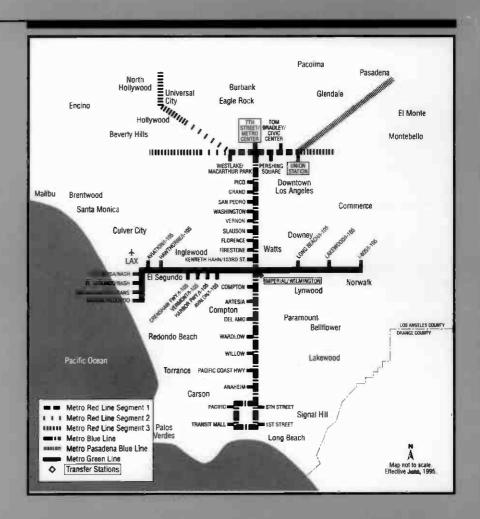
# MTA METRO CONSTRUCTION



Executive Report Rail Program Status



# RAIL PROGRAM STATUS SUMMARY

THE LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY
METRO CONSTRUCTION DIVISION



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 99.4% Actual 80.3%

10.4% 7.7%

The construction variance is due to C6435 Reconstruction and Retrofit of Bridges.

Safety Status Lost Time Rate Lost Work Days Project Rate 0.0

National Average

0.0

4.9 143.1

The project is producing 19,000 construction hours per month with no Lost Time Injuries.

#### Areas of Concern

• Design criteria must be reconciled by August 8, 1996 to avoid impacting the May 2001 ROD.

#### Monthly Highlights

- The CWO 037 PIP for \$3 million to define scope, design requirements and path-forward for final design was approved.
- A package was submitted to Capital Planning to facilitate the application and approval the CTC grant.
- A five-phased approach for approval of final engineering was initiated.

# METRO RED LINE SEGMENT 2

Cost Status

Current Budget

\$1,640,781,000

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

Schedule Status

Design Progress

Construction Progress

Wilshire Corridor

Plan

84.4%

84.0%

Current Plan July 1996

Actual

84.6%

76.0%

Wilshire Corridor began revenue operations on July 13, 1996.

Vermont/Hollywood - Current Plan

Dec 1998

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

Safety Status Lost Time Rate Project Rate

National Average 4.9

Lost 11me Hate

2.7 73.1

148.1

Fifteen contracts were completed with no Lost Time Injuries.

# Areas of Concern

Installation of piles and excavation of B251E/F are delaying trackwork access, station

# Monthly Highlights

- MTA began revenue operations of the Wilshire Corridor on July 13, 1996.
- Contract B263, Kaiser Hospital Second Entrance was placed on hold due to revisions to the contracting schedule.
- MTA is reviewing options to mitigate schedule delays for the Vermont/Hollywood Corridor.

# METRO RED LINE SEGMENT 3 NORTH HOLLYWOOD EXTENSION

Cost Status

Current Budget

\$1,313,348,000

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

Schedule Status Design Progress

Current Plan September 2000

Plan

98.5%

Construction Progress

51.7%

Actual 91.1%

26.5%

System and pre-revenue operation schedules are being reviewed to mitigate schedule delays.

Safety Status Lost Time Rate Lost Work Days Project Rate 0.2 13.9

National Average 4.9

4.9 148.1

• The project completed 140,000 labor hours with no Lost Time Injuries.

#### Areas of Concern

· Project impacts due to tunneling under the Santa Monica Mountains are under review.

# Monthly Highlights

- All known schedule impacts due to C0311 were incorporated into the project schedule. Total delay is approximately five months.
- Trackwork, systems and pre-revenue operations schedules are under review.
- · Continued work on finalizing a new revised baseline schedule.

# 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

Design Progress
Plan 0%

Construction Progress

Current Plan TBD

Actual

0% 0% 0% 0%

Safety Status Lost Time Rate Lost Work Days

Project Rate

National Average

N/A N/A 4.9 148.1

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

- A first draft of the final report on the Engineering Feasibility Study was prepared and submitted by EMC.
- The EMC is refining the vertical alignment based on new data from Enviro-Rail.
- The EMC submitted rough order-of-magnitude cost estimates for the study alignments.

# 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

Design Progress

Construction Progress

Current Plan November 2002

Plan 27.8%

0.0%

Actual

29.4%

0.0%

The plan reflects the revised scope of work included in the Project Implementation Plan.

Safety Status

Project Rate

National Average

Lost Time Rate

N/A N/A

4.9 148.1

Lost Work Days No Construction Safety activity for this period.

#### Areas of Concern

Nine full take parcels for C0521 will impact the project schedule by approximately 77 days.

# Monthly Highlights

- Final design PIP negotiations continued.
- MTA issued CWO #28 Time Extension of Final Design Services to the EMC.
- Initial constructability review by the PMA consultant is underway.

# VEHICLE ACQUISITION PROJECT

Cost Status

Current Budget

\$257,597,000

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

Schedule Status

Design Progress

Fabrication Progress

Schedule Car Delivery

1st Car 52nd Car June 1997 Mar 1999

90%

25%

• The schedule from the contractor reflects 13.5 months delay in first car deliveries due to design and manufacturing problems.

# Areas of Concern

• The MTA received the Vehicle Weight Report which forecast a weight 250 lbs. over the specified limit.

# Monthly Highlights

- The first carshell manufacturing was completed in July.
- MTA met with STS to review areas of concern and project staffing improvement.
- LTK hired a Resident Inspector to oversee work at the Sacramento assembly plant.

STATUS DATE: 7/26/96

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

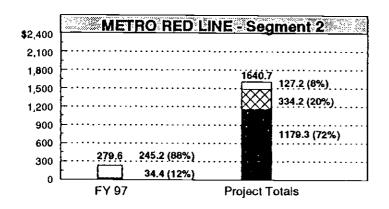
PROJECT: TOAL RAIL PROGRAM

Page 4

ELEMENT	BUD	GET	COMMIT	MENTS	INCURR	ED COST	EXPEND	TURES	CURRENT	VARIANCE
DESCRIPTION	ORIGINAL	CURRENT	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	FORECAST	(9-2)
	(!)	(2)	(3)	(4)	(5)	(c)	(7)	(8)	(9)	(10)
T CONSTRUCTION	5,153,507	5,342,839	4,367	3,721,256	o	0	37,425	2,749,635	4,961,952	(45,054)
S PROFESSIONAL SERVICES	1,685,529	2,105,187	2,247	1,558,079	0	o	13,290	1,401 278	2,061,013	55,153
R REAL ESTATE	480,002	536,539	23	400,368	o	0	(214)	398,395	485,863	2,627
FUTILITY/AGENCY FORCE ACCOUNTS	146,279	160,748	э	129,398	0	0	2,832	108,660	156,679	1,018
D SPECIAL PROGRAMS	11,045	16,747	0	5,753	o	0	70	4,800	15,701	(1,046)
C CONTINGENCY	560,120	339,286	0	0	0	0	0	0	273,112	(69,060)
A PROJECT REVENUE	(18,115)	(38,152)	0	(2,822)	0	0	o	(11,284)	(33,161)	4,992
PROJECT GRAND TOTAL	8,018,367	8,463,194	6,640	5,812,032	0	0	53,403	4,651,484	7,921,159	(51,370)

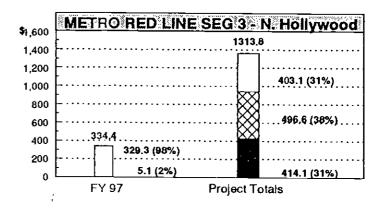
NEW REQUIREMENTS DESCRIPTION	BUDGET ORIGINAL CURRENT		COMMIT			ED COST	EXPEND		CURRENT	VARIANCE
DESCRIPTION		CURRENT	PERIOD	10 DATE	PERIOD	TO DATE	PERIOD	TO DATE	FORECAST	(9-2)
*** · · · · · · · · · · · · · · · · · ·	<u>{!}</u>	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
T CONSTRUCTION	o	49,393	553	. 44,677	o	0	0	22,226	60,325	10,632
S PROFESSIONAL SERVICES	0	17,495	0	16,474	0	0	0	9,443	17,665	170
R REAL ESTATE	0	. 0	. О	0	0	0	0	37	О	0
F UTILITY/AGENCY	o	o	0	0	o	o	0	О	0	0
FORCE ACCOUNTS										
D SPECIAL PROGRAMS	o	20	o	20	o	o	0	20	20	o
C CONTINGENCY	0	1,348	0	0	0	0	0	0	1,027	(320)
A PROJECT REVENUE	0	0	0	0	0	0	0	0	(11,462)	(11,462)
NEW REQ. SUBTOTAL	0	68,256	553	61,171	0	0	0	31,726	67,575	(980)
PROJECT GRAND TOTAL	8,018,367	8,531,450	7,193	5,873,203	0	0	53,403	4,683,210	7 988,734	(52,350)

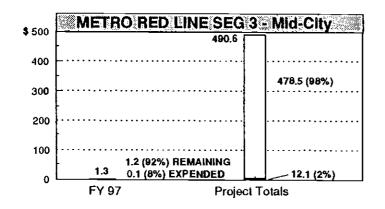
# BUDGET STATUS - July 26, 1996 (in \$ Millions)

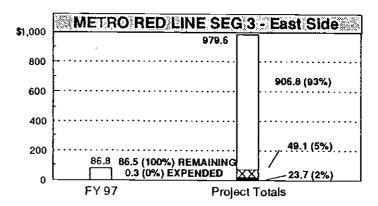


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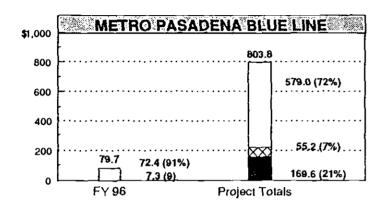


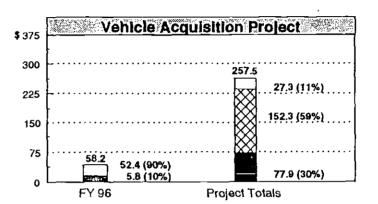


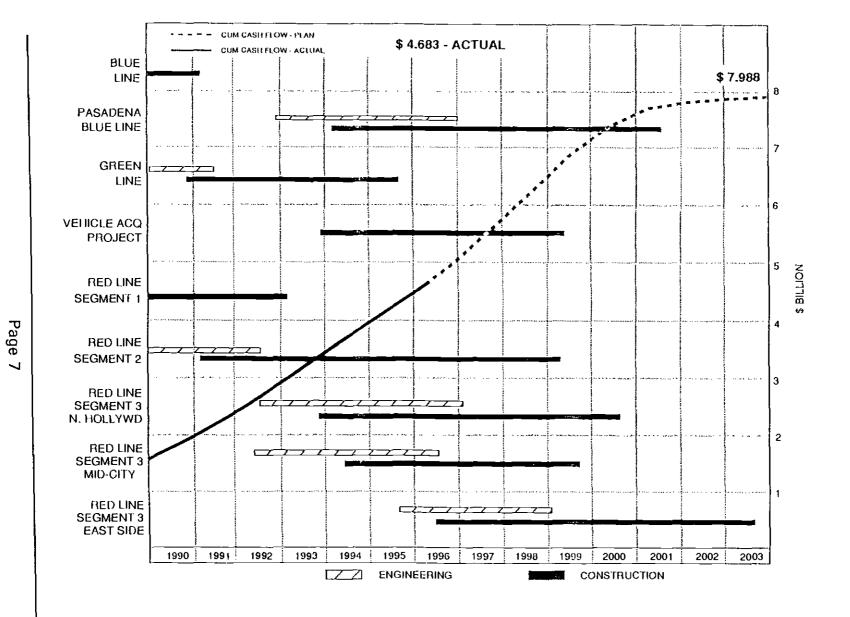


Actual Spent Encumbered Remaining Budget

# BUDGET STATUS - July 26, 1996 (in \$ Millions)







# METROPOLITAN TRANSPORTATION AUTHORITY

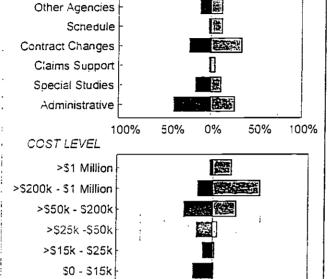
									RCES (IN		OTRONI DNS)	• •							JULY	1006
		BLUE	PASA			GREEN	METRO	AED	METRO	RED	METROF	SED LINE	METRO	RED LINE					TOTA	N.
•	LIN	<u>×</u>	8LUE	FINE -	<u>LIN</u>		SEGMI	ENT 1	SEGME	WI 5	SEG 3	* NII	5EG 3	· MC	5E0 3		<u>PRO</u>	<u>JECI</u>		MAH
ORIGINAL SCOPE;						<del>-</del>		<i>=</i>	<u>-</u>									76		<u>*</u>
FFA-SECTION 3							605.3	42	667.0	40	681.0	52	242.5	19	492.9	50			2688.7	32
FTA - OTHER																	11.9	J.	11.9	o
ISTEA - FED SURFACE THANSIT PROG									52,1	3	50.0	1			25.0	2	84.0	32	211.1	ن
FED-ISTEA HSTP/CMAQ											39,9	3	40,4	ម	86.1	9	6.1	3	172.5	2
FIA-SECTION 4							90,6	σ̈											90.6	1
STATE			387.8	18	106.4	15	210.3	15	133.0	В	65.0	5	40.0	ន	65.0	7	33.5	13	1041.0	12
STATE ISM MATCH											3.2	ں	7.2	2	11.1	1	į		21.5	υ
SB 1995 THUST FUND											75.0	õ							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
PROPIC (AMERICAN DISABILITY ACT)					6.0	1					<u> </u>								6.0	U
CITY OF LOS ANGELES							34,0	2	157.5	10	190.7	14	9.0	1	0.3	υ			391.5	5
BENEFIT ASSESSMENT		 	<u> </u>			<u> </u>	130.3	9	58.0	1	13.5	ı					.	:	201,8	2
COST OVERRUN ACCOUNT					- <del> </del>	 	200.1	14											200.1	2
TOTAL OTHER LOCALLY	877.2	100	803.9	100	717.6	100	1450.1	100	1569.5	96	1311.1	100	490.7	100	979.5	100	257.5	100	8457.3	99
FUNDED ACTIVITIES:												,								
PHOP C (TRANSIT ENHANCEMENTS)									òθ.7	1	2.7	0							71.4	'
FED ISTEA HSTP/CMAQ									2.5	0						]		!	2.5	o
TOTAL		!				i			71.2	4	2.7	o				j		·	73.9	7

Note: Data rellects Current Budget

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SASIS

# Professional Service Contracts Changes by Basis and Cost Level Amended Changes Only VOLUME DOLLARS



# CHANGE BASIS ANALYSIS

Administrative changes account for approximately 41% or 291 of the 713 Consultant Change Notices overall. This equals 26% 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 68.6% of all change costs associated with the Rail Project or \$65M of a total change cost of \$95M. This equals 21% of the total change volume or 147 of 713 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

50%

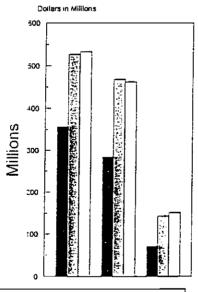
0%

50%

100%

100%

# Consultant Cost Status



<u> </u>	DESIGNI	СМ	OTHER
Current Authonzation	356	283	70
Forecast	527 .	468	143
Sudget	533	462	: 151

# PROFESSIONAL SERVICES COST ANALYSIS

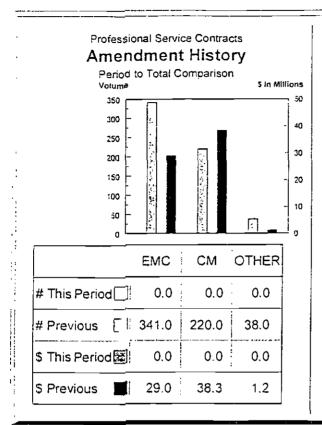
Categories represent all professional contracts, not individual contracts (i.e. "design" includes all line 11 contracts not just EMC).

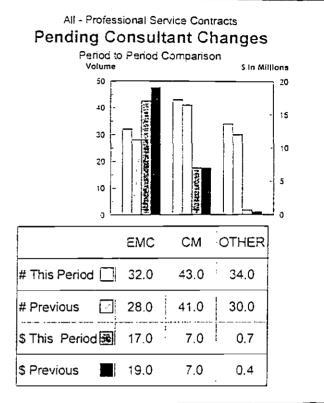
The forecast cost for design and other consultant contracts is below the current budget. While the forecast for construction management contracts continues to exceed the budget amount, due to delays in project activities on the Metro Red Line Eastside Extension and Pasadena Blue Line

# Data Source:

CMS: Consultant Contract Authorization, Forecast and Budget Values.

CHNGSAMP:07/96





# CONSULTANT CHANGE NOTICE ANALYSIS

Three new Requests for Change (RFC) were received during the period with a total estimated value of \$107 thousand.

Nine new Consultant Change Notices (CCN's) were assigned during the period with an estimated value of \$1.35 million.

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

# Cost Performance Relutive to Corporate Goels (IN THOUSANDS)

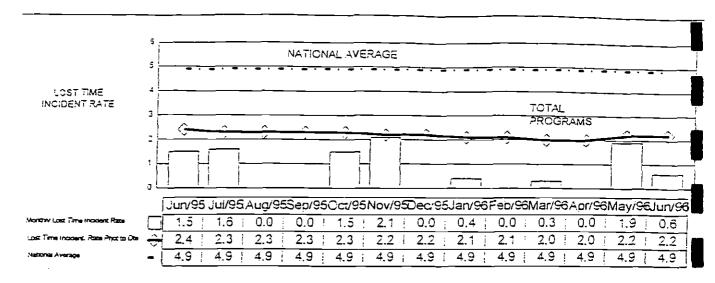
	MEINUE	PLUE LINE	METRO P	ASADENA	METHO G	HEEN TINE				RED LINE	METRO F	RED UNE	METRO F	ED UNE	METRO	ED LINE	VEHICLE A	CQUISITIC	TOT		LY 199 ROO.
	rou Lioe	DEDOCE OF	BLUE		### T T ##		SEGN	IENT I	SEGN	MENT 2	SEGMEN	T 3 NH	SEGMEN	T3MC	SEGMEN		PRO.		PROG		IGOA
CONSTRUCTION	657,487	74.95%	448.058	55 65%	477 236	PERCENT	DOLLARS	PERCENT	DOLLARS	PERCENTI	DOLLARS		DOLLARS	PERCENT	DOLLARS	PÉRCENT	DOLLARSI	PERCENT	DOLLARS	PERCENT	
	051,401	74.50/6	440,030	22 02.76	4//,236	66.49%	812,270	56 02%	1,137,802	69.35%	826,874	63.04%	0	0	641,401	65,15%					
REAL ESTATE	55,592	6 34%	59.916	7,44%	26,047	3.63%	140,000	9 66%	87,773	5 35%	89,076	6.79%	اه	0	27,459	2.79%	0	0.00%	485,863	5 0 6 %	
PHOFESSIONAL SERVICES:																					
ENGINEERING/DES	69,597	7.93%	119,401	14 83%	83 296	11.60%	221,659	15 29%	165,514	10 09%	87,121	fi,54%	0	o	103,992	10.55%	1,700	0 84%	852,170	10 67%	
CONSTRINGME.	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 63%	0	0.00%	718,603	9 00%	
STAFF	17,655	2.01%	46,820	5,82%	24,179	3.37%	95,558	6 59%	55,749	3.40%	59,588	4.51%	o	0	37,565	3 62%	3,840	1.91%	340,951	4.27%	
OTHER	14,222	1 62%	22,075	2.74%	17,337	2.42%	32,671	2.25%	21,268	1,48%	41,709	3,18%	٥	٥	17,358	1.76%	9,237	4 50%	178,677	2 24%	100 E
SUBTOTAL	193,106	22.01%	255,150	31.69%	203,025	20.20%	456,317	32.16%	410,094	24,99%	304,337	23.20%	<u>-</u>	ō	243,798	24.76%	14,777	7.34%	2,090,604	26.17%	20%
CONTINGENCY	963	0.11%	43,187	5.36%	12,757	1.78%	31,432	2.17%	5,922	0 36%	102,810	7 84%	o	0	71,618	7.30%	5,930	295%	274,819	3 44%	  }
PROJECT REVENUE	(29,677)	3 41%	(1.211)	-0.15%	(1,263)	-0.18%	0	0 00%	(810)	-0 05%	(11,462)	-0.87%.	o	o	o	0 00%	0	0.00%	(44,623)	0.56%	
GRAND TOTAL	877,271	100 00%	805,100	100.07%	717,802	100.00%	1,450,019	100 00%	1,640,781	100 00%	1,311,635	100.00%	0	0	984.476	100 00%	201,351	100 07%	7,988,435	100 00%	

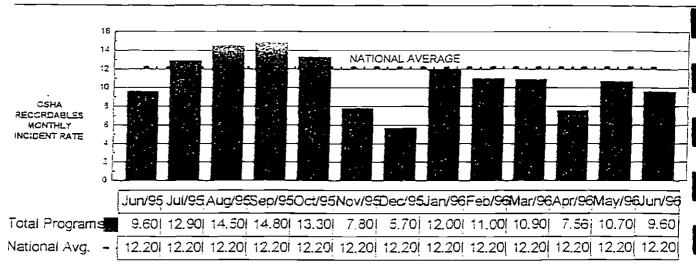
NOTE: Data reflects Current Forecast.

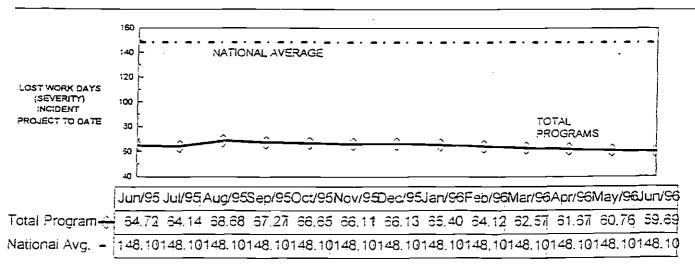
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# TOTAL PROGRAM SAFETY SUMMARY

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Prepared by:

Sedgwick James of CA Inc.

# METRO PASADENA BLUE LINE EXECUTIVE SUMMARY

Summary Status Report

Period Ending - July 26, 1996

phase to be completed in December 1996.

to cost reduction work scope changes continued.



# MAJOR ACTIVITIES THIS PERIOD Sierra Madre Villa C6435 - Bridge Reconstruction & Retrofit Lake Ave. Overcrossing: Completed concrete placement for four abutment Allen Avenue footings, began excavation & shoring of Bent 2 and forming wing walls, completed installation of traffic control system for Lake Avenue westbound I-210 at Bent 2. Memorial Park • Allen Ave.: Began drilling 20" CIDH piles for Bent 2 footing. · Sierra Madre Bl. Underpass: Began installation of reinforcement at Bent 5. Del Ma completed installation of overhang forms. Lake & Allen Ave. bridges: Began column casing fabrication. Fillmore Street Arroyo Seco Parkway Bridge: Completed backfill operations behind abutments, continued installation of catch plates. Mission Street C6430 - Arroyo Seco Bridge Reconstruction · Continued park restoration change order work. · Continued punch list work items. Continued close-out activities. venue 57 Completed approximately 50% of safety ertifications Southwest Museum C6410 - Los Angeles River Bridge French Avenue Completed close-out pending installation of drain holes to correct for standing water near Bent 6 and receipt of final payment request. Avenue 26 Chinatown Union Station SYSTEMWIDE ACTIVITIES • The CWO 037 PIP for \$3.0M to define scope, design requirements and path-forward for final design was approved. A package to facilitate application and approval of a CTC grant was prepared by MTA Project Control for submittal to Capital Planning. • A five-phased approach for approval of final engineering, whereby work packages will be approved for design based

on criticality, was initiated; detailed PIP's will be implemented for each phase beginning in August 1996, with the last

Evaluation by MTA Environmental staff of the potential for Supplemental Environmental Impact Reports (SEIR's) due

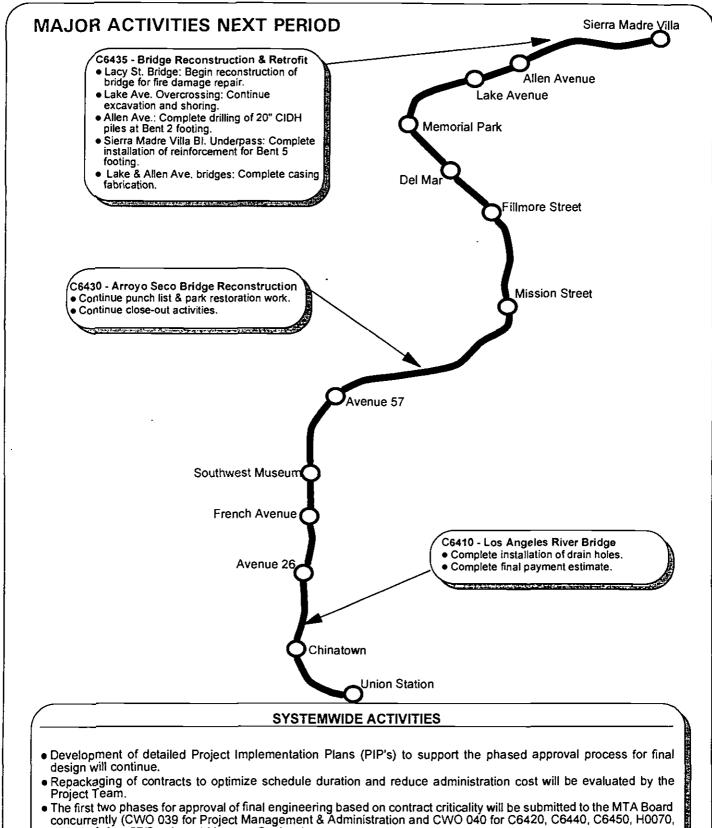
Interface with community representatives regarding work scope changes continued.

Summary Status Report

Period Ending - July 26, 1996

H0090, & Ave 57/Southwest Museum Stations).





Summary Status Report Period Ending - July 26, 1996



# BUDGET

Amount (\$ in mil)	Change from Last Month (\$ in_mil)
841	None
804	None
804	None
225	+ 2
170	+ 8
	(\$ in mil) 841 804 804 225

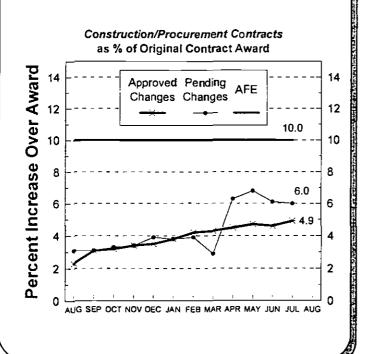
# OTHER LOCALLY FUNDED ACTIVITIES

	Amount (\$ in mil)	Change from Last Month (\$ in mil)
Original Budget	0	None
Approved Budget	0	None
Current Forecast	1	+0.1
Commitments	0	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, as amended by a report submitted to the Board in June.
- There is no change to the overall budget during the period. There is an increase of \$0.3M in the Other Locally Funded Activities category to reflect the negotiated value of the Lacy St. Bridge fire repair work at Contract C6435, Reconstruction and Retrofit of Concrete & Steel Bridges.
- The increase in expenditures for July is for construction (C6430, Arroyo Seco Bridge Reconstruction; C6435) and professional services contracts (engineering; construction management; MTA).

# CONTRACT CHANGES



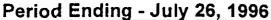
# **CONTRACT CHANGE ANALYSIS**

The percent of approved and pending change values shows a slight increase this period, due to the progress of work on the Arroyo Seco Bridge Reconstruction and Reconstruction and Retrofit of Concrete and Steel Bridges contracts (C6430 and C6435, respectively).

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.

# **Summary Status Report**





# **SCHEDULE**

Current ROD

С	hang	e	from
	Last	M	onth

None

Design Progress\* 80.3% None Constr. Progress 7.2% +0.1

May 2001

Critical Path -119 days -28 days Float (Calendar Days)

# SCHEDULE ANALYSIS

- The forecast ROD is May 2001. Delays in the schedule due primarily to finalizing scope definition and obtaining community concurrence for cost reduction items have resulted in negative float. The Project Team is evaluating measures to mitigate these delays.
- Mitigation measures include a phased approval process, whereby packages will be submitted to the Board based on criticality. This is expected to mitigate one month of the potential four month delay.
- Additionally, the Project team is working to identify activities in the design and construction durations that can be realistically shortened or resequenced.
- The schedule may be further impacted if a Supplemental Environmental Impact Report for cost reduction scope changes is required.

# **EMC** COST PERFORMANCE Cost Estimat Final Design - CWO 37 At Completion (enollim nl) July 96 Current Productivity 0.1 Contract \$3.0 Forecast \$3.0 **Design % Complete**

# **EMC** COST PERFORMANCE ANALYSIS

- CWO 037, established at the February 1996 MTA Board meeting, was approved for development of a PIP and definition of new scope to incorporate approved cost containment items.
- Through July 26, 1996, the EMC is reporting 37% progress on this CWO and a CPI of 87%. Weekly progress meetings are being held to assure the design effort stays within scope, schedule, and budget.
- EMC plans to mitigate any problems encountered in achieving the work; therefore, a CPI of 100% is forecast for the overall work order.

<sup>\*</sup>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

Summary Status Report Period Ending - July 26, 1996



# CONSTRUCTION SAFETY STATISTICS

Change from Last Month

Recordable Injury Rate

1994 National Average 11.8

Project Rate (Cum.) 3.0 -0.2

Lost Time Rate (Frequency)

1994 National Average 4.9

Project Rate (Cum.) 0.0 None

Lost Work Days (Severity)

1991 National Average 148.1

Project Rate (Cum.) 0.0 None

NOTE: Statistics are based on June data.

# CONSTRUCTION SAFETY SUMMARY

- Project is producing over 19,000 construction work hours per month and has continued with zero Lost Time cases and no lost work days.
- Completed over 526,000 total workhours to-date without Lost Time Injury.
- Continued with eight (8) OSHA-200 recordable cases to date, resulting in a further reduction of the cumulative project rate.

# AREAS OF CONCERN

# ONGOING

Item (Date Initiated: May 1996)

Reconciliation of Design Criteria

# Concern/Impact

Value engineering, cost containment and community initiated scope changes have resulted in the need to reconcile design criteria revisions. The criteria must be reconciled by August 8, 1996 in order to support the May 2001 ROD.

# Status/Action

The Project team is working with EMC to define the final work scope, which is required before the design criteria can be reconciled. In the interim, steps are being taken to request a waiver or exemption to the procedure from the Engineering Department within the Construction Division, so final design can start. A follow-up meeting among Project team members is scheduled for August 5, 1996.

Summary Status Report Period Ending - July 26, 1996



# AREAS OF CONCERN (Con't)

# ONGOING(Con!t)

Item (Date Initiated: March 1996)

Start of Final Design

# Concern/Impact

The current schedule shows -119 calendar days of negative float because final design for Contract C6450 and other near critical contracts has not begun as early as planned.

# Status/Action

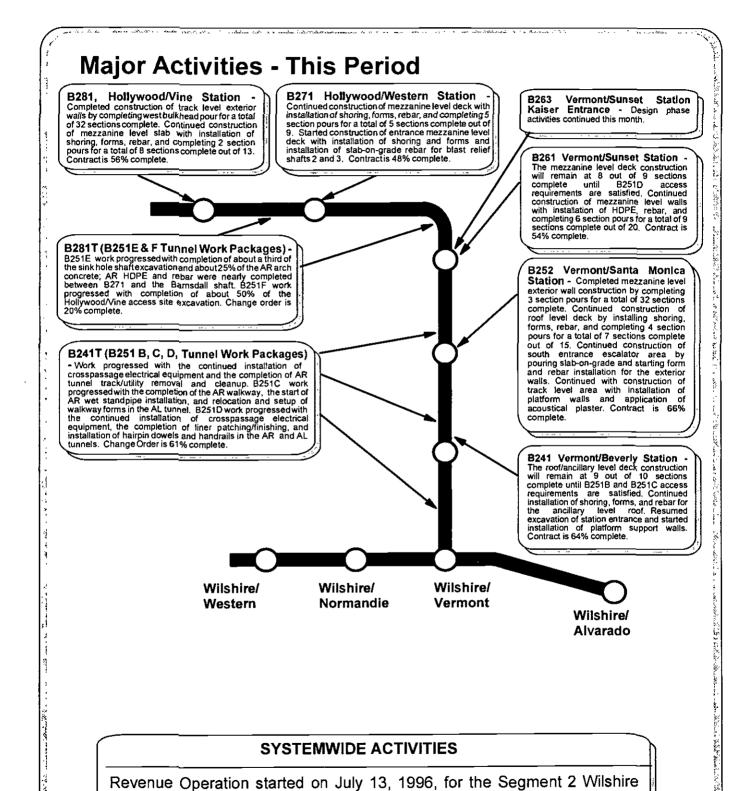
A rolling wave approach, whereby work packages will be approved for design based on criticality, has been implemented. This phased approach will mitigate approximately one month of the -119 day negative float. If for any reason this plan cannot be executed as scheduled and the MTA Board does not approve the first phase at the August meeting, the ability to mitigate one month of the negative float will be gone.

# **METRO RED LINE SEGMENT 2**

**EXECUTIVE SUMMARY** 

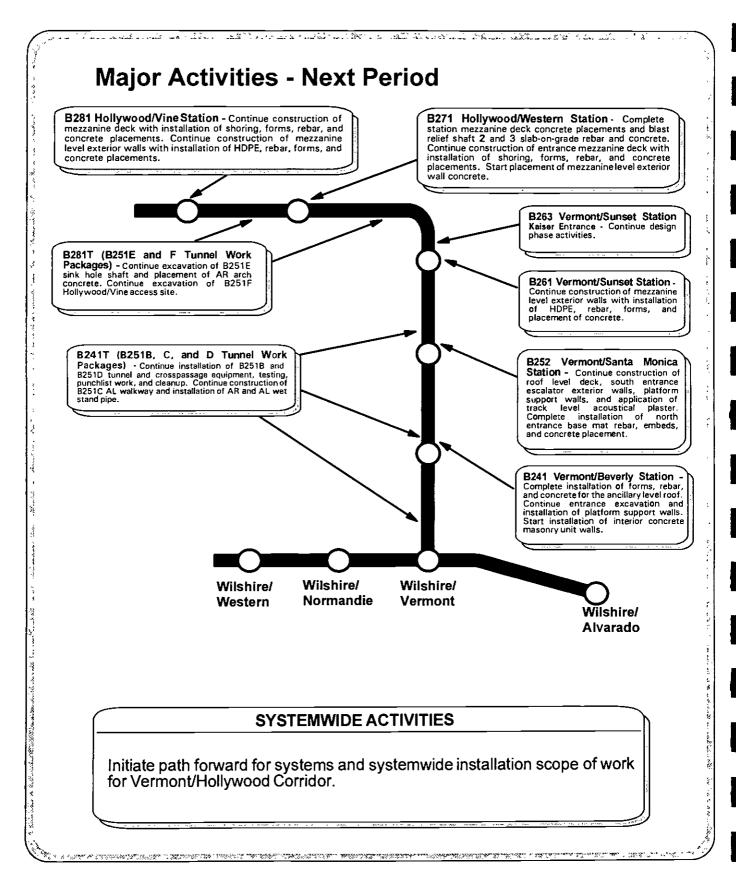
Corridor.





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# BUDGET

	Amount (in \$ mil)	Change from Last Month (in \$ mil)
Original Budget	1,446	None
Approved Budget	1,576	None
Current Forecast	1,576	None
Expenditures	1,151	34

# Additional Locally Funded Activities

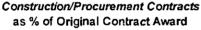
	Amount (in \$ mil)	Change from Last Month (in \$ mil)
Original Budget	0	None
Approved Budget	65	None
Current Forecast	65	None
Expenditures	28	None

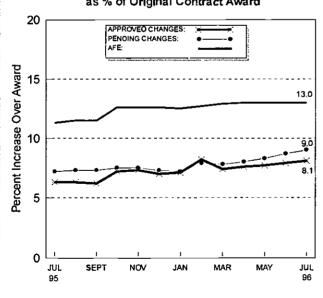
# **BUDGET ANALYSIS**

Original scope expenditures increased \$34.0 million\*, primarily due to construction and professional services contracts. The expenditures to date are 73.0% of the current total forecast. Expenditures for Additional Locally Funded Activities were unchanged at 43.2% of the current total forecast. Overall, there are no changes to the total budget and forecast categories this period.

\*Due to the implementation of the new Financial Information System (FIS), actual expenditure amounts from March, April, and May have been adjusted to reflect corrected expended values. This period reflects the cumulative expenditure amount from March through June.

# **CONTRACT CHANGES**





# **CONTRACT CHANGE ANALYSIS**

The percent of approved and pending change values shows a slight increase this period. The approved changes are attributable to the progress of work on the B241 and B281 station contracts and tunnel completion contracts (B241T and B281T), as well as an increase in pending changes on the Vermont/Sunset station and Ancillary Construction and Maintenance contracts (B261 and B290).

The significant approved changes include:

- B241, Vermont/Beverly Station-CN 99.00, Concrete reinforcing steel quantity overrun.
- B241T, Tunnel Completion Portion of B241-CN 7.01, Install nitrile gasket and ringplate; CN 27.00, Precast covers; CN 29.00, Leak and misc. repairs at nitrile gasket location; and CN 30.00, Repair SKK walkway forms.
- B281, Hollywood/Vine Station and Crossover-CN 26.00, Deletion of ashtray receptacles; CN 121.00, Revised conduit stub up locations at electrical.
- B281T, Tunnel Repair/Completion of B281-CN 5.01, Corrections of pre-existing deficiencies to owner; and CN 20.01, Correction of preexisting B251 safety deficiencies.
- B648A, Communications Installation Wilshire Corridor–CN 46.00, Miscellaneous directed work; CN 47.00, Additional smoke detectors/flow monitoring and valve.

The significant pending changes total \$2.3 million, including:

- B261, Vermont/Sunset Station-CN 31.00, Kalser entrance revised emergency exit stairs; CN 96.00, Revise cable room floor; and CN 141.00, Increased kickplate width.
- B290, Ancillary Construction and Maintenance—CN 2.00, Maintenance of B251 tunnels and associated activities; CN 3.00, Station Exit Lights.

# METRO RED LINE Segment 2

# Summary Status Report Period ending - July 26, 1996



# SCHEDULE

Wilshire Corrido	<u>or</u>	Change from Last Month
Current ROD	July 13, 1996	0 days
Design Progress	1 <b>00</b> %	None
Critical Path Float	+0 Days	0 days
<u>Vermont/Hollyw</u>	ood Corridor	Change from Last Month
Current ROD	Dec. 31, 1998	None
Design Progress	99%	None
Critical Path Float	-130 Days	+15 days
Const. Progress	76.0%	1.0%

# SCHEDULE ANALYSIS

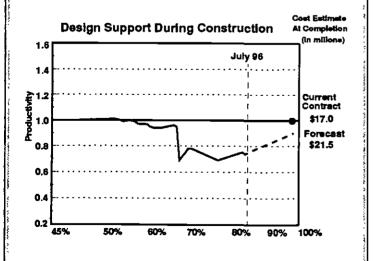
# Wilshire Corridor

 The Grand Opening for Wilshire Corridor was achieved on July 13, 1996.

#### Vermont/Hollywood Corridor

- Vermont/Hollywood Corridor critical path is going through excavation of the sinkhole shaft, tunnel completion, and trackwork access: B610, Trackwork Installation; B620, Train Control Installation; and System Integration Testing and Pre-Revenue Operations.
- Mitigation options under review include alternate excavation support systems, decreasing excavation activity durations, and weekend, shift, and/or overtime work on critical path activities to mitigate forecast delays. The contractor responsible for current critical path work initiated a 6-day workweek and two shifts per day, which resulted in a 2-week improvement to the schedule.

# EMC COST PERFORMANCE



# **EMC**

# COST PERFORMANCE ANALYSIS

- The EMC Cost Performance chart represents the cost performance for design support during construction (DSDC) on a cumulative to-date basis.
- The chart relates the Cost Performance Index (CPI) relative to design support during construction percent complete. DSDC is 82.1% complete through July 1996, at a CPI of 0.74.
- The actual numbers of Requests for Information (RFIs) and other design services, submittals, and Change Notices for both the Wilshire and Vermont/Hollywood Corridors continue to significantly exceed the number budgeted. With the approval of Consultant Change Notice (CCN) 500, budgets through mid 1997 will be established, enabling an increase in earned value, which is expected to significantly improve the CPI.
- The percent complete has been revised this period to reflect the restructuring of the project required to prepare CCN 500 data.



# **CONSTRUCTION SAFETY STATISTICS**

Project-to-Date Rates		Change From Last Month
Recordable Injury Rate		
1994 National Average	11.8	
Project Rate	20.3	-0.2
Lost Time Rate (Frequency)		
1994 National Average	4.9	
Project Rate	2.7	N/C
Lost Work Days (Severity)		
1991 National Average	148.1	
Project Rate	73.1	-0.5

Segment 2 is incurring over 140,000 work hours per month.

# CONSTRUCTION SAFETY SUMMARY

- Fifteen of 16 active contracts were completed in June without a Lost Time Injury.
- Year-to-Date, Segment 2 has produced 10.1 recordable injuries per 200,000 hours of work. This is more than 10% below the National Average of 11.8.
- 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

(Based on June statistics)

As a result of past delays in installation of piles and excavation of B251E Sink Hole Shaft and B251F Hollywood/Vine Access Shaft, June 1996 completion forecasts for B251E and F tunnel trackwork milestones impacted the project completion forecast by 63 calendar days.

# Status/Action

Actions to remedy this situation were discussed with the MTA, EMC, and the Contractor. Mitigation actions taken to-date include proposed adjustments to the excavation support systems to reduce excavation activity durations, the addition of manpower, and/or additional shiftwork on critical path activities. A forecast improvement of 15 calendar days was made in July due to mitigation measures initiated to date.

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# **ONGOING**

# Item (Initiated May 1996)

Vermont/Sunset Station Kaiser Entrance Construction

# Concern/Impact

The B261 street restoration milestone is forecasted to complete significantly later than the required completion date to allow the critical construction activities to proceed. The B263 contract consists of building an entrance into the Vermont/Sunset Station from Kaiser Hospital on the northwest corner of the Vermont and Sunset intersection. The coordination of the Notice to Proceed and site availability is contingent on completion of the B261 street restoration. To facilitate the Work Traffic Control Plan (WTCP) and allow B263 Kaiser Hospital Second Entrance work to proceed, the B261 contract must complete with the final phase of the WTCP. As part of several changes, critical portions of work (emergency exit and air shaft) were modified and deleted from Contract B261 and were added to Contract B263 construction. The emergency exit and air shaft in contract B263 are required for the Vermont/Hollywood Corridor ROD.

#### Status/Action

The CM has completed its analysis to evaluate several scenarios and recommendations for MTA review and approval:

- 1 Allow the B263 contract access when B261 has completed Street Restoration at its current date of March 12, 1998.
- 2 Same as scenario 1, but accelerate the B261 contractor on all work impacting Street Restoration and B263 contract work.
- 3 Prepare entire Kaiser Entrance work as Change Order to the B261 contract.
- 4. Prepare Kaiser Entrance excavation/concrete as a Change Order to the B261 contract and a new Contract B263 for entrance finish work, including elevators.
- 5. Prepare Kaiser Entrance excavation/concrete (including emergency exit and ventilation shaft) as a Change Order to the B261 contract. Prepare Kaiser Entrance elevator finishes as a Change Order to the B710 contract.
- 6. Same as scenario 1, but include a temporary/interim vent in time for ROD. The emergency exit will not be required for Vermont/Hollywood ROD.

MTA is evaluating all scenarios and will provide direction to the CM and EMC based on the findings. The advertise date for Contract B263 has been adjusted to a later date, regardless of the selected scenario.

# **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.

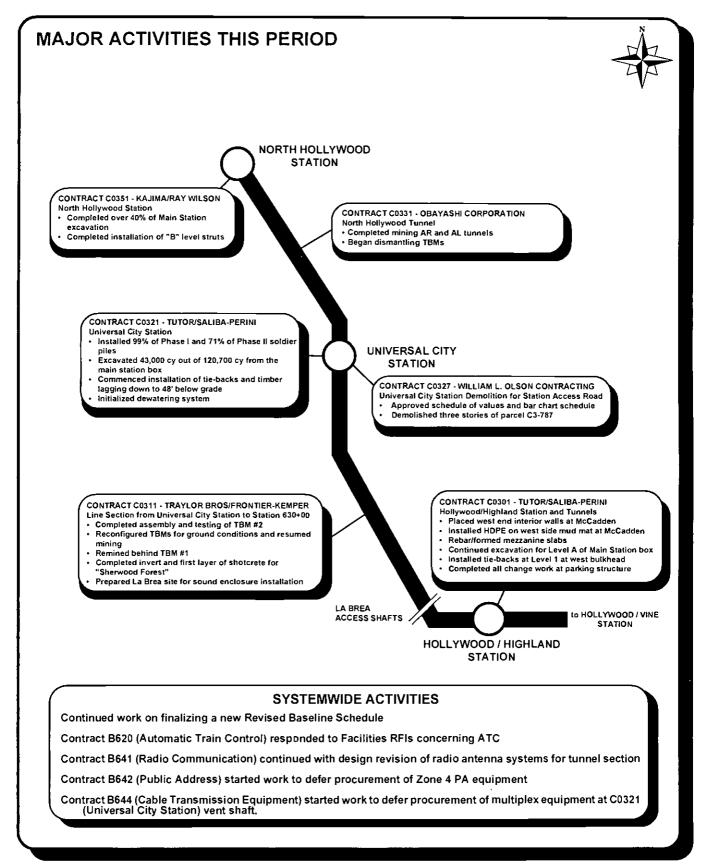
# Status/Action

Assessment of B251 B, C, and D remaining work and access requirements influencing station efforts was initiated. Methods to complete work with the least impact to trackwork and other station milestones are under evaluation. It appears that a significant factor giving rise to the potential impact results from contractor posturing. The CM is evaluating what actions can be taken to maintain the targeted trackwork start date of October 1, 1996.

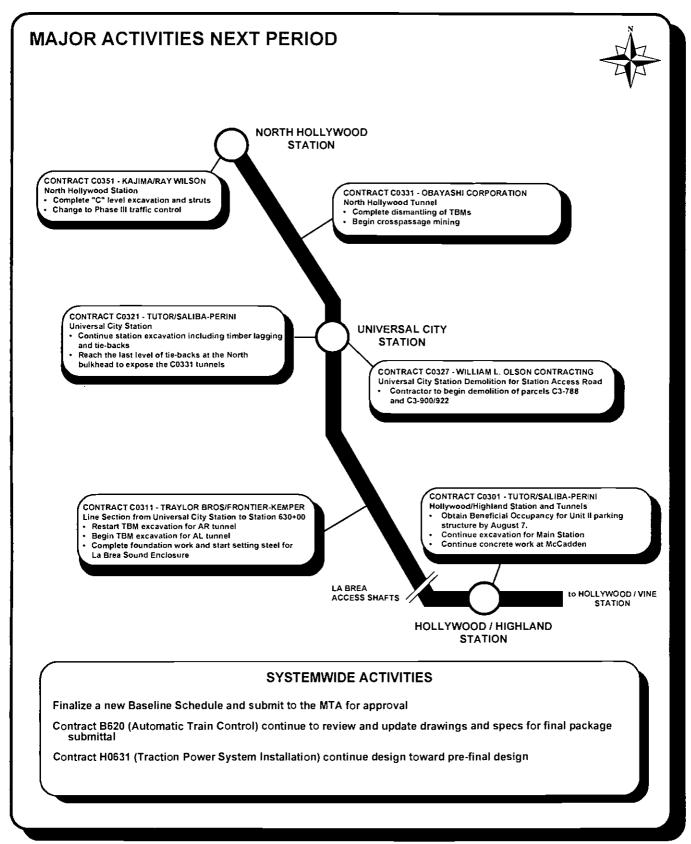
# METRO RED LINE SEGMENT 3 NORTH HOLLYWOOD EXTENSION

**EXECUTIVE SUMMARY** 









ES-2



# BUDGET

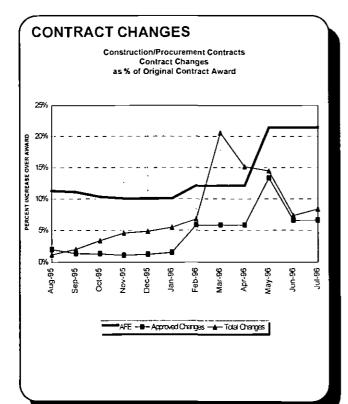
# **ORIGINAL SCOPE ACTIVITIES**

	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	410.6	5.2

#### ADDITIONAL LOCALLY FUNDED ACTIVITIES (ALFA)

# **BUDGET ANALYSIS**

- The Original Budget of \$1,310.8M was established on March 25, 1993 with the approval of the Full Funding Grant Agreement (FFGA). The Approved Budget has been modified on three occasions for a net increase of \$3.02M to provide for Additional Locally Funded Activities (ALFA).
- The Current Forecast has not changed this period from the June 96 fiscal year close.
- The Expenditures for Original Scope Work and ALFA through the current period are \$410.6M and \$3.5M respectively. This represents 31.6% of the Total Current Forecast.
- ALFA Expenditures currently 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 will fall in line with the \$0.8 M forecast.



# CONTRACT CHANGE ANALYSIS

The combined effect of Approved and Pending Changes this period represent an 8.35% cumulative increase to the value of the respective contract award values.

Individually, the value of the Approved Changes stands at 6.63% of the awarded contract amounts, a minor increase over the previous period, while the Pending Changes value increased by approximately 1%, and now stands at 1.71% of the same base.

 These percentages reflect an increase for the Approved Changes of \$190K, the result of a \$175K increase to Contracts C0311, \$30K to C0351 and \$3K to C0351, and offsetting reductions of \$9K to C0301 and \$8K to C0321.

The significant pending changes include:

 Pending Change values increased to approximately \$8.37M this period, some \$4.6M greater than that reported previously. This is the result of a reported \$7.6M increase to Contract C0311 projections, and a \$199K increase to Contract C0311. These values were offset by reductions of \$3.25M to Contract C0301 and a minor \$43K reduction to Contract C0351.

There was no change to the AFE amounts; this figure remains at just over 21% above the total Awarded Contract value.

ES-3

+6

# METRO RED LINE - Segment 3 North Hollywood Summary Status Report Period Ending - July 26, 1996



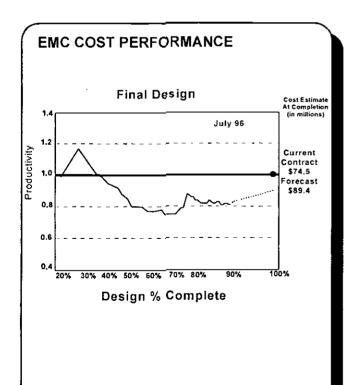
# SCHEDULE Change from Last Month Current ROD October 2000 +6 Design Progress 91.1% +0.1% Construct. Progress 26.5% +0.9%

-160 Cal. Days

Critical Path Float

# **SCHEDULE ANALYSIS**

- Project critical path changed this period from -160 to -154 calendar days. Forecast project completion date is October 18, 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.
- All known schedule impacts due to ground condition encountered in Reach 6C, seasonal springs protection, enclosure at La Brea Shaft, and Special Seismic Section redesign were incorporated into the schedule during this period. Total delay is approximately five months.
- Delay was minimized by revising the project contingency as the first step to ROD recovery.
- 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 pre-revenue operation schedules are being reviewed with the expectation of modifying these activities, in part, to recover from currently forecasted delays. Changes are under MTA, P-D, and JMA review.



# **EMC COST PERFORMANCE ANALYSIS**

- Final Design is approximately 91.1% 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 and requires only limited design services during construction. The MTA has identified areas such as Design Change Notice (DCN) tasks that may be modified to lower cost of DCN preparation.

ES-4 EXE 10



# CONSTRUCTION SAFETY STATISTICS

Project-to-Date Rates		
		Change from <u>Last Month</u>
Recordable Injury Rate		-
1994 National Average	11.8	
Project Rate	12.1	-0.1
Lost Time Rate (Frequency)		
1994 National Average	4.9	
Project Rate	0.2	-0.1
Lost Work Days (Severity)		
1991 National Average	148.1	
Project Rate	13.9	-1.0

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

(Based on June statistics)

# **CONSTRUCTION SAFETY SUMMARY**

- No Lost Time Injuries reported for any construction activities during June.
- Since November 1995, Segment 3 North Hollywood has completed over 1,016,000 work hours without a Lost Time Injury.
- Contract C0331 (North Hollywood Tunnel) completed tunnel excavation with no Lost Time Injuries.
- To date, the project has completed over 2,000,000 work hours with two 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 will likely impact overall project schedule and budget. 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.

#### Status/Action

MTA has directed its construction manager, JMA, and its designer, EMC, to conduct a comprehensive study considering safety, technical, logistical, cost and schedule impacts and issues as a result of implementing the measures. The study has been completed and is under review.

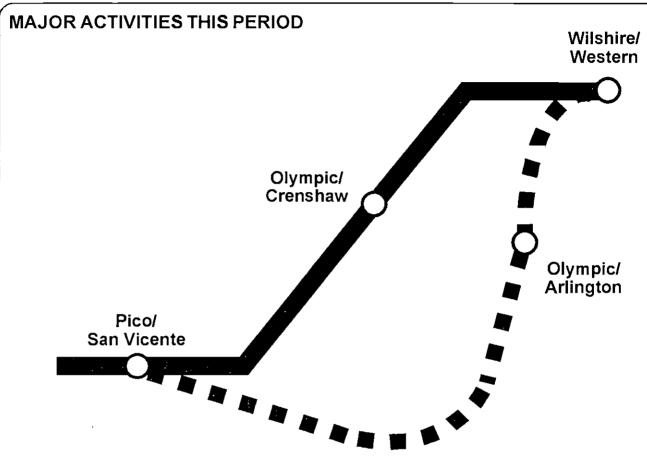
On June 26, 1996, the MTA Board approved the mitigation measures as part of a settlement of a lawsuit.

EXE 11 ES-5

# METRO RED LINE SEGMENT 3 MID-CITY EXTENSION

**EXECUTIVE SUMMARY** 

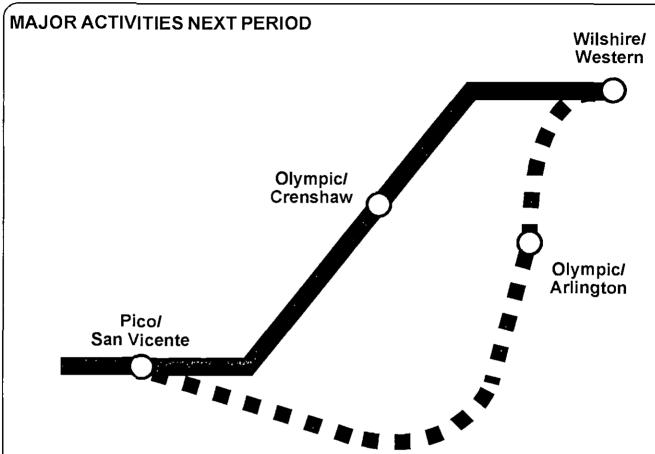




#### SYSTEMWIDE ACTIVITIES

- Enviro-Rail submitted additional cone penetrometer test logs and gas data for San Vicente Boulevard and Wilton Place.
- EMC is refining the vertical alignment based on the new data from Enviro-Rail.
- EMC prepared and submitted rough order-of-magnitude cost estimates as input to preparation of project cost estimates for the study alignments.
- A first draft of the final report on the Engineering Feasibility Study was prepared and submitted by EMC.





#### SYSTEMWIDE ACTIVITIES

- EMC will complete and submit all studies, drawings, and reports that make up the Engineering Feasibility Study.
- MTA will continue procurement of an environmental consultant to prepare an SEIS/SEIR for the new alignment.



#### **BUDGET**

Original Budget	Amount (In \$ mil) 490.7	Change from Last Month (In \$ mil) None
Approved Budget	490.7	None
<b>Current Forecast</b>	TBD	TBD
Expenditures	12.2	0.1

#### OTHER LOCALLY FUNDED ACTIVITIES

		01
	Amount (In \$ mil)	Change from Last Month (In \$ mil)
Original Budget	0.0	0.0
Approved Budget	0.0	0.0
<b>Current Forecast</b>	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**

Current ROD	7/16/99	Change from <u>Last Month</u> 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 began May 3 and will be completed by the end of August 1996.
- If the alignment and configuration prove feasible, a SEIS/SEIR will be prepared.
- This will lead to an FTA Record of Decision, scheduled for March 1998, and the subsequent resumption of final design.

#### **CONSTRUCTION SAFETY**

No activity for this period.



#### **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 completed. Both alternatives, however, were determined to have extreme community impacts. A third alternative has been authorized for study, and the SEIS/SEIR process is incurring further delays pending the outcome of that study. See SD-1 for discussion.

RESOLVED

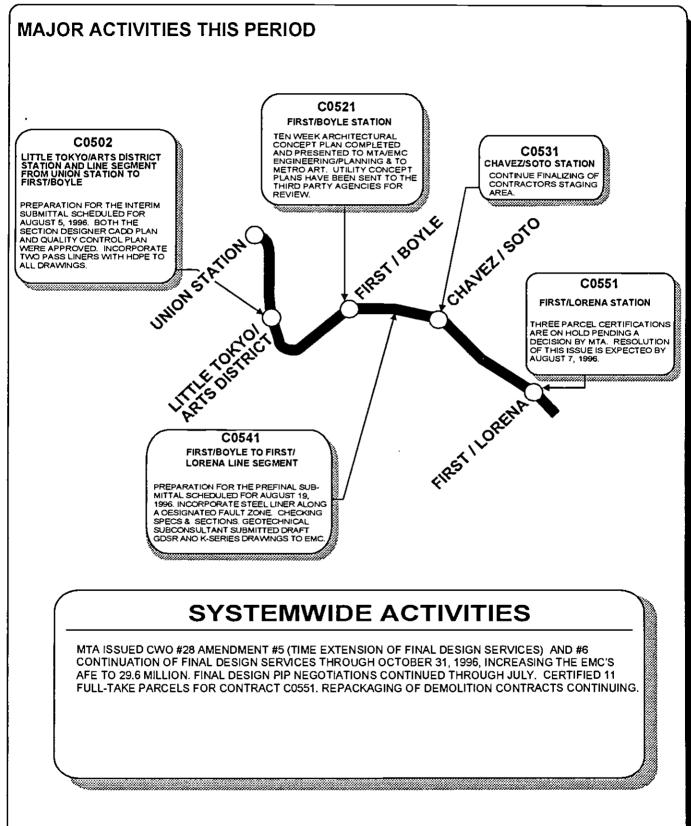
None

METRO RED LINE SEGMENT 3

EAST SIDE EXTENSION

**EXECUTIVE SUMMARY** 

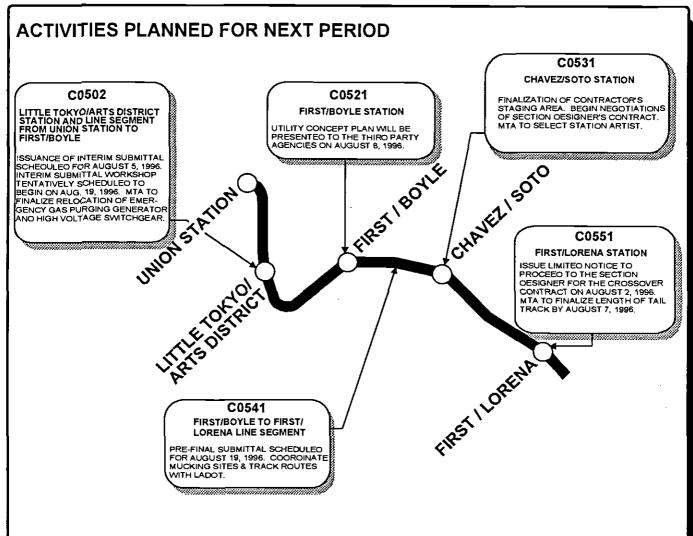




## **METRO RED LINE - Segment 3 East Side Extension**

Summary Status Report Period ending - July 26, 1996





## SYSTEMWIDE ACTIVITIES

INITIAL DRAFT CONSTRUCTABILITY REVIEW TO BE SUBMITTED BY PMA CONSULTANT. EAST SIDE EXTENSION COMMUNITY WORKSHOP SCHEDULED FOR AUGUST 3, 1996. INDUSTRY REVIEW OF TUNNELS SCHEDULED FOR AUGUST 13, 1996. APPROVAL OF NEGOTIATED FINAL DESIGN PIP AND CONSTRUCTION MANAGER ARE PLANNED FOR AUGUST BOARD MEETING. EMC TO CERTIFY 30 SUB-SURFACE EASEMENTS FOR C0541 WHICH IS ON THE CRITICAL PATH, AND 3 FULL-TAKE PARCELS FOR CONTRACT C0551. MTA'S FIRE/LIFE/SAFETY DIVISION DECISION ON THE DELETION OF UNDER PLATFORM EXHAUST (UPE) FANS.

## **METRO RED LINE - Segment 3 East Side**

## Summary Status Report Period Ending - July 26, 1996



#### BUDGET

	Amount (In Millions)	Change from Last Month (In Millions)
Original Budget	979.6	None
Approved Budget	979.6	None
Current Forecast	984.5	-3.6

#### OTHER LOCALLY FUNDED ACTIVITIES

	Amount (In Millions)	Change from Last Month (In Millions)
Original Budget	0	None
Approved Budget	0	None
Current Forecast	0	None
Expenditures	0	None

#### **BUDGET ANALYSIS**

- Negotiations of the Final Design P.I.P. are scheduled to be concluded on July 31, 1996 and is anticipated to be presented at the August Board for approval.
- Amendment No. 6 to CWO No. 28, in the amount of \$12.9M, for continuation of Final Design, was received by EMC on 7/26/96.
- The following trends reduced the current project forecast by \$3.6M.

T-041, (\$0.5M): Bulk Procurement of Electrical Main
Distribution System
T-042, (\$3.1M): Rearrangement of East Side Extension High
Voltage and Power Distribution System

- The following cost mitigation measures under review have an estimated potential cost savings of \$2 to \$4 million dollars.
  - -Floating Slab reduction
  - -Deletion of Under Platform Exhaust (UPE) fans
- Presently, MTA's Fire/Life/Safety division is reviewing the recommended deletion of Under Platform Exhaust (UPE) fans at each station. A decision is expected to be reached in August. EMC and MTA are continuing to identify, analyze and implement further 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 - July 26, 1996



SCHEDULE		ange from st Month
Current R.O.D.	Nov. 2002	None
Final Design progress	29.4%	5.8%
Construct. Progress	N/A	N/A
Critical Path Float	-319	0

#### SCHEDULE ANALYSIS

- The forecast R.O.D. is September 2003, or 319 calendar days (228 working days) behind the FFGA scheduled R.O.D. of November 2002 due to delay in full release of Final Design and the delay in the section designers' Notice to Proceed.
- Complete recovery of the full 319 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 relationship.
- Schedule mitigation measures being evaluated include:
  - -Construction/design activity resequencing
  - -Simplified contractor interfaces
  - -Possible second tunnel concreting crew
  - -Possible second fiber optics crew
- Complete review of Design and Project Schedules underway by MTA. Results are expected in August.
- Initial constructability review by PMA consultant to be completed in August.

# EMC COST PERFORMANCE

The Cost Performance for the overall project is not shown, but the Cost Performance for the active CUD's can be found in the Design Status sheets (DS-2 through DS-8)

The overall CPI will be shown in the August PMSR.

# EMC COST PERFORMANCE ANALYSIS

The Cost Performance Index baseline is no longer consistent with the original \$48.5M budget due to authorized scope changes incorporated into the work in progress. The revised scope of work is documented in the Project Implementation Plan as submitted by the EMC on May 3, 1996.

PIP negotiations are scheduled to conclude by July 31, 1996. A Cost Performance Chart which accurately reflects the work scope as negotiated will be included once the baseline is revised.

## METRO RED LINE - Segment 3 East Side Summary Status Report Period Ending - July 26, 1996



#### **AREAS OF CONCERN**

#### **NEW**

Item [Initiated July 1996]

Nine parcels needed for Contract C0521 are behind schedule.

#### Concern/Impact

Per the latest MTA acquisition schedule, nine full take parcels for contract C0521 will impact the project schedule by an average of 77 working days.

#### Status/Action

MTA Real Estate is formalizing the property acquisition schedule, and with their plan will determine if acquisition of each parcel can be less than the assumed 14 months. Results of this exercise to be available in August.

#### ONGOING

*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/EMC is developing revised design submittal dates for the demolition contracts as well as analyzing further potential schedule & cost impacts. Throughout August as these impacts are identified, further remedial actions will be taken.

## METRO RED LINE - Segment 3 East Side Summary Status Report Period Ending - July 26, 1996



## **AREAS OF CONCERN (Continued)**

#### **ONGOING**

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 Ext. Project forecast by \$3.6 M. The MTA/EMC is continuing evaluating mitigation measures including ground borne noise and vibration mitigation plans and the deletion of Under Platform Exhaust (UPE) fans at each station. MTA's Fire/Life/Safety Division is expected to reach a decision on the UPE during August. EMC and MTA are continuing to identify, analyze and implement further corrective actions.

#### **ONGOING**

Item [Initiated February 1996]

Identification of 14 (full-take) additional property acquisitions for Contract C0551.

#### Concern/Impact

Assuming 14 months acquisition for each parcel, contract C0551 will be impacted by 71 working days. This impact results in the C0551 contract becoming part of the critical path.

#### Status/Action

MTA Real Estate is formalizing the property acquisition schedule and with their plan will determine if parcel acquisition can be shorter than the assumed 14 months. Results of this exercise to be available in the month of August.

## METRO RED LINE - Segment 3 East Side Summary Status Report Period Ending - July 26, 1996



## **AREAS OF CONCERN (Continued)**

#### **ONGOING**

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. EMC is proceeding with developing specifications for either Earth Pressure Balance (EPB) or Slurry Shield machine to meet this requirement and will formalize recommendations in August and September.

#### **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 of the May 3, 1996 PIP scope of services and corresponding costs and schedule is expected to be finalized by August 1, 1996. Negotiations of the Final Design schedule are expected to conclude during August. All documents, including the Final Design schedule, will then be baselined in August.

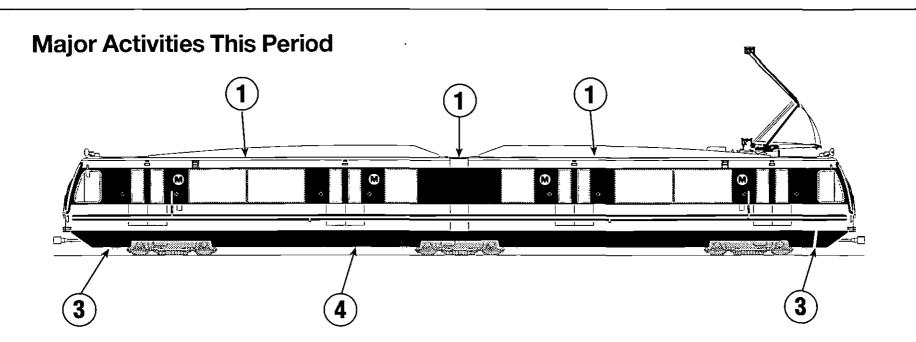
## **VEHICLE ACQUISITION PROJECT**

**EXECUTIVE SUMMARY** 

## L.A. Light Rail Vehicle

Summary Status Report Period Ending - July 26, 1996



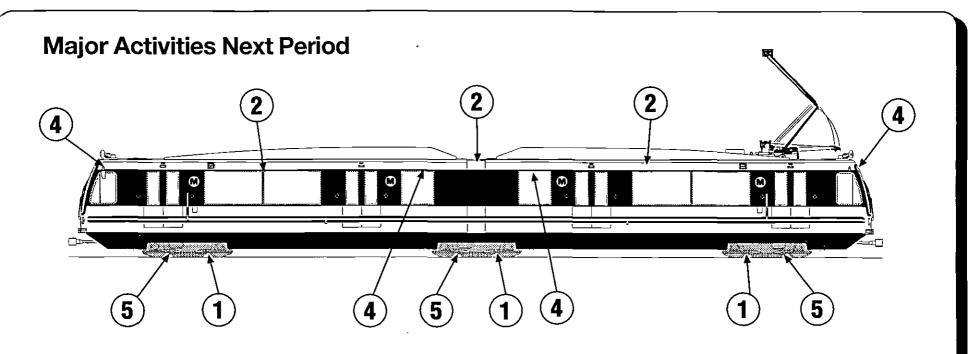


- 1. First carshell manufacturing was completed in July. STS plans to ship the shell to the Sacramento assembly plant by August 1, 1996, once the shell has been weighed and passed final inspection.
- 2. MTA met with STS's Management to review areas of concern and project staffing improvement.
- 3. Conducted Horn Test and additional Compatibility Tests in the Metro Blue Line shop.
- 4. Conducted First Article Inspection on the first Auxiliary Power Supply Unit built in the USA.
- 5. LTK's Resident Inspector for the Sacramento plant started work July 25, 1996.

## L.A. Light Rail Vehicle

Summary Status Report Period Ending - July 26, 1996





- 1. Participate in the Integrated Systems Testing in Adtranz Power lab in Pittsburgh, Pennsylvania. Train Control, Propulsion and Brake Systems will be integrated and simulated route profile runs test will be conducted.
- 2. Car Shell #2 will be completed and prepared for the critical compression load test to be conducted by Duewag engineers at the Carson plant.
- 3. Start final assembly of the first car in Sacramento.
- 4. Conduct FAI of Lighting and Destination Signs System at Luminator.
- 5. Conduct Dynamometer Test of the Brake System and FAI of the Control Box at WABCO.

## L.A. LIGHT RAIL VEHICLE

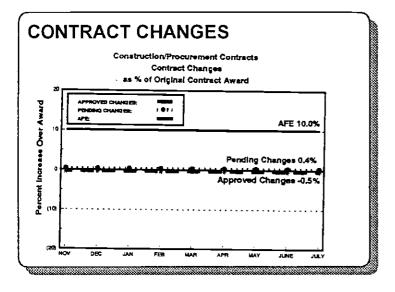
Summary Status Report Period ending - July 26, 1996



#### BUDGET Change from Amount Last Month (in \$ mil) (in \$ mil) **Original Budget** 257.6 -0-**Approved Budget** 257.6 -0-**Current Forecast** 201.4 -0-**Expenditures** 77.9 +5.9

#### **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 CHANGE ANALYSIS**

The figures for July 1996 are as follows:

 Approved Changes
 (0.5%)

 Pending Changes
 0.04%

 AFE
 10%

#### **SCHEDULE** Change from Last Month Schedule Car Delivery 1st Car Dec. 1997 +134 Days 52nd Car Mar. 1999 +117 Days **Design Progress** 90-95% complete N/C N/C Fabrication Progress 25-30% complete N/C **Critical Path** Carshell delivery Delay (1st Car) -13.5 months +5.5 Months **Data Date** July 1, 1996

#### SCHEDULE ANALYSIS

The Contractor's last forecast schedule reflected a total of 13.5 months delay in 1st car deliveries. Time required for Acceptance Testing of the 1st car increased in the July 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).



## **AREAS OF CONCERN**

#### **ONGOING**

#### Item (Date Initiated June 1996)

Vehicle Weight

#### Concern/Impact

The current STS Weight Report (Revision 10) forecasts that the Standard Cars will be approximately 250 lbs. overweight. Although this appears to be an incrementally small violation of the specification, there are two concerns. First, at this stage of the design, we should be operating with a weight *contingency* of several thousand pounds, allowing for unanticipated increases in estimated equipment weight. Second, the P2000 contract prohibits acceptance of any car over the weight limit.

#### Status/Action

The MTA requested STS validate their forecast by replacing estimated equipment weights in the report with measured values from First Article Inspections, and by weighing the first carshell fabricated at Carson before it is shipped to the Sacramento assembly plant on August 1, 1996.

#### Item (Date Initiated March 1996)

Failure of Power Truck Friction Support Brackets

## Concern/Impact

The Duewag power truck failed fatigue testing for a second time 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. Although not identical to the previous failures, these failures were in the same "general" location, and dictate a redesign of the structure.

#### Status/Action

Duewag indicated that in order to avoid the stresses associated with welding, they intend to pursue a cast design for the friction brake bracket. This approach will impact the schedule by about 10 weeks. The present schedule forecasts a completion of the power truck fatigue test on 04NOV96, with shipment of the first complete power truck frame to Sacramento on 07DEC96. Although not presently on the critical path, this date is very close to Siemens' first car shipping date of 22JAN97.



## AREAS OF CONCERN (CON'T)

#### 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. This mounting force is excessive, in that pressing forces this high can damage the axle.

#### Status/Action

MTA objected to the high pressing force and requested that STS modify the interference limits for a better fit. A confirming response from STS is still pending.

#### Item (Date Initiated February 1996)

Schedule Slippage

### Concern/Impact

The July 1996 vehicle delivery schedule forecasts a delay of approximately 13.5 months for the first car, and a seven month delay in delivery of the last car.

#### Status/Action

The 13.5 month delay in the delivery of the first car is due to two significant factors; viz., the additional time it took STS to set up and mobilize the Carson carshell facility, and Siemens' underestimate of the time it will take to perform the specified Vehicle Design Conformance Testing.

Additionally, a potential delay exists in assembly of the first car. Currently, STS has allocated about 5.7 months for the assembly of the first car; however, this may not be enough time for several reasons. With the first car, there are typically interface problems, both mechanical and electrical. These problems take time to resolve, especially if subsuppliers are involved in the resolution. Additionally, a number of Siemens' vendors are not supplying equipment in a timely manner.

STS is investigating measures to reduce schedule slippage.



## AREAS OF CONCERN (CON'T)

#### 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

An MTA audit indicated the need for further information. Additional information was received and is under review.

#### Item (Date Initiated March 1995)

**HVAC** Design

#### Concern/Impact

Sutrak completed a Prototype Unit, which was physically inspected. The first systems test has been postponed several times and the date is pending.

#### Status/Action

The first (prototype) unit was fabricated and physically inspected. This unit was found generally acceptable, with a few discrepancies which Sutrak has agreed to correct. During the inspection (07MAY96), Sutrak agreed to commence the initial systems' testing in mid-June; however, Sutrak has continually postponed the start of the test. The test now is tentatively scheduled for September.

The MTA requested that STS' management review Sutrak's performance and take corrective actions to mitigate problems.



## AREAS OF CONCERN (CON'T)

#### 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 this proposal.