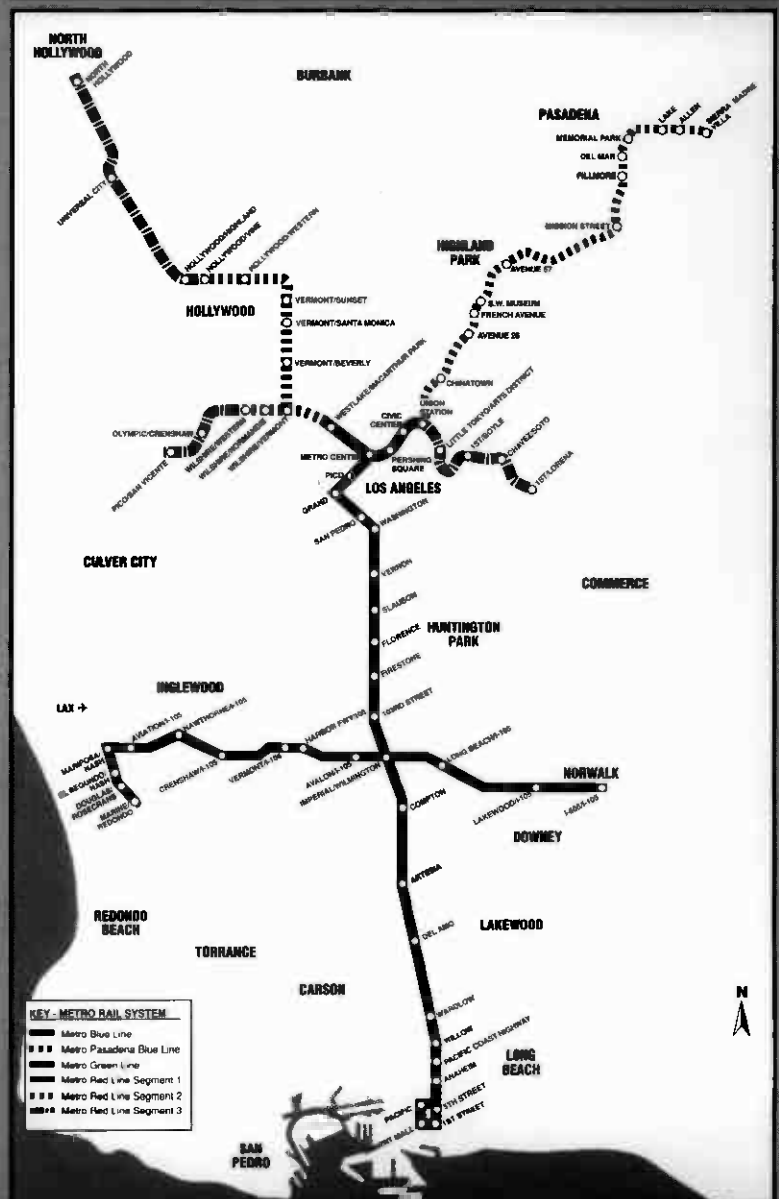


# MTA METRO CONSTRUCTION



## Executive Report Rail Program Status





## **RAIL PROGRAM STATUS SUMMARY**

**THE LOS ANGELES COUNTY  
METROPOLITAN TRANSPORTATION AUTHORITY  
METRO CONSTRUCTION DIVISION**

**SEPTEMBER 1996**



# **RAIL PROGRAM SUMMARY**



## METRO PASADENA BLUE LINE

## Cost Status

Current Budget \$803,868,000

- There were no changes to the Current Budget during the period.

## Schedule Status

Current Plan May 2001

	Design Progress	Construction Progress
Plan	100.0%	11.2%
Actual	80.3%	8.2%

- The construction variance is due to delays in finalizing work scope and delays in the start of final design.

## Safety Status

Project Rate

National Average

Lost Time Rate

0.0

4.9

Lost Work Days

0.0

148.1

- The project is incurring 17,000 work hours per month with no Lost Time Injuries.

## Areas of Concern

- Community concurrence with the Chinatown Station redesign.

## Monthly Highlights

- The MTA Board approved the third phase of final engineering.
- Community representatives were briefed on pending work scope changes.
- Began the review of CWO 40, estimated costs for final design, in preparation of final negotiations with EMC.

## METRO RED LINE SEGMENT 2

## Cost Status

Current Budget \$1,640,000

- There was no change to the Current Budget during the period.

## Schedule Status

	Design Progress	Construction Progress
Plan	89.8%	86.0%
Actual	92.8%	78.3%

Wilshire Corridor - Revenue operations - July 13, 1996

Vermont/Hollywood - Current Plan Dec 1998

- Vermont/Hollywood Corridor is behind schedule due to tunnel delays under Hollywood Blvd.

## Safety Status

Project Rate

National Average

Lost Time Rate

2.6

4.9

Lost Work Days

70.7

148.1

- Sixteen contracts were completed with no Lost Time Injuries.

## Areas of Concern

- Installation of piles and excavation of B251E Sink Hole Shaft and B251F Hollywood/Vine Access Shaft are delaying trackwork access.

## Monthly Highlights

- Excavation of the sinkhole and the Hollywood/Vine access shaft was completed.
- Trackwork mobilization continued toward the turnover of the trackway area to the B610 Trackwork Installation contractor.
- Efforts to mitigate the Vermont/Hollywood Corridor schedule continued.



## METRO RED LINE SEGMENT 3 NORTH HOLLYWOOD EXTENSION

**Cost Status**

Current Budget \$1,313,848,000

- The were no changes to the Current Budget during the period.

**Schedule Status**

Current Plan December 2000

**Design Progress**

Plan	N/A
Actual	91.6%

**Construction Progress**

58.2%
29.3%

- Contract C0311 Line Section from Universal City Station to Station 630+00 continues to be behind schedule. Efforts to mitigate these delays continue.

**Safety Status****Project Rate****National Average**

Lost Time Rate

0.3

4.9

Lost Work Days

13.5

148.1

- The project is incurring 140,000 work hours per month. One Lost Time Injury occurred in during August.

**Areas of Concern**

- Implementation of the MTA Board Motion to adopt community mitigation measures and construction delays may impact the overall project schedule and forecast.

**Monthly Highlights**

- A revised Baseline Design Schedule was finalized and submitted to the MTA.
- The interface and phased turnover plan from C0331 to C0351 was approved.
- The project Systems Schedule is under review to mitigate forecasted delays.

## METRO RED LINE SEGMENT 3 MID-CITY EXTENSION

**Cost Status**

Current Budget \$490,663,000

- The Current Budget value is contingent on the preferred alternative selected.

**Schedule Status**

Current Plan TBD

**Design Progress**

Plan	0%
Actual	0%

**Construction Progress**

0%
0%

**Safety Status****Project Rate****National Average**

Lost Time Rate

N/A

4.9

Lost Work Days

N/A

148.1

- No Construction Safety activity for this period.

**Areas of Concern**

- The overall schedule for final design and construction is on hold pending the MTA Board determination of the preferred alternative.

**Monthly Highlights**

- The EMC submitted a Final Engineering Feasibility Study to the MTA on September 5, 1996.
- Schedules and ROM cost estimates were prepared for the four alignment/configuration alternatives.
- Four project implementation scenarios were prepared for the Venice Boulevard alignment/subway alternative. Cashflow projections are under review.



## METRO RED SEGMENT 3 EAST SIDE EXTENSION

## Cost Status

Current Budget \$979,601,000

- There were no changes to the Current Budget during the period.

## Schedule Status

Current Plan November 2002

## Design Progress

Plan 40.6%

Actual 38.6%

## Construction Progress

0.0%

0.0%

- The plan reflects the Final Design Schedule and Project Implementation Plan (PIP).

## Safety Status

Lost Time Rate

Lost Work Days

## Project Rate

N/A

N/A

## National Average

4.9

148.1

- No Construction Safety activity for this period.

## Areas of Concern

- Additional costs for the tunnel boring machines and tunnel lining technologies increased the forecast at project completion to \$46.5 million over the current budget.

## Monthly Highlights

- The final design submittal for C0538 Phase 1 Demolition was issued on September 18, 1996.
- A Tunnel Review Board Meeting was held at the EMC on September 24-25, 1996.
- The MTA Fire/Life Safety Committee agreed to delete all under platform exhaust fans (UPE).

## VEHICLE ACQUISITION PROJECT

## Cost Status

Current Budget \$257,597,000

- There were no changes to the Current Budget during the period.

## Schedule Status

Schedule Car Delivery

1st Car March 1998

52nd Car June 1999

## Design Progress

90%

## Fabrication Progress

25%

- The schedule from the contractor reflects 16.5 months delay in first car deliveries due to design and manufacturing problems.

## Areas of Concern

- Lack of progress in the design of the Vehicle Communications Systems.

## Monthly Highlights

- The second carshell was completed and prepared for compression testing.
- The MTA sponsored a Green Line Partnering Meeting to help identify and resolve P2000 vehicle design, delivery and testing issues.
- Siemens is revising the testing subschedule to improve vehicle production and delivery.



METROPOLITAN TRANSPORTATION AUTHORITY  
PROJECT COST REPORT - TOTAL RAIL PROGRAM  
SUMMARY BY COST ELEMENT  
(IN THOUSANDS)

PROJECT: TOTAL RAIL PROGRAM

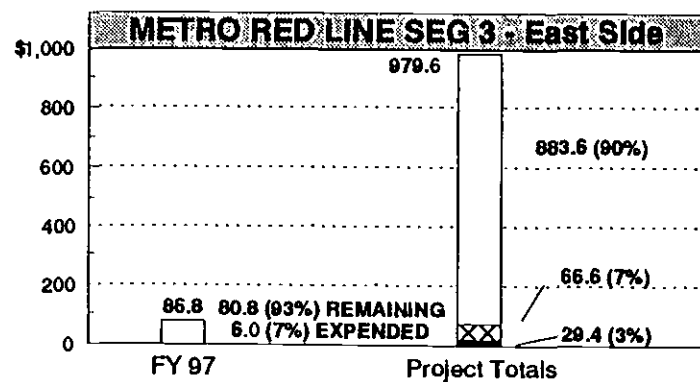
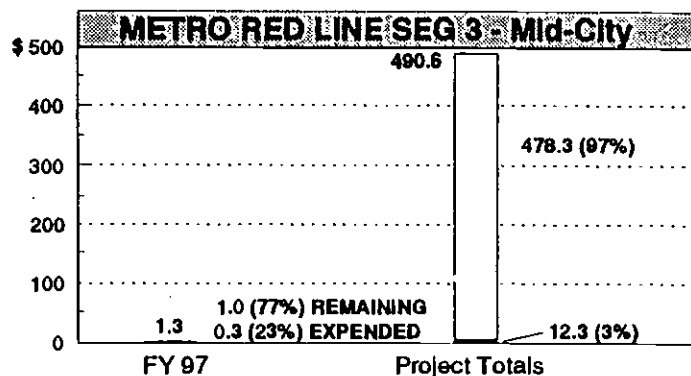
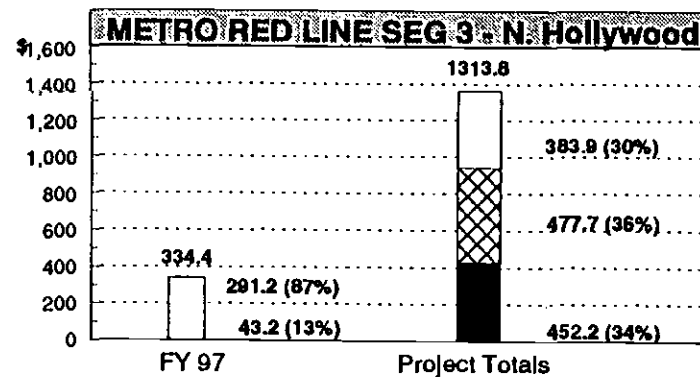
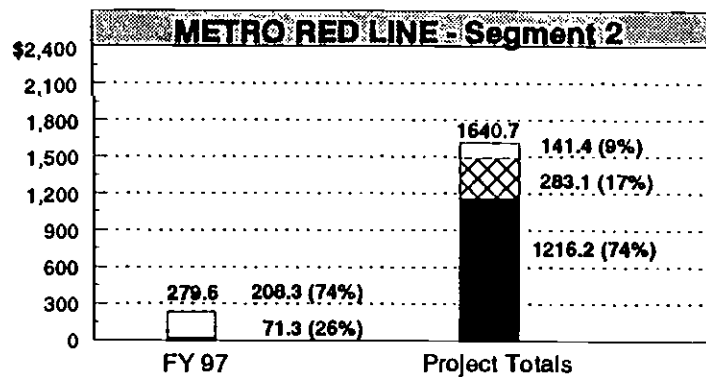
STATUS DATE: 9/27/96

ELEMENT DESCRIPTION	BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST (7)	VARIANCE (9-2) (8)
	ORIGINAL (1)	CURRENT (2)	PERIOD (3)	TO DATE (4)	PERIOD (5)	TO DATE (6)		
T CONSTRUCTION	5,153,507	5,343,640	2,096	3,707,674	17,305	2,813,119	5,010,555	1,054
S PROFESSIONAL SERVICES	1,685,529	2,101,723	16,591	1,615,001	5,450	1,419,904	2,056,976	53,383
R REAL ESTATE	480,002	537,113	778	402,702	268	400,295	485,863	2,053
F UTILITY/AGENCY FORCE ACCOUNTS	146,279	160,748	1,020	137,489	521	109,689	158,165	2,504
D SPECIAL PROGRAMS	11,045	16,747	0	5,650	11	4,827	15,701	(1,046)
C CONTINGENCY	560,120	340,634	0	0	0	0	273,593	(67,037)
A PROJECT REVENUE	(18,115)	(37,411)	(1)	(2,824)	0	(11,310)	(33,161)	4,251
ORIGINAL SCOPE SUBTOTAL	8,018,367	8,463,194	20,484	5,865,692	23,555	4,736,524	7,967,692	(4,838)

NEW REQUIREMENTS ELEMENT DESCRIPTION	BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST (9)	VARIANCE (9-2) (10)
	ORIGINAL (1)	CURRENT (2)	PERIOD (3)	TO DATE (4)	PERIOD (7)	TO DATE (8)		
T CONSTRUCTION	0	49,404	(25)	43,095	494	22,884	60,138	10,734
S PROFESSIONAL SERVICES	0	17,484	0	16,462	0	9,434	17,657	173
R REAL ESTATE	0	0	0	0	0	37	0	0
F UTILITY/AGENCY FORCE ACCOUNTS	0	0	0	0	0	0	0	0
D SPECIAL PROGRAMS	0	20	371	391	15	35	3,142	3,122
C CONTINGENCY	0	1,348	0	0	0	0	922	(425)
A PROJECT REVENUE	0	0	0	0	0	0	(11,462)	(11,462)
NEW REQ. SUBTOTAL	0	68,256	346	59,948	509	32,390	70,397	2,142
PROJECT GRAND TOTAL	8,018,367	8,531,450	20,830	5,925,640	24,064	4,768,914	8,038,089	(2,696)



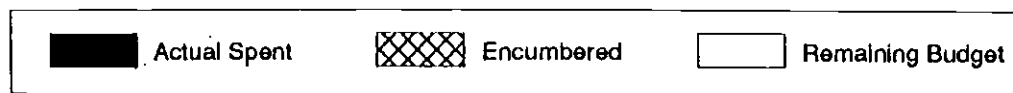
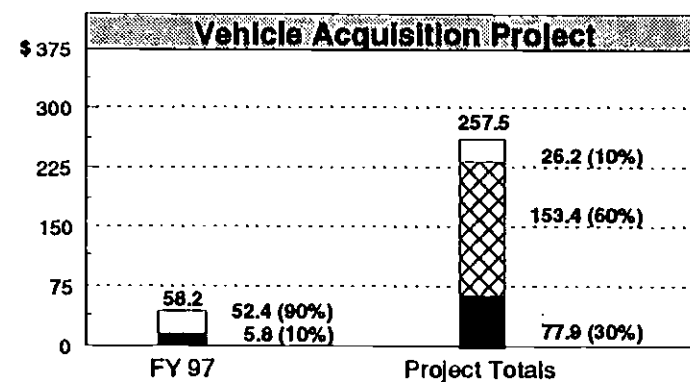
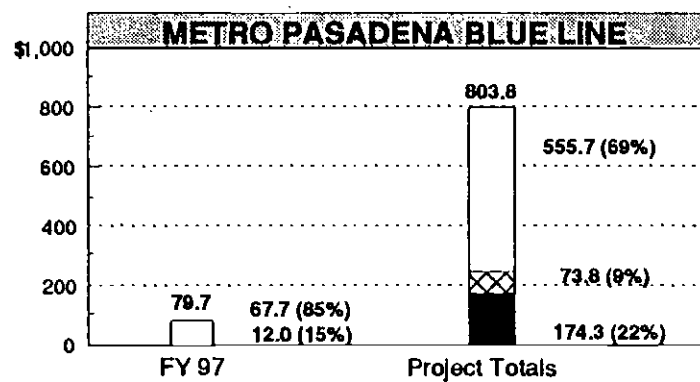
**BUDGET STATUS - September 27, 1996**  
(in \$ Millions)



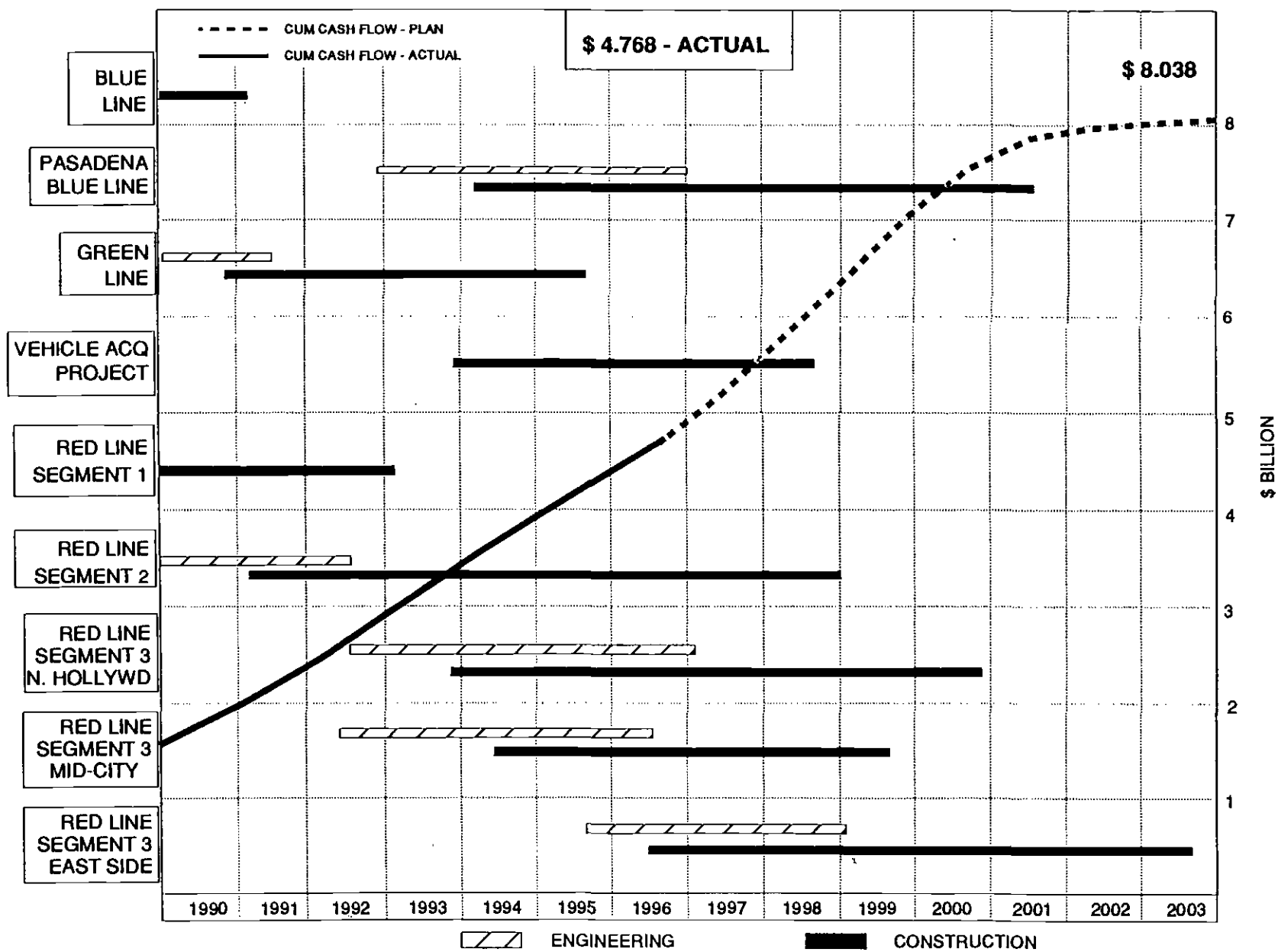
Actual Spent
  Encumbered
  Remaining Budget



**BUDGET STATUS - September 27, 1996**  
(in \$ Millions)









**METROPOLITAN TRANSPORTATION AUTHORITY  
FUNDING SOURCES (IN MILLIONS)**

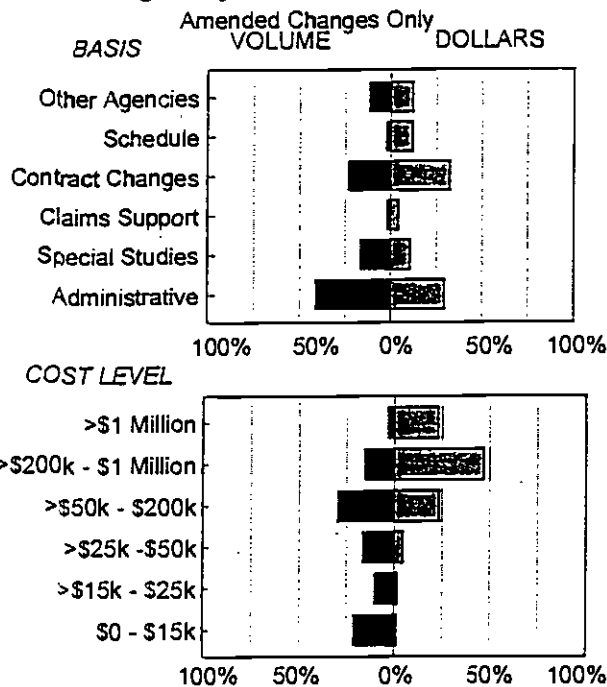
SEPTEMBER 1996

	METRO BLUE LINE*		PASADENA BLUE LINE		METRO GREEN LINE		METRO RED SEGMENT 1**		METRO RED SEGMENT 2		METRO RED LINE SEG 3 - NH		METRO RED LINE SEG 3 - MC		METRO RED LINE SEG 3 - ES		VEHICLE ACQUIS PROJECT		TOTAL PROGRAM	
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%
<b>ORIGINAL SCOPE:</b>																				
FTA-SECTION 3							605.3	42	667.0	40	681.0	52	242.5	49	492.9	50			2688.7	32
FTA - OTHER																	11.9	4	11.9	0
ISTEA - FED SURFACE TRANSIT PROG									52.1	3	50.0	4			25.0	2	84.0	32	211.1	3
FED-ISTEA RSTP/CMAQ											39.9	3	40.4	8	86.1	9	6.1	3	172.5	2
FTA-SECTION 3							90.6	6											90.6	1
STATE			387.8	48	106.4	15	210.3	15	133.0	8	65.0	5	40.0	8	65.0	7	33.5	13	1041.0	12
STATE TSM MATCH											3.2	0	7.2	2	11.1	1			21.5	0
SB 1995 TRUST FUND											75.0	6							75.0	1
PROPOSITION A	877.2	100	202.6	25	205.1	28	179.5	12	501.9	31									1966.3	23
PROPOSITION C			213.5	27	400.3	56					192.8	15	151.6	32	299.1	31	122.0	48	1379.3	16
PROP C (AMERICAN DISABILITY ACT)					6.0	1													6.0	0
CITY OF LOS ANGELES							34.0	2	157.5	10	190.7	14	9.0	1	0.3	0			391.5	5
BENEFIT ASSESSMENT							130.3	9	58.0	4	13.5	1							201.8	2
COST OVERRUN ACCOUNT							200.1	14											200.1	2
<b>TOTAL</b>	<b>877.2</b>	<b>100</b>	<b>803.9</b>	<b>100</b>	<b>717.8</b>	<b>100</b>	<b>1450.1</b>	<b>100</b>	<b>1569.5</b>	<b>96</b>	<b>1311.1</b>	<b>100</b>	<b>490.7</b>	<b>100</b>	<b>979.5</b>	<b>100</b>	<b>257.5</b>	<b>100</b>	<b>8457.3</b>	<b>99</b>
<b>OTHER LOCALLY FUNDED ACTIVITIES:</b>																				
PROP C (TRANSIT ENHANCEMENTS)									68.7	4	2.7	0							71.4	1
FED ISTEA RSTP/CMAQ									2.5	0									2.5	0
<b>TOTAL</b>									<b>71.2</b>	<b>4</b>	<b>2.7</b>	<b>0</b>							<b>73.9</b>	<b>1</b>

Note: Data reflects Current Budget



### Professional Service Contracts Changes by Basis and Cost Level



### CHANGE BASIS ANALYSIS

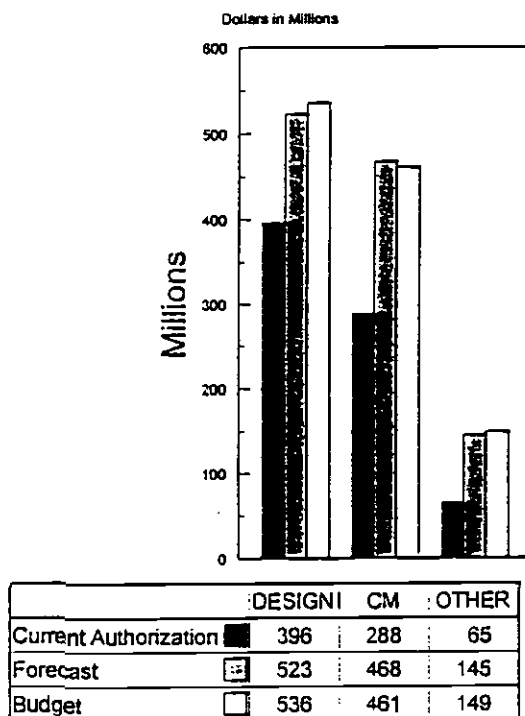
Administrative changes account for approximately 42% or 304 of the 729 Consultant Change Notices overall. This equals 29% of the overall change cost of amended changes.

### CHANGE COST LEVEL ANALYSIS

As shown on the Cost Level Analysis chart opposite, the MTA Board approves 69.7% of all change costs associated with the Rail Project or \$69M of a total change cost of \$99M. This equals 20% of the total change volume or 148 of 729 total changes.

*Note: Data for Basis and Cost charts includes only MTA Board amended changes. Prior months reports also included staff approved changes not amended by the MTA Board.*

### Professional Services Contracts Consultant Cost Status



### PROFESSIONAL SERVICES COST ANALYSIS

Categories represent all professional services contracts, not individual contracts (i.e. "design" includes all line 11 contracts not just EMC).

The forecast cost for design and other consultant contracts is below the current budget. While the forecast for construction management contracts continues to slightly exceed the budget amount, due to delays in project activities on the Metro Red Line Eastside Extension and Pasadena Blue Line

#### Data Source:

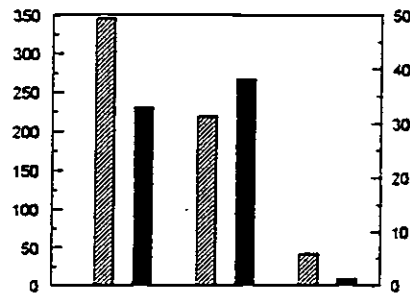
CMS: Consultant Contract Authorization, Forecast and Budget Values.



### Professional Service Contracts Amendment History

Period to Total Comparison  
Volume

\$ In Millions

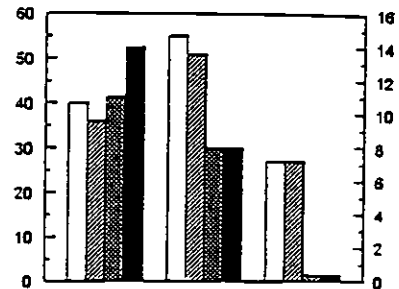


	EMC	CM	OTHER
# This Period	0.0	0.0	0.0
# Previous	345.0	220.0	42.0
\$ This Period	0.0	0.0	0.0
\$ Previous	33.0	38.3	1.3

### All - Professional Service Contracts Pending Consultant Changes

Period to Period Comparison  
Volume

\$ In Millions



	EMC	CM	OTHER
# This Period	40.0	55.0	27.0
# Previous	36.0	51.0	27.0
\$ This Period	11.0	8.0	0.4
\$ Previous	14.0	8.0	0.4

## CONSULTANT CHANGE NOTICE ANALYSIS

Six new Requests for Change (RFC) were received during the period with an estimated value of \$283 thousand.

Fourteen new Consultant Change Notices (CCN's) were assigned during the period with an estimated value of \$1.2 million.

Six CCN's were rejected / cancelled during the period.



Cost Performance Relative to Corporate Goals  
(IN THOUSANDS)

SEPTEMBER 1996

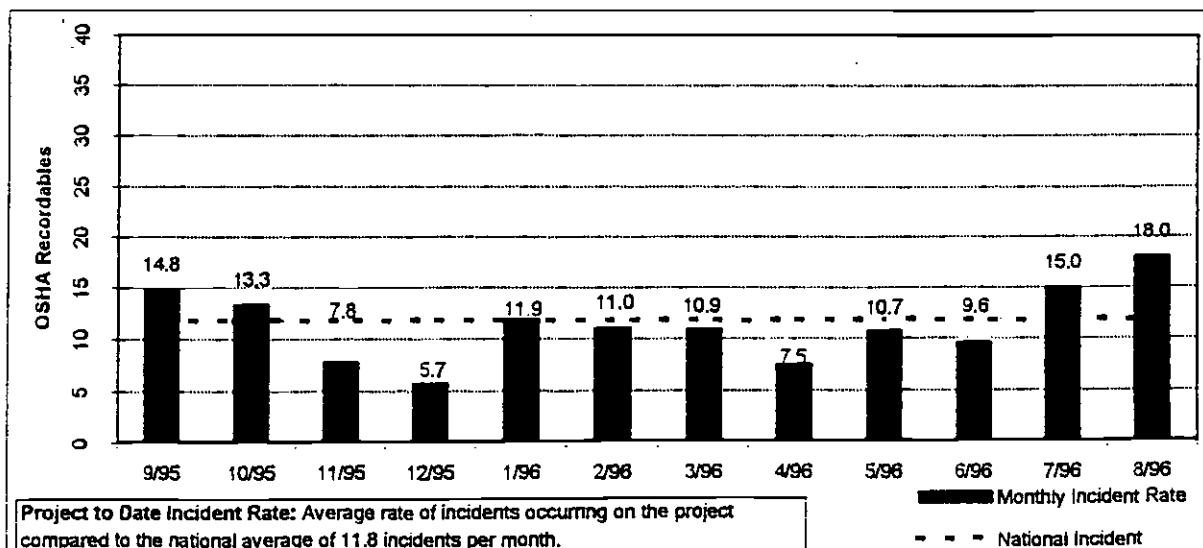
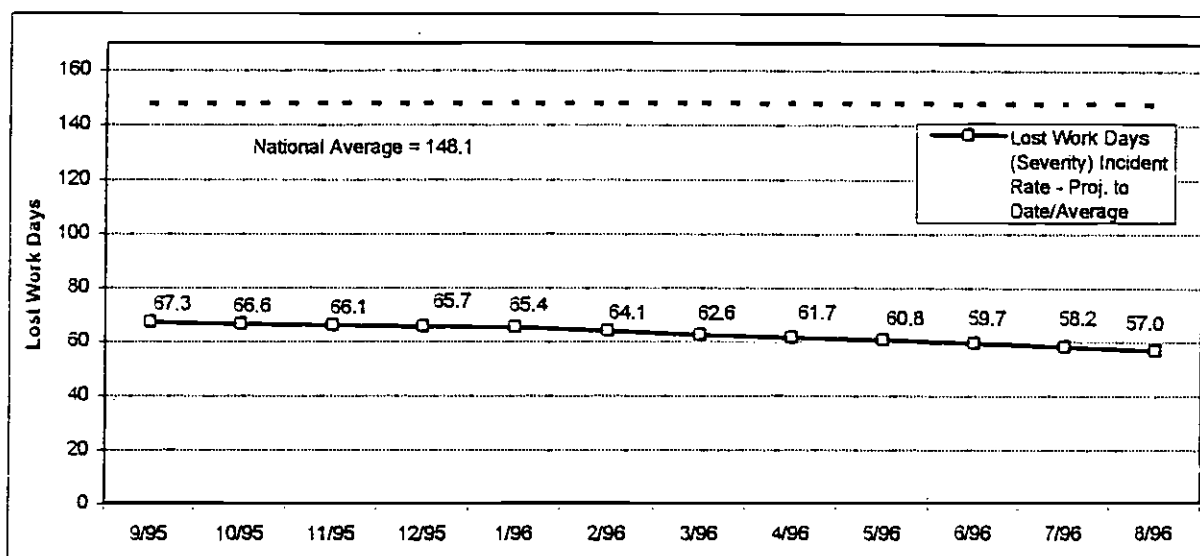
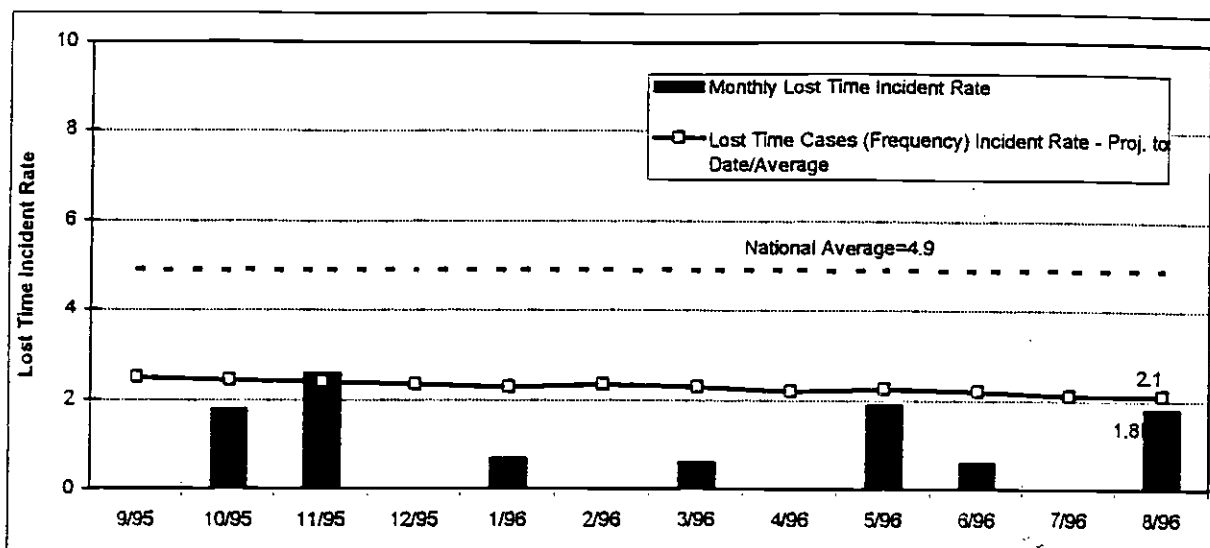
	METRO BLUE LINE		METRO PASADENA BLUE LINE		METRO GREEN LINE		METRO RED LINE SEGMENT 1		METRO RED LINE SEGMENT 2		METRO RED LINE SEGMENT 3 NH		METRO RED LINE SEGMENT 3 MC		METRO RED LINE SEGMENT 3 ES		VEHICLE ACQUISITION PROJECT		TOTAL PROGRAM		CORP GOAL
	DOLLARS	PERCENT	DOLLARS	PERCENT	DOLLARS	PERCENT	DOLLARS	PERCENT	DOLLARS	PERCENT	DOLLARS	PERCENT	DOLLARS	PERCENT	DOLLARS	PERCENT	DOLLARS	PERCENT	DOLLARS	PERCENT	
CONSTRUCTION	657,487	74.95%	448,488	55.71%	477,238	68.49%	812,270	56.02%	1,141,867	69.59%	832,795	63.49%	0	0	684,309	66.17%	180,644	89.72%	5,235,086	65.13%	
REAL ESTATE	55,592	8.34%	59,918	7.44%	26,047	3.63%	140,000	9.66%	87,773	5.35%	89,078	6.79%	0	0	27,459	2.66%	0	0.00%	485,863	6.04%	
PROFESSIONAL SERVICES:																					
ENGINEERING/DES	60,587	7.93%	119,401	14.83%	83,298	11.60%	221,659	15.29%	165,514	10.09%	87,121	6.64%	0	0	101,488	9.81%	1,700	0.84%	849,786	10.57%	
CONSTR MGMT.	91,642	10.45%	66,854	8.30%	78,213	10.90%	116,429	8.03%	164,563	10.03%	115,919	8.84%	0	0	84,983	8.22%	0	0.00%	718,803	8.94%	
STAFF	17,655	2.01%	46,820	5.82%	24,179	3.37%	95,558	6.59%	55,748	3.40%	59,588	4.54%	0	0	37,585	3.63%	3,840	1.91%	340,954	4.24%	4%
OTHER	14,222	1.62%	22,078	2.74%	17,337	2.42%	32,871	2.25%	22,784	1.39%	41,552	3.17%	0	0	17,358	1.68%	9,237	4.59%	177,238	2.20%	
SUBTOTAL	183,108	22.01%	255,150	31.69%	203,025	28.28%	466,317	32.16%	408,610	24.90%	304,180	23.10%	0	0	241,394	23.34%	14,777	7.34%	2,086,559	25.96%	20%
CONTINGENCY	983	0.11%	42,757	5.31%	12,757	1.78%	31,432	2.17%	3,341	0.20%	97,046	7.40%	0	0	80,989	7.83%	5,930	2.95%	275,195	3.42%	
PROJECT REVENUE	(29,877)	-3.41%	(1,211)	-0.15%	(1,253)	-0.18%	0	0.00%	(810)	-0.05%	(11,462)	-0.87%	0	0	0	0.00%	0	0.00%	(44,623)	-0.56%	
GRAND TOTAL	677,271	100.00%	805,100	100.00%	717,802	100.00%	1,450,019	100.00%	1,640,781	100.00%	1,311,635	100.00%	0	0	1,034,131	100.00%	201,351	100.00%	8,038,080	100.00%	

\*METRO RED LINE SEGMENT 3 MID-CITY FORECAST NOT AVAILABLE.

NOTE: Data reflects Current Forecast.



## Rail Program Status Summary





# **METRO PASADENA BLUE LINE**

## **EXECUTIVE SUMMARY**



# METRO PASADENA BLUE LINE

## Summary Status Report

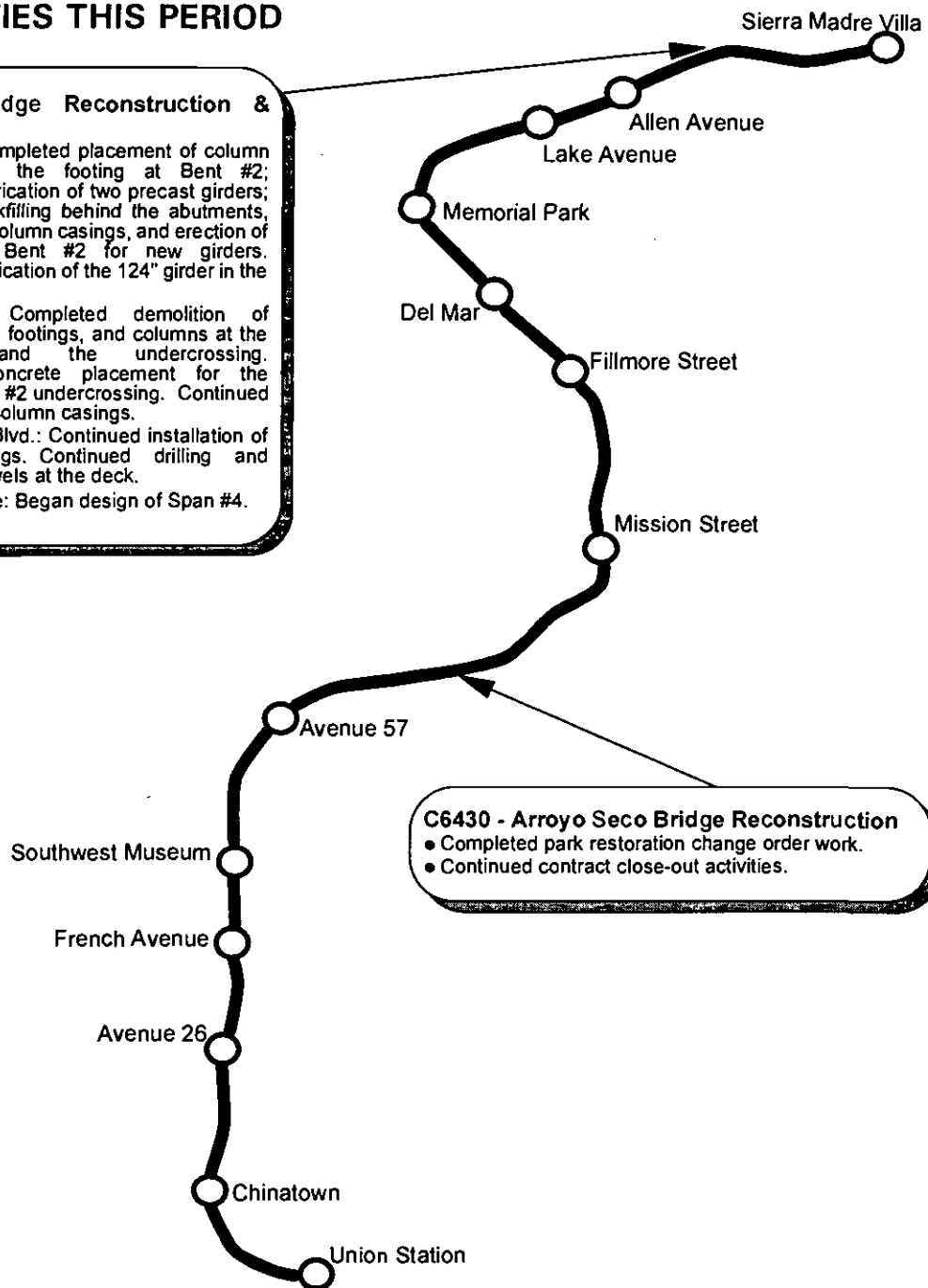
Period Ending - September 27, 1996



### MAJOR ACTIVITIES THIS PERIOD

#### C6435 - Bridge Reconstruction & Retrofit

- Lake Ave.: Completed placement of column concrete and the footing at Bent #2; completed fabrication of two precast girders; continued backfilling behind the abutments, installation of column casings, and erection of falsework at Bent #2 for new girders. Continued fabrication of the 124" girder in the yard area.
- Allen Ave.: Completed demolition of superstructure, footings, and columns at the underpass and the undercrossing. Completed concrete placement for the column at Bent #2 undercrossing. Continued installation of column casings.
- Sierra Madre Blvd.: Continued installation of column casings. Continued drilling and bonding of dowels at the deck.
- Lacy St. Bridge: Began design of Span #4.



#### C6430 - Arroyo Seco Bridge Reconstruction

- Completed park restoration change order work.
- Continued contract close-out activities.

### SYSTEMWIDE ACTIVITIES

- Obtained MTA Board approval for the third phase of final engineering based on contract criticality (CWO 41 for C6390, C6400, C6460, C6475, C6480, C6500, C6510, C6520).
- Completed manufacturing of concrete ties at Contract P2100, Precast Concrete Ties.
- Continued interface with community representatives regarding work scope changes.
- Began review of CWO 40 estimated costs for final design of C6420, C6440, C6450, H0070, H0090, and Ave. 57/Southwest Museum Stations in preparation for final negotiations with EMC.



# METRO PASADENA BLUE LINE

## Summary Status Report

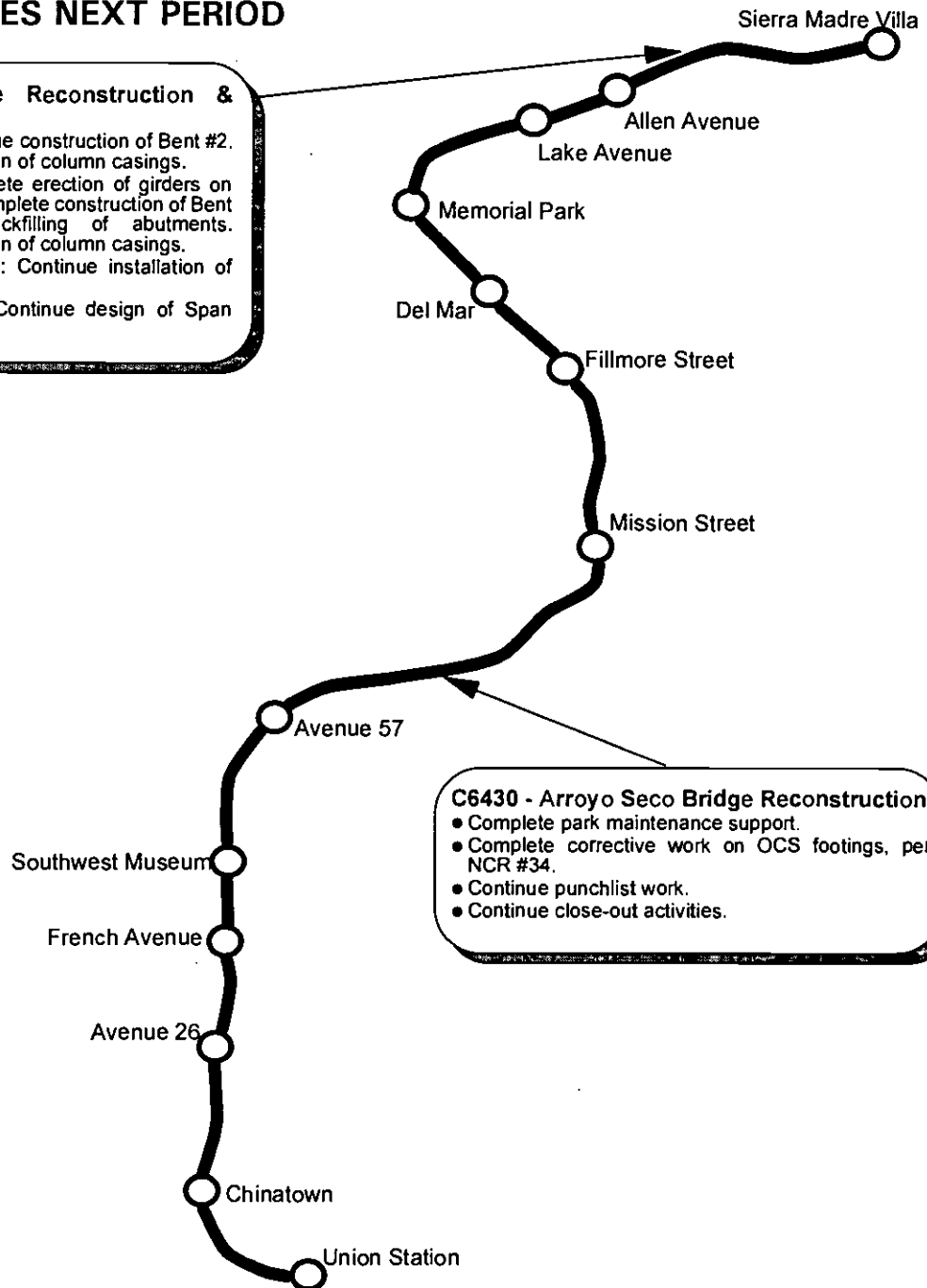
Period Ending - September 27, 1996



### MAJOR ACTIVITIES NEXT PERIOD

#### C6435 - Bridge Reconstruction & Retrofit

- Allen Ave.: Continue construction of Bent #2. Continue installation of column casings.
- Lake Ave.: Complete erection of girders on the west side. Complete construction of Bent #2. Complete backfilling of abutments. Continue installation of column casings.
- Sierra Madre Ave.: Continue installation of column casings.
- Lacy St. Bridge: Continue design of Span #4.



#### C6430 - Arroyo Seco Bridge Reconstruction

- Complete park maintenance support.
- Complete corrective work on OCS footings, per NCR #34.
- Continue punchlist work.
- Continue close-out activities.

### SYSTEMWIDE ACTIVITIES

- Complete final PIP negotiations for CWO 40.
- Complete final delivery of concrete ties at Contract P2100, Precast Concrete Ties.
- Complete a Letter Contract for environmental consultant review and recommendations relating to Supplemental Environmental Impact Report (SEIR) requirements.
- Continue to support cash flow and funding special studies.
- Begin final design on approved engineering packages.
- Begin review of CWO 41 estimated costs for final design in preparation for final negotiations with EMC.



# METRO PASADENA BLUE LINE

## Summary Status Report

### Period Ending - September 27, 1996



#### BUDGET

	Amount (\$ in mil)	Change from Last Month (\$ in mil)
Original Budget	841	None
Approved Budget	804	None
Current Forecast	804	None
Commitments	247	+1
Expenditures	174	+2

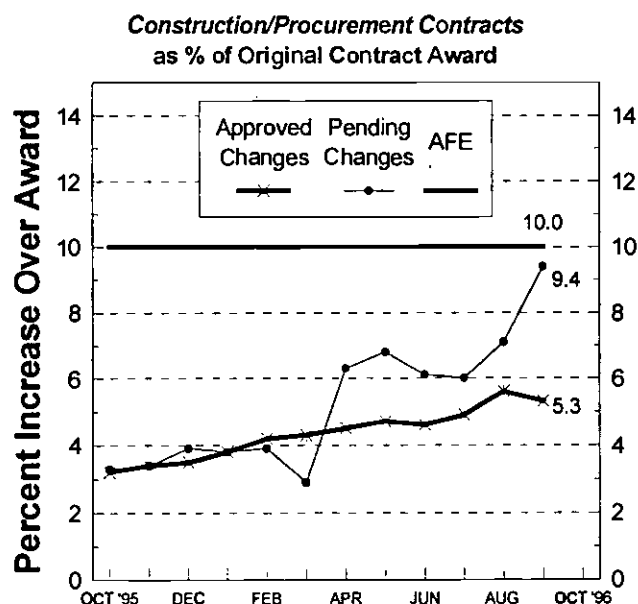
#### ADDITIONAL LOCALLY FUNDED ACTIVITIES

	Amount (\$ in mil)	Change from Last Month (\$ in mil)
Original Budget	0	None
Approved Budget	0	None
Current Forecast	1	None
Commitments	1	None
Expenditures	0	None

#### BUDGET ANALYSIS

- The Original Budget of \$841.0M was formally adopted in January 1993 and was based on a November 1997 ROD.
- The Approved Budget and Current Forecast are based on cost reduction scope changes and a May 2001 ROD adopted in February 1996.
- There is no change to the overall budget or forecast during the period.
- The increase in Commitments during the period is primarily for Utility/Agency Force Accounts for the City of Los Angeles.
- The increase in Expenditures for September is primarily for procurement (Contract P2100, Precast Concrete Ties), MTA Administration, and professional services contracts (engineering and construction management).

#### CONTRACT CHANGES



#### CONTRACT CHANGE ANALYSIS

The percent of pending changes shows an increase this period because of changes for deferred work at Contract C6435 (Reconstruction and Retrofit of Concrete & Steel Bridges) and for settlement of the pea gravel claim. A slight decrease in approved changes is a result of a credit change to delete the communication and signal duct scope of work at Allen Ave. (Contract C6435).

The significant approved and pending changes include:

- C6410 (L.A. River Bridge) - CO 8.00, Differing Site Conditions at Bents 5 & 6; CO 14.00, Adjust Bid Quantities.
- C6430 (Arroyo Seco Bridge Reconstr.) - CO 4.00, Adjust Bid Quantities; CN 52.02, Cost for Operating Engineer's Strike, credit CN 65.00, Delete 9-Way Ductbank & Related Electrical.
- C6435 (Reconstruction & Retrofit of Concrete & Steel Bridges) - CN 25.00, Lacy St. Bridge Repair; credit CN 45.00, Delete Madre St. Bridge work.



# METRO PASADENA BLUE LINE

## Summary Status Report

### Period Ending - September 27, 1996



#### SCHEDULE

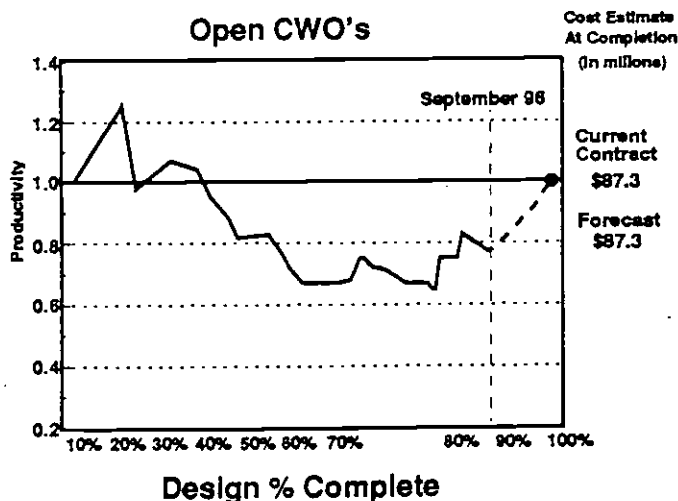
		Change from Last Month
Current ROD	May 2001	None
Design Progress*	80.3%	None
Constr. Progress	8.2%	+0.1
Critical Path Float (Calendar Days)	-147 days	None

\*Based on original design work scope; design will be rebaselined pending an evaluation of design status, detailed definition of new work scope & preparation of an execution plan.

#### SCHEDULE ANALYSIS

- The forecast ROD is May 2001. Delays in the schedule due primarily to finalizing scope definition, obtaining community concurrence for cost reduction items, and starting final design have resulted in negative float.
- The negative float is being partially mitigated through implementation of a phased engineering approval process, whereby packages are being submitted to the Board based on criticality. This is expected to mitigate one month of the potential five month delay.
- During September, the third phase was approved by the Board; remaining phases will be submitted in October and December. Final design on the most critical packages will begin in October.
- The Project Team is evaluating additional measures to mitigate the balance of the negative float; continued delays to the start of engineering production may make full mitigation impossible.

#### EMC COST PERFORMANCE



#### EMC COST PERFORMANCE ANALYSIS

- Currently, all CWOs open for EMC total \$87.3M; the forecast remains at \$119.2M and includes \$17.0M for design support during construction.
- The chart at the left summarizes CWO's which are not closed-out (CWOs 021, 025, 037, 039, 040, and 041).
- The active CWOs are for design support during construction, final design, and administrative support. CWO 037 was approved for development of a PIP and definition of new scope to incorporate cost reduction items.
- CWOs 039, 040, & 041 were approved to facilitate the start of final design for the new scope. CWO 039 is for administrative support for final design and CWOs 040 & 041 are for final design on critical and sub-critical contracts.



**METRO PASADENA BLUE LINE**  
**Summary Status Report**  
**Period Ending - September 27, 1996**



**CONSTRUCTION SAFETY  
STATISTICS**

		Change from <u>Last Month</u>
<b>Recordable Injury Rate</b>		
1994 National Average	11.8	
Project Rate (Cum.)	2.9	None
<b>Lost Time Rate (Frequency)</b>		
1994 National Average	4.9	
Project Rate (Cum.)	0.0	None
<b>Lost Work Days (Severity)</b>		
1991 National Average	148.1	
Project Rate (Cum.)	0.0	None

NOTE: Statistics are based on July data.

**CONSTRUCTION SAFETY  
SUMMARY**

- The Project is incurring 17,000 work hours per month. To date, the Project has completed over 560,000 work hours without a Lost Time injury.

**AREAS OF CONCERN**

**ONGOING**

***Item (Date Initiated: March 1996)***

**Start of Final Design**

***Concern/Impact***

The current schedule shows -147 calendar days of negative float because final design has not begun as planned.

***Status/Action***

Final design has not started because the EMC is experiencing delays in bringing section designers on board. If the start of engineering continues to be delayed, the projected ROD may slip.



# METRO PASADENA BLUE LINE

## Summary Status Report

Period Ending - September 27, 1996



### AREAS OF CONCERN (Con't)

#### ONGOING (Con't)

*Item (Date Initiated: August 1996)*

#### Real Estate Availability

##### **Concern/Impact**

In general, real estate availability is a concern to the extent that certain parcels may not be available to support the schedule for contracts on the critical path. The most critical real estate issues are related to:

Ratkovich Property: A parcel which is owned by the Federal Government and leased by Ratkovich Property is required for the Chinatown Aerial. This property may not be available in sufficient time to support the construction schedule. A resolution must be reached with Ratkovich because this parcel is not eligible for the condemnation process. In order to support the schedule, the property must be available by January 1998.

Certification of Parcels for Underpinning: Certification of parcels required for underpinning associated with Contract C6450 (Del Mar to Memorial Park Line Segment) is required in order to obtain necessary easements for construction. To support the current construction schedule, these parcels must be available by January 1998.

##### **Status/Action**

Regarding the Ratkovich property, MTA is preparing a follow-up letter to Ratkovich requesting additional information concerning the lease on the property. MTA is also preparing an architectural rendering, as requested by Ratkovich, to address aesthetic issues. Regarding the parcels for underpinning, the certification process began during September.

*Item (Date Initiated: August 1996)*

#### Community Concurrence With Design

##### **Concern/Impact**

Community concurrence with the Chinatown Station redesign remains outstanding. Currently, issues relating to the number of elevators and the canopy, platform, and plaza design remain to be resolved. These issues may delay the final design of the station and impact the schedule.

##### **Status/Action**

Although the Chinatown Station has been approved by the Board to start final engineering, the design cannot be completed until these issues are resolved with community representatives. During September, agreement was reached to provide two elevators. A meeting is planned for October 17, 1996 to discuss the choice of canopy, platform, and plaza design. If required, follow-up meetings have been planned for the first week of November and the first week of December. A final decision on the station design is anticipated prior to the January 1997 MTA Board meeting.



# **METRO RED LINE SEGMENT 2**

## **EXECUTIVE SUMMARY**



# METRO RED LINE Segment 2 Summary Status Report Period ending - September 30, 1996



## Major Activities - This Period

### B281 Hollywood/Vine Station -

Completed construction of mezzanine deck with installation of forms, rebar, and 3 section pours for a total of 13 sections complete. Continued construction of mezzanine level exterior walls with installation of HDPE, rebar, forms, and completed 4 section pours for a total of 14 sections out of 36. Started installation of shoring and forming for roof level slab. Contract is 58% complete.

### B271 Hollywood/Western Station -

Continued construction of the mezzanine level exterior walls with installation of HDPE, rebar, and completed 5 section pours for a total of 6 sections out of 22. Started installing entrance interior walls. Contract is 54% complete.

### B261 Vermont/Sunset Station -

Construction of mezzanine level exterior walls remains at 17 sections complete out of 20, awaiting completion of the southern mezzanine deck section. Continued construction of roof deck by installing shoring, forms, rebar, and completed 3 section pours for a total of 8 sections out of 10. Continued construction of ancillary exterior walls by pouring 4 sections. Contract is 60% complete.

### B252 Vermont/Santa Monica Station -

Completed construction of roof deck by pouring 2 section pours for a total of 15 sections complete. Continued construction of the north entrance, with installation of exterior wall HDPE, interior wall, and escalator invert slab rebar. South entrance escalator exterior wall sections were placed, and shoring for the roof started. Continued construction of track level, with installation of platform walls, platform slabs, installation of HVAC ductwork, and installation of nitrile gaskets. Continued construction of mezzanine level masonry walls; with the traction power, DWP, and auxiliary power rooms being completed. Contract is 73% complete.

### B281T (B251E & F Tunnel Work Packages) -

B251E work progressed so that excavation of the sinkhole shaft and placement of the invert concrete were completed; removal of the AL tunnel debris/muck was almost completed; and AR walkway concrete and grouting near the Bamsdall shaft portal started. B251F work progressed so that AR arch and AL walkway concrete started. Change Order is 44% complete.

### B241T (B251 B, C, D, Tunnel Work Packages)

B251B and B251D tunnels were essentially completed this period with the acceptance of substantial completion for these sections. B251C work progressed with the completion of the AL wet standpipe, AR/AL floating slabs, AR/AL hairpin dowels, and removal of temporary AR/AL work real/utilities; and continued installation of AR/AL electrical equipment. Change Order is 86% complete.

### B241 Vermont/Beverly Station -

Completed construction of 6 out of 8 track platform sections. Started preparation of trackway area for B610 track access by installing acoustical lath and plaster, working on bridging beams and nitrile gaskets, and general cleanup of trackway areas. Completed excavation of station entrance. Started installation of HDPE for station entrance mudmat. Continued installation of mezzanine level masonry walls. Neared completion of work required for follow-on contractor access to the DWP and traction power rooms. Contract is 74% complete.

Wilshire/  
Western

Wilshire/  
Normandie

Wilshire/  
Vermont

Wilshire/  
Alvarado

= Operating

## SYSTEMWIDE ACTIVITIES

Coordination activities continued toward turnover of trackway area from facility control to Contract B610, Trackwork Installation, contractor and beginning of trackwork mobilization.





## Major Activities - Next Period

**B281 Hollywood/Vine Station** - Continue construction of mezzanine level exterior walls, with installation of forms, rebar, and concrete placements. Continue construction of shoring, forms, and rebar for roof deck. Continue construction of entrance invert concrete.

**B271 Hollywood/Western Station** - Continue construction of mezzanine level exterior walls with installation of HDPE, rebar, forms, and placement of concrete. Start installation of roof deck shoring, forms, and rebar. Start track level platform concrete activities, exterior wall sandblasting, and installation of acoustical plaster.

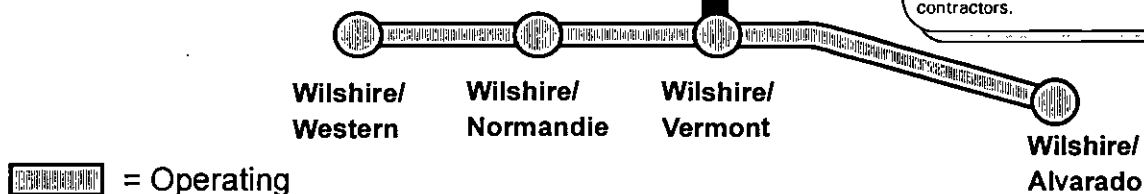
**B261 Vermont/Sunset Station** - Continue construction of mezzanine level exterior walls, roof deck, and ancillary level walls, with installation of rebar, forms, and placement of concrete.

**B281T (B251E and F Tunnel Work Packages)** - Continue B251E work efforts with the completion of AL debris/muck removal, and the placement of AR walkway concrete; as well as start concrete activities for the sinkhole area invert slab. Continue placement of B251F AR arch and AL invert concrete.

**B252 Vermont/Santa Monica Station** - Complete construction of track platform and prepare for B610 access, by completing items in trackway envelope. Continue construction of north and south entrance exterior and interior walls. Continue side structure excavation and construction. Continue installation of mezzanine level CMU walls, HVAC, mechanical piping, and lighting.

**B241T (B251B, C, and D Tunnel Work Packages)** - Complete punchlist items required for B610 access in the B251B and D tunnel sections. Complete installation of B251C of AR/AL electrical and mechanical equipment; start final cleanup and punchlist activities.

**B241 Vermont/Beverly Station** - Complete construction of track platform and prepare for B610 access, by completing acoustical plaster and items in trackway envelope. Continue installation of entrance invert concrete, installation of mezzanine level masonry walls and excavation and construction of east side structures. Complete required work for DWP and traction power rooms for follow-on systems contractors.



### SYSTEMWIDE ACTIVITIES

B610, contractor to begin trackwork survey in the Vermont Line. Continue path forward for systems and systemwide installation scope of work for Vermont/Hollywood Corridor.



# METRO RED LINE Segment 2 Summary Status Report Period ending - September 30, 1996



## BUDGET

<u>Original Scope</u>	<u>Amount (in \$ mil)</u>	<u>Change from Last Month (in \$ mil)</u>
Original Budget	1,446	None
Approved Budget	1,576	None
Current Forecast	1,576	None
Expenditures	1,187	12

### Additional Locally Funded Activities

Original Budget	0	None
Approved Budget	65	None
Current Forecast	65	None
Expenditures	29	1

## BUDGET ANALYSIS

### Original Scope

Original Scope expenditures increased \$12.0 million for construction and professional services contracts. The expenditures to date are 75.3% of the current total forecast.

### Additional Locally Funded Activities

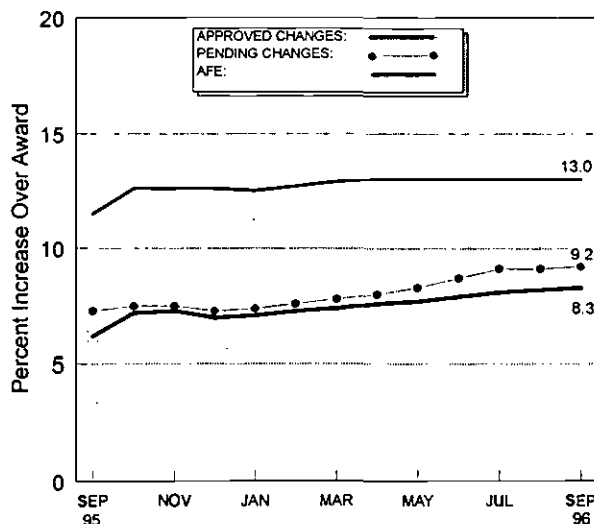
Expenditures for Additional Locally Funded Activities increased \$1.0 million, due to construction contracts. The expenditures to date are 44.6% of the current total forecast.

Overall, there were no changes to the total budget and forecast categories for either Original or Additional Locally Funded Activities this period.

This period's expenditures reflect the cumulative expenditure amounts through September, including accounting adjustments in prior months.

## CONTRACT CHANGES

*Construction/Procurement Contracts  
as % of Original Contract Award*



## CONTRACT CHANGE ANALYSIS

The percent increase over the award value showed a slight increase this period. The approved changes are attributable to the progress of work on the B241, B252, and B261 station contracts, as well as an increase in pending changes on the Hollywood/Vine Station and Automatic Train Control contracts (B281 and B620).

The significant approved changes total \$0.8 million, including:

- B241, Vermont/Beverly Station—Work Authorized: CN 51.01, Schedule delays NTP to June 1994.
- B252, Vermont/Santa Monica Station and Crossover—Executed CN 28.00, P.A. Speakers; CN 144.00, Settlement of Claim; Work Authorized CN 146.00, Tunnel Ring Extra.
- B261, Vermont/Sunset Station—Executed CN 62.00, Modify excavate support system to accommodate existing telephone utilities; Work Authorized: CN 152.00, Additional pulling iron and galvanized pipe.

The significant pending changes total \$0.1 million, including:

- B281, Hollywood/Vine Station and Crossover—CN 71.00, Suspension of Station Excavation.
- B620, Automatic Train Control—CN 55.00, 56.00, and 57.00 Provide materials and install intrusion alarm systems, as indicated at the W/N and W/W station; rework and extend existing embedded train control conduit duct bank TC087; rework 480V disconnect switches and install junction boxes and 25-pair phone cable in the Wilshire Corridor elevators, as field directed.



# METRO RED LINE Segment 2 Summary Status Report Period ending - September 30, 1996



## SCHEDULE

### Vermont/Hollywood Corridor

### Change from Last Month

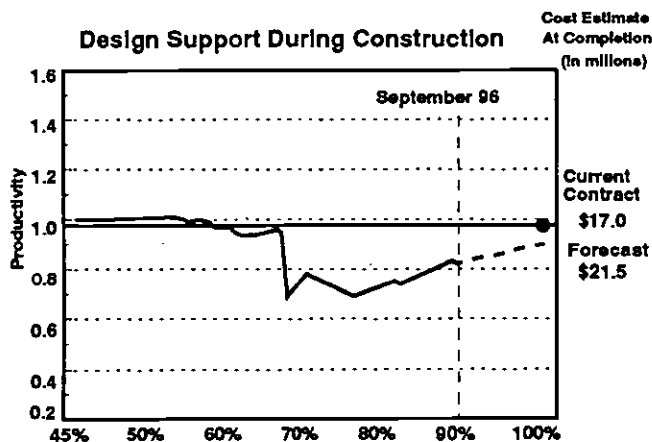
Current ROD	Dec. 31, 1998	None
Design Progress	99%	None
Critical Path Float	-109 Days	0 days
Const. Progress	78.3%	1.1%

## SCHEDULE ANALYSIS

### Vermont/Hollywood Corridor

- The Vermont/Hollywood Corridor critical path remained the same this period. The sinkhole and Hollywood/Vine access shaft excavation activities were completed, allowing the B251E and F tunnel activities to start. The critical path then continues through B610, Trackwork Installation; B620, Train Control Installation; System Integrated Testing; and Pre-Revenue Operations.
- The forecast revenue operations date remained the same this period. Kajima/Ray Wilson continued shift, weekend, and/or overtime efforts on the critical B251E and F tunnel construction activities. Aggressive efforts will be maintained and evaluated as this work progresses to see if additional time savings are possible.

## EMC COST PERFORMANCE



The Cost Performance Chart is not applicable at this time, but it will be provided at the time the 1997 fiscal year Change Notice is approved, which is expected next month.

## EMC COST PERFORMANCE ANALYSIS

The Cost Performance Index (CPI) is no longer consistent with the original baseline, due to authorized scope changes incorporated into the work in progress. The revised scope of work is documented in the 1997 annual work plan, CCN 500. Change Notice 500 was negotiated after the reporting cut-off date. The EMC anticipates having revised CPI numbers for the next reporting period.



**METRO RED LINE Segment 2**  
**Summary Status Report**  
**Period ending - September 30, 1996**



**CONSTRUCTION SAFETY  
STATISTICS**

**Project-to-Date Rates**

**Change From  
Last Month**

**Recordable Injury Rate**

1994 National Average	11.8	
Project Rate	20.2	N/C

**Lost Time Rate (Frequency)**

1994 National Average	4.9	
Project Rate	2.6	-0.1

**Lost Work Days (Severity)**

1991 National Average	148.1	
Project Rate	70.7	-1.2

Segment 2 is incurring over 180,000 work hours per month.

(Based on August statistics)

**CONSTRUCTION SAFETY  
SUMMARY**

- Sixteen active construction contracts were completed in August without a Lost Time Injury.
- Lost Time Injuries (year-to-date) have occurred at a rate of 1.3 per 200,000 work hours. This is approximately 75% less than the National Average of 4.9.

**ONGOING**

***Item (Initiated June 1996)***

Hollywood Boulevard Stations and Line Trackwork Access

***Concern/Impact***

As a result of past delays in installation of piles and excavation of the B251E Sink Hole Shaft and B251F Hollywood/Vine access shaft, completion forecasts for B251E and F tunnel trackwork milestones impacted the project completion forecast.

***Status/Action***

The addition of manpower, shiftwork, and/or overtime has resulted in the completion of sinkhole shaft (B251E) and Hollywood/Vine access shaft (B251F) excavation activities. The shiftwork and overtime is scheduled to continue for tunnel concrete work, which may result in improvement to critical path activities.



**METRO RED LINE Segment 2**  
**Summary Status Report**  
**Period ending - September 30, 1996**



**ONGOING**

***Item (Initiated March 1996)***

Vermont Stations and Line Trackwork Access

***Concern/Impact***

As a result of the delays in the B251B, C, and D work packages, access for B251B and C work through B241, Vermont/Beverly Station, and access for B251D through B261, Vermont/Sunset Station, have the potential for influencing the current B241 and B261 stations dates for the trackwork milestones.

***Status/Action***

Actual work progress and negotiations with the Contractors performing work in the B251B, C, and D tunnel sections and at the B241 and B252 stations have resulted in the substantial completion of the B251B and D tunnel sections and a commitment to complete the B251C tunnel section by mid-October, providing track access through the B241 and B252 stations by early November.

The B610 trackwork contractor started mobilizing and is expected to start its initial trackwork efforts during October. Several working sessions were held with the B610 contractor to discuss strategies and alternatives for mitigating delays from the seven month Vermont/Hollywood tunnel work stoppage. MTA and PD continue to work with EMC to finalize all necessary changes (bridging beams, contact rail pedestals, floating slabs, restraining rails) to avoid impacting the trackwork completion schedule for the Vermont Line.



**METRO RED LINE SEGMENT 3  
NORTH HOLLYWOOD EXTENSION**

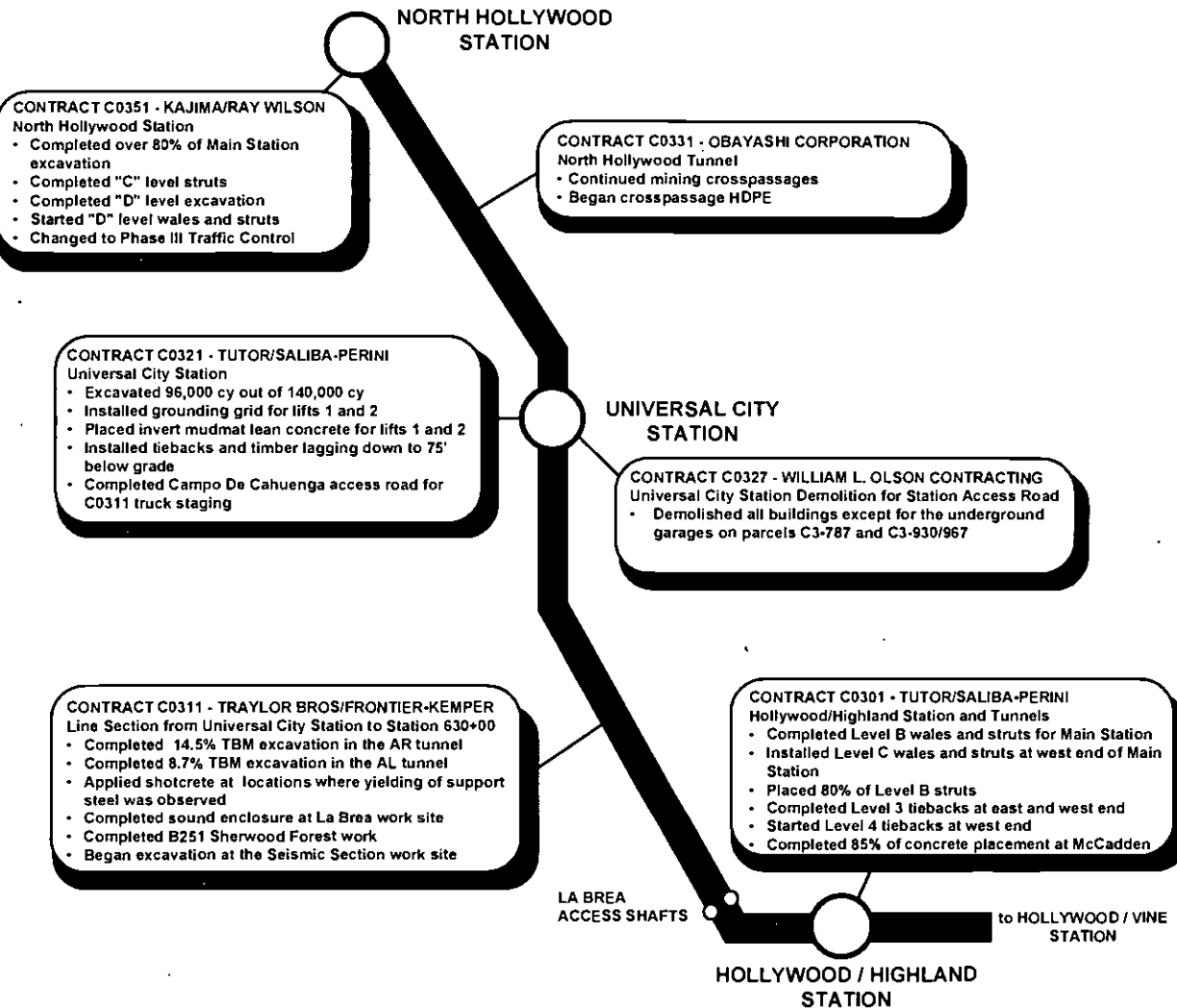
**EXECUTIVE SUMMARY**



# METRO RED LINE - Segment 3 North Hollywood Summary Status Report Period Ending - September 27, 1996



## MAJOR ACTIVITIES THIS PERIOD



## SYSTEMWIDE ACTIVITIES

Finalized and submitted to the MTA the Revised Baseline Design Schedule. EMC was directed to incorporate the revised baseline in the September progress report. Formal approval is expected in October 1996.

Contract B620 (Automatic Train Control) continued review and update drawings and specs for final package submittal

Contracts B641, B642, B643, B644 (Communications) continued incorporation of review comments in the technical information update and reviewed lift drawings

Contract C1610 (Trackwork Installation) implemented modification of the single crossover and attended meetings on contract limits

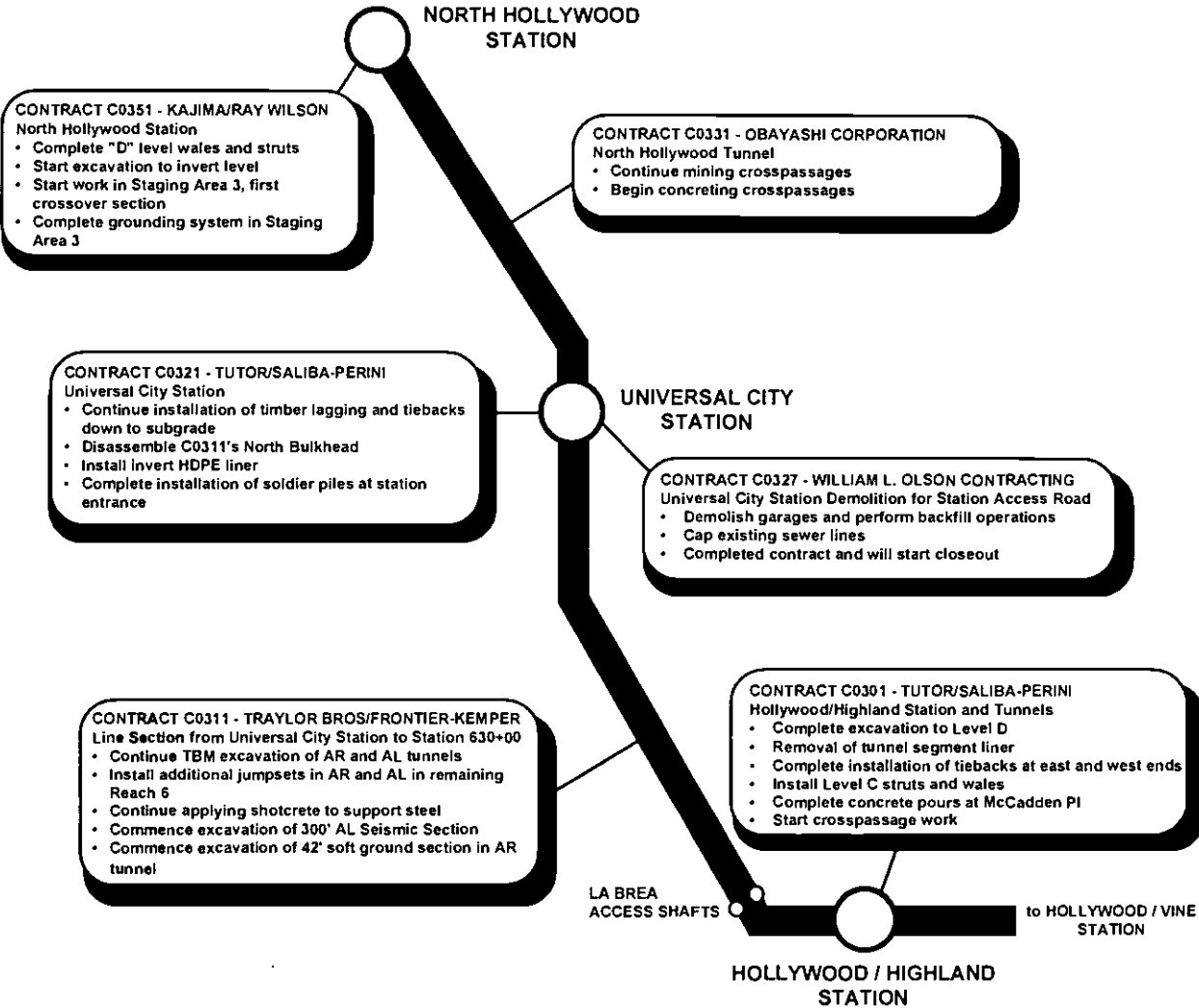
Contract H0631 (Traction Power System Installation) continued design toward pre-final submittal and reviewed lift drawings



**METRO RED LINE - Segment 3 North Hollywood**  
**Summary Status Report**  
**Period Ending - September 27, 1996**



**MAJOR ACTIVITIES NEXT PERIOD**



**SYSTEMWIDE ACTIVITIES**

- Contract B620 (Automatic Train Control) continue to review and update drawings and specs for final package submittal (planned for November 1996)
- Contract C1610 (Trackwork Installation) finalize contract limits and implement in the contract drawings planned for January 1997
- Contract H0631 (Traction Power System Installation) continue efforts toward pre-final design



# METRO RED LINE - Segment 3 North Hollywood

## Summary Status Report

### Period Ending - September 27, 1996



#### BUDGET

##### ORIGINAL SCOPE ACTIVITIES

	Amount (in \$ mil)	Change from Last Month (in \$ mil)
Original Budget	1310.8	None
Approved Budget	1310.8	None
Current Forecast	1310.8	None
Expenditures	448.7	7.5

##### ADDITIONAL LOCALLY FUNDED ACTIVITIES (ALFA)

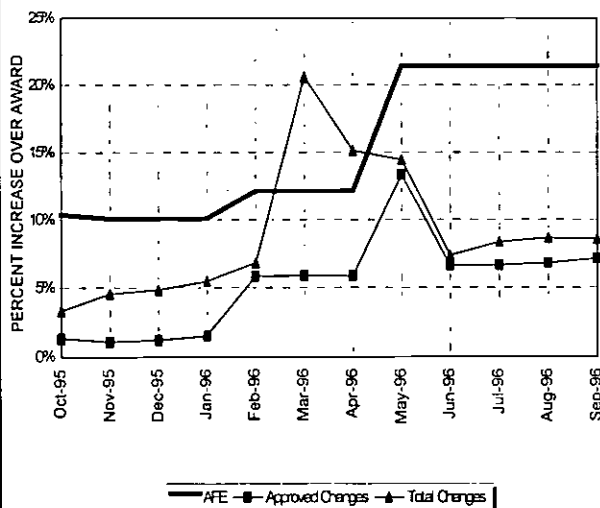
	Amount (in \$ mil)	Change from Last Month (in \$ mil)
Original Budget	0.0	None
Approved Budget	3.0	None
Current Forecast	0.8	None
Expenditures	3.5	None

#### BUDGET ANALYSIS

- The Expenditures for Original Scope Work and ALFA through the current period are \$448.7M and \$3.5M respectively. This represents 34.5% of the Total Current Forecast. Total expenditures for the current period were \$7.5M. Retroactive adjustments totalling \$4.7M were made for April, May, June and July due to the continuing reconciliation of the Financial Information System (FIS). The expenditure for August was \$2.8M. Adjustments to prior periods are anticipated in the future while FIS continues its historical reconciliations.
- ALFA Expenditures exceed the ALFA Current Forecast by \$2.7M. This is due to the charges associated with the Tunnel Settlement of Contract B251 (Vermont/Hollywood Tunnel). These ALFA charges are anticipated to be offset at a later date with revenues from insurance and claims settlement. Upon realization of these anticipated revenues, the expenditures are expected to fall in line with the \$0.8 M forecast.

#### CONTRACT CHANGES

Construction/Procurement Contracts  
Contract Changes  
as % of Original Contract Award



#### CONTRACT CHANGE ANALYSIS

- Approved Changes values increased by approximately \$1.7M this period, mainly due to a \$1.27M change increase on Contract C0301 (Hollywood/Highland Station and Tunnels).
- Pending Changes values were reduced to a current value of \$6.99M, a reduction of approximately \$2.11M for the period. This is primarily due to C0301 reducing pending change values by \$1.9M and B281 reducing by \$508K.



# METRO RED LINE - Segment 3 North Hollywood

## Summary Status Report

### Period Ending - September 27, 1996



#### SCHEDULE

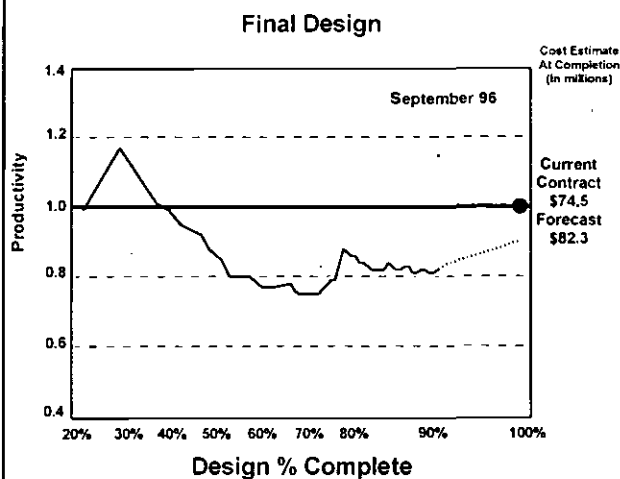
		Change from Last Month
Current ROD	December 2000	-17
Design Progress	91.6%	+0.2%
Construction Progress (estimated)	29.3%	+1.3%
Critical Path Float	-198 Cal. Days*	-17

\*Forecast project completion date is December 01, 2000, compared to the official ROD date of May 17, 2000. The forecast is within the Full Funding Grant Agreement schedule obligation date of December 2000.

#### SCHEDULE ANALYSIS

- Project critical path changed this period from -181 to -198 calendar days. The additional delay is due to continued low production of TBM through Reach 6C in both tunnels.
- All known schedule impacts to C0311 contract due to ground conditions encountered in Reach 6C, seasonal springs protection, enclosure at La Brea Shafts, and special seismic section redesign are incorporated into the schedule. These delays amount to approximately six months. Mitigation plans for C0311 are underway with contractor.
- Critical path continues to run through Contract C0311 (Line Section from Universal City Station to Station 630+00), C1610 (Trackwork Installation), B620 (Automatic Train Control), B645 (SCADA) and Testing/Pre-Revenue Operations.
- Trackwork, systems and prerevenue operation schedules are being reviewed to modify these activities to recover from currently forecasted delays. Changes are under PD, JMA and MTA review.

#### EMC COST PERFORMANCE



#### EMC COST PERFORMANCE ANALYSIS

- Final Design is approximately 91.6% complete, with all of the Major Facilities (Stations and Tunnels) at 100% complete. The Cost Performance Index is expected to improve to 90% over the next 12-18 months as the final design of site restoration and systems is completed, based on improvement in productivity and efficiencies.
- The MTA has calculated a Forecast at Completion of \$82.3M, not including the cost of work to be transferred from Segment 2 to Segment 3 for B251-related design activities.
- The MTA is working with the EMC to reduce the overall cost forecast by as much as 15% as the project moves fully into construction. The MTA has identified areas such as Design Change Notice (DCN) tasks that may be modified to lower the cost of EMC services.



# METRO RED LINE - Segment 3 North Hollywood

## Summary Status Report

### Period Ending - September 27, 1996



#### CONSTRUCTION SAFETY STATISTICS

##### Project-to-Date Rates

		Change from Last Month
Recordable Injury Rate		
1994 National Average	11.8	
Project Rate	12.7	0.3
Lost Time Rate (Frequency)		
1994 National Average	4.9	
Project Rate	0.3	0.1
Lost Work Days (Severity)		
1991 National Average	148.1	
Project Rate	13.5	0.4

- Segment 3 North Hollywood is incurring over 140,000 work hours per month.

(Based on August statistics)

#### CONSTRUCTION SAFETY SUMMARY

- One Lost Time Injury occurred in August.
- To date, the project has completed 2,200,000 work hours with three Lost Time Injuries.

#### AREAS OF CONCERN

##### ONGOING

*Item (Date initiated: February 1996)*

Contract C0311 (Line Section from Universal City Station to Station 630+00)

Project Impacts Due to Implementation of MTA Board Motion Dated January 24, 1996 Regarding Tunneling Under the Santa Monica Mountains

##### Concern/Impact

Implementation of MTA Board Motion to adopt community mitigation measures have impacted overall project schedule and forecast. Measures instituted by the Board include reducing the amount and intensity of blasting, increasing tunnel grouting to prevent surface springs leaking into the tunnel, and monitoring tunneling effects on surrounding public and private property ecosystems. Current forecast delays to Contract C0311 impact planned ROD.

##### Status/Action

In an effort to recover ROD, a revision to follow-on Trackwork and Systems Installation contracts is currently under review. In addition, JMA has reviewed the C0311 construction milestones sequence and has met with the contractor to discuss mitigation measures. One of the options is to add a new interim milestone to partially turnover the tunnels to the trackwork contractor as early as May 1998.



# **METRO RED LINE SEGMENT 3**

## **MID-CITY EXTENSION**

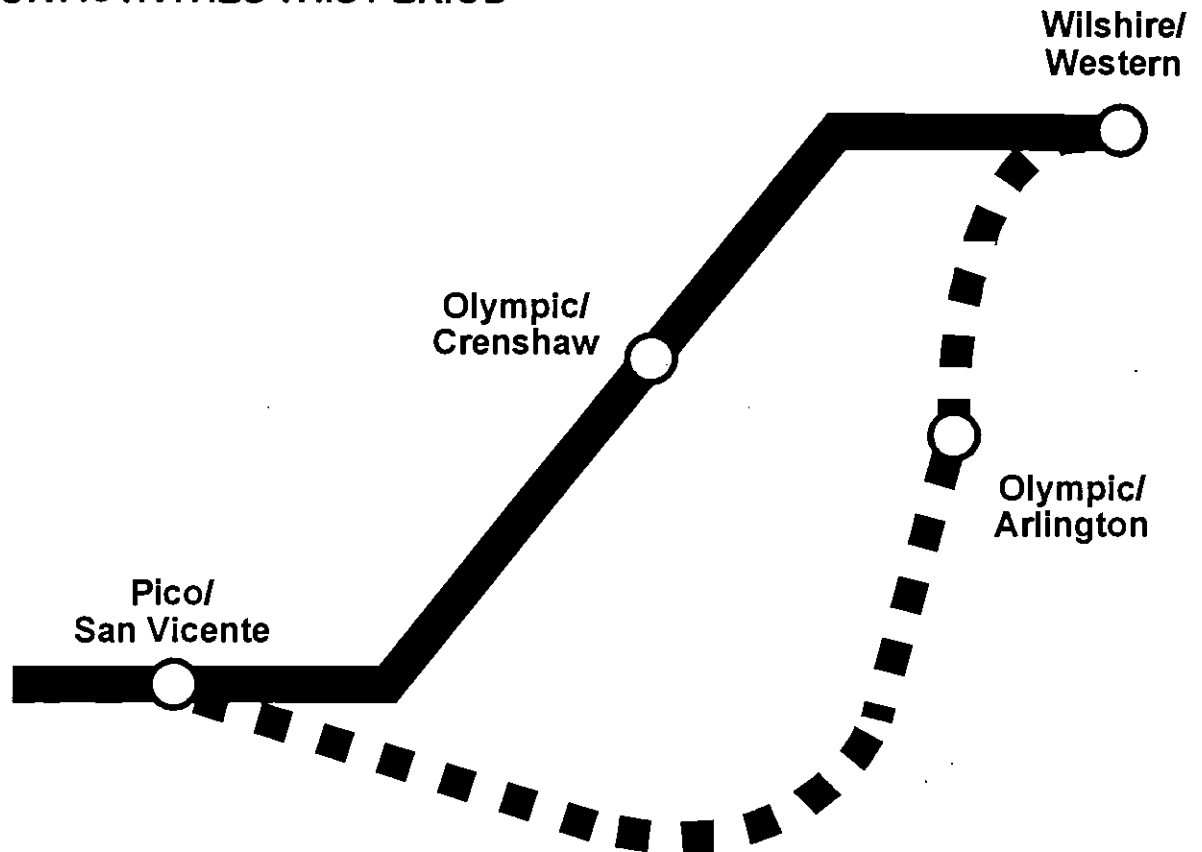
### **EXECUTIVE SUMMARY**



**METRO RED LINE - Segment 3 / Mid-City Extension**  
**Summary Status Report**  
**Period Ending - September 27, 1996**



**MAJOR ACTIVITIES THIS PERIOD**



**SYSTEMWIDE ACTIVITIES**

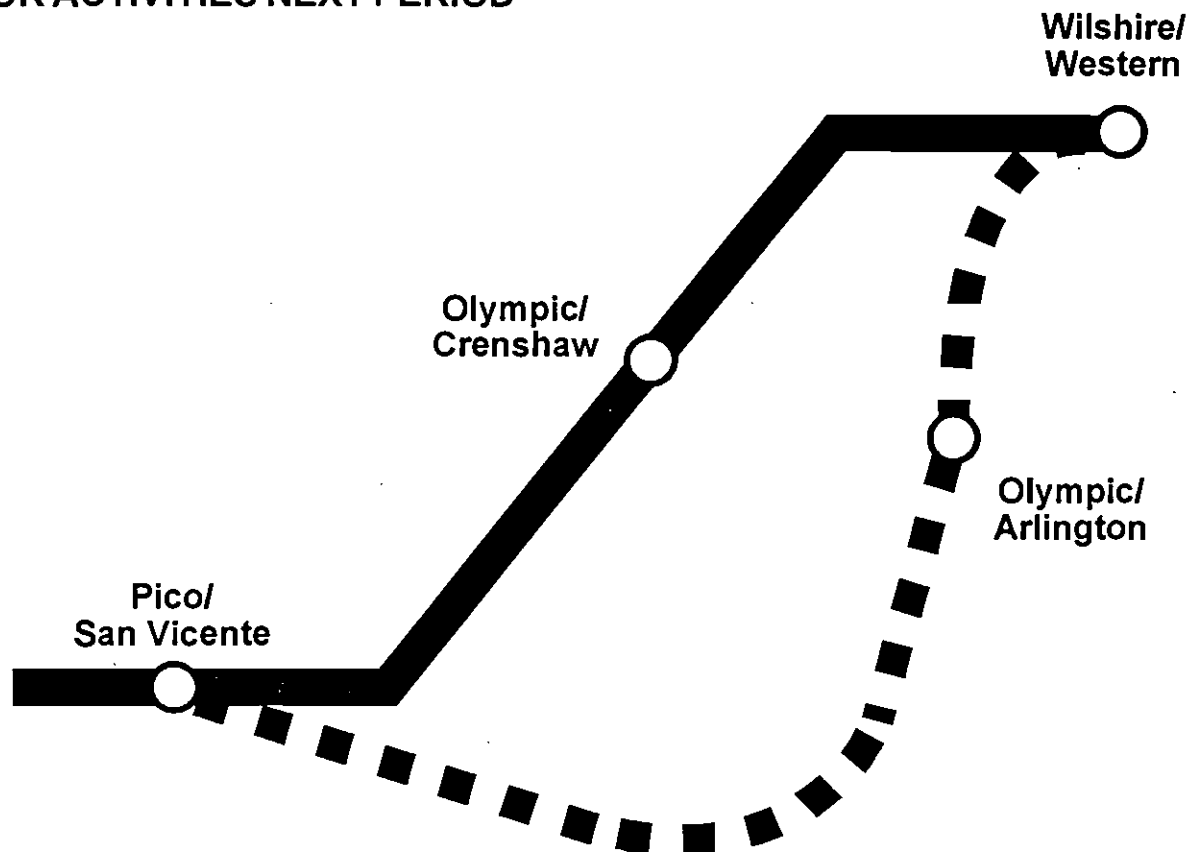
- EMC submitted the final Engineering Feasibility Study report, dated August 29, 1996, on September 5, 1996.
- MTA transmitted the report to the Board on September 27, 1996.
- Schedules and ROM cost estimates were prepared for each of the four alignment/configuration alternatives presented in the report.
- Four different project implementation scenarios were prepared for the Venice Boulevard alignment/subway alternative, and resulting cash flow projections are being reviewed.



**METRO RED LINE - Segment 3 / Mid-City Extension**  
**Summary Status Report**  
**Period Ending - September 27, 1996**



**MAJOR ACTIVITIES NEXT PERIOD**



**SYSTEMWIDE ACTIVITIES**

- Enviro-Rail will complete and submit a report documenting the field testing conducted in the course of the Engineering Feasibility Study.
- MTA will provide the Board a report containing ROM cost estimates for each of the alignment/configuration alternatives analyzed in the study.
- MTA will continue procurement of an environmental consultant to prepare an SEIS/SEIR incorporating the Wilton/Arlington alignment alternatives.



**METRO RED LINE - Segment 3 / Mid-City Extension**  
**Summary Status Report**  
**Period Ending - September 27, 1996**



**BUDGET**

	<u>Amount</u> <u>(In \$ mil)</u>	<u>Change from</u> <u>Last Month</u> <u>(In \$ mil)</u>
Original Budget	490.7	None
Approved Budget	490.7	None
Current Forecast	TBD	TBD
Expenditures	12.5	0.2

**OTHER LOCALLY FUNDED ACTIVITIES**

	<u>Amount</u> <u>(In \$ mil)</u>	<u>Change from</u> <u>Last Month</u> <u>(In \$ mil)</u>
Original Budget	0.0	0.0
Approved Budget	0.0	0.0
Current Forecast	0.0	0.0
Expenditures	0.0	0.0

**BUDGET ANALYSIS**

- Budget and Forecast values are subject to outcome of alignment alternative selected.
- None at this time.

**SCHEDULE**

		<u>Change from</u> <u>Last Month</u>
Current ROD	7/16/99	None
Design Progress	0%	None
Construction Progress	0%	None
Critical Path Float	N/A	None

**SCHEDULE ANALYSIS**

- The Engineering Feasibility Study for the Wilton/Arlington alignment was completed August 29, and the final report submitted September 5, 1996.
- An SEIS/SEIR will be prepared beginning in December 1996, leading to an FTA Record of Decision, scheduled for March 1998, and the subsequent resumption of final design.

**CONSTRUCTION SAFETY**

- No activity for this period.



**METRO RED LINE - Segment 3 / Mid-City Extension**  
**Summary Status Report**  
**Period Ending - September 27, 1996**



**AREAS OF CONCERN**

● **NEW**

None

● **ONGOING**

*Item*

**Mid-City Master Schedule (initiated 8/95)**

*Concern/Impact*

The Draft SEIS/SEIR when completed will define the project alternatives. The MTA Board will be able to make a decision on the preferred alternative for the Final SEIS/SEIR. The overall schedule for final design and construction is on hold pending the MTA Board determination of the preferred alternative. The impact to R.O.D. cannot be finalized until the preferred alternative is selected.

*Status/Action*

Administrative Draft SEIS/SEIR document preparation for two alternatives was put on hold while a third alternative (Wilton/Arlington) was explored. MTA is now proceeding to procure a consultant to complete an SEIS/SEIR which incorporates Wilton/Arlington alignment alternatives. See SD-1 for discussion.

● **RESOLVED**

None



**METRO RED LINE SEGMENT 3**

**EAST SIDE EXTENSION**

**EXECUTIVE SUMMARY**



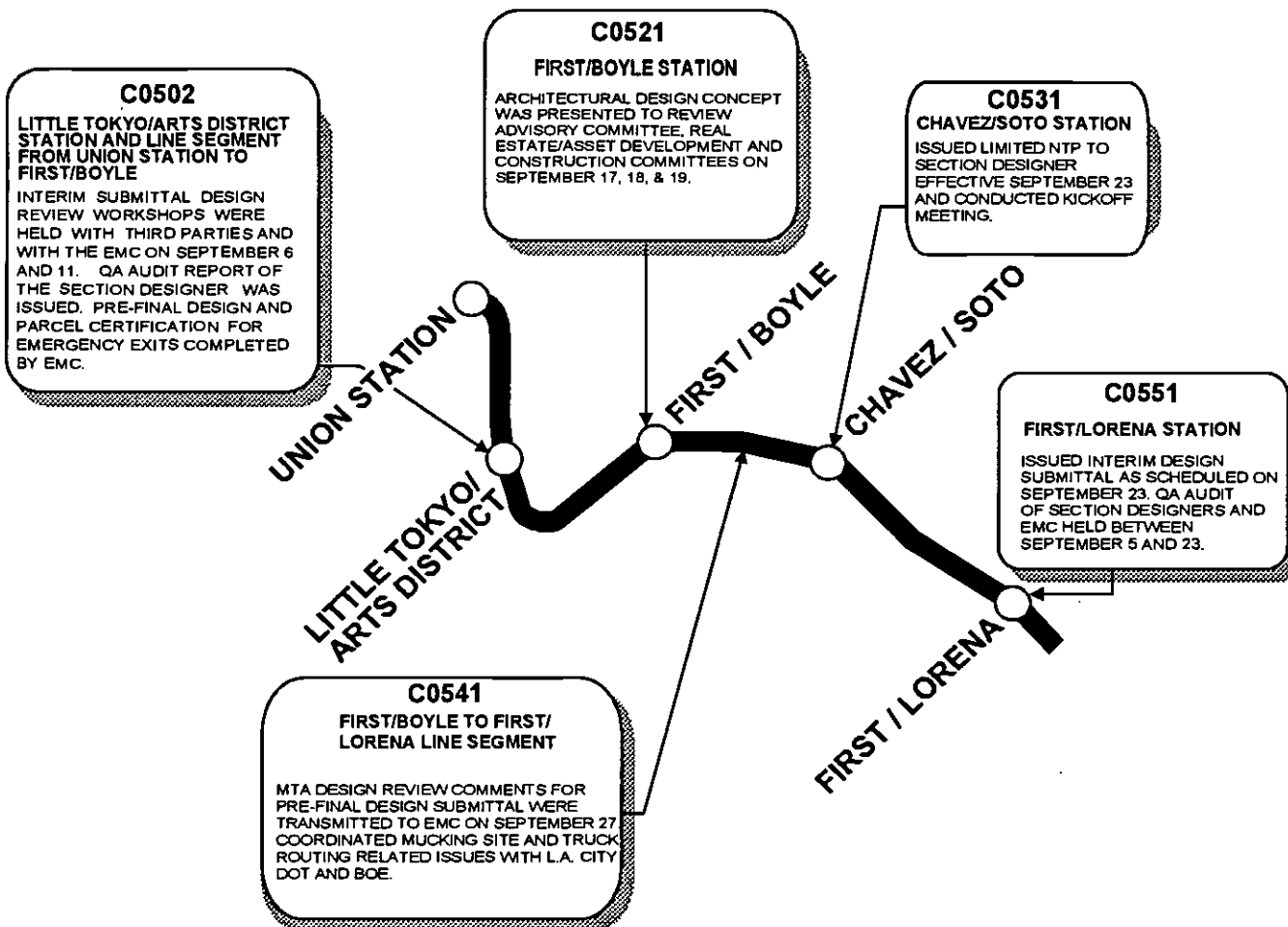
# METRO RED LINE - Segment 3 East Side Extension

## Summary Status Report

Period Ending - September 27, 1996



### MAJOR ACTIVITIES THIS PERIOD



### SYSTEMWIDE ACTIVITIES

CONTRACT C0538 PHASE I DEMOLITION, FINAL DESIGN SUBMITTAL WAS ISSUED ON SEPTEMBER 18. MTA'S FIRE/LIFE/SAFETY DIVISION DECISION REACHED TO DELETE UNDER PLATFORM EXHAUST FANS (UPE). RECEIVED FROM EMC INTERIM DESIGN SUBMITTAL FOR CONTRACT P1616, DIRECT FIXATION RAIL FASTENERS. RECERTIFIED ONE EMERGENCY EXIT & ONE ADDITIONAL PARCEL AT C0502. THE EMC TUNNEL REVIEW BOARD MEETING OCCURRED SEPTEMBER 24-25. RECOMMENDATIONS INCLUDED: THE CONTRACTOR SHOULD SELECT EQUIPMENT (EPB OR SLURRY MACHINE); SUBMITTALS (MACHINE - TYPE, OPERATORS ETC.) TO BE MADE AT TIME OF THE BID TO ENSURE CONTRACTOR HAS CONSIDERED ALL SPEC REQUIREMENTS.



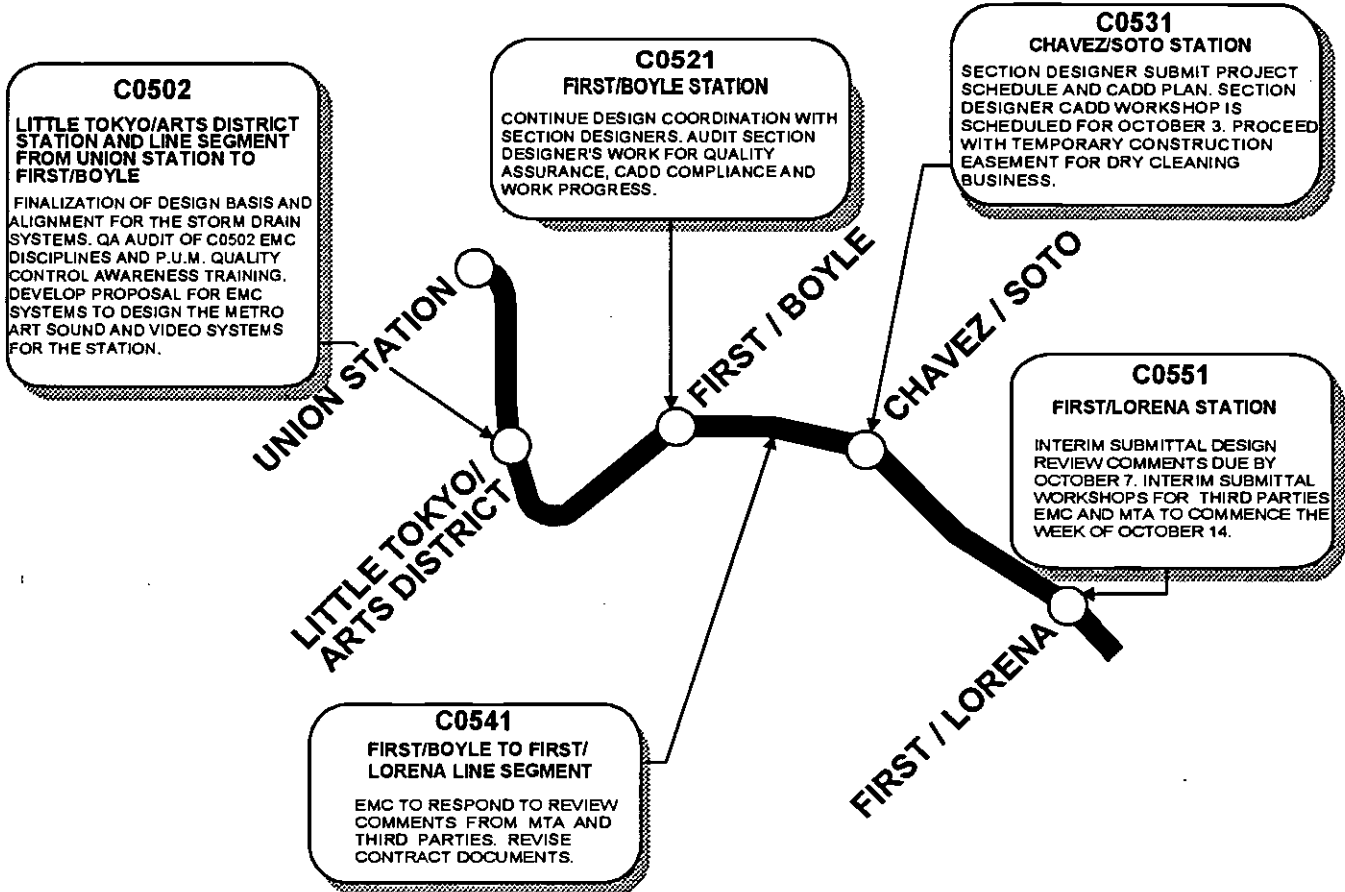
# METRO RED LINE - Segment 3 East Side Extension

## Summary Status Report

Period Ending - September 27, 1996



### ACTIVITIES PLANNED FOR NEXT PERIOD



### SYSTEMWIDE ACTIVITIES

APPROVAL OF NEGOTIATED FINAL DESIGN PIP, PRE-CONSTRUCTION SURVEY CONTRACTOR, AND CONSTRUCTION MANAGER PLANNED FOR THE OCTOBER MTA BOARD. EMC TO CERTIFY 30 SUB-SURFACE EASEMENTS FOR C0541. EMC TO PREPARE CERTIFICATION FOR UTILITY EASEMENT AT C0551 AND ONE ADDITIONAL FULL TAKE PARCEL AT C0502.



# METRO RED LINE - Segment 3 East Side

## Summary Status Report

Period Ending - September 27, 1996



### BUDGET

	<u>Amount</u> <u>(In Millions)</u>	<u>Change from</u> <u>Last Month</u> <u>(In Millions)</u>
Original Budget	979.6	None
Approved Budget	979.6	None
Current Forecast	1031.0	46.5

### OTHER LOCALLY FUNDED ACTIVITIES

	<u>Amount</u> <u>(In Millions)</u>	<u>Change from</u> <u>Last Month</u> <u>(In Millions)</u>
Original Budget	0	None
Approved Budget	0	None
Current Forecast	3.1	0

### BUDGET ANALYSIS

- Negotiations of the Final Design P.I.P. concluded in August. Presentation to the Board is anticipated in October.

- During the month of September, the project forecast was increased by \$49.6M due to the added cost of the Earth Pressure Balance tunneling machines, the two pass tunnel liner and the steel tunnel liner.

A trend was issued for the deletion of the Under Platform Exhaust (UPE) fans, one of the cost mitigation measures mentioned previously, which mitigated \$3.1M, making the total forecast increase \$46.5M.

- EMC and MTA are continuing efforts to identify, analyze and implement additional cost mitigation measures.

### CONTRACT CHANGES

- No activity for this period.

### CONTRACT CHANGE ANALYSIS

- No activity for this period.



# METRO RED LINE - Segment 3 East Side

## Summary Status Report

### Period Ending - September 27, 1996



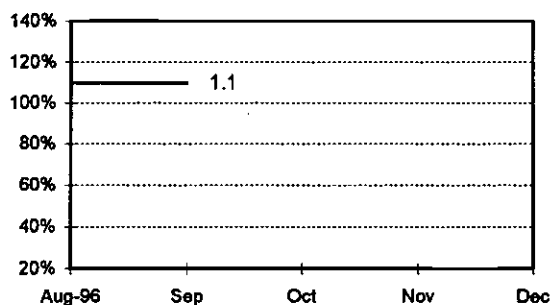
#### SCHEDULE

		Change from Last Month
Current R.O.D.	Nov. 2002	None
Final Design progress	38.6%	5.9%
Construct. Progress	N/A	N/A
Critical Path Float	-358	-39

#### SCHEDULE ANALYSIS

- During the month of September, the forecast R.O.D. changed from September 24, 2003 to November 3, 2003. The forecast Revenue Operation Date is now 358 calendar days (256 working days) behind the FFCA scheduled R.O.D. of November 2002. The major source of the Sept. slippage (39 calendar days, 28 working days) occurred when the five vertical emergency exit shafts were added. The project schedule went from -319 days to -354 days float. The remainder of the slippage occurred when MTA requested a separation in time between launching two tunnel boring machines.
- Complete recovery of the full 358 days presently seems unlikely until the award of the Construction Management (CM) contract, at which time the CM will begin to incorporate substantially more detail into the schedule and more precisely define the critical activity relationships and refine the construction logic.
- Schedule mitigation measures currently being evaluated for consideration by the CM include:
  - Construction/design activity resequencing
  - Simplified contractor interfaces
  - Possible second tunnel concreting crew
  - Possible second fiber optics crew
- The final design schedule has been received by the MTA for review and approval as a baseline. Approval is expected in October. The project schedule, which will incorporate this baseline design schedule, is still under development and is expected to be received by the MTA in October for review and approval as a baseline.

#### EMC COST PERFORMANCE



#### EMC COST PERFORMANCE ANALYSIS

The EMC Cost Performance Index for the month of September is 1.1. Final Design progress is 38.6%



**METRO RED LINE - Segment 3 East Side**  
**Summary Status Report**  
**Period Ending - September 27, 1996**



**AREAS OF CONCERN**

**NEW**

**Item** [Initiated September 1996]

Increased Project Cost Forecasts.

**Concern/Impact**

Inclusion this month of the added costs of the tunnel boring machines and tunnel lining technologies increased the project forecast to \$46.5 million over the current budget. Further potential cost impacts foreseen at this time but still being quantified include commercial building protection and environmental mitigation along the tunnel alignment, as well as increased real estate costs due to additional parcel acquisition and changes to MTA's Risk Management program.

**Status/Action**

MTA and EMC are developing other mitigation measures to potentially offset these increases. Cost reduction results from these efforts should begin to appear during November.

**NEW**

**Item** [Initiated September 1996]

EIS/EIR Addendum Approval Process

**Concern/Impact**

Twenty-one full take property acquisitions cannot be authorized by the MTA Board until the EIS/EIR Addendum has been approved.

**Status/Action**

The earliest date foreseen for approving the EIS/EIR Addendum is December 1996. MTA is currently reviewing the approval process to schedule this date.



**METRO RED LINE - Segment 3 East Side**  
**Summary Status Report**  
**Period Ending - September 27, 1996**



**AREAS OF CONCERN (Continued)**

**NEW**

**Item** [Initiated September 1996]

Increased negative float to the Project Schedule.

**Concern/Impact**

Additional logic detail (inclusion of the five emergency exit shafts and the decision to launch the TBM machines separately) within the Project Schedule has increased the negative float from 319 calendar days to 358 calendar days. The forecast R.O.D. has slipped from September 2003 to November 2003, compared to the FFGA Base-line R.O.D. of November 2002.

**Status/Action**

Although the additional logic detail has increased the project's negative float, several schedule mitigation measures being considered have the potential to mitigate some of the negative float. Also, after the award of the Construction Management (CM) contract, the CM will begin to incorporate more detail within the project schedule and refine the construction sequences and logic to potentially mitigate some of the negative float.



**METRO RED LINE - Segment 3 East Side**  
**Summary Status Report**  
**Period Ending - September 27, 1996**



**AREAS OF CONCERN (Continued)**

**ONGOING**

*Item* [Initiated July 1996]

Eight parcels needed for Contract C0521 are behind schedule.

***Concern/Impact***

Per the latest MTA acquisition schedule, eight full take parcels for contract C0521 will impact the project schedule by an average of 83 working days.

***Status/Action***

MTA Real Estate and Environmental Departments are formalizing the property acquisition/environmental schedules for all full take parcels that require demolition. Results of this exercise are expected to be available in October.

**ONGOING**

*Item* [Initiated February 1996]

Identification of 14 (full-take) additional property acquisitions for Contract C0551 which impact the C0558 Demolition contract.

***Concern/Impact***

Per the latest MTA Acquisition Schedule, Demolition contract C0558 shows eight parcels being turned over two days after close of environmental mitigation and two parcels delayed by 43 working days. This does not impact the overall project schedule but could delay important demolition work.

***Status/Action***

MTA Real Estate, Environmental and Project Control Departments are attempting to expedite the property acquisition/environmental schedules for all full take parcels that require demolition. Results of this exercise are expected to be available in October.



# METRO RED LINE - Segment 3 East Side

## Summary Status Report



### AREAS OF CONCERN (Continued)

#### ONGOING

**Item** [Initiated February 1996]

Revised Baseline documents including scope of services and schedule.

**Concern/Impact.**

Due to changes in work scope that have been incorporated into the work in progress, the previous design status baseline is no longer valid. The baseline is used as the basis for measuring design progress and performance measurement and without one, accurate performance measurement is unable to be performed and reported.

**Status/Action**

Negotiations PIP scope of services and corresponding costs were finalized with EMC in August. Negotiations of the Final Design schedule are expected to conclude during October. All design and performance measurement documents, including the Final Design schedule, will then be baselined in October.



# METRO RED LINE - Segment 3 East Side

## Summary Status Report

Period Ending - September 27, 1996



### AREAS OF CONCERN (Continued)

#### RESOLVED (SEPT. '96)

*Item* [Initiated February 1996]

Project escalation costs due to delayed starts.

#### **Concern/Impact**

Stemming directly from the delay in the full release of final design services and the Section Designers' Notice-To-Proceed, the project schedule has been increased 319 calendar days (228 working days) from the approved FFGA schedule, incurring a \$44 million escalation cost.

#### **Status/Action**

The \$44 million escalation cost has been partially mitigated by a previously identified \$15 million value engineering cost savings. The MTA Board's decision to delete the air conditioning system at the stations and to procure sixteen passenger vehicles instead of twenty-four has resulted in an additional cost savings of \$20.9 million. For July 1996, rearrangement of the High Voltage and Power Distribution System and the development of a separate Bulk Procurement contract for the Electrical Main Distribution System have resulted in an additional cost savings. The total of the two, \$3.1 M and \$.5 M, respectively, have reduced the East Side Extension Project forecast by \$3.6 M. During September 1996m MTA's Fire/Life/Safety Division reached their decision to delete the Under Platform Exhaust (UPE) fans at each station. By making this decision the project forecast was further reduced by \$3.1M. EMC and MTA are continuing to identify, analyze and implement further corrective actions.

Since only about \$1.4 million of the total \$44 million has not been mitigated, this item is considered resolved. Serious cost concerns remain, however, and these concerns are included in the "Increased Project Cost forecasts" item during September (Page ES-5).



**METRO RED LINE - Segment 3 East Side**  
**Summary Status Report**  
**Period Ending - September 27, 1996**



**AREAS OF CONCERN (Continued)**

**RESOLVED (SEPT.'96)**

*Item* [Initiated June 1996]

Repackaging demolition Contracts C0528, C0538 and C0558.

***Concern/Impact***

Repackaging of these contracts will be based upon property availability rather than station site. This repackaging effort has currently delayed two design submittals that were originally scheduled for June 1996, and two for July 1996. Further design submittals may also be delayed. It is not foreseen that this will impact the current

forecasted R.O.D. of September 2003.

***Status/Action***

MTA has approved the revised milestone dates as presented by EMC.

**RESOLVED (SEPT.'96)**

*Item* [Initiated February 1996]

Escarpment within East Side Extension alignment.

***Concern/Impact***

Study of the Coyote Pass Escarpment shows the East Side Extension alignment crosses the escarpment at three places. Further engineering analysis is needed to determine whether enhanced structural and tunnel design is required to mitigate the risk at escarpment crossings. Cost impacts have been included in the project cost forecast this month, totaling about \$6.1 million.

***Status/Action***

Steel tunnel liners will be used at one fault crossing to mitigate the Maximum Design Earthquake, per the recommendation of the Tunnel Advisory Panel. The single steel liner installation has not resulted in an impact of the critical path. A definitive steel liner length will be determined after further field investigations are complete. Results of the field investigations are expected by November 15, 1996. This item is considered resolved as the technical solution is in place and the cost impacts have been included in the forecast this month.



**METRO RED LINE - Segment 3 East Side**  
**Summary Status Report**  
**Period Ending - September 27, 1996**



**AREAS OF CONCERN (Continued)**

**RESOLVED (SEPT.'96)**

*Item* [Initiated February 1996]

MTA requested EMC to study alternative methods of tunneling for the East Side Extension.

***Concern/Impact***

To minimize settlement along the East Side alignment to prevent disturbance to residents, excessive building repair costs, and schedule delays.

***Status/Action***

During the on-going discussions with the MTA and the Tunnel Advisory Panel, EMC has been directed to proceed with the design using closed positive-face control tunnel boring machines for the East Side Extension project. The decision has been made that the tunnel contractor will choose the type of closed positive-face control tunnel boring machines, either Earth Pressure Balance (EPM) or Slurry Shield.



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# **VEHICLE ACQUISITION PROJECT**

## **EXECUTIVE SUMMARY**



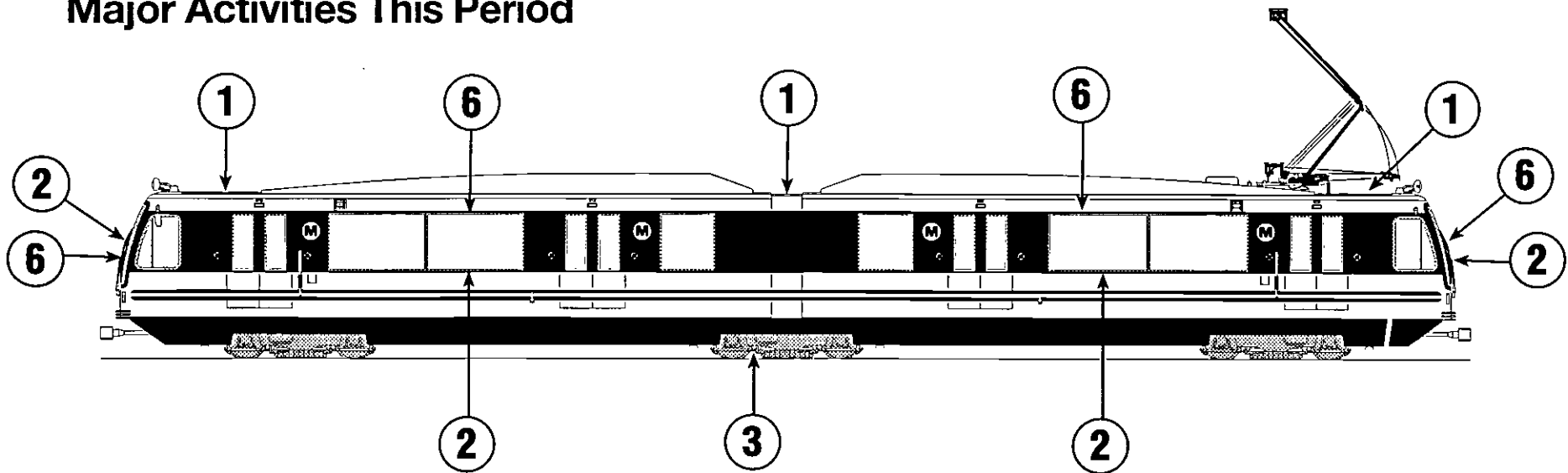
# L.A. Light Rail Vehicle

## Summary Status Report

Period Ending - September 27, 1996



### Major Activities This Period



1. Carshell #2 was completed and prepared for compression testing. Initial results are encouraging.
2. Car #1 is being assembled in Sacramento using Carshell #1. Problems encountered during assembly include windshield/windows sizing mismatches and leaks detected during the water test. Both issues are being addressed.
3. Conducted First Article Inspection (FAI) of the center truck.
4. Participated in Green Line Team Partnering meeting to identify and resolve vehicle delivery and testing issues.
5. Met with Siemens management to discuss program issues and concerns and arranged PMO tour of Siemens assembly plant in Sacramento.
6. Witnessed FRA (Federal Railroad Administration) required tests of the windshield and side glass. Side glass passed all tests but the windshield failed ballistic impact test. Design improvements are in progress.

ES-1



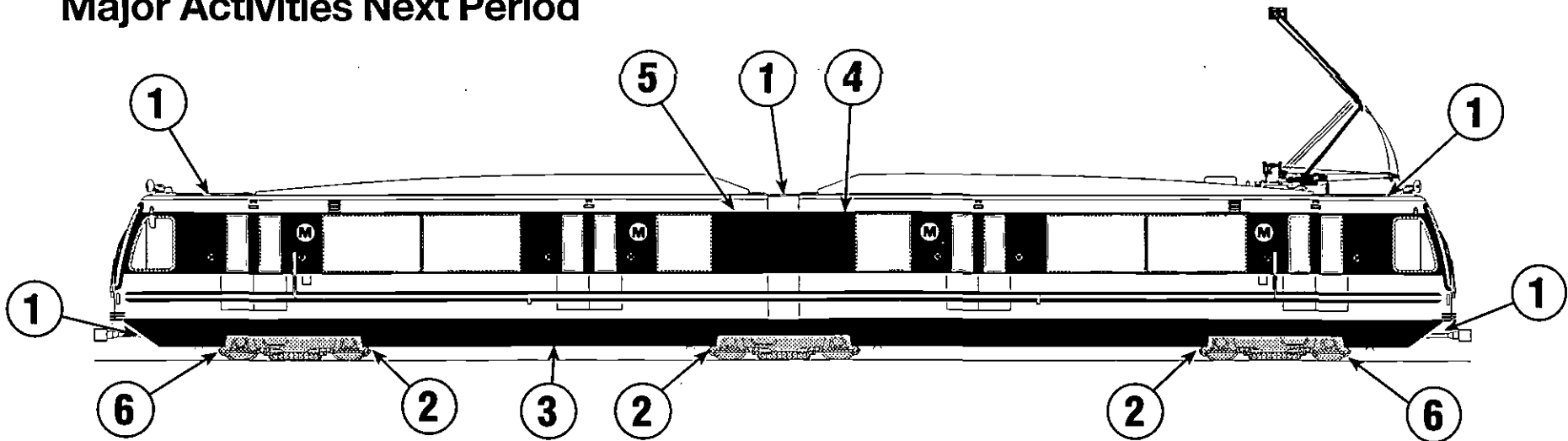
# L.A. Light Rail Vehicle

## Summary Status Report

Period Ending - September 27, 1996



### Major Activities Next Period



1. Complete all structural tests of the carshell, including carshell compression, diagonal jacking, coupler, etc.
2. Conduct Dynamometer Test of the brake system and FAI of the control box at WABCO.
3. Conduct FAI of First Auxiliary Power Supply System assembled in the U.S.
4. Participate in EMI detector Design Conformance Test.
5. Meet with communication equipment supplier V-H to review project concerns.
6. Start power truck Life Cycle Fatigue Test.



# L.A. LIGHT RAIL VEHICLE

## Summary Status Report

Period ending - September 27, 1996



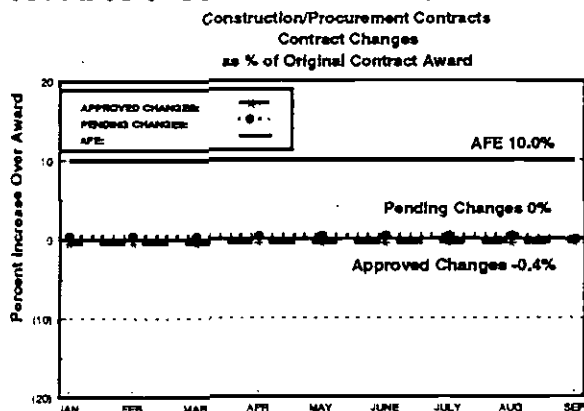
### BUDGET

	Amount (in \$ mil)	Change from Last Month (in \$ mil)
Original Budget	257.6	-0-
Approved Budget	257.6	-0-
Current Forecast	201.4	-0-
Expenditures	77.9	-0-

### BUDGET ANALYSIS

- Car reduction effected 9/08/95 which will reduce contract value from \$215 million to approximately \$170 million after termination liability is negotiated (2-4 months from now).
- The current forecast includes the reduction of both procurement contract value and other project costs.

### CONTRACT CHANGES



### CONTRACT CHANGE ANALYSIS

The figures for September 1996 are as follows:

Approved Changes ..... (0.4%)  
 Pending Changes ..... 0%  
 AFE ..... 10%

### SCHEDULE

Schedule Car Delivery		Change from Last Month
1st Car	March 1998	N/C
52nd Car	June 1999	N/C
Design Progress	90-95% complete	N/C
Fabrication Progress	25-30% complete	N/C
Critical Path	Carshell delivery	N/C
Delay (1st Car)	-16.5 months	N/C
Data Date	September 1, 1996	

### SCHEDULE ANALYSIS

The Contractor's last forecast schedule reflected a total of 16.5 months delay in 1st car deliveries. Time required for Acceptance Testing of the 1st car increased in the August schedule due in part to limited availability of Test Track (Revenue Operation). Other subsystems with potential impact on delivery are air conditioning, doors and communications equipment. Carshell delivery is still on the critical path. Acceleration of the delivery schedule for the first several carshells is unlikely, however, the delivery schedule is projected to improve for later units.

In recent schedules, STS assumed that the MTA can accept cars at a higher rate than specified (2 cars per month).



**L.A. LIGHT RAIL VEHICLE  
Summary Status Report  
Period ending - September 27, 1996**



**AREAS OF CONCERN**

**NEW**

***Item (Date Initiated September 1996)***

**Lack of Progress in the Design of Vehicle Communications**

***Concern/Impact***

Siemens selected Vale Harmon (VH) of Montreal to design and build the vehicle communications systems. To date, two areas of concern exist:

- VH is consistently late with design deliverables; in that their deliverables are on the critical path, this may impact the delivery of cars.
- VH has not made it evident that they have a comprehensive understanding of the P2000 contract technical requirements.

***Status/Action***

STS and VH management have been tasked to present a corrective action plan on 24OCT96 in Los Angeles. A Communications Equipment Design Review will also be scheduled at the same time.

***Item (Date Initiated September 1996)***

**Lack of Progress in the Development of Manuals and Training**

***Concern/Impact***

Lack of progress exists in both the development of Repair and Parts Manuals, and in the Vehicle Training Program.

***Status/Action***

STS Management has been requested to expedite the supplier, Trans Ed.



**L.A. LIGHT RAIL VEHICLE**  
**Summary Status Report**  
**Period ending - September 27, 1996**



**AREAS OF CONCERN (CON'T)**

**ONGOING**

***Item (Date Initiated June 1996)***

Vehicle Weight

***Concern/Impact***

The current version of Vehicle Weight Report, Revision No. 11, indicates a margin of approximately 1300 pounds under the specified weight. Although this news is encouraging, it represents less than a 1% margin.

***Status/Action***

Revision 11 of the Weight Report includes the actual carshell weight, and the weight of several actual on board systems measured during FAI. The vehicle assembly process tends to add additional weight and continued vigilance is necessary.

***Item (Date Initiated March 1996)***

Fatigue Test of Power Truck

***Concern/Impact***

In late June, at approximately 790,000 cycles into the 2,000,000 cycle test, cracks developed in both of the friction brake support arms for the second time. Although not identical to the previous failures, these failures were in the same "general" location, and dictate a re-design of the structure.

***Status/Action***

Duewag is using a cast friction brake support structure in lieu of the fabricated arm. They recently submitted the following schedule for re-testing the power truck:

- |  |         |
|--|---------|
| • Three friction brake arm castings delivered to Duewag: | 13SEP96 |
| • One casting welded to truck cross beam for pre-test:   | 18SEP96 |
| • Commence pre-test at Duewag Uerdingen test facility:   | 23SEP96 |
| • Complete pre-test of cast bracket (2,000,000 cycles):  | 07OCT96 |
| • If successful, weld two cast brackets on truck frame:  | 11OCT96 |
| • Statistical stress measurement test series in Berlin:  | 18OCT96 |
| • Complete 2,000,000 cycle fatigue test:                 | 04NOV96 |



**L.A. LIGHT RAIL VEHICLE  
Summary Status Report  
Period ending - September 27, 1996**



**AREAS OF CONCERN (CON'T)**

***Item (Date Initiated February 1996)***

**Schedule Slippage**

***Concern/Impact***

Siemens submitted their 01SEP96 Data Date schedule, and there were no substantive changes from the 01AUG96 version. Delivery of the first car is approximately 16→17 months late, with delivery of the last car approximately 7 months late.

***Status/Action***

Although realistically little can be done at this point to improve the delivery of the first 20 or so vehicles, STS Management indicated that a two-shift work schedule will be implemented to improve the production schedule. Siemens is also preparing a revision to the Vehicle Design Conformance Testing portion of the schedule. Significant revisions to the testing subschedule are expected in the October revision.

***Item (Date Initiated November 1995)***

**Carborne Signal Equipment for 16 Standard Cars**

***Concern/Impact***

Current plans call for sixteen LA Standard Cars to be assigned to the Metro Blue Line (LA→Long Beach). The Standard Cars require on-board signal equipment compatible with the Blue Line wayside before they can enter revenue service. STS was requested to provide a proposal for the supply of this equipment.

***Status/Action***

STS Executive Management promised to expedite submittal of their proposal.

***Item (Date Initiated July 1995)***

**Cancellation of 22 Standard Cars**

***Concern/Impact***

STS requested \$10 million in damages from the cancellation of 22 cars. This claim must be validated before payment can be made.

***Status/Action***

Back-up data from STS is being evaluated by MTA Auditing.



**L.A. LIGHT RAIL VEHICLE  
Summary Status Report  
Period ending - September 27, 1996**



**AREAS OF CONCERN (CON'T)**

***Item (Date Initiated March 1995)***

HVAC Design

***Concern/Impact***

Sutrak has completed a Prototype Unit. Although this prototype has been physically inspected, the first systems test has been postponed by Sutrak.

***Status/Action***

STS revised their test schedule to include the following HVAC events slated as follows:

- HVAC Design Conformance Test/Phase I: 18→27NOV96
- HVAC Design Conformance Test/Phase II: 03→06DEC96
- HVAC First Article Inspection/Lamar/CO: 20DEC96

**RESOLVED**

***Item (Date Initiated March 1996)***

Failure to Press Disc Brake Hubs onto Axle at the Design Force

***Concern/Impact***

Due to a mis-communication between STS, Duewag, Penn Machine, WABCO, and BSI, the German supplier of braking discs and hubs, the interference fit between the braking disc hubs and the axle seat for the braking disc hubs requires a pressing force of up to 94 tons. Apparently, the braking disc was designed for a different size hub. LTK views the mounting force required as excessive, in that pressing forces this high can damage the axle.

***Status/Action***

Results of the hub pressings to date indicate that the required force is less than 90 tons in all cases. Additionally, the disc assembly is actually two-piece (disc + hub), obviating the need to press the hub off the axle to replace a worn disc. The satisfactory results of the hub pressings allows this issue to be closed.