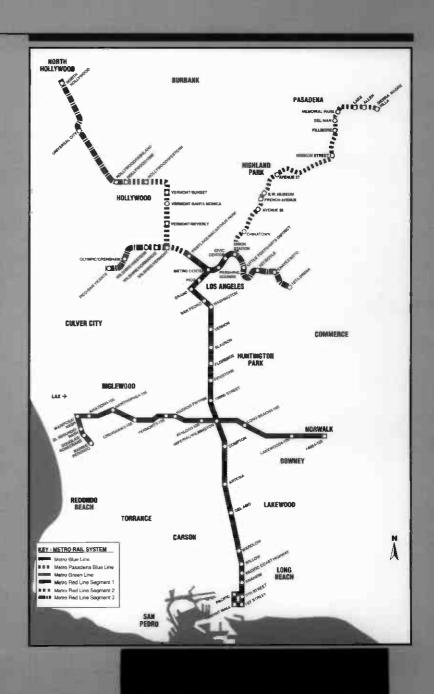
## MTA METRO CONSTRUCTION



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 100.0% 80.3% Actual

11.8% 8.8%

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

Safety Status Lost Time Rate Lost Work Days Project Rate 0.0 0.0

National Average 4.9

148.1

The project is incurring 13,000 work hours per month with no Lost Time Injuries.

#### Areas of Concern

EMC is developing a recovery plan for the resequencing of critical contracts.

#### Monthly Highlights

- Meetings were held with community representatives to discuss project work scope changes.
- Final design efforts for contract C6450 Del Mar to Memorial Park Line Segment continued.
- · Developed studies on project cash flow and proposed funding scenarios.

#### METRO RED LINE SEGMENT 2

Cost Status

Current Budget

\$1,640,000

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

Schedule Status

Design Progress

Construction Progress

Plan Actual

94.3% 94.7%

90.5% 83.0%

Wilshire Corridor - Revenue operations date - July 13, 1996

Vermont/Hollywood - Current Plan

Dec 1998

Vermont/Hollywood Corridor is behind schedule due access delays and trackwork activities.

Safety Status

Project Rate

National Average

Lost Time Rate

2.5 68.9

4.9 148.1

Lost Work Days

• The project completed 181,000 work hours with one Lost Time Injury.

#### Areas of Concern

Vermont/Sunset Station (B261) interim and final milestone completion.

#### Monthly Highlights

- The critical 8610 Trackwork contractor completed a survey of the Vermont tunnels and began gantry rail installation.
- The critical B620 Automatic Train Control installation contractor continued limited work in the tunnel and station areas in preparation for formal access.
- The fabrication of systemwide equipment continued.

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

Cost Status

Current Budget

\$1,313,848,000

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

Schedule Status

Plan

Design Progress 92.5%

Construction Progress 70.8%

Current Plan May 2000

Actual

92.0%

34.5%

 Contract C0311 Line Section from Universal City Station to Station 630 ± 00 and C0301 Hollywood/Highland Station remains behind schedule.

Safety Status Lost Time Rate

Lost Work Days

Project Rate 0.4

National Average 4.9

148.1

18.7

• The project is incurring 120,000 work hours per month.

#### Areas of Concern

 The unknown risks associated with the C0311 tunnels remains a concern. TBM production rates for running tunnel excavation on C0311 are lower than those in the baseline schedule. Six mitigation options were identified to improve production and mitigate potential delays.

#### Monthly Highlights

- Meetings were held with the CO311 contractor to discuss schedule mitigation options.
- Schedule mitigation efforts for Trackwork Installation and Automatic Train Control.
- The MTA is working with the EMC to reduce their overall forecast by 5% as the project moves into construction.

#### METRO RED LINE SEGMENT 3 MID-CITY EXTENSION

Cost Status

Current Budget

\$682,731,000

The Current Budget reflects the revised 20-Year Long Range Plan approved by the MTA Board.

Schedule Status

**Design Progress** 0%

Construction Progress

Current Plan July 2009

Plan Actual

0%

0%

0%

The Current Plan reflects a revised ROD of July 2009 approved by the MTA Board.

Safety Status

Project Rate

National Average

Lost Time Rate

N/A

4.9

Lost Work Days

N/A

148.1

No Construction Safety activity during the period.

#### Areas of Concern

Finalization of the Mid-City cost estimate and master schedule.

#### Monthly Highlights

- The MTA Board approved a revised 20-Year Long Range Plan which incorporates funding constraints and a July 2009 ROD into the Mid-City plan.
- An Interagency Advisory Committee meeting was held to discuss project alternatives and explain the SEIS/SEIR process.
- Ultrasystems Environmental, Inc., began preparation of the SEIS/SEIR draft.

#### METRO RED SEGMENT 3 EAST SIDE EXTENSION

Cost Status

Current Budget

\$1,049,200,000

• The Current Budget reflects the revised 20-Year Long Range Plan approved by the MTA Board.

Schedule Status

Design Progress Plan

Construction Progress

Current Plan November 2004

62.5%

0.0%

Actual

58.1%

0.0%

The Current Plan reflects a revised ROD of November 2004 approved by the MTA Board.

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

Schedule procurement of the Breda Vehicles.

 Acquisition of critical real estate parcels may impact construction. The project team is prioritizing efforts to mitigate potential delays.

#### Monthly Highlights

- The MTA Soard approved a revised 20-Year Long Range Plan which incorporates a revised project budget of \$1,049.2 million and a November 2004 ROD.
- The MTA, EMC and PMA are working together to refine the project schedule and identify mitigation opportunities.

#### 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 February 1998 June 1999

90%

30%

 The current schedule reflects 16 months delay in first car deliveries due to equipment and manufacturing problems.

#### Areas of Concern

• TransEd's (TEI) lack of progress in the development of the Repair and Parts manuals and the Vehicle Training Program.

#### Monthly Highlights

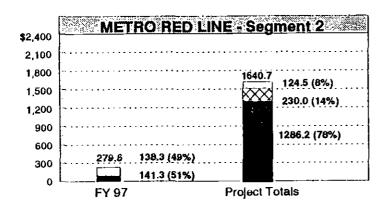
- Two carsnells were shipped from Carson to Sacramento bringing the total to five carshells (three standard and two prototype).
- MTA and LTK attended the HVAC System Design Conformance Test and partial First Article Inspection (FAI).
- The Power Truck successfully completed the 2 million Life Cycle Test.

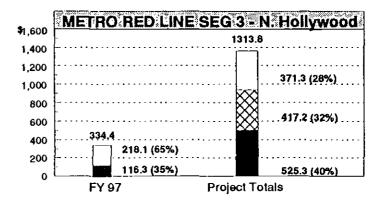
## METROPOLITAN TRANSPORTATION AUTHORITY PROJECT COST REPORT - TOTAL RAIL PROGRAM SUMMARY BY COST ELEMENT (IN THOUSANDS)

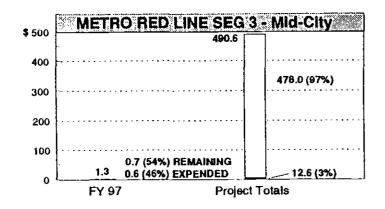
				• •	•		07.77.10.0.475	
PROJECT: TOTAL RAIL PROGR.	<u> </u>	<del></del>		<del></del>			STATUS DATE:	1/31/97
ELEMENT	BUD	SET	COMMIT	MENTS	EXPEND	<u>Tures</u>	CURRENT	VARIANCE
DESCRIPTION	ORIGINAL	CURRENT	PERIOD	TO DATE	PERIOD	TO DATE	FORECAST	(7-2)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CONSTRUCTION	5,153,507	5,435,958	4,844	3,728,170	35,773	2,931,870	5,391,718	(44,240
PROFESSIONAL SERVICES	1,685,529	2,220,054	18,961	1,634,647	13,772	1,467,133	2,253,148	33,09
REAL ESTATE	480,002	539,357	2,170	416,446	2,664	415,305	531,516	(7,84
UTILITY/AGENCY	146,279	173,995	15	141,161	(277)	112,759	174,129	13
FORCE ACCOUNTS								
SPECIAL PROGRAMS	11,045	18,454	626	6,520	26	4,879	17,415	(1,03
CONTINGENCY	560,120	374,461	o	0	o	0	333,858	(40,60
PROJECT REVENUE	(18,115)	(37,411)	o	(2,824)	1	(11,308)	(33,163)	4,24
PROJECT GRAND TOTAL	8,018,367	8,724,868	26,616	5,924,120	51,959	4,920,638	8,668,621	(56,24
							1	

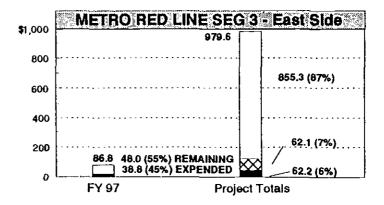
NEW REQUIREMENTS	BUDG	3ET	COMMIT	MENTS	EXPENDI	TURES	CURRENT	VARIANCE
DESCRIPTION	ORIGINAL	CURRENT	PERIOD	TO DATE	PERIOD	TO DATE	FORECAST	(7-2)
· <del></del>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CONSTRUCTION	o	49,250	o	43,085	4,540	29,061	59,823	10,574
PROFESSIONAL SERVICES	o	17,484	o	16, <del>4</del> 64	126	9,699	17,657	173
REAL ESTATE	o	o	o	o	0	37	o	0
UTILITY/AGENCY	0	0	o	o	0	0	o	0
FORCE ACCOUNTS								
SPECIAL PROGRAMS	0	20	o	452	0	86	3,142	3,122
CONTINGENCY	0	1,502	o	o	0	0	1,237	(265
PROJECT REVENUE	0	0	o	0	0	o	(11,462)	(11,462
NEW REQ. SUBTOTAL	0	68,256	0	60,001	4,666	38,883	70,397	2,142
PROJECT GRAND TOTAL	8,018,367	8,793,124	26,616	5,984,121	56,625	4,959,521	8,739,018	(54,105

#### BUDGET STATUS - January 31, 1997 (in \$ Millions)



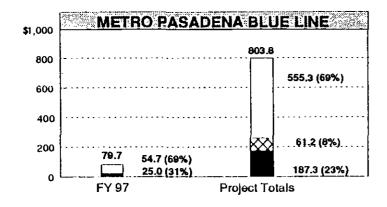


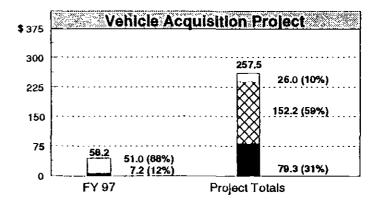




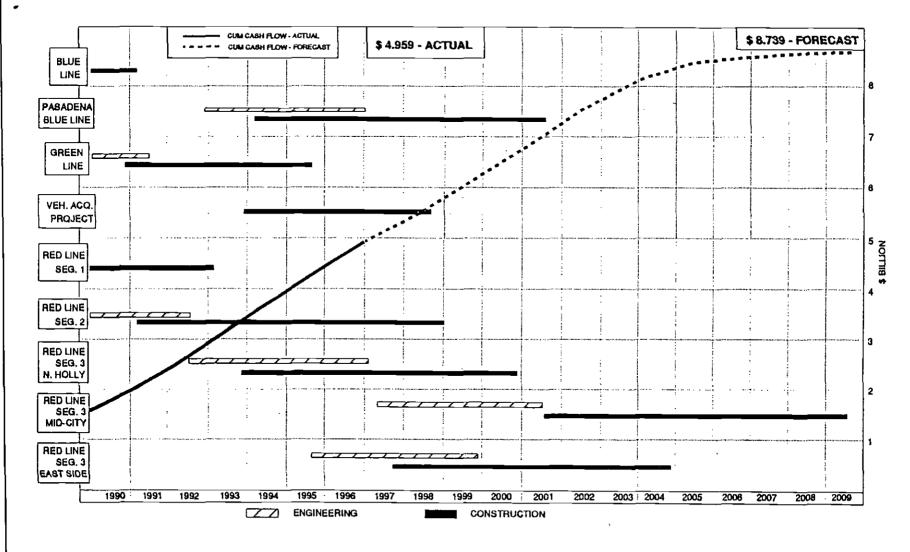
Actual Spent Encumbered Remaining Budget

#### BUDGET STATUS - January 31, 1997 (in \$ Millions)





Actual Spent Encumbered Remaining Budget



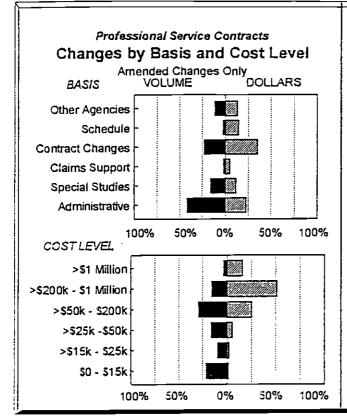
Page 7

#### METROPOLITAN TRANSPORTATION AUTHORITY

									RCES (II										UARY 198	
	METRO	BLUE	PASAC		METRO LIN	OREEN	METRO	RED ENT 1**	METRO		METRO P		METRO F		METRO P			ACOUIS JECT	TOTA PROGE	
	\$	*	\$	× 1	\$	*	\$	*	\$	*	\$	*	\$	*	\$	%	\$	% ×	\$	**
ORIGINAL SCOPE:																				
FTA-SECTION 3							605.3	42	667.0	40	681.0	52	242.6	48	492.9	47			2688.8	32
FTA - OTHER																	11.9	4	11.9	o
ISTEA - FED SURFACE TRANSIT PROG		:							52.1	3	50.0	4			25.0	1	84.0	32	211.1	3
FED-ISTEA RSTP/CMAQ											67.9	5	20.4		288.6	28	6.1	3	383.0	2
FTA-SECTION 9							90.6	ΰ											90.6	1
STATE			387.8	48	106.4	15	210.3	15	133.0	8	85.0	6	90.0	14	15.0	1	33.5	13	1061.0	12
STATE TSM MATCH											8.8	1	2.6	1	37.4	4	!		48.8	o
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					138.9	11	327.3	36	181.0	18	122.0	48	1383.0	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	:		9.3	1			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
TOTAL	877.2	100	803.9	100	717.8	100	1450.1	100	1569.5	96	1310.8	100	682.9	100	1049.2	100	257.5	100	8718.9	99
OTHER LOCALLY FUNDED ACTIVITIES:																				
PROP C (TRANSIT ENHANCEMENTS)									68.7	4	2.7	o							71.4	1
FED ISTEA RSTP/CMAQ									2.5	o									2.5	o
TOTAL				ii		_			71.2	4	2.7	О							73.9	1

Note: Date reflecte Current Budget

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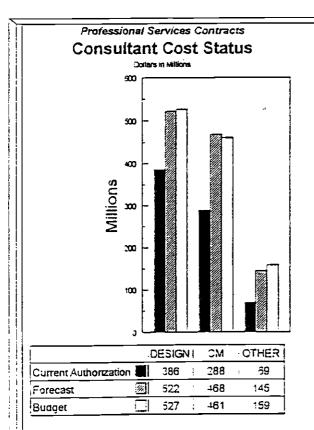
#### CHANGE BASIS ANALYSIS

Administrative changes account for approximately 42% or 318 of the 751 Consultant Change Notices overall. Administrative changes include capital equipment, facilities and extra work requested by the MTA. This represents approximately 23% 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 66.9% of all change costs associated with the Rail Project or \$62M of a total change cost of \$93M. This equals 21% of the total change volume or 157 of 751 total changes.

Note: Data for Basis and Cost charts includes only MTA Board amended changes.



## PROFESSIONAL SERVICES COST ANALYSIS

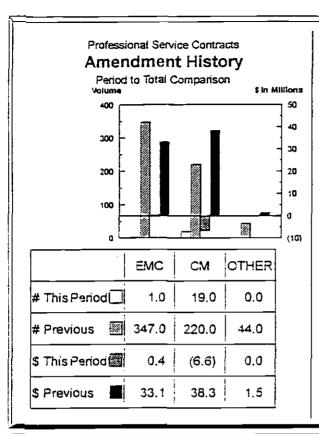
Categories represent all professional services contracts, not individual contracts (i.e. "design" includes all line 11 contracts not just EMC).

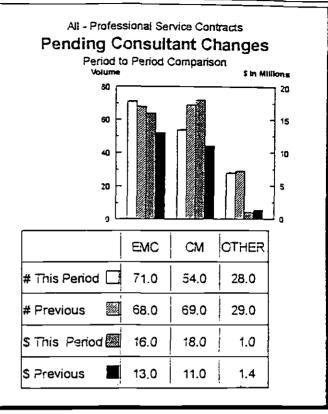
The forecast cost for design and other consultant contracts is below the current budget. While the forecast for construction management contracts continues to slightly exceed the budget amount, due to detays in project activities on the Metro Red Line Eastside Extension and Pasadena Blue Line

Data Source:

CMS: Consultant Contract Authorization, Forecast and Budget Values,

CHNGSAMP/01/97





#### CONSULTANT CHANGE NOTICE ANALYSIS

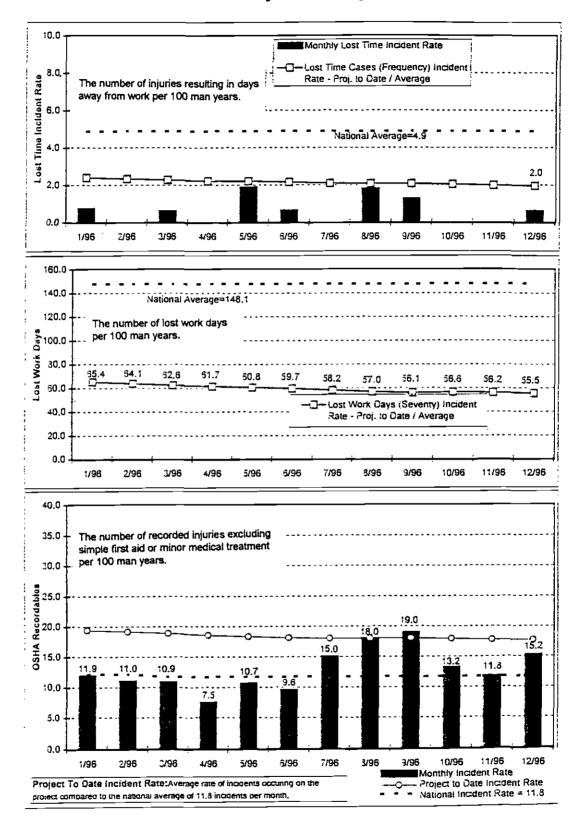
Eleven new Requests for Change (RFC's) were received during the period with an estimated value of \$1 million.

Twelve new Consultant Change Notices (CCN's) were assigned or issued during the period with an estimated value of \$3.8 million.

Twenty CCN's were approved for amendment by the MTA Board during the period with an estimated negative value of \$6.2 million. The negative value resulted from CCN's processed for budget reductions related to construction management services on Red Line Segment 2.

Two CCN's were canceled or withdrawn during the period.

#### Safety Summary



# METRO PASADENA BLUE LINE EXECUTIVE SUMMARY

Summary Status Report Period Ending - January 31, 1997

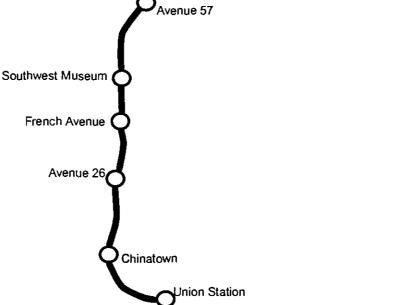


#### MAJOR ACTIVITIES THIS PERIOD

C6435 - Reconstruction & Retrofit of Steel & Concrete Bridges

- Lake Ave.: Completed concrete pour closure for bottom deck, between the precast girders A1 & A2. Concrete placed for column Bent #2 and retaining wall. Top deck concrete placed for precast girder A2.
- Allen Ave.: Completed installation of Bent #2 column casing. Installation of soldier piles and lagging for shoring system progressed at Abutment 1. Completed sheet pile installation at Abutment 1 & 3.
- Sierra Madre Blvd.: Completed concrete placement for the top deck.
- Lacy St. Bridge: CalTrans is awaiting the receipt of a permit rider before issuing approval of design.





#### SYSTEMWIDE ACTIVITIES

- Continued interface with community representatives regarding work scope changes.
- Continued final design for Contract C6450, Del Mar to Memorial Park Line Segment.
- Completed review of CWO 41, estimated costs for final design of C6390, C6400, C6460, C6475, C6480, C6500, C6510 and C6520, in preparation for final negotiations with the EMC.
- Continue to support cash flow and funding special studies.
- Continue final preparation of project records for Contract C6410, L.A. River Bridge, for transfer to Records Management Center (RMC).

**Summary Status Report** 

Period Ending - January 31, 1997



## **MAJOR ACTIVITIES NEXT PERIOD** Sierra Madre Villa C6435 - Reconstruction & Retrofit of Steel & Concrete Bridges Allen Avenue Continue rebar placement for modified ballast Lake Avenue retainer on seven concrete bridges. Allen Ave.: Commence shoring and installation. Memorial Park of CIDH piles for new abutments. • Lake Ave.: Place concrete sidewalk and curb. Del Mar Fillmore Street Mission Street Avenue 57 Southwest Museum French Avenue Avenue 26, Chinatown Jnion Station

#### SYSTEMWIDE ACTIVITIES

- Continue to support cash flow and funding special studies.
- Continue final design for Contract C6450, Del Mar to Memorial Park Line Segment.
- Continue final preparation of project records for Contract C6410, L.A. River Bridge, for transfer to Records Management Center (RMC) in March.
- Submit EMC's contract changes associated with substitution of subconsultants to the MTA Board for approval.

Summary Status Report Period Ending - January 31, 1997



#### BUDGET

	Amount (\$ in mil)	Change from Last Month (\$ in mil)
Original Budget	841	None
Approved Budget	804	None
Current Forecast	804	None
Commitments	248	+g
Expenditures	187	+5

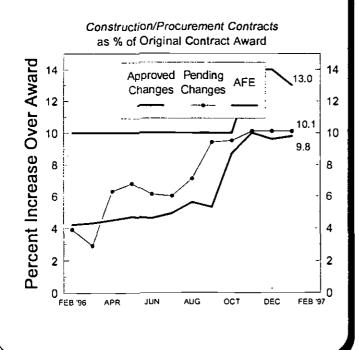
#### ADDITIONAL LOCALLY FUNDED ACTIVITIES

	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 Value Engineering/Cost Containment scope changes and a May 2001 ROD adopted in February 1996, as amended in the Board report submitted in June 1996.
- The increase in Commitments is primarily due to the implementation of the full contract award value issued for EMC's CWO 040, final design on critical contracts.
- The increase in Expenditures during the period is due to the close-out of Contract C6410, L..A. River Bridge, work performed on Contract C6435, Reconstruction & Retrofit of Steel & Concrete Bridges, Owner's Insurance, Project Administration, and Professional Services contracts.

#### **CONTRACT CHANGES**



#### **CONTRACT CHANGE ANALYSIS**

The decrease to the AFE is to reflect against the R05 portion of Contract B611, Running Rail Procurement, for estimating changes to reduce the rail quantity. The pending changes remained the same in January. Approved changes increased slightly during the period for Contract C6435 Foothill Blvd. Abutment Footing Work. Approved and pending changes processed to date are less than the AFE values.

Approved and pending changes with values in excess of \$200K include:

- C6410 (L.A. River Bridge) Differing Site Conditions and Adjustment of Bid Quantities.
- C6430 (Arroyo Seco Bridge Reconstr.) -Adjustment of Bid Quantities and Cost for Operating Engineer's Strike.
- C6435 (Reconstruction & Retrofit of Steel & Concrete Bridges) - Lacy St. Bridge Repair, Delayed Release of Lake & Allen Ave. Work Scope and Differing Site Conditions - Pea Gravel.

**Summary Status Report** 

Period Ending - January 31, 1997



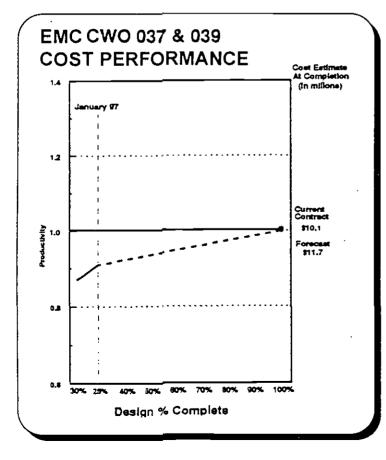
#### **SCHEDULE**

		Change from <u>Last Month</u>
Current ROD	May 2001	None
Design Progress*	80.3%	None
Constr. Progress	8.8%	+0.04
Critical Path Float (Calendar Da	-121 days ys)	-30

\*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. The schedule update for January shows 121 calendar days (CD) of negative float.
- Delays in the schedule are due primarily to finalizing scope definition, obtaining community concurrence for cost reduction items, and starting final design. The required Board approval process for EMC contract changes on critical contracts are currently contributing to the delay. However, this delay may be mitigated through resequencing construction work on several contracts. The EMC have been asked to submit a recovery plan. Refer to pages ES-6, Start of Final Design and ES-7, Community Concurrence with Design for further detail.
- The recovery of negative float may be achieved once a detailed constructibility review on critical contracts is completed.
- Final design on the most critical package, Contract C6450, Del Mar to Memorial Park Line Segment, continues on a limited basis.



#### **EMC COST PERFORMANCE ANALYSIS**

- The chart summarizes CWO's which are in place to facilitate the start of final design. This chart includes CWO 037, which was approved for development of a PIP and definition of new scope to incorporate cost reduction items, and CWO 039, which is for administrative support for final design. Refer to page EPC-4 for further analysis.
- Currently, all CWO's open for EMC total \$83.3M; the overall forecast cost remains at \$121.8M, and includes Design Support During Construction.
- The delays in the activities required to start final design have resulted in a negative float to the schedule from 75 to 121 calendar days. The EMC have been asked to submit a recovery plan to mitigate this projected schedule slip. unattainable, this will extend CWO 039 from mid-March 1998 to June 1998, and may result in a further increase of \$0.8M.

Summary Status Report Period Ending - January 31, 1997



## CONSTRUCTION SAFETY STATISTICS

Change from Last Month

0.0

#### Recordable Injury Rate:

The number of recorded injuries excluding simple first aid or minor medical treatment per 100 man years.

1994 National Average 11.8

Project Rate 3.6

#### Lost Time Incident Rate:

The number of injuries resulting in days away from work per 100 man years.

1994 National Average 4.9

Project Rate 0.0 0.0

#### Lost Work Days:

The number of lost work days per 100 man years.

1991 National Average 148.1

Project Rate (Cum.) 0.0 0.0

NOTE: Based on December statistics.

## CONSTRUCTION SAFETY SUMMARY

 The Project is incurring 13,000 work hours per month. Through the December reporting period, the Project has completed over 618,000 work hours without a Lost Time injury and only eleven Recordable Injury cases.

#### AREAS OF CONCERN

#### NEW

Item (Date Initiated: January 1997)

Contract C6435 Change Order: Differing Site Conditions (Pea Gravel) at CIDH Piles & Impacts From Late Release of Lake and Allen Avenues.

#### Concern/Impact

The Change Order (CO) for Contract C6435, Reconstruction & Retrofit of Steel & Concrete Bridges, was issued for time and cost for differing site conditions (DSC) and late release of Lake and Allen Avenue bridges. The change order associated with DSC was determined to have merit by the Claims Review Board (CRB). Without approval of this CO, the contractor cannot be compensated for General Conditions after February 7, 1997.

#### Status/Action

The CRB found merit on August 26,1996 for the contractor's claim of DSC of pea gravel at the CIDH piles on four bridges. Negotiations on the overhead costs for DSC and bridges were completed with the contractor on November 8, 1996. The December Board meeting was canceled resulting in the CO being moved to the January agenda before the Construction Committee pulled the CO because of an incomplete audit of the daily overhead rate

Summary Status Report Period Ending - January 31, 1997



#### AREAS OF CONCERN (Con't)

#### **ONGOING**

Item (Date Initiated: March 1996)

Start of Final Design

#### Concern/Impact

The current schedule shows -121 calendar days of negative float because final design has not begun as planned.

#### Status/Action

Final design production continues on a limited basis for C6450, Del Mar to Memorial Park Line Segment. Final design on the remainder of the projects has not started because the EMC is experiencing delays in mobilizing section designers, due to substitution of MBE/WBE sub-consultants requiring Board approval, and completion of CWO negotiations. If the start of engineering continues to be delayed, the projected ROD may slip and there will be a corresponding impact to the Project Cost forecast for additional escalation and administrative cost. The EMC have been asked to submit a recovery plan to mitigate this projected schedule slip.

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:

<u>Ratkovich Property</u>: 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.

<u>Certification of Parcels for Underpinning</u>: 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, Project Staff submitted follow-up letters to Ratkovich requesting additional information concerning the lease on the property. The parcels for underpinning were certified in mid November.

Summary Status Report Period Ending - January 31, 1997



#### AREAS OF CONCERN (Con't)

ONGOING (Con't)

Item (Date Initiated: August 1996)

**Community Concurrence With Design** 

#### Concern/Impact

Community concurrence with the Chinatown Station redesign and upgrades to Marmion Way between 50th and 58th Avenues remain outstanding. For Chinatown, issues relating to 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 start of final design for Chinatown Station has been approved by the Board, the design cannot be completed until these issues are resolved with community representatives. During January, discussions continued on the choice of canopy, platform, and plaza design. It has been agreed to remove the Chinatown Plaza from the existing contract (C6390, Chinatown Aerial Structure) to allow design work to proceed and additional time for community input. Community concurrence with the station design concept is anticipated by the end of February 1997. Additional conceptual designs for Marmion Way have been prepared and are currently being reviewed within MTA before presentation to the community. Separate funding is being pursued to fund the community requested upgrades.

Item (Date Initiated: September 1996)

Validation of \$803.9M Baseline Estimate

#### Concern/Impact

When the Pasadena Blue Line Project was re-adopted in February 1996, the EMC had not prepared updated estimates which included the proposed Value Engineering/Cost Containment items approved by the Board. Included in the scope of CWO 037 was the development of capital cost estimates based on the new construction work scope.

#### Status/Action

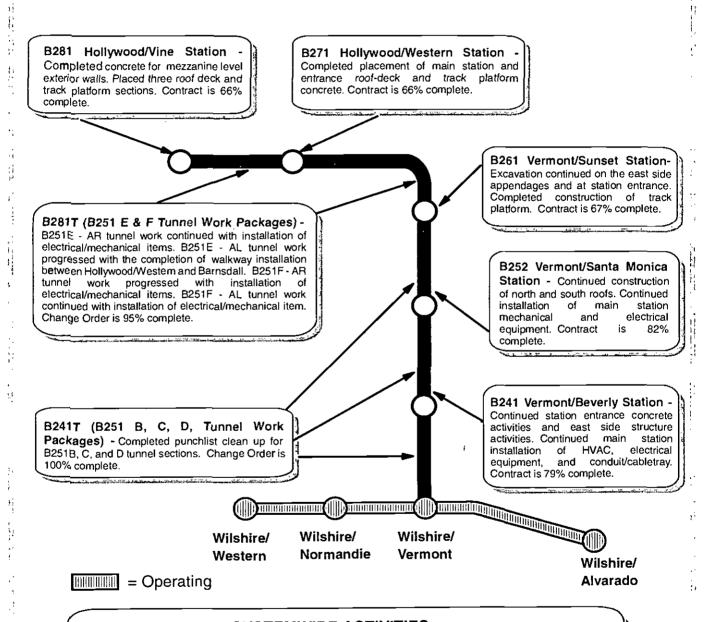
The EMC has submitted the estimates for the construction work packages. Project Staff has reviewed these estimates and formalize the forecast for indirect costs such as Professional Services, Real Estate, and Master Cooperative Agreement s in order to update the total Project Forecast. Once the escalation and project scope of work is validated, a revised total Project Forecast will be formally issued. It is expected that this exercise will be complete by the end of February 1997.

## **METRO RED LINE SEGMENT 2**

**EXECUTIVE SUMMARY** 



#### **Major Activities - This Period**



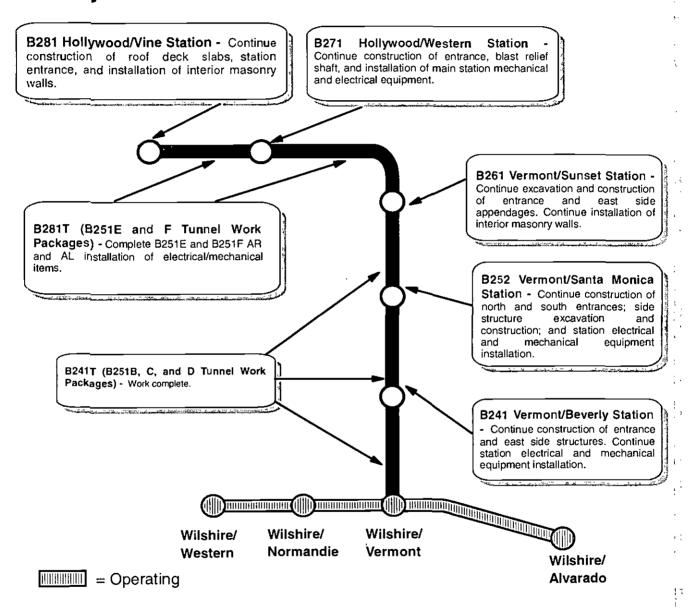
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#### SYSTEMWIDE ACTIVITIES

B610 Trackwork Contractor completed survey of Vermont tunnels and started gantry rail installation in preparation of initial concrete work. B620 Automatic Train Control Installation Contractor continued limited work in available tunnel and station areas to progress work, in advance of formal access, to assist with overall schedule mitigation. Fabrication of systemwide equipment continued.



#### **Major Activities - Next Period**



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#### SYSTEMWIDE ACTIVITIES

B610 Contractor to start plinth concrete installation and start survey of Hollywood tunnels. B610 contractor to continue installation of gantry rail. Fabrication of systemwide equipment to continue.



#### BUDGET

Original Scope	Amount (in S mil)	Change from Last Month (in S mil)
Original Budget	1,446	None
Approved Budget	1,576	None
Current Forecast	1,576	None
Expenditures	1,251	9

#### Additional Locally Funded Activities

Original Budget	0	None
Approved Budget	65	None
Current Forecast	65	None
Expenditures	35	4

#### **BUDGET ANALYSIS**

#### **Original Scope**

Original scope expenditures increased \$9 million, due to progress and reconciliation in construction and professional services contracts. The expenditures to date are 79.4% of the current total forecast.

#### Additional Locally Funded Activities

Expenditures for Additional Locally Funded Activities increased \$4 million in construction contracts. The expenditures to date are 49.5% of the current total forecast.

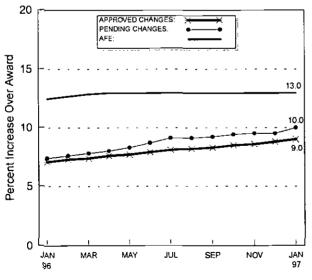
Overall, there were no changes to the total budget and forecast categories for either Original or Additional Locally Funded Activities this period.

This period's expenditures reflect the cumulative expenditure amounts through December.

Expenditure data lags the report date by one month.

#### CONTRACT CHANGES

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



#### CONTRACT CHANGE ANALYSIS

The percent increase over the award value for approved changes showed a slight increase, and pending changes showed a significant increase. For approved changes this was attributable to the progress of work on the Vermont/Beverly Station (B241) and Tunnel Repair/Completion (B281T) contracts. For pending changes the increase was attributable to work on Vermont/Santa Monica Station, Hollywood/Vine Station, and Transit Automatic Controls and [SCADA (TRACS) (B252, B281, and B645)] contracts. The AFE remained the

The significant approved changes total an increase of \$1.8 million, including:

- B241, Vermont/Beverly Station-Work Authorized Change Notice (WACN) 47.01, Temporary decking quantity overrun.
- B281T, Tunnel Repair/Completion–Executed CN 15, Increase estimated amount for pay item 01000; WACN 18.03, Starter wall construction supplemental joint reinforcement; and WACN 66.01, Schedule mitigation for E tunnel section.

The significant pending changes total \$2.7 million, including:

- B252, Vermont/Santa Monica Station-CN 2.02, Automatic sprinkler system in public areas; and CN 154, Concrete reinforcing steel quantity overrun.
- B281, Hollywood/Vine Station-CN 153, Automatic sprinkler system in public areas.
- B645, Transit Automatic Controls and SCADA (TRACS) CN 25, Train control and monitoring modification; CN 37, Additional technical support; CN 38, Fire alarm zone changes.



#### SCHEDULE

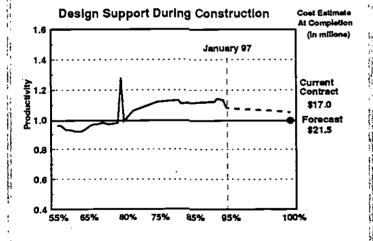
Vermont/Hollyw	Change from Last Month	
Current ROD	Dec. 31, 1998	None
Design Progress	94.7%	0.1
Critical Path Float	-32 Days	77
Const. Progress	83.0%	1.0%

#### SCHEDULE ANALYSIS

#### Vermont/Hollywood Corridor

- The Vermont/Hollywood Corridor critical path starts with concrete operations for B610, Trackwork Installation, and continues through B620, Automatic Train Control Installation; System Integrated Testing; and Pre-Revenue Operations.
- Completion of B251E and B261 for track access continue to be secondary critical paths, due to delays in contract B610 trackwork activities, resulting from safety engineer approval, receipt of final survey data, restricted yard access, and weather-related impediments.
- The forecast revenue operations date was advanced significantly this period as a result of schedule modifications that eliminated project schedule contingency and considered contract actions taken with the B610 contractor.

## EMC COST PERFORMANCE



## EMC COST PERFORMANCE ANALYSIS

The EMC Cost Performance chart represents productivity for design support during construction (DSDC) for the current fiscal year. The cumulative rate of 1.1 indicates that DSDC items are being processed at a rate of 0.9 fewer hours per item than planned. This rate is based on the ratio of actual hours to process Requests for Information (RFIs), submittals, and Change Notices, compared to budgeted hours.

The Cost Performance Index (CPI) is trending downward toward a productivity factor of 1.0 because budget that has been recently negotiated for the remainder of the fiscal year is based on productivity rates experienced to date. Therefore, if the EMC maintains its current favorable DSDC processing rate, the ratio of actual-to-plan will be closer to 1:1, ultimately resulting in a CPI of 1.0.

The forecast is greater than the current contract amount because, even though fewer hours per item are being expended than planned, a greater volume of items has been processed than originally anticipated. This increased volume is likely to continue through the completion of the Vermont/Hollywood Corridor and will be reflected in future budget negotiations for the remainder of the project.

During January, CCN 500 was partially approved by the MTA Board to authorize work in the balance of the fiscal year. Approval of the remainder of CCN 500 is anticipated; current funding for Segment 2 will be exhausted in March 1997.



## CONSTRUCTION SAFETY STATISTICS

Project-to-Date Rates		ge From Month	
Recordable Injury Rate	•		
The number of recorded injuries, excluding simple first aid or minor medical treatment, per 100 man years.			
1994 National Average	11.8		
Project Rate	19.8	N/C	
Lost Time Incident Rate			
The number of injuries resulting in days away from work per 100 man years.			
1994 National Average	4.9		
Project Rate	2.5	N/C	
Lost Work Days The number of lost work days per 100 man years.			
1991 National Average	148.1		
Project Rate	68.9	-0.2	
(Based on December statistics)			

## CONSTRUCTION SAFETY SUMMARY

- Over 181,000 work hours were completed in December, with only one Lost Time Injury.
- Lost Time Injuries for 1996 occurred at a rate of 1.1 per 200,000 work hours. This is approximately 75% less than the National Average of 4.9.
- To date, the project has completed over 10,000,000 work hours. This statistic reduces the impact that the monthly safety statistics have on the project-to-date rates.

#### **ONGOING**

#### Item (Initiated December 1996)

Vermont/Sunset Station (B261) interim and final milestone completion

#### Concern/Impact

The level of Contractor cooperation in addressing settlement of time and safety-related issues over the past several months has been limited. As a result, the Construction Manager has little confidence that the Contractor will proceed with the work in a timely enough fashion to support B610, B631, B740/B745, and overall contract completion requirements.

#### Status/Action

Previous MTA requests that the Contractor take remedial actions with personnel and schedule issues have been responded to by the Contractor. The Contractor has prepared revised schedules, with noted improvements, and will be implementing staff changes in February.



#### **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 sinkhole shaft and B251F Hollywood/Vine access shaft, completion forecasts for B251E and F tunnel trackwork milestones impact the project completion forecast.

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#### Status/Action

The Contractor's aggressive efforts to perform multiple tunnel and concurrent invert, arch, and walkway concrete operations have resulted in the B251E AR and B251F AR and AL tunnel sections being essentially completed in January 1997; a turnover review is scheduled in early February. Work in the B251E AL tunnel section is expected to follow by several weeks.

## METRO RED LINE SEGMENT 3 NORTH HOLLYWOOD EXTENSION

**EXECUTIVE SUMMARY** 

NORTH HOLLYWOOD

#### METRO RED LINE - Segment 3 North Hollywood **Summary Status Report** Period Ending - January 31, 1997



#### MAJOR ACTIVITIES THIS PERIOD



**STATION** 

CONTRACT C0351 - KAJIMA/RAY WILSON North Hollywood Station

- Completed 98% of main station excavation
- Completed first five invert pours at north end of station
- Installed first eight column rebar cages at station south end
- Started rebar and prep for invert pours at south end of station
- Started strut removal at north end of station

CONTRACT C0331 - OBAYASHI CORPORATION North Hollywood Tunnel

- Completed crosspassage concrete to North Hollywood Station
- Began AL tunnel arch prep via C0321 access Continued AL tunnel invert concrete

CONTRACT C0321 - TUTOR/SALIBA-PERINI Universal City Station

- Station excavation is 98% complete
- Completed invert concrete for Phases 1 and 2
- Placed structural concrete for invert slab lifts 9, 10 and 11
- Completed structural concrete for exterior walls lifts 1 through 4
- Started rebar fabrication for the mezzanine slab Continued to coordinate access with C0331
- contractor at north interface

**UNIVERSAL CITY** STATION

CONTRACT C0327 • WILLIAM L. OLSON CONTRACTING Universal City Station Demolition for Station Access Road Contract closeout in progress

CONTRACT C0311 - TRAYLOR BROS/FRONTIER-KEMPER Line Section from Universal City Station to Station 630+00

- Completed 43% TBM excavation in the AR tunnel
- Completed 39% TBM excavation in the AL tunnel
- Excavated 16' of heading in AL Seismic Section for a total to date of 126'
- Excavated 56' of heading in AR Seismic Section
- Completed excavation on 42' Soft Ground Section
- Started excavation of Crosspassage 59

CONTRACT C0301 - TUTOR/SALIBA-PERINI Hollywood/Highland Station and Tunnels

- Completed 100% of the station excavation Completed installation of struts and wales
- Completed lifts 1-6 invert at Main Station Box
- Removed struts 1-27 at Level D after invert concrete for lifts 1-6 was placed
- Completed invert HDPE for lilts 7-12
- Completed 40% of rebar for invert lifts 7-9
- Completed AL tunnel prep and cleanup for final lining Completed 60% of AR prep and cleanup for final lining
- Laid out tracks for mobilizing equipment, forms and material for final tunnel lining

Continued backfitl and remaining pours at McCadden

ACCESS SHAFTS

to HOLLYWOOD / VINE STATION

HOLLYWOOD / HIGHLAND STATION

#### SYSTEMWIDE ACTIVITIES

LA BREA

Contract B620 (Automatic Train Control) prepared for change negotiations for DCN 48.00 and responded to the CTE comments.

Contract B641 (Radio Communication) revised design to incorporate Crosspassage 60 relocation.

Contracts B642, B643, B644 (Communications) issued DCNs to Change Control.

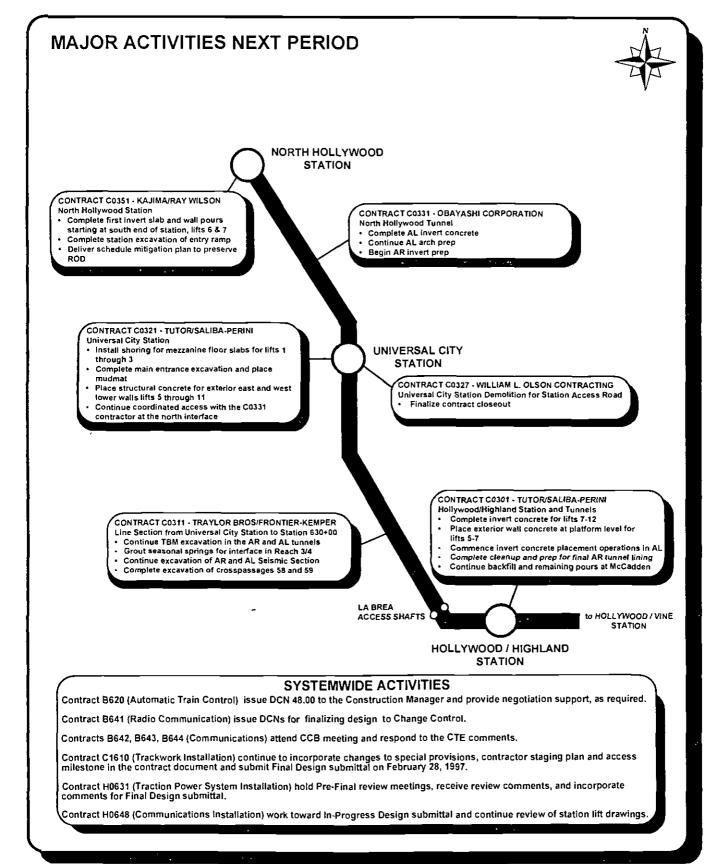
Contract C1610 (Trackwork Installation) continued incorporating special provisions and contractor staging plan in contract document.

Contract H0631 (Traction Power System Installation) issued Pre-Final submittal on January 22.

Contract H0648 (Communication Installation) continued the design and reviewed station lift drawings.

ES-1





ES-2 EXE 8



#### **BUDGET**

#### ORIGINAL SCOPE ACTIVITIES

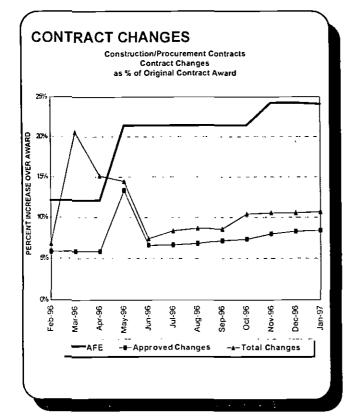
	Amount (in \$ mil)	Change from Last Month (in \$ mil)
Original Budget	1310.8	None
Approved Budget	1310.8	None
Current Forecast	1310.8	None
Expenditures	521.8	22.6

#### 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	3.6	None

#### **BUDGET ANALYSIS**

- The Expenditures for Original Scope work and ALFA through the December period are \$521.8M and \$3.6M, respectively. This represents 40% of the Total Forecast. Total expenditures for the current period were \$22.6M.
- ALFA Expenditures exceed the ALFA Current Forecast by \$2.8M. 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 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 CHANGE ANALYSIS**

- The AFE for MRL Segment 3 North Hollywood decreased slightly this reporting period by \$331K due to adjustments in Contract B611 (-\$707K) and Contract C0327 (+\$376K).
- Pending Change values increased this period for a total of \$125K, as a result of significant increases to CO351 (\$720K) and CO331 (\$232K), plus minor increases to CO321 (\$52K), CO301 (\$32K), and B612 (\$6K), offset by decreases to Contracts CO311 (\$672K), B281T (\$213K) and A650 (\$32K).
- Approved Change Order values increased by \$460K, due to increases to B281T (\$172K), C0311 (\$202K), C0301 (\$49K), C0321 (\$24K) and C0351 (\$19K) plus minimal decreases to B612 and B631.
- Current total Change Order exposure forecast at present (Approved plus Pending) stands at just over 10.5% of Change Control System recorded contract award values, or approximately \$52.2M.

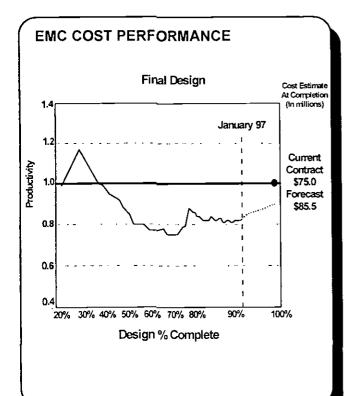
EXE 9 ES-3



# Change from Last Month Current ROD May 17, 2000 0 Design Progress 92% N/A\* Construction Progress 34.5% +1.5% Critical Path Float 0

#### **SCHEDULE ANALYSIS**

- The January 1997 Project Master Schedule includes C1610 (Trackwork Installation) planning schedule. It also includes schedule impacts to C0301 (Hollywood/Highland Station) due to CN-63, Tunnel Deletion, and C0351 (Hollywood/Vine Station) mitigation schedule. These changes had no impact to ROD. The project completion date forecast remains May 17, 2000.
- Focus continues to be on the unknown risks associated with tunnels under the Santa Monica Mountains, Contract C0311. Six different mitigation options, as described on ES-5, to recover some of the lost time and to add contingency back into the program have been firmly identified. In addition, a risk analysis on TBM excavation to better forecast excavation completion was developed. A meeting to review cost/benefit/risk analysis report was held with MTA on January 13, 1997. Negotiations with the C0311 contractor have begun.
- Additionally, the ongoing schedule improvements to add contingency rests with downstream contracts, i.e., C1610 (Trackwork Installation), B620 (Automatic Train Control) and Integration Testing and Start-up.
- 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), Systems Integration Testing and Pre-Revenue Operations.



#### **EMC COST PERFORMANCE ANALYSIS**

- Final Design is approximately 92% complete, with all of the Major Facilities (Stations and Tunnels) at 100% complete. This percentage is lower than last period due to the addition of budget for Contract C2326 (Widen LA River Bridge at Lankershim Blvd.). 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 \$82.8M. The EMC has a current Forecast at Completion of \$85.5M.
- The MTA is working with the EMC to reduce their overall cost forecast by as much as 5% as the project moves fully into construction. To date, the MTA has worked with the EMC and reduced their forecast by \$2M over the past several months. The MTA has identified additional areas such as Design Change Notice (DCN) tasks that may be modified to lower the cost of EMC services.

ES-4 EXE 10

<sup>\*</sup> The Design Progress percent was affected by the addition of budget for Contract C2326, Widen L.A. River Bridge at Lankershim Blvd.



#### CONSTRUCTION SAFETY STATISTICS

Project-to-Date Rates		Change from Last Month
Recordable Injury Rate: The number of recorded injuries excluding simple first aid or minor medical treatment per 100 man years.		Last Month
1994 National Average Project Rate	11.8 13.3	N/C
Lost Time Rate (Frequency) The number of injuries resulting away from work per 100 man yea	in days	
1994 National Average Project Rate	4.9 0.4	N/C
Lost Work Days (Severity): The number of lost work days per 100 man years.		
1991 National Average Project Rate	148.1 18.7	-0.9
<ul> <li>Segment 3 North Hollywo 120,000 work hours per m</li> </ul>		ring over

#### **CONSTRUCTION SAFETY SUMMARY**

- No Lost Time Injuries were reported in December.
- To date, the project has completed 2,730,282 work hours with only five Lost Time Injuries.
- Project-to-Date Lost Time Injury Rate continues at less than 10% of the last reported National Average.

#### **AREAS OF CONCERN**

(Based on December statistics)

#### NEW

Item (Date initiated: January 1997)

**TBM Production Rates** 

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

#### Concern/Impact

The production rates achieved for the running tunnel excavation for Contract C0311 are lower than those in the baseline schedule which has resulted in the continued erosion of project schedule contingency.

In an effort to increase production rates and mitigate further delays to ROD, six schedule studies have been reviewed with the contractor and recommendations provided to MTA. The six studies are: (1) shotcrete north and south crossover transition; (2) resequence track level room excavation and concrete work; (3) concrete lining south of La Brea Shaft to be done concurrently with seismic section excavation; (4) accelerate TBM drive, (5) accelerate tunnel concrete lining south of track level room; and (5) accelerate north/south crossover shotcrete and concrete. Acceleration will be accomplished by working six days a week.

#### Status/Action

The contractor has taken remedial action to mitigate some delays by replacing the muck hoist with cranes and working some Saturdays. The contractor is also preparing its position on the six studies and will provide cost and schedule analysis to the CM in early February. Meetings, to begin negotiations, will follow subsequent to the reviews of the contractor's submissions.

EXE 11 ES-5



#### AREAS OF CONCERN

#### **ONGOING**

Item (Date initiated: October 1996)
Project Schedule Contingency

#### Concern/Impact

Successful mitigation efforts to maintain ROD of May 17, 2000, has left the project schedule with no unallocated contingency. Allowances for all known-to-date schedule impacts due to ground conditions encountered in Reach 6C, seasonal springs protection, enclosure at La Brea shafts, additional 429 feet of standard tunnel excavation and Special Seismic Section redesign have been incorporated into the schedule. However, no other project contingency allowances exist for future unknown risks associated with the excavation of the tunnels under the Santa Monica Mountains.

#### Status/Action

In addition to the six options to improve C0311 TBM production rates, as described on page ES-5, other efforts have been done to add contingency back into the program including acceleration and resequencing of C1610 (Trackwork Installation) and returning Contract B620 (Automatic Train Control) to its original schedule. The acceleration of Contract B620 will be maintained as an option to mitigate future delays, if needed. Efforts continue to further refine downstream systems contracts such as B645 (SCADA) and start-up. MTA approval of these revisions is anticipated in early February 1997.

#### **AREAS OF CONCERN**

#### **ONGOING**

Item (Date initiated: February 1996)
MTA Board Motion Dated January 24, 1996

#### Concern/Impact

The MTA Board Motion to adopt community protection measures due to tunneling under the Santa Monica Mountains has added additional cost and time to the project. The protective measures instituted by the Board are being implemented on the tunneling Contract C0311 and include reducing the amount and intensity of blasting, increasing tunnel grouting to prevent surface springs leaking into the tunnel, and monitoring tunneling effects on the surrounding public and private property ecosystems.

#### Status/Action

The forecast cost and schedule impacts to Contract C0311 have been incorporated into the program. As each measure is implemented, cost and schedule forecasts will be adjusted accordingly.

ES-6 EXE 12

# METRO RED LINE SEGMENT 3 MID-CITY EXTENSION

**EXECUTIVE SUMMARY** 

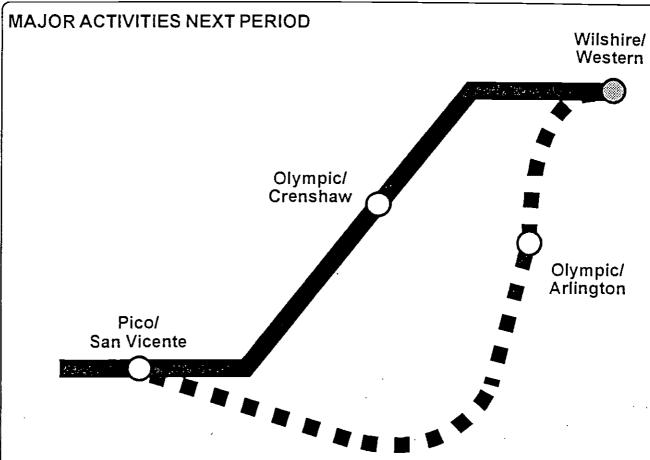


# MAJOR ACTIVITIES THIS PERIOD Wilshire/ Western Olympic/ Crenshaw Olympic/ Arlington

#### SYSTEMWIDE ACTIVITIES

- EMC continued work on a site plan feasibility study addressing interfaces between an expanded bus terminal and the two new station options at Pico/San Vicente; completed drawings were transmitted to the MTA in January.
- The environmental consultant, Ultrasystems Environmental, Inc., continued to collect and analyze information necessary for the preparation of the Draft SEIS/SEIR. In January, EMC transmitted CADD files to the environmental consultant for use in this analysis.
- A Notice of Preparation (NOP), required by the California Environmental Quality Act (CEQA), was completed and transmitted to Mid-City Project mailing list recipients.
- A Community Open House meeting was held to provide information about the Project.
- An Interagency Advisory Committee meeting was held to provide an overview of Project alternatives and discuss the SEIS/SEIR process.





#### SYSTEMWIDE ACTIVITIES

- Ultrasystems Environmental Inc., will continue preparation of an SEIS/SEIR incorporating the Wilton/Arlington alignment alternatives.
- MTA will continue to conduct community outreach through presentations with individual community groups.
- The Project budget and schedule will be revised in February to incorporate the Wilton/Arlington underground alignment alternative and a July 2009 ROD.



#### BUDGET

Original Budget	Amount ( <u>\$ in mil)</u> 490.7	Change from Last Month (\$ in mil) N/A
Current Budget	682.7	192.0
Current Forecast	682.7	192.0
Expenditures	12.8	0.2

#### ADDITIONAL LOCALLY FUNDED ACTIVITIES

Original Budget	Amount (\$ in mil) 0.0	Change from Last Month (\$ in mil) 0.0
Approved Budget	0.0	0.0
Current Forecast	0.0	0.0
Expenditures	0.0	0.0

#### **BUDGET ANALYSIS**

- The budget of \$490.7M was adopted in 1992 and is based on the original Project alignment and a July 1999 ROD.
- The Budget and Forecast increased to \$682.7M to reflect Board approval this month of a revised 20-Year Long Range Plan which incorporates funding constraints and a July 2009 ROD into the Mid-City plan.
- A PBCR is being undertaken in February to formally change the approved budget from \$490.7M to \$692.7M; the budget baseline will be finalized when the preferred alignment alternative is selected by the Board in August 1997.
- There is no Additional Locally Funded Activity at this time.

#### **SCHEDULE**

7/28/09	Change from Last Month 10 Years
0%	None
0%	None
N/A	None
	0%

#### SCHEDULE ANALYSIS

- The Wilton/Arlington alignment alternative was incorporated into the Project plan this period. This schedule, which shows a July 2009 ROD, corresponds to the \$682.7M budget approved by the Board in January as part of the 20-Year Long Range Plan.
- The Master Schedule baseline will be finalized and engineering work will resume pending selection of the pre-
- ferred alignment alternative by the Board; the SEIS/SEIR process, planned for completion mid-1997, is required for this selection to be made.

#### CONSTRUCTION SAFETY

No activity for this period.



#### AREAS OF CONCERN

#### NEW

There are no new areas of concern this period.

#### ONGOING

#### ltem.

Finalization of Mid-City Cost Estimate & Master Schedule (initiated 8/95)

#### Concern/Impact

The Mid-City Project cost and schedule baseline cannot be finalized until an alignment alternative is selected. Finalization of the master schedule for design and construction is on hold pending completion of the draft SEIS/SEIR and Board decision on the preferred alternative.

#### Status/Action

MTA is proceeding with a draft SEIS/SEIR to incorporate the Wilton/Arlington alignment alternatives. When the draft SEIS/SEIR is completed, the Board can make a decision on the alignment, a final SEIS/SEIR will be done, and the Project Master Schedule and preliminary cost estimates will be finalized.

#### • RESOLVED

No outstanding issues were resolved this period.

METRO RED LINE SEGMENT 3

EAST SIDE EXTENSION

**EXECUTIVE SUMMARY** 



#### MAJOR ACTIVITIES THIS PERIOD

# C0502 LITTLE TOKYO/ARTS DISTRICT STATION AND LINE SEGMENT FROM UNION STATION TO FIRST/BOYLE

EMC issued the Pre-Final Submittal on 1/23/97.
EMC submitted RFC for CR track realignment
1/17/97. EMC QA completed an audit of C0502
Section Designer 1/14/97. Audit findings report
received 1/31. EMC completed Interdiscipline and
Systems Interface/Lessions Learned Reviews
required for the Pre-Final Submittal.

#### C0521 FIRST/BOYLE STATION

Continued Design work on Station Plaza and Entrance. Third Party workshop held January 14, 1997. MTA Interim Review was held on January 8, 1997. Crossover Structural Design Progressed by INCA Engineers as a small contract.

FRST BOYLE

#### C0531 CHAVEZ/SOTO STATION

Section Designer's Concept Design was presented to and well received by the community and MTA Real Estate/Construction Boards. Design work is continuing by EMC and Section Designer per the schedule lowards the Interim Submittal milestone. As of January Plan Audit, Section Designer is 38.2% complete.

# UNION STATION UN

#### C0541 FIRST/BOYLE TO FIRST/ LORENA LINE SEGMENT

Completed Interdisciplinary review on drawings and specifications. Incorporated all review comments received on "review comments" forms and prepared final design documents to be released to MTA in February. Reviewed draft copy of Three Large Diameter Borings reports and provided review comments to the subconsultant. Final report to be received by mid-February will be distributed to MTA and LKG. Completed field work for pressuremeter (testing). Analytical work continues.

#### C0551

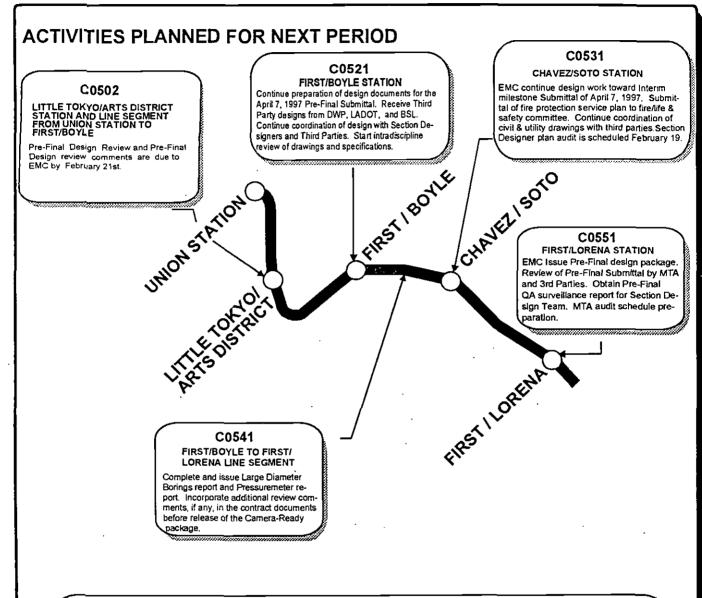
## FIRST/LORENA STATION Completed Interdiscipline Review and Systems Integration/Interface Management Review for Pre-Fina

and Systems Integration/Interface Management Review for Pre-Final Design Submittal. Continued Design and Preparation of Specification towards Pre-Final Submittal Feb.10.

#### SYSTEMWIDE ACTIVITIES

EMC SUBMITTED TO MTA AMENDMENT #9 FOR CONTINUATION OF FINAL DESIGN SERVICES. CONTRACT P1616, DIRECT FIXATION RAIL FASTENERS PROCUREMENT WAS SUBMITTED FOR INTERIM REVIEW. CONTINUE WORK ON DRAWINGS AND SPECIFICATIONS FOR THE PRE-FINAL SUBMITTAL OF CONTRACT P1614 AND CONTRACT C2610. EMC SUBMITTED RESULTS OF THE PROGRAMWIDE SEISMIC STUDIES ON EAST SIDE EXTENSION STATIONS DESIGN. QUALITY MANAGEMENT AUDIT REPORTS WERE PRESENTED ON C0541 PRE-FINAL, C0551 INTERIM, C0521 INTERIM AND C0502 INTERIM. FOLLOW-UP HAS BEEN CONDUCTED ON EACH OF THESE AUDITS TO RESOLVE FINDINGS.





#### SYSTEMWIDE ACTIVITIES

RECEIVE APPROVAL FROM MTA FOR AMENDMENT #9 FOR CONTINUATION OF FINAL DESIGN SERVICES THROUGH FEBRUARY. EMC TO HELP PREPARE PRESENTATION TO MTA CONSTRUCTION COMMITTEE OF THE GEOTECHNICAL BORINGS COMPLETED FOR EASTSIDE EXTENSION. MTA REAL ESTATE IS FORMALIZING THE PROPERTY ACQUISITION SCHEDULE. EMC TO RECERTIFY 25 SUB-SURFACE EASEMENTS AND BUILDING PROTECTION EASEMENTS FOR C0541, AND 26 SUB SURFACE AND BUILDING PROTECTION EASEMENTS FOR C0502. CONTINUE LIMITED COORDINATION WORK ON C2610, P1614, AND P1616.



#### **BUDGET**

	Amount (In Millions)	Change from Last Month (In Millions)
Original Budget	\$979.6	None
Approved Budget	\$1,049.2	69.6
Current Forecast	\$1,049.2	39.2

#### OTHER LOCALLY FUNDED ACTIVITIES

	Amount (In Millions)	Change from Last Month (In Millions)
Original Budget	\$0.0	None
Approved Budget	\$0.0	None
Current Forecast	\$3.1	None

#### **BUDGET ANALYSIS**

- In Jaunuary, the MTA Board adopted a revised project budget of \$1,049.2 million. This budget will be submitted for FTA approval as part of a revision to the FFGA.
- Revised Budget includes additional costs for Tunnel Boring Technology changes, increased Real Estate acquisition, Building Protection costs, increased environmental costs, and escalation due to the revised schedule.
- EMC and MTA are continuing efforts to identify, analyze and implement additional cost mitigation measures to bring forecast back to budget.
- The current forecast for "Other Locally Funded Activities" includes \$3.1M for the MTA Art Program.

#### **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 - January 31, 1997



#### **SCHEDULE**

Change from Last Month

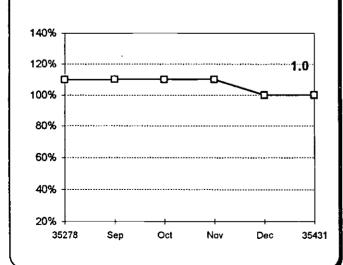
Board Adopted R.O.D. Nov. 2004 365
(FFGA) Baseline R.O.D. Nov. 2002 None
Final Design progress 58.0% 6.5%
Construct. Progress N/A N/A
Critical Path Float 0 374

Note: This MTA Board adopted current schedule will be submitted to the FTA for approval.

#### **SCHEDULE ANALYSIS**

- The MTA Board adopted a revised project schedule which will be submitted for FTA approval as part of a revision to the FFGA.
- The project schedule, which incorporates the approved baseline design schedule, has been turned over to the PMA for maintenance and incorporation of further detail. The MTA, EMC and PMA are working closely together to further refine the project schedule to identify mitigation opportunities.
- The MTA Board adopted schedule sets the Revenue Operations Date at November 3, 2004, and reduces the number of TBM's specified for contract C0502 from three to two.

### EMC COST PERFORMANCE



# EMC COST PERFORMANCE ANALYSIS

The EMC Cost Performance Index for the month of January 1997 is 1.0. Final Design progress is 58.0%



#### AREAS OF CONCERN

#### NEW

Item [Initiated January 1997]

Schedule Procurement of Breda Vehicles (A650)

#### Concern/Impact

The vehicles will be delivered and accepted according to the A650 Option contract (signed 4/9/96) with the last of the 14 vehicles accepted in January 1999. Since the 1996 signing of A650 contract, the difference between the original FFGA and the Board-adopted baseline schedule for Segment 3 East Side Extension has grown by two (2) years with integrated systems testing slated to start in April 2004.

The vehicles' warranty (2 years for most functional equipment, 5 years for carbody, trucks and certain particular system components) will have expired by February 2004.

#### Status/Action

The 14 (R84) vehicles, when accepted, will be integrated into the operating fleet and undergo the contractually required reliability and warranty programs. When the Segment 3 East Side Extension R.O.D. occurs, the proven vehicles shall be available to be inserted into Segment 3 revenue service.

#### **ONGOING**

Item [Initiated September 1996]

Increased Project Cost Forecasts.

#### Concern/Impact

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

#### Status/Action

The MTA Board approved a new Project Budget of \$1,049.2M which will be submitted for FTA approval as part of a revision to the FFGA. MTA and EMC continue to develop mitigation measures to potentially offset these increases.



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

#### **ONGOING**

*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. The EIR Addendum is expected to be approved by the Board in April 1997. This delay may impact the critical path and the current forecast R.O.D. of November 18, 2003, and may result in a cost escalation.

#### Status/Action

The earliest date foreseen for approving the EIS/EIR Addendum is June 1997. The Addendum has been submitted for FTA comments and MTA is responding to those comments as they occur.

#### **ONGOING**

*Item* [Initiated September 1996] Increased negative float to the Project Schedule.

#### Concern/Impact

The project schedule now stands at 374 calendar days (267 working days) of negative float behind the FFGA original ROD of November 11, 2002. The new forecast ROD is November 18, 2003. The schedule has slipped an additional eleven (11) working days due to a slippage in the Camera Ready Design Submittal on contract C0502. The delay occurred because of the "Two Pass" vs the "One Pass with Option" tunnel liner, realignment of CR tunnel at the Unocal Tank Farm, and the development of specs due to the C0541 delay.

#### Status/Action

On December 20, 1996 the project schedule was turned over to the PMA for maintenance and incorporation of further detail. While the MTA Board has adopted a revised R.O.D. of November 2004, and pending FTA approval of the revision, PMA, EMC, and MTA will continue to incorporate more detail within the project schedule and refine the construction sequences and logic to potentially advance R.O.D.



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

#### **ONGOING**

Item [Initiated February 1996]

Real Estate acquisitions for full-take parcels are critical.

#### Concern/Impact

Real Estate acquisition for 6 full-take parcels are critical and are impacting the project schedule. These parcels are needed by the C0521 Station contractor prior to the date the schedule indicates they will be available. In addition, twenty-one full-take property acquisitions cannot be authorized by the MTA Board until the EIS/EIR Addendum has been approved.

#### Status/Action

MTA Real Estate and Environmental Departments are formalizing the property acquisition/environmental schedules for all full-take parcels that require demolition. This process is expected to be completed within the first quarter of 1997. This will enable MTA management to direct their real estate department to accelerate the acquisition of those parcels that are deemed critical.

#### **ONGOING**

Item [Initiated December 1996]

Design is on the schedule Critical Path.

#### Concern/Impact

Due to a slippage in the Camera Ready submittal on contract C0502, design for this contract became critical and the projected R.O.D. for the project schedule was pushed out 11 working days. The delay was due to the "Two-Pass" vs. "One-Pass with Option" tunnel liner, realignment of the CR tunnel at the Unocal Tank Farm, and development of specs due to the C0541delay.

#### Status/Action

EMC is attempting to make the Camera Ready submittal ahead of the currently scheduled date of March 31, 1997.

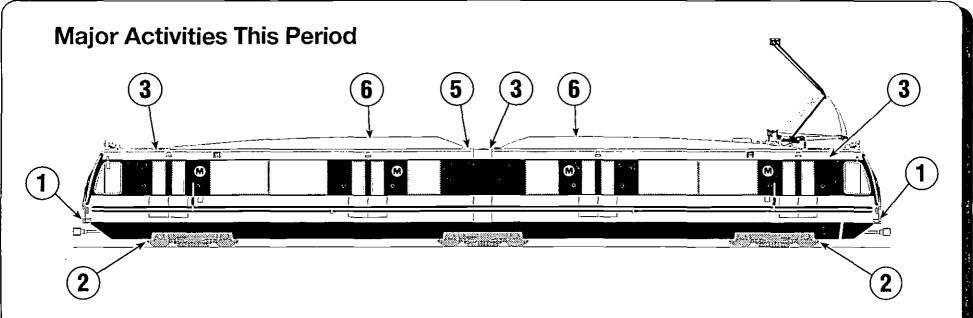
# VEHICLE ACQUISITION PROJECT

**EXECUTIVE SUMMARY** 

#### L.A. Light Rail Vehicle

Summary Status Report Period Ending - January 31, 1997



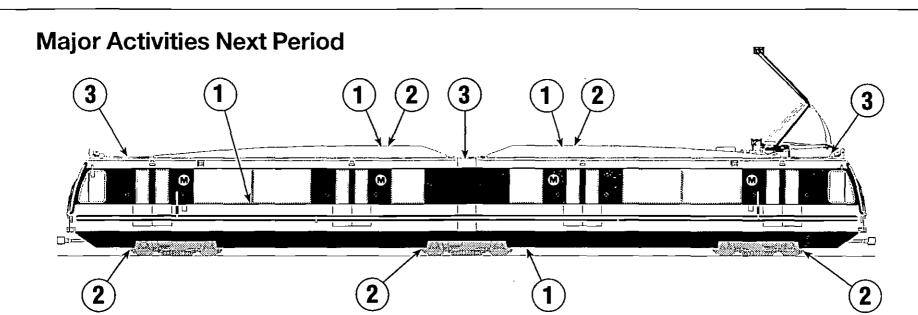


- 1. Held a project status review with Siemens and participated in a Between Car Warning Device demonstration.
- 2. The Power Truck successfully passed the 2 million Life Cycle Test.
- 3. Two more carshells were shipped to Sacramento, bringing the total to five carshells (three standard and two prototype). Carshells No. 6 through 12 are in various manufacturing stages at the Carson Facility.
- 4. Clarified MTA's position regarding the vehicle delivery sites proposed by Siemens. Rejected the proposed seat cover material due to smoke and flammability requirements and requested new material.
- 5. Resolved the majority of interface issues between Siemens and US & S.
- 6. Conducted HVAC System Design Conformance Test and partial First Article Inspection (FAI).

#### L.A. Light Rail Vehicle

Summary Status Report Period Ending - January 31, 1997





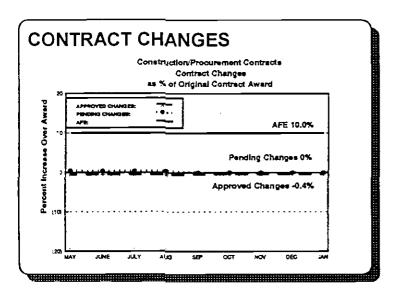
- 1. Participate in the First Article Inspection (FAI) of passenger seats, battery and battery box and complete HVAC First Article Inspection.
- 2. Participate in the audit conducted by Project Management Oversight (PMO) of Siemens at Carson and at Sacramento facilities. Conduct a Quality Assurance audit of the HVAC and truck suppliers.
- 3. Complete the sixth and seventh carshell and ship to Sacramento for final assembly.
- 4. Finalize vehicle delivery logistics and location to an MTA site.
- 5. Meet with Siemens management to discuss ongoing project concerns.



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	79.3	+0.3

#### **BUDGET ANALYSIS**

- Car reduction effected 9/08/95 which will reduce the 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 January 1997 are as follows:

 Approved Changes
 (0.4%)

 Pending Changes
 0%

 AFE
 10%

SCHEDULE		
	Change from Last Month	
Schedule Car Delivery	•	
1st Car	February 1998	N/C
52nd Car	June 1999	N/C
Design Progress	90-95% complete	N/C
Fabrication Progress	30-35% complete	N/C
Critical Path	Carshell assembly	N/C
Delay (1st Car)	-16 months	N/C
Data Date	November 1, 1996	

#### SCHEDULE ANALYSIS

The Contractor's last forecast schedule reflected a total of 16 months delay in 1st car deliveries. Subsystems with potential impact on delivery are air conditioning and communications equipment. Car assembly is still on the critical path. Acceleration of the delivery schedule for the first several cars 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 September 1996)

Lack of Progress in the Development of Manuals and Training

#### Concern/Impact

TransEd (TEI), Siemens' DBE Subcontractor for the User Education portion of the Contract, evidenced a lack of progress in both the development of Repair and Parts Manuals, and in the Vehicle Training Program.

#### Status/Action

STS determined that TransEd, the DBE subcontractor for training and manuals is in default. As a result, they are requesting the MTA allow them to contract with MRA, TransEd's sub-supplier. The MTA is reviewing Siemens' request.

#### Item (Date Initiated June 1996)

Vehicle Weight

#### Concern/Impact

Vehicle Weight Report, No. 11, indicates a margin of approximately 1,300 pounds under the specified weight. Although this news is encouraging, it represents less than a 1% margin.

#### Status/Action

Vehicle Weight Report, Revision 12, dated December 9, 1996, indicates the margin has shrunk to 0.6%, or just over 800 lbs. The estimate reflects actual equipment weights. STS continues to monitor vehicle weight during the assembly of the first car and make improvements wherever possible.

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

#### Item (Date Initiated February 1996)

Schedule Slippage

#### Concern/Impact

The November delivery schedule indicates a delay of 16 months for the first car with delivery of the last car approximately 7 months late.

#### Status/Action

Siemens is expected to submit the latest schedule by mid-February.

#### Item (Date Initiated November 1995)

Carborne Signal Equipment for 16 Standard Cars

#### Concern/Impact

The current plan calls for 16 LA Standard Cars to be assigned to the Metro Blue Line (LA→Long Beach Branch). 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

Siemens submitted a revised ROM cost which is under review by MTA.

#### 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 has been evaluated by technical staff and will be submitted to Audit Group for final determination.



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

#### Item (Date Initiated March 1995)

**HVAC** Design

#### Concern/Impact

The Prototype Unit was completed and inspected. The completion of the systems test has been delayed due to postponements by Sutrak.

#### Status/Action

In an executive level meeting held last month, Sutrak cited corporate reorganization as the reason for their delay. Sutrak's President, stated that the reorganization is behind them, and Sutrak-USA is now an independent entity, with an exclusive license to produce the P2000 HVAC design in the United States.

Design Conformance Testing (initiated in November) was conducted in January in Lamar, CO., along with a partial First Article Inspection. Further tests and FAI is scheduled for the end of February or early March.

This item will remain as an area of concern until Sutrak produces specification-compliant units in the required time frame.

#### **RESOLVED**

#### Item (Date Initiated March 1996)

**Fatigue Test of Power Truck** 

#### Concern/Impact

The Duewag power truck failed fatigue testing for a third time. In November, at about 500,000 cycles into the 2,000,000 cycle test, cracks developed in the weld joining the friction brake support arm to the frame transom.

#### Status/Action

Duewag determined the cause of the problem is the weld itself, including the joint design and surface finish. Poor workmanship (welding) also entered into the equation. Proposed corrective measures include a revised joint design; different surface treatment; and improved quality control surveillance. Duewag implemented these corrective measures on a new truck, and successfully completed the 2 million Life Cycle Test. The Fatigue Test of the Power Truck is no longer a concern.

#### QA / TQM ISSUES

#### STS EQUIPMENT SUPPLIER INSPECTIONS

- STS is scheduled to submit truck mounting hardware test data to demonstrate freedom from the effects of hydrogen embrittlement.
- Sutrak submitted an interim Quality Assurance Manual for review. This manual does not propose an appropriate
  program for Sutrak, therefore a Quality Assurance representative will monitor Sutrak's operations while a
  program is developed. An audit of Sutrak's facility will be conducted by LTK if February. Additionally, V-H is in
  the process of revising its Quality Assurance Manual.
- LTK reviewed and accepted Coach and Car's Quality Assurance Plan and conducted an inspection of the P2000 passenger seats. Issues concerning seat cover material are under review.
- Prototypes of the Lundahl Between Car Warning Device and the Battery Box were inspected at Siemens. The
  results were satisfactory. First Article Inspections (FAI's) are being scheduled.

#### **DUEWAG TRUCK FRAME AND BOLSTER MANUFACTURING**

- The newly manufactured power truck frame passed the fatigue test at the end of January.
- Dueway received renewal of its ISO 9001 certificate.

#### CARSON CARSHELL MANUFACTURING

- Painting problems found on carshell no. 4 were corrected. Carshell no. 2, the second half of carshell no. 4 and carshell no. 5 were shipped to Sacramento in January.
- · Manufacturing of the twelfth carshell commenced.
- Dimensional inspections were conducted on the ninth carshell.
- Assembly fixture adjustments for weld shrinkage are under review.
- STS Carson continues to report a low rejection rate of parts received from its suppliers.

#### SACRAMENTO FINAL ASSEMBLY

- Inspection monitoring of LRV no. 201, 202, 301, and 302 assembly progresses. Passenger windows and floor covering were installed in all cars. STS is addressing issues concerning the fit of the windshield and cab side windows.
- Car no. 201 and 202 progressed to the wiring of cab console fit-up stages.
- Car no. 201 roof equipment was installed.
- Trial fit-up for the installation of truck wiring and piping commenced. An FAI will be scheduled when this activity
  is complete. LTK and MTA provided preliminary inspection comments during a Sacramento design
  review meeting.

#### CCN BACKLOG STATUS

- 1 Consultant Change Notice (CCN) is pending approval by the Change Control Review Board (CCRB) for an estimated value of \$113,000.
- No CCN's were approved by the CCRB during the period.