contractor



Traffic Signal Poles and Mast Arms being issued to Line Section 3 Contractor

## Underfloor Wheel Profiling Machine



### Description

Design, fabricate, furnish an Underfloor Wheel Profiling Machine, Mechanical Chip Collection/Removal Conveying System, and all necessary accessories, items of equipment, and mechanical, electrical, controls and structural items to re-profile wheels on Light Rail Vehicles. Deliver the machine to the OMC and install the machine within the concrete foundation constructed by the Agency in the Maintenance of Equipment building. Inspect, test, start-up the machine to ensure it is operating properly and safely and provide training to Agency staff.

### Progress

- The installation of the machine is now underway and is more than 90 percent complete.

### Cost and Schedule – Variance Analysis

- Wheel profiling machine activities remain on schedule and within budget at this time.

### Issues and Solutions

- None.

## 13. Systems

### Automated Fare Collection System



#### Description

Design, manufacture, furnish, assemble, test, inspect and install the LRT Automated Fare Collection System (AFCS) for use by METRO. The AFCS consists of Ticket Vending Machines (TVMs), Ticket Validators (Validators) integrated within the TVMs, a Data Collection/Information System (DC/IS), station LANs, Hand Held Verifiers (HHVs), Revenue Collection Equipment, related data communication networks to allow the TVMs to communicate with a central fare collection computer, spare parts, tools, test equipment, documentation, software listings, training, technical assistance and warranty.



## **Progress**

- Milestone 1 Progress - Complete.
- Milestone 2 Progress - Complete.
- Milestone 3 Progress - Awaiting completion of Preliminary Design Review re-submittals from the Contractor.
- Milestone 4 Progress - Continuing preparation of Final Design Submittals.

## **Cost and Schedule – Variance Analysis**

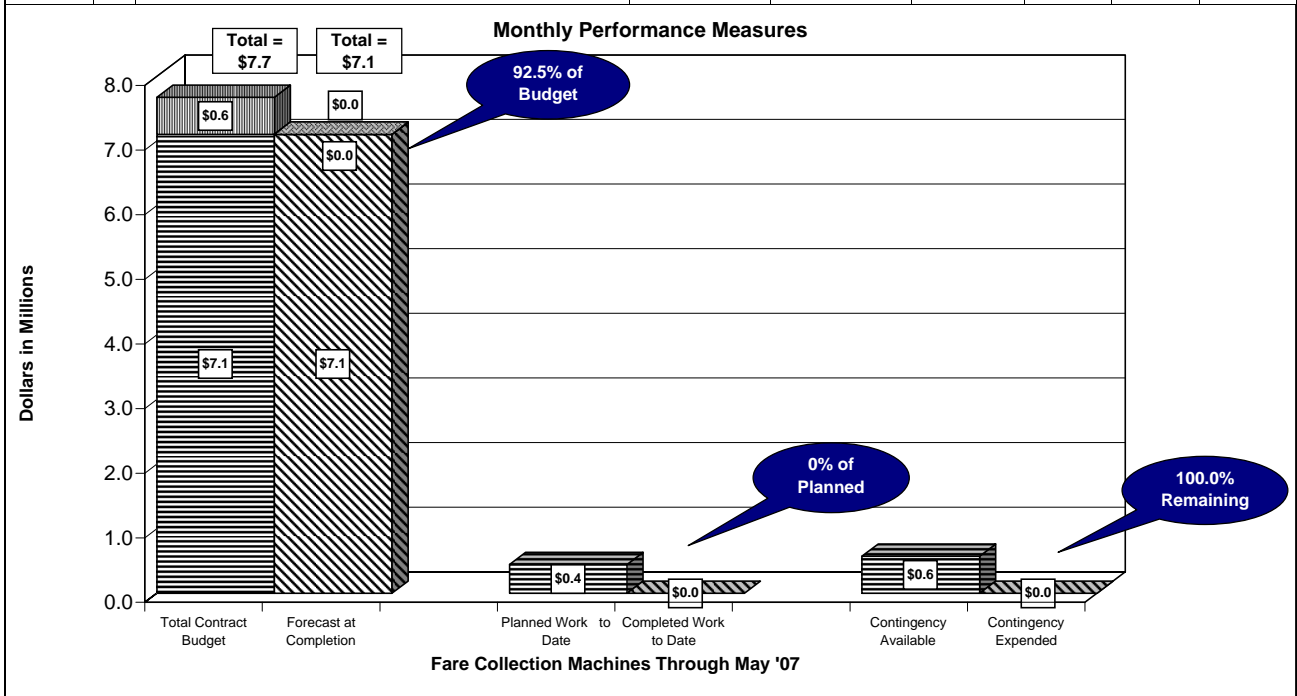
- Master Baseline Schedule has been approved with comments. These review comments shall be incorporated into the next Monthly Progress Update Report.

## **Issues and Solutions**

- Ticket Validator Requirements. Contractor design continues to reflect non-conformance with contract requirements. Currently discussing ticket validator design issues with Contractor.
- Ticket Vending Machine Servicing Envelope. Continuing to await Contractor's concurrence of the revised layouts.



<b>Description:</b>		Fare Collection Machines
<b>PE/PA:</b>		Arkady Bernshtryn
<b>Contractor:</b>		Scheidt & Bachmann USA, Inc.
<b>Resident Engineer:</b>		Thomas Klings
<b>Data Through:</b>		N/A
<b>Cumulative</b>		
1	Original Budget	\$7,100,012
2	Executed Change Orders	\$0
3	Budget Transfers	\$0
4	Current Budget (1+2+3)	\$7,100,012
5	Work Scheduled	\$443,735
6	Work Earned	\$0
7	Actual Expenditures	\$0
8	Forecast to Complete Base (4-7)	\$7,100,012
9	Change Orders Pending Execution	\$1,600
10	Forecast at Completion (7+8+9)	\$7,101,612
11	Percent Budget Expended (7/4)	0.0%
12	Percent Planned (5/4)	6.2%
13	Earned Percent Complete (6/4)	0.0%
14	Schedule Performance (6/5)	N/A
15	Cost Performance (6/7)	N/A
16	Contingency Budget	\$574,535
17	Remaining Contingency	\$574,535
18	Percent Contingency Remaining (17/16)	100.0%
<b>Period</b>		
1	Original Budget	\$0
2	Executed Change Orders	\$0
3	Budget Transfers	\$0
4	Current Budget (1+2+3)	\$7,100,012
5	Work Scheduled (Cumm - Last Period)	\$1,590
6	Work Earned (Cumm - Last Period)	\$0
7	Actual Expenditures (Cumm - Last Period)	\$0
8	Forecast to Complete Base (4-7)	\$7,100,012
9	Change Orders Pending Execution	\$0
10	Forecast at Completion (7+8+9)	\$7,100,012
11	Percent Budget Expended (7/4)	0.0%
12	Percent Planned (5/4)	0.0%
13	Earned Percent Complete (6/4)	0.0%
14	Schedule Performance (6/5)	N/A
15	Cost Performance (6/7)	N/A
16	Contingency Budget	
17	Remaining Contingency	
18	Percent Contingency Remaining (17/16)	



## Light Rail Vehicle



### Description

METRO has a Contract with KINKISHARYO International, L.L.C. (KI) for two prototype and forty eight production light rail vehicles (LRVs) for a total of fifty (50) LRVs. The contract includes prototype engineering, special tools and test equipment, training, spare parts and publications. The cars are 70 percent low-floor, double-articulated LRVs with two main “A” and “B” passenger sections and a mid “C” section, joined to form one single operating unit. There are four passenger doors on each side and an operators cab at each end. The LRVs are designed to be “street friendly” with energy absorbing bumpers and crashworthy cab ends.

### Progress

- METRO is continuing review of submittals of Contract Data Requirement List items (CDRLs) the bulk of which are test procedures and reports as well as First Article Inspection (FAI) reports and Test Procedures.
- METRO held Design Review Meeting Number 23 with KI on December 5th and 6th, 2006. The next review is scheduled for June 2007. The main topics for presentation by KI and discussion in December 2006 were: special tools; spare parts; operator training course; application; closing open items; and vehicle delivery schedule.



- Final assembly began at the OMC mid-February 2007.
- Changes for an Overhead Catenary System (OCS) Surveillance Camera Installation on two cars and an Automatic Passenger Counting System (APC) for the fleet are processed.
- The following describes ongoing METRO resident inspection, quality assurance, manufacturing monitoring, and site surveillance activities at the Kinki Sharyo factory in Osaka Japan (KS-J) during June 2007:
  - LRV Mass Production – 50 Trains are now in production.
  - An inspection of the interior is being performed and ongoing. No defects noted.
  - An inspection of the exterior paint and finish is being performed and ongoing. No defects noted.
  - A visual and dimensional inspection of underframe and car body was performed and ongoing. The dimensions were within tolerance, but defects were noted during the inspection. No defects remained after rework and re-inspection.
  - Concealment inspections were witnessed in two stages each for cars 136 and 138. All noted defects were repaired. No defects remain.
  - KS-J advised that a new rubber seal will be installed on the front headlights to improve the water tightness.
- METRO resident inspections in Phoenix final assembly:
  - 12 Vehicles are in final assembly at the MOE.
  - LRV 101 thru 119 arrived at the OMC between December 2006 and April 2007. KI and METRO have just reached an agreement on two significant changes to the contract that affect activities that will be starting in the coming months. KI will perform vehicle final assembly in the OMC and KI will perform single car running tests on car 101 on METRO's designated test track. As documented in change order Number5, the test track will be available on or before April 1, 2007.
  - Cars 101 thru 124 were shipped from Osaka and will arrive at the OMC for final assembly. Truck frames and components were also shipped from Osaka to Phoenix for final assembly. 36 trucks have been built for the 12 cars in final assembly.
  - Telephone, email and drawing exchange continue between KSJ and KI on carbody issues, testing procedures and schedules, subsystem interfaces and equipment mounting, interior design and equipment installation, systems application issues, material shipments, production schedule and CDRL items. The underfloor cross beam welding issues have been addressed and weld modifications are done or ongoing from cars 107 and above. Kinkisharyo Japan has sent a team to the United States and repairs 103 – 106 are completed. This welding issue is completed on the entire fleet.

### Cost and Schedule – Variance Analysis

- No perceptible cost or schedule variance. Car delivery remains on schedule sufficient to meet the needs of the overall program. Contract remains within budget.

### Issues and Solutions

- Elin is investigating gear box noise at their US manufacturing plant and here at the OMC. METRO is waiting for engineering reports.

### Construction Photographs



Vehicle Assembly



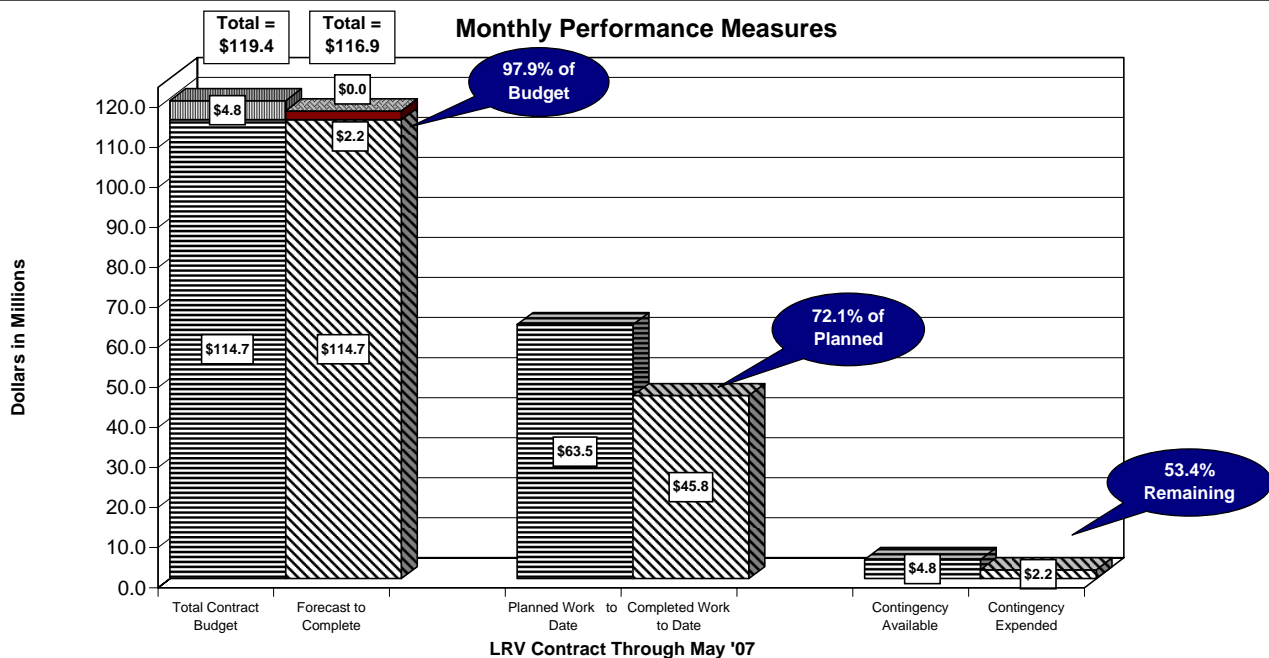
Truck Assembly



Vehicle on in-shop hoist



<b>Description:</b>		<b>3.7.1 Light Rail Vehicles</b>		
<b>PE/PA:</b>		<b>Steve Bethel</b>		
<b>Contractor:</b>		<b>Kinkisharo International</b>		
<b>Resident Engineer:</b>		<b>John Swanson</b>		
<b>Data Through:</b>		<b>April 30, 2007</b>		
<b>Cumulative</b>				
		<b>5309</b>	<b>COP Funded</b>	<b>Total</b>
1	Original Budget	\$114,654,076	\$40,050,160	\$154,704,236
2	Executed Change Orders	\$2,221,380	\$0	\$2,221,380
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$116,875,456	\$40,050,160	\$156,925,616
5	Work Scheduled	\$63,481,986	N/A	\$63,481,986
6	Work Earned	\$45,752,157	N/A	\$45,752,157
7	Actual Expenditures	\$45,799,763	N/A	\$45,799,763
8	Forecast to Complete Base (4-7)	\$71,075,693	N/A	\$71,075,693
9	Change Orders Pending Execution	\$0	N/A	\$0
10	Forecast at Completion (7+8+9)	\$116,875,456	\$40,050,160	\$156,925,616
11	Percent Budget Expended (7/4)	39.2%	N/A	N/A
12	Percent Planned (5/4)	54.3%	N/A	N/A
13	Earned Percent Complete (6/4)	39.1%	N/A	N/A
14	Schedule Performance (6/5)	0.72	N/A	N/A
15	Cost Performance (6/7)	1.00	N/A	N/A
16	Contingency Budget	\$4,768,489	\$2,135,840	\$6,904,329
17	Remaining Contingency	\$2,547,109	\$2,135,840	\$4,682,949
18	Percent Contingency Remaining (17/16)	53.4%	N/A	N/A
<b>Period</b>				
1	Original Budget	\$114,654,076	\$40,050,160	\$154,704,236
2	Executed Change Orders	-\$34,296	\$0	-\$34,296
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$116,875,456	\$40,050,160	\$156,925,616
5	Work Scheduled (Cumm - Last Period)	\$6,982,232	N/A	\$6,982,232
6	Work Earned (Cumm - Last Period)	\$5,991,615	N/A	\$5,991,615
7	Actual Expenditures (Cumm - Last Period)	\$5,933,460	N/A	\$5,933,460
8	Forecast to Complete Base (4-7)	\$110,941,996	N/A	\$110,941,996
9	Pending Changes	\$0	N/A	\$0
10	Forecast at Completion (7+8+9)	\$116,875,456	\$40,050,160	\$156,925,616
11	Percent Budget Expended (7/4)	5.1%	N/A	N/A
12	Percent Planned (5/4)	54.3%	N/A	N/A
13	Earned Percent Complete (6/4)	54.3%	N/A	N/A
14	Schedule Performance (6/5)	1.00	N/A	N/A
15	Cost Performance (6/7)	1.00	N/A	N/A
16	Contingency Budget	\$4,768,489	\$2,135,840	\$6,904,329
17	Remaining Contingency	\$2,547,109	\$2,135,840	\$4,682,949
18	Percent Contingency Remaining (17/16)	53.4%	N/A	N/A



Note: COP Funded Data unavailable, performance date and graph represent only the Federal 5309 portion

## Signals and Communications



### Description

The LRT Signal and Communications (SC) Contract provides for the final design, manufacturing, installation, and testing of the integrated signal and communication system.

Major work elements include train signal equipment and communication hardware and software for controlling train movements through crossovers and interlockings, fiber-optic backbone communication transmission system (CTS), closed-circuit TV (CCTV), public address system (PA), variable message boards (VMB), Train Control System, Vehicle Management (VMS), Radio System, PABX and Telephone System including emergency telephones at Park-and-Rides and Transit Centers, Supervisory Control and Data Acquisition System (SCADA), installation of workstations and equipment in the Operations Control Center (OCC) and at the Maintenance and Storage Facility (OMC), six site-built signal buildings and three signal buildings combined with traction power substations. The work scope also includes installation of fiber-optic cables for street traffic control systems for the Cities of Phoenix, Tempe and Mesa, and installation of fiber-optic cables for ASU.

### Progress

- Signal Buildings and Signal Cases
  - Continuing electrical rough-in at Signal Buildings Number 1 and 2.
  - Irrigation and landscaping nearly complete at Signal Building Number 4.
  - Installed signal rack equipment at Signal Building Number 6.



- Set Signal Cases at Washington Street, 1st Street/UPRR, Mission Palms, Macayo's/AWA, and University Grade Crossing Sites.
- Signaling System
  - Completed all Factory Acceptance Testing for the Signaling System.
- Communications System
  - Subsystem Final Design Submittals have been approved. Awaiting Site Specific Book of Plans Final Design Submittals.
  - Contractor preparing documentation to Support Communication System Factory Acceptance Testing during the week of June 11th.
  - Performed site visit of South Mountain Radio Site.
  - Performed Joint Walkthrough of Milestone 1B.
- OCC Build Out
  - Mechanical system functional. Currently performing punchlist activities.
- Coordinating with other Contracts
  - LS5 - UPRR/1st Crossing. Installed Cantilever, Gate, and Pedestrian Flasher/Gate. Terminated signal cables for 1st Street/UPRR Crossing Case. Ready for UPRR interfaces.
  - Station Finishes. Scheduling coordination of turnover and access activities between Station Finishes Contractor and Signals and Communications Contractor.

### **Cost and Schedule – Variance Analysis**

- The contract is in the advanced stages of submittals, design and procurement with field construction work in progress. Field construction to date has included the civil and architectural parts of six signal buildings, signal equipment installation at four signal buildings and two shared substations, architectural work at the OCC, track bonding at OMC Yard, LS4 Yard Entrance and some mainline track areas, and signaling equipment installation at the OMC Yard Entrance and at some intersections in Tempe.

### **Issues and Solutions**

- Fiber and Microduct Installation. MEC procurement for blowing demonstration of microduct fiber has been postponed until August 2007 due to material procurement issues.

### Construction Photographs



Signal Building Number 4  
Completed Irrigation and Landscaping



Signal Building Number 6  
Installation of Metal Fencing



1st/UPRR - Installation of Cantilever



Washington - Setting Signal Case



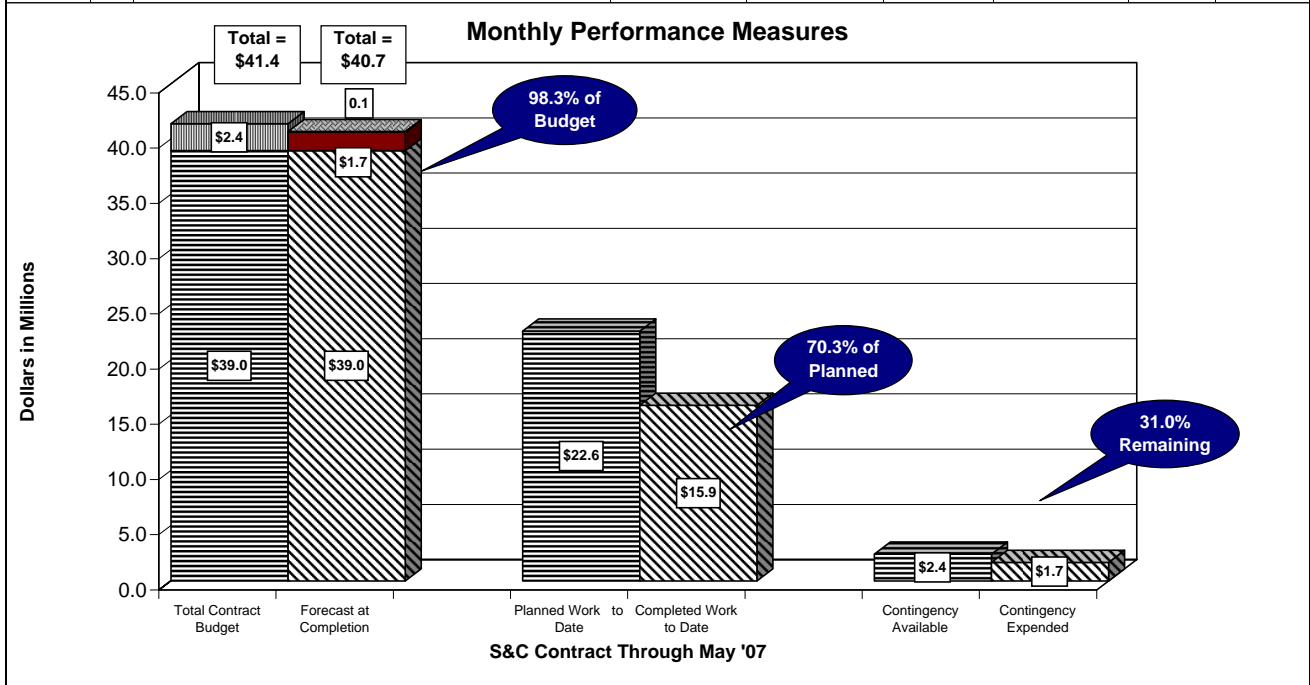
Mill Pocket - Installing Impedance Bonds



OCC - Terminating Generator Cables



<b>Description:</b>		<b>3.7.4 Signals &amp; Communications</b>		
<b>PE/PA:</b>		Leslee O' Conell		
<b>Contractor:</b>		Mass Electric		
<b>Resident Engineer:</b>		Steve Kyauk		
<b>Data Through:</b>		April 15, 2007		
<b>Cumulative</b>		<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Original Budget	\$37,476,762	\$1,480,805	\$38,957,567
2	Executed Change Orders	\$1,252,611	\$417,561	\$1,670,172
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$38,729,373	\$1,898,366	\$40,627,739
5	Work Scheduled	\$22,369,618	\$257,968	\$22,627,586
6	Work Earned	\$15,816,478	\$82,970	\$15,899,448
7	Actual Expenditures	\$16,076,364	\$30,000	\$16,106,364
8	Forecast to Complete Base (4-7)	\$22,653,009	\$1,868,366	\$24,521,375
9	Change Orders Pending Execution	\$0	\$53,000	\$53,000
10	Forecast at Completion (7+8+9)	\$38,729,373	\$1,951,366	\$40,680,739
11	Percent Budget Expended (7/4)	41.5%	1.6%	39.6%
12	Percent Planned (5/4)	57.8%	13.6%	55.7%
13	Earned Percent Complete (6/4)	40.8%	4.4%	39.1%
14	Schedule Performance (6/5)	0.71	0.32	0.70
15	Cost Performance (6/7)	0.98	2.77	0.99
16	Contingency Budget	\$2,308,000	\$111,942	\$2,419,942
17	Remaining Contingency	\$1,055,389	-\$305,619	\$749,770
18	Percent Contingency Remaining (17/16)	45.7%	-273.0%	31.0%
<b>Period</b>				
1	Original Budget	N/A	N/A	N/A
2	Executed Change Orders	\$73,250	\$0	\$73,250
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$38,729,373	\$1,898,366	\$40,627,739
5	Work Scheduled (Cumm - Last Period)	\$1,152,480	\$32,414	\$1,184,894
6	Work Earned (Cumm - Last Period)	\$742,880	\$0	\$742,880
7	Actual Expenditures (Cumm - Last Period)	\$758,114	\$0	\$758,114
8	Forecast to Complete Base (4-7)	\$37,971,259	\$1,898,366	\$39,869,625
9	Change Orders Pending Execution	-\$53,455	\$0	-\$53,455
10	Forecast at Completion (7+8+9)	\$38,675,918	\$1,898,366	\$40,574,284
11	Percent Budget Expended (7/4)	2.0%	0.0%	1.9%
12	Percent Planned (5/4)	3.0%	1.7%	2.9%
13	Earned Percent Complete (6/4)	1.9%	0.0%	1.8%
14	Schedule Performance (6/5)	0.64	0.00	0.63
15	Cost Performance (6/7)	0.98	N/A	0.98
16	Contingency Budget	\$2,308,000	\$111,942	\$2,419,942
17	Remaining Contingency	\$1,055,389	-\$305,619	\$749,770
18	Percent Contingency Remaining (17/16)	45.7%	-273.0%	31.0%



## Traction Electrification System



### Description

The Traction Electrification System (TES) provides the electric power required to operate the Light Rail Vehicles (LRV). There are two main components to the TES, these are: Traction Power Substations (TPSS) that convert incoming utility power to DC power, which is used by the LRV and the Overhead Contact System (OCS), which distributes the DC power to the trackway. There are 15 Site Built 2,000 kW substations. Twelve of the substations are 22 feet by 44 feet and three are 22 feet by 57 feet. The substation buildings will be constructed of integrally colored concrete block on landscaped sites. The OCS is comprised of 20 route miles of double-track low-profile overhead catenary. The OCS will be installed on over 1,300 round painted poles. The nominal system voltage is 850 VDC. The nominal height of the OCS above the roadway is 18 feet, 6 inches.

The TES Contract provides final design of the TPSS and OCS, manufacturing, fabrication, installation and testing.

### Progress

- Traction Power Substation Number 1
  - Landscaping progressed.
- Traction Power Substation Number 2
  - Landscape and irrigation installations progressed.
- Traction Power Substation Number 3
  - Application of di-electric floor has been completed and tested.



- Installation of structural steel beam, roof, metal stud framing, and parapet wall has been completed.
- Installation of the HVAC System commenced.
- Application of Sprayed Fire Resistive Material (SFRM) has commenced.
- Traction Power Substation Number 5
  - TPSS Equipment installation progressed.
  - Conduit and Cable Tray installation progressed.
- Traction Power Substation Number 6
  - Installation of HVAC System progressed.
  - Installation of Interior Lighting progressed.
  - Installation of cables for TPSS Equipment progressed.
- Traction Power Substation Number 7
  - Interior rough-in activities progressed.
  - Installation of wall-mounted TPSS equipment progressed.
  - Installation of HVAC System progressed.
- Traction Power Substation Number 8
  - Concrete placed for building stoops.
- Traction Power Substations Number 9, 15, and 16
  - No work performed. Punchlist has been created. These substations are currently being used by the Vehicle Manufacturer to supply power for vehicle testing.
- Traction Power Substation Number 10
  - TPSS Equipment installation progressed.
  - Installation of HVAC System progressed.
  - Formwork and rebar placed for the building stoops.
- Traction Power Substation Number 11
  - Concrete placed for building stoops.
  - Rectifier-Transformer has been delivered.
- Traction Power Substation Number 13
  - Concrete placed for building slab and stemwall.



- Installation of manholes progressed.
- Overhead Contact System
  - OMC Yard and Test Track (Wire Runs 35 through 38).
    - Punchlist work is being performed on an ongoing basis.
  - LS4 Washington Street from east of 56<sup>th</sup> Street to east of Center Parkway (Wire Runs 39 and 40).
    - OCS has been installed. Regulation of wire is in progress.
  - LS5 1<sup>st</sup> Street to Rural Road (Wire Runs 43 to 46)
    - Installation of OCS Poles commenced.
- Site Access/Permits
  - TPSS Number 12 (McClintock Park-and-Ride). Permits have been issued for both the grading and drainage and the building. Tempe has requested that the TES Contractor construct an 8-foot CMU wall along the south and east sides of the TPSS site. A site plan is being developed to show this change. The size and locations of the wall footer necessitates that the footer be installed prior to construction of the building.
  - TPSS Number 14 was resubmitted to Mesa Building Safety on May 24, 2007. It is expected that a permit will be available by mid to late June to allow the contractor to begin work.
- Milestone Completion Status
  - The following Milestones have been granted Substantial Completion.
    - Milestone 5A – Deliver Draft O&M Manuals.
    - Milestone 7 – TPSS Number 7.
    - Milestone 8 – TPSS Number 1.
    - Milestone 3C – Wire Runs 35 through 38.
    - Milestone 1A – OMC North Yard, Shop and Yard Lead.
    - Milestone 6 – Completion of Remaining TES Work at the OMC.
- Coordination with other Contracts/Entities
  - Ongoing coordination meetings are being held with the Facility Contractors on an as-needed basis.

## Cost and Schedule – Variance Analysis

- The contract is in the final stages of design, procurement and material delivery. Field construction progress to date has included the civil and architectural parts of fourteen of the sixteen traction power substations, TPSS electrical equipment installation in eleven of the traction power substations, OCS components installation in the OMC yard, OMC shop and Line Section 4 Test Track areas, and start up testing and commissioning at the OMC and Line Section 4 Test Track.

## Issues and Solutions

- Mitigation Schedule. A change order which revises the milestone and access dates has been sent to the Contractor for signature. A revised mitigation schedule based on these dates is currently being created by the contractor.

## Construction Photographs



TPSS Number 2 – Installation of Irrigation System



First Shipment of Copper Poles Received



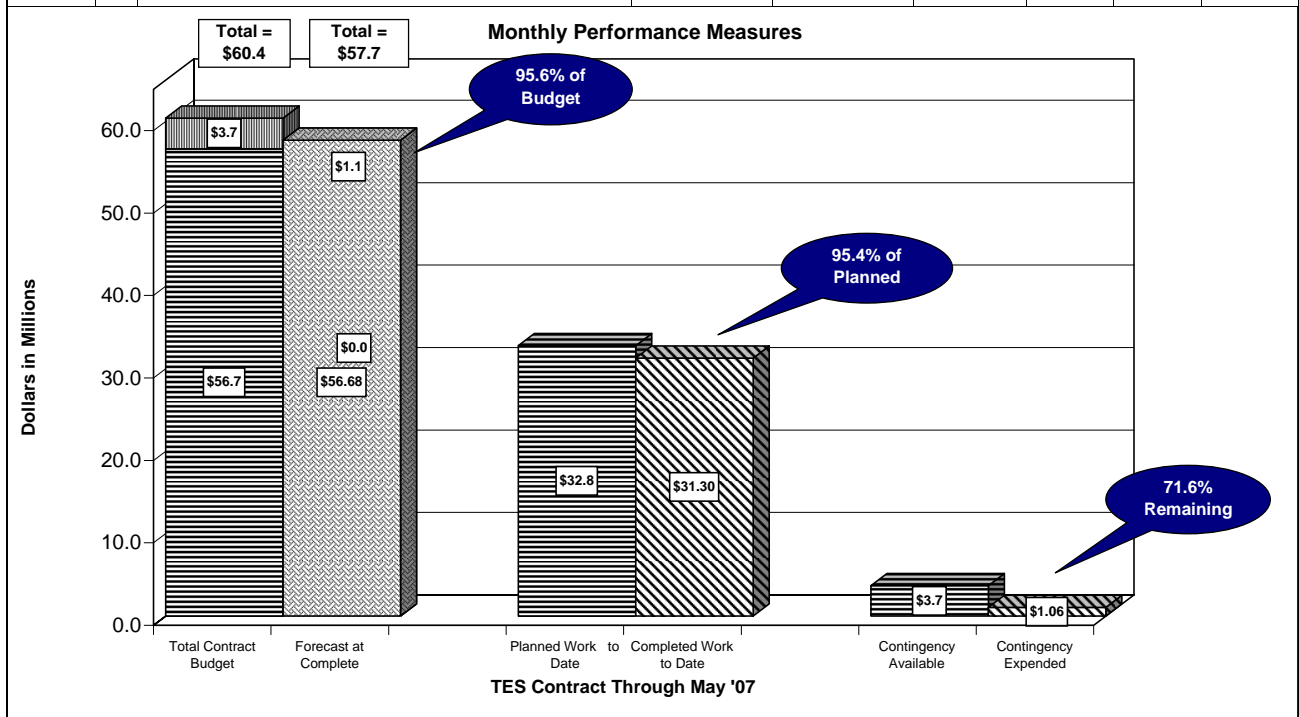
LS4 – Contact Wire Installation (WR 40)



LS5 – Installation of OCS Poles (WR 43 and 44)



<b>Description:</b>		<b>3.7.3 Traction Electrification Systems</b>	
<b>PE/PA:</b>		<b>Alan Friend</b>	
<b>Contractor:</b>		<b>Mass Electric Corporation</b>	
<b>Resident Engineer:</b>		<b>Ron Wong</b>	
<b>Data Through:</b>		<b>April 15, 2007</b>	
Cumulative		<b>5309</b>	
1	Budget	\$56,681,003	
2	Executed Change Orders	\$1,058,630	
3	Budget Transfers	\$0	
4	Current Budget (1+2+3)	\$57,739,633	
5	Work Scheduled	\$32,819,993	
6	Work Earned	\$31,300,670	
7	Actual Expenditures	\$31,255,972	
8	Forecast to Complete Base (4-7)	\$26,483,661	
9	Change Orders Pending Execution	-\$39,842	
10	Forecast at Completion (7+8+9)	\$57,699,791	
11	Percent Budget Expended (7/4)	54.1%	
12	Percent Planned (5/4)	56.8%	
13	Earned Percent Complete (6/4)	54.2%	
14	Schedule Performance (6/5)	0.95	
15	Cost Performance (6/7)	1.00	
16	Contingency Budget	\$3,721,000	
17	Remaining Contingency	\$2,662,370	
18	Percent Contingency Remaining (17/16)	71.5%	
Period			
1	Budget	N/A	
2	Executed Change Orders	\$502,870	
3	Budget Transfers	\$0	
4	Current Budget (1+2+3)	\$57,739,633	
5	Work Scheduled (Cumm - Last Period)	\$1,534,643	
6	Work Earned (Cumm - Last Period)	\$1,347,031	
7	Actual Expenditures (Cumm - Last Period)	\$1,347,929	
8	Forecast to Complete Base (4-7)	\$56,391,704	
9	Change Orders Pending Execution	-\$513,172	
10	Forecast at Completion (7+8+9)	\$57,226,461	
11	Percent Budget Expended (7/4)	2.3%	
12	Percent Planned (5/4)	2.7%	
13	Earned Percent Complete (6/4)	2.3%	
14	Schedule Performance (6/5)	N/A	
15	Cost Performance (6/7)	N/A	
16	Contingency Budget	\$3,721,000	
17	Remaining Contingency	\$2,662,370	
18	Percent Contingency Remaining (17/16)	71.5%	





## **Rail Activation/System Integration**

### **Description**

The Rail Activation Plan was developed in June, 2006 to outline the process and organizational approach that METRO will employ to oversee the testing and start-up of the 20 mile light rail CP/EV system. The Rail Activation process is used to transition the Light Rail Project from the construction phase, through testing, pre-revenue operations, and finally into revenue service. The Rail Activation Team is a diverse group of Transit professionals which consists of METRO staff from Operations, Maintenance, System Engineering, Safety/Security, and Media relations, along with CAC, PMC, GEC and City staff.

This same group will participate in and oversee the System Integration process, which is the final testing process before sections of the alignment can be activated for use. The System Integrated tests are designed to prove that the various systems within the alignment work well together and meet design criteria. The primary goal of the Rail Activation Team is to ensure the project achieves revenue operations in a timely and safe manner.

Presently, the primary focus of the Rail Activation Team is the OMC yard and test track area. The test track has been defined as the area just east of Highway 143 to 56 Street.

### **Progress**

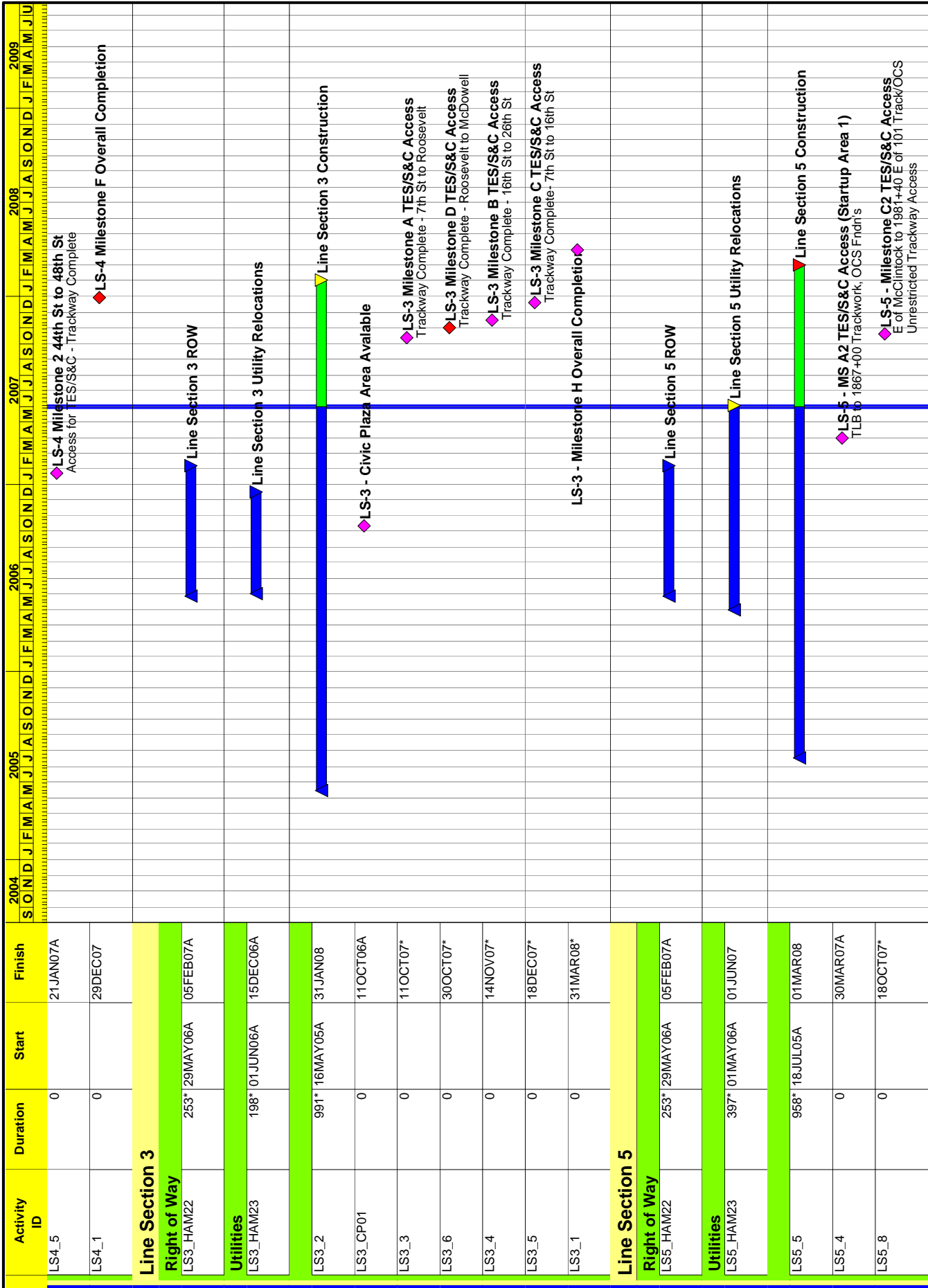
- METRO and consulting staffs are developing test plans and procedures related to track allocation, rail/wheel interface, clearance and LRV dynamic testing.
- METRO Operations and Maintenance Personnel (including contractors) and consulting staff have completed numerous walk-throughs of the test track. Similar activities are planned with the City of Phoenix Police Department to finalize the traffic management safety plan.
- METRO staff has commenced occupancy of the Operations and Maintenance Center (OMC).
- OMC Yard and Test Track Activation Schedule
  - A Clearance cart was produced by Mass Electric for dynamic clearance testing through out the alignment.
  - Clearance testing in the OMC yard and test track with the clearance cart is complete.
  - Live wire testing in the entire yard and test track is complete.
  - Substation adjustments and interface tests are ongoing with LRV Number 101 and TPSS Number 15 and TPSS Number 9.
  - High speed testing is ongoing with LRV Number 101 on test track.
  - Track Allocation meetings are being held every Wednesday at the OMC conference room.
  - Track Access Training is ongoing every Monday at the OMC.

## Construction Photographs



Vehicle testing in the OMC Yard

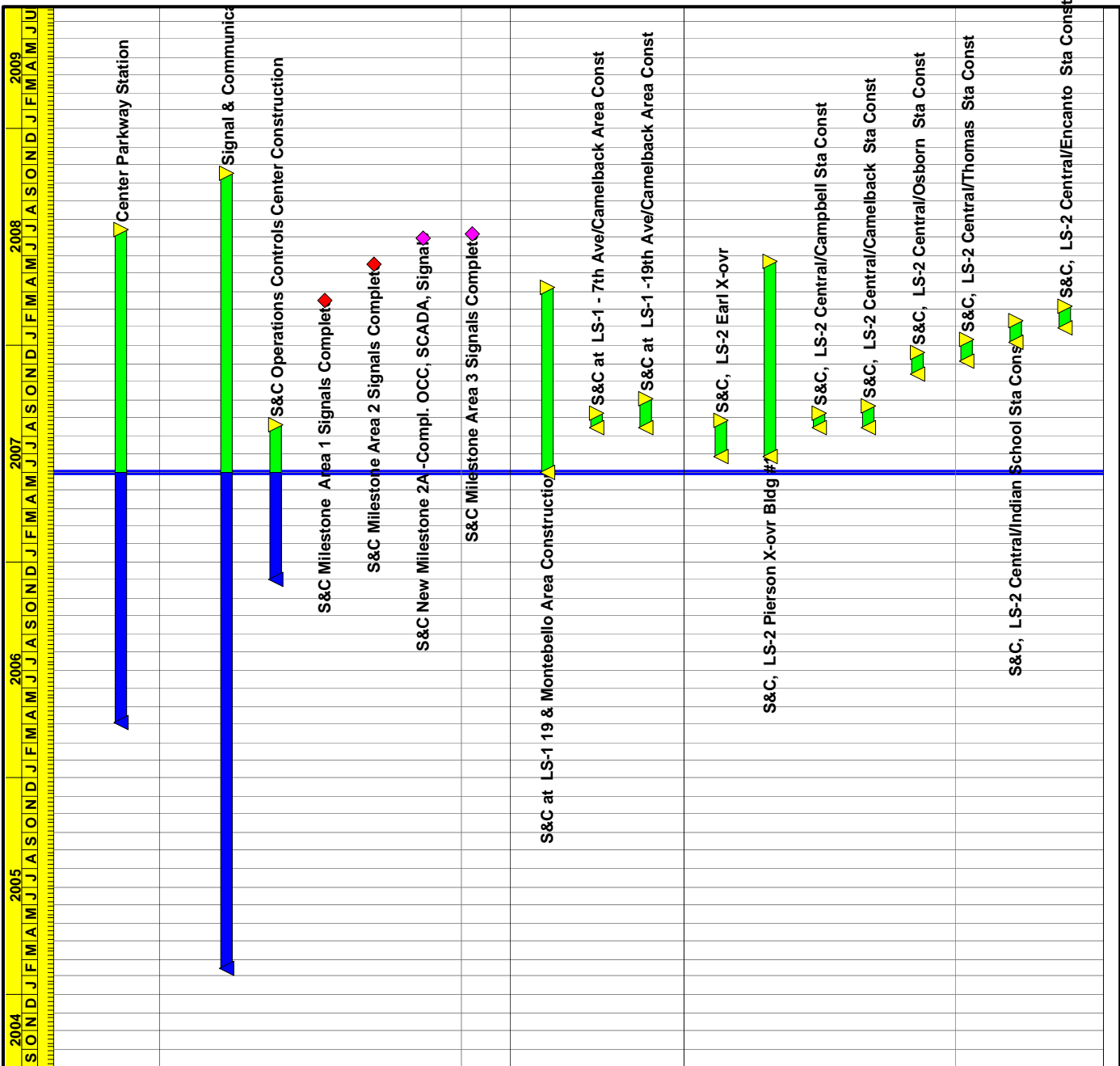








Activity ID	Duration	Start	Finish
<b>Center Pkwy Station</b>			
<b>Contract Summary</b>			
CP_HAM01	711 04APR06A		12JUL08
<b>Signal &amp; Communications</b>			
<b>Contract Summary</b>			
SC_001	1,341* 14FEB05A		16OCT08
SC_OCC1	262* 01DEC06A		19AUG07
SC_992	0		15MAR08*
SCM2B_2	0		15MAY08*
SCM2A_2	0		28JUN08*
SC_999	0		06JUL08*
<b>LS-1</b>			
SC_1001	312* 01JUN07		07APR08
SC_1003	25 15AUG07		08SEP07
SC_1002	50 15AUG07		03OCT07
<b>LS-2</b>			
SC_2002	62 27JUN07		27AUG07
SC_2001	329 27JUN07		20MAY08
SC_2003	25 15AUG07		08SEP07
SC_2102	37 15AUG07		20SEP07
SC_2005	37 14NOV07		20DEC07
SC_2100	37 05DEC07		10JAN08
SC_3004	37 05JAN08		10FEB08
SC_2006	37 30JAN08		06MAR08















## Acronyms

AASHTO	American Association of State Highway and Transportation Officials
AC	Alternating Current
ACI	American Concrete Institute
ADA	Americans with Disabilities Act
ADOT	Arizona Department of Transportation
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
APM	Automatic People Mover
APPROX	Approximately
APS	Arizona Public Service
AREMA	American Railway Engineering and Maintenance-of-Way Association
ASTM	American Society for Testing and Materials
ASU	Arizona State University
ATS	Automatic Train Stop
AT&T	American Telephone and Telegraph Company
AWG	American Wire Gauge
AWS	American Welding Society
BTU	British Thermal Unit
CAC	Construction Administration Consultant
CALCS	Calculations
CCTV	Closed Circuit Television
CFM	Cubic Feet Per Minute
CFS	Cubic Feet Per Second
CMU	Concrete Masonry Unit
CNPA	Concurrent Non-Project Activity
COE	US Corp of Engineers
COM	City of Mesa
COMM	Communications
COP	City of Phoenix
COT	City of Tempe
CPU	Central Processing Unit
CRSI	Concrete Reinforcing Steel Institute
CRT	Cathode Ray Tube
CTS	Carrier Transmission System
CWR	Continuous Welded Rail
CY	Cubic Yard
DBE	Disadvantaged Business Enterprise



DC	Direct Current
DSD	Development Services Department
DWG	Drawing(s)
EPA	Environmental Protection Agency
EST	Estimate, Estimated
FAA	Federal Aviation Administration
FAI	First Article Inspection
FHWA	Federal Highway Administration
FPS	Feet Per Second
FTA	Federal Transit Administration
GEC	General Engineering Consultant
HVAC	Heating, Ventilating, Air Conditioning
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IFB	Invitation For Bid
IPI	In Process Inspection
LAN	Local Area Network
LF	Linear Feet
LRT	Light Rail Transit
LRV	Light Rail Vehicle
LS	Line Section
MAG	Maricopa Association of Governments
MEC	Mass Electric Company
MISC	Miscellaneous
MOE	Maintenance of Equipment
MOW	Maintenance of Way
MPH	Miles Per Hour
MSF	Maintenance and Storage Facility
MUTCD	Manual on Uniform Traffic Control Devices
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NRHP	National Register of Historic Places
OCC	Operations Control Center
OCS	Overhead Contact System
O&M	Operations And Maintenance
OMC	Operations and Maintenance Center



OPS	Operations
PA	Public Address
PAN	Pantograph
PBAX	Telephone Private Exchange And Controls
PCI	Prestressed Concrete Institute
PSI	Pre Shipment Inspection
PED	Pedestrian
PMC	Program Management Consultant
PNR	Park-and-Ride
PSF	Pounds Per Square Foot
PSI	Pounds Per Square Inch
PTZ	Pan Tilt Zoom
QA	Quality Assurance
QC	Quality Control
RE	Resident Engineer
RFI	Request For Information
RI	Receiving Inspection
RPM	Revolutions Per Minute
ROW	Right-of-Way
RTU	Remote Terminal Unit
S&C	Signals and Communications
SCADA	Supervisory Control and Data Acquisition
SDI	Steel Deck Institute
SJI	Steel Joist Institute
SONET	Synchronous Optical Network
SPEC	Specification
SRP	Salt River Project
SSPC	Structural Steel Painting Council
SSW	Sundt/Stacy and Witbeck
SSWJV	Sundt/Stacy and Witbeck Joint Venture
SWG	Southwest Gas Corporation
TBD	To Be Determined
TCE	Temporary Construction Easement
TES	Traction Electrification System
TTLB	Tempe Town Lake Bridge
TPSS	Traction Power Substation
TTY	Text Teletype ADA Device
TVM	Ticket Vending Machine



TWC	Train to Wayside Communications
UBC	Uniform Building Code
UL	Underwriters Laboratories Incorporated
UPRR	Union Pacific Railroad
UPS	Uninterruptible Power System
VCR	Video Cassette Recorder
VETAG	Vehicle Tagging System
VMB	Variable Message Board
VMR	Valley Metro Rail
VMS	Vehicle Management System
WAN	Wide Area Network