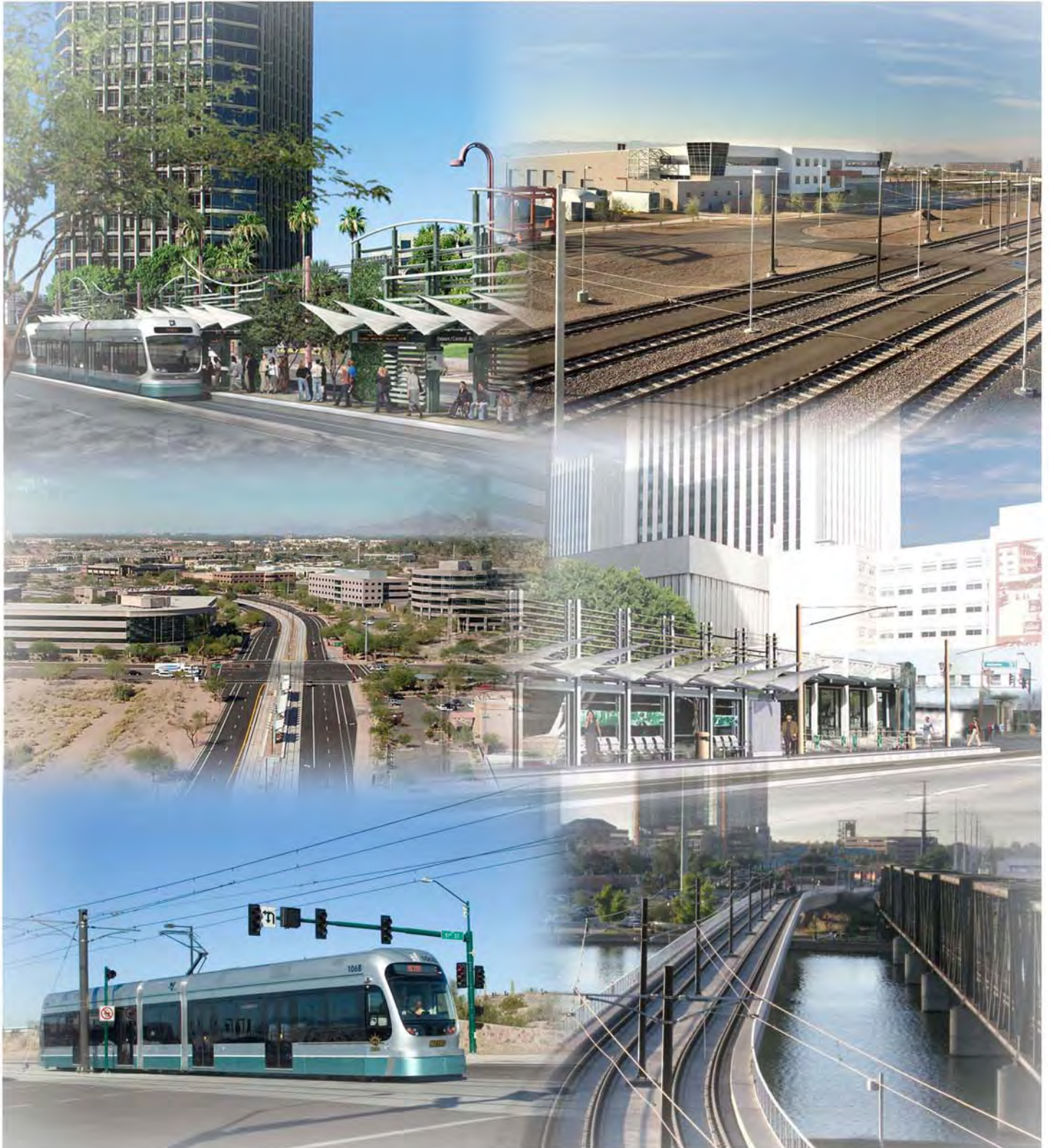




# LIGHT RAIL PROGRESS REPORT

Central Phoenix/East Valley Light Rail Transit Project







## Table of Contents

1. Executive Summary .....	3
• Map of Corridor .....	4
• Contract Log.....	5
2. Cost Overview.....	7
• Project Budget Status.....	9
• Plan vs. Actual.....	11
• Contingency Drawdown .....	12
• CNPA Project Budget Status.....	13
3. Schedule Overview .....	15
• Critical Path.....	18
• Procurement Bid Status Report.....	19
4. Quality Assurance .....	20
5. Public Involvement .....	22
6. Disadvantage Business Enterprise Program .....	27
• DBE Summary Log.....	32
7. System Safety and Security .....	33
8. Environmental Management .....	36
9. Real Estate.....	38
10. Utilities.....	41
• Prior Rights Utility Cost Status .....	43
11. Architecture .....	44
• Public Art.....	44
• Station Finishes.....	47
12. Facilities .....	51
• Line Section 1.....	51
• Line Section 2.....	55
• Line Section 3.....	59
• Line Section 4.....	63
• Line Section 5.....	66
• 48 <sup>th</sup> Street Bridge Replacement .....	70
• Town Lake Bridge .....	71
• Operations and Maintenance Center .....	73
• Park-and-Ride .....	75
• Track Material Procurement.....	78
• Traffic Signal Procurement.....	80
• Underfloor Wheel Profiling Machine.....	82
13. Systems .....	83
• Automated Fare Collection System.....	83
• Light Rail Vehicle.....	87
• Signals and Communications.....	91
• Traction Electrification System.....	96
• Rail Activation/System Integration.....	103



14. Appendix ..... 105

- Presentation Schedule ..... 105
- Acronyms ..... 114



## 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 is nearing 80 percent completion this month with the overall project a little over 81 percent complete and remains on schedule for a December 2008 opening.

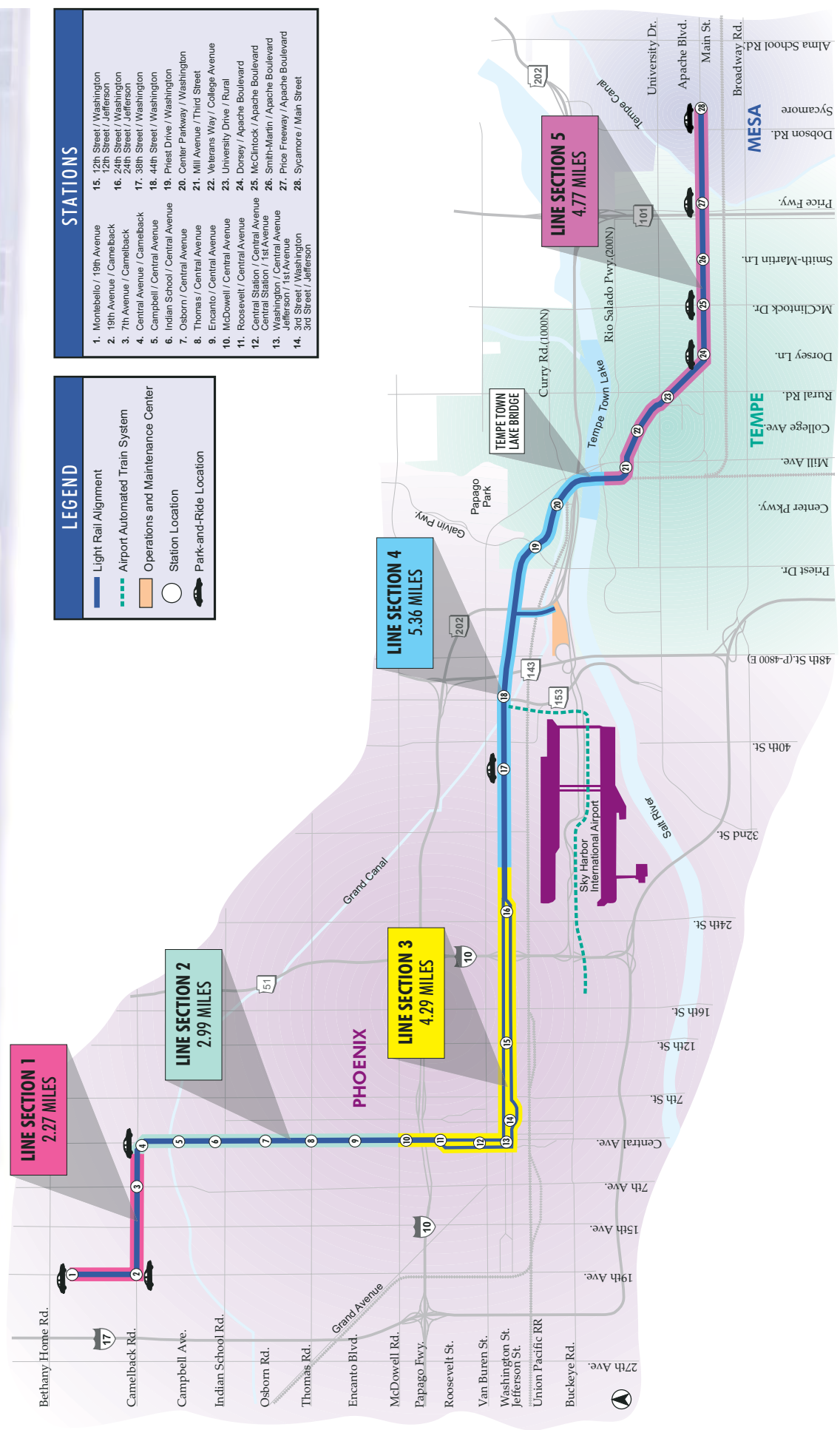
Total track constructed to date is over 211,000 linear feet or about 94 percent of the total. Line Section Four is completing the final items on the punchlist. Line Section Three continues to place guideway and construct curb, gutter, and sidewalk east of downtown Phoenix. Line Section Five has completed most civil work and is beginning landscaping and punch-out work on Apache Boulevard and Main Street. Line Section One continued installation of the new 48-inch waterline on 19<sup>th</sup> Avenue. This work is critical to the completion of work on 19<sup>th</sup> Avenue and Line Section One and is progressing at or slightly ahead of schedule. Line Section Two continues to progress with utility relocations and roadway widening in support of guideway construction. Station Finishes continues to work on structural steel placement and installation of canopies, seating, tactile warning and other station components on twenty-four station platforms along with the construction of transit center facilities. The installation of louvers continues at many locations, working westbound from the Sycamore Transit Center.

The systems contracts continue to work in LS2, LS3, LS4 and LS5 to install OCS wire. Wire has been installed throughout LS4, into LS5 to Rural Road and into the east end of LS3. Poles and hanger assemblies have also begun to be installed in LS2. Over 85 percent of the poles have been set in the line sections, with significant progress throughout the alignment. The Systems contractor has access to twenty station platforms to continue installation of systems components including communications cabinets, CCTV's, speakers and variable message boards. Fiber optic cable has been pulled throughout LS4 and into LS3 and LS5.

During the end of December beginning of January time frame the agency experienced eight rail breaks and nine flangeway breaks in the track system on Line Sections 3, 4 and 5. These breaks occurred near a drainage structure. METRO has hired Zeta-Tech and associates to analyze the breaks and determine a cause and provide recommendations for repair.



# METRO LIGHT RAIL STARTER LINE



### STATIONS

1. Montebello / 19th Avenue	15. 12th Street / Washington
2. 19th Avenue / Camelback	16. 24th Street / Washington
3. 7th Avenue / Camelback	17. 24th Street / Jefferson
4. Central Avenue / Camelback	18. 38th Street / Washington
5. Campbell / Central Avenue	19. 44th Street / Washington
6. Indian School / Central Avenue	20. Priest Drive / Washington
7. Osborn / Central Avenue	21. Center Parkway / Washington
8. Thomas / Central Avenue	22. Mill Avenue / Third Street
9. Encanto / Central Avenue	23. Veterans Way / College Avenue
10. McDowell / Central Avenue	24. University Drive / Rural
11. Roosevelt / Central Avenue	25. Dorsey / Apache Boulevard
12. Central Station / Central Avenue	26. McClintock / Apache Boulevard
13. Washington / 1st Avenue	27. Smith-Martin / Apache Boulevard
14. Jefferson / Washington	28. Price Freeway / Apache Boulevard
14. 3rd Street / Jefferson	28. Sycamore / Main Street

### LEGEND

- Light Rail Alignment
- Airport Automated Train System
- Operations and Maintenance Center
- Station Location
- Park-and-Ride Location

**METRO  
CONTRACT LOG -  
JANUARY 2008**

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 Montebello & 19th Avenue 19th Avenue & Camelback Central & Camelback 38th St. & Washington	Kiewit Western Company Kiewit Western Co. MRM Construction Services MRM Construction Services
14	LRT-05-042-PNR-RB	Park and Rides (Re-Bid) Price & Apache Sycamore & Main	Sundt / Stacy and Witbeck, Joint Venture
15	LRT-04-028-SF	Station Finishes	Archer Western Contractors
16	LRT-04-040-TLB	Town Lake Bridge	PCL Civil Constructors, Inc.
17	LRT-05-036-WPM	Wheel Profiling Machine	Simmons Machine Tool Corp
<b>3. SYSTEM ELEMENTS</b>			
18	LRT-03-001	Light Rail Vehicles (LRV)	Kinkisharyo International, L.L.C. and Mitsui & Co. (U.S.A), Inc., CPEV Joint Venture
19	LRT-04-039-S&C	Signals and Communications	Mass Electric Corp.
20	LRT-04-014-TES	Traction Electrification System	Mass Electric Corp.
21	LRT-06-053-FCS	Fare Collection System	Scheidt & Bachmann USA, Inc.
22	LRT-06-071-LCM	Light Rail Car Mover	Brandt Road Rail Corp
23	LRT-07-076-MSFF	Modular Furniture for MSF	Southwest Business Furnishings
24	LRT-06-060-MMIS	Maintenance Management Information System	Mincom, Inc.
<b>4. PUBLIC ART</b>			
25	02-002-04	LS4 Design Team Artist/Station Artist	Laurie Lundquist
26	02-002-03	LS2 Design Team Artist/Station Artist	Ilan Averbuch
27	02-002-04	LS1 Design Team Artist/Station Artist	Robert Adams
28	02-002-05	LS5 Design Team Artist/Station Artist	Norie Sato/Bill Will
29	02-002-01	LS3 Design Team Artist	Janet Zweig
30	05-041-ART	Bridge Design Team Artist	Buster Simpson
31	02-002-07	LS3 Design Team Artist	Laurie Lundquist
32	02-002-08	LS3 Design Team Artist	Robert Adams
33	02-002-09	44th Street Station Artist	Mona Higuchi
34	02-002-10	38th Street Station Artist	Stuart Keeler/Michael Machnic
35	02-002-11	Central / Roosevelt Station Artist	Peter Richards
36	02-002-12	Central / McDowell Station Artist	Michael Maglich
37	02-002-13	First Street Station Artist	Stephen Farley
38	02-002-14	Third Street Station Artist	Cliff Garten
39	02-002-15	Central Station, Station Artist	Ries Niemi
40	02-002-16	12th Street Station Artist	Victor Zaballa
41	02-002-17	Fifth Street / College Station Artist	Tad Savinar
42	02-002-18	Central / Campbell Station Artist	Al Price
43	02-002-19	Central / Indian School Station Artist	Mary Lucking
44	02-002-20	Central / Osborn Station Artist	Thomas Sayre
45	02-002-21	Central / Thomas Station Artist	Brian Goldbloom
46	02-002-23	Third Street / Mill Station Artist	Catherine Widgery
47	02-002-24	Apache Stations - Lighting Artist	Dan Corson
48	02-002-25	Apache Stations - Cultural Weave Artist	Christine Bourdette

**METRO  
CONTRACT LOG -  
JANUARY 2008**

ITEM	CONTRACT NUMBER	CONTRACT DESCRIPTION	CONTRACTOR
49	02-002-26	Apache Stations - Vertical Objects Artist	Suikang Zhao
50	02-002-27	Apache Stations - Paving Artist	Benson Shaw
51	02-002-28	Longmore Station Artist	Brad Konick
52	02-002-29	19th Avenue / Camelback Station Artist	Josh Garber
53	02-002-30	7th Avenue / Camelback Station Artist	Nubia Owens
54	02-002-31	24th Street Station Artist	Kevin Berry
55	02-002-32	Central / Encanto Station Artist	Jamex & Einar de la Torre
<b>5. MISC. CONSTRUCTION &amp; SERVICES</b>			
56	LRT-05-046-ERS	Environmental Remediation Service	Environmental Response Inc
57	LRT-04-031-PCS	Power Consulting Services	RW Beck
58	LRT-06-052-MF	Modular Furniture	Facilitec, Inc.
59	LRT-06-065-TCS	Telecom Carrier Services	Time Warner Telecom
60	LRT-06-057-WLI	WAN/LAN and IPT Voice Sys Equipment	Calence, Inc.
61	LRT-04-034-SPC	Strategic Planning Consulting Services	Davis Consulting
62	LRT-05-045-DCS	Document Control Services	LKG-CMC, Inc
63	LRT-05-037-ACS	Audit Consulting Services	Clifton Gunderson LLP
64	LRT-05-038-RMS	Risk Management Services	Ashton Tiffany, LLC
65	LRT-06-069-SSC	Safety & Security Certification Services	Booz Allen Hamilton, Inc.
66	LRT-06-067-ITS	Info Technology-Office Network Support	World Wide Technology, Inc.
67	LRT-07-082-TCS	Telecommunications Services for MSF	Qwest Communications
68	LRT-07-073-TS	Transportation Services	Alternate Concepts, Inc.
69	LRT-07-086-MSFM	Interim Maintenance Services for MSF	DMS Facility Services
70	LRT-07-088-PALS	Policy and Advisory Legal Services	Thompson Coburn, LLP
71	LRT-07-095-MAC	Marketing & Advertising Consulting Services	Park & Co.
72	LRT-08-096-EPGO	Grand Opening Event Planning Consulting Services	Entertainment Solutions, Inc.
<b>6. OWNER FURNISHED MATERIALS</b>			
73	LRT-04-009-MP1	Rail (MP1)	Progress Rail Corporation
74	LRT-04-010-MP2	Concrete Crossties (MP2)	CXT Inc
75	LRT-04-030-MP5	Ballasted Special Trackwork (MP5)	VAE Nortrak North America Inc
76	LRT-04-032-MP8	Girder Rail (MP8)	VAE Nortrak North America Inc
77	LRT-04-033-MP9	Girder Rail Special Trackwork (MP9)	VAE Nortrak North America Inc
78	LRT-04-015-MP3	Traffic Signal Hardware (MP3)	Various
79	LRT-06-072-SE	Shop Equipment for Maintenance Facility	Wissota Supply Company, Inc
80	LRT-07-078-MLE	Spray Paint Booth Manlifts at MSF	MGM Equipment Source
<b>7. FUTURE LIGHT RAIL EXTENSIONS</b>			
81	LRT-06-050-DCS	Design Criteria & Standards	Stantec Consulting
82	LRT-06-055-PSS	Planning Support Services	HDR Engineering, Inc.
83	LRT-07-077-PCES	Planning, Conceptual Engineering & Environmental Studies for Future Light Rail Extensions - Mesa-Tempe	HDR / S.R. Beard & Associates
84	LRT-07-077-PCES	Planning, Conceptual Engineering & Environmental Studies for Future Light Rail Extensions - I-10/Glendale	URS Corporation
85	LRT-07-075-PENW	Northwest LRT Extension Engineering Services	DMJM+Harris, Inc.
86	LRT-07-091-PICS-HDR	On-Call Public Involvement Consulting Services	HDR, Inc.
87	LRT-07-087D-CMNW	Northwest LRT Extension Construction Manager at Risk Design Phase Services	Sundt/Stacy & Witbeck, Joint Venture
88	LRT-07-089-NWA	Northwest LRT Extension Public Art for Glendale Station	Merge Conceptual Design, LLC
89	LRT-07-089-NWA	Northwest LRT Extension Public Art for Northern Station	Deborah Mersky
90	LRT-07-089-NWA	Northwest LRT Extension Public Art for Dunlap Parking	PhenomenArts, Inc.
91	LRT-07-089-NWA	Northwest LRT Extension Public Art for Dunlap Station	Colab Studio, LLC
92	LRT-08-102-GIS	On-Call Geographic Information Systems Consulting Services	Jacobs Carter Burgess



## **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 \$71,348,860 of the available \$98,786,587 planned contingency.

Including Project Reserve, this leaves \$32,386,226 of budgeted contingency funds available to the project.

The project is 81.2 percent complete. Construction is 79.7 percent complete.

### **Program Management and Administration**

Forecast is within budget.

### **Program Management Consultant**

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

### **City Administration**

Forecasts are per agreements with the cities.

### **Right of Way Acquisition**

Forecast is being re-evaluated; currently at \$128,500,000. Contingency was reduced by \$7,832,741 consistent with the December 2007 Board approval to transfer funds to the Park and Ride lots.

### **PE/FEIS Engineering**

Activity is complete.

### **Engineering**

Budget and forecast for the remaining work is 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 81.6 percent complete. Executed and pending change orders are expected to utilize \$56,700,000 of the \$69,400,000 available contingency. Additional expected change orders for required acceleration, additional work and expected requests for equitable adjustment are challenging the available balance of contingency.



A pending Board action is forecast to increase the line section 5 contingency by \$1,000,000 and reduce the Miscellaneous Construction budget by \$1,000,000.

### **Systems**

Systems work is 65.1 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. Current detail expenditures are tracking favorably with annual budget and forecast.

### **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 remains at \$4,948,499 after the December 2007 Board Action that transferred \$7,500,000 to facilities and systems contingencies.

### **Financing Costs**

The budget and forecast is \$118,400,000.

### **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 five change orders were processed for a total cost of \$59,961. ASU had one change order processed for a credit of \$481 which was credited back to contingency leaving the forecast unchanged. The City of Mesa had one change order processed for a credit of \$409 which was credited back to contingency leaving the contingency unchanged. The City of Tempe had two change orders processed for a total of \$7,209. Tempe's CNPA forecast decreased by \$519,760 due to close out adjustments and the cancellation of the Rural Road Bus Interface CNPA. The Phoenix Public Transit Department had two change orders processed for a cost of \$21,548. Public Transit's CNPA forecast decreased by \$435,684 due to close out adjustments. Phoenix Aviation had one change order processed for a total cost of \$8,027 which was funded by existing contingency leaving the forecast unchanged. The Phoenix Streets department had zero change orders processed and the forecast decreased by \$61,605 due to close out adjustments. Phoenix Water Services had two change orders processed for a total of \$24,067 and the forecast decreased by \$76,366 due to the close out of force account change orders.

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

2008\_01

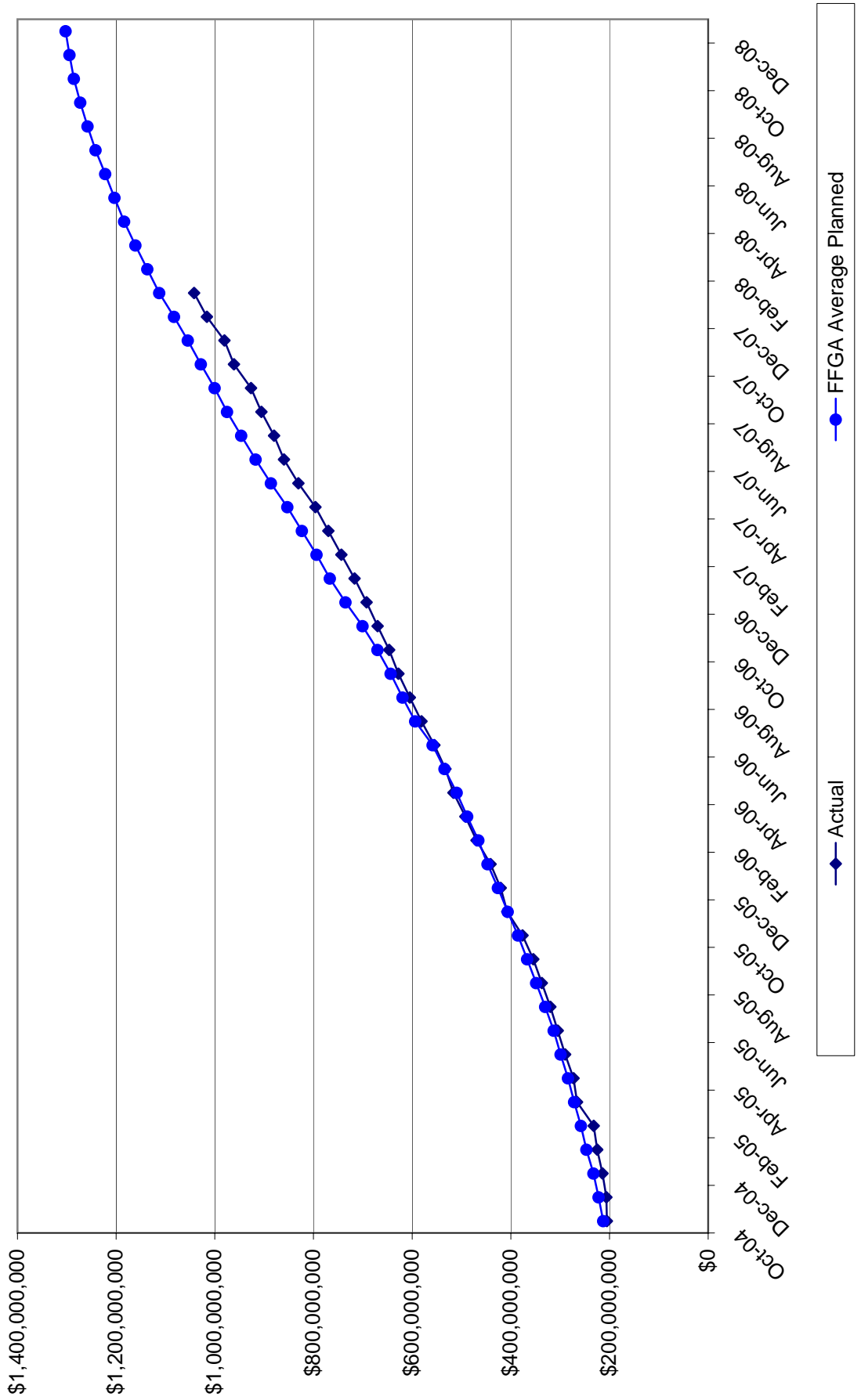
Element	Description	FFGA Attachment 3	Board Revised Budget	Current Actual \$ (To Date)	Forecast	Variance
50	LS1 19th Ave/Bethany - Camelback/Central	\$27,130,856	\$39,543,419	\$28,534,294	\$46,111,358	(\$6,567,939)
51	LS2 Camelback/Central - McDowell Road	\$38,004,059	\$53,114,028	\$42,763,488	\$53,239,564	(\$125,536)
52	LS3 McDowell Road - 28th Street	\$63,981,654	\$97,997,488	\$85,967,620	\$98,415,032	(\$417,544)
53	LS4 28th Street - N Approach to Town Lake	\$46,622,020	\$51,529,529	\$51,469,339	\$51,922,410	(\$392,881)
54	LS5 1st Street - Sycamore	\$49,680,435	\$76,221,812	\$74,703,632	\$76,771,923	(\$550,111)
55	Station Finishes	\$38,701,950	\$53,254,070	\$33,581,321	\$53,347,047	(\$92,977)
56	Park and Ride Facilities	\$15,104,339	\$22,295,267	\$776,799	\$22,295,267	\$0
57	Miscellaneous Construction	\$7,505,200	\$3,100,659	\$326,557	\$750,000	\$2,350,659
5K	Archaeological Investigations/Hazardous Material Removal	\$0	\$7,572,689	\$4,472,197	\$7,589,245	(\$16,556)
58	MSF Construction/Equipment Installation	\$57,637,721	\$65,400,000	\$65,400,001	\$65,400,001	(\$1)
5G	MSF Underfloor Wheel Profiling System	\$0	\$980,107	\$884,058	\$967,068	\$13,039
59	48th Street Bridge Restoration	\$2,014,013	\$2,824,232	\$2,837,136	\$2,837,136	(\$12,904)
5A	Town Lake Bridge	\$15,529,600	\$21,759,753	\$21,759,751	\$21,759,751	\$2
5B	Prior Rights Utility Relocations	\$22,938,000	\$25,521,262	\$26,819,035	\$33,992,167	(\$8,470,905)
81	Contingency	\$37,491,841	\$21,152,763	\$0	\$8,532,909	\$12,619,854
	<b>Facilities</b>	<b>\$422,341,688</b>	<b>\$542,267,078</b>	<b>\$440,295,228</b>	<b>\$543,930,878</b>	<b>(\$1,663,800)</b>
4A	Rail Procurement	\$1,306,200	\$1,273,506	\$1,279,492	\$1,285,385	(\$11,879)
4B	Concrete Crosstie Procurement	\$900,000	\$903,395	\$718,883	\$870,579	\$32,816
4C	Traffic Signal Hardware	\$8,060,100	\$8,063,587	\$8,127,887	\$8,128,067	(\$64,480)
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	\$14,725,878	\$14,695,450	\$14,698,376	\$27,502
4G	Girder Rail Special Trackwork Procurement	\$0	\$5,712,656	\$5,258,484	\$5,892,914	(\$180,258)
81	Contingency	\$1,412,863	\$508,585	\$0	\$0	\$508,585
	<b>Owner Furnished Materials/Equipment</b>	<b>\$29,671,419</b>	<b>\$33,839,200</b>	<b>\$32,337,652</b>	<b>\$33,132,777</b>	<b>\$706,423</b>
5D	Automated Fare Collection System	\$10,755,800	\$7,103,212	\$24,436	\$7,103,212	\$0
5E	Traction Power Substations/Overhead Catenary System	\$62,141,100	\$57,986,200	\$43,825,013	\$57,979,639	\$6,561
5F	Communications/Signals	\$38,220,002	\$38,971,482	\$25,157,047	\$38,971,483	(\$1)
81	Contingency	\$8,674,000	\$4,775,847	\$0	\$4,782,407	(\$6,560)
	<b>Systems</b>	<b>\$119,790,902</b>	<b>\$108,836,741</b>	<b>\$69,006,496</b>	<b>\$108,836,741</b>	<b>\$0</b>
	<b>Sub Total, Construction</b>	<b>\$571,804,009</b>	<b>\$684,943,019</b>	<b>\$541,639,376</b>	<b>\$685,900,396</b>	<b>(\$957,377)</b>
4K	Vehicle Contract	\$115,501,823	\$116,991,301	\$74,511,172	\$116,991,301	\$0
4N	LRT Vehicle Contract Contingency	\$5,775,001	\$2,431,264	\$0	\$1,431,264	\$1,000,000
	<b>LRT Vehicles</b>	<b>\$121,276,824</b>	<b>\$119,422,565</b>	<b>\$74,511,172</b>	<b>\$118,422,565</b>	<b>\$1,000,000</b>
22	ROW Acquisition	\$116,214,150	\$117,033,875	\$123,016,742	\$128,500,000	(\$11,466,125)
23	ROW Contingency	\$20,081,000	\$11,435,123	\$0	\$0	\$11,435,123
20	<b>ROW</b>	<b>\$136,295,150</b>	<b>\$128,468,998</b>	<b>\$123,016,742</b>	<b>\$128,500,000</b>	<b>(\$31,002)</b>

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

2008\_01

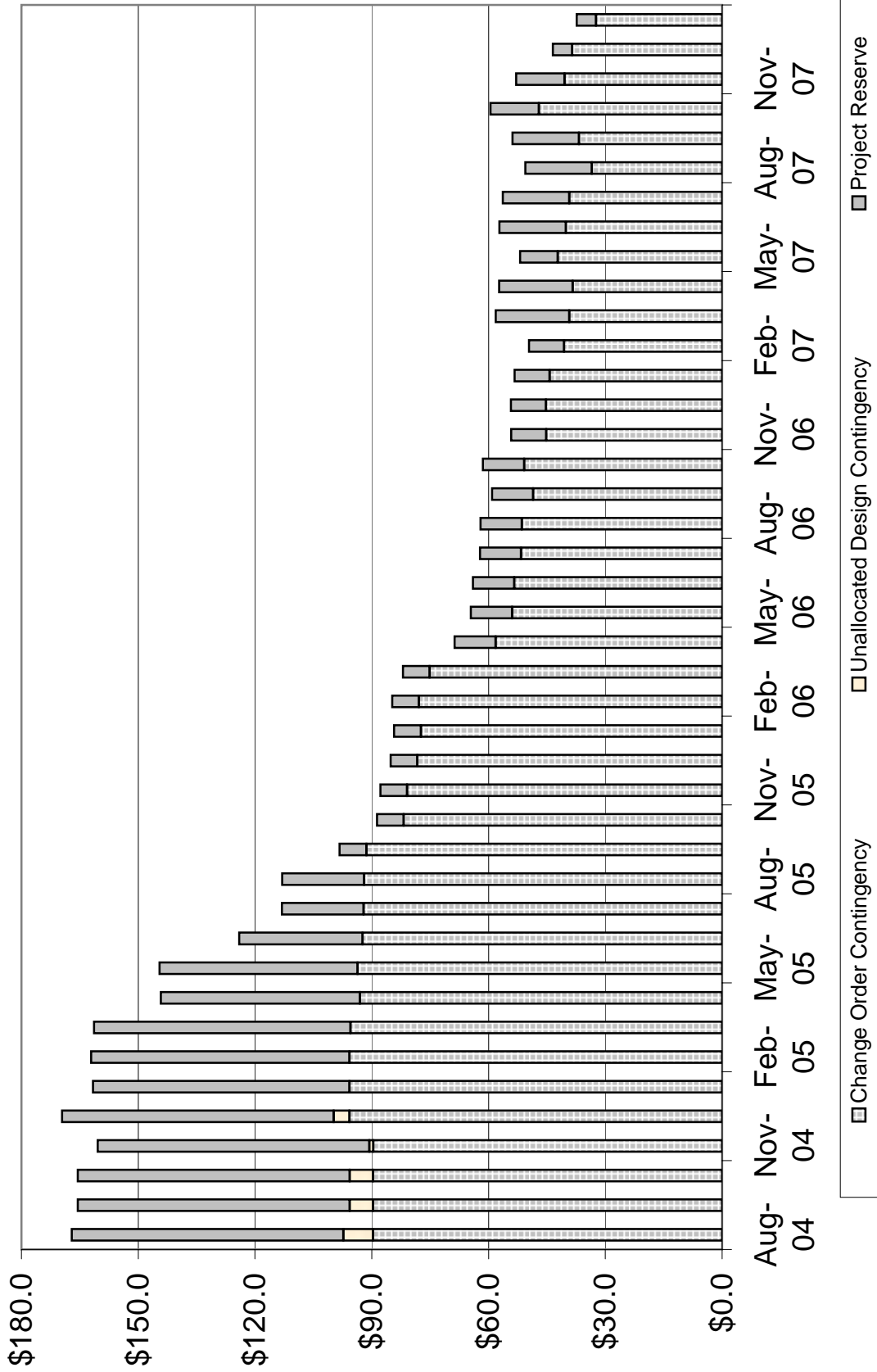
Element	Description	FFGA Attachment 3	Board Revised Budget	Current Actual \$ (To Date)	Forecast	Variance
<b>30</b>	<b>PE/FEIS Engineering</b>	<b>\$25,054,938</b>	<b>\$25,054,938</b>	<b>\$25,169,700</b>	<b>\$25,169,700</b>	<b>(\$114,762)</b>
31	Engineering	\$76,780,935	\$76,346,255	\$77,192,206	\$77,184,335	(\$838,080)
4L	Vehicle Engineering	\$5,432,358	\$6,255,358	\$5,853,489	\$6,259,273	(\$3,915)
20	ROW Engineering	\$1,016,370	\$1,321,163	\$1,266,225	\$1,266,226	\$54,937
32	Design Services During Construction	\$14,160,426	\$22,049,464	\$19,546,247	\$23,011,609	(\$962,145)
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>\$103,858,167</b>	<b>\$107,721,443</b>	<b>(\$1,749,203)</b>
60	Construction Administration Services	\$37,759,127	\$52,311,124	\$45,779,023	\$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>\$45,779,023</b>	<b>\$52,311,124</b>	<b>\$0</b>
10	PE Administrative/Management Costs	\$4,363,526	\$4,363,526	\$8,387,972	\$8,387,972	(\$4,024,446)
11	Administrative/Management - VMR	\$43,915,047	\$44,321,157	\$29,839,149	\$37,187,419	\$7,133,738
62	Construction Administration Services - VMR	\$1,697,232	\$2,908,129	\$1,639,474	\$2,100,706	\$807,423
67	CAB Program	\$0	\$2,500,000	\$2,234,954	\$2,500,000	\$0
21	Administrative ROW Costs	\$696,712	\$696,712	\$602,289	\$696,712	\$0
76	Administrative/Management Art Program Costs	\$414,632	\$414,632	\$0	\$414,632	\$0
16	Administrative/Management - ADOT	\$420,000	\$1,016,619	\$623,342	\$1,212,730	(\$196,111)
17	Agency Insurance Cost	\$7,000,000	\$7,000,000	\$6,699,590	\$7,000,000	\$0
18	Administrative/Management Contingency	\$0	\$1,388,523	\$0	\$388,523	\$1,000,000
	<b>Program Management</b>	<b>\$58,507,149</b>	<b>\$64,609,298</b>	<b>\$50,026,770</b>	<b>\$59,888,694</b>	<b>\$4,720,604</b>
10	PE Administrative/Management Costs	\$12,832,472	\$12,832,472	\$12,255,028	\$12,255,028	\$577,444
21	Administrative ROW Costs	\$1,016,571	\$828,502	\$791,139	\$791,139	\$37,363
76	Administrative/Management Art Program Costs	\$549,061	\$464,266	\$255,989	\$388,343	\$75,923
12	Administrative/Management - PMC	\$32,736,326	\$33,514,234	\$30,371,104	\$37,802,842	(\$4,288,608)
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	\$3,619,538	\$4,762,527	\$589,370
	<b>Program Management Consultant</b>	<b>\$53,053,279</b>	<b>\$53,553,279</b>	<b>\$47,846,198</b>	<b>\$56,553,279</b>	<b>(\$3,000,000)</b>
10	PE Administrative/Management Costs	\$3,158,439	\$3,158,439	\$1,692,490	\$3,158,439	\$0
13	Administrative/Management - COP	\$2,986,000	\$5,448,000	\$3,547,373	\$5,171,411	\$276,589
64	Construction Administration Services - COP	\$8,347,000	\$5,885,000	\$6,161,589	\$6,161,589	(\$276,589)
14	Administrative/Management - COT	\$6,797,000	\$6,797,000	\$6,797,000	\$6,797,000	\$0
15	Administrative/Management - COM	\$897,000	\$897,000	\$1,167,050	\$897,000	\$0
	<b>City Administration</b>	<b>\$22,185,439</b>	<b>\$22,185,439</b>	<b>\$19,365,502</b>	<b>\$22,185,439</b>	<b>\$0</b>
75	Public Art Contracts	\$5,284,133	\$6,083,177	\$3,736,780	\$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>\$3,736,780</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>\$7,076,204</b>	<b>\$25,000,000</b>	<b>\$1,000,000</b>
<b>80</b>	<b>Unallocated Design Contingency</b>	<b>\$7,575,241</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>85</b>	<b>Project Reserve</b>	<b>\$69,829,000</b>	<b>\$4,948,499</b>	<b>\$0</b>	<b>\$5,816,759</b>	<b>(\$868,260)</b>
<b>SUBTOTAL</b>		<b>\$1,253,258,000</b>	<b>\$1,293,752,532</b>	<b>\$1,042,025,634</b>	<b>\$1,293,752,532</b>	<b>\$0</b>
<b>90</b>	<b>Financing Costs</b>	<b>\$158,867,346</b>	<b>\$118,372,814</b>	<b>\$28,299,706</b>	<b>\$118,372,814</b>	<b>\$0</b>
<b>TOTAL CP/EV PROJECT</b>		<b>\$1,412,125,346</b>	<b>\$1,412,125,346</b>	<b>\$1,070,325,340</b>	<b>\$1,412,125,346</b>	<b>\$0</b>

### Plan versus Actual Costs



# CP/EV LRT Contingency Drawdown

\$ Million



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

Element	Description	Board Approved Total	Revised Budget/Estimate	Current Actual \$ (To Date)	Forecast	Variance
A1	Bus Bays (LS2)	\$963,403	\$984,756	\$454,728	\$984,756	\$0
A2	Phoenix Art Museum Left Turn Signal	\$99,083	\$108,770	\$37,188	\$99,083	\$9,687
A5	19th/Montebello Transit Center (SF)	\$5,555,929	\$6,348,742	\$4,977,769	\$6,317,206	\$31,536
A6	117 Central/Camelback Transit Center (SF)	\$7,022,524	\$7,554,237	\$4,017,169	\$7,093,078	\$461,159
A7	44th Street/Washington Transit Center Real Estate	\$4,900,509	\$4,649,580	\$4,467,450	\$4,649,580	\$0
B1	Washington Street Bike Lane (LS4)	\$930,293	\$912,714	\$702,967	\$866,305	\$46,409
F4	Civic Plaza Track Support System	\$2,595,811	\$2,223,693	\$311,467	\$320,043	\$1,883,650
F5	Additional Water Services to the Pueblo Grande Museum - LS4	\$89,285	\$89,285	\$62,262	\$81,792	\$7,493
F6	Central/Camelback Bus Bays Relocation	\$192,720	\$193,065	\$17,056	\$180,435	\$12,630
F7	COP Landscape Irrigation Restoration Central Ave	\$101,414	\$99,952	\$69,944	\$91,807	\$8,145
H2	Fiber Optic COP	\$602,233	\$620,077	\$101,861	\$615,437	\$4,640
J6	Washington/Jefferson 16th to 26th Street, Property Access	\$2,628,002	\$3,845,895	\$1,845,629	\$3,564,371	\$281,524
K7	11th Street Loop Track	\$4,377,606	\$4,780,419	\$1,232,878	\$4,780,419	\$0
	<b>Sub Total Public Transit Department</b>	<b>\$30,058,812</b>	<b>\$32,411,185</b>	<b>\$18,298,368</b>	<b>\$29,664,312</b>	<b>\$2,746,873</b>
A3	6th Lane - Camelback (LS1)	\$9,820,210	\$9,883,190	\$7,344,991	\$8,954,921	\$928,269
D1	Additional Street/Pedestrian Lighting (LS3)	\$509,602	\$521,724	\$437,468	\$521,724	\$0
E3	Seal Coat versus Rubber Overlay (LS 1)	\$264,342	\$264,342	\$17,104	\$264,342	\$0
E4	Seal Coat versus Rubber Overlay (LS 3)	\$1,479,814	\$1,509,876	\$445,069	\$1,593,099	(\$83,223)
E5	Seal Coat versus Rubber Overlay (LS 4)	\$430,896	\$430,896	\$312,273	\$378,591	\$52,305
K3	Red Light Enforcement	\$79,667	\$61,067	\$31,098	\$61,067	\$0
M1	Removable Steel Curb at 7th/Jefferson	\$5,989	\$5,989	\$5,989	\$5,989	\$0
	<b>Sub Total Streets Department</b>	<b>\$12,584,531</b>	<b>\$12,677,084</b>	<b>\$8,593,992</b>	<b>\$11,779,733</b>	<b>\$897,351</b>
A7	44th Street/Washington Transit Center (SF)	\$2,822,429	\$3,018,981	\$2,417,666	\$3,019,401	(\$420)
C6	APM Utility Connections	\$22,997	\$22,997	\$22,717	\$22,997	\$0
D2	44th Street Station People Mover Foundation (LS4)	\$783,003	\$783,003	\$756,400	\$756,400	\$26,603
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	\$57,499	\$3,770
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>\$4,162,250</b>	<b>\$3,627,801</b>	<b>\$4,242,824</b>	<b>(\$80,574)</b>
B3	LS 1 Water/Sanitary Sewer	\$9,887,790	\$9,947,102	\$6,265,061	\$9,952,539	(\$5,437)
B4	LS 2 Water/Sanitary Sewer	\$6,255,348	\$5,840,579	\$4,180,055	\$6,090,852	(\$250,273)
B5	LS 3 Water/Sanitary Sewer	\$15,367,099	\$15,089,589	\$14,323,751	\$15,365,965	(\$276,376)
B6	LS 4 Water/Sanitary Sewer	\$5,325,583	\$6,468,752	\$6,357,921	\$6,524,038	(\$55,286)
B7	Water and Sanitary Sewer Lines - 48th St. Bridge Replacement Contract	\$145,420	\$155,767	\$142,862	\$155,767	\$0
J1	Catholic Protection for Waterlines LS1	\$1,099,400	\$739,855	\$141,148	\$743,645	(\$3,790)
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	\$350,000	\$85,620	\$350,000	\$0
	<b>Sub Total Water Services Department</b>	<b>\$39,823,994</b>	<b>\$39,096,301</b>	<b>\$31,881,306</b>	<b>\$39,820,833</b>	<b>(\$724,532)</b>
	<b>Total - Phoenix</b>	<b>\$86,431,070</b>	<b>\$88,346,820</b>	<b>\$62,401,467</b>	<b>\$85,507,702</b>	<b>\$2,839,118</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	\$596,459	\$635,205	\$117,533
AA	COT SRP Prior Rights TC Relocation	\$244,080	\$235,400	\$0	\$235,400	\$0
B8	Terrace / Apache Waterline Coordination (Design Only)	\$54,639	\$35,611	\$35,292	\$35,611	\$0
C1	Additional Communications Conduits	\$32,499	\$32,499	\$24,271	\$27,775	\$4,724
C2	COT ASU Pedestrian Signal	\$114,338	\$122,000	\$74,976	\$122,000	\$0
C7	Parking Facility 5th/Farmer	\$110,701	\$116,990	\$85,740	\$118,476	(\$1,486)
C8	COT Waterline @ Cremery Route	\$94,081	\$94,081	\$82,061	\$82,061	\$12,020
D4	COT Additional Street Lighting (LS5)	\$345,014	\$345,014	\$221,597	\$279,956	\$65,058
D7	COT Additional Conduit @ McClintock/Apache	\$0	\$7,990	\$7,990	\$7,990	\$0
E6	Rubberized Asphalt LS5	\$624,874	\$624,874	\$276,903	\$624,874	\$0
F2	McClintock / Apache Storm Drain	\$75,345	\$123,153	\$107,786	\$116,207	\$6,946
F9	Rubber Asphalt - Tempe	\$610,983	\$523,603	\$348,536	\$489,349	\$34,254
G1	McClintock Park and Ride - CNPA	\$0	\$0	\$5,580,729	\$5,580,729	(\$5,580,729)
G3	Tempe Admin Costs	\$0	\$0	\$722,808	\$722,808	(\$722,808)
H3	Fiber Optic COT	\$427,239	\$414,922	\$73,963	\$414,922	\$0
J4	Catholic Protection of Waterline LS4 CO#15	\$158,638	\$158,638	\$115,923	\$139,644	\$18,994
J9	University Drive Station Bus Interface	\$509,186	\$0	\$0	\$0	\$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	\$9,766	\$9,766	\$1,310
K4	Washington/Center Parkway Station	\$4,989,270	\$4,734,791	\$2,984,974	\$4,734,791	\$0
L1	TLB 4th of July Electrical	\$0	\$12,089	\$12,089	\$24,800	(\$12,711)
L2	COT CNPA - Additional Mill/Overlay	\$0	\$466,011	\$466,011	\$466,011	\$0
L5	COT McClintock Park & Ride	\$0	\$0	\$0	\$175,768	(\$175,768)
N4	Tempe Market Analysis	\$44,378	\$44,378	\$43,728	\$44,378	\$0
XX	Tempe Miscellaneous Force Account Work LS5	\$20,000	\$20,000	\$20,000	\$21,661	(\$1,661)
	<b>Sub Total Tempe</b>	<b>\$8,973,986</b>	<b>\$8,883,503</b>	<b>\$11,898,291</b>	<b>\$15,117,827</b>	<b>(\$6,234,324)</b>
A9	Main Sycamore Transit Center	\$5,532,721	\$5,524,839	\$3,635,673	\$5,354,547	\$170,292
H4	Fiber Optic Backbone LS-4 (Mesa portion)	\$847,325	\$872,147	\$163,818	\$881,410	(\$9,263)
N3	Mesa Market Analysis	\$18,542	\$18,542	\$18,542	\$18,542	\$0
XX	Mesa Miscellaneous Force Account Work LS5	\$5,000	\$5,000	\$4,399	\$5,000	\$0
	<b>Sub Total Mesa</b>	<b>\$6,403,588</b>	<b>\$6,420,528</b>	<b>\$3,822,432</b>	<b>\$6,259,499</b>	<b>\$161,029</b>
C9	ASU Logo Additions	\$86,463	\$78,274	\$54,888	\$72,010	\$6,264
E2	ASU Steam Line	\$0	\$8,189	\$8,189	\$8,189	\$0
H1	Fiber Optic ASU	\$959,445	\$1,199,460	\$427,469	\$1,184,417	\$15,043
	<b>Sub Total ASU</b>	<b>\$1,045,908</b>	<b>\$1,285,923</b>	<b>\$490,546</b>	<b>\$1,264,616</b>	<b>\$21,307</b>
E1	(APS) Duct Bank at 48th St. Utility Bridge, Archaeological Support	\$76,309	\$74,344	\$57,870	\$71,837	\$2,507
F8	Rojo Lofis 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>\$153,835</b>	<b>(\$64,705)</b>
	<b>Grand Total CNPA</b>	<b>\$103,012,860</b>	<b>\$105,025,904</b>	<b>\$78,670,606</b>	<b>\$108,303,479</b>	<b>(\$3,277,575)</b>



### 3. Schedule Overview

The current Status of the Master Schedule is based on a data date of February 1, 2008. 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 are working and on schedule. To date, the Program has been successful in mitigating delays with a minimum of acceleration to the Civil Contracts.

Partnering and detailed scheduling meetings with all of the Major Contracts 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 24 of the Stations, and Electrical/Communications cabinet work has been completed for 19 stations. Work is continuing on 24 of the stations.

Over 211,100 linear feet (39.98 miles) of track has been placed in Line Sections 1, 2, 3, 4, 5 and OMC. Over 1,375 of the 1,400 OCS Foundations have been placed and pole setting is going well by the TES Contractor with 1,194 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	15,900	3.01	7,554	1.43	67.8%
Line Section 2	30,752	5.82	24,852	4.71	5,900	1.12	80.8%
Line Section 3	44,629	8.45	44,219	8.37	410	0.08	99.1%
Line Section 4	56,054	10.62	56,054	10.62	0	0.00	100.0%
Line Section 5	50,818	9.62	50,818	9.62	0	0.00	100.0%
<b>Total</b>	<b>224,968</b>	<b>42.61</b>	<b>211,104</b>	<b>39.98</b>	<b>13,864</b>	<b>2.63</b>	<b>93.8%</b>
OCS Pole and Down Guy Anchor Foundations							
Line Section	Bid Quantity		Installed		Remaining		% Complete
Line Section 1	136		131		5		96.3%
Line Section 2	184		178		6		96.7%
Line Section 3	481		467		14		97.1%
Line Section 4	257		257		0		100.0%
Line Section 5	342		342		0		100.0%
<b>Total</b>	<b>1,400</b>		<b>1,375</b>		<b>25</b>		<b>98.2%</b>



Station Finishes					
Stations to S&C	Bid Quantity	Complete	Remaining	% Complete	
LS-1 Milestone B	3	1	2	33.3%	
LS-2 Milestone B	6	0	6	0.0%	
LS-3 Milestone B	12	11	1	91.7%	
LS-4 Milestone B	4	4	0	100.0%	
LS-5 Milestone B	8	4	4	50.0%	
<b>Total</b>	<b>33</b>	<b>20</b>	<b>13</b>	<b>60.6%</b>	

Traction Electrification					
Area	Description	U/M	Bid Quantity	Installed	% Complete
TPSS# 1 Thru 15	Feeders & Negative Returns	LF	135,580	46,730	34.5%
Yard	500 kcmil Feeder Cable	LF	2,175	2,175	100.0%
Line Sections/Yard	OCS Pole Assemblies	EA	1,478	1,194	80.8%
Line Sections/Yard	OCS Wire	LF	259,790	141,079	54.3%
Line Sections/Yard	OCS Cantilever Assemblies	EA	2,027	1,257	62.0%

Signals and Communications					
Area	Description	U/M	Bid Quantity	Installed	% Complete
Stations	Local Wire Installed	EA	44	12	27.3%
Stations	Communications Cabinet Equipment Installed	EA	44	10	22.7%
Stations	Communications Device Kits	EA	44	14	31.8%
Stations	Terminate Devices	EA	44	9	20.5%
Line Sections	Backbone Fiber	LF	140,360	52,760	37.6%
Line Sections	Street Traffic Fiber	LF	140,360	47,556	33.9%
Line Sections	City Use Fiber	LF	245,991	0	0.0%

**Major Milestones**

**Civil:**

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



**Systems:**

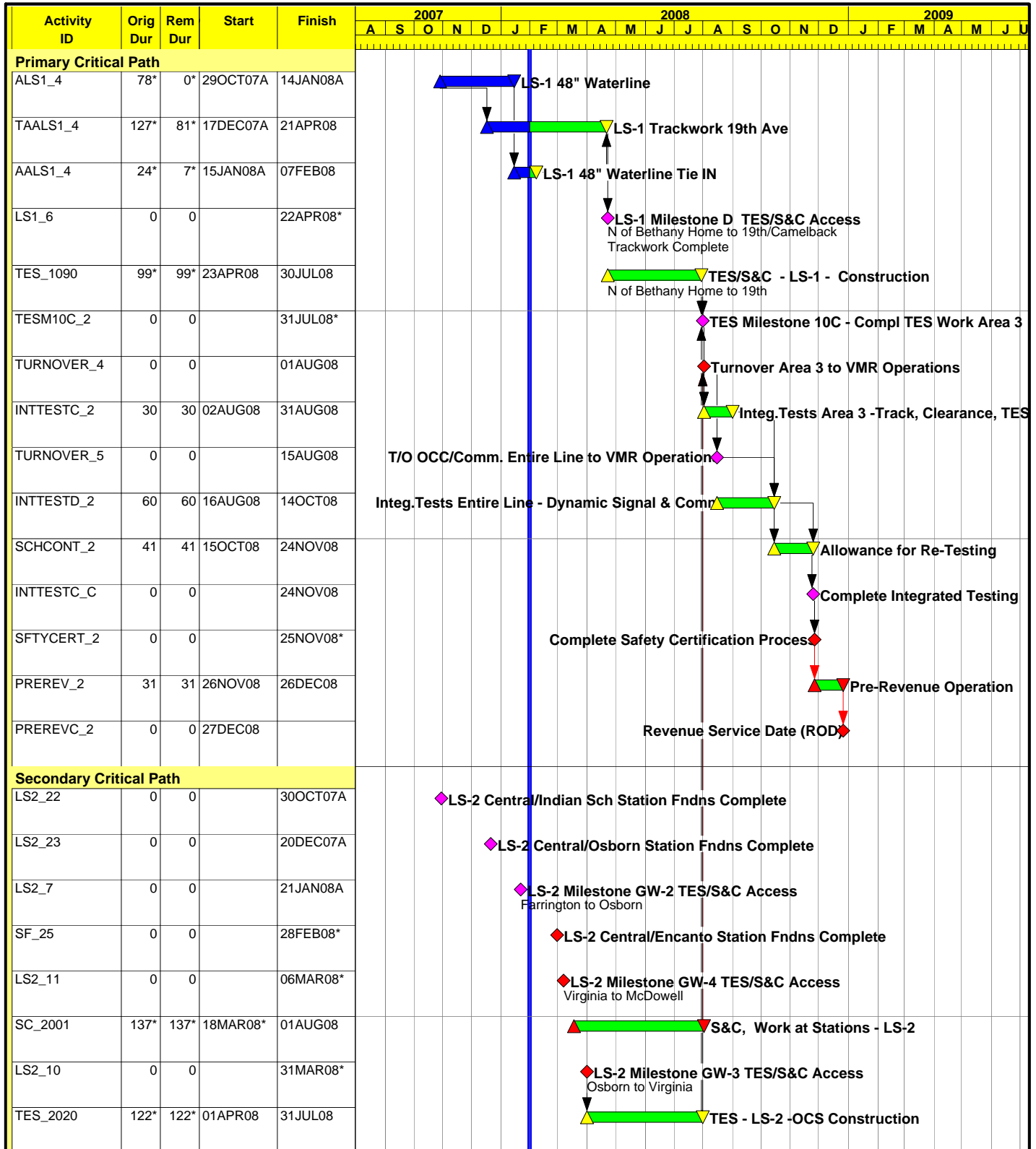
Signals and Communications	October, 2008
Fare Collection	November, 2008
Traction Electrification	August, 2008

**Startup:**

Start Integrated Testing Area 1 (24 <sup>th</sup> Street to the Mill Pocket Track)	March, 2008
Start Integrated Testing Area 2 (LS3 and Balance of LS5)	July, 2008
Start Integrated Testing Area 3 (All of LS2 and LS1):	August, 2008

**Critical Path(s):**

LS1 48-inch Waterline  
LS1 Track-work 19th Avenue  
LS1 48-inch Waterline Tie In  
S&C at LS1 19th Avenue/Camelback Area Construction  
LS1 Milestone D TES/S&C Access  
North of Bethany Home to 19th/Camelback  
Track-work Complete  
TES - LS1 - OCS Construction  
North of Bethany Home to 19th  
TES Milestone 10C - Complete TES Work Area 3  
Turnover Area 3 to METRO Operations  
Integrated Tests Area 3 -Track, Clearance, TES  
T/O OCC/Communications Entire Line to METRO Operations  
Integrated Tests Entire Line Dynamic Signal and Communication  
Allowance for Re-Testing  
Complete Integrated Testing  
Complete Safety Certification Process  
Pre-Revenue Operation  
Revenue Service Date (ROD)



Start Date 01AUG04  
 Finish Date 26DEC08  
 Data Date 01FEB08  
 Run Date 28JAN08 08:09

8002

Sheet 1 of 1

Valley Metro Rail

Central Phoenix/East Valley LRT

Critical Path



Procurement Bid Status Report as of 1/31/08						
Title	Issue Date	Pre-Bid Conf	Bid Opening	Board Award	NTP (Anticipated)	
<b>PART I – CP/EV LRT PROJECTS</b>						
Long Term Maintenance Services for OMC and Facilities	3/31/08	4/10/08	5/15/08	8/20/08	9/1/08	
<b>PART II – LONG RANGE DEVELOPMENT PROJECTS</b>						
Architectural/Engineering On-Call Consultant Services - Future Extension Projects	1/21/08	2/12/08	3/3/08	4/16/08	5/1/08	



## 4. Quality Assurance

### Description

The METRO Quality Assurance Manager is responsible for the establishment and implementation of a Quality Assurance Program for the Valley Metro Rail 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 Structural

- Attended (CAC) bi-weekly Resident Engineer meetings.
- Attended Line Section weekly progress and coordination meetings.
- Completed audit of Construction Administration Consultant's compliance with selected sections of its Resident Engineer Manual for the Line Section 4 contract. Audit closed.
- Conducted audit for Construction Administration Consultant's continued compliance/implementation of its QA Manual. Audit closed.
- Conducted audit for Construction Administration Consultant's compliance with selected sections of its Resident Engineer Manual for the Line Section 1 contract. Audit closed.

##### Light Rail Vehicle

- Audits
  - Updates to the Engineering Change Notice books
  - Car History Books for LRV 120, 121 and 122
- Inspections
  - Continuing inspections of the assembly and testing process, for example;
    - Mainline and yard load testing
    - Final vehicle inspections



- Interior and exterior inspections
- Truck inspections
- Wiring checks and testing of communications equipment
- Hi-Pot and Megger Testing
- Vehicle Final Assembly
  - Accepted delivery of LRV 120 and 121

Construction Administration Consultant Activities

Personnel

- The new CAC QA Manager began work.

Quality Manuals Reviewed

- To date all Line Section Contractor’s Quality Plans have been approved.

General

- Attended weekly Resident Engineer meetings.
- Attended various Line Section weekly coordination meetings.

Nonconformance Report Log (NCR), 41 items

Total NCR’s	New NCR’s	Closed NCR’s	Remaining NCR’s	NCR’s Projected to be Closed in February
41	10	4	27	6

Quality Action Request Log (QAR), 38 items:

Total QAR’s	New QAR’s	Closed QAR’s	Remaining QAR’s	QAR’s Projected to be Closed in February
28	0	0	28	7

**Cost and Schedule – Variance Analysis**

- Quality Assurance activities remain within budget and on schedule.

**Issues and Solutions**

- Rail breaks; the cause and remedy is currently under investigation.

## 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

Line Section 3 is finalizing plans for a milestone event to be held on February 6<sup>th</sup>. The Rock the Rail Event will celebrate light rail construction progress on Central Avenue south of Roosevelt Street. The event is designed to promote the businesses in the area of Central Avenue and Roosevelt. Local restaurants will be participating and handing out samples of their food product. Event attendees will have opportunity to enter to win gift certificates from local retail shops; including two round-trip airfare tickets courtesy of Southwest Airlines. The cheerleaders and Sparky from Arizona State University will also be in attendance to kickoff the celebration. The Event is being co-sponsored by Phoenix Community Alliance, Friends of Transit, Archer Western Construction Company, City of Phoenix, and METRO.

Public Involvement staff continues their effort to provide regular updates to stakeholders. METRO's PI Manager provided a Light Rail Update at METRO Board Chair, Tom Simplot's Monthly District 4 Breakfast, at the Adam Diaz Senior Center. Citizens voiced their interest in future opportunities to visit METRO's Operations and Maintenance Center as well as possible tour of the vehicles. Councilman Simplot indicated that he would inquire with METRO with the next available opportunity to host a future District 4 meeting at METRO's OMC.

**BUSINESS ASSISTANCE**



- Order and delivery of Courtesy Signage Program continues in all Line Sections. Through January, **740** signs and **446** banners (**1,186** totals) have been issued for businesses in the 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	98	87	185
Line Section Two	110	63	173
Line Section Three	258	86	344
Line Section Four	41	37	78
Line Section Five	233	173	406
<b>Totals</b>	<b>740</b>	<b>446</b>	<b>1,186</b>

**METRO Business Outreach Program**

The following is a break down of business outreach statistics as of January 31, 2008:

- METRO Max Program Participants – **276** businesses
- Construction Signage Program – **1,186** ( 740 signs and 446 banners)
- City of Tempe Asset Assistance Program – **2**
- City of Mesa/U.S. Bank Asset Assistance Program – Outreach continues
- Management Technical Assistance (MTA) Program – **322** 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

- The LS1 CAB conducted the January meeting at METRO's Operations and Maintenance Center. Joe Marie and Jay Harper provided information about the vehicle, the design, and the assembly process. CAB members were able to tour a vehicle and take a ride around the yard. During the contractor's presentation, Kiewit showed progress photos and provided an update on the schedule. Kiewit began track installation on 19<sup>th</sup> Avenue at Montebello heading south. In addition, utility work on the 48-inch and 45-inch waterlines is progressing. It was noted that Missouri will reopen on January 31, 2008 and Colter on February 2, 2008. Mr. Adam Barrier, Kiewit's Traffic Control Supervisor, indicated he would be leaving the METRO project. Mr. Barrier introduced his replacement Matthew Hemsath. METRO presented Mr. Gary LeBlanc with a certificate for his participation on METRO's Youth Safety Educators Board. Vice-Chair Ardyce Edstrom requested a presentation on the landscaping planned for the LS1 portion of the alignment. The CAB gave a contractor rating of 90 percent in January and the final 8<sup>th</sup> Quarter rating was 90 percent. The next meeting is scheduled for Tuesday, February 12, 2008.

### Line Section 2

- The LS2 CAB conducted the January meeting at METRO's Operations and Maintenance Center. METRO's Operations Manager, Jay Harper, provided information about the vehicle, the design, and the assembly process. Members were able to tour a vehicle and take a ride around the yard. While reviewing activity reports related to construction noise, Herzog noted they have changed the start time in the Encanto area to 7:00 a.m. During the contractor presentation, Herzog showed progress photos and provided an update on the schedule. Crews have begun roadway widening on the west side of Central from Farrington south, which created a traffic switch to the east side of the road. Herzog explained they are working with the businesses on the west side to ensure access during construction. It was noted track installation will begin in the Virginia intersection on January 18, 2008. METRO welcomed Jane Reddin representing the



Phoenix Towers as a new member to the board. Ms. Reddin is replacing Mr. Howard Mays. Herzog received a 90 percent rating for January and an 80 percent rating for the 8<sup>th</sup> Quarter. The next meeting is scheduled for Tuesday, February 19, 2008.

Line Section 3

- METRO's Community Advisory Board (CAB) for Line Section 3 held the monthly meeting in the METRO Board Room on Tuesday, January 8<sup>th</sup>. Ms. Marty McNeil, METRO Marketing Manager, provided an overview of the public safety education plan for METRO. The Activity Reports for the month and Construction Survey Summary responses were presented to members. Archer Western Contractors (AWC) delivered a contractor presentation, highlighting the progress and successes achieved during the last month and displayed examples of AWC going "above and beyond" the contract specifications. The overall contractor rating for January was 90 percent. The next meeting is scheduled for Tuesday, February 12, 2008.

Line Section 4

- CAB program concluded in November 2007.

Line Section 5

- Ken Smith, METRO Deputy Project Manager, summarized a handout detailing the LS5 follow-on contract's scope, contractors, and schedules. The LS5 CAB will not meet in February and will reconvene in March at the METRO Operations and Maintenance Center for a final meeting and thank you celebration to members and SSWJV. Ryan Snow, SSWJV Project Manager, provided details on recent notable milestones in LS5 which included the SSWJV paved another section of rubberized asphalt on Apache from McClintock to the Tempe Canal. Mr. Snow explained upcoming work which includes punch list items and restoration work. The next meeting is scheduled for March 13, 2008.

**Cost Status**

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 January is at **\$ 2,165,682**

Line Section	Total Amount Available	Available for Award to Date	Total Award to Date	% Award to Date
LS1	\$241,181	\$192,945	\$185,709	96%
LS2	\$317,680	\$285,912	\$254,144	89%
LS3	\$865,916	\$865,916	\$701,392	81%
LS4	\$567,361	\$567,372	\$567,361	100%
LS5	\$507,862	\$457,076	\$457,076	100%



**Schedule Status**

- Public Involvement activities remain on schedule.

**Issues and Solutions**

- None.



## 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 14.54 percent, participation including change order work is at 15.02 percent and DBE's have been paid 14.78 percent of construction dollars to date.

### Procurement Activities

- The DBE Community has expressed concern regarding the way that METRO is soliciting on-call professional services. The concern stems from the fact that a DBE goal was not set for on-call Engineering & Architectural services. DBE participation will be evaluated on a task order-by-task order basis after determining scope and funding sources. An addendum responding to questions related to this concern has been issued and a discussion of DBE inclusion has been added to the pre-submittal meeting agenda.

### 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



- 14.81 percent Current DBE Participation (adjusted contract amounts)
- \$8,600,445 Total DBE Subcontracted Amount
- Line Section 2 - Herzog
  - 12.10 percent Minimum DBE Participation
  - 15.69 percent Committed at Bid
  - 19.79 percent Current DBE Participation (adjusted contract amounts)
  - \$11,845,156 Total DBE Subcontracted Amount
- Line Section 3 - Archer Western Contractors
  - 12.30 percent Minimum DBE Participation
  - 13.59 percent Committed at Bid
  - 15.99 percent Current DBE Participation (adjusted contract amounts)
  - \$16,543,403 Total DBE Subcontracted Amount
- Line Section 4 - Sundt/Stacy and Witbeck
  - 11.50 percent Minimum DBE Participation
  - 14.47 percent Committed at Bid
  - 11.98 percent Current DBE Participation (adjusted contract amounts)
  - \$7,300,387 Total DBE Subcontracted Amount
- Line Section 5 - Sundt/Stacy and Witbeck
  - 14.90 percent Minimum DBE Participation
  - 16.73 percent Committed at Bid
  - 17.64 percent Current DBE Participation (adjusted contract amounts)
  - \$13,990,411 Total DBE Subcontracted Amount
- Station Finishes - Archer Western Contractors
  - 12.20 percent Minimum DBE Participation
  - 12.98 percent Committed at Bid
  - 14.45 percent Current DBE Participation (adjusted contract amounts)
  - \$9,501,543 Total DBE Subcontracted Amount



- Operations and Maintenance Center – Sundt/Stacy and Witbeck (Contract Closed)
  - 7.34 percent Minimum DBE Participation
  - 7.54 percent Committed at Bid
  - 8.21 percent Current DBE Participation (adjusted contract amounts)
  - \$4,973,643 Total DBE Subcontracted Amount
- Traction Electrification - Mass Electric
  - 10.00 percent Minimum DBE Participation
  - 11.17 percent Committed at Bid
  - 10.98 percent Current DBE Participation (adjusted contract amounts)
  - \$6,384,884 Total DBE Subcontracted Amount
- Signals and Communications - Mass Electric
  - 11.00 percent Minimum DBE Participation
  - 11.67 percent Committed at Bid
  - 11.04 percent Current DBE Participation (adjusted contract amounts)
  - \$4,520,392 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)
  - \$12,288,109 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
- Archaeological Services; DBE Prime, Archaeological Consulting Services Inc.
  - \$3,240,597 Total DBE Amount
- Park & Rides; DBE Prime, MRM Construction
  - 20.50 percent Minimum DBE Participation
  - 53.00 percent Committed at Bid
  - 53.00 percent Current DBE Participation (adjusted contract amounts)
  - \$3,000,000 Total DBE Subcontracted Amount
- Park & Rides; Kiewit Western Contractors
  - 20500 percent Minimum DBE Participation
  - 23.68 percent Committed at Bid



- 23.68 percent Current DBE Participation (adjusted contract amounts)
- \$1,850,777 Total DBE Subcontracted Amount
- Park & Rides; Sundt/Stacy and Witbeck
  - 20.50 percent Minimum DBE Participation
  - 31.79 percent Committed at Bid
  - 31.79 percent Current DBE Participation (adjusted contract amounts)
  - \$2,816,902.00 Total DBE Subcontracted Amount

#### Outreach Activities

- On January 25, 2008 City of Phoenix staff facilitated a Labor Compliance/Davis Bacon training workshop on behalf of the DBE program. Approximately 40 people were in attendance and, based on comments received by attendees, the workshop appeared to be very well received. As a result of this workshop's success, the City of Phoenix Labor Compliance Department is considering offering regularly scheduled training sessions to general contractors and DBE subs.
- The next Quarterly DBE Outreach Advisory Committee Meeting will take place February 19, 2008 from 11:30 a.m. to 1:00 p.m. at the Operations and Maintenance Center.

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

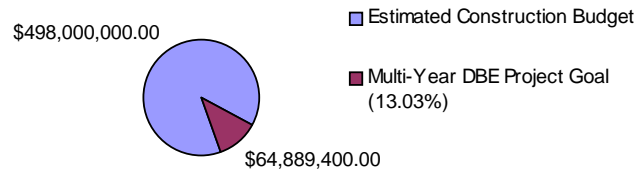
- DBE activities remain within budget and on schedule.

#### **Issues and Solutions**

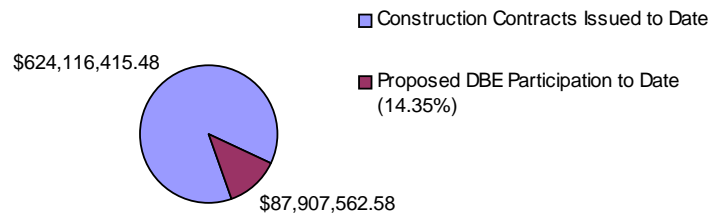
- There are no issues to report this period.



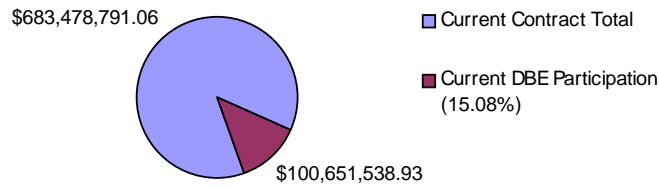
### DBE Program Overview



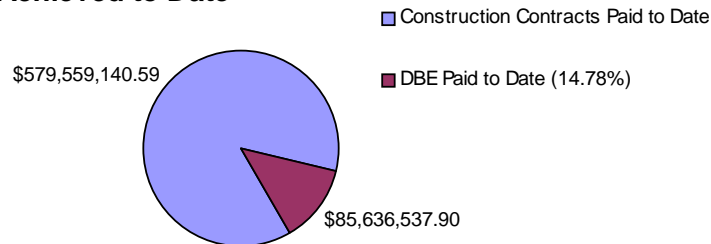
### Original Contract Amounts



### Current Participation



### Achieved to Date





## 7. System Safety and Security

### Description

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

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

### Progress

- Since March 2007, 1,333 METRO, consultant, contractor, utility company, and City personnel have received track access safety training. Thirty-four people received this training in January. A new method of issuing ID cards and hard hat stickers was instituted that results in a person taking the class receiving them at the end of the session.
- The Collision Investigation Focus Group, involving METRO and municipal police collision investigators, continues to develop procedures for investigating METRO collisions.
- Developed the safety plan for rail grinding.
- Participated in two art piece design reviews, and inspected the art piece at the Van Buren / Central and 1<sup>st</sup> Avenue station.
- Worked with the utilities coordinator, operations and maintenance to improve the lighting on the north boundary of the OMC site. The contractor will also clear debris and underbrush.
- Working with ADOT and their safety and security consultant in preparation for the FTA readiness review to be conducted in March/April, 2008.
- Reviewed mid-block pedestrian crossing design at Central and Taylor.
- Developed a “Virtual Tour, METRO Light Rail Vehicles” training program for emergency services personnel.
- 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 review and comment process for METRO Standard Operating Procedures.
- The Fire/Life Safety and Security Committee, and Safety and Security Certification Review Committee meetings met to address concerns to both groups.



**Safety and Security Certification Status**

Contract	# of Checklist Items	# of Checklist Items Complete	% Complete	Estimated Certification Date	Comments
Town Lake Bridge	41	41	100%	Aug 2006	<b>CLOSED.</b> Certificate of Compliance is completed.
Operations & Maintenance Center	353	353	100%	Sept 2007	<b>CLOSED.</b> Certification is completed. Supplemental report submitted by RE.
LS - 1	121	14	65%	June 2008	Substantial Completion scheduled for 07/31/08.
LS - 2	127	95	75%	Aug 2008	Approximately 75% is complete through a CDRL/Submittal or an inspector's report. The other 25% is pending until the end of the project for verification with inspectors or cannot be verified until the end of the project.
LS - 3	214	64	30%	Oct 2008	
LS - 4	125	110	88%	March 2008	
LS - 5	107	64	60%	Apr 2008	Substantial Completion scheduled over next two months.
LRV	205	0	0%	Nov 2008	Checklist items are being entered into database.
Ticket Vending Machines	38	0	0%	Nov 2008	
Station Finishes	55	0	0%	Nov 2008	Substantial Completion scheduled for 06/30/08.
Signals & Comm	255	52	20%	Oct 2008	
Traction Electrification System	233	40	17%	Nov 2008	
Art Contracts	Two pieces of art were inspected. Art contracts will be certified on a case by case basis as each piece is installed.				



**Construction Accident Data**

METRO Construction Incident Rate	October 2007	Previous 12 Month Average
	2.50	1.50
OSHA National Construction Incident Rate = 5.60		

METRO Construction Lost Time Rate	October 2007	Previous 12 Month Average
	0.00	0.00
OSHA National Construction Lost time Rate = 2.10		

Total Hours Worked, October 2007 – 162,698
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**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 Monitoring

- Provided archaeological monitoring in LS 2, and 3, and park-and-ride facilities at 38<sup>th</sup> Street / Washington and Central and Camelback for all ground disturbance activities.
- No significant resources were discovered this month.
- ACS has been providing one part-time field archaeologists with supervision.

#### Archaeology Testing and Analyses

- Commenced burial analyses – Pueblo Grande.
- Commenced stone tool analyses – Pueblo Grande and La Plaza.
- Commenced ceramic analyses –Pueblo Grande and La Plaza.

#### Contaminated and Hazardous Materials

- Provided disposal of concrete asbestos pipe in LS2.
- Cleaned up oily substance spill of unknown origin at 7<sup>th</sup> Avenue and Camelback.

#### Regulatory Compliance

- Secured Finding of No Significant Impact for 11<sup>th</sup> Street Crossover. This completes NEPA documentation for this addition to the CP/EV project.
- Conducted field observations of contractors for compliance with the Stormwater Pollution Prevention Plan. No substantial problems were identified.
- Reviewed Storm Water Pollution Prevention Plan and Environmental Prevention Plan submittals from Sundt/Stacy and Witbeck, Inc for Price/Apache Park and Ride project.



### Cost and Schedule – Variance Analysis

#### Archaeology Monitoring FY 08

Task Order 2 – Cost +Fee construction monitoring FY'08	\$218,536
Billed as of January 31, 2007 (estimated)	(\$199,163)
Balance available	\$19,353
Agency reserve for data recovery through end of construction	\$100,000

#### Archaeology Testing and Analyses

Contract Value	\$2,697,095
FY 08 Budget	\$1,027,098
Invoiced Through January 31, 2007	\$99,206
Funds Available FY08	\$927,892

#### Hazardous Materials Assessment (CAC)

Original Contract Value	\$499,488
Contract Value to date	\$499,488
Invoiced through December, 2007	(\$478,709)
Task orders open	(\$18,000)
Expended + Committed	\$496,709
Estimated cost to complete	\$498,000

#### Remediation and Treatment Fund (METRO)

Budget	\$1,004,000
Expended or Committed	(\$106,811)
ERI invoiced to date (December 31, 2007)	(\$96,811)
Open Task orders	(\$10,000)
Transferred to Archaeology Monitoring-Data Recovery	(\$650,000)
<u>Funds Available</u>	<u>\$247,189</u>

### Issues and Solutions

- None.



## 9. Real Estate

### Description

The LRT Project travels down main business arterials in the cities of Phoenix, Tempe and Mesa and approximately 769 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, as well as all of the normal fee acquisitions. Real Estate staffs 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 148 parcels are available for construction. Line Section 1 contains 149 parcels.
- In Line Section 2, all 29 relocations have been completed. A total of 90 parcels are under City control and 89 parcels are available for construction. Line Section 2 contains 92 parcels.
- In Line Section 3, all 36 relocations have been completed. All 254 parcels are under City control and are available for construction. Line Section 3 contains 254 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, 37 of the 41 relocations have been completed and 4 relocations are in progress. 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; all eighteen have been completed. 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, all citations have been adequately addressed and the FTA has rendered a final decision as of November 8, 2007. All issues have been resolved and the FTA's decisions have been accepted by the Project. Mesa is currently providing relocation entitlements (moving costs) to Firestone to satisfy its citation and Tempe has obtained an appraisal for the McClintock property and it has been forwarded to the FTA for review and resolution. The City of Phoenix has also revised its Settlement Procedures for Condemnation Cases and this process will be incorporated into the updated Real Estate Acquisition Management Plan.



- 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	\$ 11,435,123	\$ 1,753,931	\$ 13,189,054
Total	\$127,649,273	\$23,975,136	\$151,624,409
Spent To Date	\$123,016,742	\$18,205,829	\$141,222,571
Balance Available	\$ 4,632,531	\$ 5,769,307	\$ 10,401,838

### **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 resolved. Efforts are now focused on completing cost-to-cure work. No parcels are impeding construction work.



**CENTRAL PHOENIX / EAST VALLEY  
LIGHT RAIL TRANSIT PROJECT  
REAL ESTATE ACQUISITION SUMMARY  
January 31, 2008**

ACTIVITY	1 PHX	2 PHX	3 PHX	4 PHX	4 TEMPE	5 TEMPE	5 MESA	Totals
Full Takes	40	0	9	2	0	12	0	<b>63</b>
Partial Takes	109	92	245	105	1	109	45	<b>706</b>
<b>Total Affected Parcels</b>	<b>149</b>	<b>92</b>	<b>254</b>	<b>107</b>	<b>1</b>	<b>121</b>	<b>45</b>	<b>769</b>
Projected Relocations	183	29	36	28	0	40	1	<b>317</b>
Title Reports Completed	149	92	254	107	1	121	45	<b>769</b>
Legals sent to City	149	92	254	107	1	121	45	<b>769</b>
Appraisals Requested	149	92	254	107	1	121	45	<b>769</b>
Appraisals Completed	149	92	254	107	1	121	45	<b>769</b>
Offers Made	149	92	254	107	1	121	45	<b>769</b>
Offers Accepted	120	74	233	95	1	119	40	<b>682</b>
<b>Escrow Closed Acquisition Complete</b>	<b>116</b>	<b>73</b>	<b>232</b>	<b>93</b>	<b>1</b>	<b>119</b>	<b>40</b>	<b>674</b>
Condemnation Filed	25	15	21	11	0	2	5	<b>79</b>
OIP Received	24	12	19	9	0	2	5	<b>71</b>
ROE Signed	9	5	3	5	0	0	0	<b>22</b>
Relocations Underway	0	0	0	0	0	3	1	<b>4</b>
Relocations Completed	183	29	36	28	0	37	0	<b>313</b>
<b>Parcels Under City Control</b>	<b>149</b>	<b>90</b>	<b>254</b>	<b>107</b>	<b>1</b>	<b>121</b>	<b>45</b>	<b>767</b>
Parcels Available for Construction	148	89	254	107	1	121	45	<b>765</b>
Parcels Pending Release for Construction	1	1	0	0	0	0	0	<b>2</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
  - Utility conflicts and coordination are being addressed on a case-by-case basis in the field.
  - SRP – Power conversion of 12 kV from overhead to underground on 19<sup>th</sup> Avenue from Missouri Avenue to Bethany Home Road is complete.
  - Qwest continues to splice cable on 19<sup>th</sup> Avenue from Missouri Avenue to Bethany Home Road. This work may take up to 4 weeks to complete.
- Line Section 2, 3, 4 and 5
  - Utility conflicts and coordination issues - None
- Line Section 3 - Utility conflicts and coordination issues - None
  - 11<sup>th</sup> Street Turn Around - conflicts and coordination issues:
    - Archer Western will be doing trenching/conduits for APS and Qwest – no issues at this time.
    - SWG facilities were potholed. There is 2-foot vertical clearance which will not impact 42-inch water line relocation. SWG will lower their facilities once Archer Western is done with waterline work so there will be no impacts to 42-inch water line relocation. SWG will proceed in relocating facilities on Washington Street and 11<sup>th</sup> Street. Work will be done nights and weekends only.
- Park and Rides
  - Camelback Road and 19<sup>th</sup> Avenue
    - Private irrigation on Park and Ride will be relocated once SRP Ground Water group can complete construction of the new well site.

- Camelback Road and 3<sup>rd</sup> Avenue
  - APS and Qwest have completed main line trenching for overhead to underground conversion. The City has awarded the contract for underground electrical service to houses and once services are done, APS and Qwest will start removing their overhead facilities.
- Traction Power Substations and Station Platforms
  - APS and SRP will provide power to facilities when requested so that it does not impact MEC's schedule – no issues at this time.

### Cost and Schedule – Variance Analysis

- None.

### Issues and Solutions

- 11<sup>th</sup> Street Turn Around: Utility relocation does not impact Contractor schedule for relocating 42-inch water line at 11<sup>th</sup> Street and Jefferson Street. New electric service requests are met when requested by various contractors.

### Construction Photographs



LS1 - SRP Power removing overhead facilities on 19<sup>th</sup> Avenue from Missouri Avenue to Bethany Home Road



LS1 - SRP Power conversion



**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	89%	\$6,340,344	\$5,631,994	\$6,006,398	\$8,215,410
Line Section 2	100%	\$1,874,369	\$2,073,313	\$1,081,515	\$2,202,076
Line Section 3	97%	\$3,064,666	\$2,973,072	\$4,279,723	\$4,930,018
Line Section 4	100%	\$4,765,701	\$4,804,312	\$6,785,903	\$6,860,712
Line Section 5	100%	\$8,005,952	\$8,158,928	\$7,395,690	\$9,903,441
Maintenance Storage Facility	100%	\$320,230	\$320,230	\$441,254	\$637,257
Town Lake Bridge	100%	\$1,150,000	\$1,150,000	\$824,097	\$1,238,798
Prior Right Utilities	0%	\$0	\$0	\$4,455	\$4,455
<b>Subtotal</b>	<b>98%</b>	<b>\$25,521,262</b>	<b>\$25,111,849</b>	<b>\$26,819,035</b>	<b>\$33,992,167</b>
Contingency	98%	\$8,478,738	\$8,309,163	\$0	\$7,833
	<b>98%</b>	<b>\$8,478,738</b>	<b>\$8,309,163</b>	<b>\$0</b>	<b>\$7,833</b>
	<b>98%</b>	<b>\$34,000,000</b>	<b>\$33,421,012</b>	<b>\$26,819,035</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. Archer Western Contractors have sent architectural “dog bones” to the artist for incorporation into artwork prior to installation.
  - Camelback/7<sup>th</sup> Avenue: Pavers from Advanced Terrazzo are in fabrication and installation should occur at the end of February.
- Line Section 2
  - Camelback: Artist has installed the stone ring. The contractor has pushed back installation of the seating elements several weeks.



- Osborn: Bronze footprint pavers have been delivered to AWC site. Installation is now tentatively scheduled for April 2008.
- Encanto: Bronze sculpture and boxes are carved all cast. The entry way, Canterra Stone, is blocked out.
- Line Section 3
  - McDowell: Station Artist Michael Maglich passed away on August 2, 2007. METRO will contract with the artist's widow, Susan Carrick, to complete the project after January.
  - Van Buren: Final Walk through for the artwork determined minor adjustments that need to be made to prevent future potential damage. This change was highlighted during the design phase. The artist will come out to make additions.
  - Central/Washington – 1st Avenue/Jefferson: The terrazzo medallions depicting Justice Sandra Day O'Connor and John Frank were completed and unveiled to the media on October 30, 2007. Artist is waiting for completion of railings to install final art work.
  - Third Street: Steel fabrication is continuing. Archer Western has poured foundations for all three sculptures. Artwork should be installed in February or March.
  - Twelfth Street: Fabrication is continuing. Concrete pavers are completed and have been installed.
  - Twenty-Fourth Street: Metal Art Panels have been installed.
- Line Section 4
  - Forty-Fourth Street: Art columns were installed by Archer Western Contractors, who modified the artist-furnished base plates without prior permission from the artist's engineer. We are still working out this issue.
  - Priest/Washington: Fabrication on the main sculptural piece is completed and installation by Archer Western Contractors has begun.
- Tempe Town Lake
  - Artwork has been completed except for the final programming of the bridge lighting.
- Line Section 5
  - Mill/3rd Avenue: Staff is working to resolve installation issues. Additional photos for field measurements have been taken, artist is fabricating glass panels. Installation could occur as early as the end of February.
  - College/5th Avenue: The pedestals have been delivered, inspected by artist, and installed. Bronzes are in fabrication.
  - Apache Boulevard Stations

- Sculpture: Suikang Zhao, Dorsey sculpture artist met with METRO and City of Tempe staff to resolve issues on the completion of the hands sculpture. Work is continuing and issues of additional costs are being resolved to bring the sculpture on schedule for the 2008 opening.
- Paving: Paving has been installed at the Dorsey Station; artist is making progress on the remaining three stations.
  - Trellis boxes: The artist has three boxes completed.
- Sycamore/Main: Fabrication has begun. Artist must redesign paving inserts to accommodate new paving size and pattern.
- General Progress
  - Working with Archer Western Contractors (AWC) to resolve the foundation installation and scheduling issues.
  - Working with artists and GEC to resolve the outstanding request for information issues.

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

- Working with AWC to install artwork at the Priest/Washington station and the Dorsey/Apache station, 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.

### **Construction Photograph**



Artwork at Central and Camelback by Ilan Averbuch

## 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 Station Finishes 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 south of the realigned Montebello Avenue. Contractor finalizing completed utility work and other site improvements. Contractor completed structural steel and canopy installation. Contractor currently working on paver sidewalk.



- Work on underground utilities is completed and structural steel installation is completed at the Central Avenue and Camelback Transit Center. Construction of site screen walls continues as well as other site work improvements. Canopy installation is completed. Artwork installation is completed. Contractor continuing to work on brick paver sidewalk.
- Washington and 44<sup>th</sup> Street Transit Center: Installation of Interior wall assemblies and miscellaneous finishes continue at Operator Facility Building (OPF3).
- Sycamore and Main Street Transit Center: Site grading and curb/gutter construction is ongoing. Installation of Interior wall assemblies and miscellaneous finishes continue at Operator Facility Building (OPF4).
- Stations:
  - Structural Steel installation has been completed for 24 Station foundations.
  - Canopy Installation has been completed for 19 Stations.
  - Louver Installation is completed for 7 stations.
  - Electrical/Communications Cabinet Installations have been completed for 22 Stations.
  - Paver installation has been completed for 20 Stations.
  - Work is ongoing at 24 Stations.
- A total of 31 station foundations have been substantially completed by Line Section Contractors and made available to the Station Finishes Contractor for Area Access.
- The Signals and Communications contractor has access to 18 station platforms.

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

- A revised schedule has been accepted by METRO. Substantial agreement has been reached between METRO and Archer Western Contractors. The revised schedule is being 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 fully executed.

**Construction Photographs**



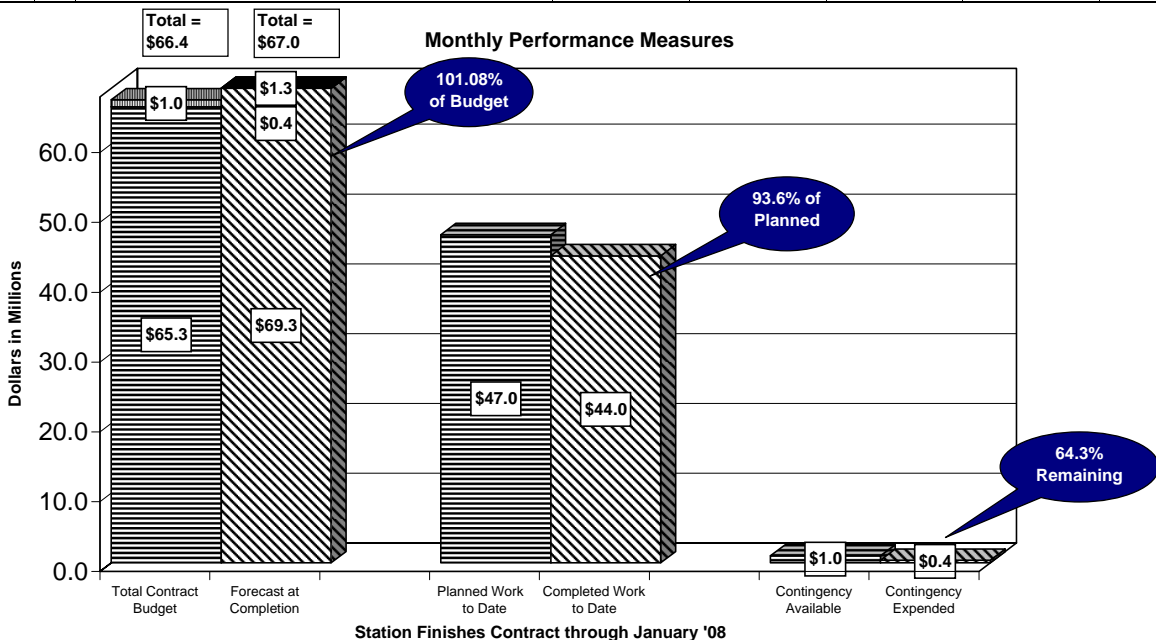
Louver Installation at University and Rural Station



Underground Electrical Installation at Smith Martin and Apache Station



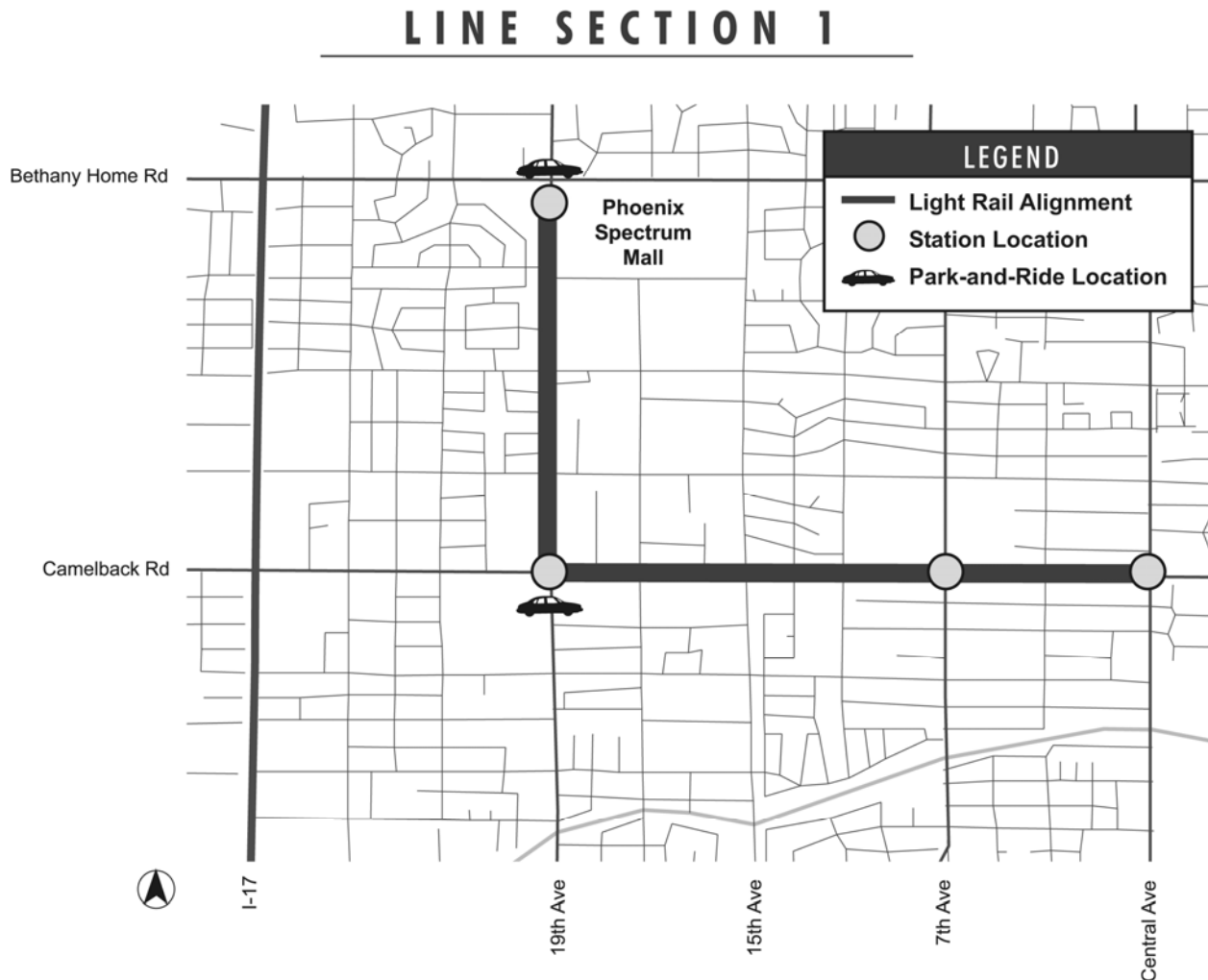
<b>Description:</b>		<b>3.2.1 Station Finishes</b>		
<b>PE/PA:</b>				
<b>Contractor:</b>		<b>Archer Western Contractors</b>		
<b>Resident Architect:</b>		<b>Doaa Aboul-Hosn</b>		
<b>Data Through:</b>		<b>December 31, 2007</b>		
<b>Cumulative</b>		<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Original Budget	\$52,985,000	\$12,348,000	\$65,333,000
2	Executed Change Orders	\$269,070	\$2,396,326	\$2,665,396
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$53,254,070	\$14,744,326	\$67,998,396
5	Work Scheduled	\$38,192,577	\$8,825,782	\$47,018,359
6	Work Earned	\$33,141,681	\$10,848,933	\$43,990,614
7	Actual Expenditures	\$33,581,321	\$10,890,489	\$44,471,810
8	Forecast to Complete Base (4-7)	\$19,672,749	\$3,853,837	\$23,526,586
9	Change Orders Pending Execution	\$92,977	\$1,216,803	\$1,309,780
10	Forecast at Completion (7+8+9)	\$53,347,047	\$15,961,129	\$69,308,176
11	Percent Budget Expended (7/4)	63.1%	73.9%	65.4%
12	Percent Planned (5/4)	71.7%	59.9%	69.1%
13	Earned Percent Complete (6/4)	62.2%	73.6%	64.7%
14	Schedule Performance (6/5)	0.87	1.23	0.94
15	Cost Performance (6/7)	0.99	N/A	0.99
16	Contingency Budget	\$546,000	\$469,414	\$1,015,414
17	Remaining Contingency	\$183,953	\$469,414	\$653,367
18	Percent Contingency Remaining (17/16)	33.7%	100.0%	64.3%
<b>Period</b>				
1	Original Budget	N/A	N/A	N/A
2	Executed Change Orders	\$98,478	\$0	\$98,478
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$53,254,070	\$14,744,326	\$98,478
5	Work Scheduled (Cumm - Last Period)	\$1,952,346	\$584,886	\$2,537,232
6	Work Earned (Cumm - Last Period)	\$2,999,960	\$818,126	\$3,818,086
7	Actual Expenditures (Cumm - Last Period)	\$2,987,194	\$818,134	\$3,805,328
8	Forecast to Complete Base (4-7)	\$50,266,876	\$13,926,192	\$64,193,068
9	Change Orders Pending Execution	-\$32,024	\$75,722	\$43,698
10	Forecast at Completion (7+8+9)	\$53,222,046	\$14,820,048	\$68,042,094
11	Percent Budget Expended (7/4)	5.6%	5.5%	5.6%
12	Percent Planned (5/4)	3.7%	4.0%	3.7%
13	Earned Percent Complete (6/4)	5.6%	5.5%	5.6%
14	Schedule Performance (6/5)	1.54	1.40	1.50
15	Cost Performance (6/7)	1.00	N/A	1.00
16	Contingency Budget			
17	Remaining Contingency			
18	Percent Contingency Remaining (17/16)			



Note: Forecast is greater than budget due to the addition of the Center Parkway Station, a COT CNPA

## 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 work excluding minor initial punchlist items have been completed on Camelback between Central Avenue and 16<sup>th</sup> Avenue.



- Center Guideway has been completed from Central Avenue to 19<sup>th</sup> Avenue excluding two destressing pours. The curved rail work for the 19<sup>th</sup> and Camelback intersection has been started and is progressing. SRP pole removal on 19<sup>th</sup> Avenue is complete from Camelback Road to Montebello Avenue.
- The 48-inch waterline installation is complete, tie-in is on schedule to be completed and the water turned back on by February 5th. KWC has completed the installation of the 12-inch waterline and 10-inch sanitary sewerline on the east side of 19<sup>th</sup> Avenue. Storm drain, waterline and sanitary sewer lateral installations are ongoing on 19<sup>th</sup> Avenue.
- All station foundations are complete and have been turned over to the follow on contractor. OCS foundations are being installed on 19<sup>th</sup> Avenue, KWC has five OCS foundations left to install. Guideway installation is ongoing with pours on the north and south end of 19<sup>th</sup> Avenue. Area between pours is being graded for track installation. KWC has started to weld up the Special Trackwork rail, first pour for special trackwork to be in February.
- Traffic control continues to be coordinated between all participants on the project. Final Paving and temporary striping is complete from Central Avenue to 16<sup>th</sup> Avenue on Camelback. Base paving is complete from 16<sup>th</sup> Avenue to 19<sup>th</sup> Avenue on both sides of Camelback and the west side of 19<sup>th</sup> Avenue. Traffic has been switched on 19<sup>th</sup> Avenue and is now completely on the west side of the street from Bethany Home Road to Camelback Road.

### **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**

- 48-inch waterline has been completed on time.
- SRP pole removal from Montebello Ave to Bethany Home Rd started late and is now impacting flatwork in this area. This is not on the critical path.
- Discovery of a shallow 12-inch existing waterline between Montebello and the Spectrum Mall entrance has slowed down the grading for the subgrade in this area. LS1 is working with Brown & Caldwell to lower this line.
- Change Order 90 was issued, revising the Contractual Milestone Dates (see chart below). One more Change Order will need to be issued in order to bring the final completion dates in line.

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**



Montebello Avenue Station Foundation Complete



Installing new 48-inch waterline



Installing 48-inch waterline

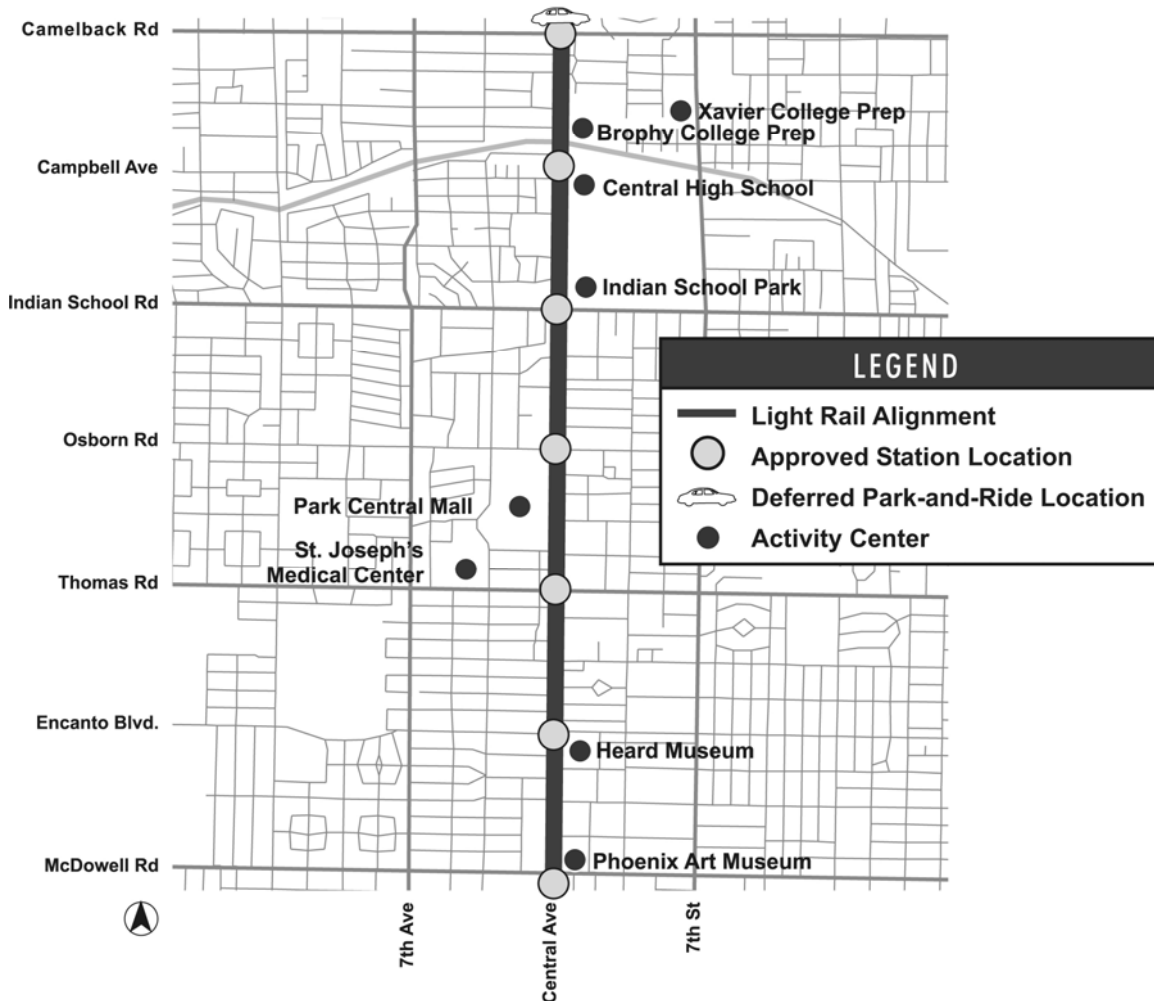


48" waterline Tie-in to existing 45-inch waterline



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 Columbus to Encanto intersection. They continued to install catch basins at various locations and to tie in sanitary services to new sanitary lines. Herzog completed the SRP Crossing at Encanto intersection, and continues to remove abandoned Waterlines from Thomas to Encanto.
- Herzog has placed a total of 24,500-feet of guideway to date with 3,200-feet this month. The Contractor continues to place guideway, curbs and devil strip on Central. Installed guideway Roanoke to Virginia, Monterey to Earll and Osborn to Columbus and continues to place the special track work in the bathtubs at Earll.
- Herzog has completed installation of infrastructure, OCS foundations for the Encanto Station.
- Herzog continues to work on the roadway widening, demolition of curb/gutter, sidewalks and placement of new curb and gutter, sidewalks, walls, street lights and traffic signals from Indian School south to Palm Lane. Herzog preparing sub-grade and placed Asphaltic Concrete (AC) Paving from Farrington to Clarendon south bound, milled AC South bound to Columbus.
- Herzog continues to work on installing sidewalk, retaining walls, sandstone borders, tree wells, and is currently working on the installation of landscaping, relocation of Palm Trees, planting trees and shrubs at various locations.

## 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 in 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 Landscaping



Completed Osborn Station Foundation



Forming Curb and Gutter



Installing Guideway Holly to Encanto



Placing colored sidewalk

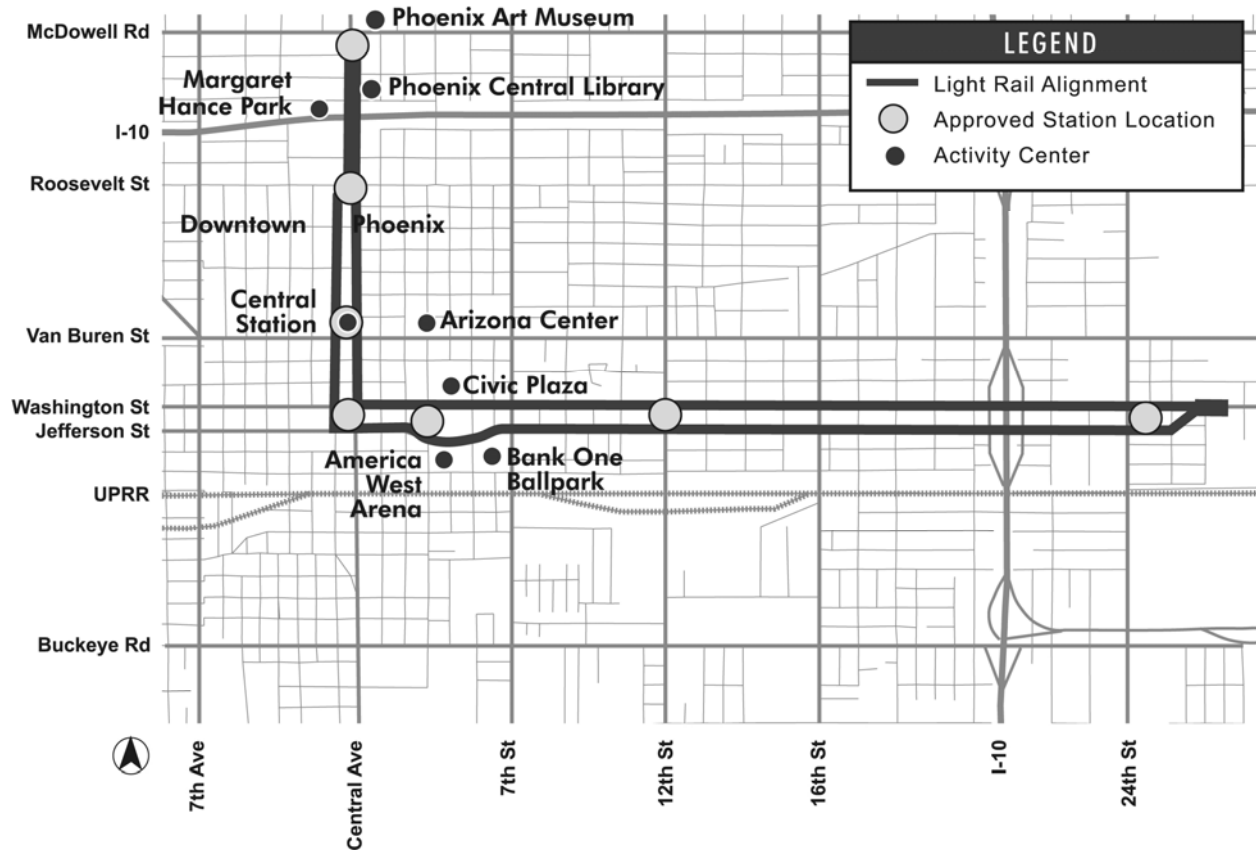


Prepare Sub-Grade for AC Paving



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 11 through 12 installing storm sewer, sanitary sewer and water service. AWC has completed installation of traffic features and wiring on traffic signals in segments throughout the project and is preparing for punch list and turnover to City of Phoenix. AWC has completed installation of OCS foundations and continues to place flatwork and irrigation systems as required along ROW and stations.
- AWC continues to work their day and night crews five ten-hour shifts a week. AWC is proceeding with the full depth asphalt installation on the east end of the project from 26<sup>th</sup> street to 16<sup>th</sup> street. Rubberized paving will resume as weather permits. AWC has completed the guideway rail heading on Jefferson except for the 11<sup>th</sup> Street Loop.
- AWC has completed the installation of the 50-meter mainline turnouts on Washington and Jefferson for the 11<sup>th</sup> Street Loop. Relocation of the waterline at Jefferson and 11<sup>th</sup> Street is scheduled to begin in February upon completion of other utility work that requires relocation.
- AWC has installed over 44,000 linear feet (100 percent) of guideway throughout the alignment. AWC is placing roadway paving and sidewalk throughout the alignment.
- AWC has completed several areas of landscaping irrigation work and has started planting material on 1<sup>st</sup> Avenue.

## Cost and Schedule – Variance Analysis

- AWC and METRO have completed negotiations concerning the master schedule milestone revision change order and requests for equitable adjustments and has issued a change order. The current progress schedule indicates the contractor has completed 85 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



Placing rubberized paving on Central Avenue



Chase Ball Park Planters



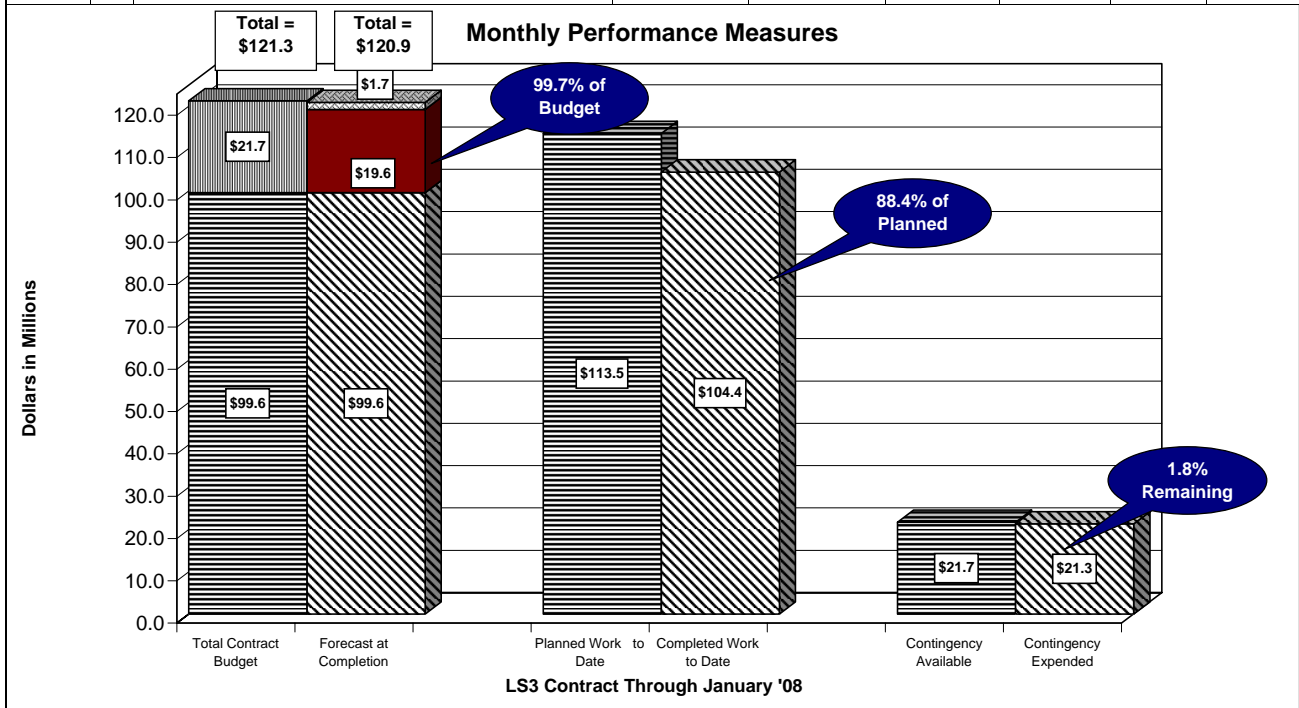
Rubberized Asphalt Paving on 1<sup>st</sup> Avenue



Planting Palms on 1<sup>st</sup> Avenue

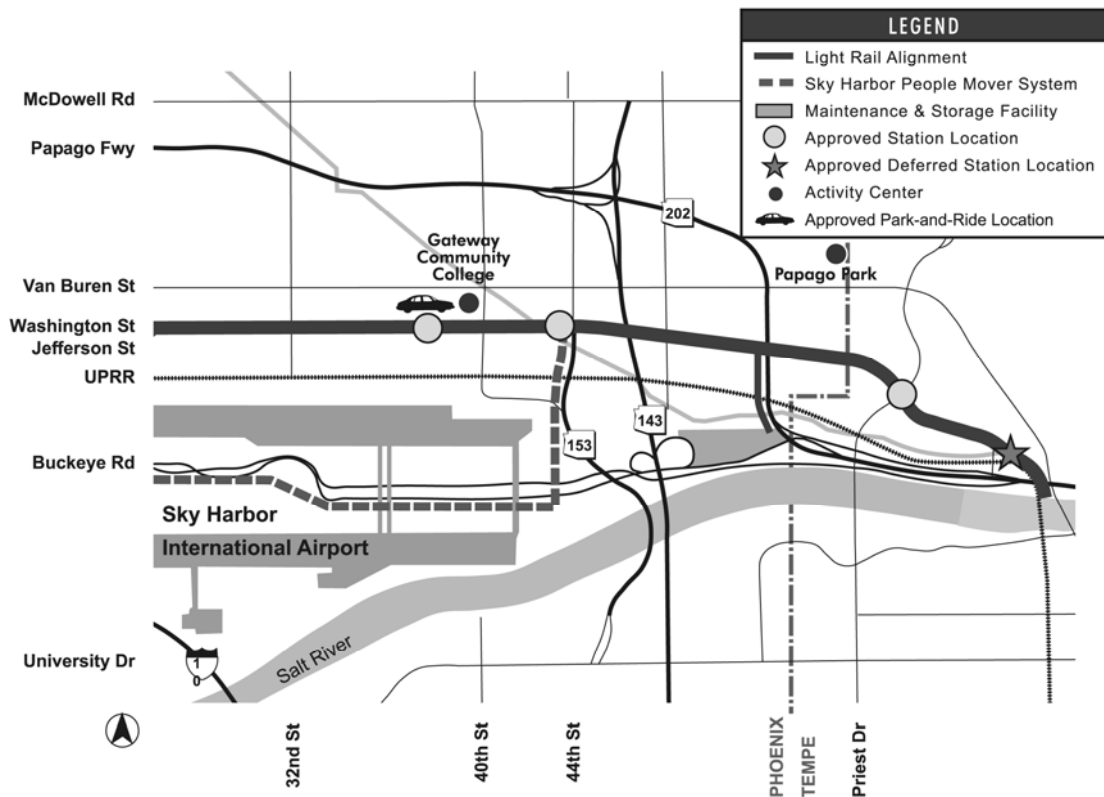


<b>Description:</b>		<b>3.1.3 Line Section 3</b>		
<b>PE/PA:</b>		<b>William Gustafson</b>		
<b>Contractor:</b>		<b>Archer Western</b>		
<b>Resident Engineer:</b>		<b>William Atesis</b>		
<b>Data Through:</b>		<b>December 28, 2007</b>		
		<b>5309</b>	<b>CNPA</b>	<b>Total</b>
<b>Cumulative</b>				
1	Budget	\$79,248,617	\$20,307,440	\$99,556,057
2	Executed Change Orders	\$18,807,657	\$1,373,806	\$20,181,463
3	Budget Transfers	\$0	\$539,912	\$539,912
4	Current Budget (1+2+3)	\$98,056,274	\$22,221,158	\$120,277,432
5	Work Scheduled	\$94,737,283	\$18,791,244	\$113,528,527
6	Work Earned	\$85,631,313	\$18,791,244	\$104,422,557
7	Actual Expenditures	\$85,967,620	\$17,273,310	\$103,240,930
8	Forecast to Complete Base (4-7)	\$12,088,654	\$4,947,848	\$17,036,502
9	Change Orders Pending Execution	\$78,597	\$1,576,940	\$1,655,537
10	Forecast at Completion (7+8+9)	\$98,134,871	\$23,798,098	\$121,932,969
11	Percent Budget Expended (7/4)	87.7%	77.7%	85.8%
12	Percent Planned (5/4)	96.6%	84.6%	94.4%
13	Earned Percent Complete (6/4)	87.3%	84.6%	86.8%
14	Schedule Performance (6/5)	0.90	1.00	0.92
15	Cost Performance (6/7)	1.00	1.09	1.01
16	Contingency Budget	\$20,348,232	\$1,349,094	\$21,697,326
17	Remaining Contingency	\$1,461,978	\$515,200	\$400,238
18	Percent Contingency Remaining (17/16)	7.2%	38.2%	1.8%
<b>Period</b>				
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	\$115,659	\$839,974	\$955,633
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$98,056,274	\$22,221,158	\$120,277,432
5	Work Scheduled (Cumm - Last Period)	\$3,208,465	\$5,354	\$3,213,819
6	Work Earned (Cumm - Last Period)	\$2,162,763	\$2,277,257	\$4,440,020
7	Actual Expenditures (Cumm - Last Period)	\$2,170,691	\$753,039	\$2,923,730
8	Forecast to Complete Base (4-7)	\$95,885,583	\$21,468,119	\$117,353,702
9	Change Orders Pending Execution	-\$302,502	\$331,067	\$28,565
10	Forecast at Completion (7+8+9)	\$97,753,772	\$22,552,225	\$120,305,997
11	Percent Budget Expended (7/4)	2.2%	3.4%	2.4%
12	Percent Planned (5/4)	3.3%	0.0%	2.7%
13	Earned Percent Complete (6/4)	2.2%	10.2%	3.7%
14	Schedule Performance (6/5)	0.67	425.34	1.38
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	\$6,282,573	\$391,098	\$6,673,671
18	Percent Contingency Remaining (17/16)	98.2%	31.8%	87.5%



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**

- Town Lake Bridge to 44<sup>th</sup> Street: Remaining punch-list items are complete.
- Forty-Fourth Street to 26<sup>th</sup> Street: The contractor is working on the punch-list items and remaining changes to the contract.

### Cost and Schedule – Variance Analysis

- The contract is in the progress of being closed.

### Issues and Solutions

- None.

### Construction Photographs



Final COT punch-list walk-through



TCE back of walk restoration



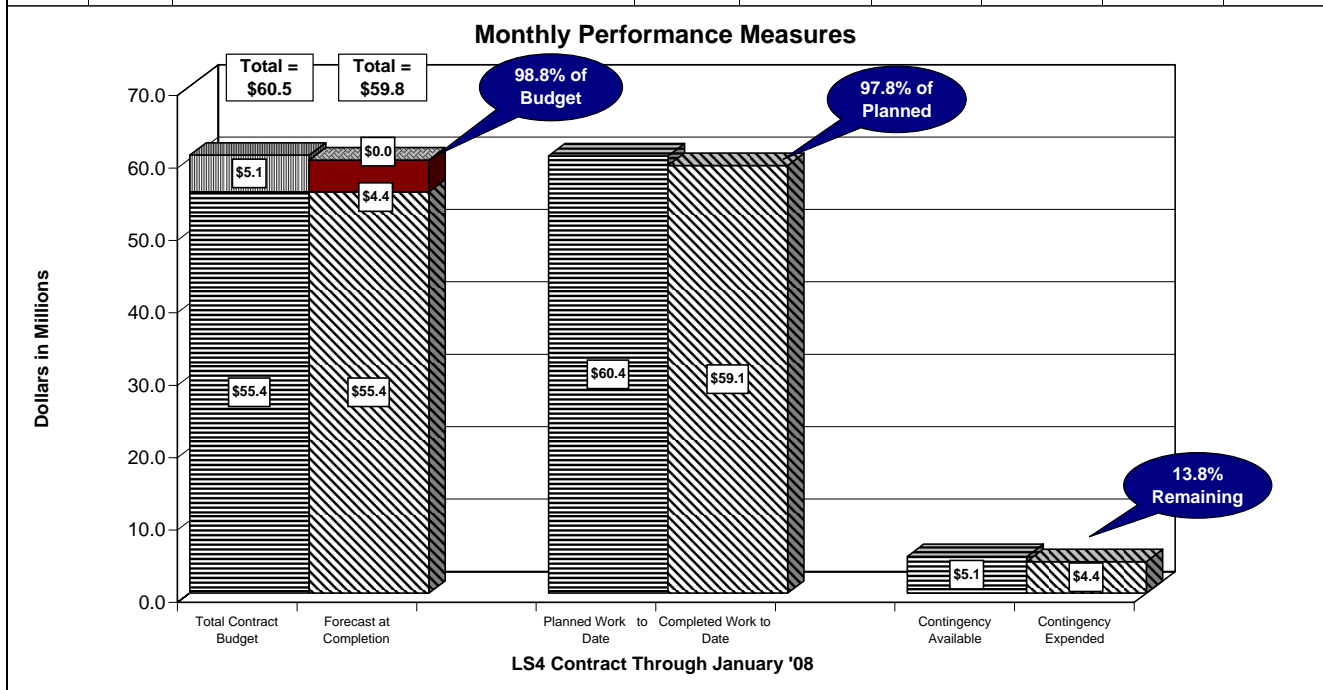
TCE back of walk restoration



Rail Grinding at 54<sup>th</sup> Place

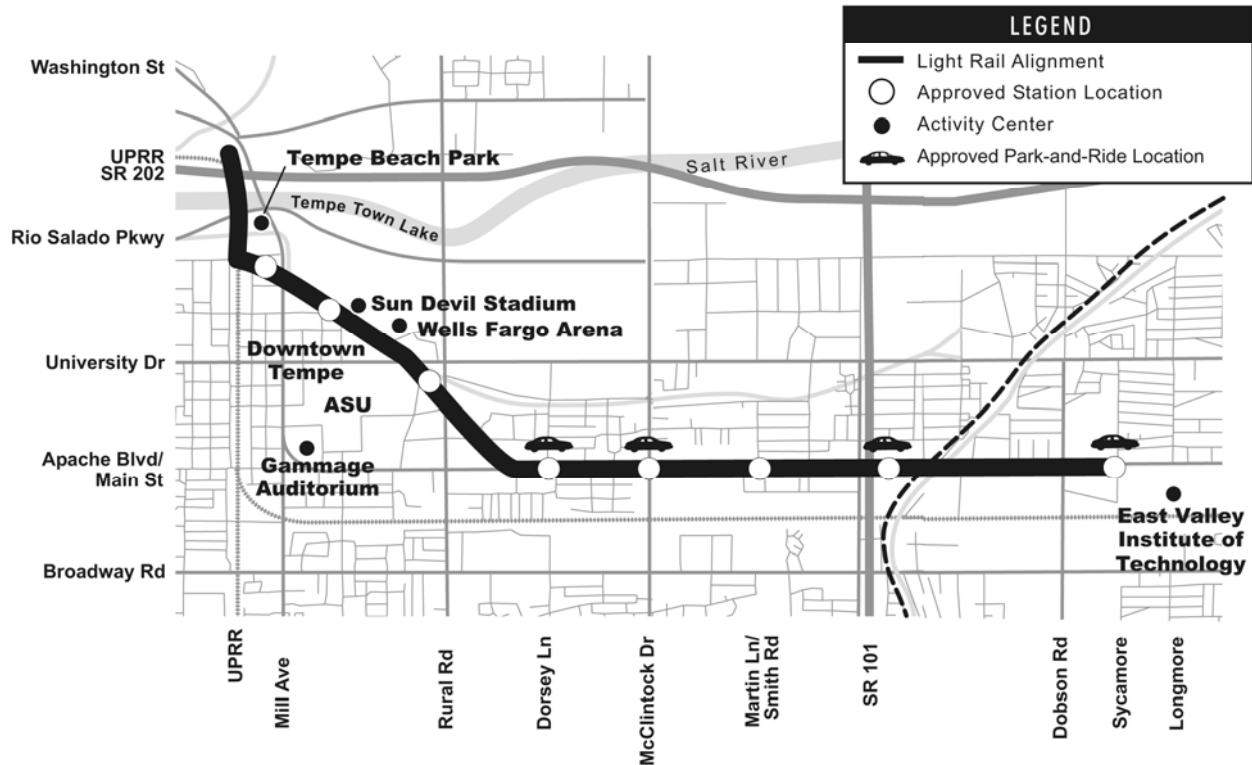


	<b>Description:</b>	<b>3.1.4 Line Section 4</b>		
	<b>PE/PA:</b>	<b>Avrum Loewenstein</b>		
	<b>Contractor:</b>	<b>Sundt/Stacey Witbeck</b>		
	<b>Resident Engineer:</b>	<b>Frank Aber</b>		
	<b>Data Through:</b>	<b>December 31, 2007</b>		
	<b>Cumulative</b>	<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Budget	\$47,869,894	\$7,557,905	\$55,427,799
2	Executed Change Orders	\$4,337,350	\$770,711	\$5,108,061
3	Budget Transfers	-\$625,000	\$1,230,322	\$605,322
4	Current Budget (1+2+3)	\$51,582,244	\$9,558,938	\$61,141,182
5	Work Scheduled	\$51,565,706	\$8,821,138	\$60,386,844
6	Work Earned	\$49,638,267	\$9,411,856	\$59,050,123
7	Actual Expenditures	\$51,469,339	\$9,415,627	\$60,884,966
8	Forecast to Complete Base (4-7)	\$112,905	\$143,311	\$256,216
9	Change Orders Pending Execution	\$287,590	\$42,711	\$330,301
10	Forecast at Completion (7+8+9)	\$51,869,834	\$9,601,649	\$61,471,483
11	Percent Budget Expended (7/4)	99.8%	98.5%	99.6%
12	Percent Planned (5/4)	100.0%	92.3%	98.8%
13	Earned Percent Complete (6/4)	96.2%	98.5%	96.6%
14	Schedule Performance (6/5)	0.96	1.07	0.98
15	Cost Performance (6/7)	0.96	1.00	0.97
16	Contingency Budget	\$4,662,188	\$409,525	\$5,071,713
17	Remaining Contingency	\$324,838	\$377,113	\$701,951
18	Percent Contingency Remaining (17/16)	7.0%	92.1%	13.8%
	<b>Period</b>			
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	-\$129,795	\$0	-\$129,795
3	Budget Transfers	\$0	-\$113,392	-\$113,392
4	Current Budget (1+2+3)	\$51,582,244	\$9,558,938	\$61,141,182
5	Work Scheduled (Cumm - Last Period)	-\$731,480	\$190,041	-\$541,439
6	Work Earned (Cumm - Last Period)	-\$42,827	\$52,140	\$9,313
7	Actual Expenditures (Cumm - Last Period)	\$995,957	\$63,142	\$1,059,099
8	Forecast to Complete Base (4-7)	\$112,905	\$143,311	\$256,216
9	Change Orders Pending Execution	\$94,096	\$85,684	\$179,780
10	Forecast at Completion (7+8+9)	\$1,202,958	\$292,137	\$1,495,095
11	Percent Budget Expended (7/4)	1.9%	0.7%	1.7%
12	Percent Planned (5/4)	-1.4%	2.0%	-0.9%
13	Earned Percent Complete (6/4)	-0.1%	0.5%	0.0%
14	Schedule Performance (6/5)	0.06	0.27	-0.02
15	Cost Performance (6/7)	-0.04	0.83	0.01
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 all embedded track for the project, as well as the direct fixation track at the end of the project.
- The Contractor has substantially completed all track milestones, and all station platforms.



- The Contractor is coordinating with follow-on contractors in various locations in Milestones A2 through F2 since their substantial completion.
- The Contractor has completed all guideway ductbank and microduct placements.
- The Contractor has completed street widening on Main Street from Dobson to Sycamore, and is awaiting warmer weather to perform the mill and overlay in this area.
- The Contractor continued traffic signal activations throughout Tempe and Mesa.
- The Contractor continued punchlist and change work throughout Tempe and Mesa.

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

- Milestones A2 through F2 are substantially complete, as are all eight station platforms. Though Milestones C2 through F2 were been challenged by utility relocation delays, the Contractor has met these milestones as set in Change Order 83 for acceleration.

### **Issues and Solutions**

- The Contractor now reached a point in which all Third Party utilities have been relocated. Only a handful of electrical feeds for traffic signals, bus shelter lights, and irrigation controllers remain to be placed.
- Maintenance of traffic flow throughout the project area is beginning to ease, with traffic restrictions currently limited primarily to Mesa. However, close coordination with local cities and ADOT is still required for periodic closures and for shifting traffic patterns.
- 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. The December Community Advisory Board ratings remained at the 100 percent that the Contractor usually has received.

**Construction Photographs**



Punchlist Work, ASU Promenade, Milestone G



Change Work, Milestone H



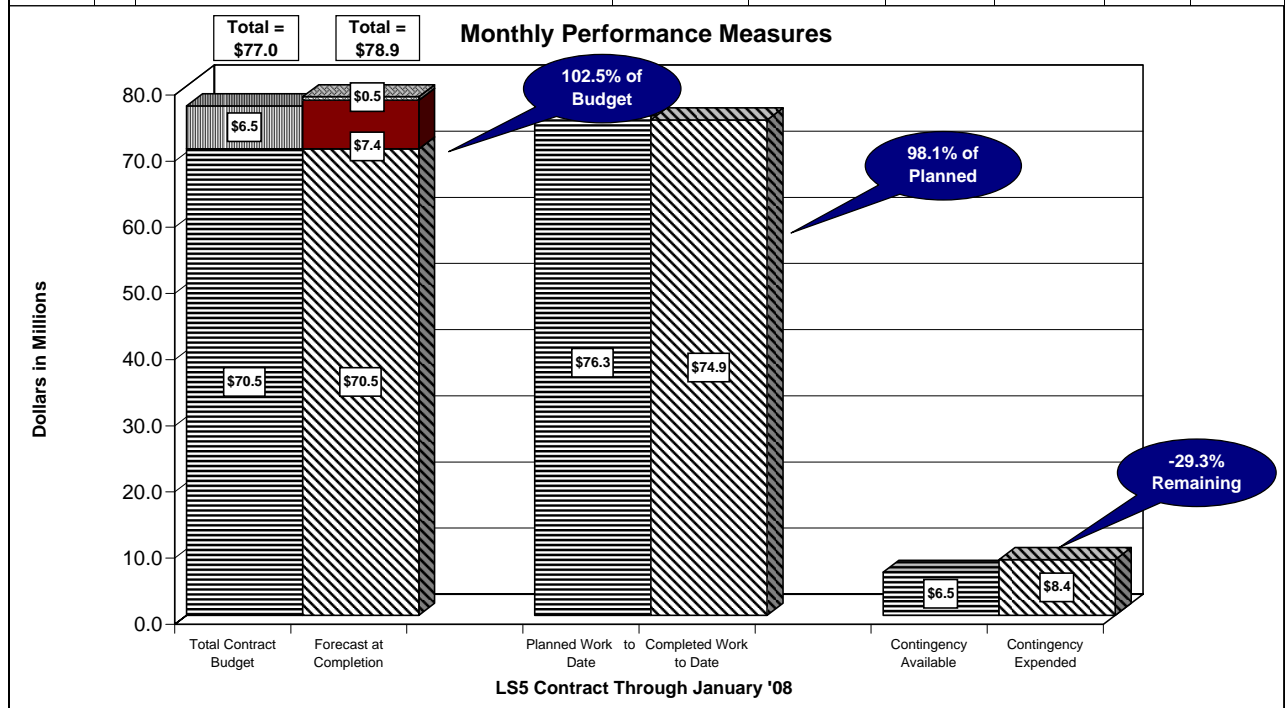
Punchlist Work, Tempe, Milestone H



Traffic Signal Work, Mesa, Milestone H



	<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>January 15, 2008</b>		
	<b>Cumulative</b>	<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Budget	\$68,882,969	\$1,610,897	\$70,493,866
2	Executed Change Orders	\$7,356,774	\$526,396	\$7,883,170
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$76,239,743	\$2,137,293	\$78,377,036
5	Work Scheduled	\$74,809,239	\$1,489,136	\$76,298,375
6	Work Earned	\$73,015,239	\$1,852,159	\$74,867,398
7	Actual Expenditures	\$74,703,632	\$1,634,081	\$76,337,713
8	Forecast to Complete Base (4-7)	\$1,536,111	\$503,212	\$2,039,323
9	Change Orders Pending Execution	\$537,276	\$0	\$537,276
10	Forecast at Completion (7+8+9)	\$76,777,019	\$2,137,293	\$78,914,312
11	Percent Budget Expended (7/4)	98.0%	76.5%	97.4%
12	Percent Planned (5/4)	98.1%	69.7%	97.3%
13	Earned Percent Complete (6/4)	95.8%	86.7%	95.5%
14	Schedule Performance (6/5) (SPI)	0.98	0.00	0.98
15	Cost Performance (6/7) (CPI)	0.98	0.00	0.98
16	Contingency Budget	\$6,408,135	\$104,416	\$6,512,551
17	Remaining Contingency	-\$1,485,915	-\$421,980	-\$1,907,895
18	Percent Contingency Remaining (17/16)	-23.2%	-404.1%	-29.3%
	<b>Period</b>			
1	Budget	N/A	N/A	N/A
2	Executed Change Orders	\$283,217	\$468,102	\$751,319
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$76,239,743	\$2,137,293	\$78,377,036
5	Work Scheduled (Cumm - Last Period)	\$1,937,693	-\$293,575	\$1,644,118
6	Work Earned (Cumm - Last Period)	\$520,598	\$466,011	\$986,609
7	Actual Expenditures (Cumm - Last Period)	\$677,304	\$466,011	\$1,143,315
8	Forecast to Complete Base (4-7)	\$75,562,439	\$1,671,282	\$77,233,721
9	Change Orders Pending Execution	-\$283,217	-\$466,011	-\$749,228
10	Forecast at Completion (7+8+9)	\$75,956,526	\$1,671,282	\$77,627,808
11	Percent Budget Expended (7/4)	0.9%	21.8%	1.5%
12	Percent Planned (5/4)	2.5%	-13.7%	2.1%
13	Earned Percent Complete (6/4)	0.7%	21.8%	1.3%
14	Schedule Performance (6/5)	0.27	0.00	0.60
15	Cost Performance (6/7)	0.00	0.00	0.00
16	Contingency Budget			
17	Remaining Contingency			
18	Percent Contingency Remaining (17/16)			



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



### Description

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

### Progress

- The 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

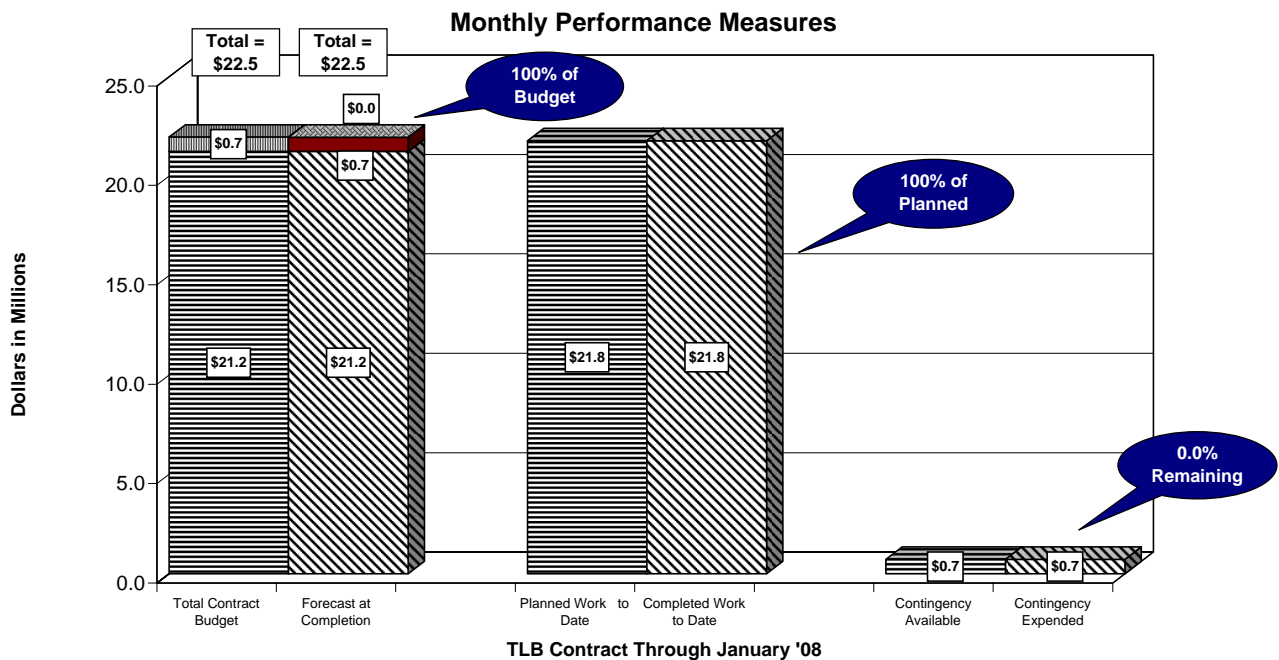
- This Contract has been closed.

### 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>Cumulative</b>	5309	CNPA	Total
1	Budget	\$21,219,861	\$17,523	\$21,237,384
2	Executed Change Orders	\$722,892	\$0	\$722,892
3	Budget Transfers	-\$183,000	\$0	-\$183,000
4	Current Budget (1+2+3)	\$21,759,753	\$17,523	\$21,777,276
5	Work Scheduled	\$21,759,753	\$17,523	\$21,777,276
6	Work Earned	\$21,759,753	\$15,771	\$21,775,524
7	Actual Expenditures	\$21,759,751	\$15,771	\$21,775,522
8	Forecast to Complete Base (4-7)	\$2	\$1,752	\$1,754
9	Change Orders Pending Execution	\$0	\$0	\$0
10	Forecast at Completion (7+8+9)	\$21,759,753	\$17,523	\$21,777,276
11	Percent Budget Expended (7/4)	100.0%	90.0%	100.0%
12	Percent Planned (5/4)	100.0%	100.0%	100.0%
13	Earned Percent Complete (6/4)	100.0%	90.0%	100.0%
14	Schedule Performance (6/5)	1.00	0.90	1.00
15	Cost Performance (6/7)	1.00	1.00	1.00
16	Contingency Budget	\$722,892	\$1,402	\$724,294
17	Remaining Contingency	\$0	\$1,402	\$1,402
18	Percent Contingency Remaining (17/16)	0.0%	0.0%	0.2%
	<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)	\$21,759,753	\$17,523	\$21,777,276
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)	\$21,759,753	\$17,523	\$21,777,276
9	Change Orders Pending Execution	\$0	\$0	\$0
10	Forecast at Completion (7+8+9)	\$21,759,753	\$0	\$21,759,753
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	\$0	\$0	\$0
18	Percent Contingency Remaining (17/16)	0.0%	0.0%	0.0%



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

- The contract is complete.

### Cost and Schedule – Variance Analysis

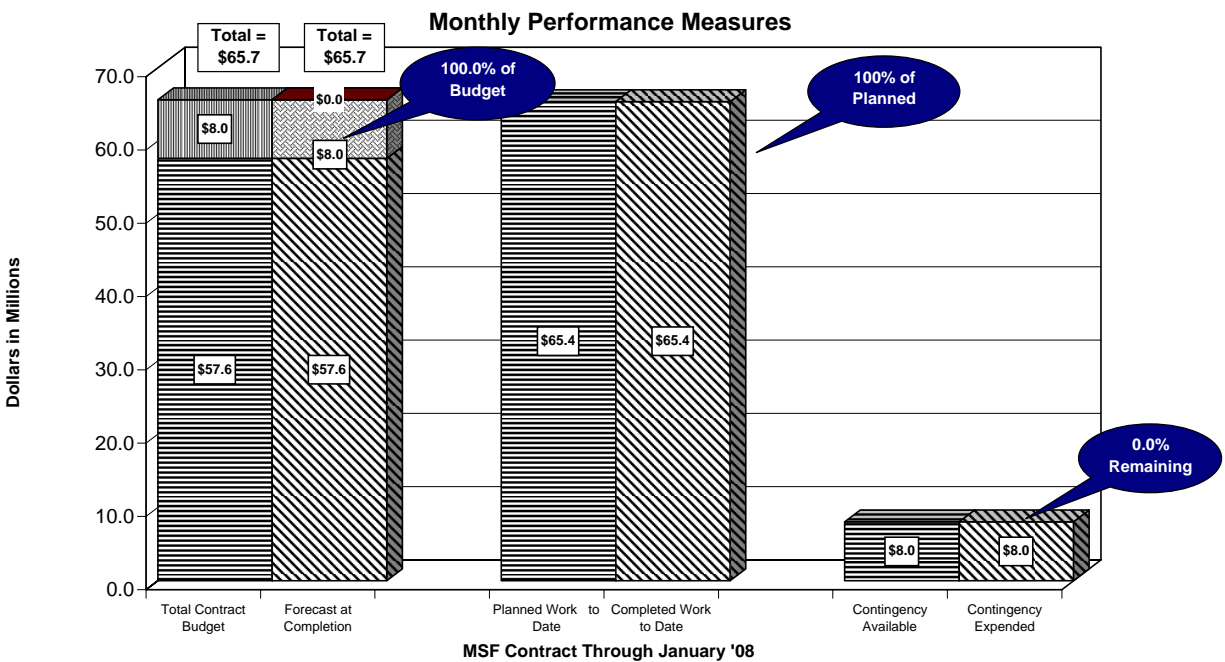
- This Contract has been closed.

### 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>		August 31, 2007	
		<b>5309</b>	<b>Total</b>
<b>Cumulative</b>			
1	Budget	\$57,637,721	\$57,637,721
2	Executed Change Orders	\$8,020,263	\$8,020,263
3	Budget Transfers	-\$257,984	-\$257,984
4	Current Budget (1+2+3)	\$65,400,000	\$65,400,000
5	Work Scheduled	\$65,400,000	\$65,400,000
6	Work Earned	\$65,400,000	\$65,400,000
7	Actual Expenditures	\$65,400,001	\$65,400,001
8	Forecast to Complete Base (4-7)	-\$1	-\$1
9	Change Orders Pending Execution	\$0	\$0
10	Forecast at Completion (7+8+9)	\$65,400,000	\$65,400,000
11	Percent Budget Expended (7/4)	100.0%	100.0%
12	Percent Planned (5/4)	100.0%	100.0%
13	Earned Percent Complete (6/4)	100.0%	100.0%
14	Schedule Performance (6/5)	1.00	1.00
15	Cost Performance (6/7)	1.00	1.00
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	\$925,357	\$925,357
3	Budget Transfers	\$0	\$0
4	Current Budget (1+2+3)	\$65,400,000	\$65,400,000
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)	\$65,400,000	\$65,400,000
9	Change Orders Pending Execution	\$0	\$0
10	Forecast at Completion (7+8+9)	\$65,400,000	\$65,400,000
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: Contract has been closed 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

- There has been no activity on the Montebello/19<sup>th</sup> Avenue and 19<sup>th</sup> Avenue/Camelback sites by Kiewit Construction.
- MRM Construction has installed the storm drainage facilities and the onsite waterline on the 38<sup>th</sup> Street/Washington site. Additionally, MRM has begun mass excavation and storm drain installation on the Central and Camelback site



- METRO issued a Notice to Proceed to Sundt/Stacy & Witbeck, Joint Venture for the Price/Apache and Sycamore/Main sites effective January 22, 2008.
- There has been no construction activity by Sundt/Stacy & Witbeck, Joint Venture on the Price/Apache and Sycamore/Main sites.
- The Developer for the McClintock/Apache site is in the process of constructing the garage. Anticipated access by METRO Signals and Communications contractor is March 25, 2008.
- The City of Tempe is in the process of design for an additional 100 spaces at Dorsey/Apache. Construction is anticipated for March 2008 thru August 2008. METRO Signals and Communications is providing the necessary interface for the facility security system.

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

- Total award amount for the six sites to be constructed by METRO is \$22,295,267.

### **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.
- The Price/Apache Park and Ride has various obstacles onsite that need to be removed before construction can begin. These consist of approximately 50 palm trees, a billboard with power service and an overhead power and Qwest line through the middle of the site.
- The fire line at both the Montebello/19<sup>th</sup> Avenue and 19<sup>th</sup> Avenue/Camelback sites are currently being re-evaluated by the City of Phoenix to determine if a backflow preventer will be required on these lines.

**Park and Ride Construction Data**

No.	Park and Ride Site	Number of Spaces	Notice to Proceed Date	Contractor
1	Montebello/19 <sup>th</sup> Ave.	794	December 3, 2007	Kiewit
2	19 <sup>th</sup> Ave./Camelback	410	December 3, 2007	Kiewit
3	Central/Camelback	135	December 3, 2007	MRM Construction
4	38 <sup>th</sup> St./Washington	189	December 3, 2007	MRM Construction
5	Dorsey/Apache (2-Sites)	190	March 2008	City of Tempe
6	McClintock/Apache--Garage	300	September 2007	Developer, Gray
7	Price Freeway/Apache	693	January 22, 2008	Sundt, Stacy & Witbeck
8	Sycamore/Main	802	January 22, 2008	Sundt, Stacy & Witbeck
<b>Opening Day Total</b>		<b>3,513</b>		

**Construction Photographs**



Storm Drain Installation  
38<sup>th</sup> and Washington



Preliminary Earthwork  
Central and Camelback

## Track Material Procurement



### Description

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

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

### Progress

- Girder Rail
- Embedded Special Trackwork
  - The Contractor continues to produce special trackwork castings and other miscellaneous materials for this contract.



**Cost and Schedule – Variance Analysis**

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

**Issues and Solutions**

- None.

## 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 has been completed.



- A table showing the status of costs incurred to-date versus budget follows:

<b>Description</b>	<b>Contract/Budget Amount</b>	<b>Total Payments</b>
COP Traffic System Upgrades	\$ 965,112.00	\$ 668,893.30
COT Traffic System Upgrades	\$ 350,347.00	\$ 189,612.00
Traffic Signal Controller/Cabinets	\$ 2,910,916.75	\$ 2,629,229.26
LS 1 Traffic Signal Poles/Mast Arms (Phoenix -PO is completed)	\$ 209,144.33	\$ 209,144.31
LS 2 Traffic Signal Poles/Mast Arms (Phoenix - PO is completed)	\$ 309,685.98	\$ 309,685.97
LS 3 Traffic Signal Poles/Mast Arms (Phoenix -PO is completed)	\$ 1,425,604.91	\$ 1,321,686.32
LS 4 Traffic Signal Poles/Mast Arms (Phoenix - PO is completed)	\$ 369,069.21	\$ 360,469.21
LS 4 Traffic Signal Poles/Mast Arms (Tempe - PO is completed)	\$ 337,883.00	\$ 336,247.85
LS 5 Traffic Signal Poles/Mast Arms (Tempe – PO is completed)	\$ 941,912.82	\$ 859,942.43

**Issues and Solutions**

- None.

## Underfloor Wheel Profiling Machine



### Description

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

### Progress

- The work is complete.

### Cost and Schedule – Variance Analysis

- The contract is in the process of being closed out.

### 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 - Formal closeout of PDR submittals in-progress.
- Milestone 4 Progress - Formal closeout of FDR submittals in-progress.



- Milestone 5 Progress - Performed First Article Configuration Inspection (FACI) in Burlington, MA at SBI's facilities. Overall inspection of the prototype revealed minor discrepancies.
- Milestone 6 Progress - Planning to perform Qualifications Tests in February 2008.

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

- The first Monthly Progress Update was received several months ago. This submittal was reviewed with a status of non-compliant with the previous month's review comments and the contract specifications and was returned to the contractor for correction and resubmittal. During the month of November the Contractor submitted a revised baseline schedule that was subsequently accepted. During the month of December the contractor submitted a schedule update based on the new baseline schedule. That schedule was reviewed and accepted with comments noted.

### **Issues and Solutions**

- Hand Held Verifier Design. SBI currently experiencing difficulty in providing a hand held verifier unit in conformance with the requirements. SBI continues to investigate industry alternatives.

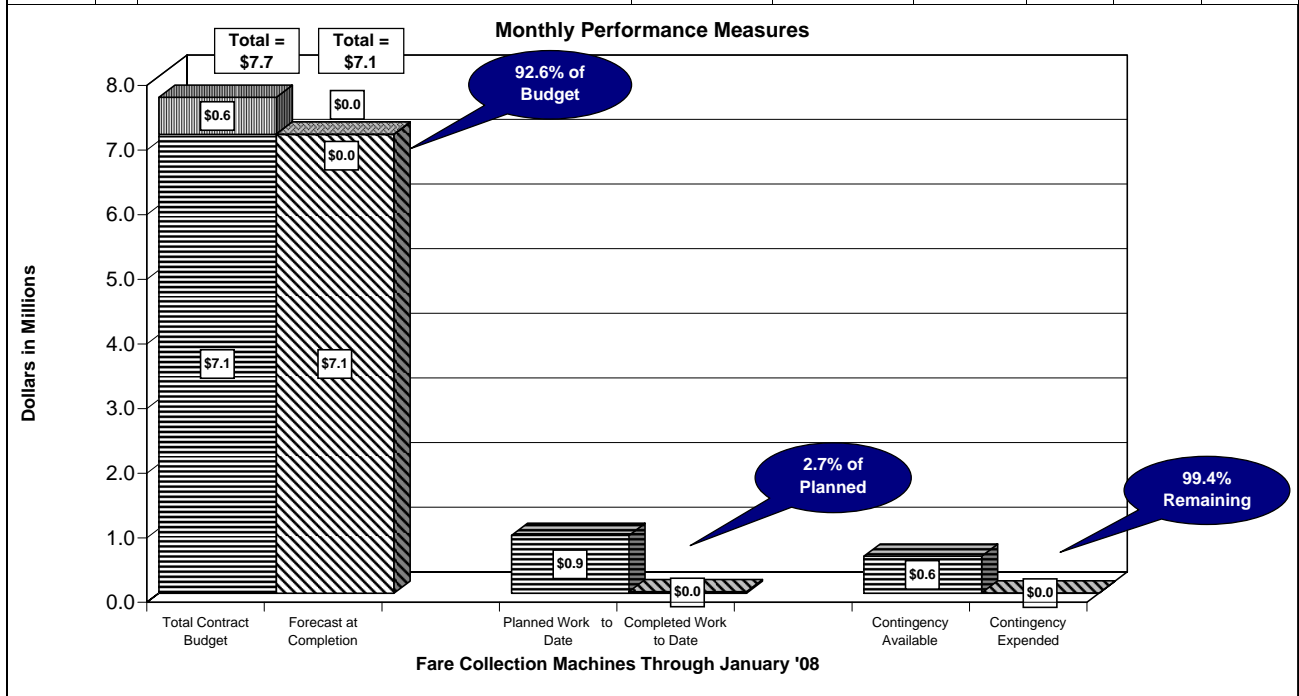
### Construction Photographs



First Article Configuration Inspection



<b>Description:</b>		<b>Fare Collection Machines</b>
<b>PE/PA:</b>		<b>Arkady Bernshtryn</b>
<b>Contractor:</b>		<b>Scheidt &amp; Bachmann USA, Inc.</b>
<b>Resident Engineer:</b>		<b>Thomas Klings</b>
<b>Data Through:</b>		<b>July 31, 2007</b>
<b>Cumulative</b>		
1	Original Budget	\$7,100,012
2	Executed Change Orders	\$3,200
3	Budget Transfers	\$0
4	Current Budget (1+2+3)	\$7,103,212
5	Work Scheduled	\$893,927
6	Work Earned	\$24,440
7	Actual Expenditures	\$24,436
8	Forecast to Complete Base (4-7)	\$7,078,776
9	Change Orders Pending Execution	\$0
10	Forecast at Completion (7+8+9)	\$7,103,212
11	Percent Budget Expended (7/4)	0.3%
12	Percent Planned (5/4)	12.6%
13	Earned Percent Complete (6/4)	0.3%
14	Schedule Performance (6/5)	N/A
15	Cost Performance (6/7)	N/A
16	Contingency Budget	\$574,535
17	Remaining Contingency	\$571,335
18	Percent Contingency Remaining (17/16)	99.4%
<b>Period</b>		
1	Original Budget	\$0
2	Executed Change Orders	\$0
3	Budget Transfers	\$0
4	Current Budget (1+2+3)	\$7,103,212
5	Work Scheduled (Cumm - Last Period)	\$264,349
6	Work Earned (Cumm - Last Period)	\$14,720
7	Actual Expenditures (Cumm - Last Period)	\$3,536
8	Forecast to Complete Base (4-7)	\$7,099,676
9	Change Orders Pending Execution	\$0
10	Forecast at Completion (7+8+9)	\$7,103,212
11	Percent Budget Expended (7/4)	0.0%
12	Percent Planned (5/4)	3.7%
13	Earned Percent Complete (6/4)	0.2%
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 for 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 need for design reviews have not been needed although VMR and KI are engaged in daily and weekly meetings. Main topics for presentation by KI and discussion are going to be: 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.
  - All 50 cars have been delivered from Osaka. No further inspections are ongoing in Osaka Japan.
    - LRV Mass Production – 50 Trains are now in production.
    - Inspections of the interior are being performed and ongoing. No defects noted.
    - Cars 122, 123, and 124, are in static testing and are being prepped for delivery acceptance.
    - Cars 120 and 121 have been inspected for delivery. Punch lists are done and waiting for title transfer.
  - METRO resident inspections in Phoenix final assembly:
    - Geo Focus equipment is being installed and testing is ongoing.
    - Geo Focus radio and MDL changes are done and approved.
    - Over 27 LRVs are in various stages of final assembly at the OMC.
    - Cars 101 thru 150 were shipped from Osaka for final assembly. All truck frames and components were also shipped from Osaka to Phoenix for final assembly...; 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 130 and above) in Tempe. KI will be responsible for security at the site as well as for costs associated with secondary handling of car bodies. KI is now in the process of moving cars out of the Tempe lot to the OMC.
    - A total of 20 LRV's are accepted as delivered.
    - Telephone, email and drawing exchange continue between KS-J and KI on vehicle issues, testing procedures and schedules, subsystem interfaces and equipment mounting, interior design and equipment installation, systems application issues, material shipments, production schedule and CDRL's items.
    - Qualification testing is ongoing in the yard for low speed. Car 101 is qualified to 40 mph.
    - Conditional acceptance testing procedures are set up and will start on February 4, 2008.

### **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 has experienced parts shortages which has caused impacts on the short term delivery schedule of LRVs. The problems involve the supply of gearbox 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. Most of the parts shortages are moving forward. KI is now ahead on APS's, HVAC's and gearboxes. VMR and KI representatives visited the US gear box assembly plant. The production at the plant is going very well. With 20 gear boxes going to assemble this month.
- 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.

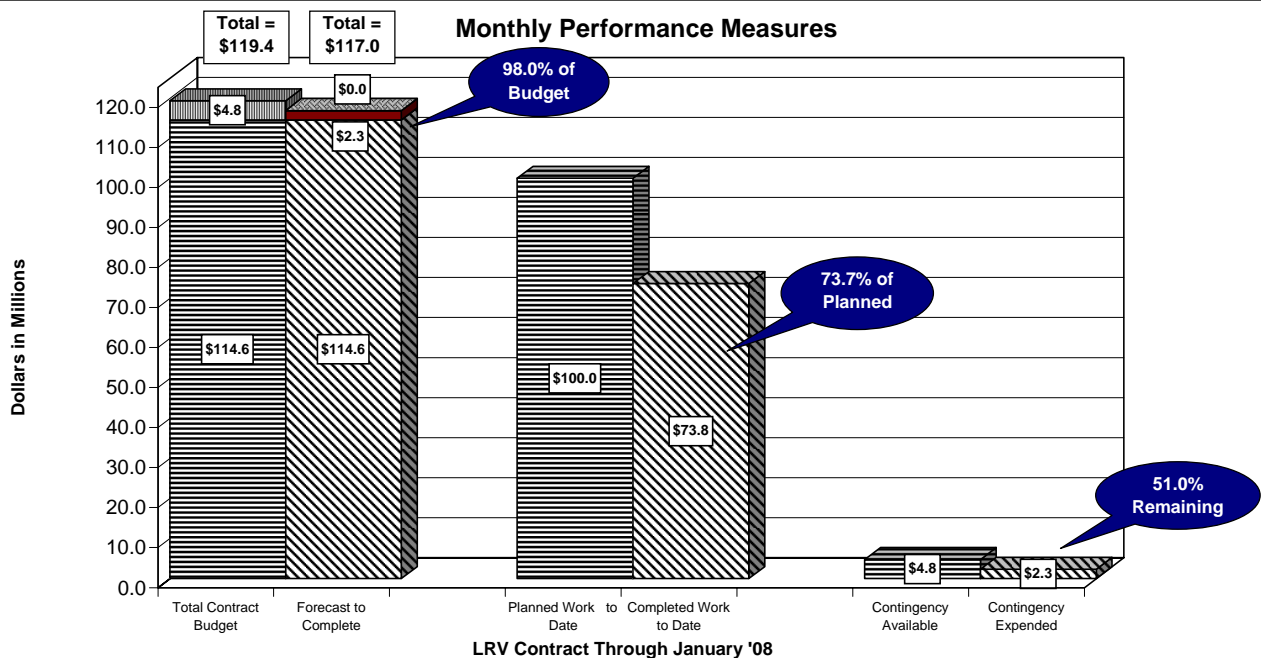
### Construction Photographs



Vehicle Assembly at the OMC



<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>December 31, 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	\$2,337,225	\$0	\$2,337,225
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$116,957,005	\$40,050,160	\$157,007,165
5	Work Scheduled	\$100,032,445	N/A	\$100,032,445
6	Work Earned	\$73,753,569	N/A	\$73,753,569
7	Actual Expenditures	\$74,511,172	N/A	\$74,511,172
8	Forecast to Complete Base (4-7)	\$42,445,833	N/A	\$42,445,833
9	Change Orders Pending Execution	\$0	N/A	\$0
10	Forecast at Completion (7+8+9)	\$116,957,005	\$40,050,160	\$157,007,165
11	Percent Budget Expended (7/4)	63.7%	N/A	N/A
12	Percent Planned (5/4)	85.5%	N/A	N/A
13	Earned Percent Complete (6/4)	63.1%	N/A	N/A
14	Schedule Performance (6/5)	0.74	N/A	N/A
15	Cost Performance (6/7)	0.99	N/A	N/A
16	Contingency Budget	\$4,768,489	\$2,135,840	\$6,904,329
17	Remaining Contingency	\$2,431,264	\$2,135,840	\$4,567,104
18	Percent Contingency Remaining (17/16)	51.0%	N/A	N/A
<b>Period</b>				
1	Original Budget	\$114,619,780	\$40,050,160	\$154,669,940
2	Executed Change Orders	\$115,845	\$0	\$115,845
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$116,957,005	\$40,050,160	\$157,007,165
5	Work Scheduled (Cumm - Last Period)	\$473,343	N/A	\$473,343
6	Work Earned (Cumm - Last Period)	\$4,101,334	N/A	\$4,101,334
7	Actual Expenditures (Cumm - Last Period)	\$5,793,562	N/A	\$5,793,562
8	Forecast to Complete Base (4-7)	\$111,163,443	N/A	\$111,163,443
9	Pending Changes	\$0	N/A	\$0
10	Forecast at Completion (7+8+9)	\$116,957,005	\$40,050,160	\$157,007,165
11	Percent Budget Expended (7/4)	5.0%	N/A	N/A
12	Percent Planned (5/4)	0.4%	N/A	N/A
13	Earned Percent Complete (6/4)	3.5%	N/A	N/A
14	Schedule Performance (6/5)	1.00	N/A	N/A
15	Cost Performance (6/7)	0.99	N/A	N/A
16	Contingency Budget	\$4,768,489	\$2,135,840	\$6,904,329
17	Remaining Contingency	\$2,431,264	\$2,135,840	\$4,567,104
18	Percent Contingency Remaining (17/16)	51.0%	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 Operations and Maintenance Center (OMC), six site-built signal buildings and three signal buildings combined with traction power substations. The work scope also includes installation of fiber-optic cables for street traffic control systems for the Cities of Phoenix, Tempe and Mesa, and installation of fiber-optic cables for ASU.

### Progress

- Signal Buildings and Signal Cases
  - Continuing Acceptance Testing of Signal Building Equipment for Yard Entrance, MSF Yard, and 27th Street Interlockings.



- Performing Pre-Acceptance Testing activities at Signal Building No. 6 (Mill Pocket Track). Acceptance Testing scheduled to begin following 5<sup>th</sup> and College Power Up which is tentatively scheduled for February 21, 2008.
- Final Stages of Signaling System Equipment Installation at Signal Building No. 1 (Pierson Interlocking) and commencement of Pre-Acceptance Testing.
- Coordination with APS for power up for Washington Street Case.
- Signal System Installation at combined TPSS No. 14 (Sycamore/Dobson).
- Communications System
  - Fiber Splices completed at OMC MOE Communication Room.
  - Installing communications devices equipment at Center Parkway Stations.
  - South Mountain Radio. Agency Contractor scheduled to complete antenna tower equipment installation by February 8, 2008. MEC shall proceed with Radio Communication System Installation upon completion of antenna tower work.
  - Communication System Fiber Optic Cable Installed and Spliced from TPSS No. 7 to 5<sup>th</sup> and College Station.
  - City-Use Fiber Optic Cable. MEC tentatively scheduled to begin microfiber installation the week of February 8, 2008.
  - Approved Value Engineering Credit Proposal for Fiber Splice Enclosure Substitution currently being processed.
- OCC Build Out
  - Reconfigured the electrical panels to meet code and clearance requirements. Final power shutdown for switch installation tentatively scheduled for the week of February 29, 2008. This will complete OCC Build Out installation (with minor punch list items to be completed following). MEC has begun OCC Communications System installation.
- Coordinating with other Contracts
  - Station Finishes. Station Finishes/Signals and Communications Inspection Team continuing to perform joint pre-access inspection and walkthrough.
  - TES. Coordination for power to Signal Cases located at TPSS Sites.

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

- The contract is in the final 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 OMC Yard, LS4 Yard Entrance and numerous mainline track areas, signaling equipment installation at the OMC Yard Entrance and at some intersections in Tempe, Signal Case installation, Communications Device installation at several LRT Passenger Stations and



Cable Pulling for the Fiber Optic Backbone from the OMC into Line Section 5 and along Line Section 4.

### **Issues and Solutions**

- Mitigation Schedule and Cost Proposal. Received mitigation schedule and cost proposal. Ongoing negotiations between METRO and MEC.
- Handover of Stations with Power to support power up of Signal Buildings and Communication System Testing. Agency to provide updates to Station Finishes access schedule. MEC to coordinate access in order to accommodate Signaling and Communication System schedules.

### Construction Photographs



Splicing Communications System Fiber Optic Cable at 3<sup>rd</sup> and Mill Station



Performing Signal System Testing at Combined TPSS No. 7 (27<sup>th</sup> Street Interlocking)



Communication System Fiber Optic Cable Installation at 3<sup>rd</sup> and Mill Station



Installation of Communication System Fiber Optic Cables at MOE



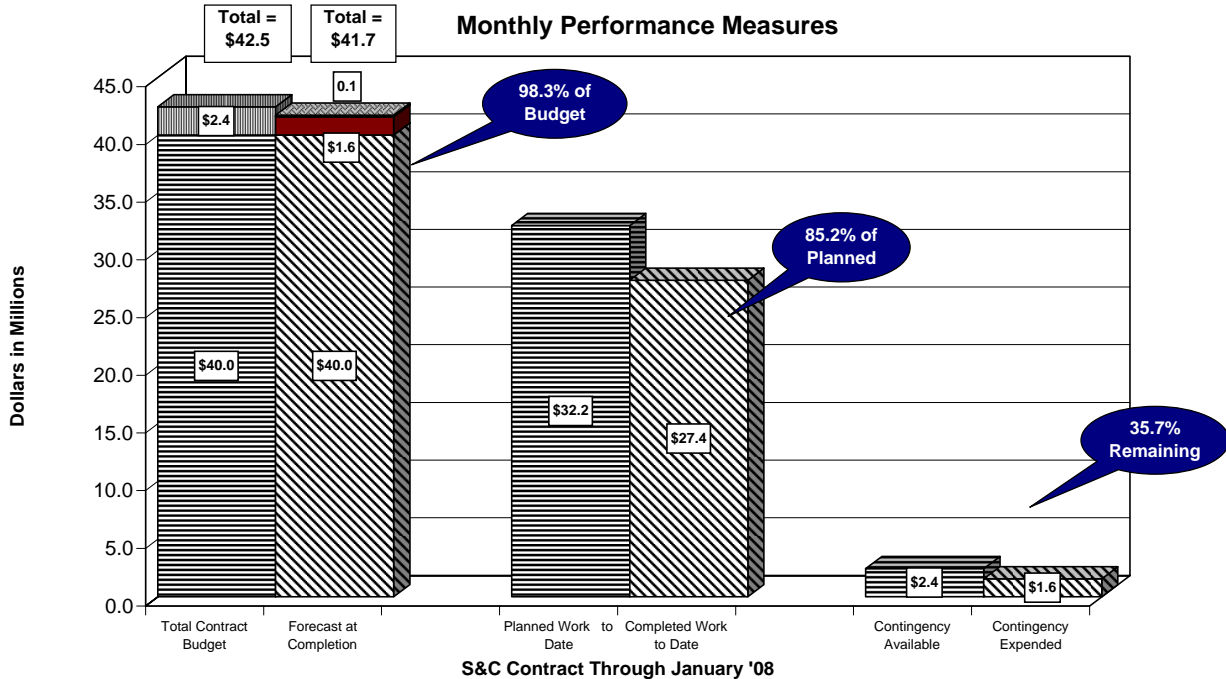
Infrastructure for Signal System Installation at Mission Palms Case



Receipt Inspection and Delivery of OCC UPS



	<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>	December 15, 2007		
	<b>Cumulative</b>	<b>5309</b>	<b>CNPA</b>	<b>Total</b>
1	Original Budget	\$37,476,762	\$2,562,259	\$40,039,021
2	Executed Change Orders	\$1,494,721	\$74,402	\$1,569,123
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$38,971,483	\$2,636,661	\$41,608,144
5	Work Scheduled	\$31,733,481	\$456,619	\$32,190,100
6	Work Earned	\$27,054,465	\$373,148	\$27,427,613
7	Actual Expenditures	\$25,157,047	\$418,617	\$25,575,664
8	Forecast to Complete Base (4-7)	\$13,814,436	\$2,218,044	\$16,032,480
9	Change Orders Pending Execution	\$0	\$130,000	\$130,000
10	Forecast at Completion (7+8+9)	\$38,971,483	\$2,766,661	\$41,738,144
11	Percent Budget Expended (7/4)	64.6%	15.9%	61.5%
12	Percent Planned (5/4)	81.4%	17.3%	77.4%
13	Earned Percent Complete (6/4)	69.4%	14.2%	65.9%
14	Schedule Performance (6/5)	0.85	0.82	0.85
15	Cost Performance (6/7)	1.08	0.89	1.07
16	Contingency Budget	\$2,308,000	\$132,118	\$2,440,118
17	Remaining Contingency	\$813,279	\$57,716	\$870,995
18	Percent Contingency Remaining (17/16)	35.2%	43.7%	35.7%
	<b>Period</b>			
1	Original Budget	N/A	N/A	N/A
2	Executed Change Orders	-\$47,520	-\$4,159	-\$51,679
3	Budget Transfers	\$0	\$0	\$0
4	Current Budget (1+2+3)	\$38,971,483	\$2,636,661	\$41,608,144
5	Work Scheduled (Cumm - Last Period)	\$979,805	\$30,391	\$1,010,196
6	Work Earned (Cumm - Last Period)	\$3,440,742	-\$1,707	\$3,439,035
7	Actual Expenditures (Cumm - Last Period)	\$1,242,227	\$43,782	\$1,286,009
8	Forecast to Complete Base (4-7)	\$37,729,256	\$2,592,879	\$40,322,135
9	Change Orders Pending Execution	\$0	\$0	\$0
10	Forecast at Completion (7+8+9)	\$38,971,483	\$2,636,661	\$41,608,144
11	Percent Budget Expended (7/4)	3.2%	1.7%	3.1%
12	Percent Planned (5/4)	2.5%	1.2%	2.4%
13	Earned Percent Complete (6/4)	8.8%	-0.1%	8.3%
14	Schedule Performance (6/5)	3.51	-0.06	3.40
15	Cost Performance (6/7)	2.77	N/A	2.67
16	Contingency Budget	\$2,308,000	\$132,118	\$2,440,118
17	Remaining Contingency	\$813,279	\$57,716	\$870,995
18	Percent Contingency Remaining (17/16)	35.2%	43.7%	35.7%



## 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 750 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, site work and testing.

### Progress

- Traction Power Substation No. 1
  - Pavement placed around building.
  - Building and Sitework Construction – 90 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 60 percent complete.



- Traction Power Substation No. 2
  - Conduits have been mandrelled.
  - Pavement placed around building.
  - Building and Sitework Construction – 80 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 60 percent complete.
- Traction Power Substation No. 3
  - Painting of exterior finishes progressed.
  - Conduits have been mandrelled.
  - HVAC System installation progressed.
  - Building and Sitework Construction – 80 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 40 percent complete.
- Traction Power Substation No. 4
  - Installation of TPSS equipment, lightning protection system, and security system progressed.
  - Building and Sitework Construction – 75 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 35 percent complete.
- Traction Power Substation No. 5
  - Installation of TPSS equipment progressed.
  - Louver post installations progressed.
  - Conduits have been mandrelled.
  - Pre-commissioning installation verification inspections commenced.
  - Building and Sitework Construction – 80 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 60 percent complete.
- Traction Power Substation No. 6
  - Installation of TPSS equipment, wire and cable progressed.
  - Conduits have been mandrelled.
  - Pre-commissioning installation verification inspections commenced.



- Pavement placed around building.
- Building and Sitework Construction – 90 percent complete.
- Traction Power Substation Equipment Installation and Testing – 65 percent complete.
- Traction Power Substation No. 7
  - Conduits have been mandrelled.
  - Testing HVAC System.
  - Pavement placed around building.
  - Building and Sitework Construction – 90 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 70 percent complete.
- Traction Power Substation No. 8
  - Testing HVAC System.
  - Conduits have been mandrelled.
  - Building and Sitework Construction – 85 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 70 percent complete.
- Traction Power Substation No. 9
  - Installations of grounds for screenwall gates commenced.
  - Pavement placed around building.
  - Building and Sitework Construction – 95 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 95 percent complete.
- Traction Power Substation No. 10
  - Ongoing investigations for water intrusion.
  - Building and Sitework Construction – 90 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 65 percent complete.
- Traction Power Substation No. 11
  - Installations of grounds for screenwall gates commenced.
  - Conduits have been mandrelled.



- Sitework performed for driveway.
- Building and Sitework Construction – 90 percent complete.
- Traction Power Substation Equipment Installation and Testing – 70 percent complete.
- Traction Power Substation No. 12
  - Conduits have been mandrelled.
  - Painting of exterior finishes progressed.
  - Building and Sitework Construction – 70 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 5 percent complete.
- Traction Power Substation No. 13
  - TPSS equipment installation progressed.
  - Building and Sitework Construction – 75 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 60 percent complete.
- Traction Power Substation No. 14
  - Installation of TPSS equipment progressed.
  - Concrete curbs have been placed.
  - Building and Sitework Construction – 60 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 5 percent complete.
- Traction Power Substation No. 15
  - Building and Sitework Construction – 95 percent complete.
  - Traction Power Substation Equipment Installation and Testing – 95 percent complete.
- MOE Shop and Traction Power Substation No. 16
  - 95 percent complete.
- Overhead Contact System
  - OMC Yard and Test Track (Wire Runs 35 through 40).
    - completed
  - Line Section 1
    - Installation of OCS poles for wire runs 3 and 4 progressed.



- Installation of cantilever arms for wire runs 7 and 8 progressed.
- Installation of OCS poles is 55 percent complete.
- Installation of cantilever support arms is 40 percent complete.
- Line Section 2
  - Installation of cantilever support arms and poles for wire runs 9 and 10 progressed.
  - Installation of OCS poles is 40 percent complete.
  - Installation of cantilever support arms is 20 percent complete.
- Line Section 3
  - Regulated contact wire for wire runs 26 and 28.
  - Installation of OCS poles is 95 percent complete.
  - Installation of cantilever arms is 50 percent complete.
- Line Section 4
  - Installation of OCS wire is complete.
  - Performed height and stagger measurements and clearance cart tests for wire runs 29 through 34.
  - Regulated wire runs 41 and 42.
- Line Section 5
  - Regulated OCS for wire runs 43 through 48, 51, and 52.
  - Installed messenger wire for wire runs 49 and 50.
  - Installed OCS balance weight assembly poles for wire runs 55 and 56.
  - Installation of OCS poles is 95 percent complete.
  - Installation of cantilever arms is 70 percent complete.
- Site Access/Permits
  - All traction substation building permits have been issued. The remaining permits are for fire alarm systems in the City of Phoenix. Metro will be requesting an exemption from the Fire Alarm permits in Phoenix because the buildings are classified as U-1, Unoccupied.
- 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 procurement and material delivery with primary emphasis on OCS field construction. Construction progress to date has included the civil and architectural parts of all sixteen traction power substations, TPSS electrical equipment installation in all sixteen of the traction power substations, OCS components installation in the OMC yard, OMC shop and parts of all Line Sections. Start up testing and commissioning has been done at the OMC and LS4 Test Track areas.

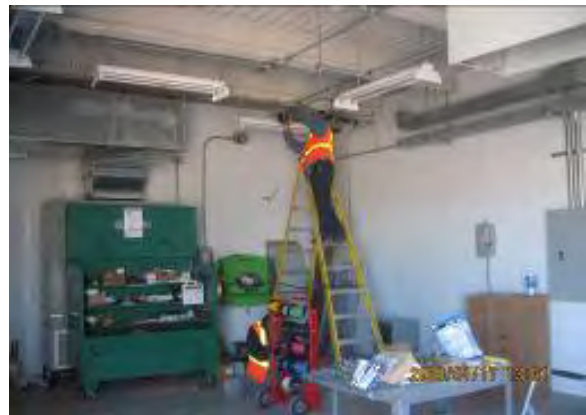
## Issues and Solutions

- Mitigation Schedule and Request for Equitable Adjustment. The Agency and Contractor are nearly complete with negotiating and finalizing an executed change order to resolve the Contractor's Acceleration Proposal.
- TPSS/LRV Compatibility Issue. The Contractor previously responded to comments on their TPSS/LRV Compatibility Investigation Report. No comments have been received from the Vehicle Manufacturer.
- Water Intrusion at TPSS No. 10. Water intrusion witnessed in TPSS No. 10. The GEC is currently preparing a design for a vault in between the building and the feeder poles to drain water.

## Construction Photographs



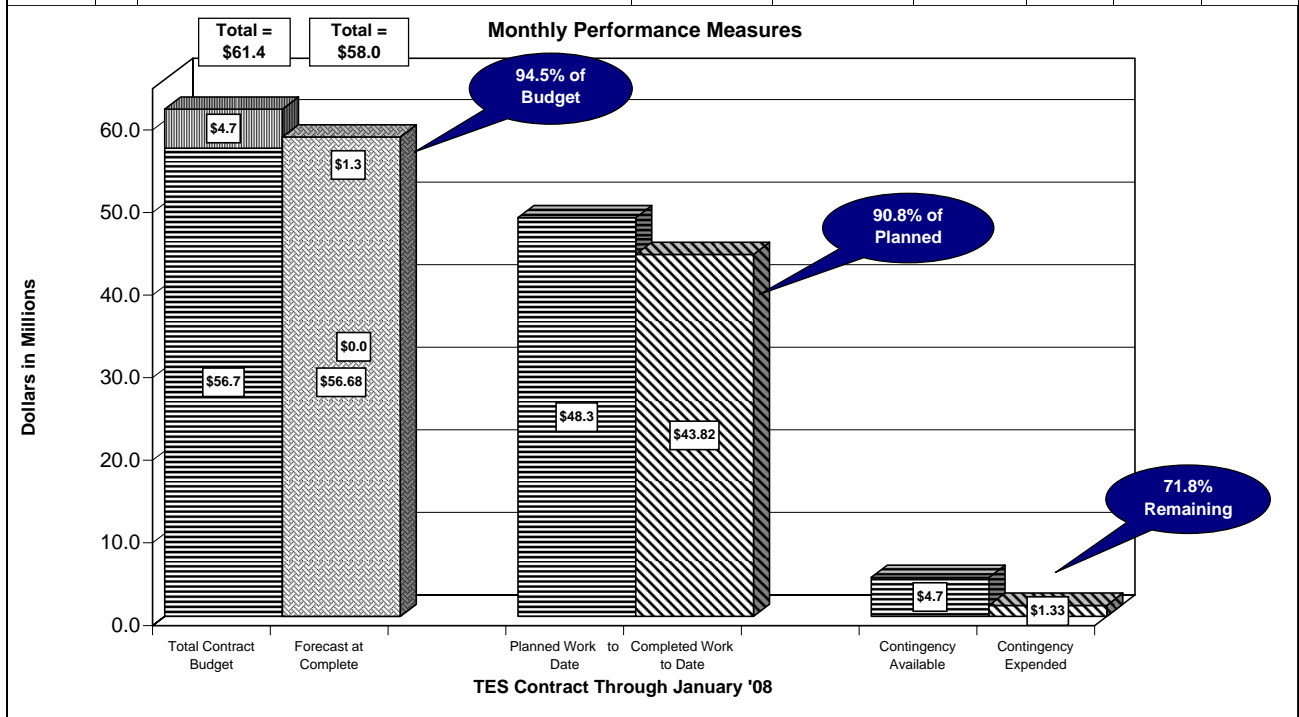
TPSS No. 5 – Installing Louver Posts



TPSS No. 14 – Installing Raceways



<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>December 15, 2007</b>	
Cumulative		<b>5309</b>	
1	Budget	\$56,681,003	
2	Executed Change Orders	\$1,333,207	
3	Budget Transfers	\$0	
4	Current Budget (1+2+3)	\$58,014,210	
5	Work Scheduled	\$48,259,552	
6	Work Earned	\$43,817,428	
7	Actual Expenditures	\$43,825,013	
8	Forecast to Complete Base (4-7)	\$14,189,197	
9	Change Orders Pending Execution	-\$10,000	
10	Forecast at Completion (7+8+9)	\$58,004,210	
11	Percent Budget Expended (7/4)	75.5%	
12	Percent Planned (5/4)	83.2%	
13	Earned Percent Complete (6/4)	75.5%	
14	Schedule Performance (6/5)	0.91	
15	Cost Performance (6/7)	1.00	
16	Contingency Budget	\$4,721,000	
17	Remaining Contingency	\$3,387,793	
18	Percent Contingency Remaining (17/16)	71.8%	
Period			
1	Budget	N/A	
2	Executed Change Orders	\$7,404	
3	Budget Transfers	\$0	
4	Current Budget (1+2+3)	\$58,014,210	
5	Work Scheduled (Cumm - Last Period)	\$1,728,518	
6	Work Earned (Cumm - Last Period)	\$828,719	
7	Actual Expenditures (Cumm - Last Period)	\$880,631	
8	Forecast to Complete Base (4-7)	\$57,133,579	
9	Change Orders Pending Execution	-\$991	
10	Forecast at Completion (7+8+9)	\$58,013,219	
11	Percent Budget Expended (7/4)	1.5%	
12	Percent Planned (5/4)	3.0%	
13	Earned Percent Complete (6/4)	1.4%	
14	Schedule Performance (6/5)	N/A	
15	Cost Performance (6/7)	N/A	
16	Contingency Budget	\$4,721,000	
17	Remaining Contingency	\$3,387,793	
18	Percent Contingency Remaining (17/16)	71.8%	





## **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**

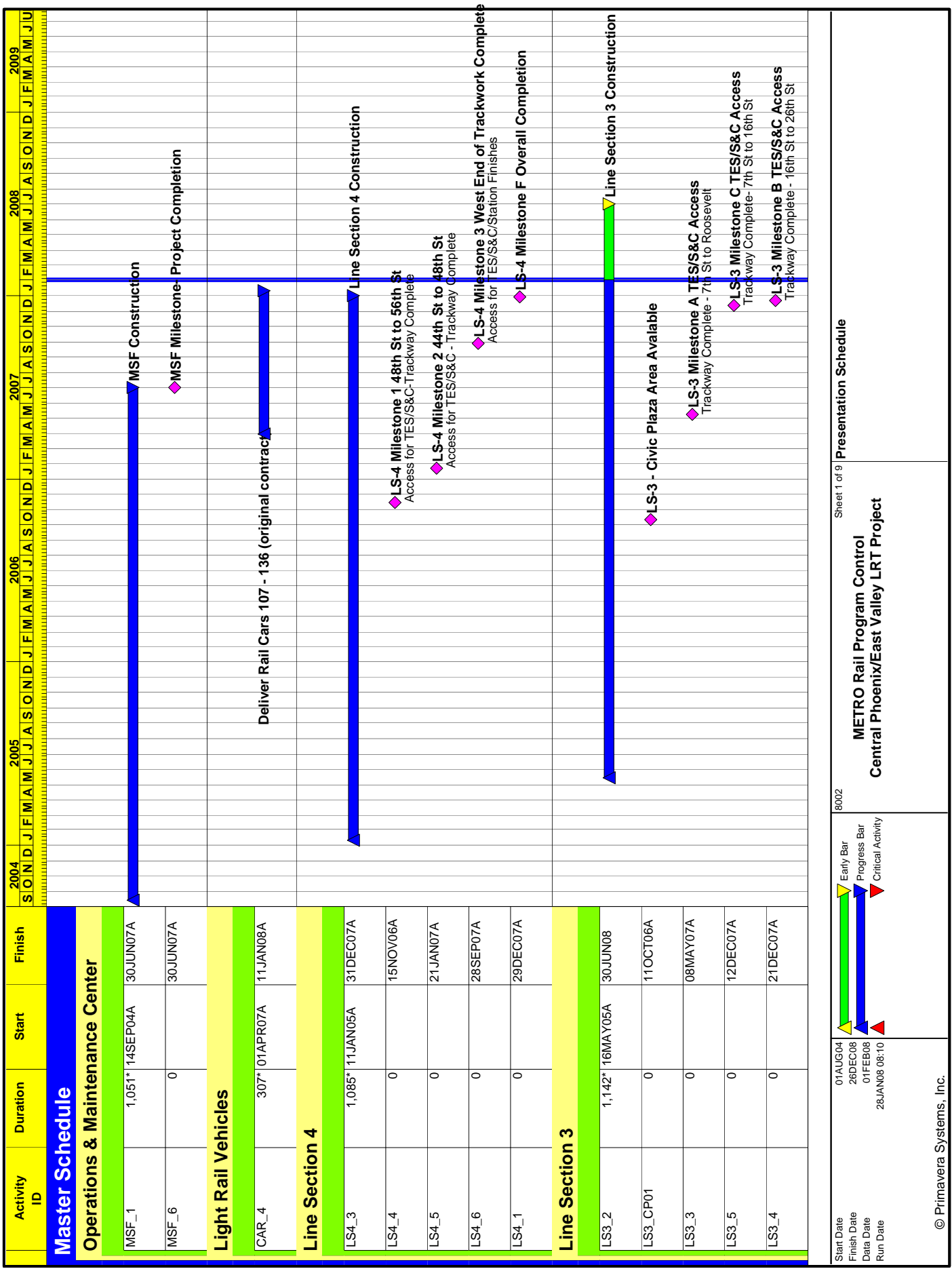
- METRO and the consulting staff are developing test plans and procedures related to track allocation, rail/wheel interface, clearance and LRV dynamic testing.
- Siemens has conducted tests on METRO substation and we received a report August 20<sup>th</sup>.
- The GEC, METRO, and Kinkisharyo have reviewed 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.
- METRO, CAC and Seimens are continuing work on modifications to the substations, but this work has no impact on LRV testing.
- Interface tests with LRV 101 and the Substations No. 9 and 15 will continue.
- LRV testing will continue in the yard until the RAIL/LRV interface problem is corrected.
- Kinkisharyo is making software changes to the LRV and will continue tuning the LRV in the yard.
- Loram Corporation did surface rail grinding on the test track between 48<sup>th</sup> St. and 56<sup>th</sup> St. Some improvement in wheel adhesion was realized after the grinding, but more investigation is needed.
- 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 delivered the Integrated Test Plan to METRO on October 15, 2007.
- METRO has accepted the final version of the Integrated Test Plan from the CAC.
- The CAC and Metro staff are working on an Integrated Test Schedule. The schedule should be completed by the end of February.

### **Construction Photograph**



Rail Grinder



Sheet 1 of 9 | Presentation Schedule

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

8002

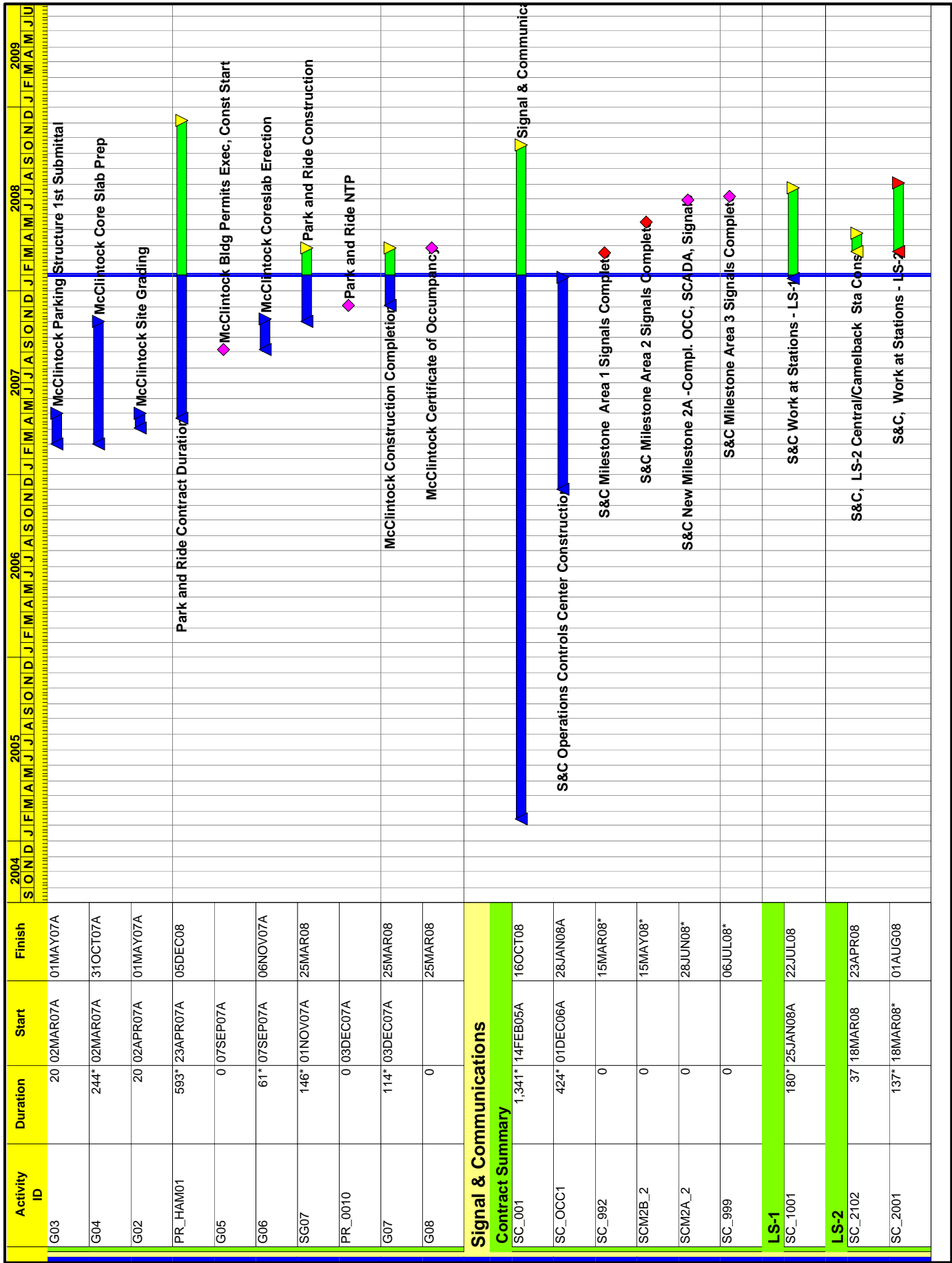
Start Date: 01AUG04  
 Finish Date: 26DEC08  
 Data Date: 01FEB08  
 Run Date: 28JAN08 08:10

Legend:  
 Early Bar (Yellow triangle)  
 Progress Bar (Blue bar)  
 Critical Activity (Red triangle)

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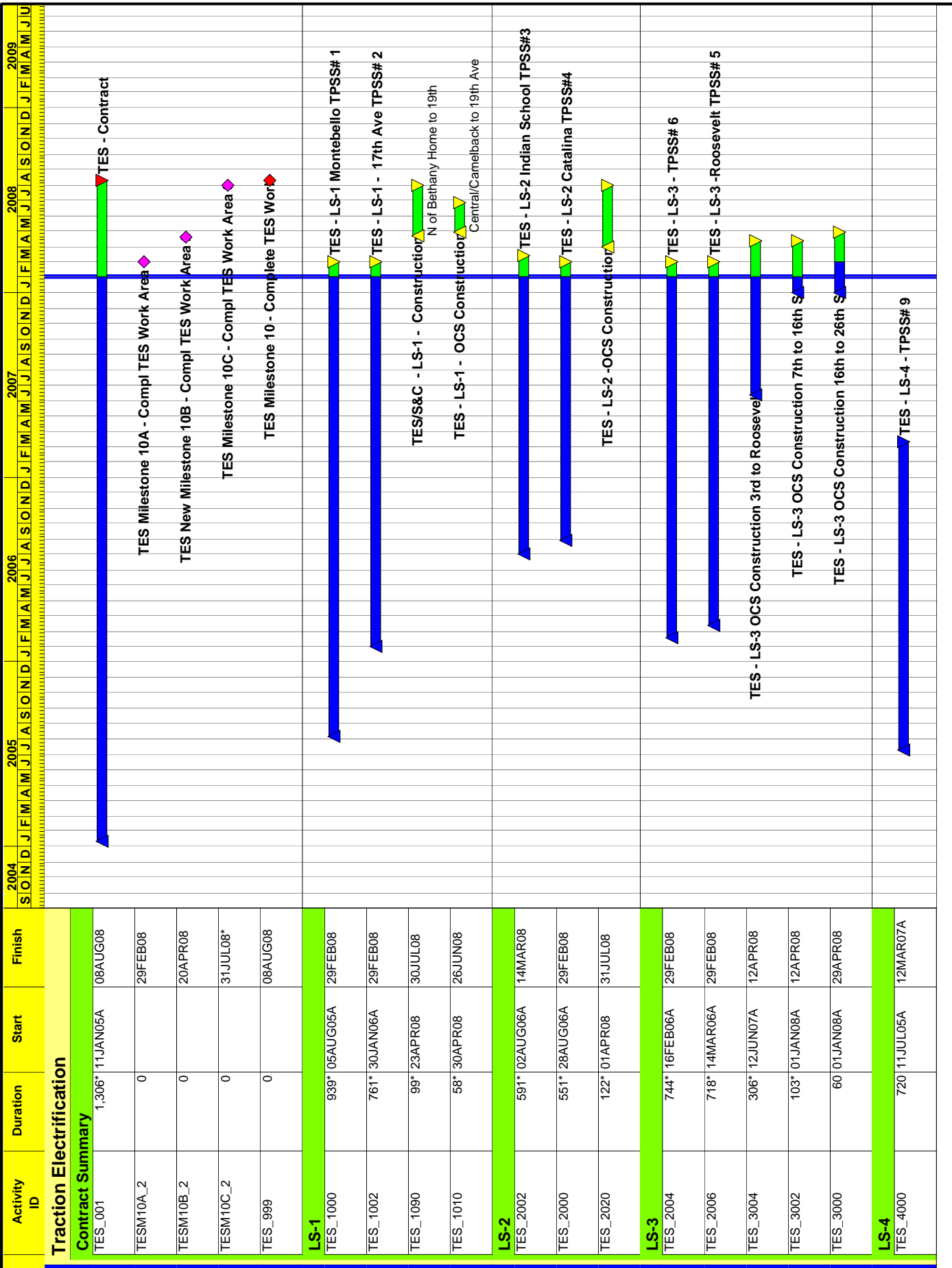








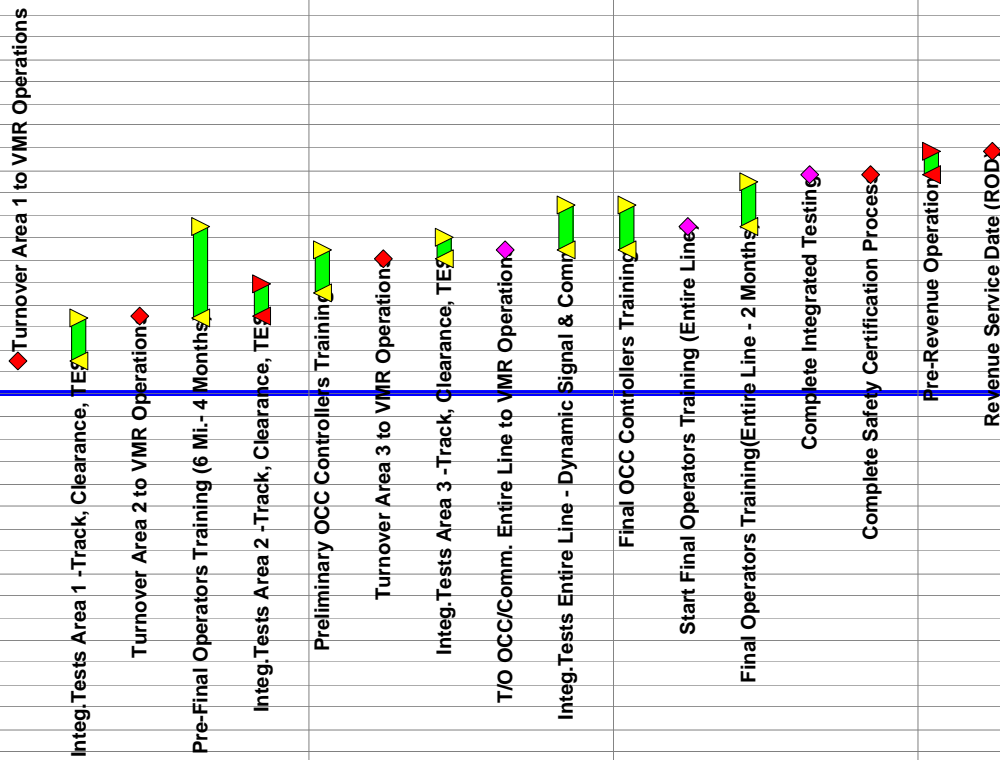






Activity ID	Duration	Start	Finish
TURNOVER_2	0	15MAR08*	15MAR08*
INTTESTA_2	60	16MAR08	14MAY08*
TURNOVER_3	0	15MAY08*	15MAY08*
OPTTR2_2	124	15MAY08	15SEP08
INTTESTB_2	45	16MAY08	29JUN08
OPTTR5_2	60	17JUN08	15AUG08
TURNOVER_4	0	01AUG08	01AUG08
INTTESTC_2	30	02AUG08	31AUG08
TURNOVER_5	0	15AUG08	15AUG08
INTTESTD_2	60	16AUG08	14OCT08
OPTTR6_2	60	16AUG08	14OCT08
OPTTR3_2	0	16SEP08	
OPTTR4_2	60	16SEP08	14NOV08
INTTESTC_C	0		24NOV08
SFTYCERT_2	0		25NOV08*
PREREV_2	31	26NOV08	26DEC08
PREREVC_2	0	27DEC08	

**Rail Activation Plan  
Testing & Startup**





## 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