



# LIGHT RAIL PROGRESS REPORT

Central Phoenix/East Valley Light Rail Transit Project







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## 1. Executive Summary

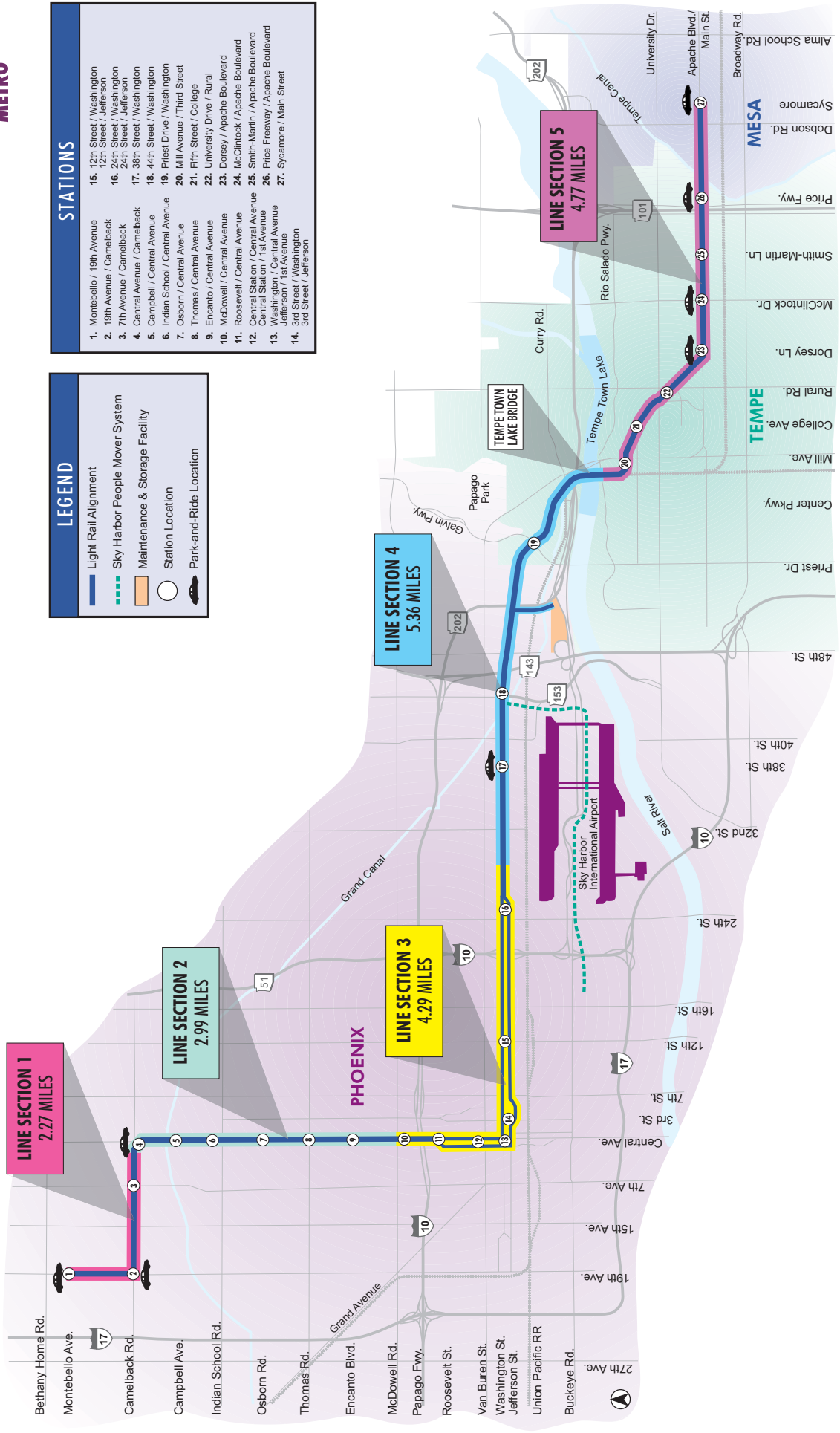
The Central Phoenix/East Valley (CP/EV) Light Rail Transit Project includes the design and construction of a 19.6 mile, double track, Minimum Operable Segment that extends from 19th Avenue near Bethany Home Road in North Central Phoenix through the downtown area to and through the City of Tempe, then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

During the month of March the project progressed to nearly 60 percent completion and construction is nearing 55 percent completion. Construction progress can be seen with over 96,000LF of track having been constructed thus far in all line sections and almost half of the OCS foundations are in place. The critical path of the project continues to run through utility relocations and station foundations and finally through the signals and communications contract for the wiring of the signal and communication equipment on the platforms.

One of March's highlights included the rise of the first station structural steel at the 1<sup>st</sup> Avenue and Van Buren station. Additional station steel has continued to be erected and fabrication of additional structural steel continues in preparation for continuous station structural steel construction continuing over the next few months. Line Section construction continues to progress. All line sections are working to build guideway to allow the follow-on systems contractors to begin. Line Section Five gained substantial completion of Guideway from near First Street to Rural Road. This month the systems contractor moved out to the test track to install OCS and systems components to support the test track operations. The systems contractor finished the systems components necessary to support the test track on time.

Finally, closeout activities have begun at the Operation and Maintenance Facility. The contractor has been issued a punch list and is working on the items. The contractor is expected to complete the project by mid-May and a formal certificate of occupancy is expected mid-April for the Maintenance of Equipment building. This is the last certificate of occupancy needed.

# LIGHT RAIL STARTER SEGMENT



### LEGEND

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

### STATIONS

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



**METRO  
CONTRACT LOG - MARCH 2007**

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



**METRO  
CONTRACT LOG - MARCH 2007**

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



## **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 \$33,636,237 of the available \$72,904,121 planned contingency.

Including Project Reserve, this leaves \$58,151,713 of contingency funds available to the project.

The project is 59.9 percent complete. Construction is 53.0 percent complete.

Since the last reporting period, the contingency for facilities decreased by \$974,000, systems decreased by \$357,000 and project reserve increased by \$9,430,000. The net result was an increase in forecasted available contingency of \$8,099,000.

### **Program Management & Administration**

Forecast is within budget.

### **Program Management Consultant**

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

### **City Administration**

Forecasts are per agreements with the cities.

### **Right of Way Acquisition**

No forecast change this period.

### **PE/FEIS Engineering**

Activity is complete.

### **Engineering**

No forecast change this period.

### **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 53.9 percent complete. Executed and pending change orders are expected to utilize \$17,700,000 of the \$32,600,000 available contingency. Additional expected change orders for required acceleration, additional work and expected requests for equitable adjustment are challenging the available balance of contingency.



## **Systems**

Systems work is 38.8 percent complete. Remaining contingency will be required for unforeseen conditions and to accelerate the systems work.

## **Construction Administration Services**

Budget and forecast for work through fiscal year 2007 are in sync. Additional forecast will be obtained on a yearly basis.

## **Testing and Startup**

Forecast continues to show an underrun to the budget.

## **Art Program**

Forecast appears sufficient to complete the work.

## **Unallocated Design Contingency**

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

## **Project Reserve**

The budget remains at \$9,500,000 and the forecast increased from \$6,800,000 million to \$18,900,000 by transferring anticipated \$12,100,000 Phoenix finance cost savings to this element.

## **Financing Costs**

The budget is \$158,900,000 and the last forecast was \$140,000,000. The forecast has been reduced to \$128,000,000 by lowering the Phoenix forecast of finance costs.

## **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 no new CNPAs were initiated. A total of twelve change orders were initiated for a total cost of \$766,332. ASU has one change order processed for a total cost of \$8,189. The City of Tempe had two change orders processed for a total cost of \$434,096. The Phoenix Aviation Department had one change order processed for a total cost of \$22,956. Phoenix Water Services had eight change orders processed for a total cost of \$301,091.

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

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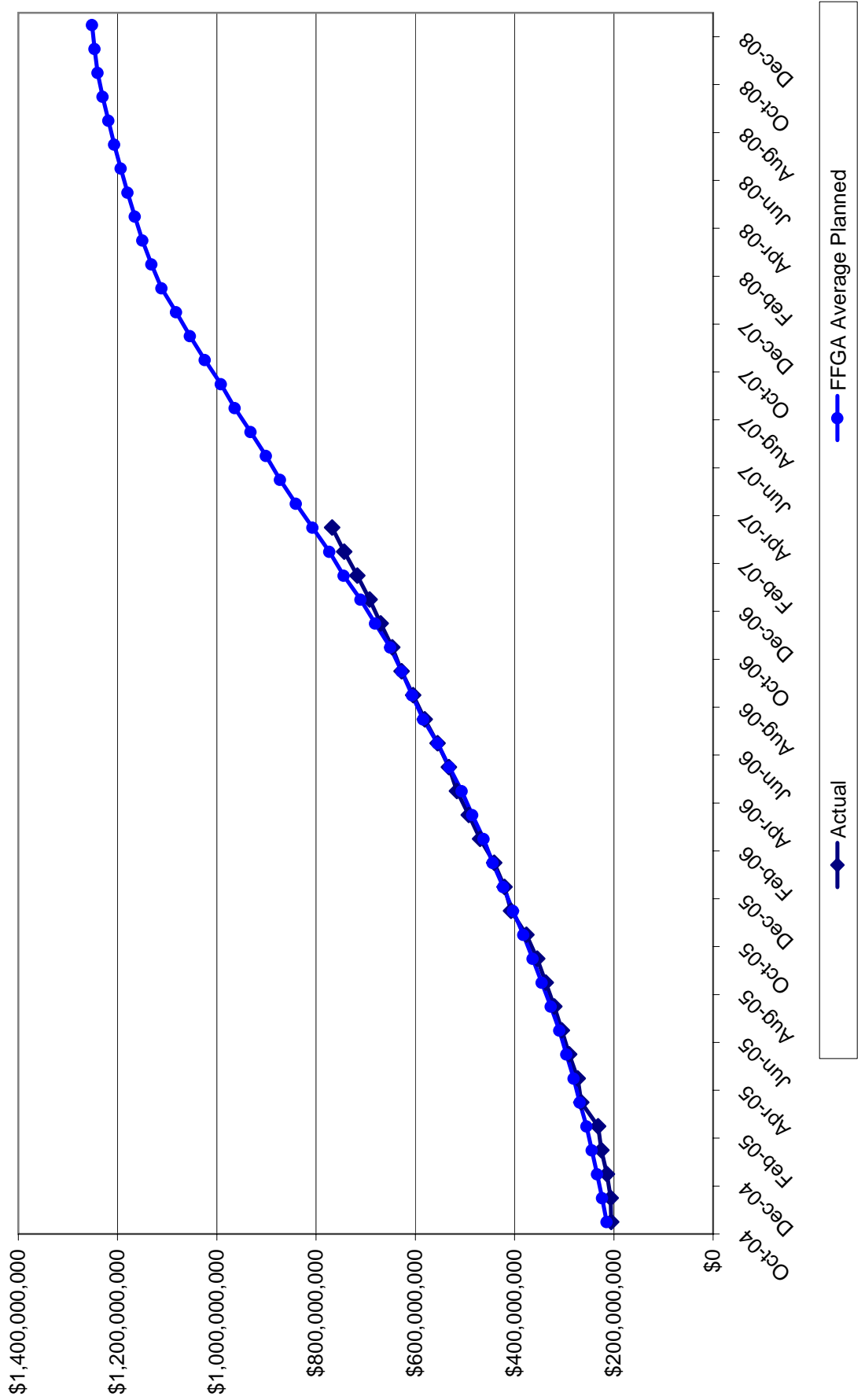
| Element | Description  | FFGA<br>Attachment 3 | Board<br>Revised<br>Budget | Current<br>Actual \$<br>(To Date) | Forecast             | Variance              |
|---------|--|----------------------|----------------------------|-----------------------------------|----------------------|-----------------------|
| 50      | LS1 19th Ave/Bethany - Camelback/Central                 | \$27,130,856         | \$38,381,469               | \$11,860,186                      | \$38,406,469         | (\$25,000)            |
| 51      | LS2 Camelback/Central - McDowell Road                    | \$38,004,059         | \$49,403,772               | \$15,733,313                      | \$50,213,835         | (\$810,063)           |
| 52      | LS3 McDowell Road - 28th Street                          | \$63,981,654         | \$80,729,594               | \$42,020,914                      | \$80,869,668         | (\$140,074)           |
| 53      | LS4 28th Street - N Approach to Town Lake                | \$46,622,020         | \$51,446,371               | \$36,386,910                      | \$51,351,747         | \$94,624              |
| 54      | LS5 1st Street - Sycamore                                | \$49,680,435         | \$69,128,867               | \$42,791,953                      | \$69,154,495         | (\$25,628)            |
| 55      | Station Finishes   | \$38,701,950         | \$52,482,508               | \$9,071,532                       | \$52,248,188         | \$234,320             |
| 56      | Park and Ride Facilities                                 | \$15,104,339         | \$15,104,339               | \$0                               | \$20,907,699         | (\$5,803,360)         |
| 57      | Miscellaneous Construction                               | \$7,505,200          | \$4,501,200                | \$0                               | \$750,000            | \$3,751,200           |
| 5K      | Archaeological Investigations/Hazardous Material Removal | \$0                  | \$5,182,048                | \$3,953,172                       | \$6,604,170          | (\$1,422,122)         |
| 58      | MSF Construction/Equipment Installation                  | \$57,637,721         | \$64,474,643               | \$63,818,955                      | \$64,099,480         | \$375,163             |
| 5G      | MSF Underfloor Wheel Profiling System                    | \$0                  | \$980,107                  | \$686,075                         | \$980,107            | \$0                   |
| 59      | 48th Street Bridge Restoration                           | \$2,014,013          | \$2,824,232                | \$2,824,232                       | \$2,824,232          | \$0                   |
| 5A      | Town Lake Bridge   | \$15,529,600         | \$21,884,369               | \$21,759,752                      | \$21,884,369         | \$0                   |
| 5B      | Prior Rights Utility Relocations                         | \$22,938,000         | \$24,878,840               | \$22,305,843                      | \$31,178,193         | (\$6,299,353)         |
| 81      | Contingency  | \$37,491,841         | \$15,916,204               | \$0                               | \$17,187,299         | (\$1,271,095)         |
|         | <b>Facilities</b>  | <b>\$422,341,688</b> | <b>\$497,318,563</b>       | <b>\$273,212,837</b>              | <b>\$508,659,951</b> | <b>(\$11,341,388)</b> |
| 4A      | Rail Procurement   | \$1,306,200          | \$1,271,080                | \$1,251,101                       | \$1,279,755          | (\$8,675)             |
| 4B      | Concrete Cross-tie Procurement                           | \$900,000            | \$751,492                  | \$718,285                         | \$751,492            | \$0                   |
| 4C      | Traffic Signal Hardware                                  | \$8,060,100          | \$8,060,100                | \$6,830,577                       | \$8,060,100          | \$0                   |
| 4D      | Ballasted Special Trackwork Procurement                  | \$2,532,414          | \$2,291,498                | \$2,253,875                       | \$2,291,497          | \$1                   |
| 4E      | Crossing Panel Procurement                               | \$380,100            | \$360,096                  | \$0                               | \$0                  | \$360,096             |
| 4F      | Girder Rail Procurement                                  | \$15,079,742         | \$14,726,085               | \$14,497,970                      | \$14,726,085         | \$0                   |
| 4G      | Girder Rail Special Trackwork Procurement                | \$0                  | \$5,712,656                | \$2,071,811                       | \$5,712,656          | \$0                   |
| 81      | Contingency  | \$1,412,863          | \$666,193                  | \$0                               | \$638,519            | \$27,674              |
|         | <b>Owner Furnished Materials/Equipment</b>               | <b>\$29,671,419</b>  | <b>\$33,839,200</b>        | <b>\$27,623,619</b>               | <b>\$33,460,104</b>  | <b>\$379,096</b>      |
| 5D      | Automated Fare Collection System                         | \$10,755,800         | \$7,100,012                | \$0                               | \$7,101,612          | (\$1,600)             |
| 5E      | Traction Power Substations/Overhead Catenary System      | \$62,141,100         | \$57,236,763               | \$28,229,704                      | \$57,626,963         | (\$390,200)           |
| 5F      | Communications/Signals                                   | \$38,220,002         | \$38,632,471               | \$14,209,991                      | \$38,662,709         | (\$30,238)            |
| 81      | Contingency  | \$8,674,000          | \$4,892,066                | \$0                               | \$4,470,028          | \$422,038             |
|         | <b>Systems</b>   | <b>\$119,790,902</b> | <b>\$107,861,312</b>       | <b>\$42,439,695</b>               | <b>\$107,861,312</b> | <b>\$0</b>            |
|         | <b>Sub Total, Construction</b>                           | <b>\$571,804,009</b> | <b>\$639,019,075</b>       | <b>\$343,276,151</b>              | <b>\$649,981,367</b> | <b>(\$10,962,292)</b> |
| 4K      | Vehicle Contract   | \$115,501,823        | \$116,875,456              | \$32,631,116                      | \$116,875,456        | \$0                   |
| 4N      | LRT Vehicle Contract Contingency                         | \$5,775,001          | \$2,547,109                | \$0                               | \$2,547,109          | \$0                   |
|         | <b>LRT Vehicles</b>                                      | <b>\$121,276,824</b> | <b>\$119,422,565</b>       | <b>\$32,631,116</b>               | <b>\$119,422,565</b> | <b>\$0</b>            |
| 22      | ROW Acquisition  | \$116,214,150        | \$116,786,065              | \$125,093,336                     | \$134,000,000        | (\$17,213,935)        |
| 23      | ROW Contingency  | \$20,081,000         | \$19,509,087               | \$0                               | \$0                  | \$19,509,087          |
| 20      | <b>ROW</b>   | <b>\$136,295,150</b> | <b>\$136,295,152</b>       | <b>\$125,093,336</b>              | <b>\$134,000,000</b> | <b>\$2,295,152</b>    |

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

2007\_03

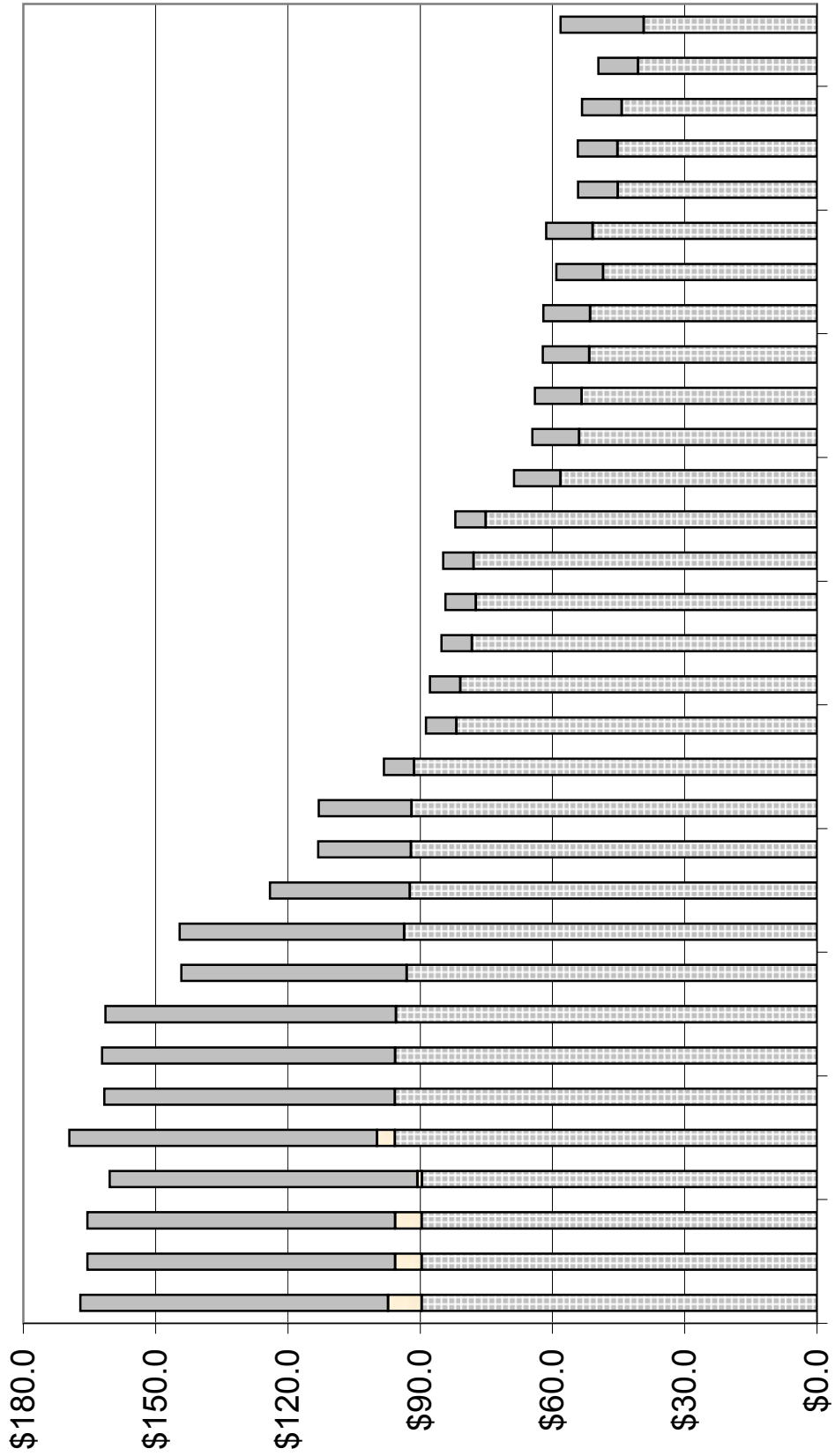
| Element                    | Description                                 | FFGA<br>Attachment 3   | Board<br>Revised<br>Budget | Current<br>Actual \$<br>(To Date) | Forecast               | Variance              |
|----------------------------|---|------------------------|----------------------------|-----------------------------------|------------------------|-----------------------|
| <b>30</b>                  | <b>PE/FEIS Engineering</b>                  | <b>\$25,054,938</b>    | <b>\$25,054,938</b>        | <b>\$25,054,938</b>               | <b>\$25,054,938</b>    | <b>\$0</b>            |
| 31                         | Engineering                                 | \$76,780,935           | \$76,346,254               | \$75,921,102                      | \$76,678,480           | (\$332,226)           |
| 4L                         | Vehicle Engineering                         | \$5,432,358            | \$6,255,358                | \$5,709,324                       | \$6,255,358            | \$0                   |
| 20                         | ROW Engineering                             | \$1,016,370            | \$1,321,163                | \$1,386,172                       | \$1,386,172            | (\$65,009)            |
| 32                         | Design Services During Construction         | \$14,160,426           | \$17,680,180               | \$15,633,858                      | \$23,442,984           | (\$5,762,804)         |
| 33                         | Engineering Contingency                     | \$0                    | \$0                        | \$0                               | \$0                    | \$0                   |
| 34                         | DSDC Contingency                            | \$0                    | \$0                        | \$0                               | \$0                    | \$0                   |
|                            | <b>Engineering</b>                          | <b>\$97,390,089</b>    | <b>\$101,602,955</b>       | <b>\$98,650,456</b>               | <b>\$107,762,994</b>   | <b>(\$6,160,039)</b>  |
|                            |   |                        |                            |                                   |                        | <b>\$0</b>            |
| 60                         | Construction Administration Services        | \$37,759,127           | \$41,778,693               | \$34,182,293                      | \$54,515,289           | (\$12,736,596)        |
| 61                         | CAC Contingency                             | \$15,244,622           | \$0                        | \$0                               | \$0                    | \$0                   |
|                            | <b>Construction Administration Services</b> | <b>\$53,003,749</b>    | <b>\$41,778,693</b>        | <b>\$34,182,293</b>               | <b>\$54,515,289</b>    | <b>(\$12,736,596)</b> |
| 10                         | PE Administrative/Management Costs          | \$4,363,526            | \$4,363,526                | \$4,363,526                       | \$4,363,526            | \$0                   |
| 11                         | Administrative/Management - VMR             | \$43,915,047           | \$44,228,316               | \$27,782,031                      | \$43,908,510           | \$319,806             |
| 62                         | Construction Administration Services - VMR  | \$1,697,232            | \$3,087,589                | \$945,859                         | \$1,766,054            | \$1,321,535           |
| 67                         | CAB Program                                 | \$0                    | \$2,500,000                | \$1,295,482                       | \$2,500,000            | \$0                   |
| 21                         | Administrative ROW Costs                    | \$696,712              | \$696,712                  | \$576,776                         | \$696,712              | \$0                   |
| 76                         | Administrative/Management Art Program Costs | \$414,632              | \$414,632                  | \$0                               | \$414,632              | \$0                   |
| 16                         | Administrative/Management - ADOT            | \$420,000              | \$930,000                  | \$510,365                         | \$1,269,053            | (\$339,053)           |
| 17                         | Agency Insurance Cost                       | \$7,000,000            | \$7,000,000                | \$5,206,585                       | \$7,000,000            | \$0                   |
| 18                         | Administrative/Management Contingency       | \$0                    | \$5,388,523                | \$0                               | \$4,608,212            | \$780,311             |
|                            | <b>Program Management</b>                   | <b>\$58,507,149</b>    | <b>\$68,609,298</b>        | <b>\$40,680,624</b>               | <b>\$66,526,699</b>    | <b>\$2,082,599</b>    |
| 10                         | PE Administrative/Management Costs          | \$12,832,472           | \$12,832,472               | \$12,832,472                      | \$12,832,472           | \$0                   |
| 21                         | Administrative ROW Costs                    | \$1,016,571            | \$1,016,571                | \$793,865                         | \$981,934              | \$34,637              |
| 76                         | Administrative/Management Art Program Costs | \$549,061              | \$549,061                  | \$234,041                         | \$501,189              | \$47,872              |
| 12                         | Administrative/Management - PMC             | \$32,736,326           | \$32,736,326               | \$26,430,544                      | \$33,684,591           | (\$948,265)           |
| 4M                         | Administrative Vehicle Costs                | \$1,337,322            | \$1,337,322                | \$561,908                         | \$1,337,322            | \$0                   |
| 63                         | Construction Administration Services - PMC  | \$4,581,527            | \$5,081,527                | \$2,539,229                       | \$4,215,771            | \$865,756             |
|                            | <b>Program Management Consultant</b>        | <b>\$53,053,279</b>    | <b>\$53,553,279</b>        | <b>\$43,392,059</b>               | <b>\$53,553,279</b>    | <b>\$0</b>            |
| 10                         | PE Administrative/Management Costs          | \$3,158,439            | \$3,158,439                | \$3,158,439                       | \$3,158,439            | \$0                   |
| 13                         | Administrative/Management - COP             | \$2,986,000            | \$5,448,000                | \$5,581,938                       | \$5,747,755            | (\$299,755)           |
| 64                         | Construction Administration Services - COP  | \$8,347,000            | \$5,885,000                | \$4,657,223                       | \$5,585,245            | \$299,755             |
| 14                         | Administrative/Management - COT             | \$6,797,000            | \$6,797,000                | \$5,146,515                       | \$6,797,000            | \$0                   |
| 15                         | Administrative/Management - COM             | \$897,000              | \$897,000                  | \$263,164                         | \$897,000              | \$0                   |
|                            | <b>City Administration</b>                  | <b>\$22,185,439</b>    | <b>\$22,185,439</b>        | <b>\$18,807,279</b>               | <b>\$22,185,439</b>    | <b>\$0</b>            |
| 75                         | Public Art Contracts                        | \$5,284,133            | \$6,095,129                | \$2,961,331                       | \$6,095,129            | \$0                   |
| 77                         | Art Program Contingency                     | \$999,000              | \$188,004                  | \$0                               | \$188,004              | \$0                   |
|                            | <b>Public Art</b>                           | <b>\$6,283,133</b>     | <b>\$6,283,133</b>         | <b>\$2,961,331</b>                | <b>\$6,283,133</b>     | <b>\$0</b>            |
| <b>70</b>                  | <b>Start-Up and Testing</b>                 | <b>\$31,000,000</b>    | <b>\$30,000,000</b>        | <b>\$3,155,487</b>                | <b>\$26,000,000</b>    | <b>\$4,000,000</b>    |
| <b>80</b>                  | <b>Unallocated Design Contingency</b>       | <b>\$7,575,241</b>     | <b>\$0</b>                 | <b>\$0</b>                        | <b>\$0</b>             | <b>\$0</b>            |
| <b>85</b>                  | <b>Project Reserve</b>                      | <b>\$69,829,000</b>    | <b>\$9,453,473</b>         | <b>\$0</b>                        | <b>\$18,883,829</b>    | <b>(\$9,430,356)</b>  |
| <b>SUBTOTAL</b>            |   | <b>\$1,253,258,000</b> | <b>\$1,253,258,000</b>     | <b>\$767,885,070</b>              | <b>\$1,284,169,532</b> | <b>(\$30,911,532)</b> |
| <b>90</b>                  | <b>Financing Costs</b>                      | <b>\$158,867,346</b>   | <b>\$158,867,346</b>       | <b>\$5,717,401</b>                | <b>\$127,955,814</b>   | <b>\$30,911,532</b>   |
| <b>TOTAL CP/EV PROJECT</b> |   | <b>\$1,412,125,346</b> | <b>\$1,412,125,346</b>     | <b>\$773,602,471</b>              | <b>\$1,412,125,346</b> | <b>\$0</b>            |

### Plan versus Actual Costs



# CP/EV LRT Contingency Drawdown

**\$ Million**



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



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               | \$890,760                   | \$1,013,138         | (\$28,382)         |
| A2      | Phoenix Art Museum Left Turn Signal                                   | \$99,083             | \$108,770               | \$0                         | \$99,083            | \$9,687            |
| A5      | 19th/Montebello Transit Center (SF)                                   | \$5,555,929          | \$6,344,742             | \$3,646,730                 | \$5,783,968         | \$560,774          |
| A6      | 117 Central/Camelback Transit Center (SF)                             | \$7,022,524          | \$6,968,745             | \$2,134,776                 | \$5,511,035         | \$1,457,710        |
| A7      | 44th Street/Washington Transit Center Real Estate                     | \$4,900,509          | \$4,649,580             | \$4,339,742                 | \$4,872,992         | (\$223,412)        |
| B1      | Washington Street Bike Lane (LS4)                                     | \$930,293            | \$912,714               | \$541,535                   | \$924,838           | (\$12,124)         |
| F4      | Civic Plaza Track Support System                                      | \$2,595,811          | \$2,297,669             | \$172,054                   | \$401,289           | \$1,896,380        |
| F5      | Additional Water Services to the Pueblo Grande Museum - LS4           | \$89,285             | \$89,285                | \$62,262                    | \$89,285            | (\$0)              |
| F6      | Central/Camelback Bus Bays Relocation                                 | \$192,720            | \$193,065               | \$0                         | \$193,065           | \$0                |
| F7      | COP Landscape Irrigation Restoration Central Ave                      | \$101,414            | \$90,750                | \$41,971                    | \$113,153           | (\$22,403)         |
| H2      | Fiber Optic COP   | \$602,233            | \$476,896               | \$71,559                    | \$650,593           | (\$173,697)        |
| J6      | Washington/Jefferson 16th to 26th Street, Property Access             | \$2,628,002          | \$3,932,769             | \$1,834,264                 | \$2,831,780         | \$1,100,989        |
| K7      | 11th Street Loop Track  | \$4,377,606          | \$4,352,606             | \$94,561                    | \$4,352,606         | \$0                |
|         | <b>Sub Total Public Transit Department</b>                            | <b>\$30,058,812</b>  | <b>\$31,402,347</b>     | <b>\$13,830,214</b>         | <b>\$26,856,825</b> | <b>\$4,565,522</b> |
| A3      | 6th Lane - Camelback (LS1)  | \$9,820,210          | \$9,883,190             | \$7,336,319                 | \$8,954,921         | \$928,269          |
| D1      | Additional Street/Pedestrian Lighting (LS3)                           | \$509,602            | \$509,602               | \$376,923                   | \$509,602           | \$0                |
| E3      | Seal Coat versus Rubber Overlay (LS 1 )                               | \$264,342            | \$264,342               | \$17,104                    | \$264,342           | \$0                |
| E4      | Seal Coat versus Rubber Overlay (LS 3)                                | \$1,479,814          | \$1,482,845             | \$90,509                    | \$1,479,814         | \$3,031            |
| E5      | Seal Coat versus Rubber Overlay (LS 4)                                | \$430,896            | \$430,896               | \$10,832                    | \$430,896           | \$0                |
| K3      | Red Light Enforcement   | \$79,667             | \$61,067                | \$0                         | \$79,667            | (\$18,600)         |
|         | <b>Sub Total Streets Department</b>                                   | <b>\$12,584,531</b>  | <b>\$12,631,942</b>     | <b>\$7,831,687</b>          | <b>\$11,719,242</b> | <b>\$912,700</b>   |
| A7      | 44th Street/Washington Transit Center (SF)                            | \$2,822,429          | \$2,821,531             | \$1,187,917                 | \$2,821,531         | \$0                |
| C6      | APM Utility Connections   | \$22,997             | \$22,997                | \$7,000                     | \$22,997            | \$0                |
| D2      | 44th Street Station People Mover Foundation (LS4)                     | \$783,003            | \$783,003               | \$606,608                   | \$781,038           | \$1,965            |
| D6      | People Mover - APS Duct Bank @ 40th Place                             | \$214,035            | \$216,000               | \$115,997                   | \$216,000           | \$0                |
| E9      | 10 <sup>th</sup> Water Line at 42nd/Washington LS 4                   | \$61,269             | \$61,269                | \$47,020                    | \$61,269            | \$0                |
| F3      | Archaeological/Hazardous Material Testing (CAC)                       | \$60,000             | \$60,000                | \$47,871                    | \$60,000            | \$0                |
|         | <b>Sub Total Aviation Department</b>                                  | <b>\$3,963,733</b>   | <b>\$3,964,800</b>      | <b>\$2,012,413</b>          | <b>\$3,962,835</b>  | <b>\$1,965</b>     |
| B3      | LS 1 Water/Sanitary Sewer   | \$9,887,790          | \$9,494,406             | \$1,589,659                 | \$9,691,601         | (\$197,195)        |
| B4      | LS 2 Water/Sanitary Sewer   | \$6,255,348          | \$5,564,735             | \$1,614,166                 | \$5,667,316         | (\$102,581)        |
| B5      | LS 3 Water/Sanitary Sewer   | \$15,367,099         | \$14,826,489            | \$9,858,286                 | \$14,925,755        | (\$99,266)         |
| B6      | LS 4 Water/Sanitary Sewer   | \$5,325,583          | \$5,927,940             | \$4,774,929                 | \$5,940,876         | (\$12,936)         |
| B7      | Water and Sanitary Sewer Lines - 48th St. Bridge Replacement Contract | \$415,420            | \$155,767               | \$155,767                   | \$155,767           | \$0                |
| J1      | Catholic Protection for Waterlines LS1                                | \$1,099,400          | \$739,855               | \$96,775                    | \$739,855           | \$0                |
| J2      | Catholic Protection for Waterlines LS2                                | \$1,094,162          | \$979,408               | \$111,912                   | \$1,083,586         | (\$104,178)        |
| J3      | Catholic Protection for Waterlines LS3                                | \$29,192             | \$0                     | \$0                         | \$29,192            | (\$29,192)         |
| J5      | Catholic Protection for Waterlines LS4                                | \$350,000            | \$435,620               | \$85,620                    | \$435,620           | \$0                |
|         | <b>Sub Total Water Services Department</b>                            | <b>\$39,823,994</b>  | <b>\$38,124,220</b>     | <b>\$18,287,114</b>         | <b>\$38,669,568</b> | <b>(\$545,348)</b> |
|         | <b>Total - Phoenix</b>  | <b>\$86,431,070</b>  | <b>\$86,123,309</b>     | <b>\$41,961,428</b>         | <b>\$81,188,470</b> | <b>\$4,934,839</b> |

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

| Element | Description  | Board Approved Total | Revised Budget/Estimate | Current Actual \$ (To Date) | Forecast            | Variance             |
|---------|--|----------------------|-------------------------|-----------------------------|---------------------|----------------------|
| A8      | 5th/College Transit Center   | \$500,000            | \$752,738               | \$658,992                   | \$759,682           | (\$6,944)            |
| AA      | COT SRP Prior Rights TC Relocation                                 | \$244,080            | \$235,400               | \$0                         | \$235,400           | \$0                  |
| B8      | Terrace / Apache Waterline Coordination (Design Only)              | \$54,639             | \$37,999                | \$35,287                    | \$54,534            | (\$16,535)           |
| C1      | Additional Communications Conduits                                 | \$32,499             | \$32,499                | \$24,271                    | \$32,499            | \$0                  |
| C2      | COT ASU Pedestrian Signal  | \$114,338            | \$122,000               | \$55,976                    | \$122,000           | \$0                  |
| C7      | Parking Facility 5th/Farmer  | \$110,701            | \$116,990               | \$110,701                   | \$116,990           | \$0                  |
| C8      | COT Waterline @ Cremery Route                                      | \$94,081             | \$94,081                | \$67,264                    | \$94,081            | \$0                  |
| D4      | COT Additional Street Lighting (LS5)                               | \$345,014            | \$345,014               | \$221,597                   | \$345,014           | \$0                  |
| D7      | COT Additional Conduit @ McClintock/Apache                         | \$0                  | \$0                     | \$0                         | \$7,990             | (\$7,990)            |
| E6      | Rubberized Asphalt LS5   | \$624,874            | \$624,874               | \$0                         | \$624,874           | \$0                  |
| F2      | McClintock / Apache Storm Drain                                    | \$75,345             | \$72,419                | \$57,041                    | \$72,419            | \$0                  |
| F9      | Rubber Asphalt - Tempe   | \$610,983            | \$523,603               | \$15,221                    | \$523,603           | \$0                  |
| H3      | Fiber Optic COT  | \$427,239            | \$421,934               | \$113,563                   | \$441,978           | (\$20,044)           |
| J4      | Catholic Protection of Waterline LS4 CO#15                         | \$158,638            | \$158,638               | \$110,538                   | \$158,638           | \$0                  |
| J9      | University Drive Station Bus Interface                             | \$509,186            | \$509,186               | \$0                         | \$509,186           | \$0                  |
| K1      | Veteran's Way- 5th/College TC                                      | \$7,645              | \$7,645                 | \$4,826                     | \$7,645             | \$0                  |
| K2      | Bus Shelter Electrification  | \$11,076             | \$11,076                | \$7,315                     | \$11,076            | \$0                  |
| K4      | Washington/Center Parkway Station                                  | \$4,989,270          | \$1,773,870             | \$380,986                   | \$4,985,005         | (\$3,211,135)        |
| N4      | Tempe Market Analysis  | \$44,378             | \$44,378                | \$43,254                    | \$44,378            | \$0                  |
| XX      | Tempe Miscellaneous Force Account Work LS5                         | \$20,000             | \$20,000                | \$10,708                    | \$20,000            | \$0                  |
|         | <b>Sub Total Tempe</b>   | <b>\$8,973,986</b>   | <b>\$5,904,344</b>      | <b>\$1,917,540</b>          | <b>\$9,166,992</b>  | <b>(\$3,262,648)</b> |
| A9      | Main Sycamore Transit Center                                       | \$5,532,721          | \$5,519,839             | \$2,462,915                 | \$5,653,132         | (\$133,293)          |
| H4      | Fiber Optic Backbone LS-4 (Mesa portion)                           | \$847,325            | \$836,798               | \$41,270                    | \$847,328           | (\$10,530)           |
| N3      | Mesa Market Analysis   | \$18,542             | \$18,542                | \$13,890                    | \$18,542            | \$0                  |
| XX      | Mesa Miscellaneous Force Account Work LS5                          | \$5,000              | \$5,000                 | \$2,738                     | \$5,000             | \$0                  |
|         | <b>Sub Total Mesa</b>  | <b>\$6,403,588</b>   | <b>\$6,380,179</b>      | <b>\$2,520,813</b>          | <b>\$6,524,002</b>  | <b>(\$143,823)</b>   |
| C9      | ASU Logo Additions   | \$86,463             | \$54,888                | \$0                         | \$81,280            | (\$26,392)           |
| E2      | ASU Steam Line   | \$0                  | \$0                     | \$0                         | \$8,189             | (\$8,189)            |
| H1      | Fiber Optic ASU  | \$959,445            | \$1,198,930             | \$338,679                   | \$1,198,300         | \$630                |
|         | <b>Sub Total ASU</b>   | <b>\$1,045,908</b>   | <b>\$1,253,818</b>      | <b>\$338,679</b>            | <b>\$1,287,769</b>  | <b>(\$33,951)</b>    |
| E1      | (AFS) Duct Bank at 48th St. Utility Bridge, Archaeological Support | \$76,309             | \$74,344                | \$57,870                    | \$76,309            | (\$1,965)            |
| F8      | Rojo Lofts Property  | \$81,999             | \$14,786                | \$0                         | \$81,998            | (\$67,212)           |
|         | <b>Sub Total Other</b>   | <b>\$158,308</b>     | <b>\$89,130</b>         | <b>\$57,870</b>             | <b>\$158,307</b>    | <b>(\$69,177)</b>    |
|         | <b>Grand Total CNPA</b>  | <b>\$103,012,860</b> | <b>\$99,750,780</b>     | <b>\$46,796,330</b>         | <b>\$98,325,540</b> | <b>\$1,425,240</b>   |



### 3. Schedule Overview

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

Line Sections 1 and 2 continue to work through utility relocation issues that have impacted access dates and/or interim contract milestones. To date, the Program has been successful in mitigating the delays with a minimum of acceleration to the Civil Contracts.

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

Over 96,000 linear feet (18.25 miles) of track has been placed in Line Sections 1, 2, 3, 4, 5 and the OMC. Over 780 of the 1400 OCS Foundations have been placed and pole setting by the TES Contractor is ongoing.

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

#### **Revised Baseline Preliminary Schedule Highlights:**

##### **Civil:**

|                                   |                |
|-----------------------------------|----------------|
| Line Section 1 Completion:        | February, 2008 |
| Line Section 2 Completion:        | December, 2007 |
| Line Section 3 Completion:        | January, 2008  |
| Test Track Completion:            | April, 2007    |
| Line Section 4 Completion:        | December, 2007 |
| Line Section 5 Completion:        | March, 2008    |
| Operations and Maintenance Center | March, 2007    |
| Tempe Town Lake:                  | August, 2006   |
| Station Finishes:                 | October, 2008  |
| Park and Ride                     | October, 2008  |

##### **Systems:**

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



**Startup:**

|  |             |
|--|-------------|
| Start Integrated Testing Area 1 (Part of LS-4 and majority of LS-5): | March, 2008 |
| Start Integrated Testing Area 2 (LS-3 and Balance of LS-4 and 5):    | June, 2008  |
| Start Integrated Testing Area 3 (All of LS-2 and LS-1):              | July, 2008  |

**Critical Path(s):**

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



| Activity ID | Orig Dur | Rem Dur | Start   | Finish   | 2006   |   |   |   |   |   |   |   |   |   |   |   | 2007 |   |   |   |   |   |   |   |   |   |   |   | 2008 |   |   |   |   |   |   |   |   |   |   |   | 2009 |   |   |   |   |   |   |   |   |   |   |   |
|-------------|----------|---------|---------|----------|--|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|
|             |          |         |         |          | J  | F | M | A | M | J | J | A | S | O | N | D | J    | F | M | A | M | J | J | A | S | O | N | D | J    | F | M | A | M | J | J | A | S | O | N | D | J    | F | M | A | M | J | J | A | S | O | N | D |
| TES_3000    | 100      | 100     | 15NOV07 | 22FEB08  | TES - LS-3 OCS Construction 16th to 26th St                    |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| TES_5016    | 110      | 110     | 16NOV07 | 04MAR08  | TES - LS-5 OCS Const Dobson to EOL                             |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| SC_3004     | 37       | 37      | 17NOV07 | 23DEC07  | S&C, LS-2 Central/Indian School Sta Const                      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| TES_2020    | 150      | 150     | 20NOV07 | 17APR08  | TES - LS-2 -OCS Construction                                   |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| TES_3002    | 116*     | 116*    | 19DEC07 | 12APR08  | TES - LS-3 OCS Construction 7th to 16th St                     |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| TES_1090    | 75       | 75      | 11JAN08 | 25MAR08  | TES - LS-1 - OCS Construction<br>N of Bethany Home to 19th     |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| TESM10A_2   | 0        | 0       |         | 22FEB08* | TES New Milestone 10A - Compl TES Work Area 1                  |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| TES_1010    | 75       | 75      | 23FEB08 | 07MAY08  | TES - LS-1 - OCS Construction<br>Central/Camelback to 19th Ave |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| INTTESTA_2  | 60       | 60      | 16MAR08 | 14MAY08* | Integ. Tests Area 1 -Track, Clearance, TES                     |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| TESM10B_2   | 0        | 0       |         | 12APR08  | TES New Milestone 10B - Compl TES Work Area 2                  |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| TURNOVER_3  | 0        | 0       |         | 15MAY08* | Turnover Area 2 to VMR Operations                              |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| INTTESTB_2  | 45       | 45      | 16MAY08 | 29JUN08  | Integ. Tests Area 2 -Track, Clearance, TES                     |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| TESM10C_2   | 0        | 0       |         | 27JUN08* | TES New Milestone 10C - Compl TES Work Area                    |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| TURNOVER_4  | 0        | 0       |         | 01AUG08  | Turnover Area 3 to VMR Operations                              |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| INTTESTC_2  | 30       | 30      | 02AUG08 | 31AUG08  | Integ. Tests Area 3 -Track, Clearance, TES                     |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| TES_999     | 0        | 0       |         | 08AUG08  | TES Milestone 10 - Complete TES Work                           |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| TURNOVER_5  | 0        | 0       |         | 15AUG08  | T/O OCC/Comm. Entire Line to VMR Operations                    |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| INTTESTD_2  | 60       | 60      | 16AUG08 | 14OCT08  | Integ. Tests Entire Line - Dynamic Signal & Control            |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| SCHCONT_2   | 41       | 41      | 15OCT08 | 24NOV08  | Allowance for Re-Testing                                       |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| INTTESTC_C  | 0        | 0       |         | 24NOV08  | Complete Integrated Testing                                    |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| SFTYCERT_2  | 0        | 0       |         | 25NOV08* | Complete Safety Certification Process                          |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| PREREV_2    | 31       | 31      | 26NOV08 | 26DEC08  | Pre-Revenue Operations   |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |
| PREREVC_2   | 0        | 0       | 27DEC08 |          | Revenue Service Date (ROD)                                     |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |



| Procurement Bid Status Report as of 3/29/07   |            |                     |             |             |                   |  |
|---|------------|---------------------|-------------|-------------|-------------------|--|
| Title   | Issue Date | Pre-Bid Conf        | Bid Opening | Board Award | NTP (Anticipated) |  |
| <b>PART I – C/PEV LRT PROJECTS</b>  |            |                     |             |             |                   |  |
| Park and Rides<br>( <i>Tentative</i> )<br>Note: significant delays in the IFB due to the design hold for the Central & Camelback site | 04/23/07   | 05/02/07            | 05/22/07    | 07/18/07    | 08/13/07          |  |
| LRT Systems and Facilities Maintenance - RFP  | 04/02/07   | 04/18/07            | 05/22/07    | 10/17/07    | 12/1/07           |  |
| Power Consulting Services   | TBD        | TBD                 | TBD         | TBD         | TBD               |  |
| <b>PART II – LONG RANGE DEVELOPMENT PROJECTS</b>  |            |                     |             |             |                   |  |
| Planning, Conceptual Engineering, and Environmental Studies for Future Light Rail Extensions – I-10/Glendale                          | 08/10/06   | 08/30/06 & 09/26/06 | 10/18/06    | 02/21/07    | 04/15/07          |  |
| Policy & Advisory Legal Services  | 12/18/06   | N/A                 | 01/26/07    | 04/10/07    | 04/30/07          |  |
| Northwest LRT Extension Engineering Services  | 10/16/06   | 10/31/06            | 11/20/06    | 05/16/07    | 06/01/07          |  |
| Construction Manager at Risk for Northwest Extension Light Rail Transit Project   | TBD        | TBD                 | TBD         | TBD         | TBD               |  |
| Artist for Northwest Extension Light Rail Transit Project   | TBD        | TBD                 | TBD         | TBD         | TBD               |  |
| Architectural/Engineering On-Call Consultant Services - Future Extension Projects   | TBD        | TBD                 | TBD         | TBD         | TBD               |  |
| Public Involvement On-Call Support Services – Future Extension Projects   | TBD        | TBD                 | TBD         | TBD         | TBD               |  |



## 4. Quality Assurance

### Description

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

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

### PROGRESS

#### Personnel

- The METRO Quality Assurance Engineer for Light Rail Vehicle Final Assembly was filled.

#### METRO Activities

- Met with CAC QA Manger to review planned audit schedule for 2007.
- Attended Construction Administration Consultant (CAC) weekly Resident Engineer meetings.
- Attended various Line Section weekly re-sequencing and coordination meetings.
- Conducted Surveillance Reports of LS2 and Traction Electrification System daily inspection activities.
- Conducted Surveillance Report of distribution of OFM and traffic signal poles, to Contractor from Material Storage Yard.
- Conducted audit for Resident Engineer's (RE) compliance with selected sections of the RE Manual for TES Contract. Audit closed.
- Closed QAR for January audit finding on Station Finishes Contract.
- Conducted joint meeting with METRO and CAC QA personnel to plan QA activities for the coming year.



### Construction Administration Consultant Activities

#### Quality Manuals Reviewed:

- To date all Line Section Contractor's Quality Plans have been approved. The Automated Fare Collection Quality Manual was received and reviewed in November and rejected with revision required. A request has been sent to the contractor following up on the resubmittal requirement.

#### Quality Assurance Audits/Surveillances:

- Performed two surveillances on the fabricator of the Station's columns and beams.

#### General:

- Attended weekly Resident Engineer meetings.
- Attended various Line Section weekly coordination meetings.
- Performed two audits on CAC Resident Engineers
- Performed four surveillances of fabricators for Station Finishes
- Nonconformance Report Log (NCR), 42 open items
- Quality Action Request Log (QAR), 21 open items
  - One item was closed in March.
  - Fifteen items are projected to be closed in April.
  - Six items are projected to be closed in May.

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

- Quality Assurance activities remain within budget and on schedule.

### **Issues and Solutions**

- One Mass Electric Quality Action Request (QAR) S2006-001 is still open. Second response was rejected. Quality Action Request was issued to Mass Electric on the Traction Electrification System Contract for lack of adequate inspection personnel; lack of inspection and surveillance reports, lack of inspection and failure to implement an internal and external audit program. CAC responded to MEC 12/6/06. MEC has recently hired two additional inspectors to aid in resolving the QAR and is in the process of evaluating if additional action is required prior to responding to the QAR.

## 5. Public Involvement



### Description

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

### Progress

- On March 22<sup>nd</sup>, METRO conducted its first Vehicle Testing Public Meeting at the F1 Race Factory, 317 S. 48th Street, LS4 Stakeholder. The purpose of this public meeting was to inform stakeholders of why METRO will be testing vehicles, explain testing activities, and educate stakeholders of METRO vehicle testing hazards and safety awareness. Stakeholders also provided feedback on the information presented and METRO will take those comments to refine and incorporate those items in future presentations. METRO is also conducting one-on-one presentations for stakeholders who were unable to participate in this meeting.

Business Assistance



- Order and delivery of Courtesy Signage Program continues in all Line Sections. Through March, **554** signs and **347** banners (**901** totals) have been issued for businesses in all five Line Sections. The following table illustrates the current distribution for this program:

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

| Line Section             | Signs      | Banners    | Total      |
|--------------------------|------------|------------|------------|
| Line Section One (LS1)   | 62         | 65         | 127        |
| Line Section Two (LS2)   | 83         | 54         | 137        |
| Line Section Three (LS3) | 210        | 70         | 280        |
| Line Section Four (LS4)  | 35         | 33         | 68         |
| Line Section Five (LS5)  | 164        | 125        | 289        |
| <b>Totals</b>            | <b>554</b> | <b>347</b> | <b>901</b> |

METRO Business Outreach Program

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

- METRO Max Program Participants – **140** businesses
- Construction Signage Program – **901** ( 554 signs and 347 banners)
- City of Tempe Asset Assistance Program – **1**
- City of Mesa/U.S. Bank Asset Assistance Program – Outreach continues
- Management Technical Assistance (MTA) Program – **260** businesses
- ASU Market Needs Assessment – **111** businesses (99 Complete /12 In-Progress)

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

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



### LS1

- LS1 conducted its Community Advisory Board (CAB) meeting on Tuesday, March 13th, at AmeriSchools Academy. Mr. Patrick Fuller, General Engineering Consultant Project Manager, provided an overview on signalization and the operation of signal control for the light rail system. Members asked questions about emergency services, pedestrians crossing light rail intersections, adjacent traffic signals to the alignment, and what the procedure will be if problems occur. During the contractor's presentation, Kiewit representatives described the upcoming 7<sup>th</sup> Avenue lane restriction for track installation. Discussion occurred regarding the rationale behind a half closure vs. full closure, the traffic set-up for the restriction, and alternative routes. Ms. Dee Hidalgo-Coe was introduced to the CAB as the new Line Section 1 Community Outreach Coordinator. Kiewit received an overall rating of 100 percent, for their effort going "above and beyond" the contract specifications. The next LS1 CAB meeting is scheduled for Tuesday, April 10<sup>th</sup>.

### LS2

- LS2 held their monthly meeting Tuesday, March 20<sup>th</sup> at The Heard Museum. While reviewing activity reports, members suggested that METRO and/or Herzog inform commuters that u-turns are allowed where left turns are permitted, unless noted by signage. Herzog indicated they will not place u-turn "allowed" signage, but will look into other possible approaches. During the contractor's presentation, Mr. Dick Schaefer inquired if Herzog was on schedule. Mr. Pat Gray (Herzog's Project Manager) stated Herzog was on schedule and working with METRO on a new completion date. Mr. Sloane McFarland inquired if other METRO contactors were on schedule. Mr. Brian Buchanan addressed Mr. McFarland's question stating METRO is scheduled to open on time; however, contactors may be around longer than anticipated. Herzog received an overall rating of 80 percent, for their effort going "above and beyond" the contract



specifications. The next LS2 CAB meeting is scheduled for Tuesday, April 17, 2007 at the Heard Museum.

### LS3

- LS3 conducted their monthly meeting on Tuesday, March 13, 2007 at METRO. Members of the general public addressed the CAB on pedestrian safety and accessibility issues. Archer Western Contractors (AWC) delivered their presentation, highlighting the progress and successes they have achieved during the last month and displaying examples of AWC going “above and beyond” the contract specifications. AWC reviewed all upcoming intersection closures and restrictions, and showed the phases of construction scheduled for work in all segments. Members discussed the merits of utilizing the median number for the Contractor Evaluation, and indicated the median number would help provide a more accurate figure of what the rating should be. AWC received an overall rating of 80 percent, for their effort going “above and beyond” the contract specifications. The next LS3 CAB meeting is scheduled for Tuesday, April 10, 2007 at the Operations and Maintenance Center.

### LS4

- LS4 held their monthly CAB Meeting on Thursday, March 14, 2007, at Papago Buttes Corporate Plaza. Meeting discussions included further details regarding construction surveys and executive summary used to communicate survey feedback, upcoming light rail vehicle testing on Washington from 48<sup>th</sup> to 56<sup>th</sup> Streets, the announcement of Vehicle Testing Public Meeting on March 22, 2007, and general conversation surrounding various stakeholder concerns that developed over the last month. Erik Yingling, Sundt/Stacy and Witbeck (SSWJV) LS4 Project Manager, presented an overview of construction activities in LS4 including a general overview of the job (with aerial photos), station foundation at 44<sup>th</sup> Street, construction of bathtub track that will house track switch, and progress as SSWJV progresses west on Washington Street. Mr. Yingling also noted that SSWJV has turned the completed track on Washington from 48<sup>th</sup> to 56<sup>th</sup> Street over to METRO to be used as the light rail corridor for upcoming vehicle testing this spring. SSWJV received an overall rating of 100 percent for the month of March. The next LS4 CAB Meeting is scheduled for Thursday April 12, 2007 at the Papago Buttes Corporate Plaza.

### LS5

- LS5 conducted its CAB meeting on Thursday, March 8, 2007 at the Escalante Center. Howard Steere, METRO Public Involvement Manger, presented an update on systems contracts following the civil (track) construction which included updates on the entire project status, Operations and Maintenance Center (OMC), signals and communications, and station finishes. John Zehner, Sundt/Stacy and Witbeck (SSWJV) LS5 Project Manager, provided an overview of construction progress in Tempe and Mesa. The discussion informed the CAB of the near completion of Milestone A in Tempe (from First Street/Ash to Rural Road), construction of station platforms, roadway widening on Apache Boulevard, the final work on the Loop 101 bridge construction, and storm drain work in Mesa. SSWJV received an overall rating of 100 percent for their efforts notifying businesses of upcoming work, responding to several community concerns and requests, maintaining orderly construction zones and keeping dust to a minimum. The next meeting is scheduled for Thursday, April 12, 2007 at the Escalante Community Center.



### Cost Status

- Scheduled CAB Disbursement remains the same as the previous month:  
Total Available Incentive: **\$2,500,000.00** (10 Quarterly disbursements)  
Total Miles of Street with LRT: 23.53 miles  
Allocation per Mile: \$106,247.34  
Total CAB Disbursement through March is at **\$ 1,352,221**

| Line Section | Total Amount Available | Available for Award to Date | Total Award to Date | % Award to Date |
|--------------|------------------------|-----------------------------|---------------------|-----------------|
| LS1          | \$241,181.00           | \$96,472                    | \$96,472            | 100%            |
| LS2          | \$317,680.00           | \$158,840                   | \$149,310           | 94%             |
| LS3          | \$865,916.00           | \$519,550                   | \$415,639           | 81%             |
| LS4          | \$567,361.00           | \$453,889                   | \$436,858           | 96%             |
| LS5          | \$507,862.00           | \$253,931                   | \$253,931           | 100%            |

### Schedule Status

- Public Involvement activities remain on schedule.

### Issues and Solutions

- Issue:** Night time noise continues to be issue in Line Sections 2 and 3.

**Solution:** Both impacted contractors, Herzog and Archer Western, are developing plans to avoid conducting extremely loud activities, such as jack-hammering, concrete/asphalt saw cutting and rail cutting. City of Phoenix also indicated that permit issues are subject to revocation.



## 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 14.71 percent, participation including change order work is at 15.11 percent and DBE's have been paid 12.71 percent of construction dollars to date.

### Procurement Activities

- The Systems and Facilities Maintenance procurement is scheduled for release in late March, 2007. The DBE participation goal is 8.6 percent. Five companies were pre-qualified for this procurement. A procurement-specific networking session will be held April 26, 2007 so that DBE subcontractors interested in pursuing this work can meet with the pre-qualified primes.
- The Park-N-Ride procurement will be released in early April, 2007. METRO is preparing Invitations for Bid(s) that will enable contractors to bid on single, multiple, or all Park-N-Ride locations. The DBE Participation goal for the contract has been set at 21 percent. The DBE community, and the small business community as a whole, has expressed great interest in these projects. A procurement-specific networking session will be hosted by METRO on May 10, 2007 to assist DBEs in meeting with potential primes.



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
  - 15.79 percent Current DBE Participation (based on adjusted contract amounts)
  - \$7,804,432.64 Total DBE Subcontracted Amount
- Line Section 2
  - Herzog
  - 12.10 percent Minimum DBE Participation
  - 15.69 percent Committed at Bid
  - 22.02 percent Current DBE Participation (based on adjusted contract amounts)
  - \$12,314,224 Total DBE Subcontracted Amount
- Line Section 3
  - Archer Western Contractors
  - 12.30 percent Minimum DBE Participation
  - 13.59 percent Committed at Bid
  - 14.17 percent Current DBE Participation (Based on adjusted contract amounts)
  - \$13,474,880.31 Total DBE Subcontracted Amount
- Line Section 4
  - Sundt/Stacy and Witbeck Joint Venture
  - 11.50 percent Minimum DBE Participation
  - 14.47 percent Committed at Bid
  - 12.22 percent Current DBE Participation (based on adjusted contract amounts)
  - \$6,887,600 Total DBE Subcontracted Amount



- Line Section 5
  - Sundt/Stacy and Witbeck Joint Venture
  - 14.90 percent Minimum DBE Participation
  - 16.73 percent Committed at Bid
  - 18.96 percent Current DBE Participation (based on adjusted contract amounts)
  - \$13,523,050 Total DBE Subcontracted Amount
- Station Finishes
  - Archer Western Contractors
  - 12.20 percent Minimum DBE Participation
  - 12.98 percent Committed at Bid
  - 15.08 percent Current DBE Participation (based on adjusted contract amounts)
  - \$8,546,818.74 Total DBE Subcontracted Amount
- Operations and Maintenance Center
  - Sundt/Stacy and Witbeck Joint Venture
  - 7.34 percent Minimum DBE Participation
  - 7.54 percent Committed at Bid
  - 8.11 percent Current DBE Participation (based on adjusted contract amounts)
  - \$4,676,599 Total DBE Subcontracted Amount
- Traction Electrification
  - Mass Electric Construction Company
  - 10.00 percent Minimum DBE Participation
  - 10.20 percent Committed at Bid
  - 10.49 percent Current DBE Participation (based on adjusted contract amounts)
  - \$5,726,370.25 Total DBE Subcontracted Amount
- Signals and Communication
  - Mass Electric Construction Company
  - 11.00 percent Minimum DBE Participation
  - 11.67 percent Committed at Bid



- 11.51 percent Current DBE Participation (based on adjusted contract amounts)
- \$4,611,664 Total DBE Subcontracted Amount
- Tempe Town Lake Bridge
  - PCL Civil Constructors
  - 12.00 percent Minimum DBE Participation
  - 14.49 percent Committed at Bid
  - 20.80 percent Current DBE Participation (based on adjusted contract amounts)
  - \$4,559.765.58 Total DBE Subcontracted Amount
- Construction Administration Consultant
  - PBS&J/PGH Wong Joint Venture
  - 21.00 percent Minimum DBE Participation
  - 25.35 percent Committed at Bid
  - 32.29 percent Current DBE Participation (based on adjusted contract amounts)
  - \$11,990,770 Total DBE Subcontracted Amount
- Program Management Consultant
  - SRBA/Parsons Joint Venture
  - 1.5 percent Minimum DBE Participation (established post contract award)
  - 0 percent Committed at Bid
  - 4.25 percent Current DBE Participation (based on adjusted contract amounts)
  - \$1,493,992 Total DBE Subcontracted Amount
- General Engineering Consultant
  - Parsons Brinckerhoff
  - 13.00 percent Minimum DBE Participation
  - 13.89 percent Committed at Bid
  - 16.06 percent Current DBE Participation (based on adjusted contract amounts)
  - \$11,392,061 Total DBE Subcontracted Amount



- Fare Collection System
  - Scheidt Bachmann
  - 8.20 percent Minimum DBE Participation
  - 8.39 percent Committed at Bid
  - 8.39 percent Current DBE Participation (based on adjusted contract amounts)
  - \$627,000 Total DBE Subcontracted Amount
- Material Procurements
  - Multiple Suppliers
  - 3.00 percent Minimum DBE Participation
  - 3.00 percent Committed at Bid
  - 3.00 percent Current DBE Participation (based on adjusted contract amounts)
  - \$1,770,322.77 Total DBE Subcontracted Amount

#### Outreach Activities

- The DBE Outreach Advisory Committee met March 20, 2007. Dates for the Park and Ride procurement networking session and Systems and Facilities Maintenance procurement were established. Additionally, a schedule of training and networking events was established for the remainder of the year.

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

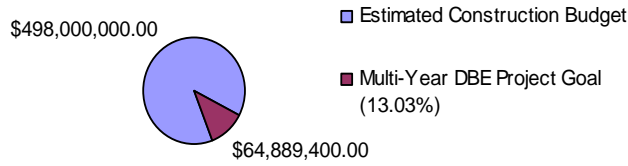
- DBE activities remain within budget and on schedule.

#### **Issues and Solutions**

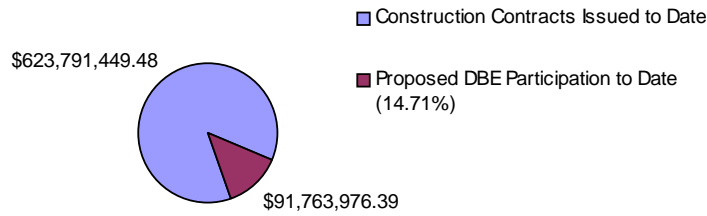
- METRO staff met with the contractor and DBE subcontractor on LS5 regarding the issue of non-payment for survey work completed by the DBE. It appears that both the contractor and DBE subcontractor failed to communicate regarding issues as they were occurring and failed to produce adequate documentation to support their positions. The prime contractor offered payment of a portion of the DBE's final invoice amount in an attempt to resolve the issue. The DBE, however, finds no fault in their company's actions and has not accepted the reduced amount. Additionally, the DBE has stated that they believe their reputation has been damaged and that the prime contractor is attempting to circumvent their obligations regarding DBE compliance. METRO does not share that opinion and staff members will continue working with the DBE to try to resolve this issue.



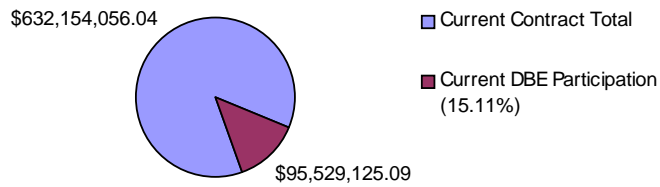
### DBE Program Overview



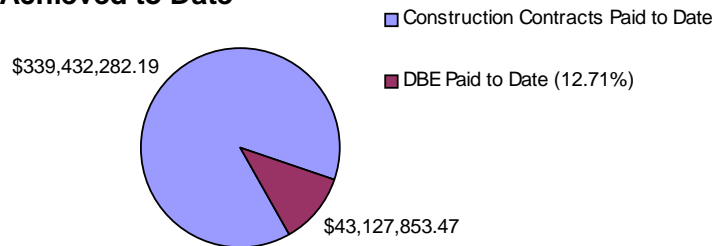
### Original Contract Amounts



### 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

- The first Certificate of Compliance, as part of the Safety and Security Certification Program, was signed. The Certificate was for the Town Lake Bridge.
- Assisted in developing the Track Access Training course.
- Conducted Track Access Training for over 200 METRO, consultant, and contractor personnel.
- Conducted METRO orientation and hazard awareness training for over 100 Phoenix Fire Department personnel.
- Conducted METRO orientation training for Phoenix Police Department municipal guard and police assistant recruit training class.
- Assisted with clearance cart testing, and the dead wire pull of the LRV in the OMC Yard and Test Track.
- Developed and implemented fire/life safety and security plan for the Friends of Transit Conference at the Operations and Maintenance Center.
- Developed a draft agreement for the Phoenix Police Department to provide municipal guards at the Operations and Maintenance Center.
- Continued with the process to develop light rail codes and ordinances for traffic, public conduct, and fare inspection enforcement with the City of Phoenix Law Department.
- Continued working with the safety and security certification support consultant to develop checklists and monitor implementation of the program.
- Continued review and comment process for METRO Standard Operating Procedures.
- There was no Fire/Life Safety and Security Committee in March (every other month schedule).
- Conducted the Safety and Security Certification Review Committee meeting.

### Cost and Schedule – Variance Analysis

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



## **Issues and Solutions**

- None



## 8. Environmental Management

### Description

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

- Contract for archaeology services was transferred from CAC to METRO effective March 1, 2007.
- Provided archaeological monitoring in LS 2, 3, 4 and 5 for all ground disturbance activities.
- No new burials or features were discovered.
- ACS is providing four field archaeologist and one supervisor. ACS has maintained schedule commitments.
- ACS is wrapping up base data entry for all discoveries.

#### Contaminated and Hazardous Materials

- One underground storage tank of unknown origin was uncovered by the contractor at 7<sup>th</sup> Avenue and Camelback. Ninyo and Moore responded to take material samples. Environmental Response Inc. responded with containment equipment and directed the contractor in the removal of the tank and contaminated materials. Upon receipt of test results, the site will be released to the contractor for backfilling.

#### Regulator Compliance

- Conducted field observation of contractor compliance with dust control BMP. No substantial problems were identified.



## Cost and Schedule – Variance Analysis

### Archaeology

|   |               |
|---|---------------|
| Original Contract Value (CAC)                             | \$1,500,064   |
| Approved Change Orders                                    | \$2,137,936   |
| Contract Value to date                                    | \$3,638,000   |
| Invoiced through February 28, 2007                        | (\$3,643,796) |
| Estimated cost March '07 through June '07                 | \$325,000     |
| Estimated cost for construction monitoring FY'08          | \$175,000     |
| Contingency for data recovery through end of construction | \$100,000     |
| Total estimated costs for field archaeology               | \$4,243,795   |

### Hazardous Materials Assessment (CAC)

|                                  |             |
|----------------------------------|-------------|
| Original Contract Value          | \$499,488   |
| Contract Value to date           | \$499,488   |
| Invoiced as of February 28, 2007 | (\$419,257) |
| Task orders open                 | (\$35,331)  |
| Expended or Committed            | \$449,588   |
| Estimated Cost to Complete       | \$45,000    |
| Estimated total Cost             | \$499,588   |

### Remediation and Treatment Fund (METRO)

|                       |             |
|-----------------------|-------------|
| Budget                | \$1,004,000 |
| Expended or Committed | (\$188,680) |
| Data Recovery Report  | (\$84,956)  |
| ERI                   | (\$103,724) |
| Funds Available       | \$815,320   |

## Issues and Solutions

- **Issue:** Archaeology field work has exceeded budget estimates.

**Solution:** Staff is requesting that the Board authorize a change order to CAC and add \$240,000 to the archaeology sub-account for costs incurred through February 2007.



Staff is recommending that \$600,000 of the remaining Remediation and Treatment fund be allocated to complete archaeology field services.

- **Issue:** Archaeology technical report(s) must be completed for project close-out. Independent cost estimate for analysis and report preparation is \$3,500,000 plus \$75,000 of direct agency costs.

**Solution:** Staff is preparing a detailed scope of work and a management plan for the archaeology analysis and reporting. This plan will be reviewed by City of Phoenix and SHPO archaeologists to assure compliance with federal and state requirements. The scope and management plan will be the basis for developing a final cost estimate for the reporting process.



## 9. Real Estate

### Description

The LRT Project travels down main business arterials in the cities of Phoenix, Tempe and Mesa and approximately 780 parcels of property are affected. The number of right-of-way certifications required within this 20-mile corridor is in excess of 2,500. This number includes all easements required by the project, such as utility, irrigation, sidewalk, traffic, slope, landscape and temporary construction. Real Estate staff members from the project cities are responsible for obtaining all of the necessary property rights required to construct and operate the LRT system. Oversight and coordination of the cities' activities is provided by METRO Real Estate staff.

### Progress

- Presently, 99 percent of the required properties are now under city control and 95 percent of the properties are available for construction. Extensive coordination between METRO and City staff has enabled the project to obtain these properties in a manner sufficient to support construction.
- In Line Section 1, 182 relocations have now been completed and only one remains. A total of 149 are under city control and a total of 132 parcels are available for construction. Line Section 1 contains 151 parcels.
- In Line Section 2, all 29 relocations have now been completed. A total of 91 parcels are under city control and 85 parcels are available for construction. Line Section 2 contains 94 parcels.
- In Line Section 3, 35 relocations have now been completed and only 1 relocation remains. All parcels are now under City control and 247 parcels are available for construction. Line Section 3 contains 259 parcels.
- In Line Section 4, all 28 relocations have now been completed. All parcels are now under City control and all parcels are available for construction. Line Section 4 contains 109 parcels.
- In Line Section 5, all 40 relocations have now been completed. All parcels are now under City control and all but one parcel is available for construction. Line Section 5 contains 167 parcels.
- In Line Sections 1, 2, 3 and 4; eighteen building cut and re-faces were identified; seventeen have been completed and one is currently underway. These building modifications required a structural engineering analysis, architectural and utility modifications, the procurement of relevant contractors and an extensive permitting process.
- The FTA Real Estate Program Compliance Review cited nine infractions. Work to resolve these issues are still ongoing. Presently, five of the issues have been resolved to the FTA's satisfaction and only four issues remain.
- An updated Real Estate Acquisition Summary sheet is included at the end of this section.



|                       | <b>5309</b>   | <b>CNPA</b>  | <b>Total</b>  |
|-----------------------|---------------|--------------|---------------|
| Budget                | \$116,214,150 | \$22,221,205 | \$138,435,355 |
| Available Contingency | \$ 19,557,203 | \$ 1,753,931 | \$ 21,311,134 |
| Total                 | \$135,771,353 | \$23,975,136 | \$159,746,489 |
| Spent To Date         | \$123,026,057 | \$20,760,424 | \$143,786,481 |
| Balance Available     | \$ 12,745,296 | \$ 3,214,712 | \$ 15,960,008 |

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

- Real Estate was one of two key issues (utilities being the other) that was driving the project schedule; however, a focused real estate effort has eliminated this concern. The Cities are working diligently with METRO to improve and streamline processes wherever possible.
- The overall real estate forecast is still within the budget and actual costs are within the budget plus contingency for the real estate contract unit.

### **Issues and Solutions**

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



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

| ACTIVITY  | 1 PHX      | 2 PHX     | 3 PHX      | 4 PHX      | 4 TEMPE  | 5 TEMPE    | 5 MESA    | Totals     |
|---|------------|-----------|------------|------------|----------|------------|-----------|------------|
| Full Takes  | 40         | 0         | 9          | 2          | 0        | 12         | 0         | <b>63</b>  |
| Partial Takes                                     | 111        | 94        | 250        | 106        | 1        | 109        | 46        | <b>717</b> |
| <b>Total Affected<br/>Parcels</b>                 | <b>151</b> | <b>94</b> | <b>259</b> | <b>108</b> | <b>1</b> | <b>121</b> | <b>46</b> | <b>780</b> |
| Projected Relocations                             | 183        | 29        | 36         | 28         | 0        | 40         | 0         | <b>316</b> |
| Title Reports Completed                           | 151        | 94        | 259        | 108        | 1        | 121        | 46        | <b>780</b> |
| Legal's sent to City                              | 151        | 94        | 259        | 108        | 1        | 121        | 46        | <b>780</b> |
| Appraisals Requested                              | 151        | 94        | 259        | 108        | 1        | 121        | 46        | <b>780</b> |
| Appraisals Completed                              | 151        | 94        | 259        | 108        | 1        | 121        | 46        | <b>780</b> |
| Offers Made                                       | 151        | 94        | 259        | 108        | 1        | 121        | 46        | <b>780</b> |
| Offers Accepted                                   | 109        | 65        | 224        | 85         | 1        | 90         | 36        | <b>610</b> |
| <b>Escrow Closed<br/>Acquisition<br/>Complete</b> | <b>107</b> | <b>59</b> | <b>219</b> | <b>85</b>  | <b>1</b> | <b>90</b>  | <b>38</b> | <b>604</b> |
| Condemnation Filed                                | 26         | 12        | 25         | 11         | 0        | 29         | 17        | <b>120</b> |
| OIP Received                                      | 24         | 8         | 22         | 9          | 0        | 24         | 8         | <b>95</b>  |
| ROE Signed  | 18         | 24        | 19         | 14         | 0        | 2          | 0         | <b>77</b>  |
| Relocations Underway                              | 1          | 0         | 1          | 0          | 0        | 0          | 0         | <b>2</b>   |
| Relocations Completed                             | 182        | 29        | 35         | 28         | 0        | 40         | 0         | <b>314</b> |
| <b>Parcels Under<br/>City Control</b>             | <b>149</b> | <b>91</b> | <b>259</b> | <b>108</b> | <b>1</b> | <b>121</b> | <b>46</b> | <b>775</b> |
| Parcels Available for Construction                | 132        | 85        | 247        | 108        | 1        | 121        | 45        | <b>739</b> |
| Parcels Pending Release for Construction          | 17         | 6         | 12         | 0          | 0        | 0          | 1         | <b>36</b>  |



## 10. Utilities

### Description

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

### Progress

- Line Section 1
  - Solutions for utility issues are addressed weekly in the LS1 Utilities Coordination meeting held at the Kiewit field office
  - Kiewit continues to work on Salt River Project Irrigation (SRPI) facilities.
  - SRP: The abandonment at the historic well site on the southwest corner of 19<sup>th</sup> Avenue and Camelback Road is now beginning to impact the contractor schedule. The contractor is unable to do curb, paving, and side walk, at the corner. The old well site can not be disturbed until drilling operation begins. SRP is waiting on a drilling rig to become available.
  - SRP Job No. KJC-3002 is ready to mobilize crews to start trenching/pulling wire on the north side of Camelback Road from 19<sup>th</sup> Avenue to 15<sup>th</sup> Avenue in April. SRP is waiting for Kiewit to move traffic to the south side, which will allow SRP to start on the north side.
  - Kiewit continues trenching along the west side of 19th Avenue from Camelback Road to Missouri Avenue (SRP Job No. KJC-5001 and KJC-3000). SRP is ready to mobilize crews to start pulling/splicing new cable. Once SRP is done, Qwest and Cox Communication can start pulling/splicing new cable/fiber.
  - SRP Power Job No. KJC-5000 and KJC-3001 for joint trench along the west side of 19th Avenue from Missouri Avenue to Bethany Home Road is tentatively scheduled to start the first part of April 2007.
  - Qwest and Cox continue moving pedestals/closures along 19<sup>th</sup> Avenue at various locations.
  - Cox needs to pull/splice fiber at 17<sup>th</sup> Avenue and 15<sup>th</sup> Avenue and Camelback Road.
- Line Section 2
  - Utility conflicts and coordination issues are being addressed on a case-by-case basis in the field. Utility meetings are now being held bi-weekly in the Herzog office. These meetings increase contractor communication and utility company accountability.



- SRP Water Irrigation facilities at Central Avenue and Encanto Boulevard will be tentatively finished by the LS2 Contractor June of 2007.
- APS 230 kV spare pipe is scheduled with the LS2 Contractor activities crossing Central Avenue and Encanto. APS is scheduled to start April 9, 2007. Herzog, APS and Public Involvement continue to coordinate construction activities and closings with stake holders (Heard Museum)
- The project team continues to work with APS, the COP and Herzog on design modifications for street lights and traffic signals. The COP, METRO and APS representatives have been instrumental in facilitating the necessary changes of this work.
- Line Section 3
  - Utility conflicts and coordination issues are being addressed on a case by case basis in the field.
  - METRO has started a punch list for utility companies to address:
  - The project team continues to work with APS, COP, METRO and Archer Western representatives to implement design modifications on street lights and traffic signals. The weekly coordination meeting has been instrumental in facilitating the necessary changes of this work.
- Line Section 4
  - Utility conflicts and coordination issues are being addressed on a case by case basis in the field.
  - METRO has started a punch list for utility companies to address:
  - Installation of microduct remains an issue for LS4. The prime contractor has hired a new subcontractor with more experience on microduct installation. They will attempt installation from 56<sup>th</sup> Street to Priest upon repair of damaged conduits in the area.
- Line Section 5
  - Solutions for utility issues are addressed weekly in the LS5 Utilities Coordination meeting. These meetings increase contractor communication, and utility company accountability.
  - The Union Pacific Railroad Signal Arm and cantilever must be relocated. UPRR has stated that they will install the Pedestrian Gate on their side and control the gate. The gate design is in process, but no date has been given for the installation by UPRR.
  - The Contractor continues to face challenges with existing utilities along the alignment eastward from Apache Boulevard. Significant lengths of underground SRP electric line and SWG main must be lowered to meet clearance requirements by City of Tempe; these utility relocations were not previously noted in the drawings, or planned for in the schedule. The Agency is working to expedite these third-party utility relocations.



- SRP Job No. KJC-3008, KJC-5011, KJC-3011 are all substantially complete. This work is expected to be fully completed by the first part of April.
- SRP Job No. KEC-5000 is approximately 75 percent complete with all trenching on the north side of Main Street, and the crossing is completed. Trenching on the south side of Main Street has started, working from east to west. South side trenching was delayed by City of Mesa traffic control and SSWJV work.
- SRP irrigation work will begin in approximately three weeks, pending SWG work at Apache Boulevard and River. Once SWG is done, SRP will mobilize three crews.
- An additional shallow main has been found on Apache Boulevard in the area of the Smith-Martin station road widening. Pothole information has already been provided to SWG to determine limits. No permit has been submitted by SWG
- Traction Power Substations
  - APS, GEC and METRO continue defining electrical easements that are still needed for Traction Power Substations. No. 3, 4, 5, 6, 7, 8, 10, 11 and 15.
    - Easement requirements for No. 5 and 7 were clarified. No easement is required.
  - SRP and METRO are preparing a Service Agreement for Traction Power Substations No. 1, 2, 12, 13 and 14.
  - TPSS No. 9, 15 and Signal Building No. 4 are energized.
- New Electric Services Accounts
  - APS and SRP electrical accounts for TPSS are set up.
  - APS and SRP electrical service accounts are in the process of being established for Transit Centers, Park and Rides, Station Platforms and Signal Com Buildings.

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

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

### **Issues and Solutions**

- Utility relocation is a big concern for this project to be on schedule. METRO has requested that utility companies accelerate their relocation even if it includes providing additional resources.
- Need to define APS and SRP Power easements for the TPSS Sites.
- Line Section 2 – To assure that utility companies do not delay, the contractor revised schedule.
- The LS3 contractor is working with APS on street lights in the area to mitigate any delays.

**Construction Photographs**



SRP-Power relocation at the Fry's property along Camelback Road in LS1



SRP-Power along Camelback Road in LS1



SWG relocation at McClintock and Apache Boulevard in LS5



SRP Power - boring place conduits for 12 kV on Apache Boulevard in LS5

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

|                                     | Percent    | Budget              | Earned              | Cost to Date        | Forecast            |
|-------------------------------------|------------|---------------------|---------------------|---------------------|---------------------|
| Line Section 1                      | 59%        | \$6,234,834         | \$3,687,783         | \$6,477,743         | \$8,311,836         |
| Line Section 2                      | 92%        | \$1,765,355         | \$1,623,855         | \$508,062           | \$1,454,881         |
| Line Section 3                      | 88%        | \$3,067,860         | \$2,685,363         | \$2,264,078         | \$3,067,860         |
| Line Section 4                      | 98%        | \$4,780,945         | \$4,662,248         | \$2,587,748         | \$5,141,982         |
| Line Section 5                      | 83%        | \$7,555,076         | \$6,265,261         | \$9,240,343         | \$12,368,632        |
| Maintenance Storage Facility        | 100%       | \$320,230           | \$320,230           | \$418,332           | \$418,332           |
| Town Lake Bridge                    | 100%       | \$1,150,000         | \$1,150,000         | \$808,997           | \$850,348           |
| TPSS                                | 12%        | \$4,540             | \$540               | \$540               | \$4,540             |
| <b>Sub Total</b>                    | <b>82%</b> | <b>\$24,878,840</b> | <b>\$20,395,280</b> | <b>\$22,305,843</b> | <b>\$31,618,411</b> |
| Contingency                         | 0%         | \$1,500,452         | \$0                 | \$0                 | \$649,599           |
| <b>Total Prior Rights Utilities</b> | <b>77%</b> | <b>\$26,379,292</b> | <b>\$20,395,280</b> | <b>\$22,305,843</b> | <b>\$32,268,010</b> |

## 11. Architecture

### Public Art



### Description

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

### Progress

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



- Line Section 3
  - McDowell: Approximately one half of bronze books are cast.
  - Van Buren: Fabrication 90 percent complete.
  - Central/Washington – 1<sup>st</sup> Avenue/Jefferson: Porcelain tile production is on hold for field measurements following station steel erection.
  - 3<sup>rd</sup> Street: Steel fabrication has begun.
  - 12<sup>th</sup> Street: Paver fabrication has begun.
  - 24<sup>th</sup> Street: Steel panel fabrication is complete, final bronze fabrication ongoing.
- Line Section 4
  - 44<sup>th</sup> Street: Resolving lighting issues.
  - Priest/Washington: Fabrication has begun.
- Tempe Town Lake
  - Artwork completed except for final bridge lighting programming.
- Line Section 5
  - 3<sup>rd</sup> Avenue/Mill: Lighting issues are resolved.
  - 5<sup>th</sup> Avenue/College: Bronze models are completed.
  - Apache Boulevard Stations – Sculpture: Bronze models for “Hands” approximately 50 percent complete.
  - Sycamore/Main: Resolving lighting issues and invoicing issues.
- General Progress
  - Working with Archer Western Contractors (AWC) to resolve foundation installation and scheduling issues.
  - Working with artists and GEC to resolve outstanding request for information issues.

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

- Public Art activities remain on schedule and within budget.

### **Issues and Solutions**

- Continuing to monitor contract schedule issues.

**Construction Photographs**



Encanto Station Artwork



Encanto Station Artwork

## Station Finishes



### Description

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

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

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

### Progress

- Montebello and 19th Avenue Transit Center: Installation of storm drain pipe, catch basins and manholes, SRP lighting conduit, and site electrical is completed. Roadway construction of Montebello Avenue is complete. The Contractor was given permission by the City of Phoenix to close Montebello under renovation by Station Finishes south of Spectrum Mall during the months of February and March 2007. A further extension until April 14, 2007 is needed, due to additional weather delays and for allowing completion of Montebello to 19<sup>th</sup> Avenue storm drainage connections by the Line Section 1 Contractor.



Additional demolition work with temporary pavement making the intersection at 19<sup>th</sup> Avenue safe to travel is also underway (originally not in the Station Finishes Contract). Spectrum Mall management is being regularly updated on METRO construction activities in the vicinity of their facility.

- Central Avenue and Camelback Transit Center: No Station Finishes activity occurred during the past month at this site while coordination with other METRO contractors is ongoing. Station Finishes contract work is expected to resume in mid-April 2007.
- Washington and 44<sup>th</sup> Street Transit Center: Installation of structural steel for the three bus shelters and map case is complete. Construction of curb and gutter, grading and site utility work is ongoing. Archer Western and Sundt/Stacey Witbek (Line Section 4 Contractor) are continuing to coordinate access and sequencing of their respective work.
- Sycamore and Main Street Transit Center: Installation of underground utilities is underway. Contractor completed placing concrete foundations for the canopy shade structure and grading the site. Site grading and preparation for curb, gutter and paving is underway.
- METRO has received an approved amendment from the City of Mesa Building Safety Office to the current Sycamore and Main Street Transit Center construction permit. This includes the Sycamore and Main Street Station platform elements.
- A total of thirteen station foundations have been substantially completed by Line Section Contractors and made available to the Station Finishes Contractor for Area Access.
- Station Finishes' physical link construction between couplet stations at Van Buren and 1st Avenue and Central into the Central Station Bus Transit Center is ongoing. This work includes the extension of platform and entry foundations that were constructed by the Line Section 3 Contractor.
- Platform and Operations Facility structural steel shop drawings continue to be submitted and reviewed. Steel deliveries and installation for station/bus shelter installations began March 14, 2007.
- Installation of structural steel at the Van Buren and 1<sup>st</sup> Avenue Station is complete. Installation of above ground electrical and other utilities is underway.
- Contractor is installing electrical conduit and pull boxes at: Central and Van Buren, 1<sup>st</sup> Street and Jefferson, 3<sup>rd</sup> Street and Jefferson, 3<sup>rd</sup> Street and Washington, and 24<sup>th</sup> Street and Jefferson Stations, and 24<sup>th</sup> Street and Washington Stations.
- Contractor completed placement of pull boxes at the Central Avenue and Washington Station. Concrete deck placement is complete.
- Masonry block work of the Operator Facility (OPF-4) at the Sycamore and Main Street Transit Center is underway.
- A proposal from Archer Western for rotating concrete pads at various stations for the Ticket Vending Machines (TVM's) due to further revisions in machine design and required maintenance access is under review by METRO. Provisions for new Stand-alone Validator (SAV) concrete pads and power connections to the system for six stations are also included in this upcoming change order.



- The pad locations at all other stations have been notated in Agency approved design sketches and are ready for inclusion in another Change Notice to the SF Contractor upon METRO's determination of their funding source (see Issues and Solutions below).

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

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

### **Issues and Solutions**

- Building department comments related to received Station Finishes Permit approvals from the Cities of Phoenix and Mesa resulted in additional changes at all Transit Center sites. METRO and Archer Western are continuing to resolve any potential cost and schedule impacts due to these Contract revisions.
- Remaining funding source(s) for all other Stand-alone Validator locations at stations is expected from METRO Systems and Operations staff in April 2007 so that any schedule delays and/or additional costs for the Station Finishes Contract are minimized. Subsequently, a new change order to the Station Finishes Contract reflecting this work will be issued.

### Construction Photographs



Steel Installation at 1<sup>st</sup> Avenue and Van Buren Station



Road construction at 19<sup>th</sup> and Montebello Transit Center



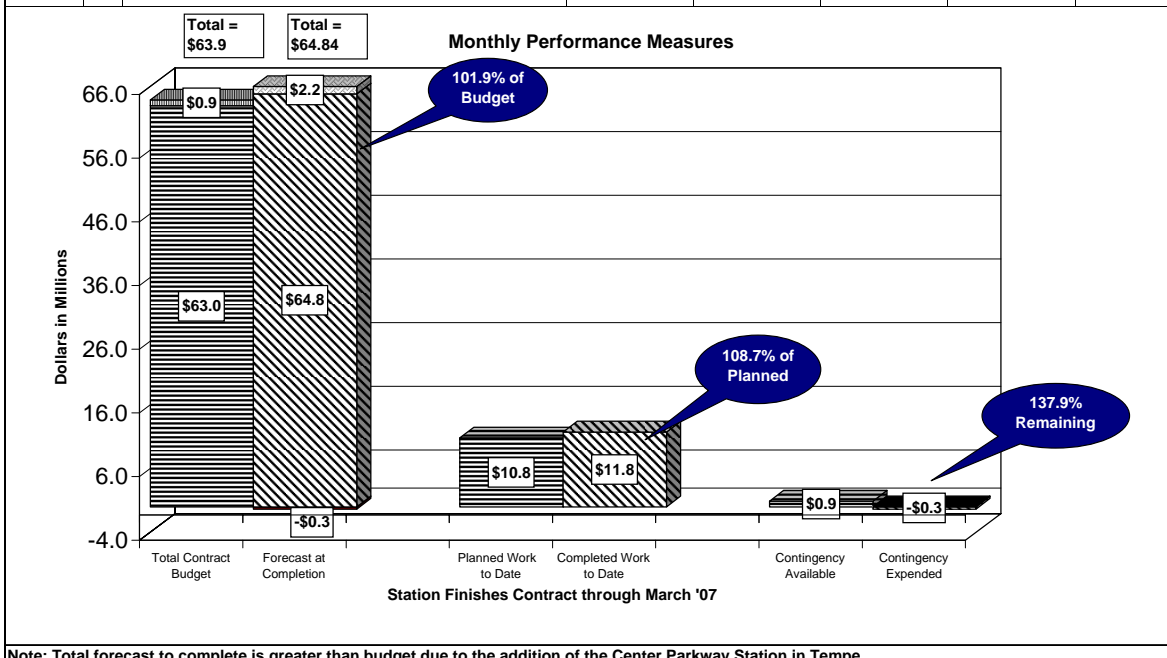
OPF 3 Steel Canopy Installation



44<sup>th</sup> Street and Washington Transit Center Steel

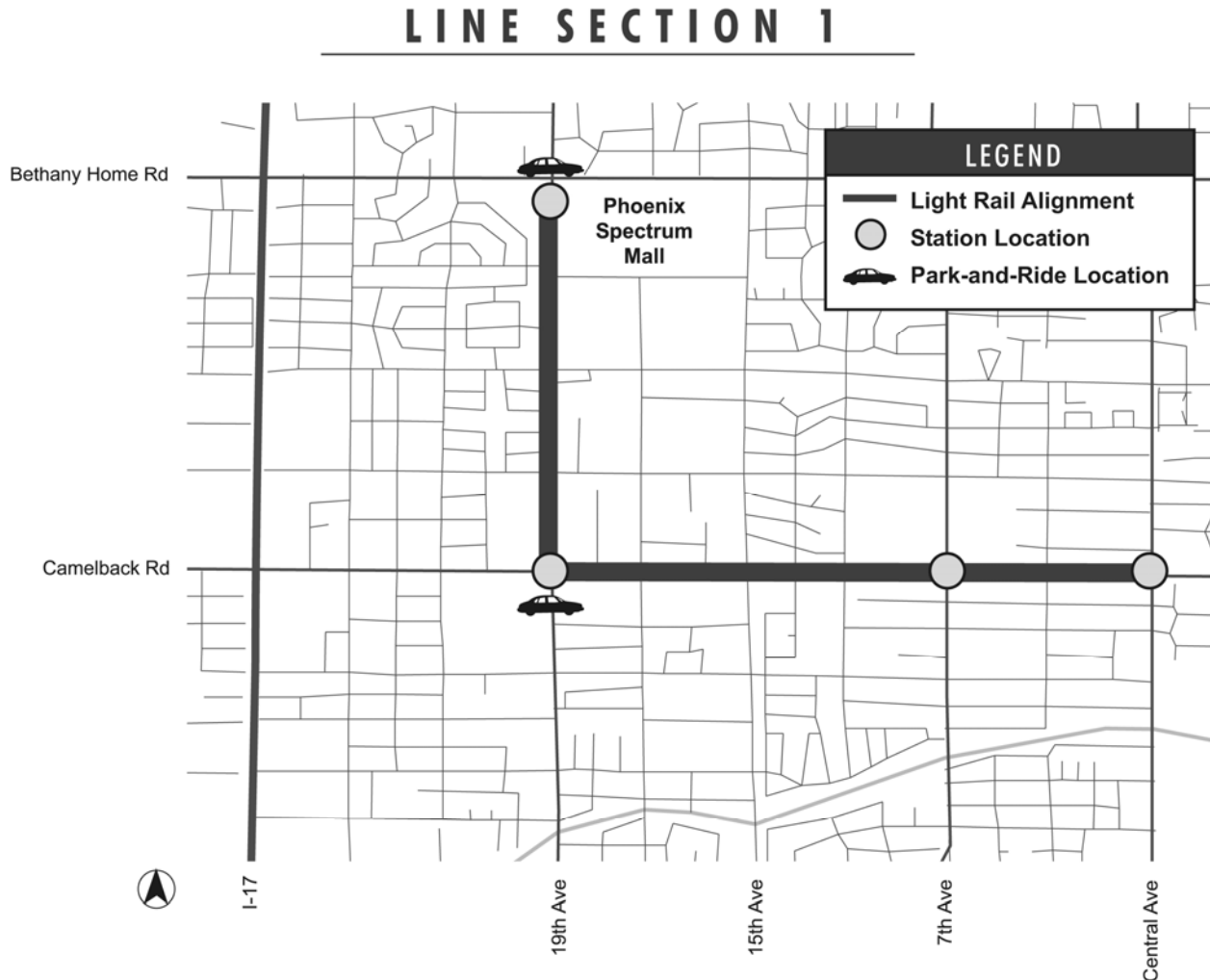


|                               |  |                                   |              |              |
|-------------------------------|--|-----------------------------------|--------------|--------------|
| <b>Description:</b>           |  | <b>3.2.1 Station Finishes</b>     |              |              |
| <b>PE/PA:</b>                 |  | <b>Steve Gottesman</b>            |              |              |
| <b>Contractor:</b>            |  | <b>Archer Western Contractors</b> |              |              |
| <b>Resident Architect:</b>    |  | <b>Doaa Aboul-Hosn</b>            |              |              |
| <b>Data Through:</b>          |  | <b>February 28, 2007</b>          |              |              |
| <b>Cumulative</b>             |  |                                   |              |              |
|                               |  | <b>5309</b>                       | <b>CNPA</b>  | <b>Total</b> |
| 1                             | Original Budget                          | \$52,985,000                      | \$9,988,000  | \$62,973,000 |
| 2                             | Executed Change Orders                   | -\$502,492                        | \$154,444    | -\$348,048   |
| 3                             | Budget Transfers                         | \$0                               | \$0          | \$0          |
| 4                             | Current Budget (1+2+3)                   | \$52,482,508                      | \$10,142,444 | \$62,624,952 |
| 5                             | Work Scheduled                           | \$7,755,499                       | \$3,072,018  | \$10,827,517 |
| 6                             | Work Earned                              | \$9,071,391                       | \$2,699,552  | \$11,770,943 |
| 7                             | Actual Expenditures                      | \$9,071,532                       | \$2,691,166  | \$11,762,698 |
| 8                             | Forecast to Complete Base (4-7)          | \$43,410,976                      | \$7,451,278  | \$50,862,254 |
| 9                             | Change Orders Pending Execution          | -\$234,320                        | \$2,452,015  | \$2,217,695  |
| 10                            | Forecast at Completion (7+8+9)           | \$52,248,188                      | \$12,594,459 | \$64,842,647 |
| 11                            | Percent Budget Expended (7/4)            | 17.3%                             | 26.5%        | 18.8%        |
| 12                            | Percent Planned (5/4)                    | 14.8%                             | 30.3%        | 17.3%        |
| 13                            | Earned Percent Complete (6/4)            | 17.3%                             | 26.6%        | 18.8%        |
| 14                            | Schedule Performance (6/5)               | 1.17                              | 0.88         | 1.09         |
| 15                            | Cost Performance (6/7)                   | 1.00                              | N/A          | 1.00         |
| 16                            | Contingency Budget                       | \$546,000                         | \$371,603    | \$917,603    |
| 17                            | Remaining Contingency                    | \$1,048,492                       | \$217,159    | \$1,265,651  |
| 18                            | Percent Contingency Remaining (17/16)    | 192.0%                            | 58.4%        | 137.9%       |
| <b>Period</b>                 |  |                                   |              |              |
| 1                             | Original Budget                          | N/A                               | N/A          | N/A          |
| 2                             | Executed Change Orders                   | \$17,905                          | \$59,154     | \$77,059     |
| 3                             | Budget Transfers                         | \$0                               | \$0          | \$0          |
| 4                             | Current Budget (1+2+3)                   | \$52,482,508                      | \$10,142,444 | \$77,059     |
| 5                             | Work Scheduled (Cumm - Last Period)      | \$856,813                         | \$592,237    | \$1,449,050  |
| 6                             | Work Earned (Cumm - Last Period)         | \$3,345,832                       | \$1,021,296  | \$4,367,128  |
| 7                             | Actual Expenditures (Cumm - Last Period) | \$3,325,603                       | \$1,018,640  | \$4,344,243  |
| 8                             | Forecast to Complete Base (4-7)          | \$49,156,905                      | \$9,123,804  | \$58,280,709 |
| 9                             | Change Orders Pending Execution          | -\$314,725                        | -\$36,198    | -\$350,923   |
| 10                            | Forecast at Completion (7+8+9)           | \$52,167,783                      | \$10,106,246 | \$62,274,029 |
| 11                            | Percent Budget Expended (7/4)            | 6.3%                              | 10.0%        | 6.9%         |
| 12                            | Percent Planned (5/4)                    | 1.6%                              | 5.8%         | 2.3%         |
| 13                            | Earned Percent Complete (6/4)            | 6.4%                              | 10.1%        | 7.0%         |
| 14                            | Schedule Performance (6/5)               | 3.90                              | 1.72         | 3.01         |
| 15                            | Cost Performance (6/7)                   | 1.01                              | N/A          | 1.01         |
| 16                            | Contingency Budget                       |                                   |              |              |
| 17                            | Remaining Contingency                    |                                   |              |              |
| 18                            | Percent Contingency Remaining (17/16)    |                                   |              |              |
| Total Contract Budget         |  | \$63.89                           |              |              |
| Total Forecast at Completion  |  | \$64.84                           |              |              |
| Percent of Budget             |  | 101.5%                            |              |              |
| Percent of Planned            |  | 108.7%                            |              |              |
| Percent Contingency Remaining |  | 137.9%                            |              |              |



## 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

- Kiewit completed the water line installation, storm drain, private irrigation, sewer line work on the South Side of Camelback Road and switched traffic in mid February. They are now working on other areas of the project to complete key traffic switches so as not



to interfere with the ongoing trackway construction. They have completed the 24-inch sewer line on 19<sup>th</sup> Avenue between Missouri and Bethany Home Road. The crew has moved to the 19<sup>th</sup> and Camelback intersection and continue to working north from Camelback heading toward Missouri. The 7<sup>th</sup> and Camelback station foundation work has been completed and a walkthrough was performed on March 30, 2007.

- Traffic control continues to be seamlessly combined between all participants on the project, with few formal complaints from the various stake holders or the traveling public. Kiewit has restructured traffic flow on both Camelback and 19th Avenue to one lane in each direction and the COP has agreed to allow pre-approved nighttime full closures of the Camelback and 19th Avenue intersection. COP Transit has rerouted the Buses so that they no longer stop at the intersection of 19<sup>th</sup> Avenue and Camelback Road and they have suspended bus operations on 19<sup>th</sup> Avenue.

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

- The revised project schedule should be ready for submittal by the end of April. It is anticipated that due to the re-sequence efforts, all interim track milestones will hit the dates as required by the unilateral Change Order. Below is an outline of the proposed milestone Issues and Solutions
- Presently there are no known issues that should adversely impact the revised contract completion dates. At this time, it appears that the real estate, cost-to-cure, and utility easement concerns that have been noted as major concerns in the past no longer pose a major problem for construction operations.

Construction Photographs



KWC crews performing thermite Welding at R Sta. 1092+02+-, Rt track.



KWC crew making final adjustments to track gauge, RT track 1096+20 to 1094+20.



RGG placing and finishing the concrete for the Rt Track between 1096+20 and 1094+20.



KWC Crew excavation of existing 18 inch sewer for casing Sta 453+10 North-South 7th Avenue.



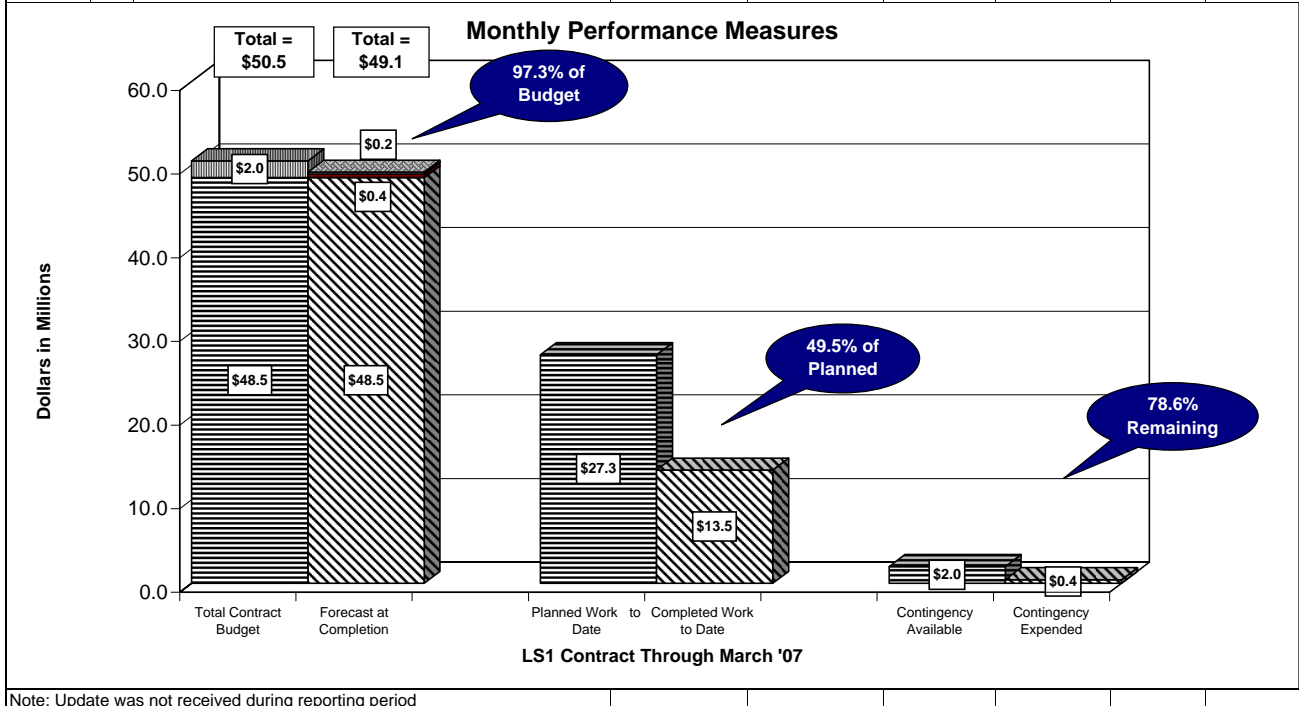
RGG placed concrete for the devil strip 1098+97 to 1101+00.



KWC crews placed concrete for the last 24 feet of 18 inch sewer for casing Sta 453+10.71.



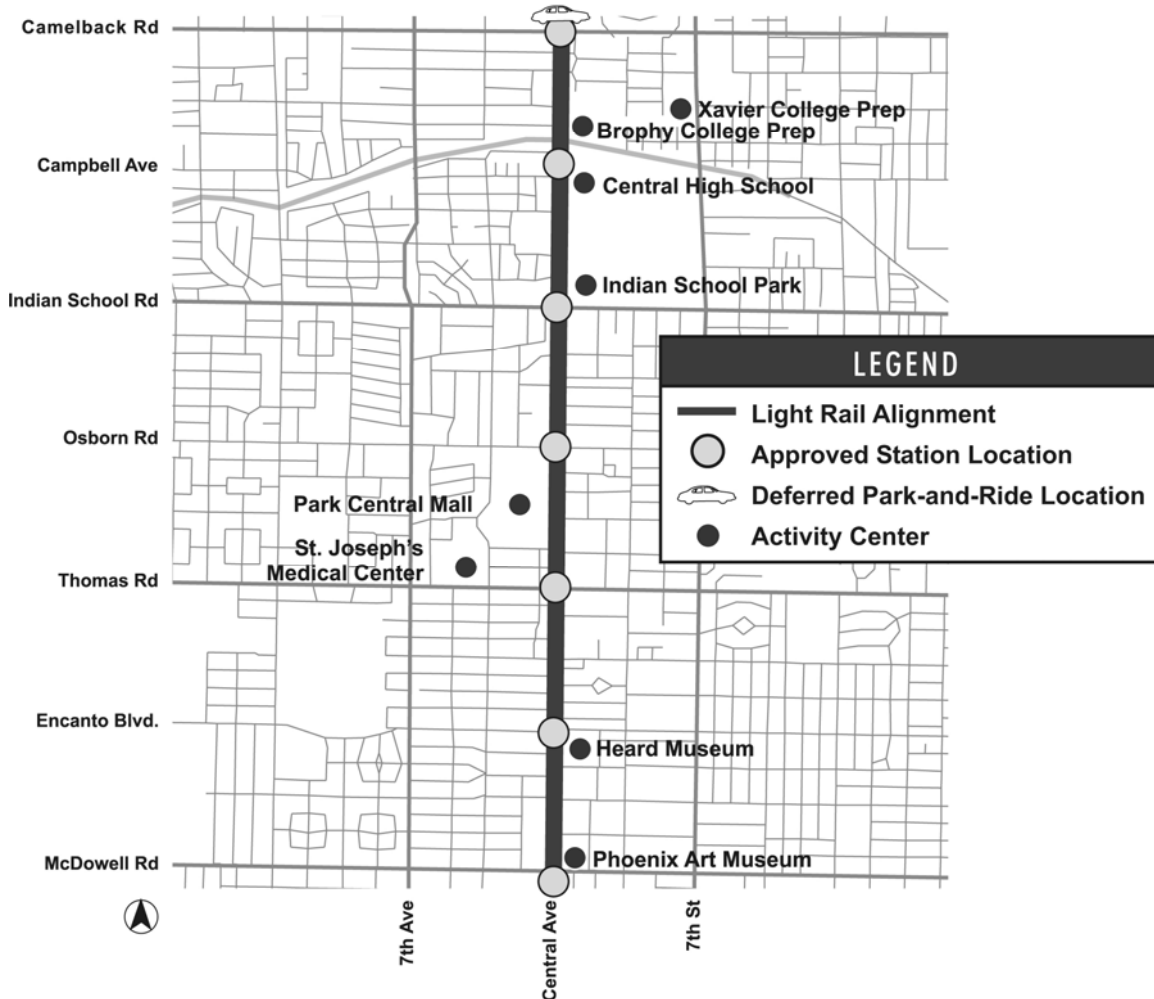
|                           |  |                             |              |              |
|---------------------------|--|-----------------------------|--------------|--------------|
| <b>Description:</b>       |  | <b>3.1.1 Line Section 1</b> |              |              |
| <b>PE/PA:</b>             |  | <b>Alvin Livingstone</b>    |              |              |
| <b>Contractor:</b>        |  | <b>Kiewit Western Co.</b>   |              |              |
| <b>Resident Engineer:</b> |  | <b>Bill Blane</b>           |              |              |
| <b>Data Through:</b>      |  | <b>December 31, 2006</b>    |              |              |
|                           |  | <b>5309</b>                 | <b>CNPA</b>  | <b>Total</b> |
| <b>Cumulative</b>         |  |                             |              |              |
| 1                         | Budget                                   | \$37,951,658                | \$10,533,342 | \$48,485,000 |
| 2                         | Executed Change Orders                   | \$429,810                   | \$0          | \$429,810    |
| 3                         | Budget Transfers                         | \$0                         | \$341,351    | \$341,351    |
| 4                         | Current Budget (1+2+3)                   | \$38,381,468                | \$10,874,693 | \$49,256,161 |
| 5                         | Work Scheduled                           | \$20,923,889                | \$6,409,650  | \$27,333,539 |
| 6                         | Work Earned                              | \$11,853,363                | \$1,685,193  | \$13,538,556 |
| 7                         | Actual Expenditures                      | \$12,347,861                | \$1,686,434  | \$14,034,295 |
| 8                         | Forecast to Complete Base (4-7)          | \$26,033,607                | \$9,188,259  | \$35,221,866 |
| 9                         | Change Orders Pending Execution          | \$25,000                    | \$206,495    | \$231,495    |
| 10                        | Forecast at Completion (7+8+9)           | \$38,406,468                | \$11,081,188 | \$49,487,656 |
| 11                        | Percent Budget Expended (7/4)            | 32.2%                       | 15.5%        | 28.5%        |
| 12                        | Percent Planned (5/4)                    | 54.5%                       | 58.9%        | 55.5%        |
| 13                        | Earned Percent Complete (6/4)            | 30.9%                       | 15.5%        | 27.5%        |
| 14                        | Schedule Performance (6/5)               | 0.57                        | 0.26         | 0.50         |
| 15                        | Cost Performance (6/7)                   | 0.96                        | 1.00         | 0.96         |
| 16                        | Contingency Budget                       | \$1,963,056                 | \$44,811     | \$2,007,867  |
| 17                        | Remaining Contingency                    | \$1,533,246                 | \$44,811     | \$1,578,057  |
| 18                        | Percent Contingency Remaining (17/16)    | 78.1%                       | 100.0%       | 78.6%        |
|                           |  |                             |              |              |
| <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)                   | \$38,381,468                | \$10,874,693 | \$49,256,161 |
| 5                         | Work Scheduled (Cumm - Last Period)      | \$1,702,699                 | \$451,904    | \$2,154,603  |
| 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)          | \$38,381,468                | \$10,874,693 | \$49,256,161 |
| 9                         | Change Orders Pending Execution          | \$0                         | \$75,111     | \$75,111     |
| 10                        | Forecast at Completion (7+8+9)           | \$38,381,468                | \$10,949,804 | \$49,331,272 |
| 11                        | Percent Budget Expended (7/4)            | 0.0%                        | 0.0%         | 0.0%         |
| 12                        | Percent Planned (5/4)                    | 4.4%                        | 4.2%         | 4.4%         |
| 13                        | Earned Percent Complete (6/4)            | 0.0%                        | 0.0%         | 0.0%         |
| 14                        | Schedule Performance (6/5)               | 0.00                        | 0.00         | 0.00         |
| 15                        | Cost Performance (6/7)                   | 0.00                        | 0.00         | 0.00         |
| 16                        | Contingency Budget                       |                             |              |              |
| 17                        | Remaining Contingency                    |                             |              |              |
| 18                        | Percent Contingency Remaining (17/16)    |                             |              |              |



Note: Update was not received during reporting period

Line Section 2

**LINE SECTION 2**



**Description**

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

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



## Progress

- Herzog continues to install infrastructure from Glenrosa to McDowell in various states of completion, including storm drainage and catch basin installation/relocations, and sanitary sewer installations from Thomas to Osborn. The sanitary installation and pump around at Monterosa has been completed. Two Change Orders were issued to Herzog for acceleration of water mains and storm drain installation between Osborn Road and McDowell Road.
- Herzog, GEC, and Brown and Caldwell continue to work on the redesign for the amended sewer installation at Mitchell per the City's request. Herzog completed the additional water main installations at the Thomas Road intersection, Indian School intersection, and McDowell to Thomas.
- Herzog has placed over 2600-feet of guideway to date, and continue layout of additional guideway toward Camelback Road. Herzog continues to work on guideway fine grading between Highland and Glenrosa
- Herzog has completed the punch list and received substantial completion on Campbell Station foundation. They have also poured the Southbound Camelback Station, and started forming the screen wall foundations.
- Herzog continues to work on the roadway widening, clear/grub, demolition of curb/gutter, sidewalks and paving work from Camelback Road, south to McDowell along the west side.
- Herzog continues to work on installing sidewalk, sandstone boarders, tree wells, and are currently working on the installation of landscaping, relocation of Palm Trees, planting trees and shrubs at various locations. They also continue to amend the existing irrigation system to facilitate the new irrigation system interface.

## Cost and Schedule – Variance Analysis

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

## Issues and Solutions

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

**Construction Photographs**



Installing Guideway reinforcing south of Campbell Station



Install Curb and Gutter at Glenrosa



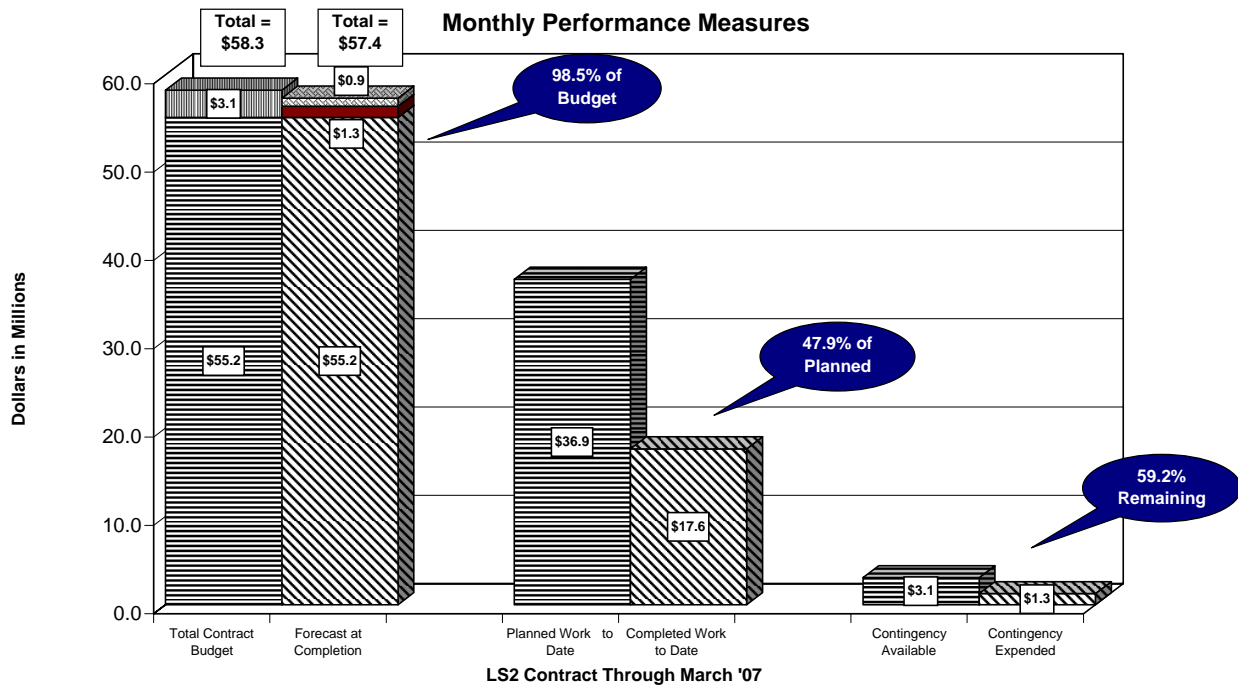
Placing concrete at LT guideway north of Campbell Station through Campbell Intersection



Placing OCS Foundations



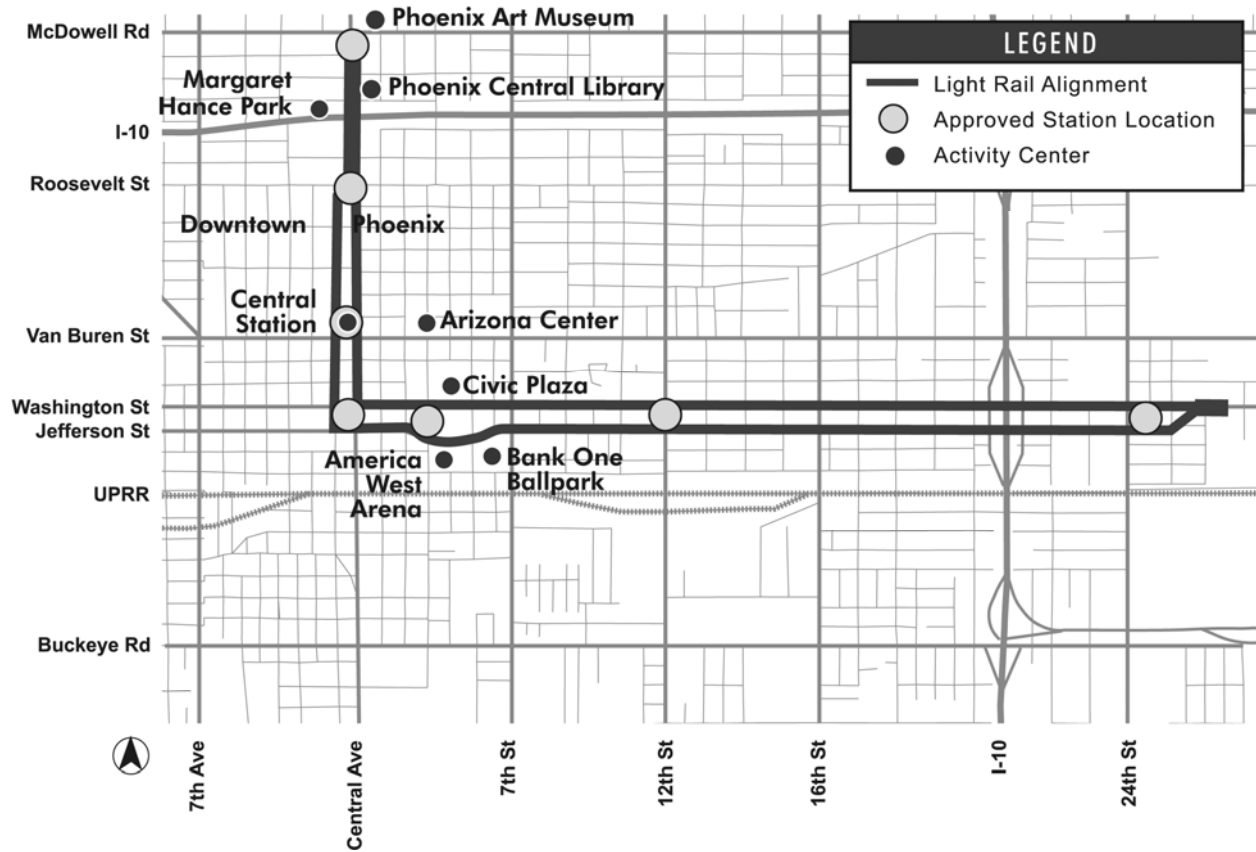
|                           |  |                                       |                   |              |
|---------------------------|--|---------------------------------------|-------------------|--------------|
| <b>Description:</b>       |  | <b>3.1.2 Line Section 2</b>           |                   |              |
| <b>PE/PA:</b>             |  | <b>Alvin Livingstone</b>              |                   |              |
| <b>Contractor:</b>        |  | <b>Herzog Contracting Corporation</b> |                   |              |
| <b>Resident Engineer:</b> |  | <b>Marty Spong</b>                    |                   |              |
| <b>Data Through:</b>      |  | <b>January 31, 2007</b>               |                   |              |
| <b>Cumulative</b>         |  | <b>5309</b>                           | <b>CNPA/Other</b> | <b>Total</b> |
| 1                         | Budget                                   | \$48,425,124                          | \$6,762,248       | \$55,187,372 |
| 2                         | Executed Change Orders                   | \$978,647                             | \$65,668          | \$1,044,315  |
| 3                         | Budget Transfers                         |                                       | \$206,131         | \$206,131    |
| 4                         | Current Budget (1+2+3)                   | \$49,403,771                          | \$7,034,047       | \$56,437,818 |
| 5                         | Work Scheduled                           | \$31,824,950                          | \$5,031,719       | \$36,856,669 |
| 6                         | Work Earned                              | \$15,702,656                          | \$1,938,940       | \$17,641,596 |
| 7                         | Actual Expenditures                      | \$15,733,313                          | \$1,870,989       | \$17,604,302 |
| 8                         | Forecast to Complete Base (4-7)          | \$33,670,458                          | \$5,163,058       | \$38,833,516 |
| 9                         | Change Orders Pending Execution          | \$810,063                             | \$111,881         | \$921,944    |
| 10                        | Forecast at Completion (7+8+9)           | \$50,213,834                          | \$7,145,928       | \$57,359,762 |
| 11                        | Percent Budget Expended (7/4)            | 31.8%                                 | 26.6%             | 31.2%        |
| 12                        | Percent Planned (5/4)                    | 64.4%                                 | 71.5%             | 65.3%        |
| 13                        | Earned Percent Complete (6/4)            | 31.8%                                 | 27.6%             | 31.3%        |
| 14                        | Schedule Performance (6/5)               | 0.49                                  | 0.39              | 0.48         |
| 15                        | Cost Performance (6/7)                   | 1.00                                  | 1.04              | 1.00         |
| 16                        | Contingency Budget                       | \$3,050,401                           | \$13,293          | \$3,063,694  |
| 17                        | Remaining Contingency                    | \$2,071,754                           | \$13,293          | \$1,813,248  |
| 18                        | Percent Contingency Remaining (17/16)    | 67.9%                                 | 100.0%            | 59.2%        |
| <b>Period</b>             |  |                                       |                   |              |
| 1                         | Budget                                   | N/A                                   | N/A               | N/A          |
| 2                         | Executed Change Orders                   | \$11,789                              | -\$6,550          | \$5,239      |
| 3                         | Budget Transfers                         | \$0                                   | \$6,530           | \$6,530      |
| 4                         | Current Budget (1+2+3)                   | \$49,403,771                          | \$7,034,047       | \$56,437,818 |
| 5                         | Work Scheduled (Cumm - Last Period)      | \$2,972,292                           | \$432,527         | \$3,404,819  |
| 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)          | \$49,403,771                          | \$7,034,047       | \$56,437,818 |
| 9                         | Change Orders Pending Execution          | \$425,121                             | \$10,175          | \$435,296    |
| 10                        | Forecast at Completion (7+8+9)           | \$49,828,892                          | \$7,044,222       | \$56,873,114 |
| 11                        | Percent Budget Expended (7/4)            | 0.0%                                  | 0.0%              | 0.0%         |
| 12                        | Percent Planned (5/4)                    | 6.0%                                  | 6.1%              | 6.0%         |
| 13                        | Earned Percent Complete (6/4)            | 0.0%                                  | 0.0%              | 0.0%         |
| 14                        | Schedule Performance (6/5)               | 0.00                                  | N/A               | 0.00         |
| 15                        | Cost Performance (6/7)                   | 0                                     | 0                 | 0            |
| 16                        | Contingency Budget                       |                                       |                   |              |
| 17                        | Remaining Contingency                    |                                       |                   |              |
| 18                        | Percent Contingency Remaining (17/16)    |                                       |                   |              |



Note: No update received during the reporting period

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 6 through 15 installing storm sewer, sanitary sewer and water service. AWC is continuing to install traffic signals in segments 5 through 15. Additionally, AWC is proceeding with OCS foundations, street lighting conduits and foundations, and irrigation work as required along ROW and stations.
- AWC is working their day and night crews 4 -10 hour shifts a week.
- AWC has completed 12<sup>th</sup> St/Jefferson station except for the east ramp. The 2nd St/Washington station foundation is scheduled for an April '07 completion and the Mc Dowell station foundation is scheduled for a May '07 completion.
- AWC currently has 6 rail headings in progress throughout the alignment and has installed approximately 24,000 lf of guideway throughout the Downtown area, including Segments 1, 2, 3, 4, 5, 6, 7,8,15 and on the east end of project in Segments 13 and 14 as well as completing the installation of the McKinley Loop.
- APS continues with street light pole installations throughout the alignment. COP Water Services contractor is installing a 12-inch water line on Central from Roosevelt to Fillmore to accommodate the demands of the proposed ASU facilities.
- AWC is placing roadway paving throughout the downtown portion of the alignment and is approaching completion in the downtown area within the next several months.

## Cost and Schedule – Variance Analysis

- AWC and METRO continue negotiations concerning the master schedule milestone revision change order. The current progress schedule indicates the contractor has completed 54 percent of the work.

## Issues and Solutions

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

## Construction Photographs



12<sup>th</sup> St/Jefferson Station Foundation



Sidewalk and Driveway Installation on Jefferson



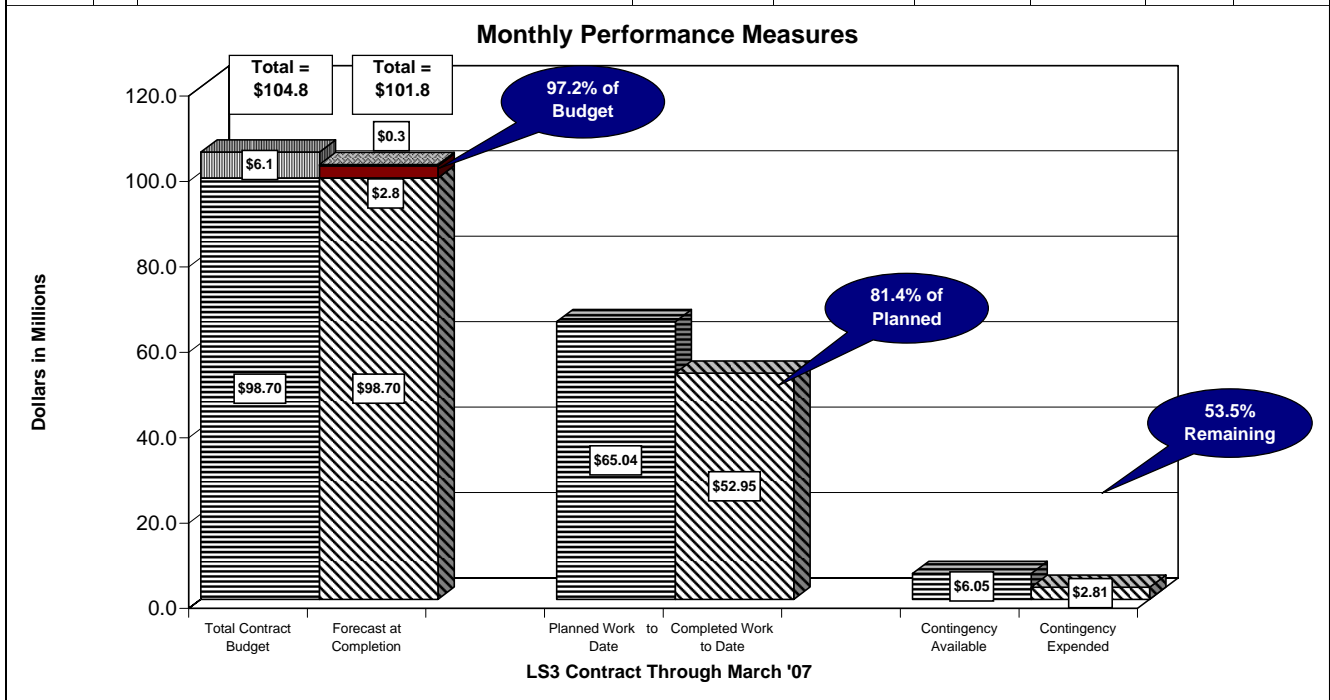
Roadway Paving on Washington



Placing Sidewalk at Jefferson/2<sup>nd</sup> Street

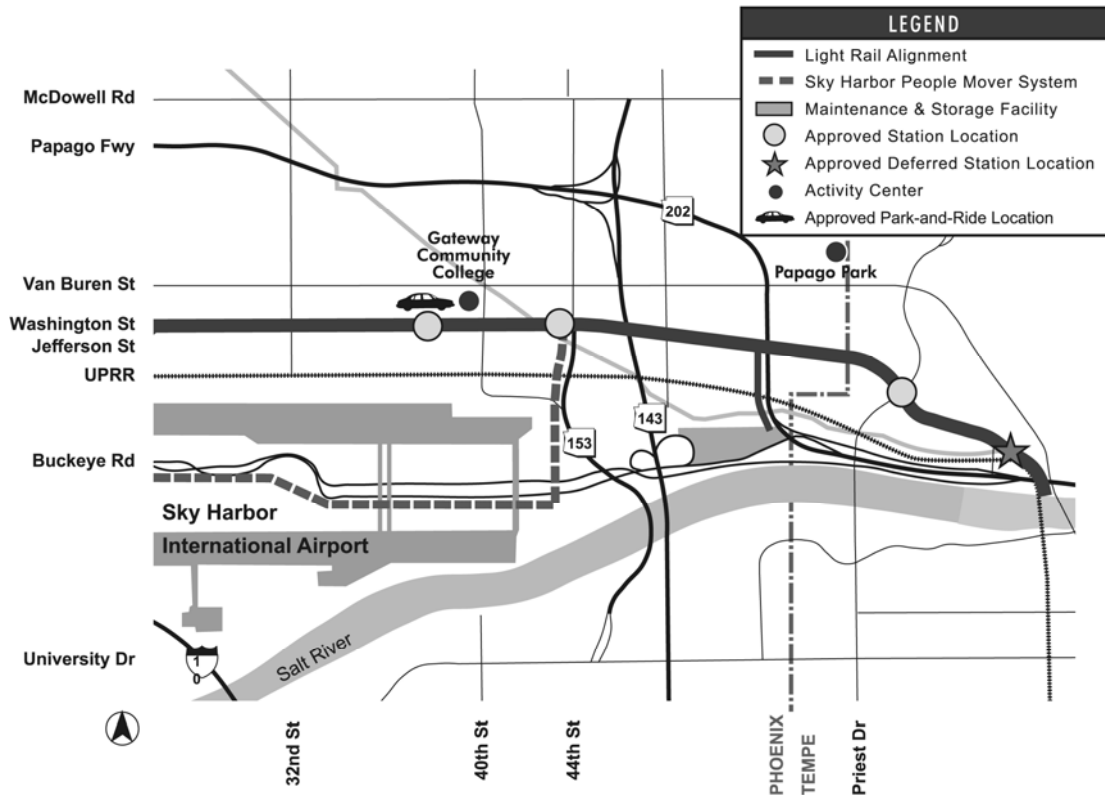


|    |  |                             |              |               |
|----|--|-----------------------------|--------------|---------------|
|    | <b>Description:</b>                      | <b>3.1.3 Line Section 3</b> |              |               |
|    | <b>PE/PA:</b>                            | <b>William Gustafson</b>    |              |               |
|    | <b>Contractor:</b>                       | <b>Archer Western</b>       |              |               |
|    | <b>Resident Engineer:</b>                | <b>William Atesis</b>       |              |               |
|    | <b>Data Through:</b>                     | <b>February 23, 2007</b>    |              |               |
|    | <b>Cumulative</b>                        | <b>5309</b>                 | <b>CNPA</b>  | <b>Total</b>  |
| 1  | Budget                                   | \$79,248,617                | \$19,452,352 | \$98,700,969  |
| 2  | Executed Change Orders                   | \$1,480,976                 | \$340,277    | \$1,821,253   |
| 3  | Budget Transfers                         | \$0                         | \$991,441    | \$991,441     |
| 4  | Current Budget (1+2+3)                   | \$80,729,593                | \$20,784,070 | \$101,513,663 |
| 5  | Work Scheduled                           | \$52,358,418                | \$12,681,309 | \$65,039,727  |
| 6  | Work Earned                              | \$41,942,123                | \$11,003,814 | \$52,945,937  |
| 7  | Actual Expenditures                      | \$42,020,914                | \$10,992,667 | \$53,013,581  |
| 8  | Forecast to Complete Base (4-7)          | \$38,708,679                | \$9,791,403  | \$48,500,082  |
| 9  | Change Orders Pending Execution          | \$129,927                   | \$166,478    | \$296,405     |
| 10 | Forecast at Completion (7+8+9)           | \$80,859,520                | \$20,950,548 | \$101,810,068 |
| 11 | Percent Budget Expended (7/4)            | 52.1%                       | 52.9%        | 52.2%         |
| 12 | Percent Planned (5/4)                    | 64.9%                       | 61.0%        | 64.1%         |
| 13 | Earned Percent Complete (6/4)            | 52.0%                       | 52.9%        | 52.2%         |
| 14 | Schedule Performance (6/5)               | 0.80                        | 0.87         | 0.81          |
| 15 | Cost Performance (6/7)                   | 1.00                        | 1.00         | 1.00          |
| 16 | Contingency Budget                       | \$5,648,232                 | \$402,730    | \$6,050,962   |
| 17 | Remaining Contingency                    | \$4,167,256                 | \$377,445    | \$3,238,268   |
| 18 | Percent Contingency Remaining (17/16)    | 73.8%                       | 93.7%        | 53.5%         |
|    | <b>Period</b>                            | <b>N/A</b>                  | <b>N/A</b>   | <b>N/A</b>    |
| 1  | Budget                                   | N/A                         | N/A          | N/A           |
| 2  | Executed Change Orders                   | \$666,676                   | \$0          | \$666,676     |
| 3  | Budget Transfers                         | \$0                         | \$273,640    | \$273,640     |
| 4  | Current Budget (1+2+3)                   | \$80,729,593                | \$20,784,070 | \$101,513,663 |
| 5  | Work Scheduled (Cumm - Last Period)      | \$4,055,555                 | \$757,666    | \$4,813,221   |
| 6  | Work Earned (Cumm - Last Period)         | \$4,028,371                 | \$313,417    | \$4,341,788   |
| 7  | Actual Expenditures (Cumm - Last Period) | \$3,694,841                 | \$320,954    | \$4,015,795   |
| 8  | Forecast to Complete Base (4-7)          | \$77,034,752                | \$20,463,116 | \$97,497,868  |
| 9  | Change Orders Pending Execution          | -\$742,758                  | -\$198,905   | -\$941,663    |
| 10 | Forecast at Completion (7+8+9)           | \$79,986,835                | \$20,585,165 | \$100,572,000 |
| 11 | Percent Budget Expended (7/4)            | 4.6%                        | 1.5%         | 4.0%          |
| 12 | Percent Planned (5/4)                    | 5.0%                        | 3.6%         | 4.7%          |
| 13 | Earned Percent Complete (6/4)            | 5.0%                        | 1.5%         | 4.3%          |
| 14 | Schedule Performance (6/5)               | 0.99                        | 0.41         | 0.90          |
| 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                    | \$5,731,556                 | \$957,432    | \$6,688,988   |
| 18 | Percent Contingency Remaining (17/16)    | 89.6%                       | 77.8%        | 87.7%         |



Line Section 4

LINE SECTION 4



Description

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

Progress

- Tempe Town Lake Bridge: Direct fixation fastener/plinth installation for the left track is complete. Right track fastener/plinth installation is more than 50% complete.
- Papago Drive to Tempe Town Lake Bridge: Roadway, curb and gutter, sidewalk, and driveway construction is nearing completion and landscape irrigation installation is underway. Guideway slabs have been accepted as substantially complete to Center Parkway and a preliminary punch list has been compiled. The guideway slab construction from south of Washington Street to the bridge is now in progress and construction of the Center Parkway station foundation is in progress.



- Fifty-Sixth Street to Papago Drive: The guideway slab construction has been accepted as substantially complete and an initial walk through punch list has been compiled. Work has begun to address the punch list items. Landscape irrigation installation has begun.
- Fifty-Sixth Street to 48th Street: Punch list work is on-going in the guideway areas.
- Forty-Eighth Street to Forty-Fourth Street: The final punch list of the guideway slabs and the 44<sup>th</sup> Street Station was issued. The items were addressed and the list was accepted as complete.
- Forty-Fourth Street to Fortieth Street: Flow through guideway curb installation has begun, concurrent with guideway slab construction west of the Washington Street Bridge over the Grand Canal to 40<sup>th</sup> Street. Guideway slabs west of the 44<sup>th</sup> Street station to the bridge were completed.
- Fortieth Street to Twenty-Sixth Street: Curb/gutter, driveway and sidewalk demolition is underway on the north side of Washington Street from 37<sup>th</sup> Street to 36<sup>th</sup> Street. Construction of offset storm drain manholes and drilling of OCS foundations was completed in the guideway from 38<sup>th</sup> to 36<sup>th</sup> Street. The 38<sup>th</sup> Street intersection on the north side of Washington Street was graded and paved with the base course of asphalt and installation of the 38<sup>th</sup> Street Station ground grid was completed. Guideway construction has started at the 36<sup>th</sup> Street intersection and the left track west of 38<sup>th</sup> Street. Placement of advanced utility crossings under the guideway between 32<sup>nd</sup> Street and 28<sup>th</sup> Street is still in progress, along with the street lighting conduits west of 30<sup>th</sup> Street.

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

- METRO targets for Milestones 1, 2 and 3 have been integrated with follow-on contractors (TES and S&C) to determine the earliest possible start for TES, S&C and Station Finishes.
- Milestone No 1: The first portion of the test track was completed on time November 15, 2006.
- Milestone No. 1A: Priest Station was successfully completed on October 20, 2006.
- Milestone No. 2: The second half of the Test Track milestone was completed on schedule January 21, 2007.
- Milestones 3, 3A, 3B for east end track and the TLB are on track for completion on March 30, 2007 and April 30, 2007 with no impact to follow-on contractors.
- A large portion of Milestone 3 (East end track) will complete ahead of the March 30, 2007 target schedule.

### **Issues and Solutions**

- There remains a concern about the Contractor's ability to install the fiber optic micro-duct in the CSD inner duct. The Contractor attempted to install a longer run of micro-duct without success and a specialty subcontractor tried at another location but discovered some challenges. A mandrel was run successfully through these inner ducts and another attempt to install micro-ducts will be made on April 2, 2007.

- An existing 6 inch water line from 30<sup>th</sup> Street to 26<sup>th</sup> Street was found to be too shallow after Washington Street is widened. The design has been completed and change negotiations are pending. The Contractor has remarked that this extra work will impact the critical path to final completion.

**Construction Photographs**



Curb/gutter and sidewalk demolition west of 36<sup>th</sup> Street



Mandrel of conduits at TPSS No.8



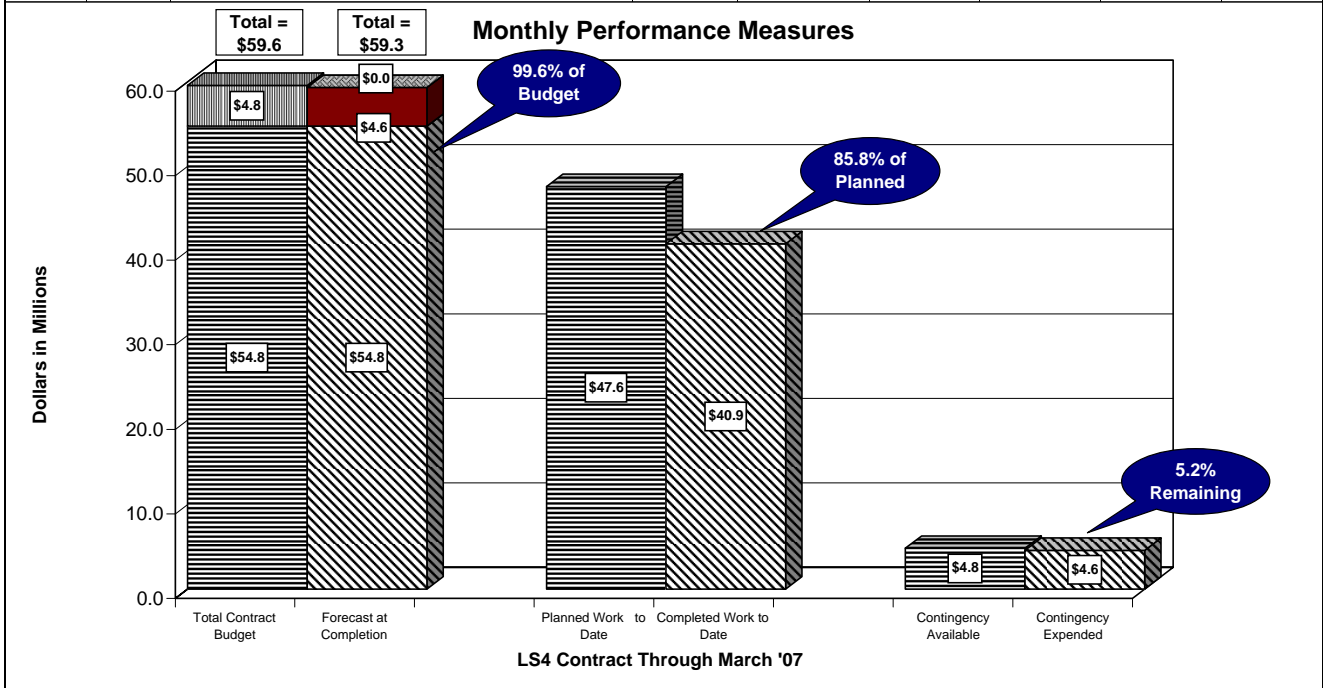
Changing of the signal mast arm at 44<sup>th</sup> Street



Guideway construction west of the Washington Street Bridge over the Grand Canal

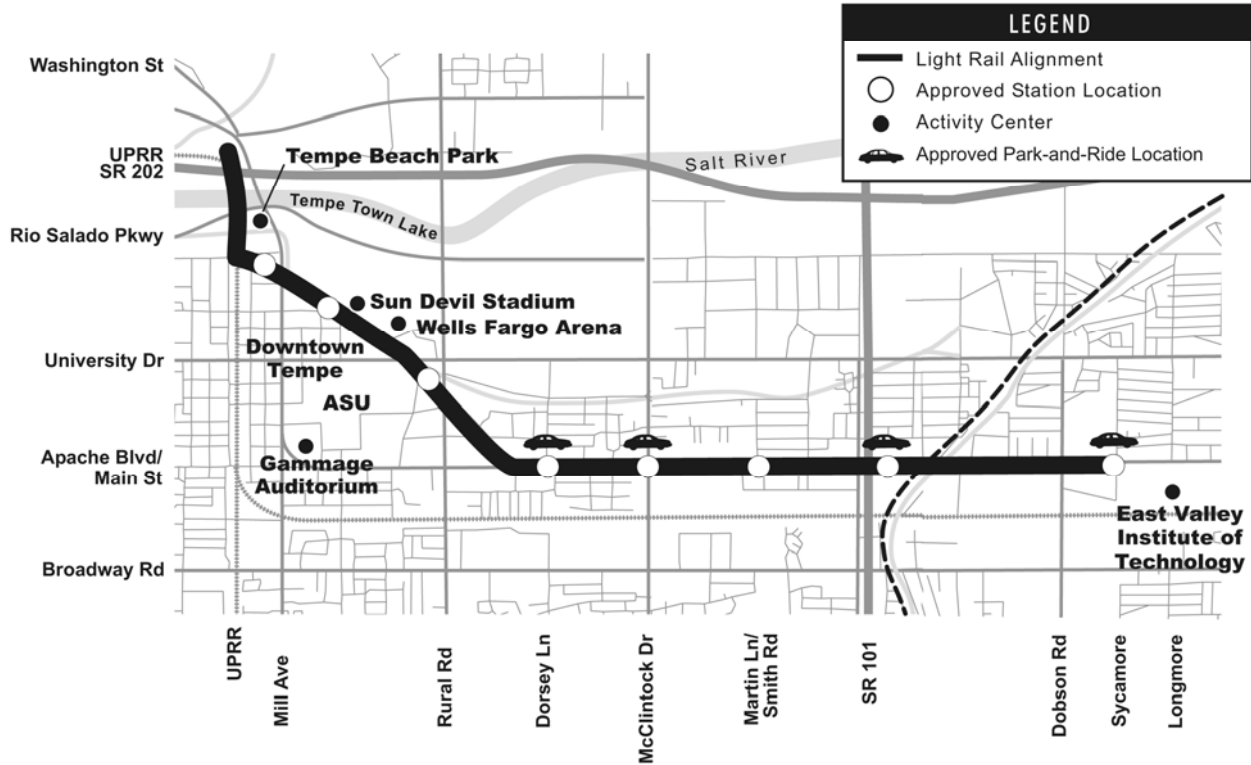


|    |  |                      |             |              |
|----|--|----------------------|-------------|--------------|
|    | <b>Description:</b>                      | 3.1.4 Line Section 4 |             |              |
|    | <b>PE/PA:</b>                            | Avrum Loewenstein    |             |              |
|    | <b>Contractor:</b>                       | Sundt/Stacey Witbeck |             |              |
|    | <b>Resident Engineer:</b>                | Frank Abner          |             |              |
|    | <b>Data Through:</b>                     | February 28, 2007    |             |              |
|    | <b>Cumulative</b>                        | <b>5309</b>          | <b>CNPA</b> | <b>Total</b> |
| 1  | Budget                                   | \$47,869,894         | \$6,880,853 | \$54,750,747 |
| 2  | Executed Change Orders                   | \$4,201,478          | \$1,238,336 | \$5,439,814  |
| 3  | Budget Transfers                         | -\$625,000           | \$1,557,561 | \$932,561    |
| 4  | Current Budget (1+2+3)                   | \$51,446,372         | \$9,676,750 | \$61,123,122 |
| 5  | Work Scheduled                           | \$39,411,930         | \$8,203,815 | \$47,615,745 |
| 6  | Work Earned                              | \$34,619,853         | \$6,232,759 | \$40,852,612 |
| 7  | Actual Expenditures                      | \$36,386,910         | \$6,204,220 | \$42,591,130 |
| 8  | Forecast to Complete Base (4-7)          | \$15,059,462         | \$3,472,530 | \$18,531,992 |
| 9  | Change Orders Pending Execution          | \$380,753            | \$1,965     | \$382,718    |
| 10 | Forecast at Completion (7+8+9)           | \$51,827,125         | \$9,678,715 | \$61,505,840 |
| 11 | Percent Budget Expended (7/4)            | 70.7%                | 64.1%       | 69.7%        |
| 12 | Percent Planned (5/4)                    | 76.6%                | 84.8%       | 77.9%        |
| 13 | Earned Percent Complete (6/4)            | 67.3%                | 64.4%       | 66.8%        |
| 14 | Schedule Performance (6/5)               | 0.88                 | 0.76        | 0.86         |
| 15 | Cost Performance (6/7)                   | 0.95                 | 1.00        | 0.96         |
| 16 | Contingency Budget                       | \$4,662,188          | \$172,633   | \$4,834,821  |
| 17 | Remaining Contingency                    | \$79,957             | \$172,633   | \$252,590    |
| 18 | Percent Contingency Remaining (17/16)    | 1.7%                 | 100.0%      | 5.2%         |
|    | <b>Period</b>                            |                      |             |              |
| 1  | Budget                                   | N/A                  | N/A         | N/A          |
| 2  | Executed Change Orders                   | \$24,500             | \$10,000    | \$34,500     |
| 3  | Budget Transfers                         | \$0                  | -\$10,000   | -\$10,000    |
| 4  | Current Budget (1+2+3)                   | \$51,446,372         | \$9,676,750 | \$61,123,122 |
| 5  | Work Scheduled (Cumm - Last Period)      | \$1,774,262          | \$54,456    | \$1,828,718  |
| 6  | Work Earned (Cumm - Last Period)         | \$1,631,245          | \$175,649   | \$1,806,894  |
| 7  | Actual Expenditures (Cumm - Last Period) | \$1,888,107          | \$150,323   | \$2,038,430  |
| 8  | Forecast to Complete Base (4-7)          | \$15,059,462         | \$3,472,530 | \$18,531,992 |
| 9  | Change Orders Pending Execution          | \$710,965            | \$818       | \$711,783    |
| 10 | Forecast at Completion (7+8+9)           | \$17,658,534         | \$3,623,671 | \$21,282,205 |
| 11 | Percent Budget Expended (7/4)            | 3.7%                 | 1.6%        | 3.3%         |
| 12 | Percent Planned (5/4)                    | 3.4%                 | 0.6%        | 3.0%         |
| 13 | Earned Percent Complete (6/4)            | 3.2%                 | 1.8%        | 3.0%         |
| 14 | Schedule Performance (6/5)               | 0.92                 | 3.23        | 0.99         |
| 15 | Cost Performance (6/7)                   | 0.86                 | 1.17        | 0.89         |
| 16 | Contingency Budget                       |                      |             |              |
| 17 | Remaining Contingency                    |                      |             |              |
| 18 | Percent Contingency Remaining (17/16)    |                      |             |              |



Line Section 5

**LINE SECTION 5**



**Description**

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

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

**Progress**

- The Contractor has installed approximately 14,777 track feet of embedded track, with scheduled weekly placements until completion.



- The Contractor is substantially complete with Milestone A2 (Unrestricted Trackway Access for Follow-On Contractors)—from the First Street intersection to Station 1867+00.
- The Contractor is waiting to conduct a coordinated track crossing installation at First Street, in conjunction with Union Pacific Railroad and the Metro Signals and Communications contractor, in early June.
- The Contractor has substantially completed the column foundations and walls at the 3<sup>rd</sup> Street and Mill Avenue and the University Avenue and Rural Road stations.
- The Contractor placed 340 feet of track along Terrace Road, and has begun the Terrace Road and Lemon Street crossing.
- The Contractor continued guideway milling, subgrade, ductbank, and OCS foundation work on Apache Boulevard from Terrace Road to the west side of McClintock Drive. The Dorsey “bathtubs” are complete, and the Contractor has started placing special track for the Dorsey Crossover.
- The Contractor continued coordination with third-party utility relocations eastward along Apache Boulevard, from McClintock Drive to the Tempe Canal Bridge, while placing 24-inch storm drain and a 12-inch waterline main.
- The Contractor continued street widening in the Apache Boulevard and McClintock Drive Station area.
- The Contractor completed wingwalls, approach slabs, painting, and highway restoration work on the Apache over 101 Loop Bridge.
- The Contractor continued street widening and street light placements from Price Road to the Tempe Canal Bridge, and began replacement of approximately 1300 feet of 8-inch waterline main.
- The Contractor completed roadwork on the north side of the Tempe Canal Bridge.
- The Contractor continued utility relocations and street light foundation installations eastward from the Tempe Canal Bridge to Sycamore Street in the City of Mesa. This will facilitate removal of the center street lights for the guideway.
- The Contractor completed the majority of the Dobson Road and Main Street intersection sewer and waterline relocation.

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

- Milestone A2 has been revised to March 30, 2007 and is on schedule. Milestone B2 has been revised to August 28, 2007, and is on schedule, though new utility conflicts at the Apache Boulevard and McClintock Drive intersection will challenge that completion date. Milestones C2 and D2 are being challenged by utility relocation delays as well. The Contractor has submitted an acceleration proposal to offset these delays.



## Issues and Solutions

- Utility relocation and coordination issues with Union Pacific Railroad have delayed the installation of the First Street crossing. This is being resolved by coordinating trackwork at that location with the placement of the light rail signal system during June. The Contractor will be given relief from his Milestone A requirement at this location to facilitate this arrangement.
- The Contractor continues to face significant challenges with existing utilities along the alignment eastward from Apache Boulevard. Significant lengths of a water main, an electric line, and a gas line must be lowered to meet clearance requirements; these utility relocations were not previously noted in the drawings, or planned in the schedule. The Agency is working to expedite the third-party utility relocations, and the Contractor is mobilizing to replace the water main.
- Utility relocations by SRP-Power along Apache Boulevard in Tempe, and Main Street in Mesa, have delayed street widening efforts and trackway work along this corridor. It appears SRP will be five months later than originally projected in completing this work. SRP irrigation relocations also threaten significant delays due to design and easement issues; it is unclear when the irrigation work will be accomplished. The Contractor has altered scheduled work sequences to enable the utilities to complete their work expeditiously.
- The Contractor's significant additional support work to facilitate third party utility relocations, and to resolve unexpected conflicts with city and private utilities, continues to draw significant Contractor resources from guideway production. Maintaining contingency funding in the project budget is critical to resolution of utility issues. Resolution of specific utility issues and coordination of work are addressed weekly in the Line Section 5 Utilities Coordination meeting.
- Maintenance of traffic flow while performing major project work, such as major grade crossings, bridgework, and utility relocations, continues to be a challenge. The scope of work at present requires significant traffic control measures along the entire project alignment, and coordinating barrier and closure plans with the numerous special events in this area requires major effort. Close coordination with local cities and ADOT for closures and for shifting traffic patterns has, thus far, resulted in workable production schemes.
- Public support for the project along the project has been reasonably good; however, some stakeholders have had to endure construction disruptions for months. As the project moves into Mesa, many new stakeholders are being impacted. The Contractor's positive efforts to assure stakeholder support through advance notices and rapid resolution of stakeholder concerns, has resulted in his receiving 100 percent of the Community Advisory Board incentive award for each quarter of the project. Additionally, the Metro public involvement personnel assigned to the Project are providing excellent and critical support in conflict avoidance and resolution.

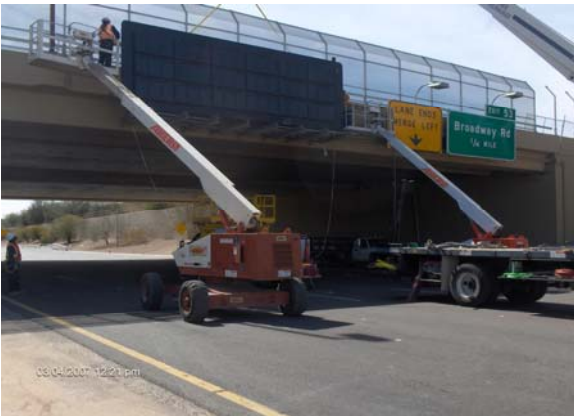
**Construction Photographs**



Switch Area at Pocket Track, Milestone A2



Track Placement at Terrace Road, Milestone B2



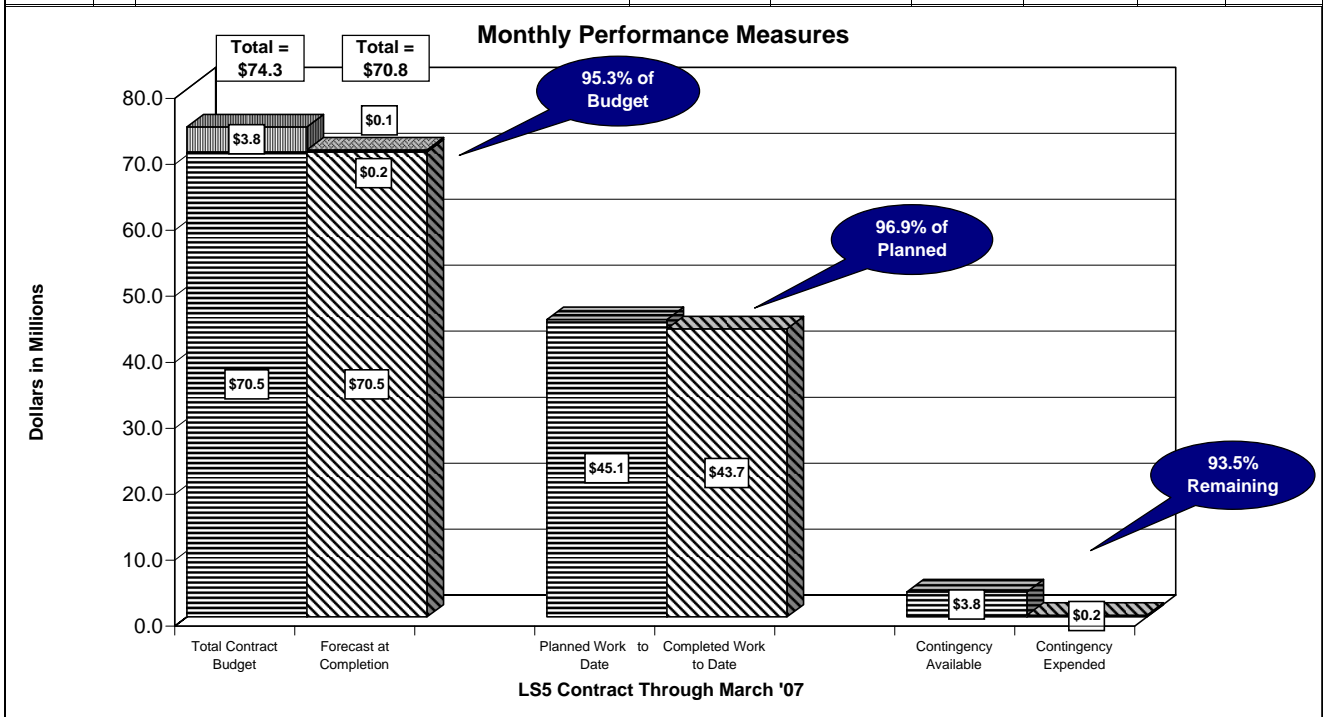
Restoration Work at Apache Boulevard/Loop 101 Bridge, Milestone C2



Waterline Work at Main Street and Dobson Road, Milestone E2



|                           |  |                             |             |              |
|---------------------------|--|-----------------------------|-------------|--------------|
| <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>March 15, 2007</b>       |             |              |
|                           | <b>Cumulative</b>                        | <b>5309</b>                 | <b>CNPA</b> | <b>Total</b> |
| 1                         | Budget                                   | \$68,882,969                | \$1,573,317 | \$70,456,286 |
| 2                         | Executed Change Orders                   | \$245,899                   | \$215,820   | \$461,719    |
| 3                         | Budget Transfers                         | \$0                         | \$0         | \$0          |
| 4                         | Current Budget (1+2+3)                   | \$69,128,868                | \$1,789,137 | \$70,918,005 |
| 5                         | Work Scheduled                           | \$43,661,445                | \$1,389,136 | \$45,050,581 |
| 6                         | Work Earned                              | \$42,736,281                | \$922,522   | \$43,658,803 |
| 7                         | Actual Expenditures                      | \$42,791,953                | \$705,222   | \$43,497,175 |
| 8                         | Forecast to Complete Base (4-7)          | \$26,336,915                | \$1,083,915 | \$27,420,830 |
| 9                         | Change Orders Pending Execution          | \$25,628                    | \$32,714    | \$58,342     |
| 10                        | Forecast at Completion (7+8+9)           | \$69,154,496                | \$1,821,851 | \$70,976,347 |
| 11                        | Percent Budget Expended (7/4)            | 61.9%                       | 39.4%       | 61.3%        |
| 12                        | Percent Planned (5/4)                    | 63.2%                       | 77.6%       | 63.5%        |
| 13                        | Earned Percent Complete (6/4)            | 61.8%                       | 51.6%       | 61.6%        |
| 14                        | Schedule Performance (6/5) (SPI)         | 0.98                        | 0.00        | 0.97         |
| 15                        | Cost Performance (6/7) (CPI)             | 1.00                        | 0.00        | 1.00         |
| 16                        | Contingency Budget                       | \$3,708,135                 | \$107,679   | \$3,815,814  |
| 17                        | Remaining Contingency                    | \$3,462,236                 | \$106,767   | \$3,569,003  |
| 18                        | Percent Contingency Remaining (17/16)    | 93.4%                       | 99.2%       | 93.5%        |
|                           | <b>Period</b>                            |                             |             |              |
| 1                         | Budget                                   | N/A                         | N/A         | N/A          |
| 2                         | Executed Change Orders                   | -\$32,700                   | \$0         | -\$32,700    |
| 3                         | Budget Transfers                         | \$0                         | \$0         | \$0          |
| 4                         | Current Budget (1+2+3)                   | \$69,128,868                | \$1,789,137 | \$70,918,005 |
| 5                         | Work Scheduled (Cumm - Last Period)      | \$2,963,337                 | \$105,254   | \$3,068,591  |
| 6                         | Work Earned (Cumm - Last Period)         | \$2,371,507                 | \$12,852    | \$2,384,359  |
| 7                         | Actual Expenditures (Cumm - Last Period) | \$2,414,551                 | \$0         | \$2,414,551  |
| 8                         | Forecast to Complete Base (4-7)          | \$66,714,317                | \$1,789,137 | \$68,503,454 |
| 9                         | Change Orders Pending Execution          | \$15,128                    | -\$17,638   | -\$2,510     |
| 10                        | Forecast at Completion (7+8+9)           | \$69,143,996                | \$1,771,499 | \$70,915,495 |
| 11                        | Percent Budget Expended (7/4)            | 3.5%                        | 0.0%        | 3.4%         |
| 12                        | Percent Planned (5/4)                    | 4.3%                        | 5.9%        | 4.3%         |
| 13                        | Earned Percent Complete (6/4)            | 3.4%                        | 0.7%        | 3.4%         |
| 14                        | Schedule Performance (6/5)               | 0.80                        | 0.00        | 0.78         |
| 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 work on the utility bridge is substantially complete. Most of the punch list activities have been completed by the Contractor. Details are being worked out for the last item.

### 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.

### Cost and Schedule – Variance Analysis

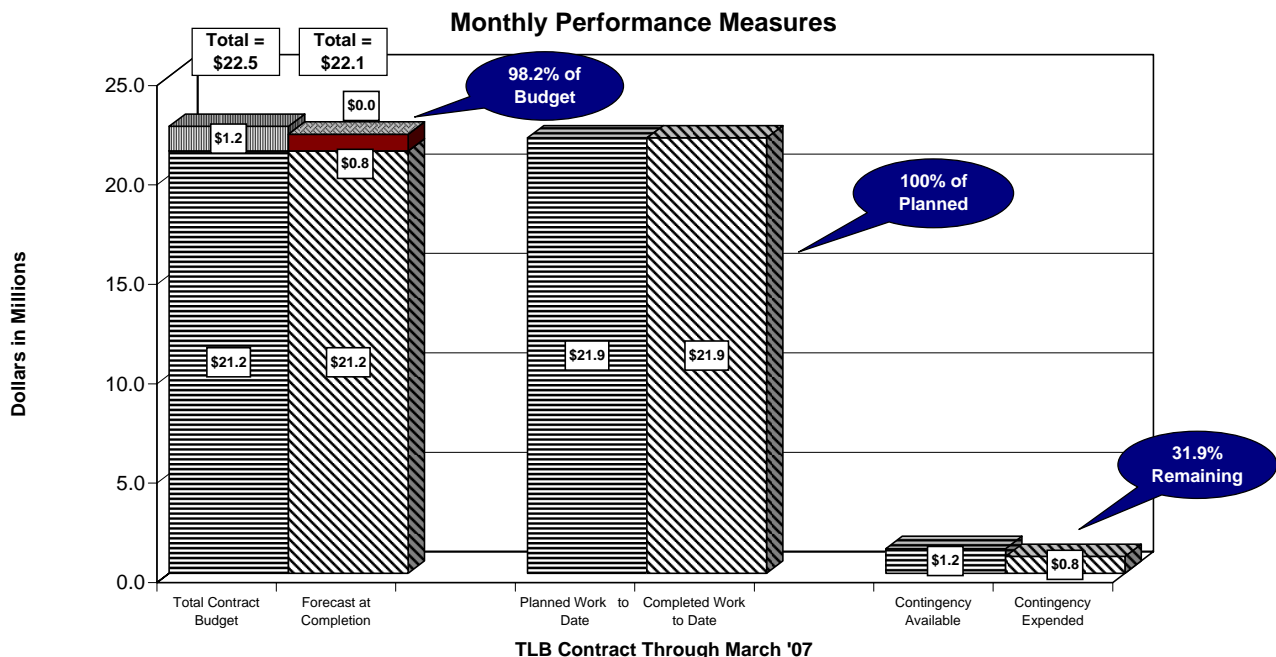
- This Contract has been closed

### 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>     |              |          |              |
|                           |  |                               | 5309         | CNPA     | Total        |
| <b>Cumulative</b>         |  |                               |              |          |              |
| 1                         | Budget                                   |                               | \$21,219,861 | \$17,523 | \$21,237,384 |
| 2                         | Executed Change Orders                   |                               | \$847,508    | \$0      | \$847,508    |
| 3                         | Budget Transfers                         |                               | -\$183,000   | \$0      | -\$183,000   |
| 4                         | Current Budget (1+2+3)                   |                               | \$21,884,369 | \$17,523 | \$21,901,892 |
| 5                         | Work Scheduled                           |                               | \$21,884,236 | \$17,523 | \$21,901,759 |
| 6                         | Work Earned                              |                               | \$21,884,369 | \$15,771 | \$21,900,140 |
| 7                         | Actual Expenditures                      |                               | \$21,759,752 | \$15,771 | \$21,775,523 |
| 8                         | Forecast to Complete Base (4-7)          |                               | \$124,617    | \$1,752  | \$126,369    |
| 9                         | Change Orders Pending Execution          |                               | \$0          | \$0      | \$0          |
| 10                        | Forecast at Completion (7+8+9)           |                               | \$21,884,369 | \$17,523 | \$21,901,892 |
| 11                        | Percent Budget Expended (7/4)            |                               | 99.4%        | 90.0%    | 99.4%        |
| 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)                   |                               | 1.01         | 1.00     | 1.01         |
| 16                        | Contingency Budget                       |                               | \$1,242,400  | \$1,402  | \$1,243,802  |
| 17                        | Remaining Contingency                    |                               | \$394,892    | \$1,402  | \$396,294    |
| 18                        | Percent Contingency Remaining (17/16)    |                               | 31.8%        | 0.0%     | 31.9%        |
| <b>Period</b>             |  |                               |              |          |              |
| 1                         | Budget                                   |                               | N/A          | N/A      | N/A          |
| 2                         | Executed Change Orders                   |                               | \$0          | \$0      | \$0          |
| 3                         | Budget Transfers                         |                               | \$0          | \$0      | \$0          |
| 4                         | Current Budget (1+2+3)                   |                               | \$21,884,369 | \$17,523 | \$21,901,892 |
| 5                         | Work Scheduled (Cumm - Last Period)      |                               | \$0          | \$0      | \$0          |
| 6                         | Work Earned (Cumm - Last Period)         |                               | \$3,755      | \$0      | \$3,755      |
| 7                         | Actual Expenditures (Cumm - Last Period) |                               | \$0          | \$0      | \$0          |
| 8                         | Forecast to Complete Base (4-7)          |                               | \$21,884,369 | \$17,523 | \$21,901,892 |
| 9                         | Change Orders Pending Execution          |                               | \$0          | \$0      | \$0          |
| 10                        | Forecast at Completion (7+8+9)           |                               | \$21,884,369 | \$0      | \$21,884,369 |
| 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                    |                               | \$394,892    | \$0      | \$394,892    |
| 18                        | Percent Contingency Remaining (17/16)    |                               | 31.8%        | 0.0%     | 31.8%        |



Note: Contractor submitted final schedule update during previous reporting period

## Operations and Maintenance Center



### Description

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

### Progress

- At the MOE building, final punch list work continues on all floors and additional repairs were made to defective components of the pre-action fire alarm system. The appeal to the fire marshal for a variance to the spray paint booth fire alarm system was approved and that remaining work is now in progress.
- At the MOW building, the landscaping was completed and the City of Phoenix DSD issued the Certificate of Occupancy. A punch list walk through was performed and work continues to address the same.



- At the yard service and cleaning platform, the sand distribution system pumps are complete and ready for sand delivery and testing. A Certificate of Occupancy was issued by the City of Phoenix DSD and a punch list was developed and is being addressed by the Contractor.
- The assembly of the LRV wash equipment is complete. A Certificate of Occupancy was issued by the City of Phoenix DSD, a punch list was developed and is being addressed by the Contractor.
- The site signage is substantially complete and the landscaping and irrigation was completed. Construction continues on various components at the site entrance and all yard track punch list items were completed.

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

- The contractor is presently developing a revised schedule of the remaining activities for OMC substantial completion.
- METRO has negotiated a final settlement of all remaining cost and schedule issues on the contract. The contract closeout activities have begun.

### **Issues and Solutions**

- None.

### Construction Photographs



Train102 with LRV Wash in background



LRV assembly operations in MOE shop



Wheel Profiling Machine ready for installation

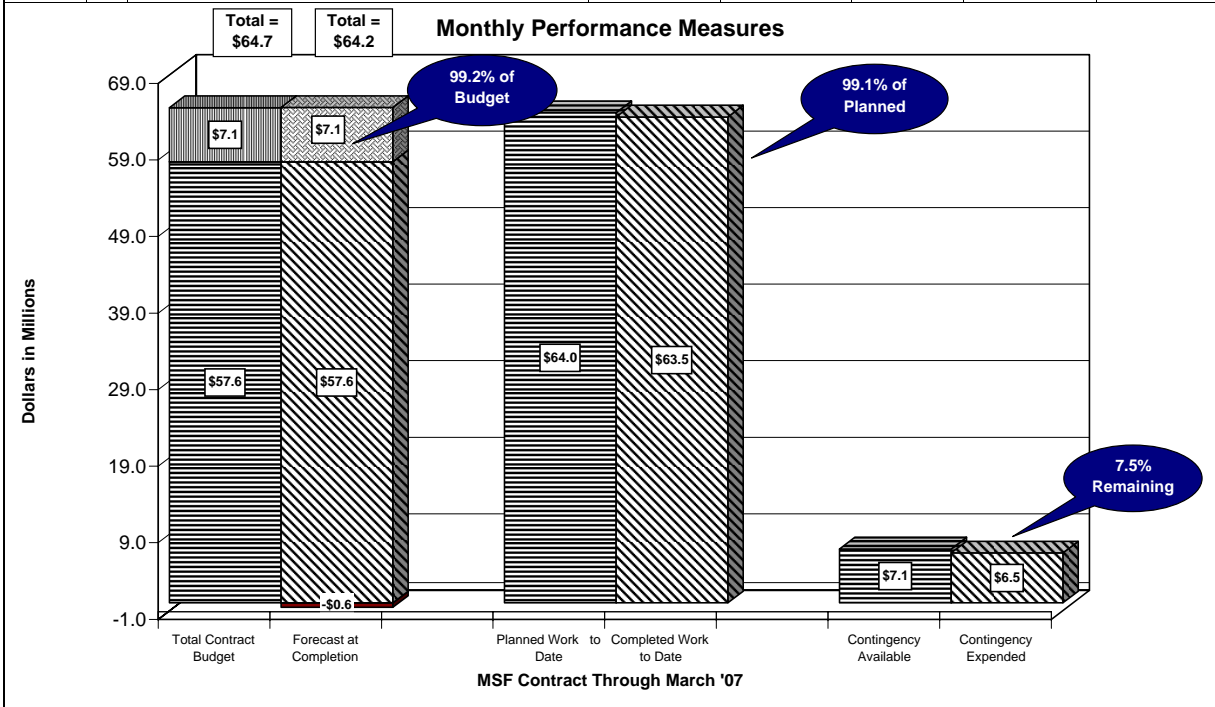


MOW building west elevation



FEBRUARY 2007 RAIL PROGRESS REPORT

|  |  |  |              |
|--|--|--|--------------|
| <b>Description:</b>                        |  | 3.5.1 Maintenance Support Facility/Operations and Maintenance Center |              |
| <b>PE/PA:</b>                              |  | Avrum Loewenstein  |              |
| <b>Contractor:</b>                         |  | Sundt/Stacy Witbeck  |              |
| <b>Resident Engineer:</b>                  |  | Brian Mason  |              |
| <b>Data Through:</b>                       |  | February 28, 2007  |              |
| <b>Cumulative</b>                          |  | <b>5309</b>  | <b>Total</b> |
| 1 Budget                                   |  | \$57,637,721   | \$57,637,721 |
| 2 Executed Change Orders                   |  | \$7,094,906  | \$7,094,906  |
| 3 Budget Transfers                         |  | -\$257,984   | -\$257,984   |
| 4 Current Budget (1+2+3)                   |  | \$64,474,643   | \$64,474,643 |
| 5 Work Scheduled                           |  | \$64,041,206   | \$64,041,206 |
| 6 Work Earned                              |  | \$63,489,495   | \$63,489,495 |
| 7 Actual Expenditures                      |  | \$63,818,955   | \$63,818,955 |
| 8 Forecast to Complete Base (4-7)          |  | \$655,688  | \$655,688    |
| 9 Change Orders Pending Execution          |  | -\$560,599   | -\$560,599   |
| 10 Forecast at Completion (7+8+9)          |  | \$63,914,044   | \$63,914,044 |
| 11 Percent Budget Expended (7/4)           |  | 99.0%  | 99.0%        |
| 12 Percent Planned (5/4)                   |  | 99.3%  | 99.3%        |
| 13 Earned Percent Complete (6/4)           |  | 98.5%  | 98.5%        |
| 14 Schedule Performance (6/5)              |  | 0.99   | 0.99         |
| 15 Cost Performance (6/7)                  |  | 0.99   | 0.99         |
| 16 Contingency Budget                      |  | \$7,063,772  | \$7,063,772  |
| 17 Remaining Contingency                   |  | \$529,465  | \$529,465    |
| 18 Percent Contingency Remaining (17/16)   |  | 7.5%   | 7.5%         |
| <b>Period</b>                              |  |  |              |
| 1 Budget                                   |  | N/A  | N/A          |
| 2 Executed Change Orders                   |  | \$183,701  | \$183,701    |
| 3 Budget Transfers                         |  | \$0  | \$0          |
| 4 Current Budget (1+2+3)                   |  | \$64,041,206   | \$64,041,206 |
| 5 Work Scheduled (Cumm - Last Period)      |  | \$1,154  | \$1,154      |
| 6 Work Earned (Cumm - Last Period)         |  | \$649,195  | \$649,195    |
| 7 Actual Expenditures (Cumm - Last Period) |  | \$690,321  | \$690,321    |
| 8 Forecast to Complete Base (4-7)          |  | \$63,350,885   | \$63,350,885 |
| 9 Change Orders Pending Execution          |  | -\$189,295   | -\$189,295   |
| 10 Forecast at Completion (7+8+9)          |  | \$63,851,911   | \$63,851,911 |
| 11 Percent Budget Expended (7/4)           |  | 1.1%   | 1.1%         |
| 12 Percent Planned (5/4)                   |  | 0.0%   | 0.0%         |
| 13 Earned Percent Complete (6/4)           |  | 1.0%   | 1.0%         |
| 14 Schedule Performance (6/5)              |  | 562.56   | 562.56       |
| 15 Cost Performance (6/7)                  |  | 0.94   | 0.94         |
| 16 Contingency Budget                      |  |  |              |
| 17 Remaining Contingency                   |  |  |              |
| 18 Percent Contingency Remaining (17/16)   |  |  |              |



## Park-and-Ride



## Description

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

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

## Progress

- Providing 794 spaces, the 19th Avenue and Montebello site is at 100 percent design completion by the primary sub-consultant. The 100 percent consolidation of plans to the IFB set is in process by the GEC.



- Providing 411 spaces, the 19<sup>th</sup> Avenue and Camelback site is at 100 percent design completion by the primary sub-consultant. The 100 percent consolidation of plans to the IFB set is in process by the GEC.
- Providing 130 spaces, the Central Avenue and Camelback PNR plans are being consolidated into the IFB set by the GEC. An addendum to the IFB is planned to include sanitary sewer relocation and include DSD requirements that cannot be designed and permitted in time for the IFB.
- Providing 90 spaces, the Dorsey and Apache PNR has been designed by the City of Tempe as a maintenance upgrade only. Completion of this work is outside of this Contract.
- Providing 189 spaces, the 38th Street and Washington Street PNR site has reached the 100 percent design completion by the primary sub-consultant. A final draft for the IGA between Gateway Community College and the City of Phoenix has been settled. The 100 percent completion plans are being consolidated into the IFB set by the GEC.
- Providing 330 spaces (as a surface lot), the McClintock and Apache PNR site has reached the 100 percent design completion by the primary sub-consultant. The 100 percent completions plans are being consolidated into the IFB set by the GEC. The site will be an alternative bid or option in the IFB. The City of Tempe is working with a Developer to design and construct a Transit Oriented Development that would include 300 parking spaces in a structure for PNR use. As the development proceeds, it is to be completed for parking no later than the current surface lot opening date of December 2008. The Developer is proposing to open the garage in March 2008. The City is implementing certain milestones that the Developer must achieve; otherwise the current surface lot will be constructed as planned. The initial submittal of Developer plans was reviewed by METRO with the City and the Developer.
- Providing 683 spaces, the Price Freeway and Apache PNR site has reached the 100 percent design completion by the primary sub-consultant. The 100 percent completion plans are being consolidated into the IFB set by the GEC.
- Providing 812 spaces, the Sycamore Drive and Main PNR site has reached the 100 percent design completion by the primary sub-consultant. The 100 percent completion plans are being consolidated into the IFB set by the GEC.

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

- The budget for all sites is \$15,104,339 with a contingency of \$1,208,300.
- A recent construction cost estimate and projections indicate a base cost (without soft costs) of \$21,400,000. A transfer of the McClintock/Apache cost to the private Developer would reduce the construction estimate for the six remaining sites to approximately \$17,700,000.
- The IFB date is April 23, 2007.
- The Bid Opening date is May 22, 2007.



- Anticipated notice to proceed is August 13, 2007. Some sites will have delayed starts due to their use as construction yards by the Line Section contractors.

### **Issues and Solutions**

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

## 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.
  - The Contractor's cost proposal for the modification of the 11<sup>th</sup> Street Wye Track Equilaterals for Line Section 3 was received on March 22, 2007. The proposal is being reviewed prior to negotiating a final price with the Contractor. Once negotiations are completed, this change will be presented to the TRAC Committee for approval.

- Five material deliveries were made during this month. The Contractor delivered two 100 meter crossovers and a 50 meter turnout for Line Section 3. They also delivered a single 100 meter crossover for Line Section 5.

### Cost and Schedule – Variance Analysis

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

### Issues and Solutions

- There are no significant issues at this time.

### Construction Photographs



Delivery of a 100m left hand crossover (5-7/5-8) for Line Section 5

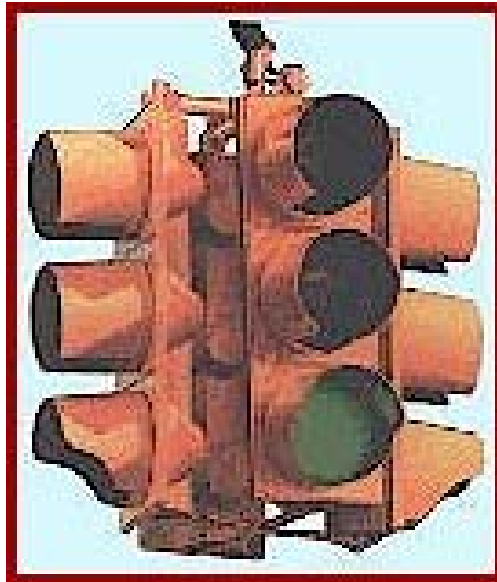


Delivery of 50 meter turnouts (3-12) for Line Section 3.



100m LH Crossover 3-3 and 3-4 delivered to METRO's Storage Yard

## Traffic Signal Procurement



### Description

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

### Progress

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

### Cost and Schedule – Variance Analysis

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

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

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

**Issues and Solutions**

- No issues at this time.

**Construction Photographs**



Contractor being issued traffic signal poles for Line Section 3 at METRO's Storage Yard



Contractor being issued traffic signal poles for Line Section 4 at METRO's Storage Yard

## 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

- Factory acceptance inspection was completed and the machine has been disassembled and is now on route to the OMC.

### Cost and Schedule – Variance Analysis

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

### Issues and Solutions

- None.

## 13. Systems

### Automated Fare Collection System



#### Description

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



## Progress

- Milestone 1 Progress - Master Baseline Schedule remains under Agency review.
- Milestone 2 Progress - Complete.
- Milestone 3 Progress - Held Preliminary Design Review (PDR) Meeting at Contractor's Factory in Burlington, MA. Awaiting PDR resubmittal package from the Contractor.

## Cost and Schedule – Variance Analysis

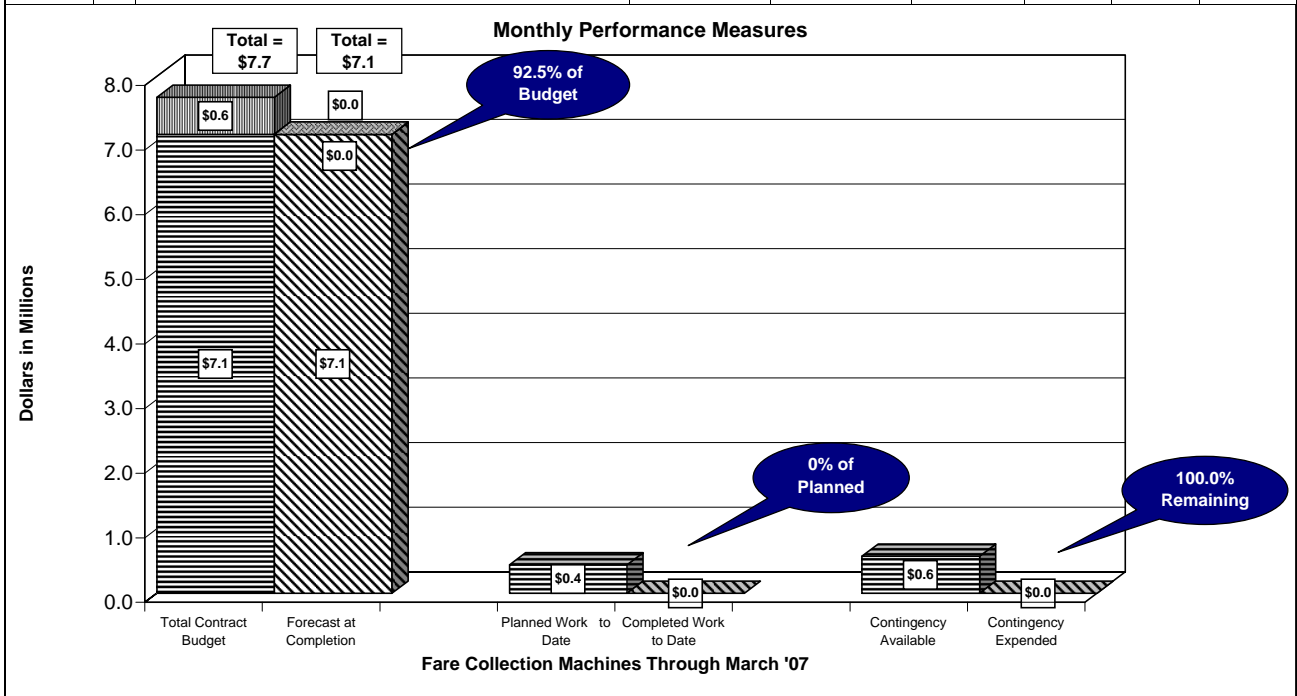
- Fare collection system schedule activities reflect impacts to interim milestones, however the Contractor has mitigated the schedule impacts to keep the overall schedule on schedule and within budget at this time.

## Issues and Solutions

- Ticket Validator Requirements. Ongoing discussions with SBI regarding potential use of stand-alone ticket validator in lieu of integrated validation unit. Awaiting credit pricing proposal.
- Ticket Vending Machine Servicing Envelope. Completing redesign for ticket vending machine concrete pad orientations to support ticket vending machine servicing envelope and station platform constraints. Awaiting Contractor's concurrence of the revised layouts.



|                           |  |                              |
|---------------------------|--|------------------------------|
| <b>Description:</b>       |  | Fare Collection Machines     |
| <b>PE/PA:</b>             |  | Arkady Bernshtryn            |
| <b>Contractor:</b>        |  | Scheidt & Bachmann USA, Inc. |
| <b>Resident Engineer:</b> |  | Thomas Klings                |
| <b>Data Through:</b>      |  | N/A                          |
| <b>Cumulative</b>         |  |                              |
| 1                         | Original Budget                          | \$7,100,012                  |
| 2                         | Executed Change Orders                   | \$0                          |
| 3                         | Budget Transfers                         | \$0                          |
| 4                         | Current Budget (1+2+3)                   | \$7,100,012                  |
| 5                         | Work Scheduled                           | \$440,605                    |
| 6                         | Work Earned                              | \$0                          |
| 7                         | Actual Expenditures                      | \$0                          |
| 8                         | Forecast to Complete Base (4-7)          | \$7,100,012                  |
| 9                         | Change Orders Pending Execution          | \$1,600                      |
| 10                        | Forecast at Completion (7+8+9)           | \$7,101,612                  |
| 11                        | Percent Budget Expended (7/4)            | 0.0%                         |
| 12                        | Percent Planned (5/4)                    | 6.2%                         |
| 13                        | Earned Percent Complete (6/4)            | 0.0%                         |
| 14                        | Schedule Performance (6/5)               | N/A                          |
| 15                        | Cost Performance (6/7)                   | N/A                          |
| 16                        | Contingency Budget                       | \$574,535                    |
| 17                        | Remaining Contingency                    | \$574,535                    |
| 18                        | Percent Contingency Remaining (17/16)    | 100.0%                       |
| <b>Period</b>             |  |                              |
| 1                         | Original Budget                          | \$0                          |
| 2                         | Executed Change Orders                   | \$0                          |
| 3                         | Budget Transfers                         | \$0                          |
| 4                         | Current Budget (1+2+3)                   | \$7,100,012                  |
| 5                         | Work Scheduled (Cumm - Last Period)      | \$1,590                      |
| 6                         | Work Earned (Cumm - Last Period)         | \$0                          |
| 7                         | Actual Expenditures (Cumm - Last Period) | \$0                          |
| 8                         | Forecast to Complete Base (4-7)          | \$7,100,012                  |
| 9                         | Change Orders Pending Execution          | \$0                          |
| 10                        | Forecast at Completion (7+8+9)           | \$7,100,012                  |
| 11                        | Percent Budget Expended (7/4)            | 0.0%                         |
| 12                        | Percent Planned (5/4)                    | 0.0%                         |
| 13                        | Earned Percent Complete (6/4)            | 0.0%                         |
| 14                        | Schedule Performance (6/5)               | N/A                          |
| 15                        | Cost Performance (6/7)                   | N/A                          |
| 16                        | Contingency Budget                       |                              |
| 17                        | Remaining Contingency                    |                              |
| 18                        | Percent Contingency Remaining (17/16)    |                              |



## Light Rail Vehicle



### Description

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

### Progress

- METRO is continuing review of submittals of Contract Data Requirement List items (CDRLs), the bulk of which are test procedures and reports as well as First Article Inspection (FAI) reports and Test Procedures.
- Final assembly began at the OMC mid February 2007.
- Changes for an Overhead Catenary System (OCS) Surveillance Camera Installation on two cars and an Automatic Passenger Counting System (APC) for the fleet are processed.



- The following describes ongoing METRO resident inspection, quality assurance, manufacturing monitoring, and site surveillance activities at the Kinki Sharyo factory in Osaka Japan (KS-J).
  - LRV Mass Production – 47 Trains are now in production.
  - An inspection of the grit blasting is being performed and ongoing. No defects noted.
  - A visual and dimensional inspection of underframe and car body was performed and ongoing. The dimensions were within tolerance, but defects were noted during the inspection. No defects remained after rework and re-inspection.
  - Concealment inspections were witnessed in two stages each for cars 128 and 129. All noted defects were repaired. No defects remain.
  - KS-J advised that a new rubber seal will be installed on the front headlights to improve the water tightness.
  - 5 Vehicles are in final assembly at the MOE
  - LRV 101 thru 113 arrived at the OMC between December 2006 and March 2007. KI and METRO have just reached an agreement on two significant changes to the contract that affect activities that will be starting in the coming months. KI will perform vehicle final assembly in the OMC and KI will perform single car running tests on car 101 on METRO's designated test track. As documented in change order No.5, the test track will be available on or before April 1, 2007.
  - Cars 101 thru 119 were shipped from Osaka and will arrive at the OMC for final assembly. Truck frames and components were also shipped from Osaka as well but KI will assemble and static test completed trucks at the Hudson-Bergen maintenance shop in New Jersey. Work continues on subsequent cars in Osaka and shipments from Japan are scheduled at about four (4) cars per month.
- Telephone, email and drawing exchange continue between KSJ and KI on carbody issues, testing procedures and schedules, subsystem interfaces and equipment mounting, interior design and equipment installation, systems application issues, material shipments, production schedule and CDRL;s items. The underfloor cross beam welding issues have been addressed and weld modifications are done or ongoing from cars 107 and above. Kinkisharyo Japan will send a team to the U.S. to repair 103 – 106. Cars 101 and 102 are not affected in these modifications.

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

- No perceptible cost or schedule variance. Car delivery remains on schedule sufficient to meet the needs of the overall program. Cost Performance Indicator of 1.0 indicates that contract remains within budget.

### **Issues and Solutions**

- None.

**Construction Photographs**



Stage of Vehicle Assembly at the OMC



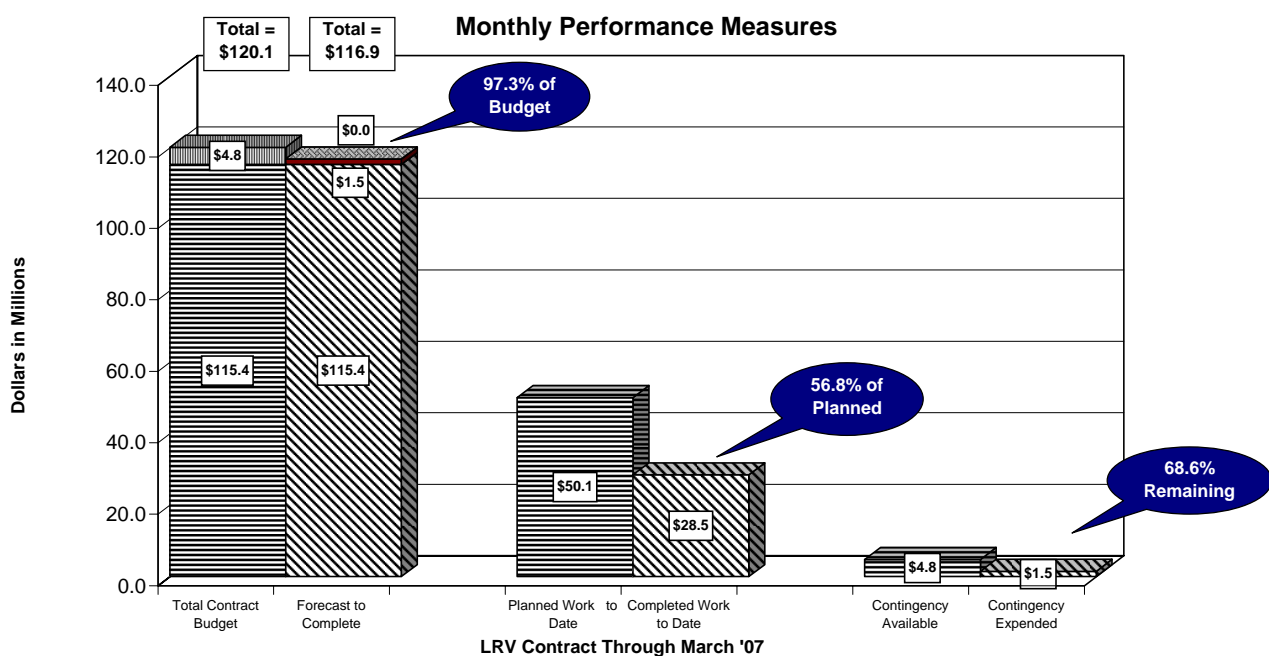
Stage of Vehicle Assembly at the OMC



Stage of 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>January 31, 2007</b>          |                   |               |
| <b>Cumulative</b>         |  | <b>5309</b>                      | <b>COP Funded</b> | <b>Total</b>  |
| 1                         | Original Budget                          | \$115,369,780                    | \$40,050,160      | \$155,419,940 |
| 2                         | Executed Change Orders                   | \$2,255,676                      | \$0               | \$2,255,676   |
| 3                         | Budget Transfers                         | -\$750,000                       | \$0               | -\$750,000    |
| 4                         | Current Budget (1+2+3)                   | \$116,875,456                    | \$40,050,160      | \$156,925,616 |
| 5                         | Work Scheduled                           | \$50,124,671                     | N/A               | \$50,124,671  |
| 6                         | Work Earned                              | \$28,478,872                     | N/A               | \$28,478,872  |
| 7                         | Actual Expenditures                      | \$32,631,116                     | N/A               | \$32,631,116  |
| 8                         | Forecast to Complete Base (4-7)          | \$84,244,340                     | N/A               | \$84,244,340  |
| 9                         | Change Orders Pending Execution          | \$0                              | N/A               | \$0           |
| 10                        | Forecast at Completion (7+8+9)           | \$116,875,456                    | \$40,050,160      | \$156,925,616 |
| 11                        | Percent Budget Expended (7/4)            | 27.9%                            | N/A               | N/A           |
| 12                        | Percent Planned (5/4)                    | 42.9%                            | N/A               | N/A           |
| 13                        | Earned Percent Complete (6/4)            | 24.4%                            | N/A               | N/A           |
| 14                        | Schedule Performance (6/5)               | 0.57                             | N/A               | N/A           |
| 15                        | Cost Performance (6/7)                   | 0.87                             | N/A               | N/A           |
| 16                        | Contingency Budget                       | \$4,802,785                      | \$2,135,840       | \$6,938,625   |
| 17                        | Remaining Contingency                    | \$3,297,109                      | \$2,135,840       | \$5,432,949   |
| 18                        | Percent Contingency Remaining (17/16)    | 68.6%                            | N/A               | N/A           |
| <b>Period</b>             |  |                                  |                   |               |
| 1                         | Original Budget                          | \$115,369,780                    | \$40,050,160      | \$155,419,940 |
| 2                         | Executed Change Orders                   | \$0                              | \$0               | \$0           |
| 3                         | Budget Transfers                         | \$0                              | \$0               | \$0           |
| 4                         | Current Budget (1+2+3)                   | \$116,875,456                    | \$40,050,160      | \$156,925,616 |
| 5                         | Work Scheduled (Cumm - Last Period)      | \$6,661,480                      | N/A               | \$6,661,480   |
| 6                         | Work Earned (Cumm - Last Period)         | \$0                              | N/A               | \$0           |
| 7                         | Actual Expenditures (Cumm - Last Period) | \$0                              | N/A               | \$0           |
| 8                         | Forecast to Complete Base (4-7)          | \$116,875,456                    | N/A               | \$116,875,456 |
| 9                         | Pending Changes                          | \$0                              | N/A               | \$0           |
| 10                        | Forecast at Completion (7+8+9)           | \$116,875,456                    | \$40,050,160      | \$156,925,616 |
| 11                        | Percent Budget Expended (7/4)            | 0.0%                             | N/A               | N/A           |
| 12                        | Percent Planned (5/4)                    | 42.9%                            | N/A               | N/A           |
| 13                        | Earned Percent Complete (6/4)            | 42.9%                            | N/A               | N/A           |
| 14                        | Schedule Performance (6/5)               | 1.00                             | N/A               | N/A           |
| 15                        | Cost Performance (6/7)                   | 0.87                             | N/A               | N/A           |
| 16                        | Contingency Budget                       | \$4,802,785                      | \$2,135,840       | \$6,938,625   |
| 17                        | Remaining Contingency                    | \$3,297,109                      | \$2,135,840       | \$5,432,949   |
| 18                        | Percent Contingency Remaining (17/16)    | 68.6%                            | 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
  - Performing electrical rough-in at Signal Building No. 1 and 2.
- Signaling System
  - Currently, performing Factory Acceptance Testing for Mill Pocket Track.



- Continuing testing of signal cables at OMC Yard and Yard Entrance Areas to support the Test Track.
- Completed rail bonding and terminations work to support the Test Track.
- Communications System
  - Resubmittals are required for the Final Design of the Communication System. MEC continues to mitigate SCADA software development schedule.
  - Contractor completed installation of public address speaker cable and devices, CCTV camera fiber cable and devices, and telephone fiber between MOE and MOW buildings at the OMC Yard.
- OCC Build Out
  - Contractor currently performing electrical rough-in at the OCC Building. Preparing for final core drill on the ceiling of the parking garage structure.
- Coordinating with other Contracts
  - LS5 - UPRR/1st Crossing. 1st St./UPRR Crossing Case delivered on-site. Awaiting temporary power connections from City of Tempe.
  - LS4/OFM - Performed field demonstration and coordination between switch machine supplier, switch machine installer, and S&C Contractor at Yard Entrance Area.

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

- The contract is in the early stages of submittals, design and procurement with some field construction work in progress. Field construction to date has included the civil and architectural parts of five signal buildings, signal equipment installation at three signal buildings and two shared substations, architectural work at the OCC, and track bonding at OMC Yard and LS4 Yard Entrance.

### **Issues and Solutions**

- Fiber and Microduct Installation. Awaiting demonstration of 2800-foot test installation with LS4 subcontractor. MEC is prepared to blow microduct fiber by mid-April.

**Construction Photographs**



SB No.1 - Applying SFRM



SB No.2 - Installed Interior Roof Decking



OCC - Performing Electrical Connections



Yard Entrance - Switch Machine Adjustment Demonstration



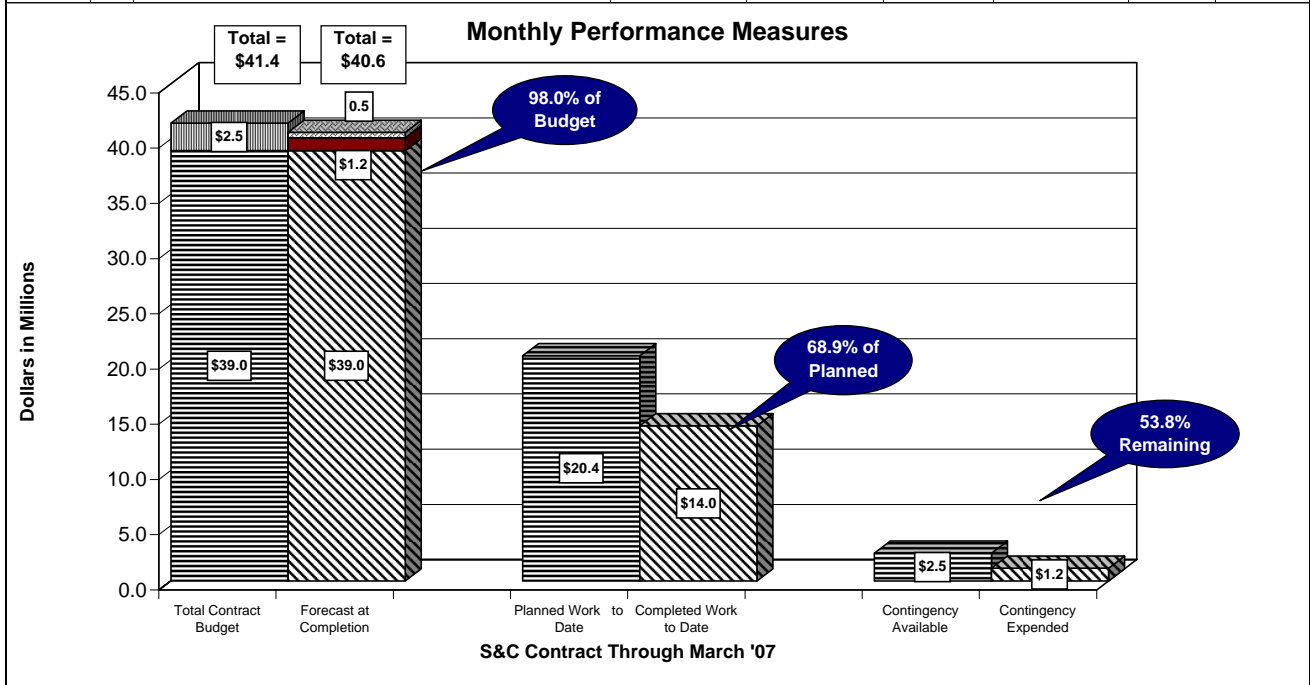
Yard Entrance - Mounting CCTV Camera



OMC Yard - Installation of Fiber Cable



|                           |  |   |             |              |
|---------------------------|--|---|-------------|--------------|
| <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>      |  | February 15, 2007                         |             |              |
| <b>Cumulative</b>         |  | <b>5309</b>                               | <b>CNPA</b> | <b>Total</b> |
| 1                         | Original Budget                          | \$37,476,762                              | \$1,480,805 | \$38,957,567 |
| 2                         | Executed Change Orders                   | \$1,155,709                               | \$0         | \$1,155,709  |
| 3                         | Budget Transfers                         | \$0                                       | \$0         | \$0          |
| 4                         | Current Budget (1+2+3)                   | \$38,632,471                              | \$1,480,805 | \$40,113,276 |
| 5                         | Work Scheduled                           | \$20,153,152                              | \$225,554   | \$20,378,706 |
| 6                         | Work Earned                              | \$13,954,550                              | \$82,970    | \$14,037,520 |
| 7                         | Actual Expenditures                      | \$14,209,991                              | \$30,000    | \$14,239,991 |
| 8                         | Forecast to Complete Base (4-7)          | \$24,422,480                              | \$1,450,805 | \$25,873,285 |
| 9                         | Change Orders Pending Execution          | \$30,238                                  | \$470,561   | \$500,799    |
| 10                        | Forecast at Completion (7+8+9)           | \$38,662,709                              | \$1,951,366 | \$40,614,075 |
| 11                        | Percent Budget Expended (7/4)            | 36.8%                                     | 2.0%        | 35.5%        |
| 12                        | Percent Planned (5/4)                    | 52.2%                                     | 15.2%       | 50.8%        |
| 13                        | Earned Percent Complete (6/4)            | 36.1%                                     | 5.6%        | 35.0%        |
| 14                        | Schedule Performance (6/5)               | 0.69                                      | 0.37        | 0.69         |
| 15                        | Cost Performance (6/7)                   | 0.98                                      | 2.77        | 0.99         |
| 16                        | Contingency Budget                       | \$2,388,332                               | \$111,942   | \$2,500,274  |
| 17                        | Remaining Contingency                    | \$1,232,623                               | \$111,942   | \$1,344,565  |
| 18                        | Percent Contingency Remaining (17/16)    | 51.6%                                     | 100.0%      | 53.8%        |
| <b>Period</b>             |  |   |             |              |
| 1                         | Original Budget                          | N/A                                       | N/A         | N/A          |
| 2                         | Executed Change Orders                   | \$14,661                                  | \$0         | \$14,661     |
| 3                         | Budget Transfers                         | \$0                                       | \$0         | \$0          |
| 4                         | Current Budget (1+2+3)                   | \$38,632,471                              | \$1,480,805 | \$40,113,276 |
| 5                         | Work Scheduled (Cumm - Last Period)      | \$1,045,266                               | \$16,044    | \$1,061,310  |
| 6                         | Work Earned (Cumm - Last Period)         | \$798,504                                 | \$0         | \$798,504    |
| 7                         | Actual Expenditures (Cumm - Last Period) | \$800,978                                 | \$0         | \$800,978    |
| 8                         | Forecast to Complete Base (4-7)          | \$37,831,493                              | \$1,480,805 | \$39,312,298 |
| 9                         | Change Orders Pending Execution          | \$30,238                                  | -\$7,439    | \$22,799     |
| 10                        | Forecast at Completion (7+8+9)           | \$38,662,709                              | \$1,473,366 | \$40,136,075 |
| 11                        | Percent Budget Expended (7/4)            | 2.1%                                      | 0.0%        | 2.0%         |
| 12                        | Percent Planned (5/4)                    | 2.7%                                      | 1.1%        | 2.6%         |
| 13                        | Earned Percent Complete (6/4)            | 2.1%                                      | 0.0%        | 2.0%         |
| 14                        | Schedule Performance (6/5)               | 0.76                                      | 0.00        | 0.75         |
| 15                        | Cost Performance (6/7)                   | 1.00                                      | N/A         | 1.00         |
| 16                        | Contingency Budget                       | \$2,388,332                               | \$111,942   | \$2,500,274  |
| 17                        | Remaining Contingency                    | \$1,232,623                               | \$111,942   | \$1,344,565  |
| 18                        | Percent Contingency Remaining (17/16)    | 51.6%                                     | 100.0%      | 53.8%        |



## 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 and testing.

### Progress

- Traction Power Substation No. 1 and 2
  - Exterior finishes progressed.
- Traction Power Substation No. 3
  - Concrete Masonry Unit block construction commenced.
- Traction Power Substation No. 5
  - Interior rough-in activities progressed.



- TPSS Equipment installation commenced.
- Traction Power Substation No. 6
  - Curb installations progressed.
- Traction Power Substation No. 7
  - Interior rough-in activities progressed.
  - Installation of mounted TPSS equipment progressed.
- Traction Power Substation No. 8
  - TPSS Equipment installation progressed.
- Traction Power Substation No. 9, 15, and 16
  - Testing and Commissioning progressed.
- Traction Power Substation No. 10
  - Interior Rough-In progressed.
- Traction Power Substation No. 11
  - Interior Rough-In progressed.
  - Roof installation has been completed.
- Traction Power Substation No. 13
  - Excavation for ductbanks commenced.
- Overhead Contact System
  - North OMC Yard and Test Track (Wire Runs 35 through 38)
    - Installation of OCS for Test Track has been completed. Minor adjustments remain.
    - Acceptance Measurements and Tests in progress.
      - Dead Car Pull Test
      - Live Line Vehicle Test
  - MOE Shop
    - Contact Wire installation complete.
- Site Access/Permits
  - TPSS No.14 was submitted to Mesa Building Safety for initial review. Comments are being addressed by the designer. Revised drawings should be available from the



- designer in early April and submitted for permit. Permit should be available by the end of April.
- TPSS No. 12 (McClintock Park-and-Ride) has utility impacts which require remediation to allow the TPSS building to be constructed. The electrical engineer engaged by Tempe has completed the design of the electrical services to the mobile homes. Construction on the utility relocation is scheduled to begin in late March. Final drawing will be submitted to Tempe for the TPSS in mid April and a permit should be available by late April.
  - Coordination with other Contracts/Entities
    - Ongoing coordination meetings are being held with the Facility Contractors. A weekly meeting is held with the OMC Resident Engineer and Contractor to coordinate the systems interfaces.

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

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

### **Issues and Solutions**

- Mitigation Schedule. The Mitigation Schedule has been accepted with the exception of the cost impacts. Metro is currently in a series of negotiations for the Contractor Mitigation Schedule Cost Impacts. A change order which revises the milestone and access dates is currently being reviewed by the Agency.

**Construction Photographs**



Dead Car Pull Test



Test Track OCS Inspection



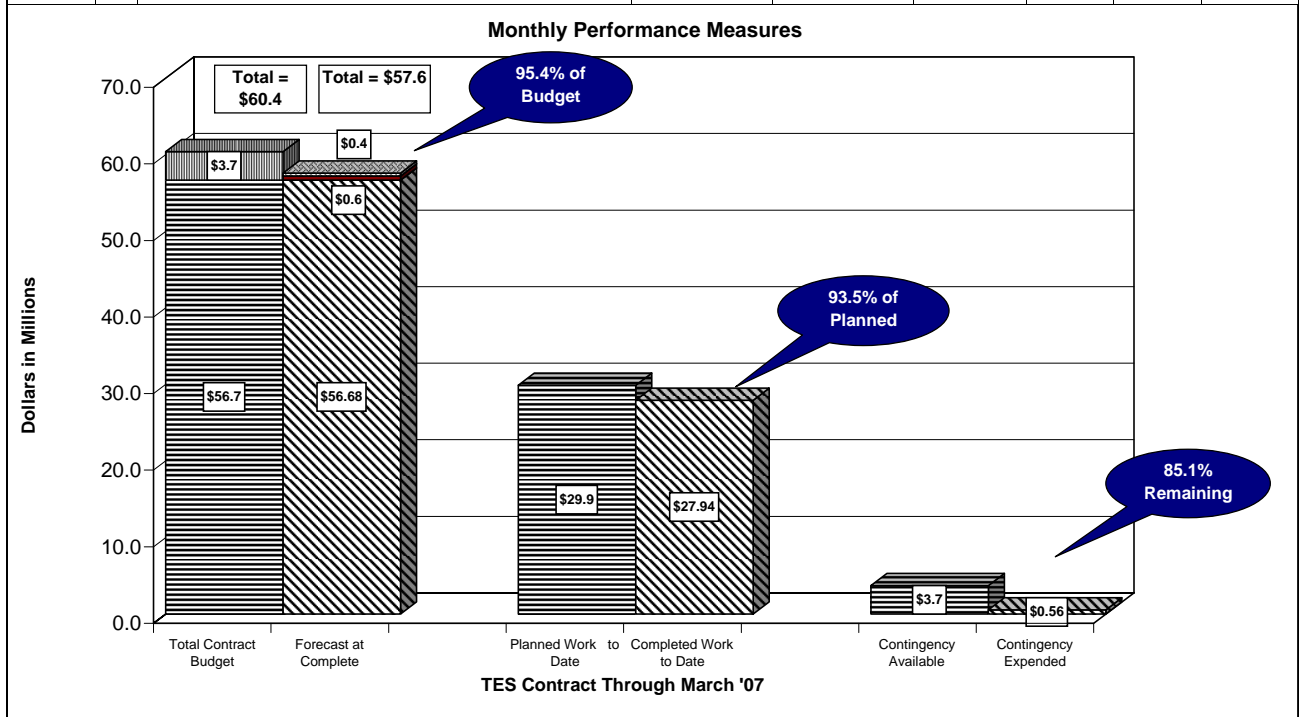
Hi-Pot Testing in TPSS No. 9



Installation of Lightning Arrestors



|                           |  |   |
|---------------------------|--|---|
| <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>February 15, 2007</b>                      |
| Cumulative                |  | <b>5309</b>                                   |
| 1                         | Budget                                   | \$56,681,003                                  |
| 2                         | Executed Change Orders                   | \$555,760                                     |
| 3                         | Budget Transfers                         | \$0   |
| 4                         | Current Budget (1+2+3)                   | \$57,236,763                                  |
| 5                         | Work Scheduled                           | \$29,888,363                                  |
| 6                         | Work Earned                              | \$27,939,991                                  |
| 7                         | Actual Expenditures                      | \$28,229,704                                  |
| 8                         | Forecast to Complete Base (4-7)          | \$29,007,059                                  |
| 9                         | Change Orders Pending Execution          | \$390,200                                     |
| 10                        | Forecast at Completion (7+8+9)           | \$57,626,963                                  |
| 11                        | Percent Budget Expended (7/4)            | 49.3%   |
| 12                        | Percent Planned (5/4)                    | 52.2%   |
| 13                        | Earned Percent Complete (6/4)            | 48.8%   |
| 14                        | Schedule Performance (6/5)               | 0.93  |
| 15                        | Cost Performance (6/7)                   | 0.99  |
| 16                        | Contingency Budget                       | \$3,721,000                                   |
| 17                        | Remaining Contingency                    | \$3,165,240                                   |
| 18                        | Percent Contingency Remaining (17/16)    | 85.1%   |
| Period                    |  |   |
| 1                         | Budget                                   | N/A   |
| 2                         | Executed Change Orders                   | \$87,447                                      |
| 3                         | Budget Transfers                         | \$0   |
| 4                         | Current Budget (1+2+3)                   | \$57,236,763                                  |
| 5                         | Work Scheduled (Cumm - Last Period)      | \$1,463,479                                   |
| 6                         | Work Earned (Cumm - Last Period)         | \$2,084,034                                   |
| 7                         | Actual Expenditures (Cumm - Last Period) | \$2,422,020                                   |
| 8                         | Forecast to Complete Base (4-7)          | \$54,814,743                                  |
| 9                         | Change Orders Pending Execution          | \$224,494                                     |
| 10                        | Forecast at Completion (7+8+9)           | \$57,461,257                                  |
| 11                        | Percent Budget Expended (7/4)            | 4.2%  |
| 12                        | Percent Planned (5/4)                    | 2.6%  |
| 13                        | Earned Percent Complete (6/4)            | 3.6%  |
| 14                        | Schedule Performance (6/5)               | N/A   |
| 15                        | Cost Performance (6/7)                   | N/A   |
| 16                        | Contingency Budget                       | \$3,721,000                                   |
| 17                        | Remaining Contingency                    | \$3,165,240                                   |
| 18                        | Percent Contingency Remaining (17/16)    | 85.1%   |





## **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**

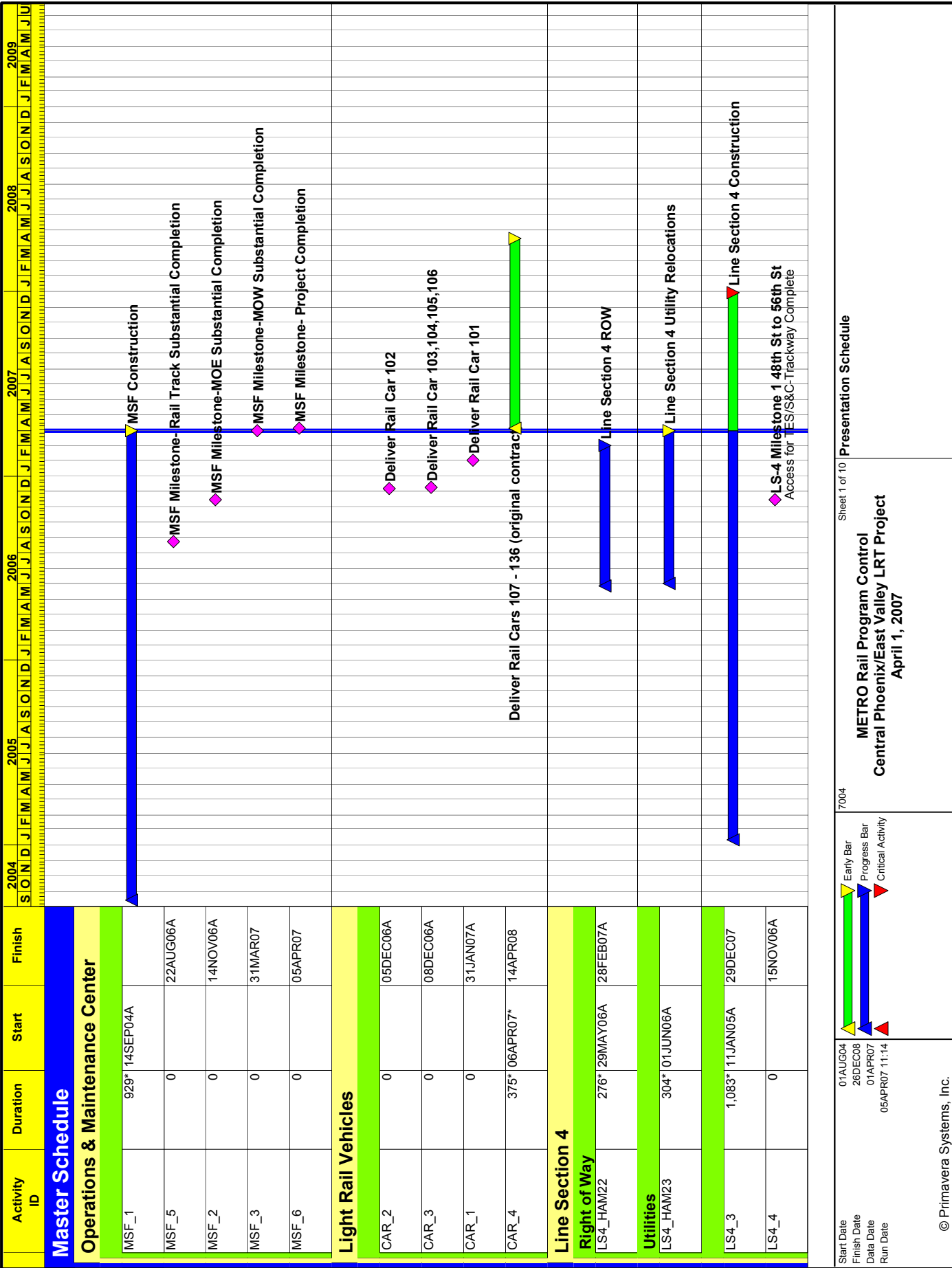
- METRO and consulting staffs are developing test plans and procedures related to track allocation, rail/wheel interface, clearance and LRV dynamic testing.
- METRO Operations and Maintenance Personnel (including contractors) and consulting staff have completed numerous walk-throughs of the test track. Similar activities are planned with the City of Phoenix Police Department to finalize the traffic management safety plan.
- METRO staff has commenced occupancy of the Operations and Maintenance Center (OMC).
- OMC Yard and Test Track Activation Schedule
  - A Clearance cart was produced by Mass Electric for dynamic clearance testing throughout the alignment.
  - Clearance testing in the OMC yard and test track with the clearance cart is complete.
  - LRV clearance testing and pantograph interface testing with an LRV being pulled by the Brandt is complete in the north and east yard.
  - The north and east yard has been energized and LRV 101 was moved through the yard under its own power.
  - The LRV No.101 and TPSS No.15 will continue to be tested and adjusted as necessary.
  - April 2, 2007 the test track is ready for live wire testing and will be conditionally accepted and we will begin LRV testing.

- Track Allocation meetings are being held every Wednesday at the OMC conference room.
- Track Access Training is ongoing every Monday at the OMC.

### **Construction Photographs**



Brandt pulling train on test track during  
dead wire pull



Sheet 1 of 10 Presentation Schedule

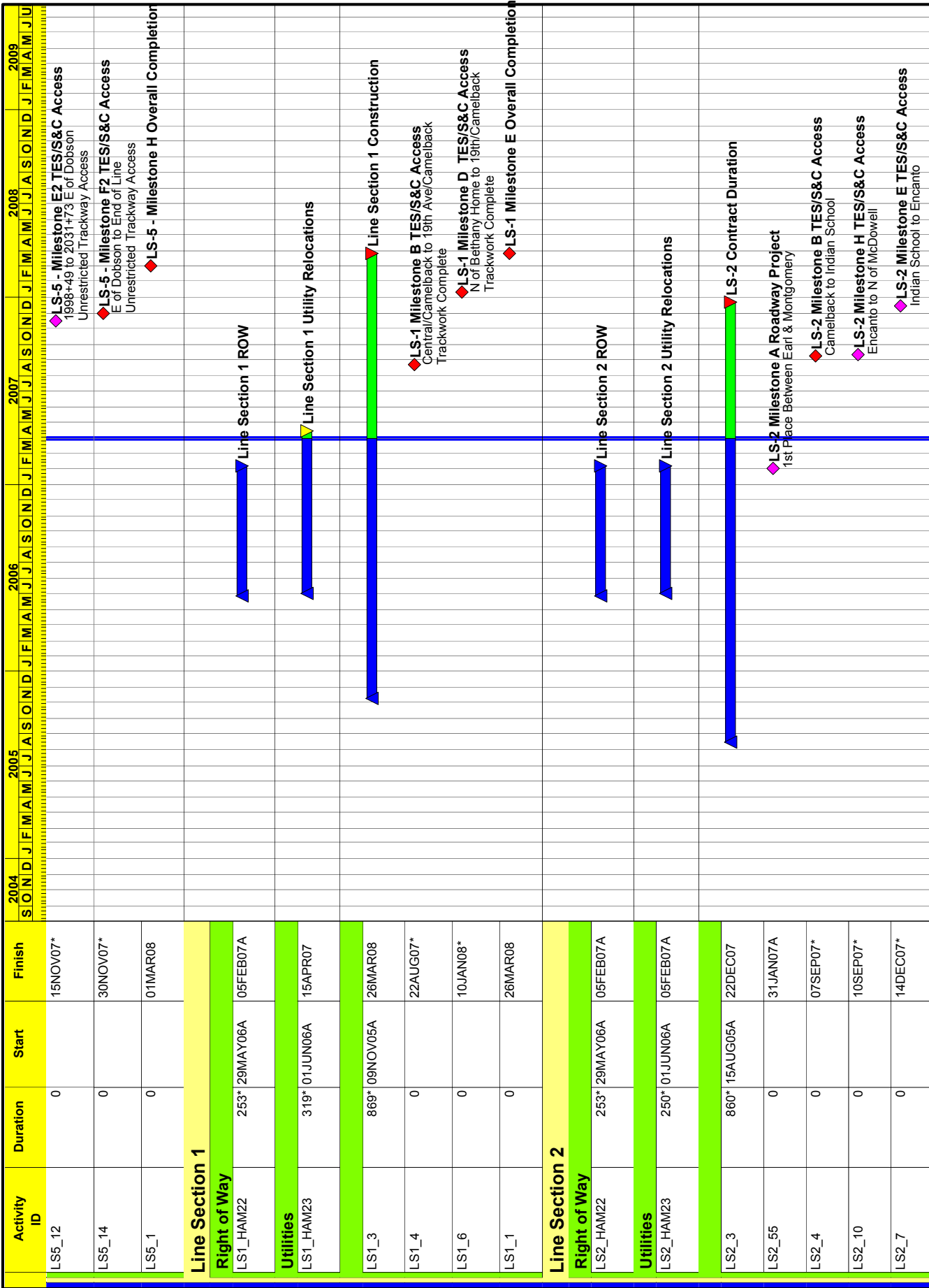
**METRO Rail Program Control**  
**Central Phoenix/East Valley LRT Project**  
**April 1, 2007**

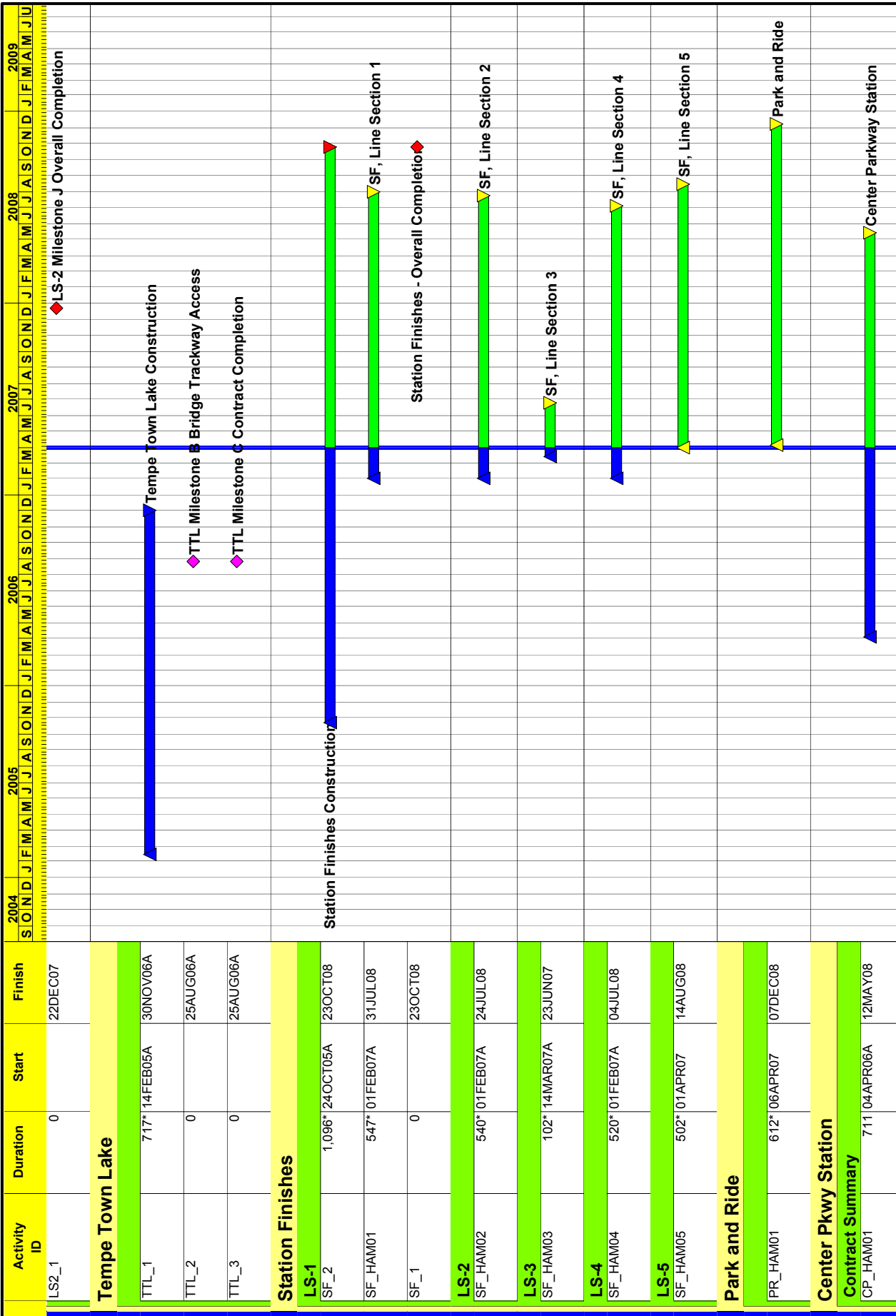
7004

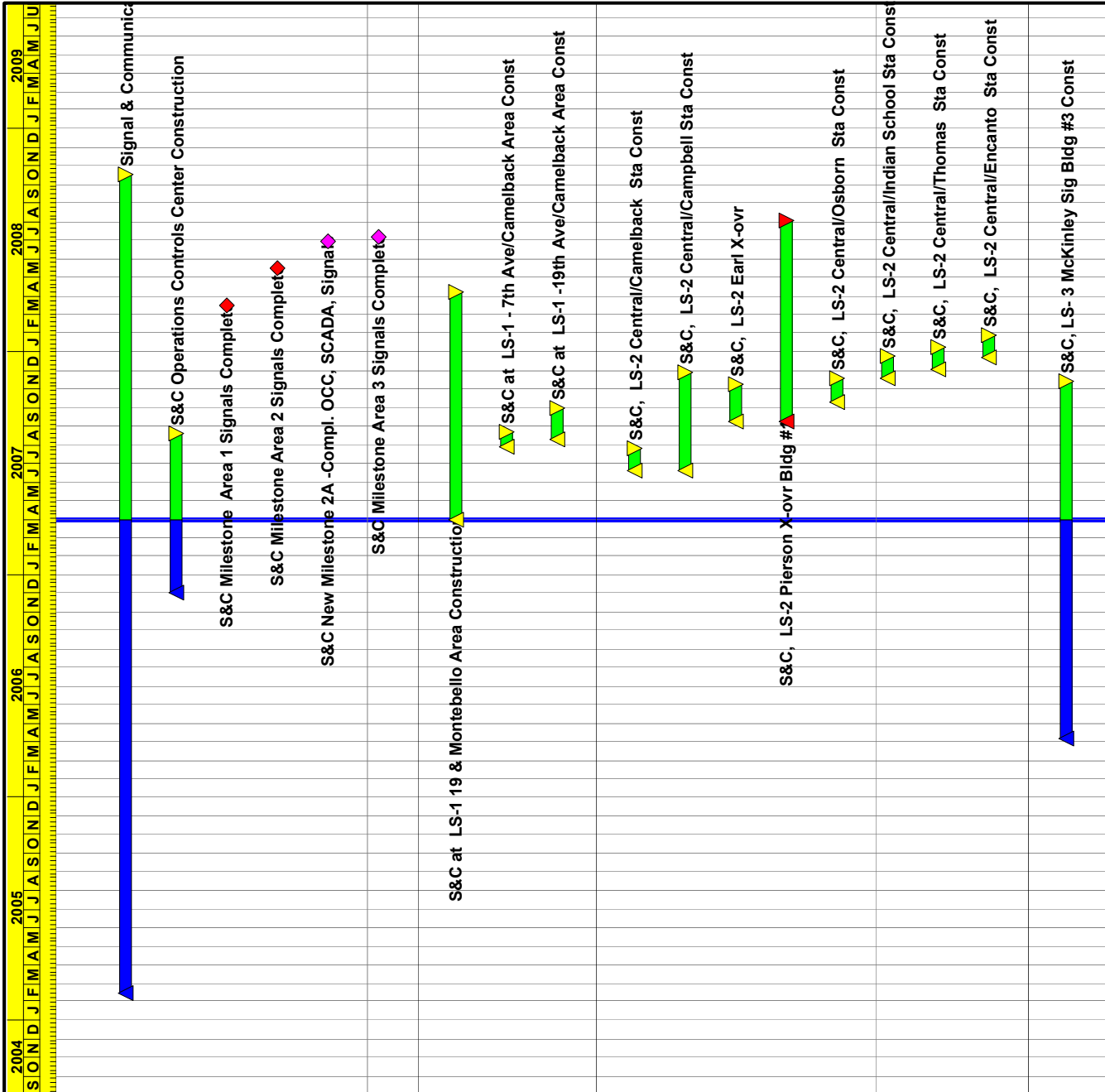
Start Date: 01/AUG/04  
 Finish Date: 26/DEC/08  
 Data Date: 01/APR/07  
 Run Date: 05/APR/07 11:14

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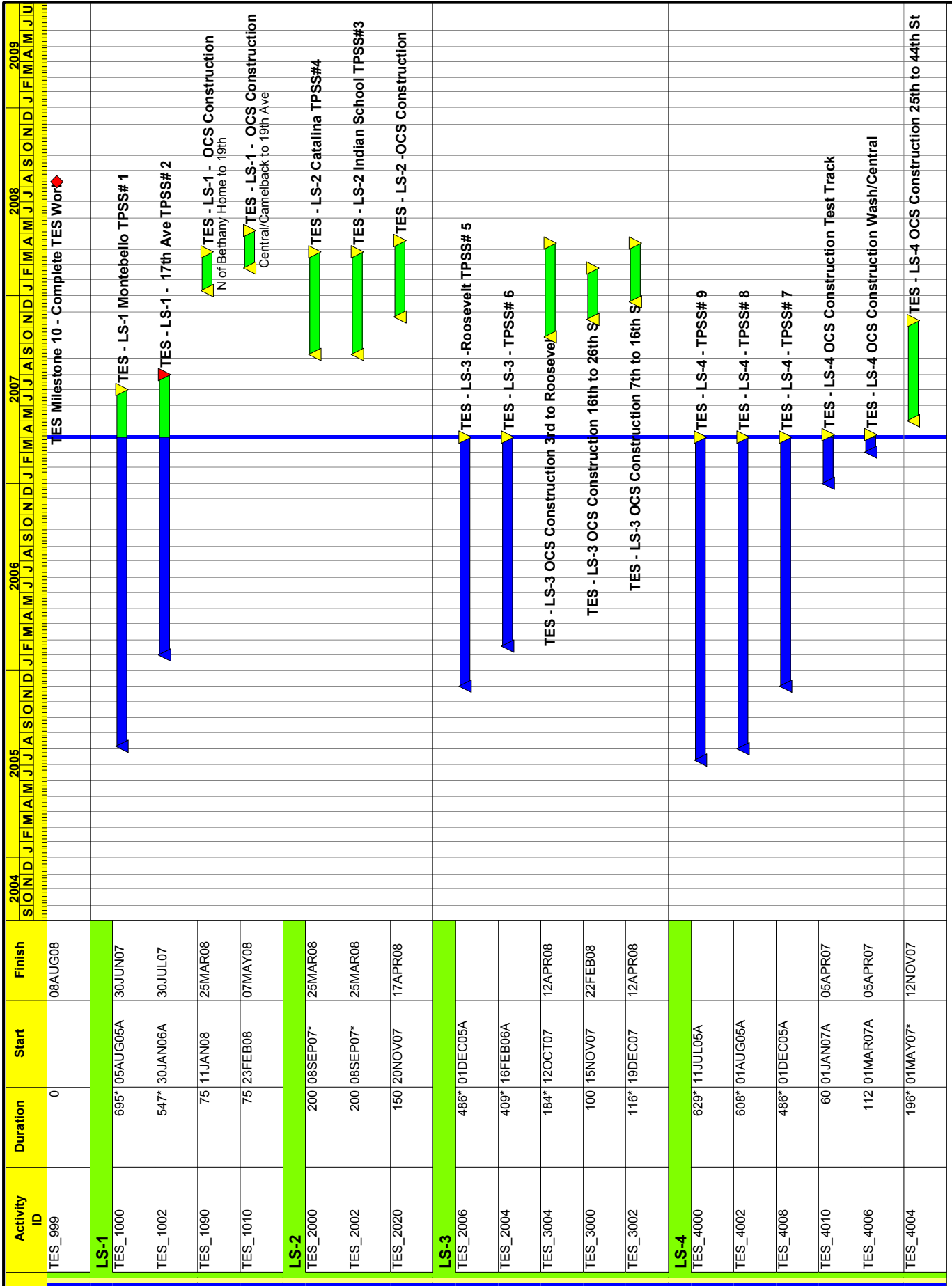




| Activity ID                        | Duration | Start    | Finish  |
|------------------------------------|----------|----------|---------|
| <b>Signal &amp; Communications</b> |          |          |         |
| <b>Contract Summary</b>            |          |          |         |
| SC_001                             | 1,341*   | 14FEB05A | 16OCT08 |
| SC_OCC1                            | 262*     | 01DEC06A | 19AUG07 |
| SC_992                             | 0        | 15MAR08* |         |
| SCM2B_2                            | 0        | 15MAY08* |         |
| SCM2A_2                            | 0        | 28JUN08* |         |
| SC_999                             | 0        | 06JUL08* |         |
| <b>LS-1</b>                        |          |          |         |
| SC_1001                            | 373*     | 01APR07  | 07APR08 |
| SC_1003                            | 25       | 28JUL07  | 21AUG07 |
| SC_1002                            | 50       | 11AUG07  | 29SEP07 |
| <b>LS-2</b>                        |          |          |         |
| SC_2102                            | 37       | 20JUN07  | 26JUL07 |
| SC_2003                            | 160      | 20JUN07  | 26NOV07 |
| SC_2002                            | 62       | 08SEP07  | 08NOV07 |
| SC_2001                            | 329      | 08SEP07  | 01AUG08 |
| SC_2005                            | 37       | 11OCT07  | 16NOV07 |
| SC_3004                            | 37       | 17NOV07  | 23DEC07 |
| SC_2100                            | 37       | 02DEC07  | 07JAN08 |
| SC_2006                            | 37       | 23DEC07  | 28JAN08 |
| <b>LS-3</b>                        |          |          |         |
| SC_3300                            | 586*     | 06APR06A | 12NOV07 |













## Acronyms

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



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



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



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