



# 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 (VMR), 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.

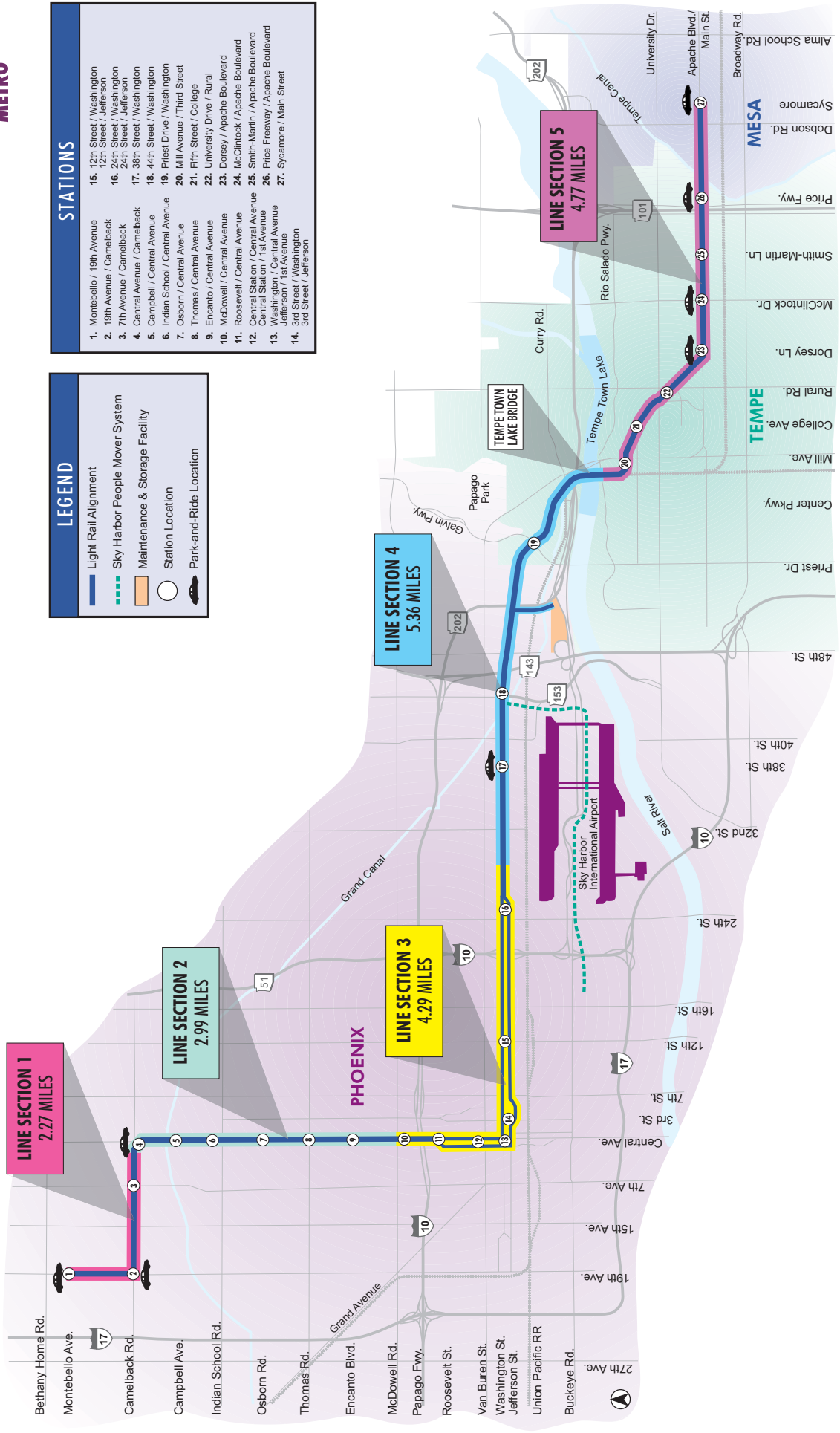
Construction surpassed 65 percent completion this month with the overall project reaching nearly 70 percent completion and the project remains on budget and on schedule.

Total track constructed to date has nearly reached 167,000 linear feet or about 75 percent of the total. Line Section Four continues to progress toward an on-time completion with 99 percent of their guideway completed. Line Sections Three and Five have also completed substantial amounts of guideway and continue to work on roadway widening and guideway construction. Line Section One has substantially completed guideway up to 15<sup>th</sup> Avenue on Camelback and continues to work towards guideway and roadway completion on Camelback up to 17<sup>th</sup> Avenue by Thanksgiving. Line Section Two is working on roadway widening and guideway construction along Central Avenue. Major progress can be seen in the North and South ends of the project and guideway excavation has begun in most remaining areas. Station Finishes continues to work on structural steel placement and installation of canopies, seating, tactile warning and other station components on fourteen station platforms along with construction of transit center facilities.

The systems contracts continue to work in LS4 and LS5 to install OCS. Approximately 60 percent of the OCS poles have been installed and about 23 percent of the OCS Wire has been installed systemwide. Systems components including communications cabinets, CCTV's, speakers and variable message boards can now be seen installed at multiple station locations.

The Community Advisory boards reconvened after a summer break in the month of August. August Line Section CAB awards continued to be 100 percent in Line Section Five. METRO is working with its partners and businesses to develop different and more effective programs for businesses for the remainder of construction. Some of these new and improved programs were presented to the CABs this month. Programs included the development of a "virtual mall" website with the tag SHOPTHELINE.NET.

# LIGHT RAIL STARTER SEGMENT



**METRO  
CONTRACT LOG - AUGUST 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 - AUGUST 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
69	LRT-07-088-PALS	Policy and Advisory Legal Services	Thompson Coburn, LLP
<b>6. OWNER FURNISHED MATERIALS</b>			
70	LRT-04-009-MP1	Rail (MP1)	Progress Rail Corporation
71	LRT-04-010-MP2	Concrete Crossties (MP2)	CXT Inc
72	LRT-04-030-MP5	Ballasted Special Trackwork (MP5)	VAE Nortrak North America Inc
73	LRT-04-032-MP8	Girder Rail (MP8)	VAE Nortrak North America Inc
74	LRT-04-033-MP9	Girder Rail Special Trackwork (MP9)	VAE Nortrak North America Inc
75	LRT-04-015-MP3	Traffic Signal Hardware (MP3)	Various
76	LRT-06-072-SE	Shop Equipment for Maintenance Facility	Wissota Supply Company, Inc
77	LRT-07-078-MLE	Spray Paint Booth Manlifts at MSF	MGM Equipment Source
<b>7. FUTURE LIGHT RAIL EXTENSIONS</b>			
78	LRT-06-050-DCS	Design Criteria & Standards	Stantec Consulting
79	LRT-06-055-PSS	Planning Support Services	HDR Engineering, Inc.
80	LRT-07-077-PCES	Planning, Conceptual Engineering & Environmental Studies for Future Light Rail Extensions - Mesa-Tempe	HDR / S.R. Beard & Associates
81	LRT-07-077-PCES	Planning, Conceptual Engineering & Environmental Studies for Future Light Rail Extensions - I-10/Glendale	URS Corporation
82	LRT-07-075-PENW	Northwest LRT Extension Engineering Services	DMJM+Harris, Inc.
83	LRT-07-091-PICS-HDR	On Call Public Involvement Services	HDR, Inc.



## **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 \$51,633,916 of the available \$85,247,024 planned contingency.

Including Project Reserve, this leaves \$50,709,099 of budgeted contingency funds available to the project.

The project is 69.9 percent complete. Construction is 65.4 percent complete.

### **Program Management & 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**

Budget and forecast for the remaining work are consistent with negotiated 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 66.9 percent complete. Executed and pending change orders are expected to utilize \$33,600,000 of the \$49,000,000 available contingency. Additional expected change orders for required acceleration, additional work and expected requests for equitable adjustment are challenging the available balance of contingency.



## **Systems**

Systems work is 54.1 percent complete. Remaining contingency will be required for unforeseen conditions and to accelerate the systems work.

## **Construction Administration Services**

Budget and forecast for remaining work is consistent with the negotiated staffing plan based scope of work.

## **Testing and Startup**

Forecast appears sufficient to complete the work.

## **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 \$17,095,991 as a result of Board approved transfers to fund Prior Rights Utilities, CAC and the GEC contracts. The forecast is currently at \$13,300,000.

## **Financing Costs**

The budget and forecast is \$128,000,000. Further reductions are possible and anticipated, though not included in the forecast yet.

## **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 eighteen change orders were initiated for a net credit of \$19,580 to the CNPA budget. The forecasts for ASU and COT were unchanged. The Cit of Mesa had two change orders processed for \$17,483. The total forecast decreased by \$98,585. Phoenix Public Transit had two change orders processed funded by existing contingency. COP Transit's forecast decreased by an estimated \$861,254 due to pending changes and estimated right of way costs. The Phoenix Streets Department had one change order processed for \$43,679. The forecast remains unchanged. The Phoenix Aviation forecast increased by \$112,492 due to increased costs for the People Mover Foundation and APS Ductbank at 40<sup>th</sup> Place. Phoenix Water Services had fifteen change orders processed for a net credit of \$95,742 which decreased the forecast respectively.

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

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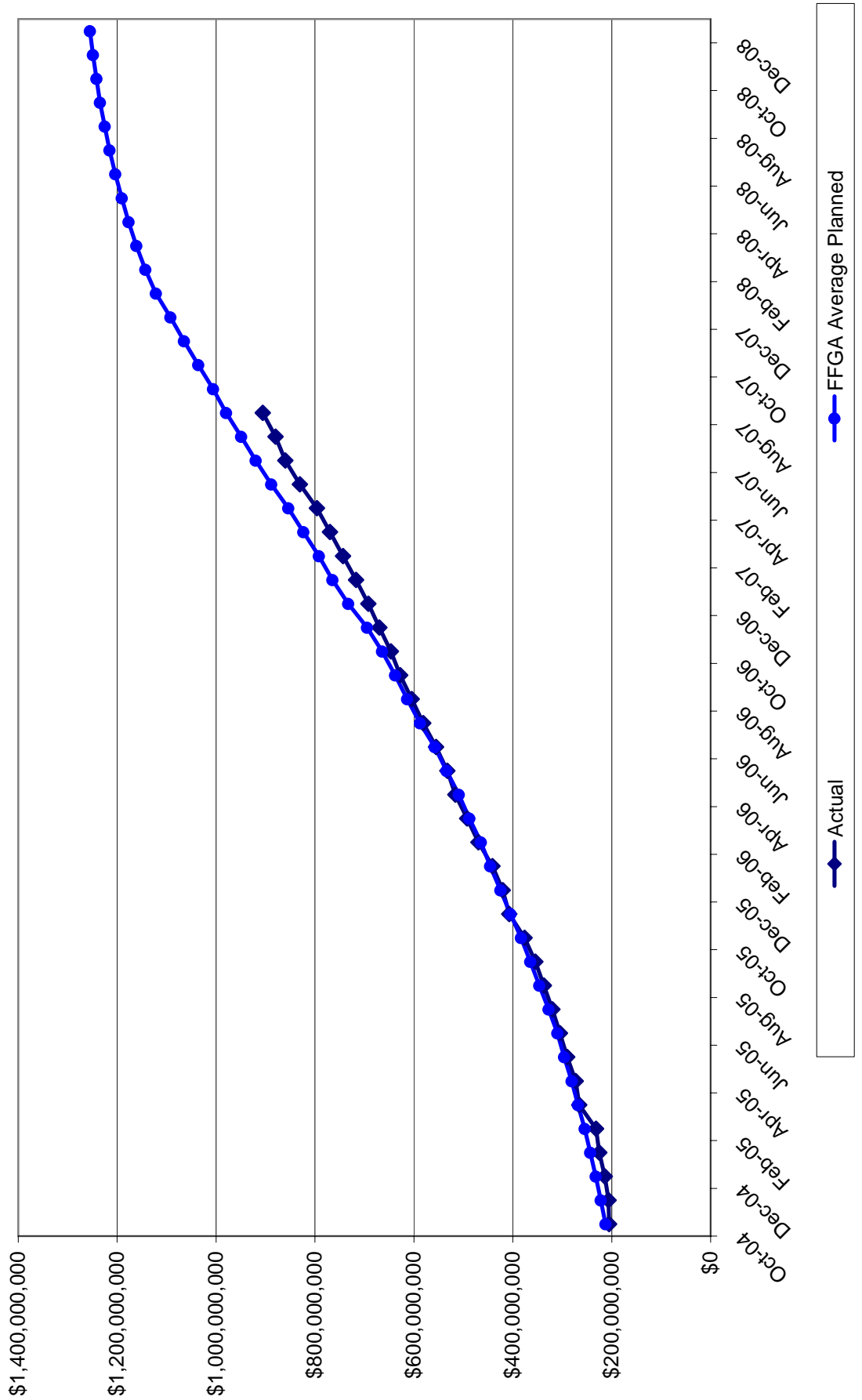
Element	Description	FFGA Attachment 3	Board Revised Budget	Current Actual \$ (To Date)	Forecast	Variance
50	LS1 19th Ave/Bethany - Camelback/Central	\$27,130,856	\$38,570,584	\$20,571,807	\$38,961,141	(\$390,557)
51	LS2 Camelback/Central - McDowell Road	\$38,004,059	\$53,488,837	\$29,936,052	\$53,517,729	(\$28,892)
52	LS3 McDowell Road - 28th Street	\$63,981,654	\$81,843,926	\$56,963,327	\$82,098,666	(\$254,740)
53	LS4 28th Street - N Approach to Town Lake	\$46,622,020	\$52,112,560	\$46,606,376	\$51,686,683	\$425,877
54	LS5 1st Street - Sycamore	\$49,680,435	\$69,787,639	\$55,299,436	\$74,859,066	(\$5,071,427)
55	Station Finishes	\$38,701,950	\$52,275,022	\$19,669,264	\$52,527,343	(\$252,321)
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	\$114,404	\$750,000	\$3,426,234
5K	Archaeological Investigations/Hazardous Material Removal	\$0	\$5,497,114	\$4,256,350	\$6,500,000	(\$1,002,886)
58	MSF Construction/Equipment Installation	\$57,637,721	\$64,474,643	\$64,874,767	\$65,400,000	(\$925,357)
5G	MSF Underfloor Wheel Profiling System	\$0	\$980,107	\$786,047	\$980,107	\$0
59	48th Street Bridge Restoration	\$2,014,013	\$2,824,232	\$2,832,387	\$2,824,232	\$0
5A	Town Lake Bridge	\$15,529,600	\$21,759,752	\$21,759,452	\$21,759,752	\$0
5B	Prior Rights Utility Relocations	\$22,938,000	\$25,582,552	\$29,009,293	\$33,990,657	(\$8,408,105)
81	Contingency	\$37,491,841	\$25,208,320	\$0	\$12,724,640	\$12,483,680
	<b>Facilities</b>	<b>\$422,341,688</b>	<b>\$513,685,861</b>	<b>\$352,678,962</b>	<b>\$519,487,715</b>	<b>(\$5,801,854)</b>
4A	Rail Procurement	\$1,306,200	\$1,271,080	\$1,254,492	\$1,254,492	\$16,588
4B	Concrete Crosstie Procurement	\$900,000	\$751,492	\$718,882	\$718,882	\$32,610
4C	Traffic Signal Hardware	\$8,060,100	\$8,060,100	\$6,239,969	\$8,060,100	\$0
4D	Ballasted Special Trackwork Procurement	\$2,532,414	\$2,291,497	\$2,257,456	\$2,257,456	\$34,041
4E	Crossing Panel Procurement	\$380,100	\$360,096	\$0	\$0	\$360,096
4F	Girder Rail Procurement	\$15,079,742	\$14,726,085	\$14,695,450	\$14,695,450	\$30,635
4G	Girder Rail Special Trackwork Procurement	\$0	\$5,864,352	\$4,858,499	\$5,864,352	\$0
81	Contingency	\$1,412,863	\$514,498	\$0	\$403,000	\$111,498
	<b>Owner Furnished Materials/Equipment</b>	<b>\$29,671,419</b>	<b>\$33,839,200</b>	<b>\$30,024,748</b>	<b>\$33,253,732</b>	<b>\$585,468</b>
5D	Automated Fare Collection System	\$10,755,800	\$7,100,012	\$12,911	\$7,101,612	(\$1,600)
5E	Traction Power Substations/Overhead Catenary System	\$62,141,100	\$57,793,597	\$36,360,694	\$57,783,597	\$10,000
5F	Communications/Signals	\$38,220,002	\$38,851,153	\$21,723,605	\$38,860,350	(\$9,197)
81	Contingency	\$8,674,000	\$4,116,550	\$0	\$4,115,753	\$797
	<b>Systems</b>	<b>\$119,790,902</b>	<b>\$107,861,312</b>	<b>\$58,097,210</b>	<b>\$107,861,312</b>	<b>\$0</b>
	<b>Sub Total, Construction</b>	<b>\$571,804,009</b>	<b>\$655,386,373</b>	<b>\$440,800,920</b>	<b>\$660,602,759</b>	<b>(\$5,216,386)</b>
4K	Vehicle Contract	\$115,501,823	\$116,875,456	\$56,187,556	\$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>\$56,187,556</b>	<b>\$119,422,565</b>	<b>\$0</b>
22	ROW Acquisition	\$116,214,150	\$116,896,033	\$126,784,719	\$134,000,000	(\$17,103,967)
23	ROW Contingency	\$20,081,000	\$19,399,119	\$0	\$0	\$19,399,119
20	<b>ROW</b>	<b>\$136,295,150</b>	<b>\$136,295,152</b>	<b>\$126,784,719</b>	<b>\$134,000,000</b>	<b>\$2,295,152</b>

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

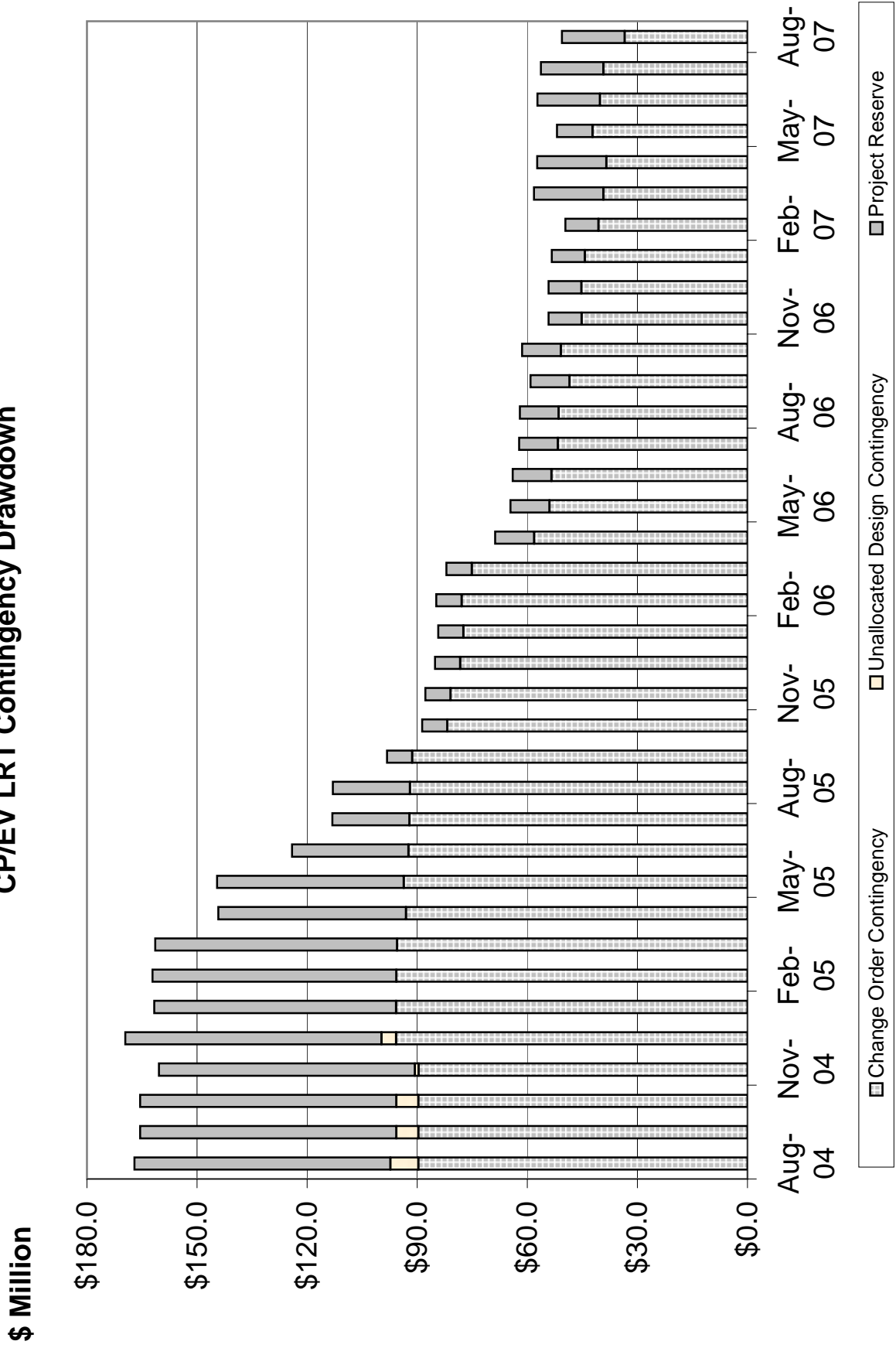
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Element	Description	FFGA Attachment 3	Board Revised Budget	Current Actual \$ (To Date)	Forecast	Variance
<b>30</b>	<b>PE/FEIS Engineering</b>	<b>\$25,054,938</b>	<b>\$25,054,938</b>	<b>\$24,234,636</b>	<b>\$25,054,938</b>	<b>\$0</b>
31	Engineering	\$76,780,935	\$76,346,255	\$76,879,030	\$76,793,372	(\$447,117)
4L	Vehicle Engineering	\$5,432,358	\$6,255,358	\$5,600,008	\$6,260,413	(\$5,055)
20	ROW Engineering	\$1,016,370	\$1,321,163	\$1,266,225	\$1,266,225	\$54,938
32	Design Services During Construction	\$14,160,426	\$22,049,464	\$17,995,575	\$23,516,195	(\$1,466,731)
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>\$105,972,240</b>	<b>\$101,740,838</b>	<b>\$107,836,205</b>	<b>(\$1,863,965)</b>
60	Construction Administration Services	\$37,759,127	\$52,311,124	\$39,756,619	\$52,311,124	\$0
61	CAC Contingency	\$15,244,622	\$0	\$0	\$0	\$0
	<b>Construction Administration Services</b>	<b>\$53,003,749</b>	<b>\$52,311,124</b>	<b>\$39,756,619</b>	<b>\$52,311,124</b>	<b>\$0</b>
10	PE Administrative/Management Costs	\$4,363,526	\$4,363,526	\$7,959,701	\$7,959,701	(\$3,596,175)
11	Administrative/Management - VMR	\$43,915,047	\$44,228,316	\$27,377,064	\$38,550,088	\$5,678,228
62	Construction Administration Services - VMR	\$1,697,232	\$3,087,589	\$1,143,747	\$1,906,330	\$1,181,259
67	CAB Program	\$0	\$2,500,000	\$1,701,782	\$2,281,882	\$218,118
21	Administrative ROW Costs	\$696,712	\$696,712	\$541,532	\$604,436	\$92,276
76	Administrative/Management Art Program Costs	\$414,632	\$414,632	\$0	\$414,632	\$0
16	Administrative/Management - ADOT	\$420,000	\$930,000	\$623,342	\$1,247,880	(\$317,880)
17	Agency Insurance Cost	\$7,000,000	\$7,000,000	\$5,836,396	\$7,026,839	(\$26,839)
18	Administrative/Management Contingency	\$0	\$1,388,523	\$0	\$608,212	\$780,311
	<b>Program Management</b>	<b>\$58,507,149</b>	<b>\$64,609,298</b>	<b>\$45,183,564</b>	<b>\$60,600,000</b>	<b>\$4,009,298</b>
10	PE Administrative/Management Costs	\$12,832,472	\$12,832,472	\$13,869,706	\$13,869,706	(\$1,037,234)
21	Administrative ROW Costs	\$1,016,571	\$828,502	\$791,139	\$791,139	\$37,363
76	Administrative/Management Art Program Costs	\$549,061	\$414,266	\$234,043	\$366,397	\$47,869
12	Administrative/Management - PMC	\$32,736,326	\$33,564,234	\$28,677,681	\$36,060,110	(\$2,495,876)
4M	Administrative Vehicle Costs	\$1,337,322	\$561,908	\$553,400	\$553,400	\$8,508
63	Construction Administration Services - PMC	\$4,581,527	\$5,351,897	\$2,720,189	\$4,912,527	\$439,370
	<b>Program Management Consultant</b>	<b>\$53,053,279</b>	<b>\$53,553,279</b>	<b>\$46,846,158</b>	<b>\$56,553,279</b>	<b>(\$3,000,000)</b>
10	PE Administrative/Management Costs	\$3,158,439	\$3,158,439	\$0	\$3,158,439	\$0
13	Administrative/Management - COP	\$2,986,000	\$5,448,000	\$3,403,561	\$5,816,288	(\$368,288)
64	Construction Administration Services - COP	\$8,347,000	\$5,885,000	\$5,612,681	\$5,516,712	\$368,288
14	Administrative/Management - COT	\$6,797,000	\$6,797,000	\$5,930,246	\$6,797,000	\$0
15	Administrative/Management - COM	\$897,000	\$897,000	\$331,826	\$897,000	\$0
	<b>City Administration</b>	<b>\$22,185,439</b>	<b>\$22,185,439</b>	<b>\$15,278,314</b>	<b>\$22,185,439</b>	<b>\$0</b>
75	Public Art Contracts	\$5,284,133	\$6,083,177	\$3,341,119	\$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>\$3,341,119</b>	<b>\$6,283,133</b>	<b>\$0</b>
<b>70</b>	<b>Start-Up and Testing</b>	<b>\$31,000,000</b>	<b>\$26,000,000</b>	<b>\$5,491,862</b>	<b>\$26,000,000</b>	<b>\$0</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>\$17,095,991</b>	<b>\$0</b>	<b>\$13,320,090</b>	<b>\$3,775,901</b>
<b>SUBTOTAL</b>		<b>\$1,253,258,000</b>	<b>\$1,284,169,532</b>	<b>\$905,646,305</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>\$13,968,253</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>\$919,614,558</b>	<b>\$1,412,125,346</b>	<b>\$0</b>

### Plan versus Actual Costs



# CP/EV LRT Contingency Drawdown



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

2007\_08

Element	Description	Board Approved Total	Revised Budget/Estimate	Current Actual \$ (To Date)	Forecast	Variance
A1	Bus Bays (LS2)	\$963,403	\$984,756	\$402,863	\$984,756	\$0
A2	Phoenix Art Museum Left Turn Signal	\$99,083	\$108,770	\$32,188	\$99,083	\$9,687
A5	19th/Montebello Transit Center (SF)	\$5,555,929	\$6,344,742	\$4,159,359	\$6,318,206	\$26,536
A6	117 Central/Camelback Transit Center (SF)	\$7,022,524	\$6,968,745	\$2,403,015	\$5,697,681	\$1,271,064
A7	44th Street/Washington Transit Center Real Estate	\$4,900,509	\$4,649,580	\$4,393,920	\$4,649,580	\$0
B1	Washington Street Bike Lane (LS4)	\$930,293	\$912,714	\$439,078	\$941,519	(\$28,805)
C3	Fiber Optic Backbone Conduits	\$17,844	\$17,844	\$0	\$17,844	\$0
F4	Civic Plaza Track Support System	\$2,595,811	\$2,223,693	\$291,999	\$348,432	\$1,875,261
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	\$180,435	\$12,630
F7	COP Landscape Irrigation Restoration Central Ave	\$101,414	\$90,750	\$69,944	\$113,153	(\$22,403)
H2	Fiber Optic COP	\$602,233	\$476,896	\$83,023	\$597,593	(\$120,697)
J6	Washington/Jefferson 16th to 26th Street, Property Access	\$2,628,002	\$3,845,895	\$1,723,250	\$3,564,371	\$281,524
K7	11th Street Loop Track	\$4,377,606	\$4,368,021	\$336,899	\$4,368,021	\$0
M1	Removable Steel Curb at 7th/Jefferson	\$5,989	\$5,989	\$0	\$5,989	\$0
	<b>Sub Total Public Transit Department</b>	<b>\$30,058,812</b>	<b>\$31,280,745</b>	<b>\$14,397,800</b>	<b>\$27,975,948</b>	<b>\$3,304,797</b>
A3	6th Lane - Camelback (LS1)	\$9,820,210	\$9,883,190	\$7,137,201	\$8,954,921	\$928,269
D1	Additional Street/Pedestrian Lighting (LS3)	\$509,602	\$553,281	\$398,594	\$509,602	\$43,679
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	\$111,871	\$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>\$12,678,652</b>	<b>\$7,786,377</b>	<b>\$11,722,273</b>	<b>\$956,379</b>
A7	44th Street/Washington Transit Center (SF)	\$2,822,429	\$2,821,531	\$1,935,153	\$2,821,531	\$0
C6	APM Utility Connections	\$22,997	\$22,997	\$22,235	\$22,997	\$0
D2	44th Street Station People Mover Foundation (LS4)	\$783,003	\$783,003	\$620,000	\$783,003	\$0
D6	People Mover - APS Duct Bank @ 40th Place	\$214,035	\$216,000	\$326,527	\$326,527	(\$110,527)
E9	10" Water Line at 42nd/Washington LS 4	\$61,269	\$61,269	\$47,020	\$61,269	\$0
F3	Archaeological/Hazardous Material Testing (CAC)	\$60,000	\$60,000	\$57,471	\$60,000	\$0
	<b>Sub Total Aviation Department</b>	<b>\$3,963,733</b>	<b>\$3,964,800</b>	<b>\$3,008,406</b>	<b>\$4,075,327</b>	<b>(\$110,527)</b>
B3	LS 1 Water/Sanitary Sewer	\$9,887,790	\$9,489,618	\$3,756,666	\$9,367,192	\$122,426
B4	LS 2 Water/Sanitary Sewer	\$6,255,348	\$5,855,781	\$3,740,146	\$5,687,960	\$167,821
B5	LS 3 Water/Sanitary Sewer	\$15,367,099	\$15,105,008	\$12,612,312	\$15,126,913	(\$21,905)
B6	LS 4 Water/Sanitary Sewer	\$5,325,583	\$6,655,474	\$6,130,040	\$6,718,296	(\$62,822)
B7	Water and Sanitary Sewer Lines - 48th St. Bridge Replacement Contract	\$415,420	\$155,767	\$142,303	\$155,767	\$0
J1	Catholic Protection for Waterlines LS1	\$1,099,400	\$739,855	\$141,148	\$739,855	\$0
J2	Catholic Protection for Waterlines LS2	\$1,094,162	\$504,657	\$384,888	\$608,835	(\$104,178)
J3	Catholic Protection for Waterlines LS3	\$29,192	\$0	\$0	\$29,192	(\$29,192)
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>\$38,941,780</b>	<b>\$26,993,123</b>	<b>\$38,869,630</b>	<b>\$72,150</b>
	<b>Total - Phoenix</b>	<b>\$86,431,070</b>	<b>\$86,865,977</b>	<b>\$52,185,706</b>	<b>\$82,643,178</b>	<b>\$4,222,799</b>

Valley Metro Rail Program Control  
 C/IEV 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	\$569,759	\$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	\$35,292	\$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	\$82,768	\$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	\$57,052	\$72,419	\$0
F9	Rubber Asphalt - Tempe	\$610,983	\$523,603	\$344,083	\$523,603	\$0
H3	Fiber Optic COT	\$427,239	\$421,934	\$73,963	\$441,978	(\$20,044)
J4	Catholic Protection of Waterline LS4 CO#15	\$158,638	\$158,638	\$115,923	\$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	\$1,174,831	\$4,919,490	\$0
L1	TLB 4th of July Electrical	\$44,378	\$44,378	\$43,577	\$44,378	\$0
N4	Tempe Market Analysis	\$20,000	\$20,000	\$21,661	\$20,000	\$0
XX	Tempe Miscellaneous Force Account Work LS5					
	<b>Sub Total Tempe</b>	<b>\$8,973,986</b>	<b>\$9,073,361</b>	<b>\$2,943,676</b>	<b>\$8,990,699</b>	<b>\$82,662</b>
A9	Main Sycamore Transit Center	\$5,532,721	\$5,519,839	\$3,620,000	\$5,554,547	(\$34,708)
H4	Fiber Optic Backbone LS-4 (Mesa portion)	\$847,325	\$847,665	\$70,503	\$847,328	\$337
N3	Mesa Market Analysis	\$18,542	\$18,542	\$15,874	\$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>\$6,391,046</b>	<b>\$3,709,115</b>	<b>\$6,425,417</b>	<b>(\$34,371)</b>
C9	ASU Logo Additions	\$86,463	\$59,039	\$30,762	\$81,280	(\$22,241)
E2	ASU Steam Line	\$0	\$8,189	\$8,189	\$8,189	\$0
H1	Fiber Optic ASU	\$959,445	\$1,203,018	\$374,428	\$1,198,300	\$4,718
	<b>Sub Total ASU</b>	<b>\$1,045,908</b>	<b>\$1,270,246</b>	<b>\$413,379</b>	<b>\$1,287,769</b>	<b>(\$17,523)</b>
E1	(AFS) 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>\$103,689,760</b>	<b>\$59,309,746</b>	<b>\$99,505,370</b>	<b>\$4,184,390</b>



### 3. Schedule Overview

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

In Line Section 1 the 24-inch sewer line and the 48-inch water line continue to be an issue affecting the contract completion. Line Sections 2 and 5 continue 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.

Station Finish Steel Erection is complete on 14 of the 27 Stations, Canopy Installation is complete for 8 stations and Electrical/Communications cabinet work has been completed for 9 stations. Signals and Communications has accessed six stations to begin their work. Work is continuing on 14 of the 27 stations.

Nearly 167,000 linear feet (31.6 miles) of track has been placed in Line Sections 1, 2, 3, 4, 5 and OMC. Over 900 of the 1400 OCS Foundations have been placed and pole setting is going well by the TES Contractor with 825 of the 1,400 OCS poles installed.

Track Installation							
Line Section	Bid Quantity		Installed		Remaining		% Complete
	LF	Miles	LF	Miles	LF	Miles	
OMC	19,261	3.65	19,261	3.65	0	0.00	100.0%
Line Section 1	23,454	4.44	10,124	1.92	13,330	2.52	43.2%
Line Section 2	30,752	5.82	10,894	2.06	19,858	3.76	35.4%
Line Section 3	44,629	8.45	37,193	7.04	7,436	1.41	83.3%
Line Section 4	56,054	10.62	55,595	10.53	459	0.09	99.2%
Line Section 5	50,818	9.62	33,761	6.39	17,057	3.23	66.4%
Total	224,968	42.61	166,828	31.60	58,140	11.01	74.2%

OCS Pole Foundations	1,400		907		493	65%
OCS Poles Installed	1400		825		575	59%
OCS Wire	271,720		62,971		208,749	23%



**Major Milestones**

**Civil:**

Line Section 1 Completion:	July, 2008
Line Section 2 Completion:	May, 2008
Line Section 3 Completion:	April, 2008
Line Section 4 Completion:	December, 2007
Line Section 5 Completion:	March, 2008
Station Finishes:	October, 2008
Park and Ride:	December, 2008

**Systems:**

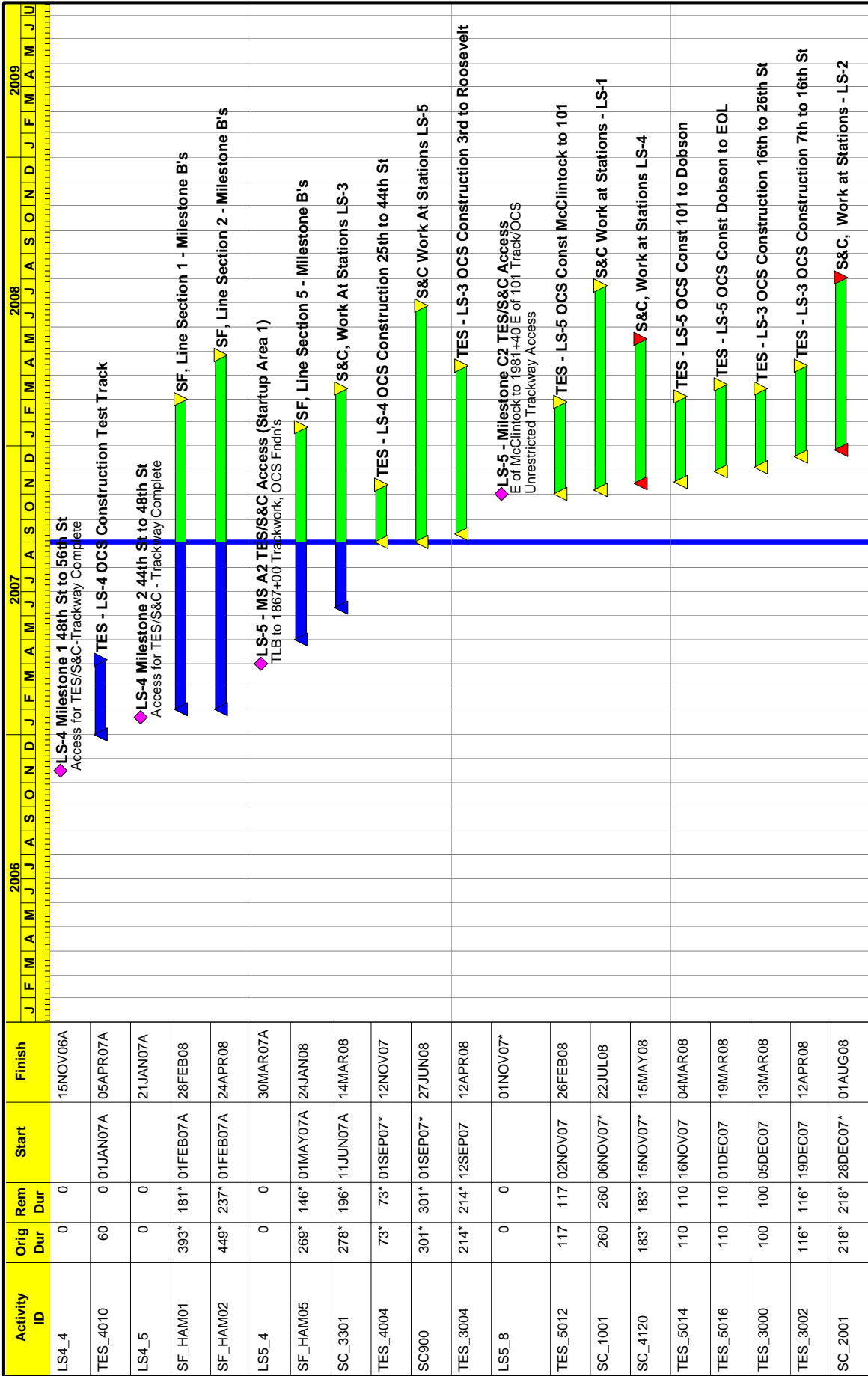
Signals and Communications:	October, 2008
Fare Collection:	November, 2008
Traction Electrification:	August, 2008

**Startup:**

Start Integrated Testing Area 1 24 <sup>th</sup> Street to the Mill Pocket Track:	March, 2008
Start Integrated Testing Area 2 (LS-3 and Balance of LS-4 and 5):	July, 2008
Start Integrated Testing Area 3 (All of LS-2 and LS-1):	August, 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.



**Valley Metro Rail**  
**Central Phoenix/East Valley LRT**

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Sheet 1 of 2

Critical Path

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Procurement Bid Status Report as of 08/30/07						
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	TBD	TBD	
LRT Systems and Facilities Maintenance - RFP	04/02/07	04/18/07	06/05/07	10/17/07	12/01/07	
Marketing & Public Relations Consultant	07/02/07	07/17/07	07/31/07	10/17/07	11/01/07	
Broker Services	TBD	TBD	TBD	TBD	TBD	
Event Planning Consultant – System Opening	08/14/07	08/22/07	09/10/07	12/19/07	01/01/08	
Government Relations Consulting Services	TBD	TBD	TBD	TBD	TBD	
<b>PART II – LONG RANGE DEVELOPMENT PROJECTS</b>						
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	07/09/07	N/A	08/06/07	09/19/07	09/21/07	
Architectural/Engineering On-Call Consultant Services - Future Extension Projects	TBD	TBD	TBD	TBD	TBD	
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 (CAC) weekly Resident Engineer meetings.
- Attended various Line Section weekly progress and coordination meetings.
- Attended Station Finishes meeting regarding Quality Control inspection/ documentation for the painted finish of structural steel.
- Conducted audit for Contractor compliance with selected sections of its Quality Control Plan for the Signals & Communications (S&C) and the Traction Electrification System (TES) contracts. Audit closed.
- Conducted audit for Contractor's compliance with selected sections of the Quality Control Plan for the Line section 4 contract. Audit closed.

##### Light Rail Vehicle

- Audits
  - Updates to the Engineering Change Notice books for the light rail vehicles (LRV)
  - Car History Books for LRV 106 to 110
- Inspections
  - Load testing LRV 101
  - Auxiliary Power Supply testing LRV 102



- GEO Focus equipment testing LRV 101 and 102
- Functional vehicle testing LRV 108 to 110
- Performed delivery inspection on LRV 103 to 106
- Witnessed water tightness testing on LRV 107 to 111
- Witnessed assembly, testing, installation, etc. of numerous LRV components

### Construction Administration Consultant Activities

#### Quality Manuals Reviewed:

- The CAC has received a resubmittal of the Automated Fare Collection Quality Manual from Scheidt & Bachmann USA, Inc. It is currently in review.

#### Quality Assurance Audits/Surveillances:

- A surveillance was performed at VAE Nortrak's facility in Birmingham Alabama for the 100m LH Crossover for 5-19/5-20.
- Two surveillances and a first article inspection were performed at Magnum Engineering in Phoenix, Arizona for the artwork for the 44 Street and Washington Station.
- CAC QA performed audits on the Traction Electrification Systems CAC Resident Engineer.

#### General:

- Attended weekly Resident Engineer meetings.
- Attended various Line Section weekly coordination meetings.
- Nonconformance Report Log (NCR), 40 items
  - Seven items were closed in August.
  - Thirty three outstanding NCR's in process.
  - Six items are projected to be closed in September.
- Quality Action Request Log (QAR), 45 items
  - Zero items were closed in August.
  - Forty five outstanding QAR's in process.
  - Nine items are projected to be closed in September.

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

- Quality Assurance activities remain within budget and on schedule.



## **Issues and Solutions**

- Mass Electric provided a third response to Quality Action Request (QAR) S2006-001, regarding their Quality Assurance Plan. Additional staff has been hired to address the concern. This action is being evaluated, and this item should be closed during September.

## 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

- On August 28<sup>th</sup>, Line Section 3 hosted a 12th Street Station Art Update at Shaw Elementary School. The purpose of this meeting was three fold: First to meet the artist, Victor Mario Zaballa; Second, to review the progress of the art planned for the 12<sup>th</sup> Street/Washington and 12<sup>th</sup> Street/Jefferson light rail stations; Third, to collect pictures from the community to use in the artwork for the tile panels, representing themes or other significant issues important to the community. Mr. Zaballa shared his general framework of the project consisting of 30 ceramic tile panels; 16 panels at Washington Street and 14 panels at Jefferson Street. The contents of the panels will be devoted to several themes celebrating the Eastlake Neighborhood. Ceramic tiles with photographic images of the community and hand-painted tiles will create a mosaic, quilt effect.

Business Assistance



- Order and delivery of Courtesy Signage Program continues in all Line Sections. Through August, **689** signs and **408** banners (**1,097** 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)	86	77	163
Line Section Two (LS2)	98	60	158
Line Section Three (LS3)	244	80	324
Line Section Four (LS4)	41	37	78
Line Section Five (LS5)	220	154	374
<b>Totals</b>	<b>689</b>	<b>408</b>	<b>1097</b>

METRO Business Outreach Program

The following is a break down of business outreach statistics as of August 30, 2007:

- METRO Max Program Participants – **274** businesses
- Construction Signage Program – **1,097** ( 689 signs and 408 banners)
- City of Tempe Asset Assistance Program – **1**
- City of Mesa/U.S. Bank Asset Assistance Program – Outreach continues
- Management Technical Assistance (MTA) Program – **306** businesses
- ASU Market Needs Assessment – **128** businesses (107 Complete / 21 In-Progress)



- SELF Seminars / Micro Loan Assistance – **22** Businesses
- SBDC One-on-One Consultation - **18** Businesses
- Prestamos – Chicanos Por La Causa – **4** 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.



### Line Section 1

- An update on METRO's CAB program and business assistance was presented at the August 14<sup>th</sup> meeting. The CAB reviewed Activity Reports from June and July. Item agenda on contractor incentive program was tabled until the September meeting. Members discussed their reasoning behind voting and Kiewit's "above and beyond" efforts. The CAB recommended a 95 percent be awarded to Kiewit. The CAB also voted to discuss coordination between the third party utility companies and METRO, and a possible recommendation to the METRO Board of Directors on accelerating the construction schedule. The next CAB meeting is scheduled for Tuesday, September 11, 2007.

### Line Section 2

- An update on METRO's CAB program and business assistance was presented at the August 21<sup>st</sup> meeting. The CAB reviewed Activity Reports from June and July. Mr. Brian Buchanan provided a construction schedule overview, and the estimated completion dates for each line section. CAB members rated Herzog Construction Company at 60 percent. The next meeting is scheduled for Tuesday, September 18, 2007.

### Line Section 3

- METRO's Community Advisory Board (CAB) for Line Section 3 held the monthly meeting on August 14, 2007. An update on the CAB program and additional business outreach efforts being instituted in the City of Phoenix (COP) was presented, including a new website for businesses located along the alignment impacted by walk-in traffic, and a post card program designed so that businesses can communicate to customers that they are open during construction. The Activity Reports for the last two months and Construction Survey Summaries were summarized for the CAB. Archer Western Contractors (AWC) staff



delivered a contractor presentation, highlighting the progress and successes achieved during the month, and displayed examples of AWC going “above and beyond” the contract specifications. Members requested a presentation describing impacts the Grand Prix Arizona will have on the construction schedule. The AWC rating for August was 80 percent. The next CAB meeting is scheduled for Tuesday, September 18, 2007.

Line Section 4

- The Line Section 4 CAB Meeting was held on August 8, 2007. Roy Alvarado, METRO Utility Manager, addressed the CAB on LS4 utility relocation activity and respond to a question/answer session. Station Finishes information was provided by Ken Smith, METRO Deputy Project Manager, as notable station work is underway on LS4. Erik Yingling, provided the CAB an update on previous month’s progress and upcoming construction activities. Mr. Yingling communicated that overall progress in LS4 is 91 percent complete (with 93 percent track work complete). Sundt, Stacy and Whitbeck Joint Venture (SSWJV) received a final rating of 100 percent. The next LS4 CAB meeting is scheduled for Monday, September 12, 2007.

Line Section 5

- The LS5 Community Advisory Board (CAB) met on August 9<sup>th</sup>. Ryan Snow, Project Engineer, reported on the construction activities of SSWJV. The LS5 contractor communicated that they have completed several project milestones: Rail tie-in at the south approach at Town Lake Bridge, McClintock Drive crossing and rail installation east of McClintock on Apache, and the first rail installed in the City of Mesa. The next meeting is scheduled for Thursday, September 13, 2007. SSWJV was rated at 100 percent.

**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 August is at **\$ 1,752,083**

Line Section	Total Amount Available	Available for Award to Date	Total Award to Date	% Award to Date
LS-1	\$241,181.00	\$144,708	\$142,297	98%
LS-2	\$317,680.00	\$222,376	\$206,492	93%
LS-3	\$865,916.00	\$692,733	\$554,186	80%
LS-4	\$567,361.00	\$510,625	\$493,604	97%
LS-5	\$507,862.00	\$355,503	\$355,503	100%



### **Schedule Status**

- Public Involvement activities remain on schedule.

### **Issues and Solutions**

- **Issue:** Line Sections 1, 2 and 3 Community Advisory Boards tabled the following items and will address concerns expressed by stakeholders in their September meetings:
  - CAB Evaluation process
  - Incentive program
  - Construction acceleration

**Solution:** METRO will continue to work with the CAB's to ensure issues and concerns are addressed.



## 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 14.84 percent, participation including change order work is at 14.98 percent and DBE's have been paid 13.84 percent of construction dollars to date.

### Procurement Activities

- There were no DBE-related procurement activities for the month of August.

### 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- Kiewit Western Contractors
  - 12.10 percent Minimum DBE Participation
  - 13.77 percent Committed at Bid
  - 13.64 percent Current DBE Participation (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 (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
  - 14.92 percent Current DBE Participation (adjusted contract amounts)
  - \$14,867,404 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 (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 (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
  - 15.05 percent Current DBE Participation (adjusted contract amounts)
  - \$9,459,868 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 (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 (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 (adjusted contract amounts)
  - \$4,512,729 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 (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 (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 (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 (adjusted contract amounts)
  - \$1,770,322.77 Total DBE Subcontracted Amount
- Tempe Town Lake Bridge - PCL Civil Constructors – Contract Closed Out
  - Final Participation 20.80 percent (adjusted contract amounts)
  - \$4,559,765.58 Total DBE Subcontracted Amount

#### Outreach Activities

- METRO has been nominated for the 2007 Government Minority Business Advocate of the Year by the United Latino Business Coalition. If selected, the award will be presented on October 4, 2007 at the ULBC Annual Awards Banquet.
- METRO is hosting the second Annual Profiles in Diversity event October 18, 2007. The purpose of the event is to highlight the DBE participation and the support provided by METRO Consultants and Contractors. The event will take place at the Operations & Maintenance Center from 5:00 to 7:00 p.m.
- The next DBE Outreach Advisory Committee meeting is scheduled for November 20, 2007.
- METRO staff has met with contractors for LS1, LS2, LS4, LS5, Station Finishes, and Traction Electrification System regarding projected DBE participation at contract completion. All contractors have demonstrated the ability to meet or exceed DBE participation requirements. In the following months, METRO staff will meet with the remaining construction contractors, and all professional services consultants, to evaluate participation levels. Additionally, focus group meetings will be held with DBEs to gather feedback regarding progress and working conditions to date.

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

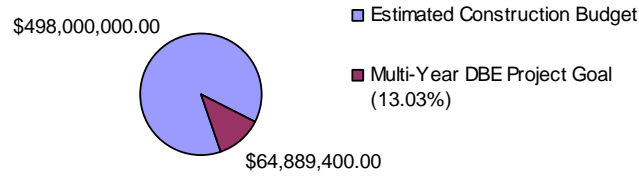
- DBE activities remain within budget and on schedule.

#### **Issues and Solutions**

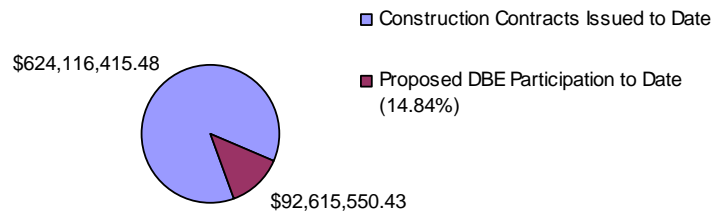
- None.



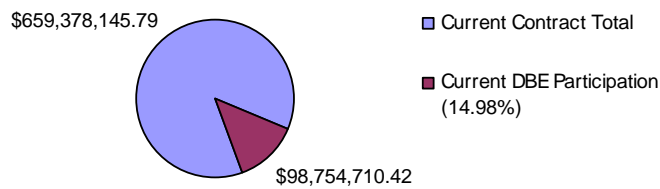
### DBE Program Overview



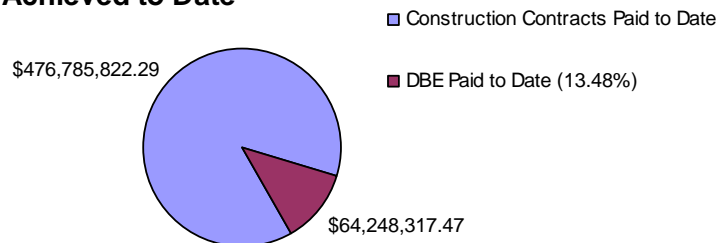
### Original Contract Amounts



### 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 19 METRO, consultant, contractor, utility company, and City of Phoenix personnel. 844 people have received this training to date.
- Finalized the METRO System Safety Program Plan (Rev 4), the System Security Program Plan (Rev 4), and the Emergency Management Plan (Rev 2) and submitted to the Arizona Department of Transportation to conform to the ADOT System Safety Program Standard, Revision 1.
- Reviewed the Arizona Department of Transportation's proposed light rail section for the Arizona Drivers License Manual and provided comments.
- Conducted the first meeting with the police officials assigned responsibility for liaison with METRO for security.
- Placed the driveway security gate in service at the Operations and Maintenance Center.
- Notified the Tempe Police and Fire Departments that the catenary wire was to be energized to Center Parkway.
- Met with the Arizona Department of Transportation to discuss safety mitigations for the low catenary wire height at Washington Street and SR 143.
- Met with US Airways Arena personnel concerning the pedestrian barrier along Jefferson Street in front of the Arena.
- 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).
- Conducted the Safety and Security Certification Review Committee meeting.



### Construction Accident Data

OSHA National Construction Incident Rate = 5.60		
METRO Construction Incident Rate	May 2007	Year to Date Average
	2.3	1.59

OSHA National Construction Lost time Rate = 2.10		
METRO Construction Lost Time Rate	May 2007	Year to Date Average
	0	0.14

### 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 Line Sections 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 in the highly sensitive areas.
- No significant resources were discovered this month.
- ACS has been providing two part time field archaeologists to conduct spot investigations and one part time supervisor.
- Work plan and cost proposal for archaeological analysis and reporting has been completed. Review and comments have been requested from the cities of Phoenix, Tempe, Mesa, the US Department of the Interior, Arizona State Historic Preservation Officer (SHPO) and Arizona State Museum. We have received comments and concurrence from US Department of the Interior, cities of Phoenix and Tempe, the Arizona State Museum, and SHPO. The City of Phoenix assisted in a detail review of the cost estimate and identified opportunities for revisions in the scope that resulted in a cost reduction of \$212,000.

#### Contaminated and Hazardous Materials

- Conducted monitoring of the excavation at Central and Camelback Station/Transit Center in compliance with SMMP.
- Provided disposal of concrete asbestos pipe in Line Sections 2 and 4.

#### Regulatory Compliance

- Conducted field observations of contractors for compliance with the Stormwater Pollution Prevention Plan. No substantial problems were identified.



### Cost and Schedule – Variance Analysis

#### Archaeology Monitoring FY' 08

Task Order 2 – Cost + Fee construction monitoring FY' 08	\$218,536
Billed as of August 31, 2007	(\$78,151)
Balance available	\$140,385
Agency reserve for data recovery through end of construction	\$100,000

#### Hazardous Materials Assessment (CAC)

Original Contract Value	\$499,488
Contract Value to date	\$499,488
Invoiced through July 27, 2007	(\$442,364)
Task orders opens	(\$50,000)
Expended + Committed	\$492,364
Estimated cost to complete	\$492,364

#### Remediation and Treatment Fund (METRO)

Budget	\$1,004,000
Expended or Committed	(\$96,855)
ERI invoiced to date (June 30, 2007)	(\$73,855)
Open Task orders	(\$23,000)
Transferred to Archaeology Monitoring-Data Recovery	(\$650,000)
<u>Funds Available</u>	<u>\$257,145</u>

### Issues and Solutions

- **Issue:** Current budget for archaeology analysis and reporting is less than required to comply with federal, state and local standards and permit conditions.

**Solution:** Scope of Work, Work Plan, Schedule and Budget for technical analyses and reporting were finalized August 28, 2007. The cost is estimated at \$2,697,093 for consultant services and \$105,000 for agency costs. Based on results of negotiations, we will submit a request for an amendment to the consultant's contract to the METRO Board in October.



## 9. Real Estate

### Description

The LRT Project travels down main business arterials in the cities of Phoenix, Tempe and Mesa and approximately 770 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 99 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. All 149 parcels are under City control and a total of 145 parcels are available for construction. Line Section 1 contains 149 parcels.
- In Line Section 2, all 29 relocations have been completed. A total of 89 parcels are under City control and are available for construction. Line Section 2 contains 92 parcels.
- In Line Section 3, all 36 relocations have been completed. All 255 parcels are under City control and are available for construction. Line Section 3 contains 255 parcels.
- In Line Section 4, all 28 relocations have been completed. All 108 parcels are under City control and are available for construction. Line Section 4 contains 108 parcels.
- In Line Section 5, all 40 relocations have been completed. All 166 parcels are under City control and are available for construction. Line Section 5 contains 166 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. The Phoenix files have been reviewed and certified by METRO and an FTA review was conducted the week of August 6, 2007. Mesa is providing relocation entitlements (moving costs) to Firestone to satisfy its citation. Tempe is conducting an appraisal of the McClintock property, as per the FTA.
- 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	\$ 19,399,119	\$ 1,753,931	\$ 21,153,050
Total	\$135,613,269	\$23,975,136	\$159,588,405
Spent To Date	\$126,784,719	\$18,205,829	\$144,990,548
Balance Available	\$ 8,828,550	\$ 5,769,307	\$ 14,597,857

### 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. In Line Section 1, there are 4 parcels that are currently unavailable for construction and in Line Section 2, there are 3 parcels that are not under City control. Work is focused on these parcels to gain the required property rights.



**CENTRAL PHOENIX/EAST VALLEY  
LIGHT RAIL TRANSIT PROJECT  
REAL ESTATE ACQUISITION SUMMARY  
August 31, 2007**

ACTIVITY	1 PHX	2 PHX	3 PHX	4 PHX	4 TEMPE	5 TEMPE	5 MESA	Totals
Full Takes	39	0	9	2	0	12	0	<b>62</b>
Partial Takes	110	92	246	105	1	109	45	<b>708</b>
<b>Total Affected Parcels</b>	<b>149</b>	<b>92</b>	<b>255</b>	<b>107</b>	<b>1</b>	<b>121</b>	<b>45</b>	<b>770</b>
Projected Relocations	183	29	36	28	0	40	0	<b>316</b>
Title Reports Completed	149	92	255	107	1	121	45	<b>770</b>
Legals sent to City	149	92	255	107	1	121	45	<b>770</b>
Appraisals Requested	149	92	255	107	1	121	45	<b>770</b>
Appraisals Completed	149	92	255	107	1	121	45	<b>770</b>
Offers Made	149	92	255	107	1	121	45	<b>770</b>
Offers Accepted	114	72	227	88	1	99	40	<b>641</b>
<b>Escrow Closed Acquisition Complete</b>	<b>110</b>	<b>70</b>	<b>232</b>	<b>93</b>	<b>1</b>	<b>116</b>	<b>40</b>	<b>662</b>
Condemnation Filed	26	12	25	11	0	29	17	<b>120</b>
OIP Received	23	9	19	9	0	4	5	<b>69</b>
ROE Signed	16	10	4	5	0	1	0	<b>36</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>255</b>	<b>107</b>	<b>1</b>	<b>121</b>	<b>45</b>	<b>767</b>
Parcels Available for Construction	145	89	255	107	1	121	45	<b>763</b>
Parcels Pending Release for Construction	4	0	0	0	0	0	0	<b>4</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.
  - SRP-Power, Qwest and Cox have started pulling cable along 19<sup>th</sup> Avenue from Colter to Missouri Avenue.
  - Kiewit continues trenching and placing conduits along 19<sup>th</sup> Avenue from Missouri Avenue to Bethany Home Road for SRP-Power, Qwest and Cox Communications.
  - SRP-Power has removed overhead 12 kV along 19<sup>th</sup> Avenue from Camelback Road to Colter leaving only street lights on power poles. Conduits being installed by Kiewit north of Colter are either damaged or not proofed, which is preventing SRP Power from pulling new cable and consequently preventing SRP from removing any of the overhead 12 kV.
- Line Section 2
  - Utility conflicts and coordination issues are being addressed on a case-by-case basis in the field.
  - SRP-Water Irrigation facilities at Central Avenue and Encanto Boulevard will be constructed by the LS2 Contractor by the end of September 2007.
- Line Section 3
  - Utility conflicts and coordination issues are being addressed on a case by case basis in the field.
- Line Section 4
  - Utility conflicts and coordination issues are being addressed on a case by case basis in the field.

- Line Section 5
  - Solutions for utility issues are now being addressed on a bi-weekly basis in the LS5 Utilities Coordination meeting.
  - SRP-Irrigation along Main Street from Dobson Road to Sycamore has commenced. The Contractor has altered scheduled work sequences to enable the SRP Water (irrigation) to complete their work expeditiously.
- Park and Rides
  - Camelback Road and 3<sup>rd</sup> Avenue: APS is waiting on a Letter of Intent so overhead to underground conversion can proceed.
- Traction Power Substations
  - SRP is still in the process of writing the remaining Legal's and Easements for Traction Power Substations Numbers 1, 2, 12 and 14.

### Cost and Schedule – Variance Analysis

- Costs incurred to-date for prior rights utilities are within the Utility Budget. We are concerned that the costs 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

- SRP-Irrigation relocation in LS5 on Main Street from Dobson Road to Sycamore is a concern in terms of schedule. METRO has requested that SRP accelerate their relocation, even if it includes providing additional resources. SRP has complied with that request. Anticipated completion in October.

### Construction Photographs



SRP-Irrigation installing new irrigation structure at Main Street and Dobson Road in LS5



SRP irrigation installing new pipe at Ironwood along Main Street Road west of Sycamore in LS5



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

	<b>Percent</b>	<b>Budget</b>	<b>Earned</b>	<b>Cost to Date</b>	<b>Forecast</b>
Line Section 1	77.8%	\$6,342,458	\$4,936,265	\$8,439,513	\$8,212,392
Line Section 2	85.2%	\$1,905,951	\$1,623,855	\$747,007	\$2,369,186
Line Section 3	98.6%	\$3,067,860	\$3,024,582	\$3,113,208	\$5,424,742
Line Section 4	97.6%	\$4,771,602	\$4,654,930	\$2,898,082	\$6,407,982
Line Section 5	82.2%	\$8,024,451	\$6,592,345	\$12,546,132	\$9,595,856
Operations and Maintenance Center	100.0%	\$320,230	\$320,230	\$441,254	\$756,801
Town Lake Bridge	100.0%	\$1,150,000	\$1,150,000	\$824,097	\$1,223,698
	<b>87.2%</b>	<b>\$25,582,552</b>	<b>\$22,302,207</b>	<b>\$29,009,293</b>	<b>\$33,990,657</b>
<b>Sub Total</b>	<b>100.0%</b>	<b>\$25,582,552</b>	<b>\$25,582,552</b>	<b>\$22,302,207</b>	<b>\$29,009,293</b>
Contingency	0.0%	\$8,417,448	\$0	\$0	\$9,343
	<b>0.0%</b>	<b>\$8,417,448</b>	<b>\$0</b>	<b>\$0</b>	<b>\$9,343</b>
	<b>65.6%</b>	<b>\$34,000,000</b>	<b>\$22,302,207</b>	<b>\$29,009,293</b>	<b>\$34,000,000</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 have been resolved. Work continues on resolving welding inspection issues.
  - Camelback/7<sup>th</sup> Avenue: Test pavers from Advanced Terrazzo were completed satisfactorily. The artist has moved on to a form cut out phase of the modified design. Advanced Terrazzo is currently working on the 1<sup>st</sup>/Jefferson station.
- Line Section 2
  - Camelback: Stone and steel fabrication is almost complete and art is in storage. We are awaiting weld certification information.



- Osborn: Bronze footprint pavers have been delivered to AWC site. Installation is scheduled for January 2008.
- Encanto: Bronze sculpture and boxes are carved and waiting to be cast. The entry way, Canterra Stone, is blocked out.
- Line Section 3
  - McDowell: Station Artist Michael Maglich passed away on August 2, 2007. METRO is devising a plan to finish this station with Michael's original ideas. METRO will review this process with the Regional Rail Art Committee before we proceed.
  - Van Buren: Fabrication is 100 percent complete. Installation is being scheduled for October, 2007.
  - Central/Washington – 1st Avenue/Jefferson: Porcelain tile is completed. Terrazzo pour is underway.
  - Third Street: Steel fabrication is continuing. Archer Western has poured foundations for all three sculptures.
  - Twelfth Street: The artist attended a community meeting on August 28, 2007 to allow stakeholders to preview his hand-painted photo tiles and his metal railing designs. He will be returning in two to three weeks to follow up with additional photography and photo submissions from stakeholders.
  - Twenty-Fourth Street: Steel panel fabrication is complete and final bronze fabrication is ongoing.
- Line Section 4
  - Forty-Fourth Street: Templates have been delivered and columns are scheduled for delivery the week of September 17th.
  - Priest/Washington: Fabrication has begun and installation issues have been resolved.
- Tempe Town Lake
  - Artwork has been completed except for the final programming of the bridge lighting. The artist came out September 6 for continued programming. He created work to coincide with the grand opening of the Tempe Center for the Arts.
- Line Section 5
  - Mill/3rd Avenue: The lighting issues have been resolved, and the art canopies are completed. Artist is scheduled to take field measurements for final fabrication.
  - College/5th Avenue: The bronze models are three-fourths completed.
  - Apache Boulevard Stations – Sculpture: Bronze models for “Hands” are approximately 40 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. No significant issues are anticipated.
  - Working with artists and GEC to resolve the ongoing 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. This is 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.

## 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

- Montebello and 19<sup>th</sup> Avenue Transit Center: Work continues intermittently south of the realigned Montebello Avenue. Roundabout North Entrance integration with Spectrum Mall was completed this month.
- Central Avenue and Camelback Transit Center: Work on underground utilities is ongoing; Mariposa Cul-De-Sac site work continues; Bus Site grading north of the Station Platform is ongoing.



- Washington and 44<sup>th</sup> Street Transit Center: Installation of colored concrete around bus shelters has been completed. Parapet framing, interior framing, interior plumbing and electrical, and window installation at Operator Facility Building (OPF3) continues.
- Sycamore and Main Street Transit Center: Site grading and curb/gutter construction is ongoing. Installation of tree grates/landscaping soil continues. Parapet framing, interior framing, interior plumbing and electrical, and window installation at Operator Facility Building (OPF4) continues.
- Stations:
  - Structural Steel installation has been completed for 14 Stations.
  - Canopy Installation has been completed for 8 Stations.
  - Electrical/Communications Cabinet Installations have been completed for 9 Stations.
  - Paver installation has been completed for 1 Station.
  - Work is ongoing at 14 Stations.
- A total of 22 station foundations have been substantially completed by Line Section Contractors and made available to the Station Finishes Contractor for Area Access.

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

- A revised schedule has been accepted 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 Station Finishes Permit approvals from the Cities of Phoenix and Mesa resulted in changes and added costs at all Transit Center sites. Two of these changes have been settled and are pending execution.

### Construction Photographs



3<sup>rd</sup>/Mill Avenue Structural Steel Installation



Central/Camelback Transit Center Sitework



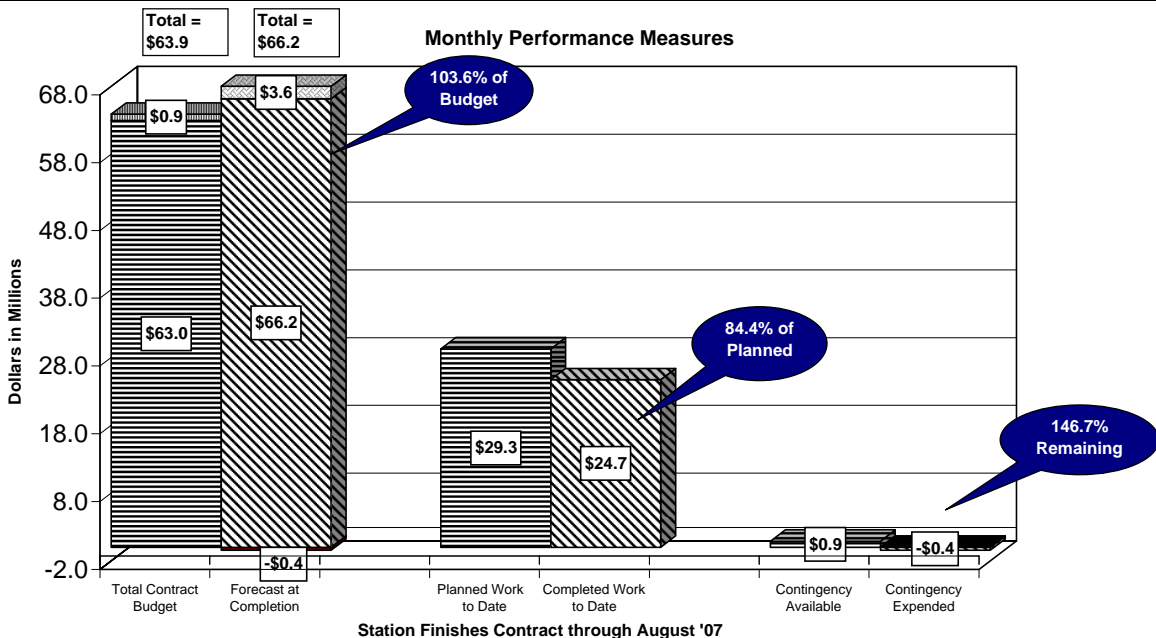
1<sup>st</sup> Avenue/Van Buren Paver Installation



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



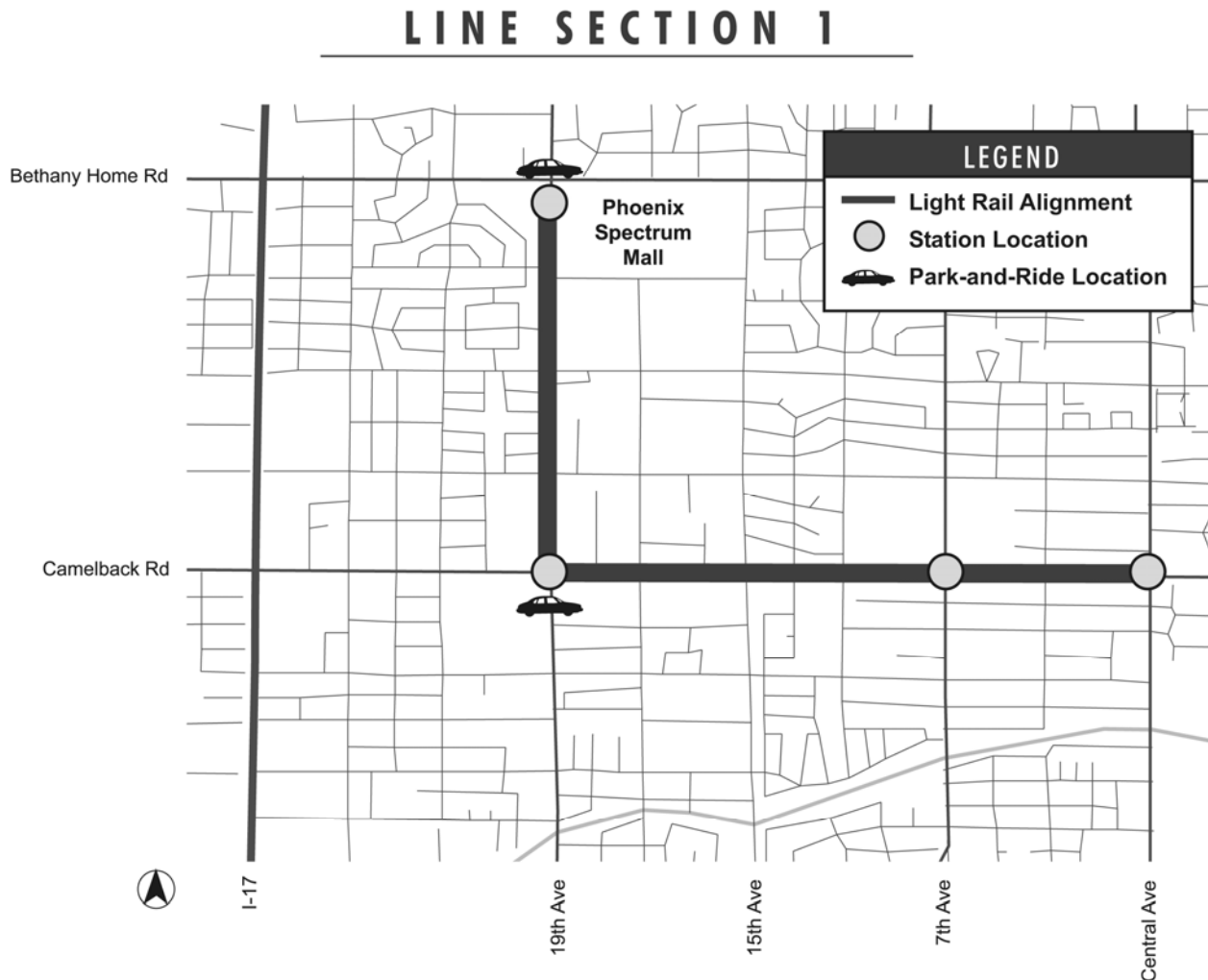
<b>Description:</b>		<b>3.2.1 Station Finishes</b>			
<b>PE/PA:</b>					
<b>Contractor:</b>		<b>Archer Western Contractors</b>			
<b>Resident Architect:</b>		<b>Doaa Aboul-Hosn</b>			
<b>Data Through:</b>		<b>July 31, 2007</b>			
		<b>Cumulative</b>	<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Original Budget		\$52,985,000	\$9,988,000	\$62,973,000
2	Executed Change Orders		-\$709,978	\$281,690	-\$428,288
3	Budget Transfers		\$0	\$0	\$0
4	Current Budget (1+2+3)		\$52,275,022	\$10,269,690	\$62,544,712
5	Work Scheduled		\$23,543,463	\$5,728,351	\$29,271,814
6	Work Earned		\$19,237,359	\$5,478,310	\$24,715,669
7	Actual Expenditures		\$19,669,264	\$5,469,887	\$25,139,151
8	Forecast to Complete Base (4-7)		\$32,605,758	\$4,799,803	\$37,405,561
9	Change Orders Pending Execution		\$252,321	\$3,369,603	\$3,621,924
10	Forecast at Completion (7+8+9)		\$52,527,343	\$13,639,293	\$66,166,636
11	Percent Budget Expended (7/4)		37.6%	53.3%	40.2%
12	Percent Planned (5/4)		45.0%	55.8%	46.8%
13	Earned Percent Complete (6/4)		36.8%	53.3%	39.5%
14	Schedule Performance (6/5)		0.82	0.96	0.84
15	Cost Performance (6/7)		0.98	N/A	0.98
16	Contingency Budget		\$546,000	\$371,603	\$917,603
17	Remaining Contingency		\$1,255,978	\$89,913	\$1,345,891
18	Percent Contingency Remaining (17/16)		230.0%	24.2%	146.7%
		<b>Period</b>			
1	Original Budget		N/A	N/A	N/A
2	Executed Change Orders		-\$178,418	\$59,861	-\$118,557
3	Budget Transfers		\$0	\$0	\$0
4	Current Budget (1+2+3)		\$52,275,022	\$10,269,690	-\$118,557
5	Work Scheduled (Cumm - Last Period)		\$1,171,246	\$550,615	\$1,721,861
6	Work Earned (Cumm - Last Period)		\$5,511,080	\$672,584	\$6,183,664
7	Actual Expenditures (Cumm - Last Period)		\$5,975,660	\$675,160	\$6,650,820
8	Forecast to Complete Base (4-7)		\$46,299,362	\$9,594,530	\$55,893,892
9	Change Orders Pending Execution		\$260,864	\$1,248,804	\$1,509,668
10	Forecast at Completion (7+8+9)		\$52,535,886	\$11,518,494	\$64,054,380
11	Percent Budget Expended (7/4)		11.4%	6.6%	10.6%
12	Percent Planned (5/4)		2.2%	5.4%	2.8%
13	Earned Percent Complete (6/4)		10.5%	6.5%	9.9%
14	Schedule Performance (6/5)		4.71	1.22	3.59
15	Cost Performance (6/7)		0.92	N/A	0.93
16	Contingency Budget				
17	Remaining Contingency				
18	Percent Contingency Remaining (17/16)				



Note: Forecast to Complete Greater than budget due to Addition of Center Parkway Station

## 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

- All underground utilities, asphalt base paving, sidewalk, and curb/gutter have been completed from Central Avenue to 11th Avenue on Camelback Road. Underground utilities, asphalt base paving, sidewalk, and curb/gutter have been complete from



7<sup>th</sup> Avenue to 19<sup>th</sup> Avenue on the south side of Camelback Road and continue from 11<sup>th</sup> Avenue toward 19<sup>th</sup> Avenue on the north side of Camelback.

- All previously existing SRP poles have been removed on Camelback Road. The Center Guideway has been completed from Central Avenue to 16<sup>th</sup> Avenue on Camelback. The 24-inch sewer line installation on 19<sup>th</sup> Avenue continues working north from the Camelback intersection and should tie into the previously installed 24-inch line at Missouri Avenue around mid-September.
- The 7<sup>th</sup> Avenue and 19<sup>th</sup> Avenue Camelback station foundations are complete and turned over to the follow on contractor. Excavation has begun for the Montebello and 19<sup>th</sup> Avenue Station.
- Traffic control continues to be coordinated between all participants on the project and has been relatively successful. Base paving has been completed from Central Avenue to 11<sup>th</sup> Avenue and both the north and south side of Camelback will be open to traffic in that area by early September.

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

- A revised schedule has been developed to reflect re-sequencing the work to support overall Program Milestones.

### **Issues and Solutions**

- Two issues have arisen that have potential impact to Contract Milestone E. They are the completion of the 24-inch sewer line and the cutover of the 48-inch waterline, both on 19<sup>th</sup> Avenue. The delay in the sewer line attributed of unstable existing material. The delay associated with the waterline is caused by the cutover availability date being changed from December 2007 to January 2008. Re-sequencing of some activities will reduce delay and these areas will be monitored closely until completion. Acceleration activities continue along both Camelback and 19<sup>th</sup> Avenues where it is productive.
- Change Order 90 was issued, revising the Contractual Milestone Dates (see chart on next page).

Milestone Number	Description	Original Contract Milestone Dates	CO #26 Revised MS Dates	CO #90 Revised MS Dates
A1	7th Ave Station	27-Nov-06	26-Jan-07	2-Apr-07
A2	Camelback Station	27-Nov-06	9-Feb-07	22-Jun-07
A3	Montebello Station	5-Jul-07	31-May-07	27-Aug-07
B	Rail Access Camelback	3-May-07	22-Aug-07	22-Aug-07
D	Rail Access 19th Ave.	5-Jul-07	10-Jan-08	10-Jan-08
E	Final Completion	1-Nov-07	26-Mar-08	25-Jul-08

**Construction Photographs**



KWC preparing the Roadway Subgrade



Crews tied rebar around the TPS boxes



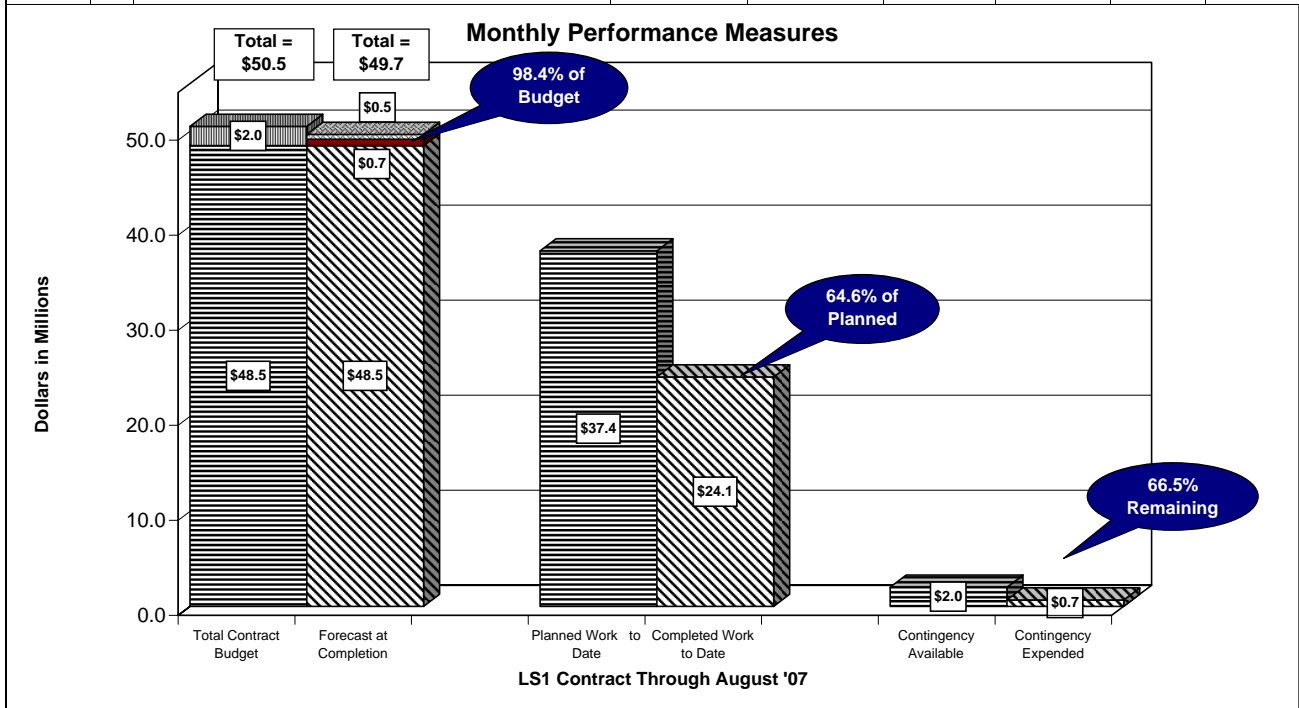
AC Paving - Crews placing AC on Camelback Road near 11th Avenue.



AC Paving - Crews placing AC in the strip area on Camelback Road near 3rd Avenue.

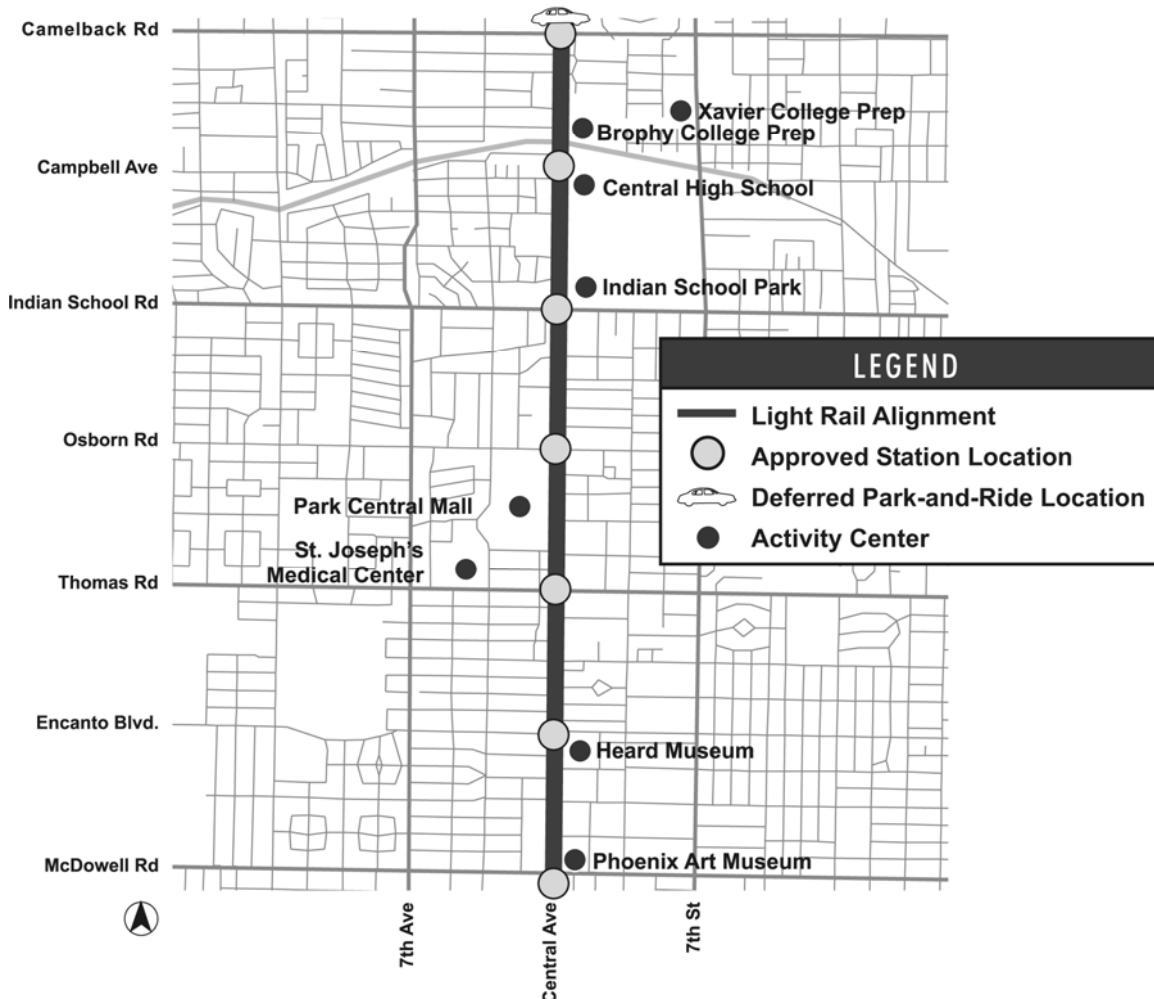


<b>Description:</b>		<b>3.1.1 Line Section 1</b>		
<b>PE/PA:</b>		<b>Alvin Livingstone</b>		
<b>Contractor:</b>		<b>Kiewit Western Co.</b>		
<b>Resident Engineer:</b>		<b>Bill Blane</b>		
<b>Data Through:</b>		<b>June 30, 2007</b>		
		<b>5309</b>	<b>CNPA</b>	<b>Total</b>
<b>Cumulative</b>				
1	Budget	\$37,951,658	\$10,533,342	\$48,485,000
2	Executed Change Orders	\$626,268	\$47,877	\$674,145
3	Budget Transfers	\$0	\$336,563	\$336,563
4	Current Budget (1+2+3)	\$38,577,926	\$10,917,782	\$49,495,708
5	Work Scheduled	\$28,731,689	\$8,669,173	\$37,400,862
6	Work Earned	\$20,179,951	\$3,964,542	\$24,144,493
7	Actual Expenditures	\$20,571,807	\$3,900,314	\$24,472,121
8	Forecast to Complete Base (4-7)	\$18,006,119	\$7,017,468	\$25,023,587
9	Change Orders Pending Execution	\$390,557	\$113,126	\$503,683
10	Forecast at Completion (7+8+9)	\$38,968,483	\$11,030,908	\$49,999,391
11	Percent Budget Expended (7/4)	53.3%	35.7%	49.4%
12	Percent Planned (5/4)	74.5%	79.4%	75.6%
13	Earned Percent Complete (6/4)	52.3%	36.3%	48.8%
14	Schedule Performance (6/5)	0.70	0.46	0.65
15	Cost Performance (6/7)	0.98	1.02	0.99
16	Contingency Budget	\$1,963,056	\$47,877	\$2,010,933
17	Remaining Contingency	\$1,336,788	\$0	\$1,336,788
18	Percent Contingency Remaining (17/16)	68.1%	0.0%	66.5%
<b>Period</b>				
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	\$253,548	\$0	\$253,548
3	Budget Transfers	\$0	\$4,699	\$4,699
4	Current Budget (1+2+3)	\$38,577,926	\$10,917,782	\$49,495,708
5	Work Scheduled (Cumm - Last Period)	\$1,192,735	\$472,446	\$1,665,181
6	Work Earned (Cumm - Last Period)	\$2,308,058	\$584,275	\$2,892,333
7	Actual Expenditures (Cumm - Last Period)	\$2,923,152	\$521,261	\$3,444,413
8	Forecast to Complete Base (4-7)	\$35,654,774	\$10,396,521	\$46,051,295
9	Change Orders Pending Execution	-\$52,415	\$103,055	\$50,640
10	Forecast at Completion (7+8+9)	\$38,525,511	\$11,020,837	\$49,546,348
11	Percent Budget Expended (7/4)	7.6%	4.8%	7.0%
12	Percent Planned (5/4)	3.1%	4.3%	3.4%
13	Earned Percent Complete (6/4)	6.0%	5.4%	5.8%
14	Schedule Performance (6/5)	1.94	1.24	1.74
15	Cost Performance (6/7)	0.00	0.00	0.00
16	Contingency Budget			
17	Remaining Contingency			
18	Percent Contingency Remaining (17/16)			



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 continued to install infrastructure from Indian School to McDowell; the installation of the last offset manhole, catch basins and sanitary sewer installations at Encanto intersection, Virginia intersection, Mitchell to Columbus and at Merrell. Herzog also completed the installation of water mains from Osborn to Thomas, and completed water shutdowns to transfer water service from old mains to the new mains. They also removed abandoned storm drain and sanitary sewers from Indian School to Farrington.
- Herzog has placed a total of 11,300-feet of guideway to date. They completed the removal and replacement of non-compliant welds and placed guideway, curbs and devil strip on Central from Camelback Station to Farrington and from Indian School to Columbus. Rail was pulled into place and continued installing rebar from Palm Lane to the south end of the Project.
- Herzog continues to work on guideway grading, duct bank installation, placement of OCS foundations and rail installation between Indian School and Farrington, and from Palm Lane to the south end of the Project.
- Herzog has completed Thomas Station and began the excavation, installation of infrastructure, OCS foundations, grounding grid and preparation for placement of forms for the Indian School Station foundation.
- Herzog continues to work on the roadway widening, clear/grub, demolition of curb/gutter, sidewalks and placement of new curb and gutter, sidewalks, walls, water services, street lights and traffic signals from Camelback south to McDowell. Herzog placed AC Base Pavement north and south lanes from Camelback to Farrington and from Palm Lane to the south end of the project. Herzog removed roadway south bound lanes from Osborn to Catalina and began preparing sub-grade for paving.
- 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 and installing landscaping in the island at Mariposa.

## 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 Sanitary Sewer



AC Paving North Bound at Central High



Placing Guideway Curb



Placement of Tree Well Sandstone pavers



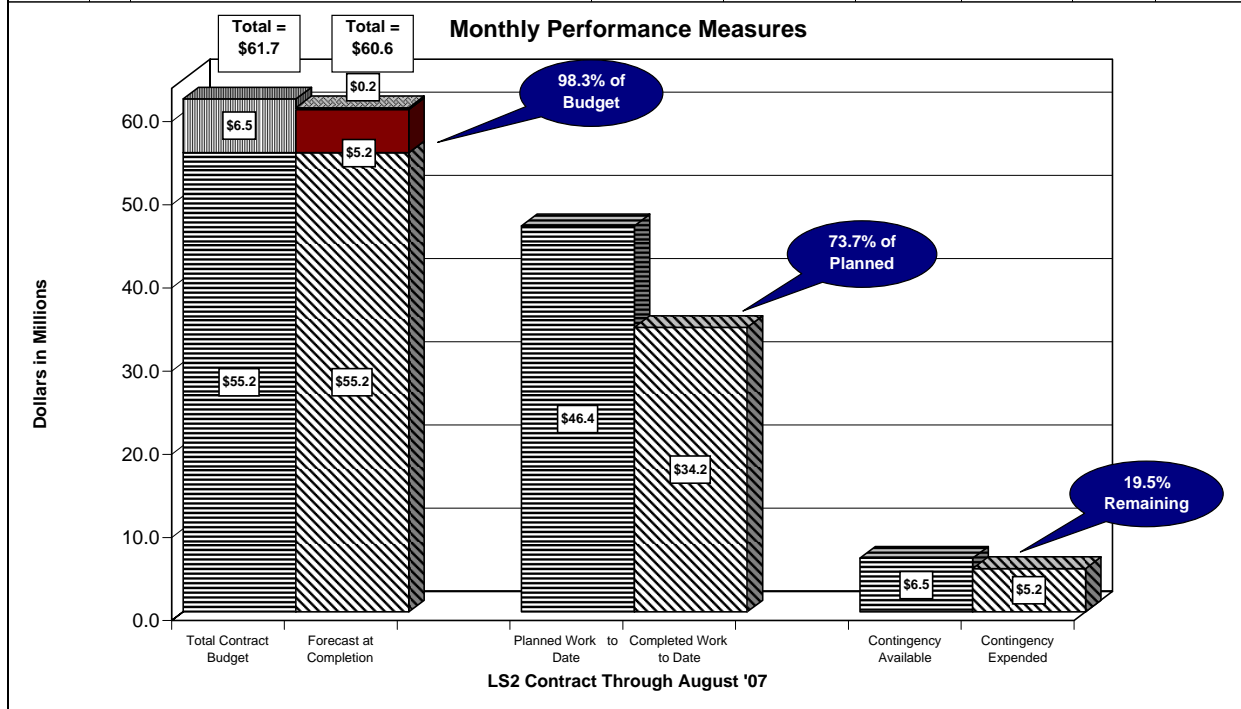
Sub-grade preparation for AC Paving



AC Paving Central Avenue Turney to Farrington

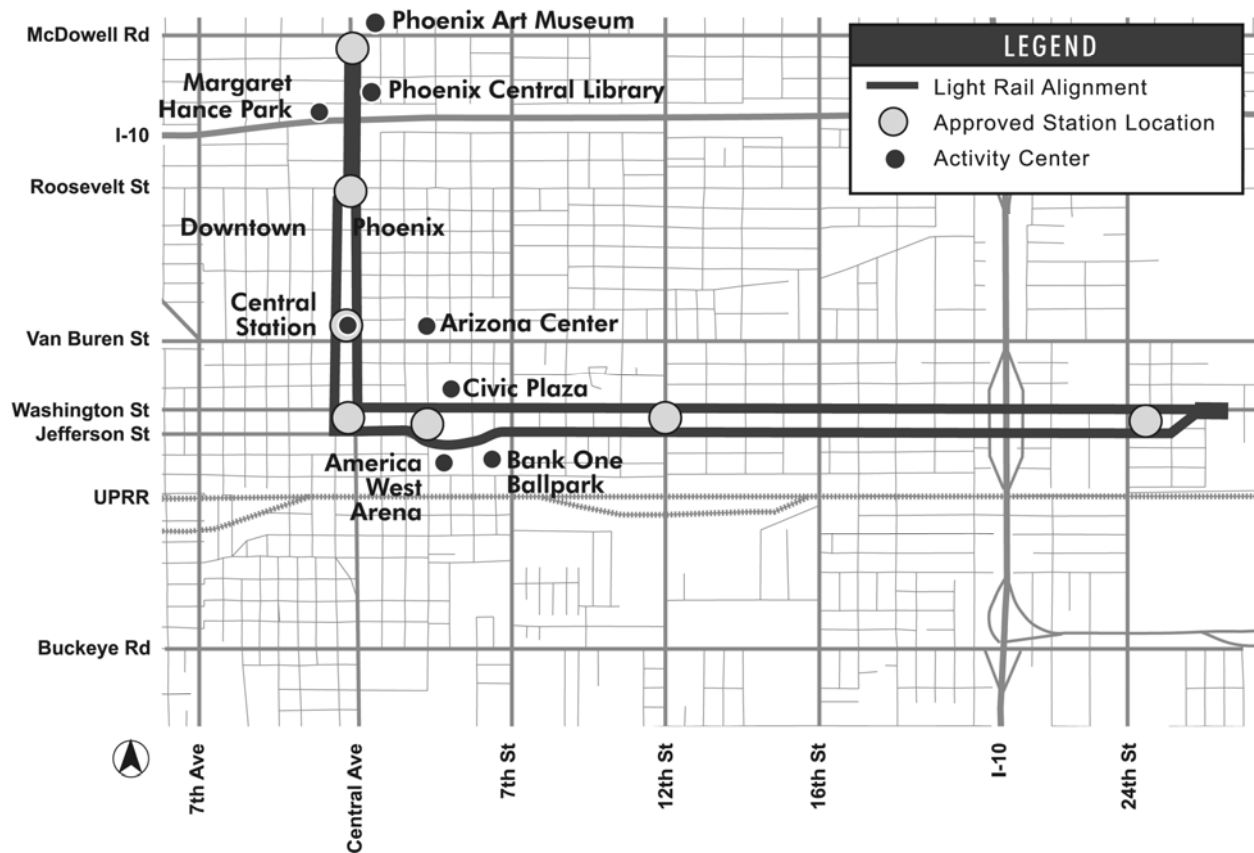


<b>Description:</b>		3.1.2 Line Section 2		
<b>PE/PA:</b>		Alvin Livingstone		
<b>Contractor:</b>		Herzog Contracting Corporation		
<b>Resident Engineer:</b>		Marty Spong		
<b>Data Through:</b>		June 30, 2007		
<b>Cumulative</b>				
		5309	CNPA/Other	Total
1	Budget	\$48,425,124	\$6,762,248	\$55,187,372
2	Executed Change Orders	\$5,069,441	\$65,668	\$5,135,109
3	Budget Transfers		\$66,105	\$66,105
4	Current Budget (1+2+3)	\$53,494,565	\$6,894,021	\$60,388,586
5	Work Scheduled	\$39,633,179	\$6,776,332	\$46,409,511
6	Work Earned	\$29,941,390	\$4,254,110	\$34,195,500
7	Actual Expenditures	\$29,936,052	\$4,308,513	\$34,244,565
8	Forecast to Complete Base (4-7)	\$23,558,513	\$2,585,508	\$26,144,021
9	Change Orders Pending Execution	\$28,892	\$183,521	\$212,413
10	Forecast at Completion (7+8+9)	\$53,523,457	\$7,077,542	\$60,600,999
11	Percent Budget Expended (7/4)	56.0%	62.5%	56.7%
12	Percent Planned (5/4)	74.1%	98.3%	76.9%
13	Earned Percent Complete (6/4)	56.0%	61.7%	56.6%
14	Schedule Performance (6/5)	0.76	0.63	0.74
15	Cost Performance (6/7)	1.00	0.99	1.00
16	Contingency Budget	\$6,450,401	\$13,293	\$6,463,694
17	Remaining Contingency	\$1,380,960	\$13,293	\$1,262,480
18	Percent Contingency Remaining (17/16)	21.4%	100.0%	19.5%
<b>Period</b>				
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	\$334,478	\$0	\$334,478
3	Budget Transfers	\$0	\$133,929	\$133,929
4	Current Budget (1+2+3)	\$53,494,565	\$6,894,021	\$60,388,586
5	Work Scheduled (Cumm - Last Period)	\$163,087	\$414,960	\$578,047
6	Work Earned (Cumm - Last Period)	\$1,913,236	\$84,896	\$1,998,132
7	Actual Expenditures (Cumm - Last Period)	\$1,908,377	\$229,108	\$2,137,485
8	Forecast to Complete Base (4-7)	\$1,586,188	\$6,664,913	\$58,251,101
9	Change Orders Pending Execution	-\$255,908	\$117,962	-\$137,946
10	Forecast at Completion (7+8+9)	\$53,238,657	\$7,011,983	\$60,250,640
11	Percent Budget Expended (7/4)	3.6%	3.3%	3.5%
12	Percent Planned (5/4)	0.3%	6.0%	1.0%
13	Earned Percent Complete (6/4)	3.6%	1.2%	3.3%
14	Schedule Performance (6/5)	11.73	N/A	3.46
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 12 and 15 installing storm sewer, sanitary sewer and water service. AWC is continuing to install traffic features and wiring on traffic signals in segments 11 through 15. Additionally, AWC is proceeding with OCS foundations, flatwork and irrigation work as required along ROW and stations.
- AWC is continuing working their day and night crews five ten hour shifts a week, The Copper square area sidewalk restoration is nearing completion with paving operations following. AWC placed rubberized final pavement on Jefferson from 1<sup>st</sup> Avenue to 7<sup>th</sup> Street with temporary pavement markings and is preparing Washington from 9<sup>th</sup> Street to Central Avenue and Central Avenue to Van Buren for final rubberized paving by the end of next month.
- The McDowell station foundation is scheduled for completion in October 2007. Eleven of the twelve station foundations have been substantially completed and the Station Finishes contractor continues to work on the majority of them.
- AWC has completed the Washington portion of the guideway except for the 11<sup>th</sup> Street loop work. There are currently two rail headings in progress on Jefferson and the Jefferson guideway is scheduled to complete by the end of next month except for the 11<sup>th</sup> Street loop area. AWC is also preparing ROW for the rail heading on Central from Deck Park Bridge to the connection point at Line Section 2. AWC has installed approximately 37,000 linear feet of guideway throughout the alignment. The 11<sup>th</sup> Street loop modification work is standing by to start if the City of Phoenix's (COP) council approves the work in September.
- 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. This work is scheduled for a September completion.
- AWC is placing roadway paving and sidewalk throughout the alignment.

### Cost and Schedule – Variance Analysis

- AWC and METRO continue negotiations concerning the master schedule milestone revision change order and request for equitable adjustment. The current progress schedule indicates the contractor has completed 70 percent of the work.

### Issues and Solutions

- Bi-weekly meetings with the system integration contractor are being held to address any design conflicts and coordination issues. Meetings are being held at the field office to better effect contractor communication with the LS3 contractor and TES/S&C contractor.

### Construction Photographs



Asphalt paving Placement at 7th Street/Washington



Subgrade preparations on 1st Avenue



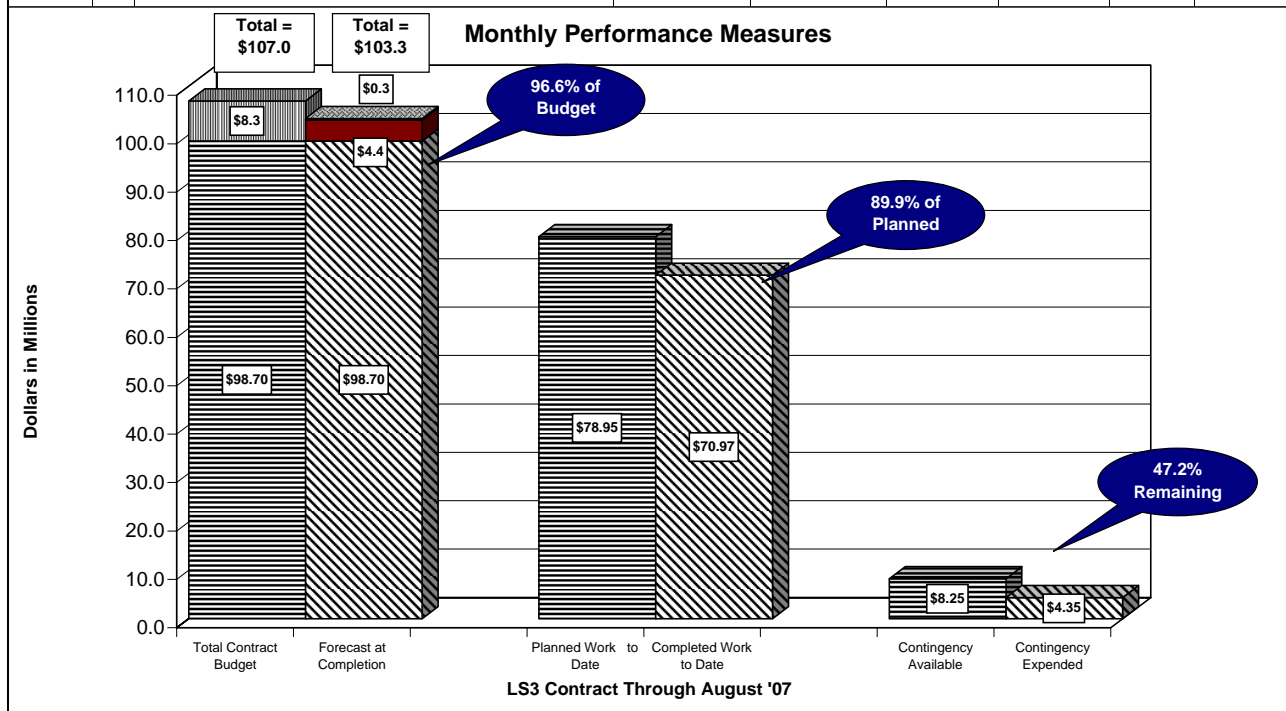
Curb placement for realigned ROW on Central Avenue



Sidewalk installation on 1st Avenue

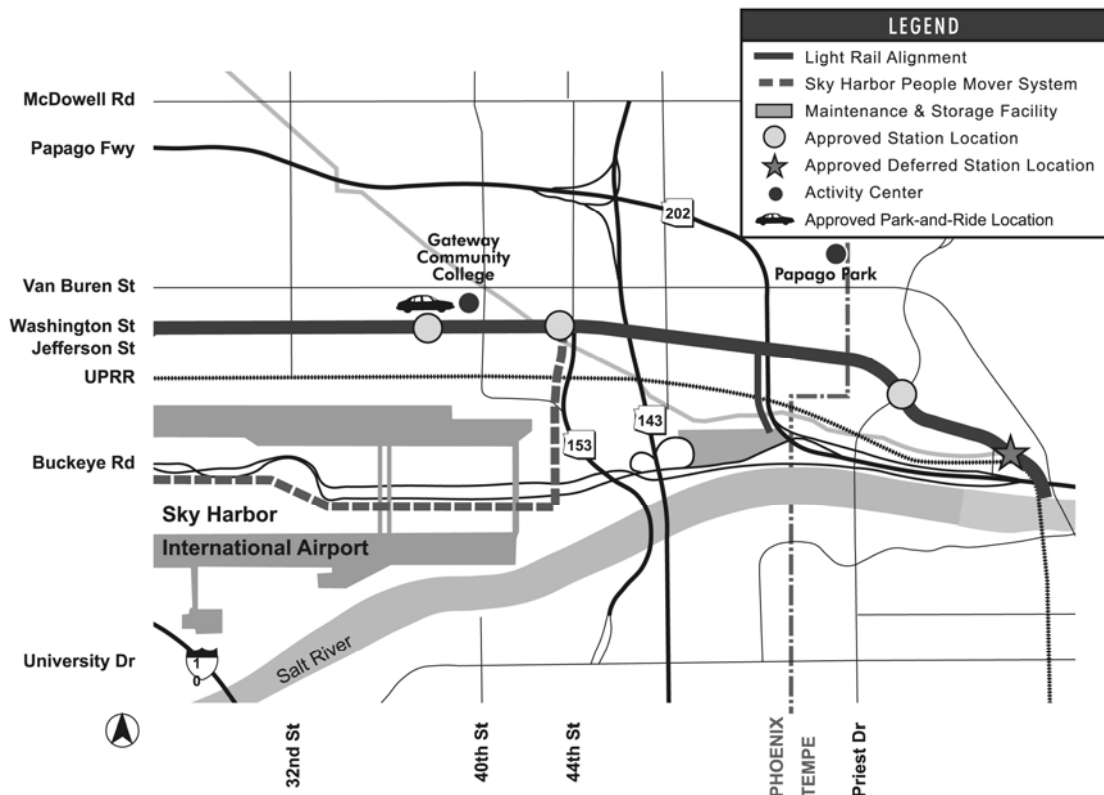


<b>Description:</b>		<b>3.1.3 Line Section 3</b>		
<b>PE/PA:</b>		<b>William Gustafson</b>		
<b>Contractor:</b>		<b>Archer Western</b>		
<b>Resident Engineer:</b>		<b>William Atesis</b>		
<b>Data Through:</b>		<b>July 27, 2007</b>		
<b>Cumulative</b>		<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Budget	\$79,248,617	\$19,452,352	\$98,700,969
2	Executed Change Orders	\$2,654,095	\$389,065	\$3,043,160
3	Budget Transfers	\$0	\$1,310,422	\$1,310,422
4	Current Budget (1+2+3)	\$81,902,712	\$21,151,839	\$103,054,551
5	Work Scheduled	\$62,261,288	\$16,687,916	\$78,949,204
6	Work Earned	\$56,727,475	\$14,240,066	\$70,967,541
7	Actual Expenditures	\$56,963,327	\$14,290,532	\$71,253,859
8	Forecast to Complete Base (4-7)	\$24,939,385	\$6,861,307	\$31,800,692
9	Change Orders Pending Execution	\$205,793	\$89,117	\$294,910
10	Forecast at Completion (7+8+9)	\$82,108,505	\$21,240,956	\$103,349,461
11	Percent Budget Expended (7/4)	69.5%	67.6%	69.1%
12	Percent Planned (5/4)	76.0%	78.9%	76.6%
13	Earned Percent Complete (6/4)	69.3%	67.3%	68.9%
14	Schedule Performance (6/5)	0.91	0.85	0.90
15	Cost Performance (6/7)	1.00	1.00	1.00
16	Contingency Budget	\$7,848,232	\$402,730	\$8,250,962
17	Remaining Contingency	\$5,194,137	\$377,445	\$3,897,380
18	Percent Contingency Remaining (17/16)	66.2%	93.7%	47.2%
<b>Period</b>				
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	\$255,865	\$0	\$255,865
3	Budget Transfers	\$0	\$134,155	\$134,155
4	Current Budget (1+2+3)	\$81,902,712	\$21,151,839	\$103,054,551
5	Work Scheduled (Cumm - Last Period)	\$1,381,575	\$1,478,421	\$2,859,996
6	Work Earned (Cumm - Last Period)	\$2,916,621	\$368,166	\$3,284,787
7	Actual Expenditures (Cumm - Last Period)	\$2,672,827	\$374,461	\$3,047,288
8	Forecast to Complete Base (4-7)	\$79,229,885	\$20,777,378	\$100,007,263
9	Change Orders Pending Execution	-\$105,084	-\$89,791	-\$194,875
10	Forecast at Completion (7+8+9)	\$81,797,628	\$21,062,048	\$102,859,676
11	Percent Budget Expended (7/4)	3.3%	1.8%	3.0%
12	Percent Planned (5/4)	1.7%	7.0%	2.8%
13	Earned Percent Complete (6/4)	3.6%	1.7%	3.2%
14	Schedule Performance (6/5)	2.11	0.25	1.15
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	\$6,142,367	\$1,096,917	\$7,239,284
18	Percent Contingency Remaining (17/16)	96.0%	89.1%	94.9%



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: The installation of the track expansion joints and anchors is now complete.
- Town Lake Bridge to 44<sup>th</sup> Street: Installation of power conduits to the two remaining irrigation controllers is nearing completion. Work on the last few punch list items for the City of Phoenix (COP) and the City of Tempe (COT) traffic signals is nearing completion.
- Forty-Fourth Street to 40th Street: The guideway curbs were constructed on the Washington Street Bridge over the Grand Canal. The last section of the left guideway



slab and devil strip, both east of the Bridge, were completed. The installation of the irrigation system is in progress. Removal and replacement of the PCCP on SR153 has begun.

- Fortieth Street to 38<sup>th</sup> Street: Curb/gutter prepunchlist work and installation of the irrigation system has begun. The construction of the devil strip and slot paving adjacent to the guideway curbs was completed.
- Thirty-Eighth Street to 36<sup>th</sup> Street: Final punchlist work, inspection and hand-over of the 38<sup>th</sup> Street Station were completed. Construction of the devil strip has started and is progressing well. The installation of the modified OSC foundations is now complete.
- Thirty-Sixth Street to 34<sup>th</sup> Street: Placement of the concrete devil strip is substantially complete. The installation of the modified OSC foundations was completed.
- Thirty-Fourth Street to 30<sup>th</sup> Street: Street widening along the north side of Washington Street between 32<sup>nd</sup> Street and 32<sup>nd</sup> Place as well as at 30<sup>th</sup> is now complete. Curb/gutter and driveways were completed on the south side of Washington Street between 32<sup>nd</sup> Street and Parcel 4041. The curb/gutter and driveways were completed along the southeast and northwest corners of 32<sup>nd</sup> Street. Preparation for the devil strip construction has begun from 34<sup>th</sup> to 33<sup>rd</sup> Streets. Work is underway for the remaining two modified OSC foundations.
- Thirtieth Street to 26<sup>th</sup> Street: Pre-punchlist work on curb/gutter, driveway, and sidewalks along the north and south side of Washington Street between 28<sup>th</sup> and 26<sup>th</sup> Streets has commenced. Guideway construction between 30<sup>th</sup> and 28<sup>th</sup> Streets is nearing completion with approximately 1000 feet remaining. The guideway slab across the 30<sup>th</sup> Street intersection was completed and opened to traffic. Demolition for street widening was completed on the south side of Washington Street between 30<sup>th</sup> and 29<sup>th</sup> Streets. The installation of the crossovers 4-1/4-2 track work is substantially complete. The construction of the bathtub for the crossovers 4-3/4-4 is complete.

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

- The successful, on time, completion of Line Section 4 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 was completed per schedule on June 15, 2007.
- Overall project completion: Milestone F is anticipated to be on schedule with completion anticipated December 29, 2007.

### **Issues and Solutions**

- None.

**Construction Photographs**



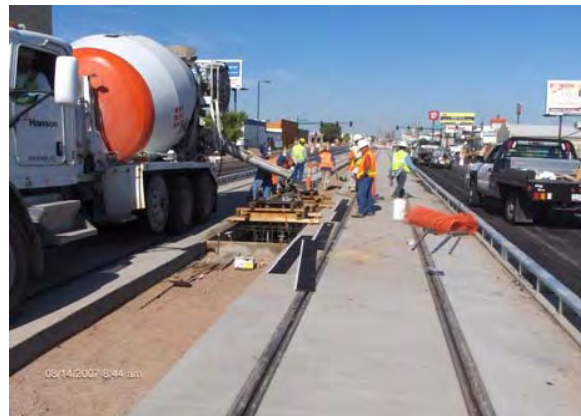
Crossovers 4-1/4-2 Track Work at 27<sup>th</sup> Street



Completed Work West of Center Parkway



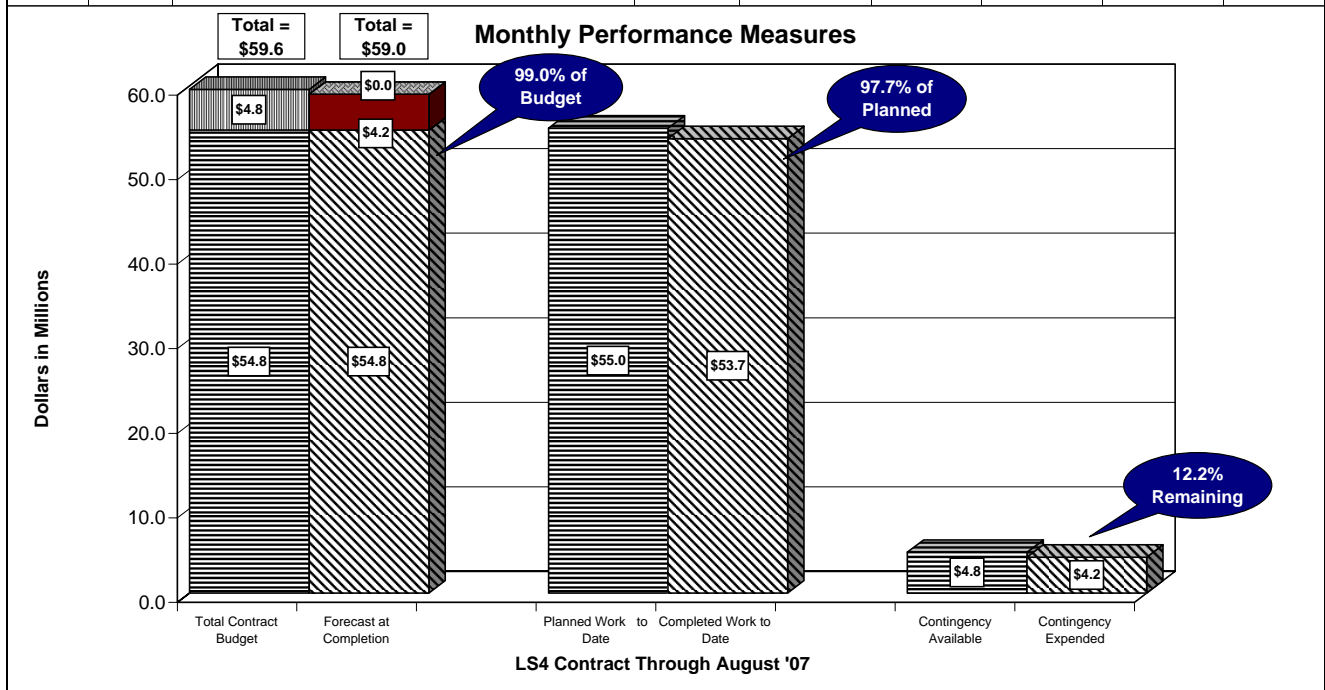
Track Expansion Joint on the South End of  
Tempe Town Lake Bridge



Modified OCS foundation Construction at  
34<sup>th</sup> Street

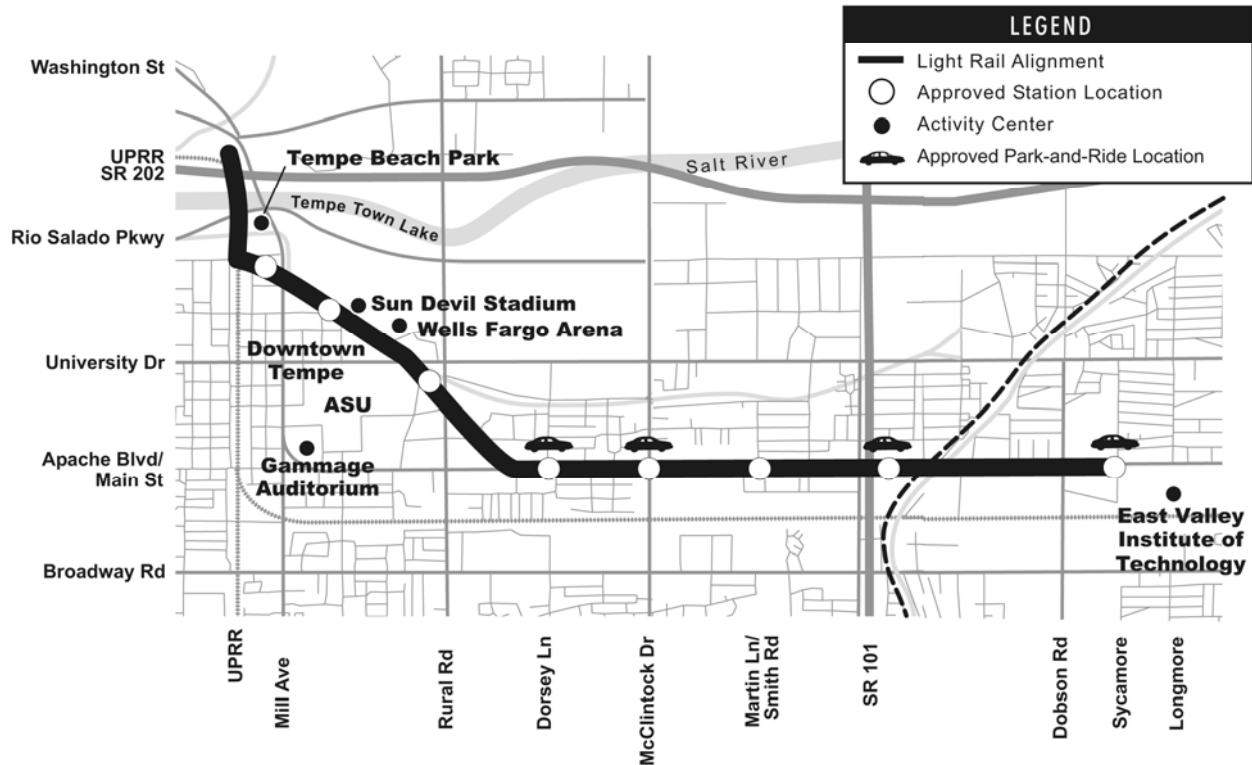


<b>Description:</b>		3.1.4 Line Section 4		
<b>PE/PA:</b>		Avrum Loewenstein		
<b>Contractor:</b>		Sundt/Stacey Witbeck		
<b>Resident Engineer:</b>		Frank Aber		
<b>Data Through:</b>		July 31, 2007		
<b>Cumulative</b>		<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Budget	\$47,869,894	\$6,880,853	\$54,750,747
2	Executed Change Orders	\$4,242,800	\$1,245,500	\$5,488,300
3	Budget Transfers	-\$625,000	\$2,285,095	\$1,660,095
4	Current Budget (1+2+3)	\$52,112,694	\$10,411,448	\$61,899,142
5	Work Scheduled	\$46,497,315	\$8,504,428	\$55,001,743
6	Work Earned	\$45,033,952	\$8,711,803	\$53,745,755
7	Actual Expenditures	\$46,606,376	\$8,827,713	\$55,434,089
8	Forecast to Complete Base (4-7)	\$5,506,318	\$1,583,735	\$7,090,053
9	Change Orders Pending Execution	\$146,413	\$49,886	\$196,299
10	Forecast at Completion (7+8+9)	\$52,259,107	\$10,461,334	\$62,720,441
11	Percent Budget Expended (7/4)	89.4%	84.8%	89.6%
12	Percent Planned (5/4)	89.2%	81.7%	88.9%
13	Earned Percent Complete (6/4)	86.4%	83.7%	86.8%
14	Schedule Performance (6/5)	0.97	1.02	0.98
15	Cost Performance (6/7)	0.97	0.99	0.97
16	Contingency Budget	\$4,662,188	\$172,633	\$4,834,821
17	Remaining Contingency	\$419,388	\$172,633	\$592,021
18	Percent Contingency Remaining (17/16)	9.0%	100.0%	12.2%
<b>Period</b>				
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	\$192,117	\$7,164	\$199,281
3	Budget Transfers	\$0	-\$4,203	-\$4,203
4	Current Budget (1+2+3)	\$52,112,694	\$10,411,448	\$62,524,142
5	Work Scheduled (Cumm - Last Period)	\$1,101,878	\$54,770	\$1,156,648
6	Work Earned (Cumm - Last Period)	\$1,845,903	\$90,644	\$1,936,547
7	Actual Expenditures (Cumm - Last Period)	\$2,024,239	\$325,668	\$2,349,907
8	Forecast to Complete Base (4-7)	\$5,506,318	\$1,583,735	\$7,090,053
9	Change Orders Pending Execution	\$215,250	\$42,722	-\$172,528
10	Forecast at Completion (7+8+9)	\$7,315,307	\$1,952,125	\$9,267,432
11	Percent Budget Expended (7/4)	3.9%	3.1%	3.8%
12	Percent Planned (5/4)	2.1%	0.5%	1.9%
13	Earned Percent Complete (6/4)	3.5%	0.9%	3.1%
14	Schedule Performance (6/5)	1.68	1.65	1.67
15	Cost Performance (6/7)	0.91	0.28	0.82
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 33,765 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 since achieving substantial completion.



- The Contractor has substantially completed Milestone B2, and the platform at Dorsey Station.
- The Contractor has placed embedded track to the east side of River Road, is forming special track for the River Road crossover, and has placed track skeleton to southbound Price Road.
- The Contractor has almost completed placement of the McClintock Station foundation, is progressing with the Smith-Martin station foundation, and has begun placing the grounding grid for the Price Road Station.
- The Contractor has completed the sides and approaches of the Apache over 101 Loop Bridge.
- The Contractor has milled out the center of the roadway to the end of line point in Mesa, and is preparing guideway subgrade, installing OCS foundations, and placing guideway ductbank throughout the remainder of the guideway to the end of the line.
- The Contractor continued street widening from the Tempe Canal Bridge to Sycamore, except in those remaining areas in which SRP-Water is relocating an irrigation line (from the west side of Dobson, across Main Street, to the southwest corner of Sycamore and Main Street).
- 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**

- Milestones A2 and B2 are substantially complete, as are four station platforms. Milestones C2 through F2 have been challenged by utility relocation delays, but are currently anticipated to be completed on schedule. The Contractor's acceleration proposal to offset these delays has been negotiated and accepted by the Agency; the change order to execute the acceleration is in staffing.

### **Issues and Solutions**

- The Contractor has faced significant challenges with existing utilities along the alignment eastward from McClintock Drive, but has now reached a point in which almost all utilities have been placed or relocated.
- 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, but are almost complete. The final SRP-Water irrigation relocation has begun, but still delays the Dobson Road crossing and completion of roadway work in Mesa. The Contractor has provided extensive support to resolve potential conflicts that could delay SRP operations. The Contractor is adjusting scheduled work sequences to enable SRP to complete its relocation work expeditiously.
- Pavement elevations along Apache Boulevard, west of Price Road, and along Main Street east of Dobson Road, have been found higher than expected from the Contract drawings. This may be partially due to having to adjust control point elevations in these

areas at the beginning of the project. Placing rail at the designed elevations in the intersections in these areas will result in significant replacement of adjacent pavement. Top of curb elevation adjustments for the guideway curbs has alleviated most of the issues between intersections. A redesign to raise the rail elevations across the Price Road intersections and the Loop 101 Bridge, and across Dobson Road to the end of the line, has been initiated to reduce pavement replacements in the affected intersections.

- Maintenance of traffic flow throughout the project area continues to be a challenge, especially in coordinating guideway security in completed areas where follow-on contractors are working. Close coordination with local cities and ADOT is still required for closures and for shifting traffic patterns and has, thus far, resulted in workable production schemes.
- Public support for the project remains reasonably good. The Contractor has continued positive efforts to assure stakeholder support through advance notices and rapid resolution of stakeholder concerns. Though the monthly Community Advisory Board meeting was placed on recess by the Agency during July, a 100 percent rating was still received for that quarter at the August meeting. The METRO public involvement personnel assigned to the Project continue to provide excellent and critical support in conflict avoidance and resolution.

### Construction Photographs



Full Depth Pavement Replacement at Dorsey Road



East Ramp Wall Placement at McClintock Station



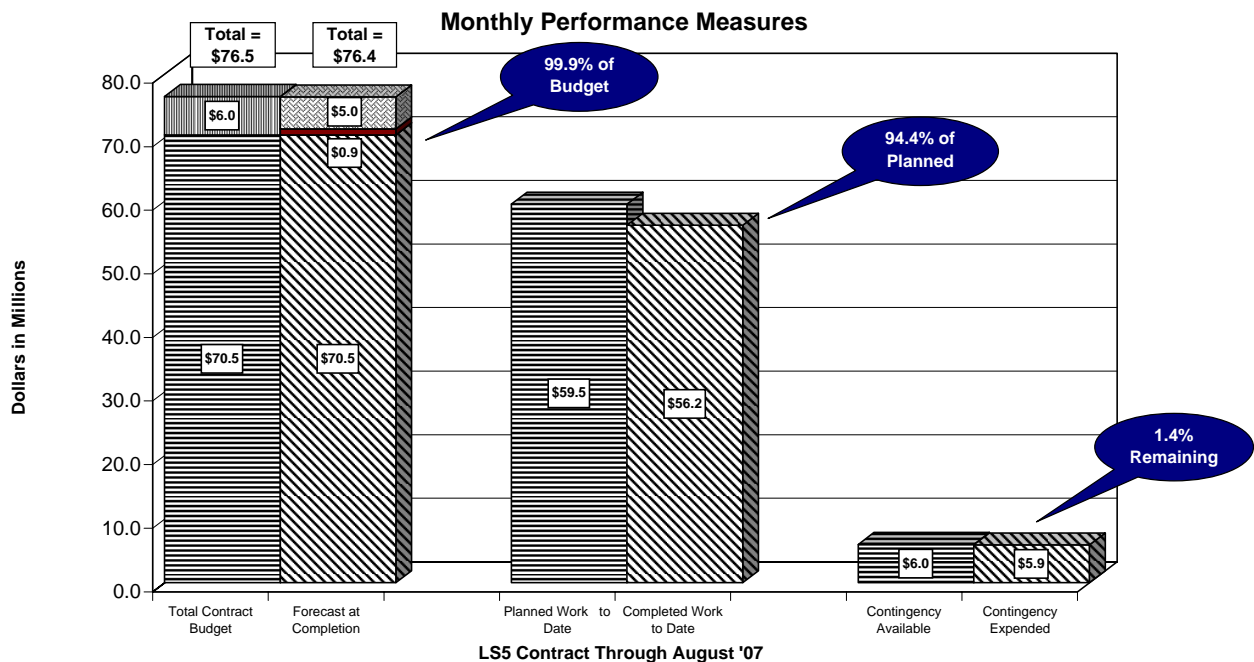
Foundation and Track at Smith-Martin Station



Roadway Work in Mesa



<b>Description:</b>		<b>3.1.5 Line Section 5</b>		
<b>PE/PA:</b>		<b>Brian Buchanan</b>		
<b>Contractor:</b>		<b>Sundt/Stacey Witbeck</b>		
<b>Resident Engineer:</b>		<b>Sam Graham</b>		
<b>Data Through:</b>		<b>July 15, 2007</b>		
		<b>5309</b>	<b>CNPA</b>	<b>Total</b>
<b>Cumulative</b>				
1	Budget	\$68,882,969	\$1,573,317	\$70,456,286
2	Executed Change Orders	\$934,337	\$240,242	\$1,174,579
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$69,817,306	\$1,813,559	\$71,630,865
5	Work Scheduled	\$57,890,454	\$1,649,531	\$59,539,985
6	Work Earned	\$55,235,343	\$989,659	\$56,225,002
7	Actual Expenditures	\$55,299,436	\$758,611	\$56,058,047
8	Forecast to Complete Base (4-7)	\$14,517,870	\$1,054,948	\$15,572,818
9	Change Orders Pending Execution	\$5,006,831	\$16,535	\$5,023,366
10	Forecast at Completion (7+8+9)	\$74,824,137	\$1,830,094	\$76,654,231
11	Percent Budget Expended (7/4)	79.2%	41.8%	78.3%
12	Percent Planned (5/4)	82.9%	91.0%	83.1%
13	Earned Percent Complete (6/4)	79.1%	54.6%	78.5%
14	Schedule Performance (6/5) (SPI)	0.95	0.00	0.94
15	Cost Performance (6/7) (CPI)	1.00	0.00	1.00
16	Contingency Budget	\$5,908,135	\$117,164	\$6,025,299
17	Remaining Contingency	-\$33,033	\$117,164	\$84,131
18	Percent Contingency Remaining (17/16)	-0.6%	100.0%	1.4%
<b>Period</b>				
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	\$184,475	\$18,413	\$202,888
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$69,817,306	\$1,813,559	\$71,630,865
5	Work Scheduled (Cumm - Last Period)	\$2,804,595	\$17,884	\$2,822,479
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)	\$69,817,306	\$1,813,559	\$71,630,865
9	Change Orders Pending Execution	\$4,656,972	\$0	\$4,656,972
10	Forecast at Completion (7+8+9)	\$74,474,278	\$1,813,559	\$76,287,837
11	Percent Budget Expended (7/4)	0.0%	0.0%	0.0%
12	Percent Planned (5/4)	4.0%	1.0%	3.9%
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)	0.00	0.00	0.00
16	Contingency Budget			
17	Remaining Contingency			
18	Percent Contingency Remaining (17/16)			



Note: No update submitted during the reporting period

## 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 remaining work was completed and accepted by METRO and the City of Phoenix in May 2007.

### Cost and Schedule – Variance Analysis

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

### Issues and Solutions

- None.

## 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 as of March 2007.

### Cost and Schedule – Variance Analysis

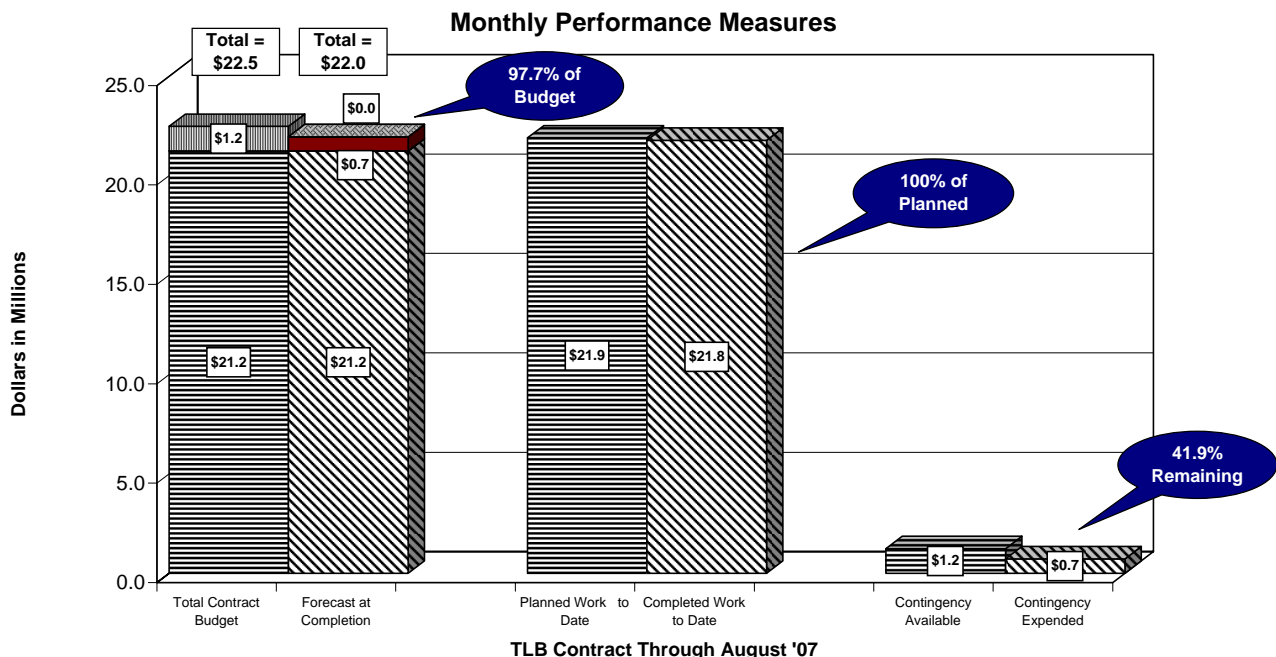
- This Contract has been closed.

### 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: Contract complete

## 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

- Installation of the spray paint gun interlock system is almost complete.
- The Contractor has completed the work on the remaining completion list items.

### Cost and Schedule – Variance Analysis

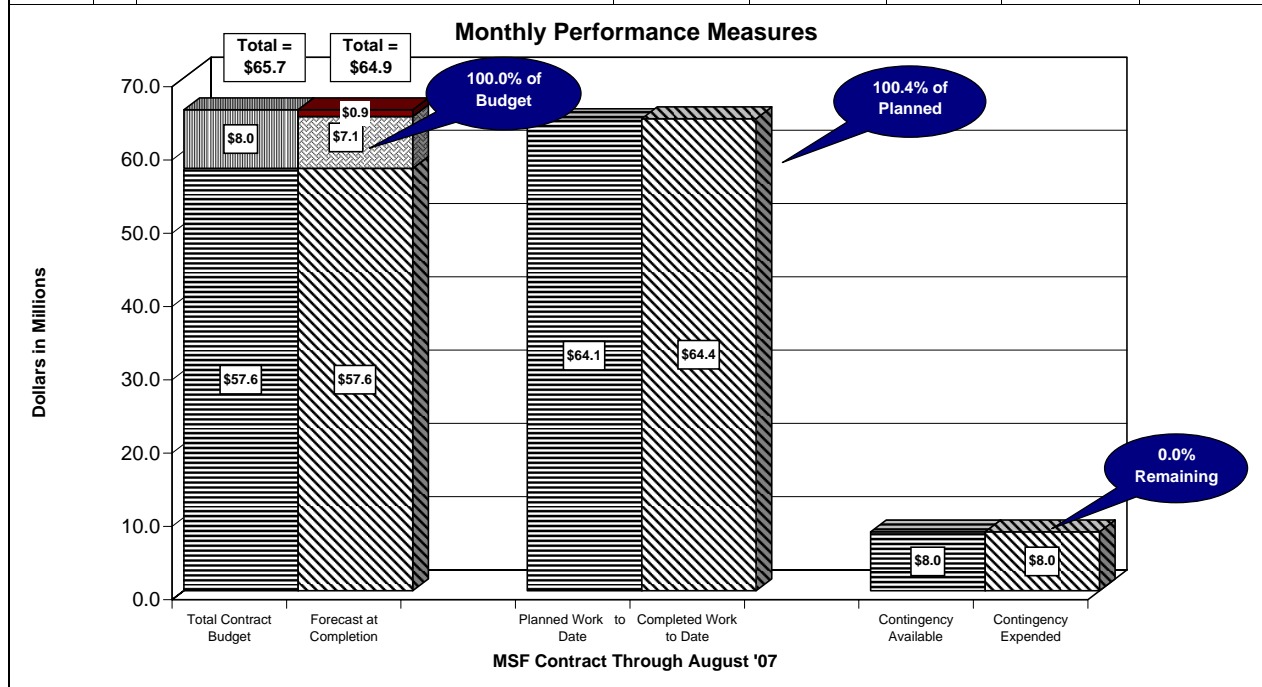
- The contract closeout and final acceptance activities are in progress.

### Issues and Solutions

- None.



<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	\$64,149,604	\$64,149,604
6	Work Earned	\$64,406,243	\$64,406,243
7	Actual Expenditures	\$64,874,767	\$64,874,767
8	Forecast to Complete Base (4-7)	-\$400,124	-\$400,124
9	Change Orders Pending Execution	\$925,357	\$925,357
10	Forecast at Completion (7+8+9)	\$65,400,000	\$65,400,000
11	Percent Budget Expended (7/4)	100.6%	100.6%
12	Percent Planned (5/4)	99.5%	99.5%
13	Earned Percent Complete (6/4)	99.9%	99.9%
14	Schedule Performance (6/5)	1.00	1.00
15	Cost Performance (6/7)	0.99	0.99
16	Contingency Budget	\$8,020,263	\$8,020,263
17	Remaining Contingency	\$0	\$0
18	Percent Contingency Remaining (17/16)	0.0%	0.0%
		<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)	\$64,149,604	\$64,149,604
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)	\$64,149,604	\$64,149,604
9	Change Orders Pending Execution	\$0	\$0
10	Forecast at Completion (7+8+9)	\$64,149,604	\$64,149,604
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; adjustments ongoing for final close-out

## Park-and-Ride



## Description

Surface Park-and-Rides (PNR) are proposed at eight sites along the alignment, 3,513 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

- METRO Procurement continues to analyze an appropriate way to initiate the Park and Ride construction contracts.
- The Developer for the McClintock/Apache site has processed his Construction and Security plans thru METRO. METRO's comments have been accepted by the Developer. Permits for construction of Phase 1 (the garage) are expected soon. The precast concrete fabrication of the structural components of the garage is complete and



the units are stored for installation following the site preparation and foundation construction. The Line Section 5 project office has been relocated.

### Cost and Schedule – Variance Analysis

- The budget for all sites is \$15,104,339 with a contingency of \$1,208,300.
- A revised Engineers Estimate, June 2007, indicates a base cost (without soft costs) of \$25,000,000. A transfer of the McClintock/Apache cost to the private Developer would reduce the construction estimate for the six remaining sites to approximately \$22,300,000.

### 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.
- Issue notices to proceed for each site of no later than March 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	January 1, 2008	*
2	19 <sup>th</sup> Ave./Camelback	410	January 1, 2008	*
3	Central/Camelback	135	February 1, 2008	*
4	38 <sup>th</sup> St./Washington	189	TBD	
5	Dorsey/Apache (2-Sites)	190	TBD	By City of Tempe
6	McClintock/Apache--Garage	300	September 2007	By Developer
7	Price Freeway/Apache	693	March 3, 2008	*
8	Sycamore/Main	802	TBD	
	<b>Opening Day Total</b>	<b>3,513</b>		

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

## 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 MSF and direct fixation fasteners for the MSF, 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 MSF, 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.

- Three material deliveries were made during this month. The Contractor delivered two 100-Meter Crossovers for LS5 and a shipment of replacement tongues for the pocket track on LS5.

### 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 two 100-Meter Crossovers to the Contractor's Storage Yard at LS5



Issuance of two 100-Meter Crossovers to the LS4 Contractor



Delivery of two 100-Meter Crossovers to the Contractor's Storage Yard at LS5



Issuance of Direct Fixation Rail for Northern Termination Point

## 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 activities have been completed.
- A table showing the status of costs incurred to-date versus budget follows:

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

Description	Contract/Budget Amount	Total Payments
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
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**

- No issues at this time.

**Construction Photographs**



Mast Arms being issued to the LS3 Contractor



Traffic Controller Cabinet being issued to the LS5 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 MSF 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 complete. Planning for on-site testing and training is underway.

### Cost and Schedule – Variance Analysis

- Wheel profiling machine activities are now behind schedule, but still within budget.

### 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 - Reviewed all outstanding Preliminary Design Review re-submittals from the Contractor. Awaiting formal closeout of PDR submittals.



- Milestone 4 Progress - Final Design Submittals review completed. Performed Final Design Review Meeting during the week of August 6, 2007 at Contractor's Engineering Headquarters. Awaiting formal closeout of FDR submittals.
- Milestone 5 Progress - Planning First Article Configuration Inspection in October of 2007.

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

- Received first Monthly Progress Update. This submittal was reviewed with a status of non-compliant with the previous month's review comments and with the contract specifications. Contractor is working with METRO to correct the deficiencies.

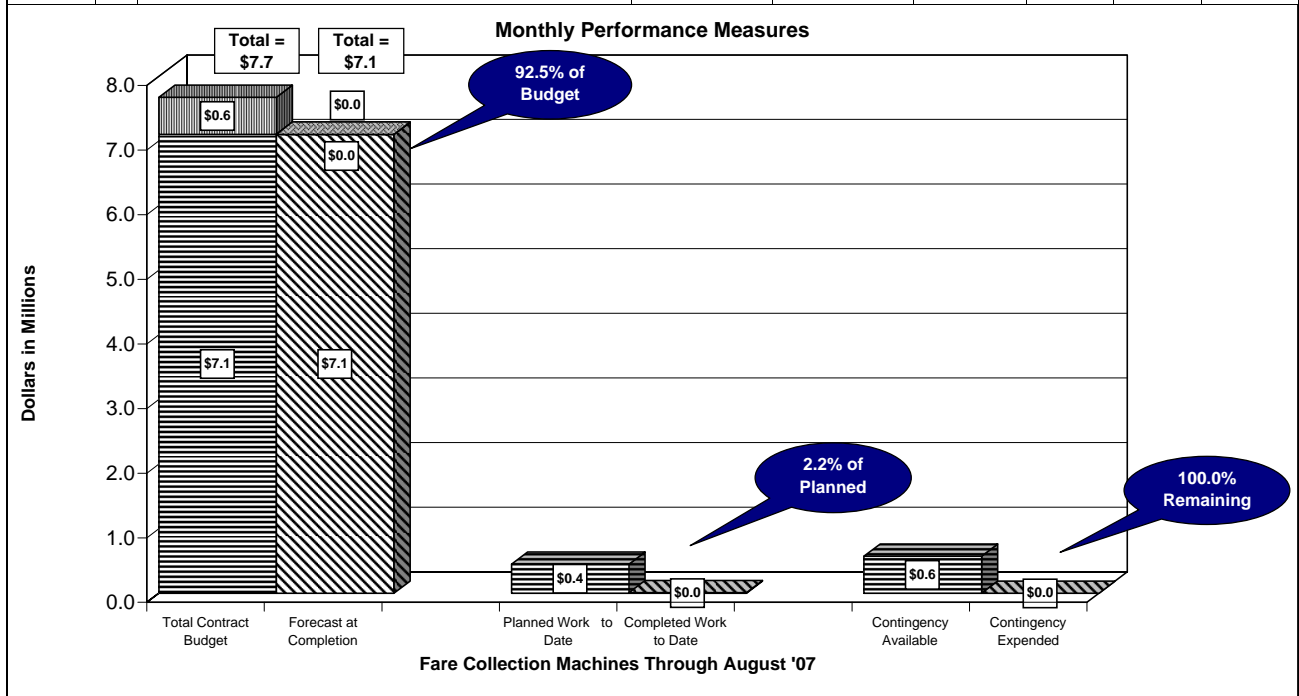
### **Issues and Solutions**

- Ticket Vending Machine Servicing Envelope. Continuing to await Contractor's concurrence of the revised layouts.
- Smart Card Regional Policy. Opportunity exists to implement a regional smart card policy under this contract. However, as completion of the Final Design is at a critical point in the AFC Contract schedule, a Regional Agency decision needs to be made if we should implement a regional smart card policy. The AFC Contract does not include software support past the Revenue Service Acceptance Test. Implementation at a later date could be costly as extensive software changes would be required.

Currently, no Regional Plan exists for the roll out of smart cards. SBI has indicated that if no decision is taken by middle of September 2007, they will continue moving forward with the current smart card selection screens and fare tables proposed by SBI, to avoid impacts to their schedule.



<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>		July 31, 2007
<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	\$448,456
6	Work Earned	\$9,720
7	Actual Expenditures	\$12,911
8	Forecast to Complete Base (4-7)	\$7,087,101
9	Change Orders Pending Execution	\$1,600
10	Forecast at Completion (7+8+9)	\$7,101,612
11	Percent Budget Expended (7/4)	0.2%
12	Percent Planned (5/4)	6.3%
13	Earned Percent Complete (6/4)	0.1%
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)	\$1,591
6	Work Earned (Cumm - Last Period)	\$9,720
7	Actual Expenditures (Cumm - Last Period)	\$1,833
8	Forecast to Complete Base (4-7)	\$7,098,179
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)	0.1%
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 24 with KI on June 20th and 21st. The next review is scheduled for September 2007. The main topics for presentation by KI and discussion were: special tools; spare parts; operator training course; application; closing open items; vehicle delivery schedule and GE and GEO Focus Interface.



- Changes for an Overhead Catenary System (OCS) Surveillance Camera Installation on two cars and an Automatic Passenger Counting System (APC) for the fleet have been processed.
- The following describes ongoing METRO resident inspection, quality assurance, manufacturing monitoring, and site surveillance activities at the Kinkisharyo 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 139 and 148. 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:
  - A total of 15 LRVs are in varying stages of final assembly at the OMC.
  - Cars 101 thru 143 were shipped from Osaka for final assembly. Truck frames and components were also shipped from Osaka to Phoenix for final assembly. As noted below, final assembly of LRVs is being impacted by material shortages (gearboxes, APS). This has led to space constraints at the OMC for carbody storage. KI has located a parcel for storing carbodies (LRV 131 and above) in Tempe. KI will be responsible for security at the site as well as for costs associated with secondary handling of carbodies.
  - 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.

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

- Car delivery remains on schedule, sufficient to meet the needs of the overall program. Contract remains within budget.

### **Issues and Solutions**

- KI's propulsion supplier, Elin, is continuing its investigation of gear box noise at their US manufacturing plant and here at the OMC. METRO is waiting for engineering reports.
- KI has experienced parts shortages which has caused impacts on the short term delivery schedule of LRVs. The problems involve the supply of greabox and APS units. METRO

representatives held a series of meetings with both suppliers in August to evaluate the impacts to the schedule as well as to determine contingency production plans. KI will be presenting a revised delivery schedule by the end of September. While this will impact the delivery of LRVs of the short term, both METRO and KI remain confident that the final LRV (150) will be delivered and accepted by October, 2008.

- METRO continues to wait for cost information from Geofocus related to the on-board radio and vehicle monitoring systems.

### Construction Photographs



Vehicle Assembly



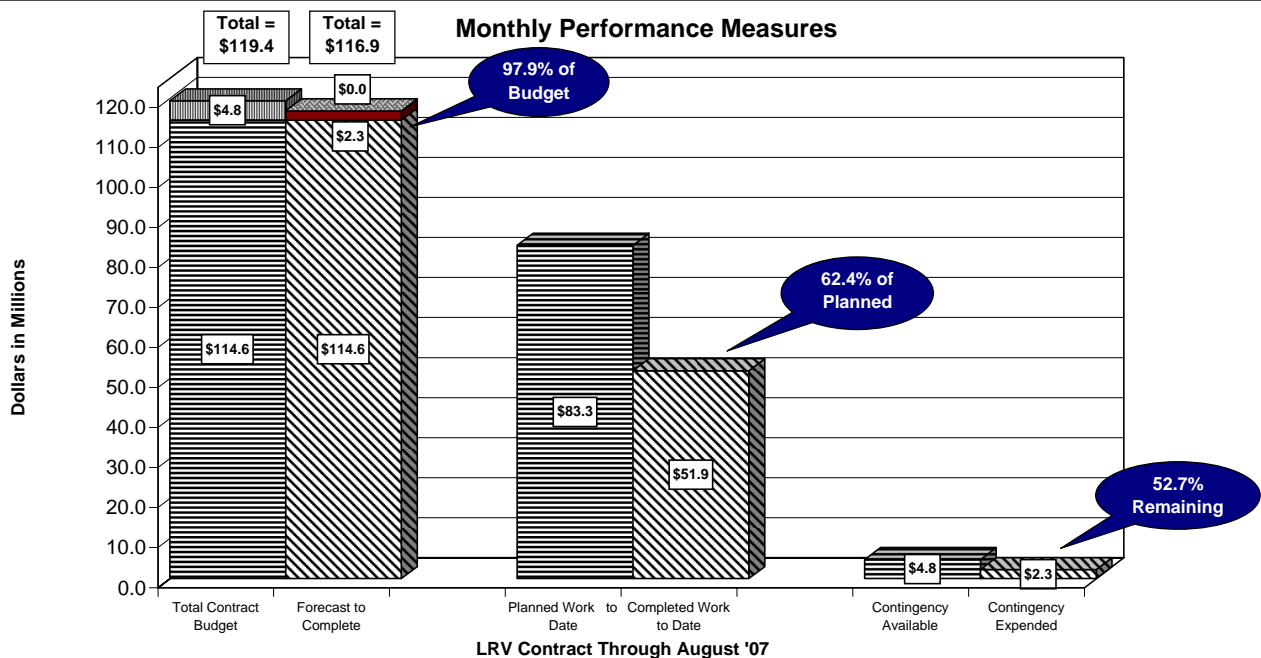
Truck Assembly



Vehicle Sections Waiting for Assembly



<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>June 30, 2007</b>		
<b>Cumulative</b>				
		<b>5309</b>	<b>COP Funded</b>	<b>Total</b>
1	Original Budget	\$114,619,780	\$40,050,160	\$154,669,940
2	Executed Change Orders	\$2,255,676	\$0	\$2,255,676
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$116,875,456	\$40,050,160	\$156,925,616
5	Work Scheduled	\$83,273,038	N/A	\$83,273,038
6	Work Earned	\$51,928,932	N/A	\$51,928,932
7	Actual Expenditures	\$56,187,556	N/A	\$56,187,556
8	Forecast to Complete Base (4-7)	\$60,687,900	N/A	\$60,687,900
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)	48.1%	N/A	N/A
12	Percent Planned (5/4)	71.2%	N/A	N/A
13	Earned Percent Complete (6/4)	44.4%	N/A	N/A
14	Schedule Performance (6/5)	0.62	N/A	N/A
15	Cost Performance (6/7)	0.92	N/A	N/A
16	Contingency Budget	\$4,768,489	\$2,135,840	\$6,904,329
17	Remaining Contingency	\$2,512,813	\$2,135,840	\$4,648,653
18	Percent Contingency Remaining (17/16)	52.7%	N/A	N/A
<b>Period</b>				
1	Original Budget	\$114,619,780	\$40,050,160	\$154,669,940
2	Executed Change Orders	\$0	\$0	\$0
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)	\$6,493,326	N/A	\$6,493,326
6	Work Earned (Cumm - Last Period)	\$0	N/A	\$0
7	Actual Expenditures (Cumm - Last Period)	\$3,887,769	N/A	\$3,887,769
8	Forecast to Complete Base (4-7)	\$112,987,687	N/A	\$112,987,687
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)	3.3%	N/A	N/A
12	Percent Planned (5/4)	71.2%	N/A	N/A
13	Earned Percent Complete (6/4)	71.2%	N/A	N/A
14	Schedule Performance (6/5)	1.00	N/A	N/A
15	Cost Performance (6/7)	0.92	N/A	N/A
16	Contingency Budget	\$4,768,489	\$2,135,840	\$6,904,329
17	Remaining Contingency	\$2,512,813	\$2,135,840	\$4,648,653
18	Percent Contingency Remaining (17/16)	52.7%	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 (MSF), 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
  - Installing signal cables at University, Washington, and Mission Palms Signal Cases.
  - Terminating signal rack equipment at Signal Building Numbers 1, 2, and 6.



- Communications System
  - Installing communication device and wiring activities at 24th Street/Jefferson and 24th Street/Washington station platforms. Rack equipment installation awaiting availability of power.
  - Fiber Installation - Approved use of alternate City-Use microfiber. Awaiting delivery of City-Use microfiber.
- OCC Build Out
  - Currently performing punchlist activities for final inspection.
  - Received revised security requirements at OCC Building.
- Coordinating with other Contracts
  - UPRR/1st Crossing Maintenance. MEC to provide maintenance and testing of the crossing.
  - Station Finishes. Station Finishes Contractor and Signals and Communications Contractor continuing to perform joint pre-access inspection and walkthrough at available stations.
  - Facilities Contractor Access Dates. Coordinating relevant milestone and access dates with facilities contracts in support of a revised Milestone and Access Date Change Order.

### **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 six signal buildings and two shared substations, architectural work at the OCC, track bonding at MSF Yard, LS4 Yard Entrance and some mainline track areas, signaling equipment installation at the MSF Yard Entrance and at some intersections in Tempe, Signal Case installation and Communications Device installation at several LRT Passenger Stations.

### **Issues and Solutions**

- Fiber and Microduct Installation. MEC procurement for blowing demonstration of microduct fiber has been postponed due to material procurement issues. Since alternate use of City-Use microfiber has been approved, this issue is now closed.

**Construction Photographs**



Signal Room Number 1  
Installing Wall Mounted Signal Equipment



University Signal Case  
Preparing to Pull Cables at Signal Case



Washington Signal Case  
Pulling Cables to Signal Case



Washington Signal Case  
Terminating Cables at Signal Case



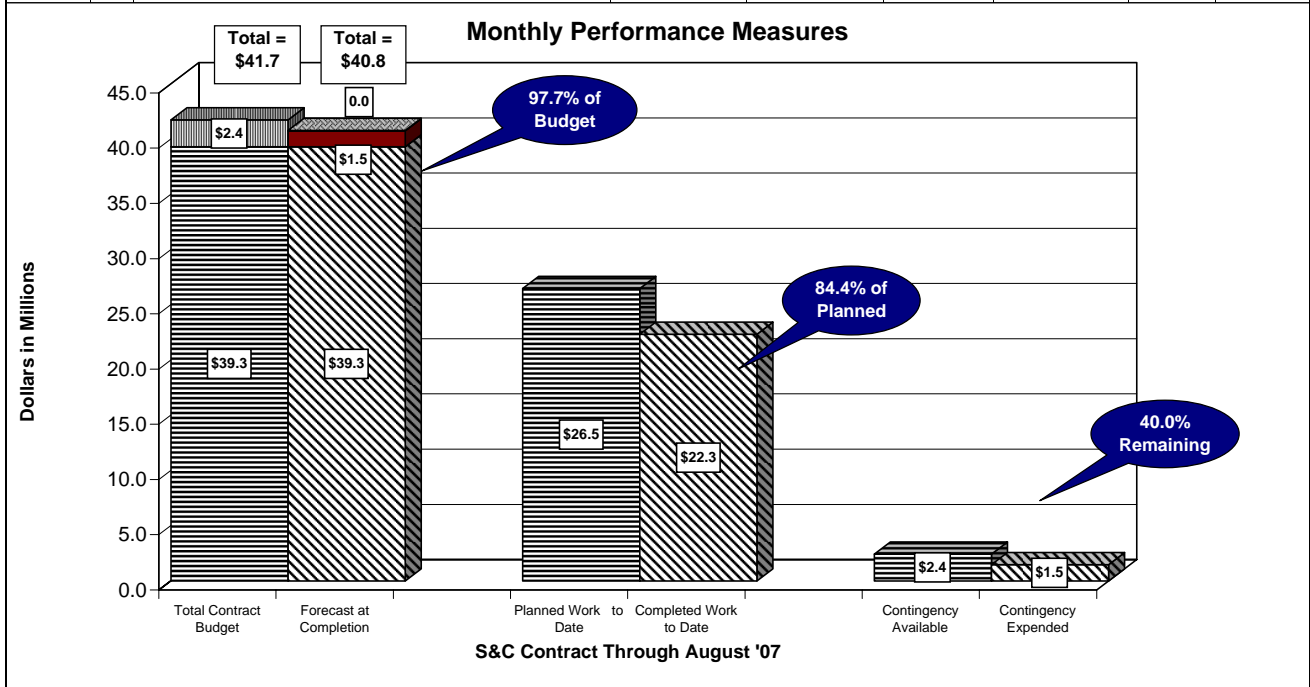
Mounting Public Address Speakers  
at 24th/Jefferson Station Platform



Factory Acceptance Testing of MSF/OCC  
Uninterruptible Power Supply Equipment



<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>		July 15, 2007			
		<b>Cumulative</b>	<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Original Budget		\$37,476,762	\$1,832,240	\$39,309,002
2	Executed Change Orders		\$1,374,391	\$78,561	\$1,452,952
3	Budget Transfers		\$0	\$0	\$0
4	Current Budget (1+2+3)		\$38,851,153	\$1,910,801	\$40,761,954
5	Work Scheduled		\$26,146,056	\$316,469	\$26,462,525
6	Work Earned		\$21,968,275	\$355,152	\$22,323,427
7	Actual Expenditures		\$21,723,605	\$355,619	\$22,079,224
8	Forecast to Complete Base (4-7)		\$17,127,548	\$1,555,182	\$18,682,730
9	Change Orders Pending Execution		\$9,197	\$0	\$9,197
10	Forecast at Completion (7+8+9)		\$38,860,350	\$1,910,801	\$40,771,151
11	Percent Budget Expended (7/4)		55.9%	18.6%	54.2%
12	Percent Planned (5/4)		67.3%	16.6%	64.9%
13	Earned Percent Complete (6/4)		56.5%	18.6%	54.8%
14	Schedule Performance (6/5)		0.84	1.12	0.84
15	Cost Performance (6/7)		1.01	1.00	1.01
16	Contingency Budget		\$2,308,000	\$111,942	\$2,419,942
17	Remaining Contingency		\$933,609	\$33,381	\$966,990
18	Percent Contingency Remaining (17/16)		40.5%	29.8%	40.0%
		<b>Period</b>			
1	Original Budget		N/A	N/A	N/A
2	Executed Change Orders		\$116,950	\$0	\$116,950
3	Budget Transfers		\$0	\$0	\$0
4	Current Budget (1+2+3)		\$38,851,153	\$1,910,801	\$40,761,954
5	Work Scheduled (Cumm - Last Period)		\$1,553,715	\$26,226	\$1,579,941
6	Work Earned (Cumm - Last Period)		\$2,038,980	\$13,780	\$2,052,760
7	Actual Expenditures (Cumm - Last Period)		\$1,494,528	\$13,984	\$1,508,512
8	Forecast to Complete Base (4-7)		\$37,356,625	\$1,896,817	\$39,253,442
9	Change Orders Pending Execution		\$9,197	\$0	\$9,197
10	Forecast at Completion (7+8+9)		\$38,860,350	\$1,910,801	\$40,771,151
11	Percent Budget Expended (7/4)		3.8%	0.7%	3.7%
12	Percent Planned (5/4)		4.0%	1.4%	3.9%
13	Earned Percent Complete (6/4)		5.2%	0.7%	5.0%
14	Schedule Performance (6/5)		1.31	0.53	1.30
15	Cost Performance (6/7)		1.36	N/A	1.36
16	Contingency Budget		\$2,308,000	\$111,942	\$2,419,942
17	Remaining Contingency		\$933,609	\$33,381	\$966,990
18	Percent Contingency Remaining (17/16)		40.5%	29.8%	40.0%



## 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
  - Installation of wall mounted equipment and cable trays/raceways progressed.
  - Installation of HVAC system continued.
- Traction Power Substation Number 2
  - Installation of TPSS Equipment progressed.
- Traction Power Substation Number 3



- Sod has been placed.
- Traction Power Substation Number 4
  - Installation of conduits and wall mounted equipment progressed.
- Traction Power Substation Number 5
  - APS conduits extended.
- Traction Power Substation Number 6
  - Installation of APS conduits progressed.
  - Wiring for HVAC system progressed.
- Traction Power Substation Number 7
  - Installation of raceways/cable trays progressed.
- Traction Power Substation Number 8
  - Labeling of wire and cables progressed.
- Traction Power Substations Numbers 9, 10, 11, and 15
  - Independent building electrical tests have been performed.
  - Landscaping activities at TPSS Number 9 progressed.
- Traction Power Substation Number 16
  - Ongoing punchlist work is being performed. These substations are currently being used by the Vehicle Manufacturer to supply power for vehicle testing.
- Traction Power Substation Number 12 and 14
  - Installation of conduits, ductbanks, and manholes progressed.
  - Concrete placed for building footing and slab.
- Traction Power Substation Number 13
  - Conduits and cable tray installation progressed.
  - Stucco has been applied to parapet walls.
- Overhead Contact System
  - OMC Yard and Test Track (Wire Runs 35 through 40).
    - Wire Runs 39 and 40 have been added to the test track. Informal electrification and live line tests have been performed.



- LS1 16<sup>th</sup> Avenue to Minnezona Avenue (Wire Runs 5 through 8)
  - Installation of OCS Poles progressed.
- LS3 Palm Lane to 15<sup>th</sup> Street (Wire Runs 17 through 23) and 20<sup>th</sup> Street to 26<sup>th</sup> Street (Wire Runs 27 and 28)
  - Installation of OCS Poles progressed.
- LS4 Center Parkway to 1<sup>st</sup> Street (Wire Runs 41 and 42).
  - Installation of OCS Poles progressed.
- LS5 1<sup>st</sup> Street to Rural Road (Wire Runs 43 to 46)
  - Installation of OCS Poles and cantilever arms progressed.
- Site Access/Permits
  - All traction substation building permits have been issued. The remaining permits are for fire alarm systems in the City of Phoenix. These are requested through DSD within six months of alarm activation so the permit does not expire.
- 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 all sixteen traction power substations, TPSS electrical equipment installation in thirteen of the traction power substations, OCS components installation in the OMC yard, OMC shop and Line Sections 1, 3, 4 and 5. Start up testing and commissioning has been done at the OMC and LS4 Test Track areas.

### **Issues and Solutions**

- Mitigation Schedule. A unilateral change order with revised access and milestone dates has been issued to the Contractor. Meetings are to be held in September between the Agency and Contractor's upper management to discuss the Contractor's Request for Equitable Adjustment.
- TPSS/LRV Compatibility Issue. MEC's subcontractor, Siemens, has submitted their investigation report as a result of their onsite testing, which took place during the week of July 9, 2007. This report has been distributed by the Agency to the vehicle manufacturer for further comment.

**Construction Photographs**



TPSS Number 7 – Installing Cable Tray Covers



TPSS Number 14 – Concrete Placement for Footings



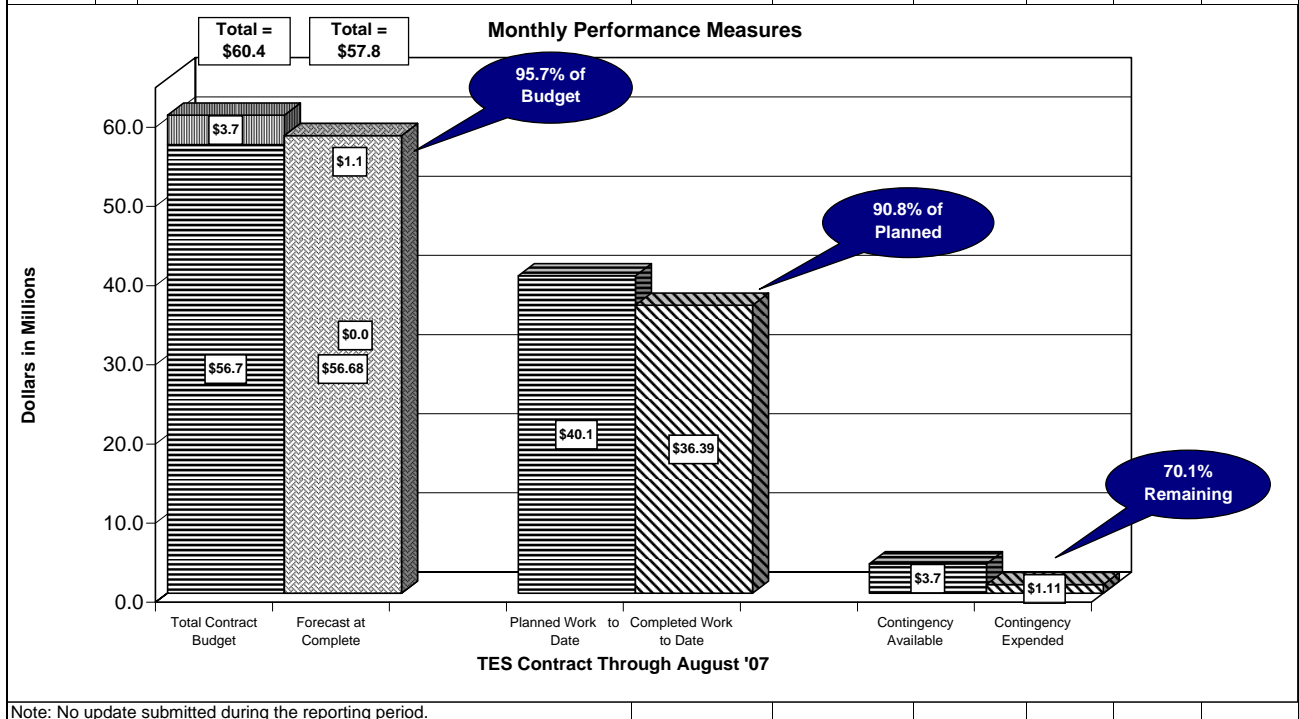
LS5 – Installation of Cantilever Arms



WR 39 and 40 - Live Line Tests



<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>July 15, 2007</b>	
Cumulative		<b>5309</b>	
1	Budget	\$56,681,003	
2	Executed Change Orders	\$1,112,594	
3	Budget Transfers	\$0	
4	Current Budget (1+2+3)	\$57,793,597	
5	Work Scheduled	\$40,089,414	
6	Work Earned	\$36,385,574	
7	Actual Expenditures	\$36,360,694	
8	Forecast to Complete Base (4-7)	\$21,432,903	
9	Change Orders Pending Execution	-\$10,000	
10	Forecast at Completion (7+8+9)	\$57,783,597	
11	Percent Budget Expended (7/4)	62.9%	
12	Percent Planned (5/4)	69.4%	
13	Earned Percent Complete (6/4)	63.0%	
14	Schedule Performance (6/5)	0.91	
15	Cost Performance (6/7)	1.00	
16	Contingency Budget	\$3,721,000	
17	Remaining Contingency	\$2,608,406	
18	Percent Contingency Remaining (17/16)	70.1%	
Period			
1	Budget	N/A	
2	Executed Change Orders	\$19,355	
3	Budget Transfers	\$0	
4	Current Budget (1+2+3)	\$57,793,597	
5	Work Scheduled (Cumm - Last Period)	\$4,404,575	
6	Work Earned (Cumm - Last Period)	\$0	
7	Actual Expenditures (Cumm - Last Period)	\$0	
8	Forecast to Complete Base (4-7)	\$57,793,597	
9	Change Orders Pending Execution	-\$78,603	
10	Forecast at Completion (7+8+9)	\$57,714,994	
11	Percent Budget Expended (7/4)	0.0%	
12	Percent Planned (5/4)	7.6%	
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	\$3,721,000	
17	Remaining Contingency	\$2,608,406	
18	Percent Contingency Remaining (17/16)	70.1%	



Note: No update submitted during the reporting period.



## **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<sup>th</sup> Street.

### **Progress**

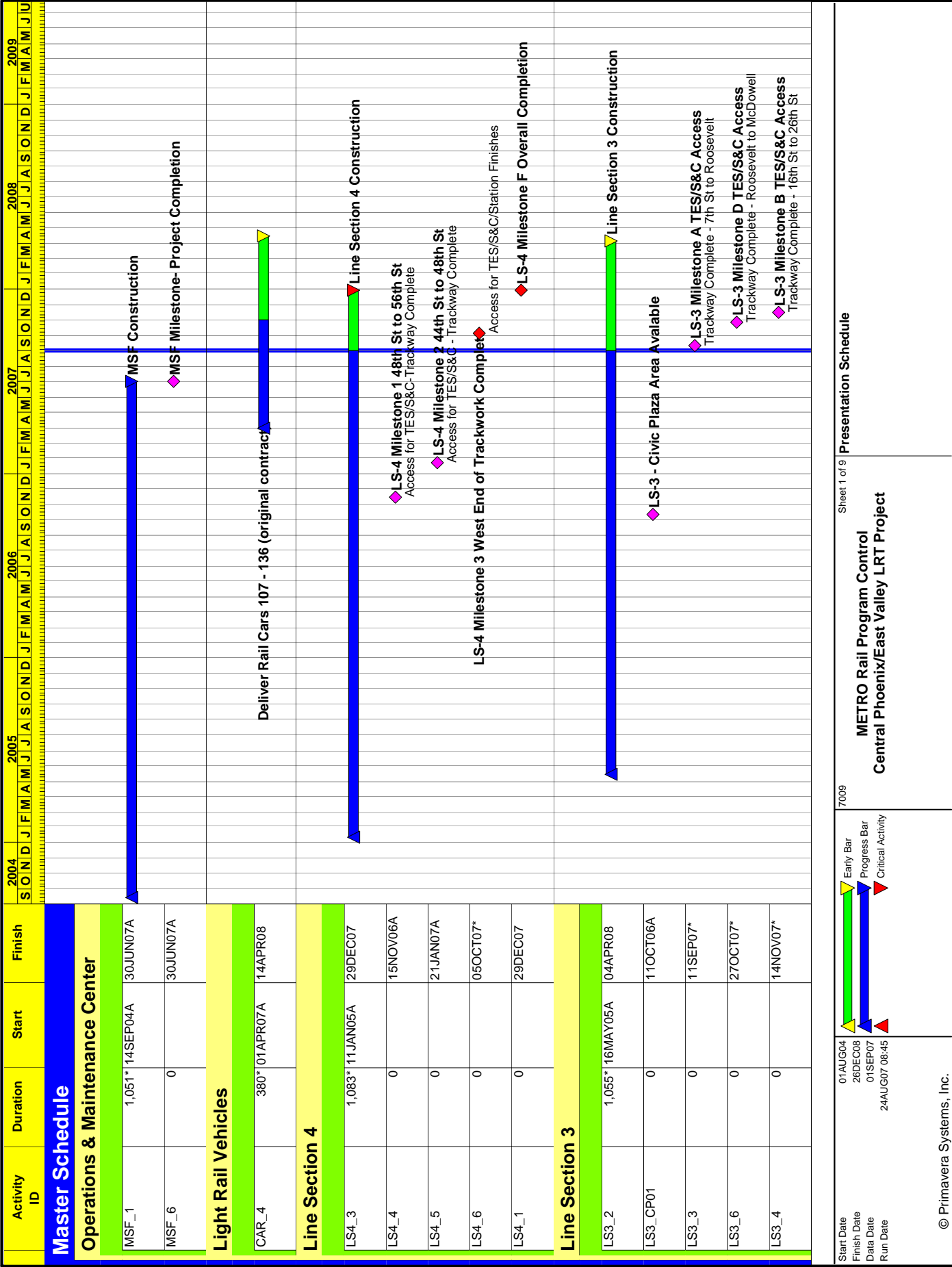
- METRO and the consulting staff are developing test plans and procedures related to track allocation, rail/wheel interface, clearance and LRV dynamic testing.
- Siemens has conducted tests on METRO substation and we received a report August 20<sup>th</sup>
- The GEC, METRO, and Kinkisharyo have reviewed the report and made comments to the Rail Activation Team
- The GEC, METRO and Kinkisharyo met and came to a tentative agreement to resume substation/LRV compatibility testing, based on the information in the Seimens report.
- Interface tests with LRV 101 and the Substations #9 and #15 will continue.
- After conducting several meetings to solve LRV/Rail interface, trains were run on the test track and sand was used to polish the head of the rail
- Conducted preliminary tests on the test track with car 101 and we are optimistic that the RAIL/LRV interface problem is corrected. (Waiting for formal testing to begin)
- Track between 56<sup>th</sup> and Priest Drive was tested and activated.
- Test track is extended east to Priest Drive.
- Track Allocation meetings are being held every Wednesday at the OMC conference room.
- Track Access Training is ongoing every Monday at the OMC.

- The CAC is updating the Integrated Test Plan which is to be delivered to METRO by October 15, 2007.

### **Construction Photographs**



Vehicle testing in the OMC Yard



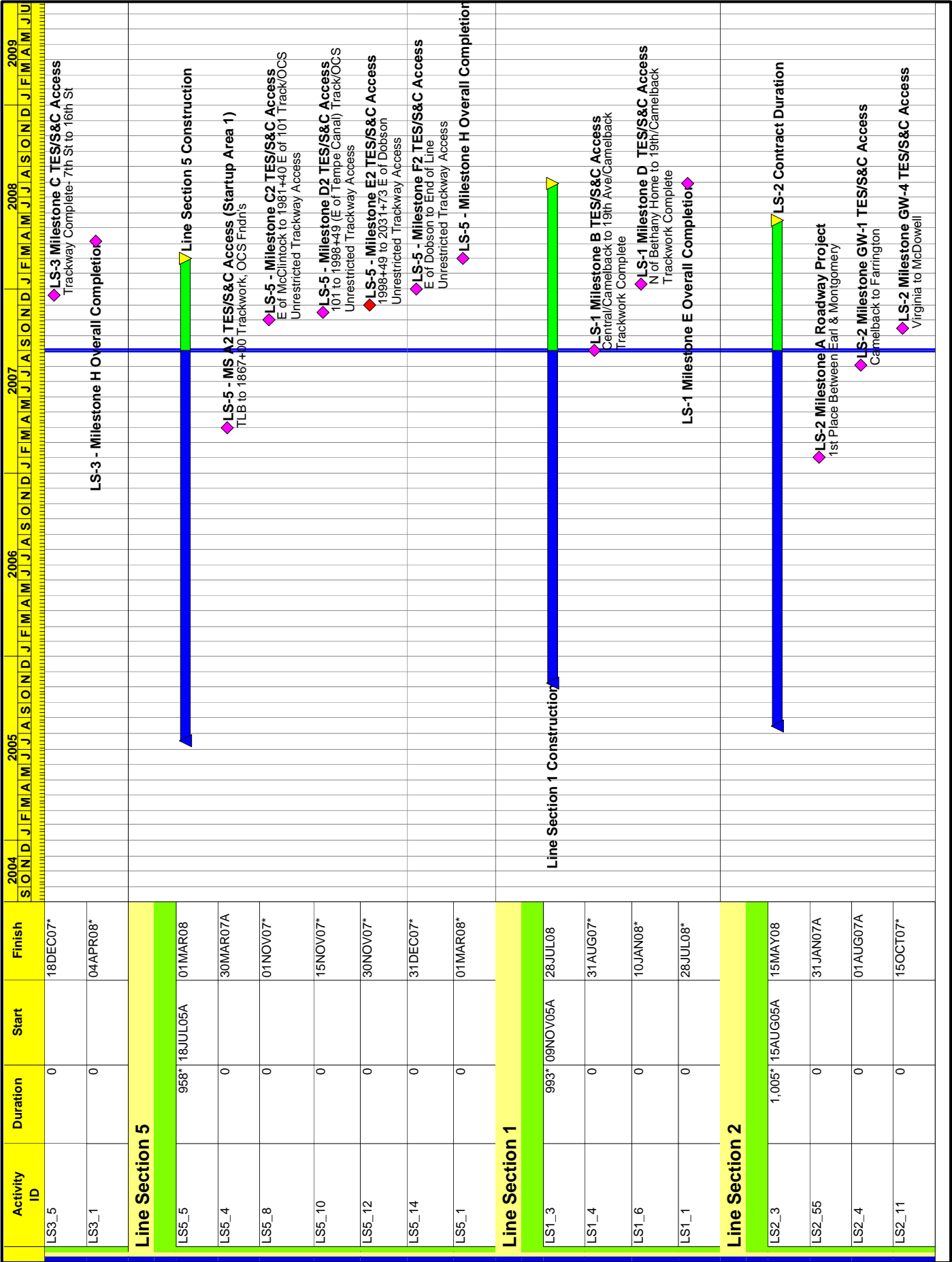
Sheet 1 of 9 Presentation Schedule

**METRO Rail Program Control**  
Central Phoenix/East Valley LRT Project

7009

Start Date	01AUG04
Finish Date	26DEC08
Data Date	01SEP07
Run Date	24AUG07 08:45

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## 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
OMC	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