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LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

REGIONAL TRANSIT ALTERNATIVES ANALYSIS

STUDY RESULTS

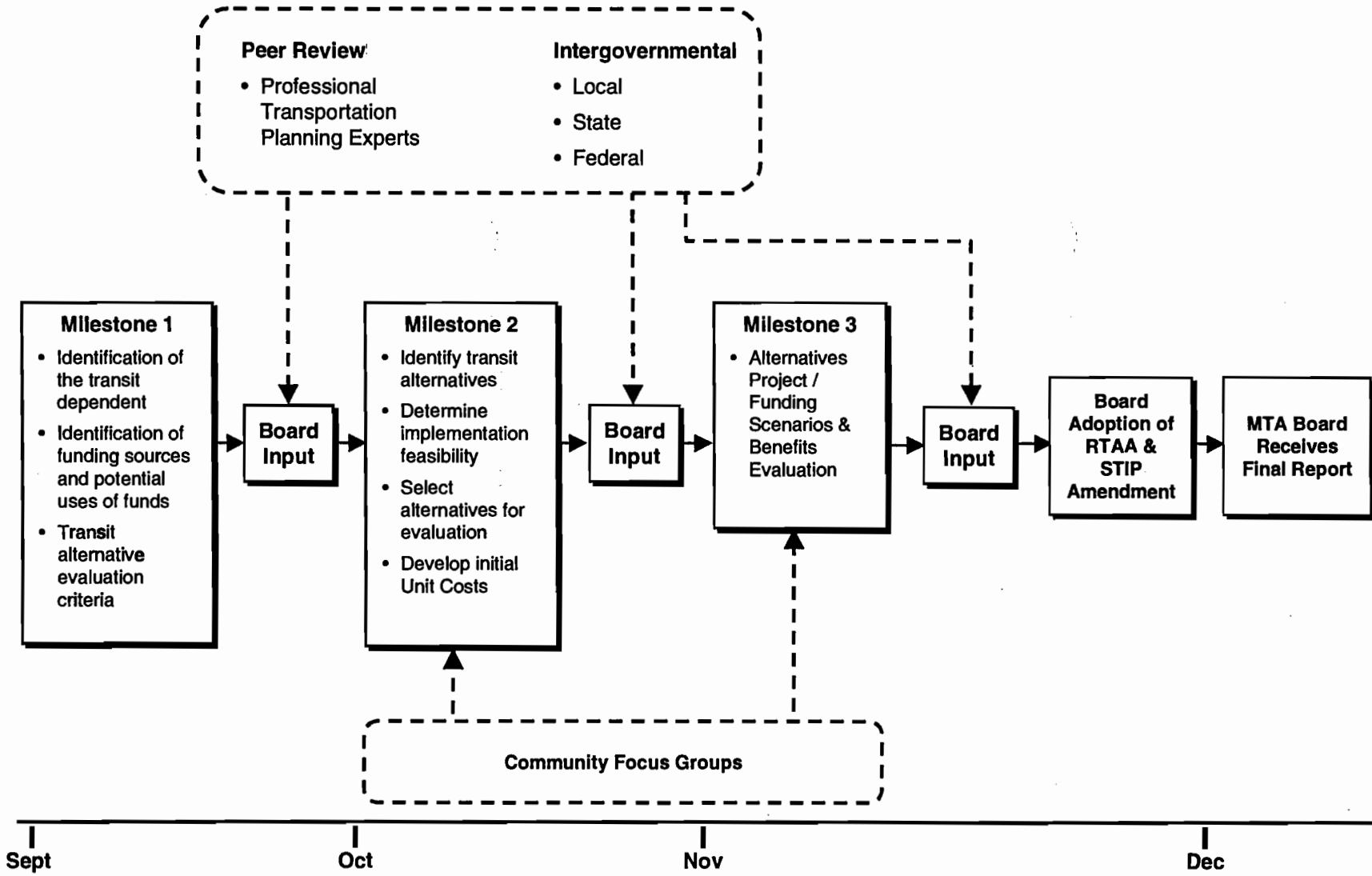
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Introduction

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Introduction

THE PURPOSE OF THIS BRIEFING IS TO PROVIDE TECHNICAL INFORMATION TO SUPPORT FUTURE BOARD DECISIONS REGARDING THE REGIONAL TRANSIT ALTERNATIVES ANALYSIS

- Study progress to date
- Financial outlook update
- A framework for policy decision making and recommendations of MTA management:
 - system investment priorities
 - allocations to non-transit programs
 - allocations to operate existing services at a reliable standard
 - related municipal operator allocations
 - addressing financial risk
 - countywide bus service expansion
 - process for future investment decisions
- Analysis of RTAA investment alternatives, including corridor specific alternatives, capital and operating cost, actions and schedule to implement, capacities, ridership and performance measures

THIS BRIEFING PROVIDES INFORMATION AND RECOMMENDATIONS – POLICY DECISIONS ARE NEEDED AND BOARD ACTION REQUESTED

Introduction

THE INCLUSIVE RTAA PROCESS HAS ENTAILED A NUMBER OF MEETINGS AND CONSULTATIONS WITH STAKEHOLDERS

NO. MTGS.	OUTREACH TO DATE
4	Board Staff Meetings
4	Ad Hoc Meetings of Elected Officials
2	Community Outreach Meetings
2	Citizen's Advisory Committee Meetings
1	Transportation Business Advisory Council
2	Bus Riders Union Meetings
1	Local Transportation System Subcommittee
1	Technical Advisory Committee
2	Peer Reviews
1	General Managers Meeting
1	Meeting with California Transportation Commission representatives

ADDITIONAL STAKEHOLDER MEETINGS ARE SCHEDULED

COMMITTED FUNDING FOR SUSPENDED PROJECTS
(\$ millions)

	<u>New Starts</u>	<u>CMAQ</u>	<u>STIP</u>	<u>Prop C</u>	<u>TOTAL</u>
FY99 – FY04					
Eastside	\$60	\$51	\$65		\$176
Mid-City		\$4	\$40		\$44
Transit Capital	—	—	\$46	—	\$46
Subtotal	<u>\$60</u>	<u>\$55</u>	<u>\$151</u>	—	<u>\$266</u>
Pasadena					
Suspended Funds			\$258	\$88	\$346
Unexpended Funds			\$22	\$1	\$23
Pasadena Subtotal			<u>\$280</u>	<u>\$89</u>	<u>\$369</u>
TOTAL, FY99-FY04	\$60	\$55	\$431	\$89	\$635
FY05 – FY10					
Eastside and/or Mid-City	<u>\$360</u>	—	—	—	<u>\$360</u>
FY99 – FY10					
TOTAL	\$420	\$55	\$431	\$89	\$995

THE STIP MUST BE AMENDED TO REPROGRAM FUNDS CURRENTLY COMMITTED FOR SUSPENDED PROJECTS

- Under the terms of the Memorandum of Understanding with the California Transportation Commission, the MTA must present a STIP amendment to the CTC by December 1, 1998 – or place at risk \$151 million in STIP funds associated with the Eastside, Mid-City, and new transit capital
- The Schiff Bill requires the MTA to transfer previously programmed capital funds to the new Pasadena Blue Line JPA, provide vehicles, and operate the resulting system

REVENUE UPDATE
(\$ millions)

<u>REVENUE SOURCE</u>	<u>FY99-FY04</u>	<u>FY05-FY10</u>	<u>FY99-FY10</u>
Federal	\$3,115.5	\$3,194.7	\$6,310.2
State	\$3,369.3	\$2,581.6	\$5,950.9
Local	\$10,184.9	\$11,112.5	\$21,297.4
Farebox	<u>\$1,975.1</u>	<u>\$2,460.2</u>	<u>\$4,435.3</u>
UPDATED REVENUE ESTIMATE	\$18,644.8	\$19,349.0	\$37,993.8

**REVENUE PROJECTIONS ARE BASED ON CRITICAL ASSUMPTIONS AND ACTUAL RESULTS
COULD VARY SIGNIFICANTLY FROM PROJECTIONS**

- Federal funds are assumed to continue and to increase:
 - MTA will receive annual federal appropriations from TEA-21 at 90% of authorized levels, equal to the expected national average authorization level
 - MTA will gain \$60 million every year through 2010 in federal discretionary New Starts funds, and the money will be provided in a timely manner
 - TEA-21 represents a new federal funding base – allocations under the next federal transportation funding act will keep pace with the 1.4% average annual growth in the Highway Trust Fund

- State funds would also continue to increase:
 - State STIP funds will remain at the levels provided by the current STIP
 - Non-STIP State programs funded with gas tax sources (e.g., STA) will grow from current levels at the 1.4% rate in the Highway Trust Fund
 - Sales tax-funded State programs will also grow from current levels at the projected rate of change in the CPI -- approximately 42 percent from FY00 through FY10

- Economic forecasts for local funding sources (i.e., Prop A, Prop C and TDA) also assume continuous growth in both the current and future STIP periods – at 27% and 34% respectively

- Fare revenues include annual increases by the MTA Board of Directors to keep pace with inflation, as permitted by the Consent Decree

FY99-FY04 FUNDING COMMITMENTS DETAIL (\$ millions)

	OPERATING			CAPITAL				TOTAL
	BUS	HIGHWAY (1)	TRANSIT	BUS	Highway	HIGHWAY (1)	TRANSIT	
COMMITTED PROJECTS - MTA								
Bus Operations	3,819.1							3,819.1
BSIP	53.7							53.7
Bus Purchases Baseline				465.5				465.5
Accelerated Bus Purchases				251.7				251.7
Other Bus Capital				533.5				533.5
Bus Operations Expansion (Consent Decree)	289.3							289.3
Fare Structure Costs	50.3							50.3
Red Line			403.4				791.8	1,195.2
Blue Line (Long Beach)			265.2					265.2
Blue Line (Pasadena)			66.0				48.3	114.3
Green Line			146.6				24.9	171.4
Other Rail Costs (2)							109.3	109.3
Red Line Segment 2 Station Enhancements							22.9	22.9
Rail Rehab. & Replacement							82.8	82.8
L.A. Rail Car							82.5	82.5
Transit Capital (3)							32.3	32.3
Capital Reservation - Section 5309 Rail Mod.							40.5	40.5
Metrolink			167.3				50.4	217.7
Rail & Bus Debt Service	135.1		1,436.7					1,571.7
Hwy. Ops. (SHOPP, Safe, Incid. Management)		1,279.5						1,279.5
Hwy. Projects (Capital-Call For Projects)				1,927.7		2,125.4		2,125.4
Other Hwy. (Alameda Corr. & Local Agency projects)				1,143.1		1,255.0		1,255.0
Hwy. Debt Service		581.8						581.8
COMMITTED PROJECTS - REGIONAL								
Bus Operations, (Muni)	1,225.0							1,225.0
BSIP: Expansion/Service Improvement (Muni)	22.2							22.2
ADA/Paratransit	355.9							355.9
Bus Purchases Baseline (Muni)				432.8				432.8
Accelerated Bus Purchases				44.7				44.7
Muni Prop. C 5% Security Funds (Calderon Bill)	31.7							31.7
TSE, Base Bus	61.5							61.5
Incentive Program/Service Expansion	61.6							61.6
Immediate Needs	34.0							34.0
Other Eligible Operators	45.0							45.0
TOTAL COMMITMENTS	6,184.6	1,861.4	2,485.1	1,728.3	3,070.8	3,380.4	1,285.7	16,925.5
TOTAL SUSPENDED RAIL PROJECTS								634.9
TOTAL COMMITMENTS + SUSPENDED RAIL								17,560.4
UNCOMMITTED FUNDS								1,084.4
TOTAL FUNDS								\$18,644.8

NOTES: (1) Highway dollars include funds that MTA passes through, not maintenance and construction costs which the MTA does not program

(2) Includes Long Beach Blue Line improvements, radio retrofit, MOW facility, Hollywood Blvd. construction mitigation

(3) Call for Projects funding for STIP TCI element

COST PROJECTIONS ARE ALSO ESTIMATED AND WILL CHANGE AS DECISIONS ARE MADE AND THE MTA CONTINUES TO OPERATE

- The projected \$144 million operating deficit in FY00-FY04 has not been resolved. It is assumed to be addressed through cost savings, not by accessing additional revenue
- Cost estimates assume that the MTA operates more effectively to contain costs to the expected rate of change in the CPI: 19.3% for FY99-FY04 and 18.9% for FY05-FY99. The following major cost drivers can impact this assumption:
 - Labor agreements
 - Fuel prices
 - Parts and materials
 - Health care benefits
 - Liability costs
- Operating costs assume no impact from new technologies and conversion to a CNG fleet
- Consent Decree costs include current interpretations of Consent Decree requirements. There is risk that these could change if new decisions are made by the Special Master
- Recent and projected ridership growth on ADA-mandated paratransit services provided by ASI indicate a potential shortfall of approximately \$15 million per year beginning in FY00
- Ridership growth is projected and considered in cost projections, but could change

BECAUSE REVENUES ARE PROJECTIONS, THERE IS AN INHERENT RISK THAT MTA WILL COMMIT TO DELIVERING MORE THAN FUNDING SUPPORTS – THERE ARE TWO COMMON APPROACHES TO REDUCING THESE RISKS

- Some transit operators establish a depreciation reserve, or sinking fund, which can be used to reduce revenue risk. Several policy considerations include:
 - Depreciation reserves may be limited to local fund investments in capital
 - Money in the sinking fund is unavailable for improvements today
 - Reserve balances may become targets of other agencies and interests
- A second approach is to establish clear priorities for funding, indicating the order of investments and specifying that delivery of the list will speed up or slow down in direct relationship to available revenues. Several benefits of this approach include:
 - All monies are fully leveraged
 - Delivery schedules focus on the order of projects
 - Continuous monitoring and communications manages risk effectively

MTA MANAGEMENT RECOMMENDS ESTABLISHMENT OF PRIORITIES CONVEYING THE ORDER OF PROJECTS/PROGRAMS TO BE DELIVERED

AVAILABLE FUNDS
(\$ millions)

	FY99 - FY04	FY05 - FY10	FY99 - FY10
Revenue Available			
Federal	\$3,115.5	\$3,194.7	\$6,310.2
State	3,369.3	2,581.6	5,950.9
Local	10,184.9	11,112.5	21,297.4
Fare Revenues	1,975.1	2,460.2	4,435.3
Total Available	\$18,644.8	\$19,349.0	\$37,993.8
Commitments:			
Suspended Projects	(\$266.1)	(\$360.0)	(\$626.1)
Pasadena Blue Line			
Capital (1)	(368.8)	0.0	(\$368.8)
Rail Cars	(45.0)	0.0	(\$45.0)
Operations	(64.2)	(217.8)	(\$282.0)
Accelerated Bus Procurement	(265.0)	0.0	(\$265.0)
Other Commitments	(16,551.3)	(15,211.7)	(31,763.0)
Total Committed (2)	(\$17,560.4)	(\$15,789.5)	(\$33,349.9)
NET AVAILABLE	\$1,084.4	\$3,559.5	\$4,643.9
Plus: SUSPENDED PROJECTS	\$266.1	\$360.0	\$626.1
TOTAL AVAILABLE	\$1,350.5	\$3,919.5	\$5,270.0

NOTES:

- (1) A question has been raised as to the intent of the Schiff bill: Is the funding reserved for the Pasadena Blue Line or is the project expected to compete with other corridors in the RTAA
- (2) Projected \$144 million deficit (FY00-FY04) is not included in committed funding

INCLUDING THE SUSPENDED PROJECTS, THE MTA IS EXPECTED TO HAVE APPROXIMATELY \$1.4 BILLION AVAILABLE BETWEEN FY99 AND FY04

- This estimate reflects recent changes to estimated revenues and commitments. It does not include funds to cover the \$144 million operating deficit projected over the FY00-FY03 timeframe, since it is assumed that the MTA will resolve the deficit through internal cost savings
- Another \$3.9 billion is expected to be available during the second planning period, yielding a total of \$5.2 billion through the 12-year timeframe of this study
- Note that these revenue estimates are based on numerous assumptions and there is significant risk that actual revenues may fall short of these amounts
- In addition to alternatives considered by the RTAA, several non-RTAA programs have a call on these funds

Policy Decisions

THIS DOCUMENT PROVIDES RTAA AND MTA MANAGEMENT RECOMMENDATIONS REGARDING BOARD DECISIONS AND ACTIONS

- System investment priorities
- Non-transit program allocations
- Allocations to improve current bus system reliability and integration
- Related municipal operator allocations
- Managing financial risk
- Countywide bus service expansion
- Process for finalizing corridor investments

THE RTAA AND MTA MANAGEMENT RECOMMEND THE BOARD OF DIRECTORS ADOPT A CLEAR SET OF PRIORITIES FOR COUNTYWIDE TRANSIT INVESTMENT

- The first priority and call on funds is to operate and maintain the transportation infrastructure and network in place today
- The second priority for revenue allocation is to improve the current countywide transit system in terms of reliability and service connectivity from a passenger perspective
- Transit system expansion is the third priority, and would only occur after current operations and improvements to reliability and connectivity are adequately funded. The MTA Board of Directors may further wish to define priorities within the expansion category considering new services:
 - Countywide (e.g., rapid bus)
 - Eastside
 - Mid-City
 - San Fernando Valley

THESE PRIORITIES SHOULD GUIDE FUTURE ALLOCATION AND INVESTMENT DECISIONS

FUNDING FOR NON-RTAA PROJECTS
(\$ millions)

	<u>FY99-FY04</u>	<u>FY05-FY10</u>	<u>FY99-FY10</u>
CALL FOR PROJECTS			
Constant Funding Approach	\$493.6	\$1,412.4	\$1,906.0
Revenue Growth Approach	\$558.7 (1)	\$2,012.3 (2)	\$2,571.0 (2)
STORM DAMAGE PROGRAM	\$50.0 (1)	\$0.0	\$50.0 (1)
SOUNDWALL PROGRAM	\$34.8 (1)	\$76.4 (1)	\$111.2 (1)
FUNDING RANGE	\$578.4 - \$643.5 (1)	\$1,488.8 - \$2,088.7 (2)	\$2,067.2 - \$2,732.2 (2)

NOTE:

- (1) Recommended by RTAA and MTA Management
- (2) To be addressed in the context of the Long Range Plan

THE TIP CALL FOR PROJECTS HAS HISTORICALLY BEEN FUNDED BY THE MTA; ADDITIONAL PROGRAMS MAY ALSO HAVE A CALL ON THE AVAILABLE FUNDING

- MTA has funded the call for projects at an average of \$235 million annually. Maintaining the same level of funding would require another \$494 million for FY02-FY04 and \$1.4 billion for FY05-FY10
- **Another approach, recommended by MTA Management, to determine call funding is to examine revenue growth by fund source typically used in the call, which would require \$558.7 million for FY02-FY04:**
 - Local funds (44% of the total) are assumed to grow 4.8% in FY03 and 5.0% per year thereafter
 - State funds (35% of the total) grow at the 1.4% rate of growth in the Highway Trust Fund
 - Federal funds (21% of the total) grow commensurate with CMAQ and RSTP funds under TEA-21, and at the Highway Trust Fund rate thereafter
- SB1477 would have provided \$79 million for El Nino storm damage rehabilitation in Los Angeles County. As a consequence of the governor's veto, MTA retains \$50 million under SB45. The veto message instructs MTA to work with the CTC and Caltrans to fund these needs. CTC guidelines are being developed – **MTA management recommends funding at \$50 million over two years using a formula allocation approach**
- The MTA Board of Directors has acknowledged that soundwalls are a regional transportation issue and has committed to seeking funding. With the veto of AB1686, the MTA should participate in funding May 1989 list retrofits using the call for projects process. **Management recommends that MTA assume half of Caltrans' current cost estimates -- \$35 million in the current planning period and \$76 million in FY05-FY10.** This does not include funding for more recent soundwall needs

MTA BUS SYSTEM IMPROVEMENTS TO RELIABILITY AND CONNECTIVITY
(\$ millions)

	<u>ESTIMATED COST</u>	<u>COMMITTED FUNDING</u>	<u>ADD'L. FUNDING REQUIRED</u>
BASE BUS REPLACEMENT	\$592.3	\$592.3	\$0.0
ACCELERATED PROCUREMENT (1)	<u>225.0</u>	<u>225.0</u>	<u>0.0</u>
	\$817.3	\$817.3	\$0.0
 TECHNOLOGY IMPROVEMENTS (2)			
Universal Fare System	\$75.8	\$37.0	\$38.8
Radio System	50.0	35.0	15.0
GPS, APC (3)	<u>27.8</u>	<u>0.0</u>	<u>27.8</u>
TOTAL	\$970.9	\$889.3	\$81.6

NOTES:

- (1) Includes 2,095 CNG buses and fueling facilities, spare parts, applicable sales taxes, shipping and delivery charges, remote outside cameras, fire suppression, headsigns, air conditioning, maintenance diagnostic hardware and software, force account, computer hardware upgrade required to support smart system components; also includes global positioning systems (GPS), automated voice enunciators for 1,657 buses and automated passenger counters for 25% of the fleet
- (2) Assumes 2,599 buses, including 161 expansion buses for the Consent Decree, unless otherwise noted
- (3) Includes GPS retrofits required on 941 buses; assumes 2/3 of fleet is outfitted with passenger counters

MTA HAS ALREADY COMMITTED SOME FUNDS TO IMPROVING RELIABILITY AND CONNECTIVITY OF THE CURRENT COUNTYWIDE TRANSIT SYSTEM IN FY99-FY04

- The Board-approved Accelerated Bus Procurement will reduce fleet age and improve the reliability of the buses in service
- Some technology improvements are already funded – additional needs are identified that will enhance the MTA’s ability to operate the bus system at a reliable standard:
 - Universal Fare System (UFS): \$37 million are currently committed to replace existing cash fareboxes. Another \$38.8 million would permit the addition of the farecard technology that would permit seamless, coordinated inter-modal and inter-agency travel in L.A. County and faster boarding times
 - Radio System: \$35 million are currently committed to replace the existing radio system. An additional \$15 million are required to replace and upgrade the entire radio system and for the central control facility
 - GPS and APC Retrofits: The Global Positioning System enables real-time dispatching in response to actual events. In conjunction with the GPS, the APC system will enable improved response to actual conditions, as well as improved ridership data for planning. Approximately \$27.8 million are needed to retrofit GPS on 941 buses and to provide passenger counters on two-thirds of the fleet

THE RTAA AND MTA MANAGEMENT RECOMMEND AN ADDITIONAL \$81.6 MILLION BE ALLOCATED IN FY99-FY04 TO TECHNOLOGY WHICH IMPROVES ON-STREET OPERATIONS

FY99-FY04 COUNTY-WIDE RELIABILITY AND CONNECTIVITY PROJECTS
(\$ millions)

	<u>ESTIMATED COST</u>	<u>COMMITTED FUNDING</u>	<u>ADD'L. FUNDING REQUIRED</u>
FUNDING TO IMPROVE RELIABILITY	\$40.0	\$40.0	\$0.0
FUNDING RELATED TO UNIVERSAL FARE SYSTEM	\$17.5	\$0.0	\$17.5
FUNDING TO IMPROVE RELIABILITY/ INTEGRATION	<u>\$14.0</u>	<u>\$0.0</u>	<u>\$14.0</u>
TOTAL COUNTY-WIDE TRANSIT ALLOCATION	\$71.5	\$40.0	\$31.5

MTA HAS COMMITTED \$40 MILLION TO MUNICIPAL OPERATORS – ADDITIONAL ALLOCATIONS ARE WARRANTED

- The \$40 million currently committed are intended to improve operations and reliability of the current countywide bus transit system. These funds were committed at the time funding was provided for the Accelerated Bus Procurement
- An additional \$31.5 million could fund improvements that would further integrate the county-wide transit system:
 - \$17.5 million is needed to extend the Universal Fare System to the municipal operators, ASI, and Metrolink
 - In addition, \$14 million should be added to provide funding to municipal operators to further improve transit integration in the County related to a municipal operators' share from other MTA bus technology
- The RTAA and MTA management recommend a process for allocating these funds be developed in consultation with municipal operators. The current intent would be to provide municipal operators significant flexibility in using these discretionary funds to meet regional objectives of high bus service reliability and improved countywide connectivity. Operators would need to demonstrate that proposed uses meet these countywide objectives
- Another option is to restrict the use of Universal Fare System funds to UFS implementation

THE RTAA AND MTA MANAGEMENT RECOMMEND AN ADDITIONAL \$31.5 MILLION BE ALLOCATED TO MUNICIPAL OPERATORS FOR PROJECTS TO IMPROVE RELIABILITY AND CONNECTIVITY

AVAILABLE FUNDS
(\$ millions)

	FY99 - FY04	FY05 - FY10	FY99 - FY10
NET AVAILABLE	\$1,084.4	\$3,559.5	\$4,643.9
RECOMMENDATIONS:			
Non-Transit Projects			
Call for Projects	(\$558.7)	(\$2,012.3)	(\$2,571.0)
Storm Damage Rehabilitation	(\$50.0)	\$0.0	(\$50.0)
Soundwall Rehabilitation	(\$34.8)	(\$76.4)	(\$111.2)
Subtotal - Non-Transit	(\$643.5)	(\$2,088.7)	(\$2,732.2)
Reliability and Connectivity Projects			
MTA Universal Fare System	(\$38.8)	\$0.0	(\$38.8)
MTA Bus Technology	(\$42.8)	\$0.0	(\$42.8)
Subtotal - Reliability and Connectivity	(\$81.6)	\$0.0	(\$81.6)
Municipal Operator Call for Projects	(\$31.5)	\$0.0	(\$31.5)
TOTAL RECOMMENDATIONS	(\$756.6)	(\$2,088.7)	(\$2,845.3)
AVAILABLE FOR SYSTEM EXPANSION	\$327.8	\$1,470.8	\$1,798.6
Plus: SUSPENDED PROJECTS	\$266.1	\$360.0	\$626.1
TOTAL AVAILABLE	\$593.9	\$1,830.8	\$2,424.7

NOTE: This table begins with the "Net Available" funding shown on the facer to page 8

RTAA AND MTA MANAGEMENT RECOMMEND THAT THE MTA BOARD COMMIT AN ADDITIONAL \$757 MILLION, AS NOTED ABOVE, IN FY99-FY04

- \$643.5 million would be committed to non-RTAA projects, including:
 - \$558.7 million for the Call for Projects
 - \$50.0 million for storm damage rehabilitation
 - \$34.8 million for soundwall rehabilitation

- \$81.6 million would be programmed for MTA reliability and connectivity projects, including:
 - \$38.8 million for the Universal Fare System
 - \$42.8 million for other bus technology projects

- \$31.5 million would fund a county-wide municipal operator call for projects

INCLUDING SUSPENDED PROJECTS FUNDING, \$594 MILLION COULD REMAIN AVAILABLE TO SUPPORT SYSTEM EXPANSION

A NUMBER OF FACTORS MAKE FULL IMPLEMENTATION OF ADDITIONAL FIXED GUIDEWAY PROJECTS UNLIKELY DURING THE FY 2004 STIP PERIOD

- The current MTA fixed guideway implementation commitments include expansion of the Red Line to Universal City, capacity expansion of the Long Beach Blue Line (e.g., platform extensions and vehicles) and allocation of additional capital funds to MetroLink. These fixed guideway projects are fully funded and will be completed in the FY04 period
- The transfer of funds to the Pasadena Blue Line Joint Powers Authority (JPA) comes with the expectation that the JPA will develop a fully funded project and implement an additional fixed guideway facility during the FY04 period
- The only additional project that is ready to move to construction in the near term is the Red Line extension to First/Lorena (a supplemental EIS may be required), but funding is not available for its construction
- Given the passage of Proposition A, federal and state funding would be needed to support construction of the suspended subway project using matching state funds. Federal new starts monies are fully committed to the North Hollywood Red Line Extension through FY 2003
- Use of federal monies requires a full funding grant agreement; state monies need also be assigned to fully funded projects. Given the degree of uncertainty in funding beyond FY04, it will be easier to gain such agreements as we get closer to fund availability and reduce uncertainties

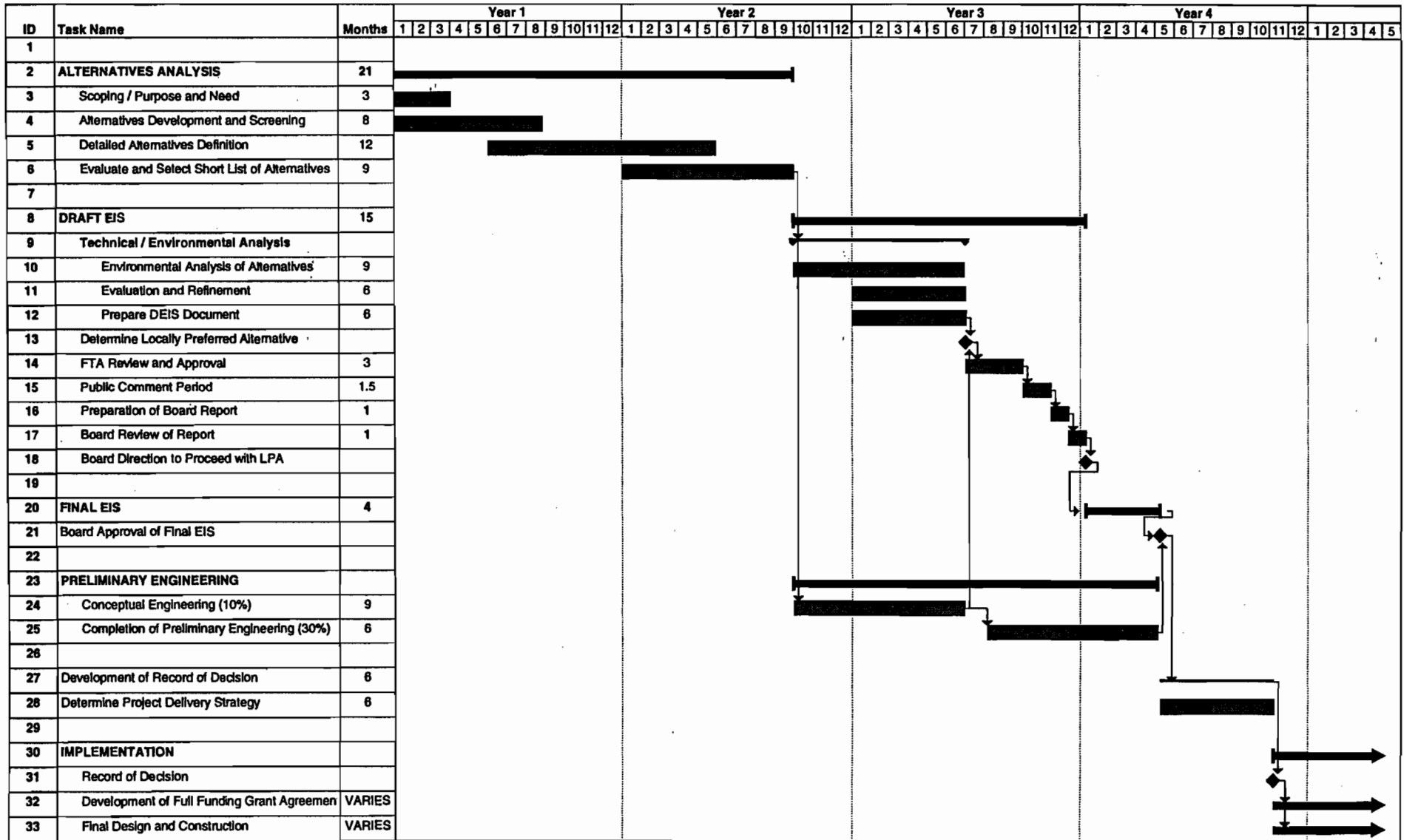
ESTIMATED TIME TO CONSTRUCTION

CORRIDOR	ESTIMATED DURATION OF PLANNING AND ENVIRONMENTAL PROCESS
Eastside (Excluding Suspended Project)	32 to 62 Months
Mid Cities/Westside	35 to 62 Months
San Fernando Valley	38 Months

ALL OTHER FIXED GUIDEWAY EXPANSION ALTERNATIVES REQUIRE SIGNIFICANT ADDITIONAL PLANNING AND ENVIRONMENTAL WORK TO DEVELOP THE FINAL PROJECT

- On the Eastside, if any fixed guideway project other than the suspended subway alignment, or modifications thereof, is pursued, significant planning and environmental work is required to fully define the alternative, involve the public and comply with funding and legal mandates
- In the mid-cities the planning work on the suspended corridor is not yet complete. In addition, a federal prohibition to deep bore tunnelling west of Crenshaw represents another hurdle. Alternative alignments and modes (e.g., exposition right of way) require substantial planning, community involvement and environmental work to define a fixed guideway project for implementation
- The San Fernando Valley fixed guideway system is still fairly early in the planning process. The administrative environmental document recently completed identifies alternatives for the Burbank/Chandler corridor, but has not completed analysis or public processes required before selecting a locally preferred alternative
- The time required for the planning and environmental process associated with implementing these fixed guideway alternatives is approximately 3 years or more
- It would be precipitous to decide on an alternative and funding commitments without the benefit of knowing the locally preferred alternative and project requirements – all to be determined through the structured planning process

PLANNING AND ENVIRONMENTAL TIMELINE



Task [Bar] Progress [Bar] Milestone [Diamond] Summary [Bar]

THE PLANNING PROCESS FOR FEDERAL ENVIRONMENTAL CLEARANCE NECESSARY TO SECURE FEDERAL FUNDING REQUIRES A NUMBER OF STEPS

- The process to arrive at project implementation follows four sequential phases — Alternatives Analysis, Draft EIS, Final EIS and the development of the Record of Decision (ROD). The entire process typically requires at least 46 months
- An Alternatives Analysis examines a broad corridor and its transportation needs and narrows the number of options to carry through environmental analysis through a detailed evaluation. A typical alternatives analysis requires 21 months of analysis and includes close coordination with affected government and community groups in identifying and evaluating alternatives
- The Draft Environmental Impact Statement measures the environmental performance of the short list of alternatives. The Federal Transit Administration (FTA), the public, and the Board review the process and note issues to resolve. The Draft EIS typically requires 9 months to prepare. The review process adds a minimum of another 6 months
- The Final Environmental Impact Statement addresses comments generated during review of the Draft EIS and suggests methods to mitigate environmental impacts. The development of the Final EIS requires 4 months
- Preliminary engineering activities often occur concurrent with the development of the Draft and Final EIS. The design level is generally about 30% by the adoption of the Final EIS

Reaching Project Implementation

THE PLANNING PROCESS FOR FEDERAL ENVIRONMENTAL CLEARANCE NECESSARY TO SECURE FEDERAL FUNDING REQUIRES A NUMBER OF STEPS (CONTINUED)

- A Record of Decision (ROD) can be obtained 6 months after all environmental clearances have been obtained. After the ROD, financial plans and final designs can be developed and then construction can proceed
- If the project does not involve federal funds the process can be shortened by 3 to 9 months

IT IS IMPORTANT THAT THE PLANNING PROCESS FOR ANY PROJECT FOLLOW THE FUNDING CASH FLOWS SO AS NOT TO JEOPARDIZE THE SHELF LIFE OF ANY OF THESE DOCUMENTS

ALTERNATIVES	CONSIDERATIONS
Bus Transitway Light Rail Heavy Rail	Funding Implementation Time Frame Capital Costs Operating Costs Performance Measures
At-Grade Elevated Subway	Regional Benefit Corridor Benefit Serve Transit Dependent Capacity Ridership

THE MTA SHOULD CONTINUE PLANNING, ENVIRONMENTAL AND COMMUNITY WORK IN ALL THREE CORRIDORS – FEDERAL FUNDING IS AVAILABLE AND COMMITTED TO THE EASTSIDE AND MID-CITIES PLANNING EFFORTS

- The RTAA examined a wide range of alternative fixed guideway alternatives within each suspended corridor, and planning efforts can take advantage of this work
- Additional alternatives are possible, and should also be considered in the corridor planning process
- Different modal choices were identified within the RTAA for both regionwide and corridor specific alternatives:
 - Rapid Bus
 - Bus Transitways
 - Light Rail
 - Heavy Rail
 - Alternative transit technologies (e.g., DMU's)
- In the context of each of these modal choices a number of alignment alternatives were considered for each of the corridor options:
 - At-grade running in dedicated right-of-way
 - At-grade running in mixed flow traffic
 - Elevated
 - Subway

THE APPENDIX CONTAINS DETAILED INFORMATION AND ANALYSIS WHICH CAN SUPPORT THE NEXT STEPS IN CORRIDOR PLANNING

- Detailed summaries of the alternatives carried forward into final evaluation for the Eastside, Westside and San Fernando Valley corridors:
 - Alignment descriptions and characteristics
 - Strengths and weaknesses of each alternative
 - Implementation schedule
 - Performance characteristics and costs

- A description of the process and measurements used to evaluate each alternative, along with a summary of the data used to calculate each performance goal:
 - Description of process used
 - Definition of the performance measures used
 - Evaluation of alternatives in the context of the performance measures
 - Summary of the performance goal evaluation
 - Detailed support data for the performance measures

- A summary of the capital costs and operating costs using both historical MTA costs and experience of other U.S. transit agencies:
 - Discussion of the costing methodology and alternative approaches
 - Summary of the capital and operating costs by alternative
 - Detailed cost back up

Recommendation

THE RAPID BUS ALTERNATIVE IS A FAVORABLE NEAR TERM OPTION BASED ON A LARGE NUMBER OF FACTORS AND INFLUENCES

- MTA Board of Directors, management, employees and community groups want improvements to bus service for greater quality, reliability and speed
- The City of Los Angeles is completing a study to increase bus speeds in city traffic and have indicated they are willing to participate in upgrades to the signal systems and bus stops
- The MOU with the CTC calls for immediate short term improvements to communities with suspended or deferred projects in addition to longer term infrastructure improvements
- The Consent Decree mandates that the MTA develop a five-year plan for new bus services
- Rapid bus provides a means to improve transit service in heavily used corridors within a short time frame

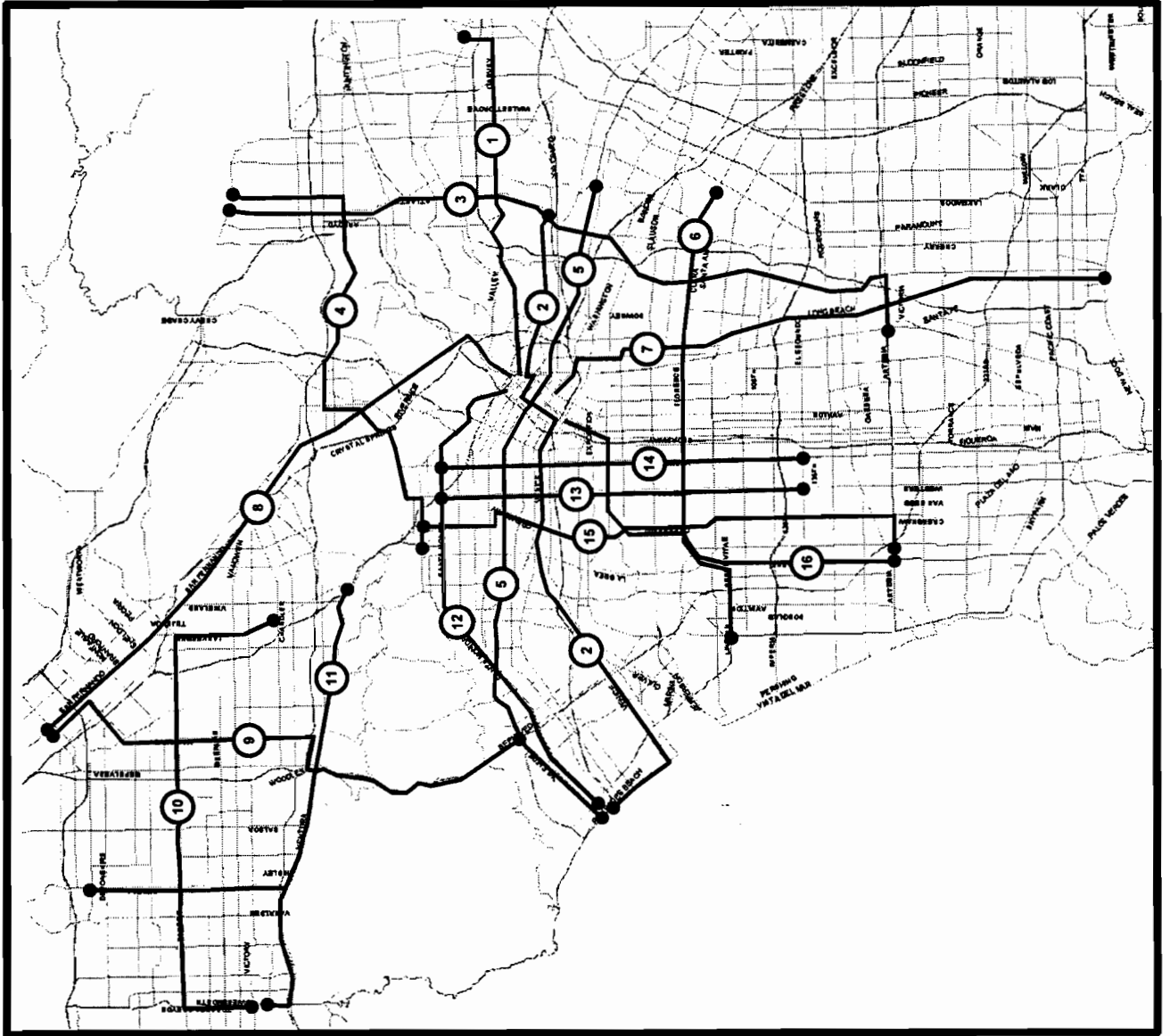
RAPID BUS IS THE ONLY INVESTMENT THAT CAN BE UP AND RUNNING BY FY2000

THE RTAA AND MTA MANAGEMENT RECOMMEND COUNTYWIDE BUS SYSTEM ENHANCEMENTS AS THE FIRST EXPANSION PRIORITY

- MTA should implement countywide rapid bus network intended to provide high quality, high speed service through a combination of limited stop service and signal priority
- Rapid bus includes: vehicles with a different look from other buses in the fleet (e.g., gold standard); vehicles with additional technology components (e.g., signal preemption); diamond lane operation during peak hours; joint use transit centers at key locations
- Criteria for selection of priority rapid bus routes should include:
 - Transit dependent corridors
 - Major high speed transit connections
 - Priority community service due to suspended or deferred rail projects
- Implementation is possible in the very near term:
 - Initiate 3 demonstration lines over the next 12 months and monitor their performance through FY2001
 - Expand reasonable countywide network in accordance with a long range plan
 - Could serve to focus ridership on potential future fixed guideway corridors

THE EXACT ROUTE STRUCTURE OF AN EXPANDED RAPID BUS NETWORK CAN BE DETERMINED THROUGH A MORE THOROUGH AND INCLUSIVE PLANNING PROCESS

POTENTIAL EXPANDED RAPID BUS NETWORK



Rapid Bus

A COUNTYWIDE RAPID BUS ALTERNATIVE IS BEING CONSIDERED TO ENHANCE REGIONAL BUS SERVICE. THE FEATURES OF THIS ALTERNATIVE INCLUDE LIMITED STOP, SIGNAL PRIORITIZATION AND PEAK HOUR DEDICATED LANES WHERE AVAILABLE

- A potential rapid bus network could include the following routes...

Rapid Bus	Limits	No. Buses	Stops	New Transit Centers
1. Garvey Ave.	El Monte Busway – LACBD	13	16	
2. Chavez / Venice	Monterey Park – Santa Monica	30	48	1
3. Atlantic Blvd.	Pasadena – Artesia Blue Line Station	16	19	
4. Colorado Blvd.	Pasadena – Hollywood	15	26	
5. Whittier / Wilshire	City of Commerce – Santa Monica	43	47	1
6. Florence Blvd.	Los Angeles International Airport – Whittier	16	31	1
7. Long Beach Blvd.	LACBD – Long Beach	20	38	
8. San Fernando Rd.	LACBD – Sylmar Transit Center	15	30	
9. Van Nuys Blvd.	Sylmar Transit Center – Westwood/UCLA	14	19	1
10. Roscoe Blvd.	Red Line North Hollywood Station – Warner Center	12	15	
11. Ventura Blvd.	Red Line Universal City Station – Warner Center Branch Line to Cal State Northridge Via Reseda Blvd.	14	19	1
12. Santa Monica Blvd.	LACBD – Santa Monica	27	31	1
13. Western Ave.	Hollywood - Green Line Imperial/Wilmington Station	14	20	
14. Vermont Ave.	Hollywood – Green Line Vermont Ave. Station	19	17	
15. Crenshaw Blvd.	Hollywood – South Bay Galleria Transit Center	10	33	
16. Hawthorne Blvd.	LACBD – South Bay Galleria Transit Center	14	26	

THE RAPID BUS SERVICE IMPLEMENTATION INCLUDES A NUMBER OF UNIQUE FEATURES

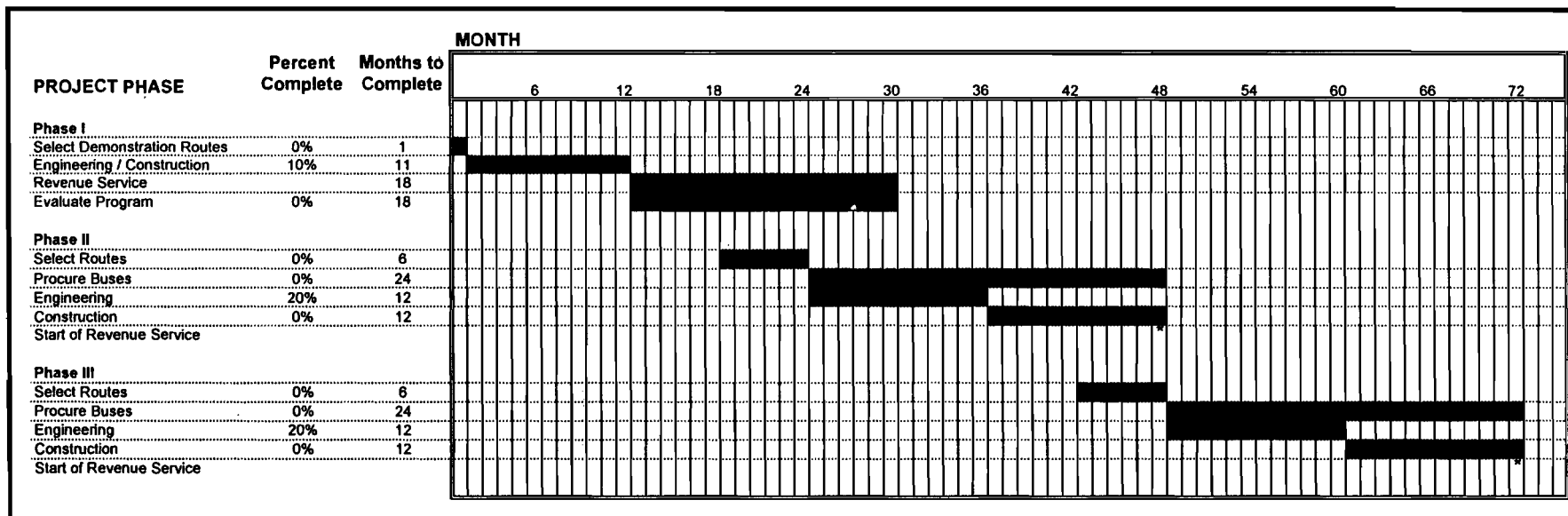
- Approximately 300 buses could be used as part of the ultimate regional program. This includes a service expansion of approximately 200 buses with the remainder of the service coming from the conversion of local service along these corridors to Rapid Bus
- The initiation of this service can be done through a number of demonstration projects:
 - Service within the corridors with suspended or deferred projects
 - Transit Dependent Corridors
- The buses used for this service should have a different color scheme and look to differentiate them from the current service offerings (e.g., gold, low floor buses)
- This program is being initiated throughout the region and should be implemented by MTA and the Municipal operators in cooperation with cities and the county
- Discussions with the City of Los Angeles Department of Transportation have indicated that the City will implement the signal priority/synchronization and bus stop enhancement components of this service within the City of Los Angeles jurisdiction. Other cities might also be interested
- Six transit centers could be constructed to enhance the system:
 - Utilize right-of-way previously acquired by the MTA
 - Will not preclude construction of rail stations in the future
 - Maximize commercial and joint development opportunities

THE COUNTYWIDE RAPID BUS EXPANSION HAS THE FOLLOWING STRENGTHS AND WEAKNESSES

STRENGTHS	WEAKNESSES
<ol style="list-style-type: none">1. Offers regional mobility solution2. Two thirds of the rapid bus corridors serve transit dependant populations and destinations3. Can be quickly implemented4. Relatively low cost5. Serves high demand corridors6. Transit centers improve modal connectivity and puts right-of-way purchased in suspended rail corridors to productive use7. Serves to focus transit demands to support future fixed guideway systems8. Applicable to all county operators9. Readily recognizable as a different service offering	<ol style="list-style-type: none">1. Providing dedicated Peak Hour Lanes reduces the number of travel lanes and leads to increased congestion2. Not having dedicated right-of-way slows operations relative to an exclusive facility3. Bus service may not provide as significant economic redevelopment opportunities as rail lines4. Some elements of the community indicate strong support for rail projects

THE DEMONSTRATION PROGRAM WILL BE DESIGNED TO MAXIMIZE SYSTEM PERFORMANCE AND DEMONSTRATE DIFFERENT APPROACHES

EXPANDED RAPID BUS NETWORK



The use of buses acquired as part of the accelerated procurement program allows the first phase to be implemented within 12 months.

Rapid Bus

THE IMPLEMENTATION OF THE COUNTYWIDE RAPID BUS SYSTEM CAN FOLLOW A PHASED PROCESS THROUGH FY 2005

- Determine Priority Corridors for demonstration projects (e.g., Suspended / Deferred Project Corridors, Transit Dependent)
- Coordinate Priority Signal Program with City of Los Angeles Department of Transportation
- Design Corridor Facilities
- Procure Buses
- Construct Facilities
- Implement Service
- Monitor Program Performance

INITIATING THREE DEMONSTRATION CORRIDORS ALLOWS FOR THE SHORTEST TERM IMPLEMENTATION PERIOD AND PROVIDES A PROCESS TO EVALUATE THE RAPID BUS PROGRAM AND TECHNOLOGY ALTERNATIVES

- The demonstration corridor should be selected based on three important criteria:
 - Serve corridors with suspended or deferred projects
 - Serve transit dependent areas
 - Provide the greatest regional connectivity
- These demonstration projects should include different technological approaches to ascertain through system performance the most cost effective approach:
 - Signal synchronization versus signal priority
 - Low floor vehicles versus standard buses
 - Mixed flow lanes versus peak hour dedicated lanes
- The performance of the rapid bus demonstration system should be evaluated regularly and the best approach selected prior to implementation of Phase II
- Once Phase II service is implemented and following completion of the 30 month demonstration project, the demonstration lines will be rolled into the Phase II service plan

IN THE NEAR FUTURE, MANAGEMENT WILL RECOMMEND TO THE BOARD THE THREE LINES SCHEDULED FOR RAPID BUS IMPLEMENTATION, IN CONSULTATION WITH OTHER STAKEHOLDERS

IMPLEMENTATION COSTS

Phase	FY04		FY10		TOTAL	
	Cap. Costs (\$M)	Ops. Costs (\$M)	Cap. Costs (\$M)	Ops. Costs (\$M)	Cap. Costs (\$M)	Ops. Costs (\$M)
I (Demonstration)	36.3	24.6	0	0	36.3	24.6
II	111.5	94.7	0	308.2	111.5	226.0
III	0	0	118.9	170.6	118.9	170.6
Total	147.8	119.3	118.9	478.8	266.7	598.1
Aggregate Total	267.1		597.7		864.8	

Rapid Bus

PRELIMINARY EVALUATION OF THE COUNTYWIDE RAPID BUS ALTERNATIVES HAS YIELDED THE FOLLOWING INFORMATION

No. Buses	No. Stops	No. Transit Facilities	Headways (Min.)	Route Miles	Daily Ridership	Peak Hour Capacity	Ultimate Peak Hour Capacity	Capital Cost(\$M)	Annual Operating Cost(\$M)
200	435	6	Varies	340	126,570	N/A	N/A	221.4	60.0

- The implementation of this program is assumed to follow a three phased approach; Phase 1 is anticipated to operate midway through FY2000 through FY2001, Phase 2 operates midway through FY2003 and Phase 3 operates midway through FY2005
- Under this implementation scheme and inflating the capital and operating costs which are in 1998 dollars results in additional commitments through the 2010 planning horizon:
 - \$147.8 million in capital and \$119.3 million in operating costs through FY2004
 - \$118.9 million in capital and \$478.8 million in operating costs from FY05 to FY10
- These commitments could be applied to the total available dollars summarized on page 14F

AVAILABLE	FY99 – FY04 (\$ millions)	FY05 – FY10 (\$ millions)	FY99 – FY10 (\$ millions)
TOTAL AVAILABLE	\$ 593.9	\$1830.8	\$2424.7
LESS RAPID BUS COSTS	\$ 267.1	\$ 597.7	\$ 864.8
NET REMAINING	\$ 326.8	\$1233.1	\$1559.9

MTA MANAGEMENT RECOMMENDS THE INITIATION OF THE RAPID BUS PROGRAM AT A COST OF \$267.1 MILLION THROUGH FY04 AND \$597.7 MILLION THROUGH FY10

FUNDS TO BE REPLACED
(\$ millions)

PREVIOUS FUNDING SOURCES

**TOTAL AMOUNT TO
BE REPLENISHED**

	<u>New Starts</u>	<u>CMAQ</u>	<u>STIP</u>	
Eastside	\$60	\$51	\$65	\$176
Mid-City		\$4	\$40	\$44
TOTAL				\$220

FUNDS REPROGRAMMED FROM THE SUSPENDED CORRIDORS SHOULD BE REPLENISHED AS FUNDS BECOME AVAILABLE IN THE FY04 PLANNING PERIOD

- Of the funds to be reprogrammed in the STIP amendment, \$220 million are associated with projects that were suspended (i.e., Eastside and Mid-Cities). Note that an additional \$46 million of suspended monies was committed to transit capital projects which are undefined
- **The RTAA and MTA Management recommend that these funds be replaced by reserving \$220 million of the available funds remaining in the FY04 period to fixed guideway uses in these corridors**
- The exact use of the funds toward a project need not be decided at this time. The corridor planning process recommended by the RTAA will result in identification of a locally preferred option in each corridor, including full funding requirements, before money is available to be expended on these fixed guideway investments
- After the planning process is complete, and the future funding picture becomes clearer, the MTA Board of Directors should act to fully fund recommended fixed guideway investments as allowed by financial resource availability
- Of the \$326 million remaining after funding the rapid bus program, reserving \$220 million for fixed guideway projects to be defined for the Eastside and Mid-City corridors would leave a balance of \$106 million uncommitted and available
- MTA is not required to commit the remaining \$106 million in projected funds – given risk in projections and the need to have flexibility to meet planning study recommendations, the RTAA recommends the MTA not commit these residual monies at this time

	FY99 - FY04	FY05 - FY10	FY99 - FY10
NET AVAILABLE	\$1,084.4	\$3,559.5	\$4,643.9
RECOMMENDATIONS:			
Non-Transit Projects			
Call for Projects	(\$558.7)	(\$2,012.3)	(\$2,571.0)
Storm Damage Rehabilitation	(\$50.0)	\$0.0	(\$50.0)
Soundwall Rehabilitation	(\$34.8)	(\$76.4)	(\$111.2)
Subtotal - Non-Transit	(\$643.5)	(\$2,088.7)	(\$2,732.2)
Reliability and Connectivity Projects			
MTA Universal Fare System	(\$38.8)	\$0.0	(\$38.8)
MTA Bus Technology	(\$42.8)	\$0.0	(\$42.8)
Subtotal - Reliability and Connectivity	(\$81.6)	\$0.0	(\$81.6)
Municipal Operator Call for Projects	(\$31.5)	\$0.0	(\$31.5)
TOTAL RECOMMENDATIONS	(\$756.6)	(\$2,088.7)	(\$2,845.3)
AVAILABLE FOR SYSTEM EXPANSION	\$327.8	\$1,470.8	\$1,798.6
Plus: SUSPENDED PROJECTS	\$266.1	\$360.0	\$626.1
TOTAL AVAILABLE	\$593.9	\$1,830.8	\$2,424.7
Less: Rapid Bus Demonstration	(\$60.9)	\$0.0	(\$60.9)
Less: Rapid Bus Phase II & III	(\$206.2)	(\$597.7)	(\$803.9)
Less: Eastside/Mid-City Reserve	(\$220.0)	\$0.0	(\$220.0)
NET AVAILABLE	\$106.8	\$1,233.1	\$1,339.9

THE FINAL “COLOR OF MONEY” WILL BE DONE AFTER THE BOARD OF DIRECTORS MAKES DECISIONS AT THIS MEETING

- RTAA and MTA Management recommendations could be implemented within the available funding
- Available CMAQ funds could be used to operate rapid bus for the first three years – sufficient uncommitted funds are available for this purpose
- If anything unexpected should occur, it is possible to “swap” uncommitted funds for sources that are currently committed, to make eligible funding available
- Booz·Allen believes, with a high degree of confidence, that MTA can accomplish management’s recommendations with the available funds

	<u>(\$ millions)</u>
– Call for Projects	\$558.7
– Storm Damage Program	\$50.0
– Soundwall Program	\$34.8
– MTA Bus Technology	\$81.6
– Municipal Operators	\$31.5
– Rapid Bus	\$267.1

- Prop A, which passed on November 3, 1998, disallows use of local sales tax monies for subway planning, design, engineering, or construction

PROPOSED DECISION PROCESS -- FY04 INVESTMENT DECISIONS

TOPIC	IMMEDIATE POLICY DECISIONS	FUTURE POLICY DECISIONS	INPUT PROCESS
1. System priorities	Maintain, improve reliability and connectivity, expand	Individual corridor priorities	Corridor planning process
2. TIP Call for Projects funding	Funding mark (recommendation: growth share \$558.7M)	Specific projects to be funded	Call and call evaluation results
3. Storm damage funding	Funding mark (recommendation: revenue retained \$50M)	Funding allocation formula/process	Consult with cities, county and Caltrans
4. Soundwall funding	Funding mark (recommendation: \$34.8M)	Project selection process and specific projects	Consult with legislative representatives, communities, cities, county and Caltrans
5. Universal Fare System (UFS)	Funding commitment (recommendation: \$38.8M)	Implementation schedule, contract award	Internal review, consult with Muni operators
6. Radio system (GPS)	Funding commitment (recommendation: \$15.0M)	Implementation schedule, contract award	Internal review
7. GPS and APC	Funding commitment (recommendation: \$27.8M)	Implementation schedule, contract award	Internal review

THE MTA BOARD OF DIRECTORS HAS A NUMBER OF IMMEDIATE AND FUTURE POLICY DECISIONS WHICH WILL DETERMINE INVESTMENTS OVER THE FY99 TO FY04 PERIOD

TOPIC	IMMEDIATE POLICY DECISIONS	FUTURE POLICY DECISIONS	INPUT PROCESS
8. Muni allocation – Universal Fare System	Funding mark (recommendation: \$17.5M)	Allocation process	Consult with Muni operators, ASI and Metrolink
9. Muni allocation – reliability and connectivity	Funding mark (recommendation: \$14M)	Allocation, reporting and review process	Consult with Muni operators
10.Fixed guideway planning	Funding commitment of \$8M to Eastside and mid-cities, \$0.3M to Eastside transit center	Corridor project selection, schedule for implementation, contract awards	Commence inclusive planning process
11.Rapid bus demonstration	Funding commitment of \$60.9M	Route selection, transit center location, final design, contract awards	Consult with cities, Muni operators, communities, BRU, CAC
12.Rapid bus expansion	Funding commitment of \$803.9M (capital and operating)	Route selection, transit center locations, final design, contract awards, schedule	Consult with riders, cities, Muni operators, communities, BRU and CAC
13.Fixed guideway expansion planning countywide	Begin countywide system planning process (20 year plan)	Systemwide fixed guideway 20 year plan and priorities	Planning process and financial results
14.Replace funds for suspended projects	Statement of intent to replace funds with future revenues	Fully-funded projects and additional funds required	Corridor planning process

Next Steps

IN ORDER TO SUBMIT THE STIP AMENDMENT TO THE CTC BY DECEMBER 1, 1998, CRITICAL STEPS MUST BE COMPLETED OVER THE NEXT 2 WEEKS

- The MTA board must make the decisions summarized on the previous page
- Instruct staff to modify the STIP
- Review and adopt the STIP amendment
- MTA management must present the STIP amendment to the CTC on December 1

DRAFT

RTAA STUDY RESULTS APPENDICES

APPENDIX 1
FUNDING

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REVENUE UPDATE

(\$ millions)

	FY99–FY04	FY05–FY10	FY99–FY10
ESTIMATED REVENUES, MILESTONE 1	\$18,454.3	\$19,199.0	\$37,653.3
Adjustments:			
– Unexpended Pasadena Blue Line funds	\$22.6		\$22.6
– Additional New Starts funding	\$8.3		\$8.3
– Revised STIP fund estimate	\$152.1	\$150.0	\$302.1
– Audit adjustment to financial model	\$7.5		\$7.5
UPDATED REVENUE ESTIMATE	\$18,644.8	\$19,349.0	\$37,993.8

THROUGHOUT THE RTAA PROCESS, REVENUE PROJECTIONS HAVE BEEN REVISED AND UPDATED AS ADDITIONAL INFORMATION BECAME AVAILABLE

- The Milestone 1 “best estimate” of \$18,454.3 million is based on assumptions of continuing economic growth, as reiterated on page six of this document
- Four adjustments have been made to the Milestone 1 revenue estimates:
 - Less has been expended on the Pasadena Blue Line than originally estimated, thereby increasing available revenue by \$22.6 million. However, all of these funds are committed by the Schiff Bill to the JPA
 - The recent Federal appropriation provides \$8.3 million more in New Starts funds than previously anticipated. Of this amount, \$8 million are committed to Red Line planning for East Side and Mid-Cities; \$0.3 million is available for an East Side Transit Center
 - Caltrans recently revised the STIP fund estimate, increasing the amount available to Los Angeles County by \$152.1 million
 - The recent audit of the MTA’s financial model identified \$7.5 million that had been committed twice, making that much more available for programming
- As a result of these adjustments, revenue projections for the FY99-FY04 planning horizon total \$18,644.8 million

COMMITMENTS UPDATE
(\$ millions)

	FY99-FY04	FY05-FY10	FY99-FY10
ESTIMATED COMMITMENTS, MILESTONE 1	\$17,135.1	\$16,738.4	\$33,873.5
Adjustments:			
- Commitments overstated in Milestone 1	(\$2.1)	(\$1,256.7)	(\$1,258.8)
- Pasadena Blue Line rail cars	45.0		45.0
- Pasadena Blue Line operating costs	64.2	217.8	282.0
- Accelerated Bus Procurement	265.0		265.0
- Revised STIP funding estimate	(24.0)		(24.0)
- Model adjustments (Red Line/Blue Line)	(22.5)		(22.5)
- ASI expansion	75.0	90.0	165.0
- Additional New Starts funding	8.3		8.3
- TSM backfill	9.0		9.0
- Audit adjustment to financial model	7.4		7.4
UPDATED COMMITMENT ESTIMATE	\$17,560.4	\$15,789.5	\$33,349.9

COSTS HAVE ALSO BEEN UPDATED TO INCORPORATE MORE CURRENT INFORMATION

- Commitments were overstated in the Milestone 1 report, primarily for the FY05-FY10 period. The Milestone 1 report noted this discrepancy and attributed it to the difficulty of following provisions in the MTA's financial model for financing debt
- The cost of 18 additional rail cars needed for the Pasadena Blue Line is estimated to be \$45 million
- Operating costs for the Pasadena Blue Line are added and assume that service would begin in July 2002
- The Accelerated Bus Procurement was adopted by the Board and funded at \$265 million
- Funds previously identified as committed in anticipation of the Caltrans STIP funds revision are now treated as uncommitted, reducing commitments by \$24 million
- An adjustment to the financial model was necessary to reduce an overstated commitment to the Red Line by \$22.5 million
- Recent and projected ridership growth on ADA-mandated paratransit services provided by ASI indicate a potential shortfall of approximately \$15 million per year, beginning in FY00
- Recently appropriated New Starts funds have been committed to bus facilities and Red Line planning (\$8.3 million)
- The need to provide the match for back-year projects (matched by the State before SB45 was enacted) was recognized, resulting in additional commitments of \$9 million
- The audit of the MTA financial model identified additional committed revenue (\$7.4 million)

APPENDIX 2
SUMMARY OF ALTERNATIVES

ELEVEN TRANSIT ALTERNATIVES IN FOUR CORRIDORS WERE ANALYZED IN THE FINAL EVALUATION OF THE REGIONAL TRANSIT ALTERNATIVES ANALYSIS STUDY

- Each corridor contained heavy rail, light rail, and bus transitway alternatives
- Four Alternatives were analyzed for The Eastside
 - Heavy Rail Subway Extension to First/Lorena (Suspended Project)
 - Heavy Rail Subway Extension to Chavez/Soto
 - Light Rail Extension to Whittier / Atlantic
 - Bus Transitway to Whittier / Atlantic
- Four Alternatives were analyzed for The Westside
 - Heavy Rail Extension to Pico/San Vicente (Suspended Project)
 - Heavy Rail subway extension to Fairfax via Wilshire Boulevard
 - Light Rail to downtown Santa Monica via Exposition right-of-way
 - Bus Transitway to downtown Santa Monica via Exposition right-of-way
- Three alternatives were analyzed for The San Fernando Valley
 - Heavy rail extension to the I-405 (Deferred Project)
 - Light Rail/DMU alternative from the North Hollywood Station to Warner Center
 - Bus Transitway from Red Line North Hollywood Station to Warner Center

SUMMARY OF EASTSIDE CORRIDOR ALTERNATIVES

Alternative	Alignment	Mode	Grade	No. of Stations	No. of Stations with Park and Ride Lots	Route Length (miles)	One-Way Travel Time (minutes)	Average Speed (mph)	Peak Headway (minutes)	Off-Peak Headway (minutes)
Heavy Rail to First / Lorena — Suspended Project	Union Station to First / Lorena	Heavy Rail	Subway	4	None	3.7	7.6	29.2	4.25	5.0
Heavy Rail to Chavez / Soto — Revised Alignment without Little Tokyo Station	Union Station to Chavez/ Soto	Heavy Rail	Subway	2	None	1.9	3.6	31.7	4.25	5.0
Light Rail to Whittier / Atlantic	Union Station to Whittier / Atlantic	Light Rail	At-Grade with one aerial section	7	None	5.9	26.5	13.4	5.0	12.0
Bus Transitway to Whittier / Atlantic	Gateway Plaza to Whittier / Atlantic	Bus	At-Grade	7	None	5.9	26.5	13.4	3.4	8.0

FOUR ALTERNATIVES WERE TAKEN THROUGH THOROUGH ANALYSIS FOR THE EASTSIDE CORRIDOR

- Red Line Subway Extension to First/Lorena (Suspended Project)
- Red Line Subway Extension to Chavez/Soto
- Light Rail Extension to Whittier / Atlantic
- Bus Transitway to Whittier / Atlantic

THE SUSPENDED PROJECT TO THE EASTSIDE PROVIDES A HEAVY RAIL SUBWAY ALIGNMENT INTO THE HEART OF EAST LOS ANGELES

- The characteristics of the alignment include...

Alignment Limits: Union Station to First/Lorena

Station Locations: Little Tokyo/Arts District

First/Boyle

Chavez/Soto

First/Lorena

No. Vehicles: None, extension of Red Line and utilizes existing fleet

Vehicles	Consist Length	Route Miles	Speed (MPH)	One-Way Time (Min)	Peak Headway (Min)	Off-Peak Headway (Min)	Planned Peak-Hour Capacity (Passengers per Hour)	Maximum Build-Out Peak-Hour Capacity (Passengers Per Hour)
Not Required	4	3.2	25.9	7.4	4.25	5	31,350	53,294

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Serves demand travel corridor 2. Strong Community Support 3. Minimal Community Impacts 4. Design is nearly complete 5. Utilizes existing Red Line Vehicles 6. Utilizes Existing Maintenance Facility 7. Expands the Red Line network and Improves regional connectivity 8. Portion of Right-of-Way Purchased 	<ol style="list-style-type: none"> 1. High Cost

THE CHAVEZ/SOTO HEAVY RAIL SUBWAY ALIGNMENT TO THE EASTSIDE MODIFIES THE SUSPENDED PROJECT BY ELIMINATING TWO STATIONS AND REDUCING THE LENGTH OF TUNNEL CONSTRUCTION

- The characteristics of the alignment include...

Alignment Limits: Union Station to Chavez/Soto

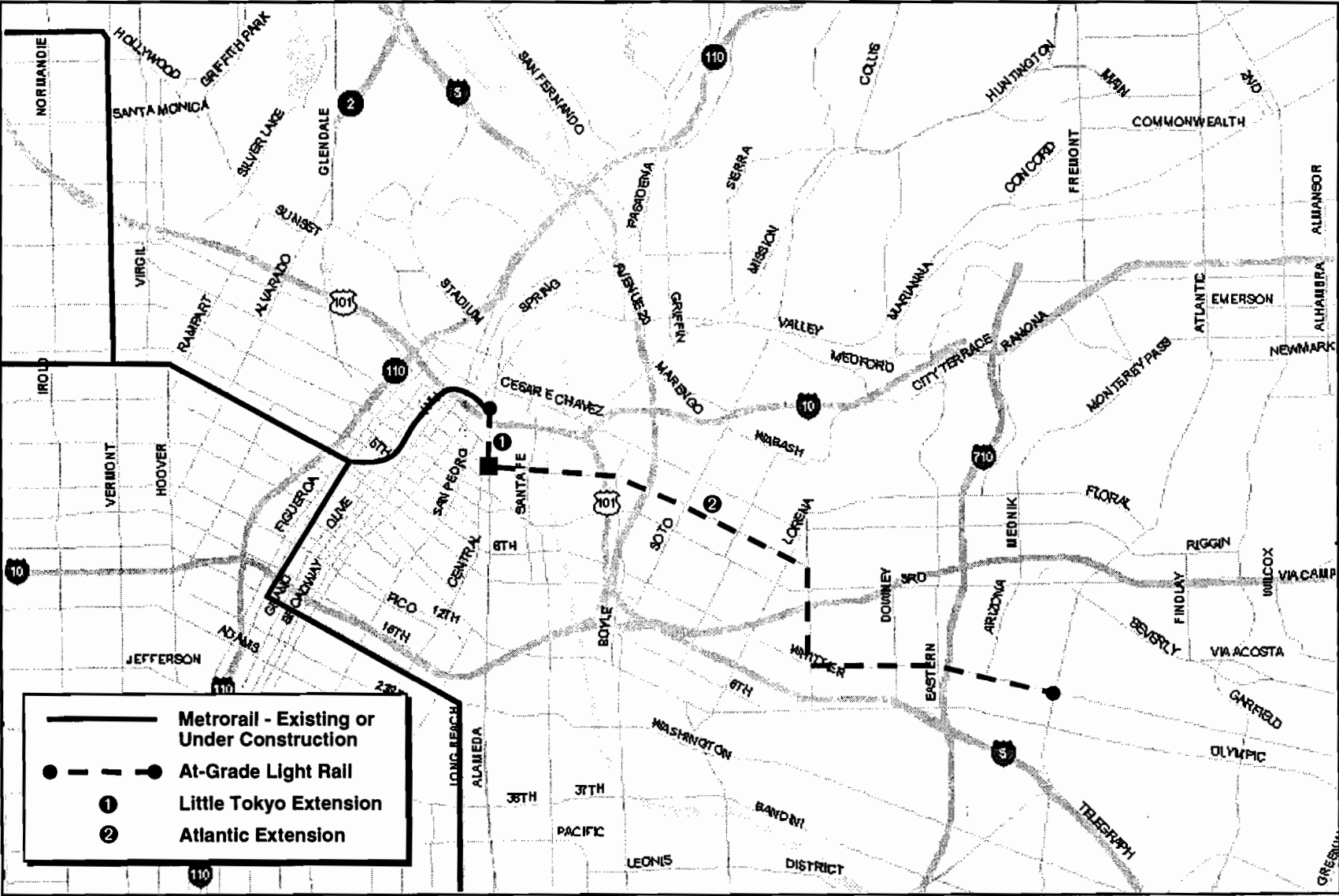
Station Locations: First/Boyle
Chavez/Soto

No. Vehicles: None, extension of Red Line and utilizes existing Fleet

Vehicles	Consist Length	Route Miles	Speed (MPH)	One-Way Time (Min)	Peak Headway (Min)	Off-Peak Headway (Min)	Planned Peak-Hour Capacity (Passengers per Hour)	Maximum Build-Out Peak-Hour Capacity (Passengers Per Hour)
Not Required	4	1.9	31.3	3.6	4.25	5	18,418	31,310

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Serves demand travel corridor 2. Strong Community Support 3. Minimal Community Impacts 4. Utilizes existing Red Line Vehicles 5. Utilizes Existing Maintenance Facility 6. Expands the Red Line network and Improves regional connectivity 7. Portion of Right-of-Way Purchased 8. Lower Cost than Suspended Project 	<ol style="list-style-type: none"> 1. High Cost 2. Limited Corridor Penetration 3. No Little Tokyo Connection 4. Requires Modification to EIR 5. Requires Redesign

EASTSIDE CORRIDOR - LIGHT RAIL



Eastside Corridor Alternatives Descriptions – Light Rail Alignment

THE LIGHT RAIL ALIGNMENT IS AN EXTENSION OF THE PASADENA BLUE LINE AND PROVIDES AN AT-GRADE ALTERNATIVE TO SERVE THE TRAVEL MARKET NEEDS OF THE EASTSIDE CORRIDOR

- The characteristics of the alignment include...

Alignment Limits: Union Station to Atlantic Blvd.

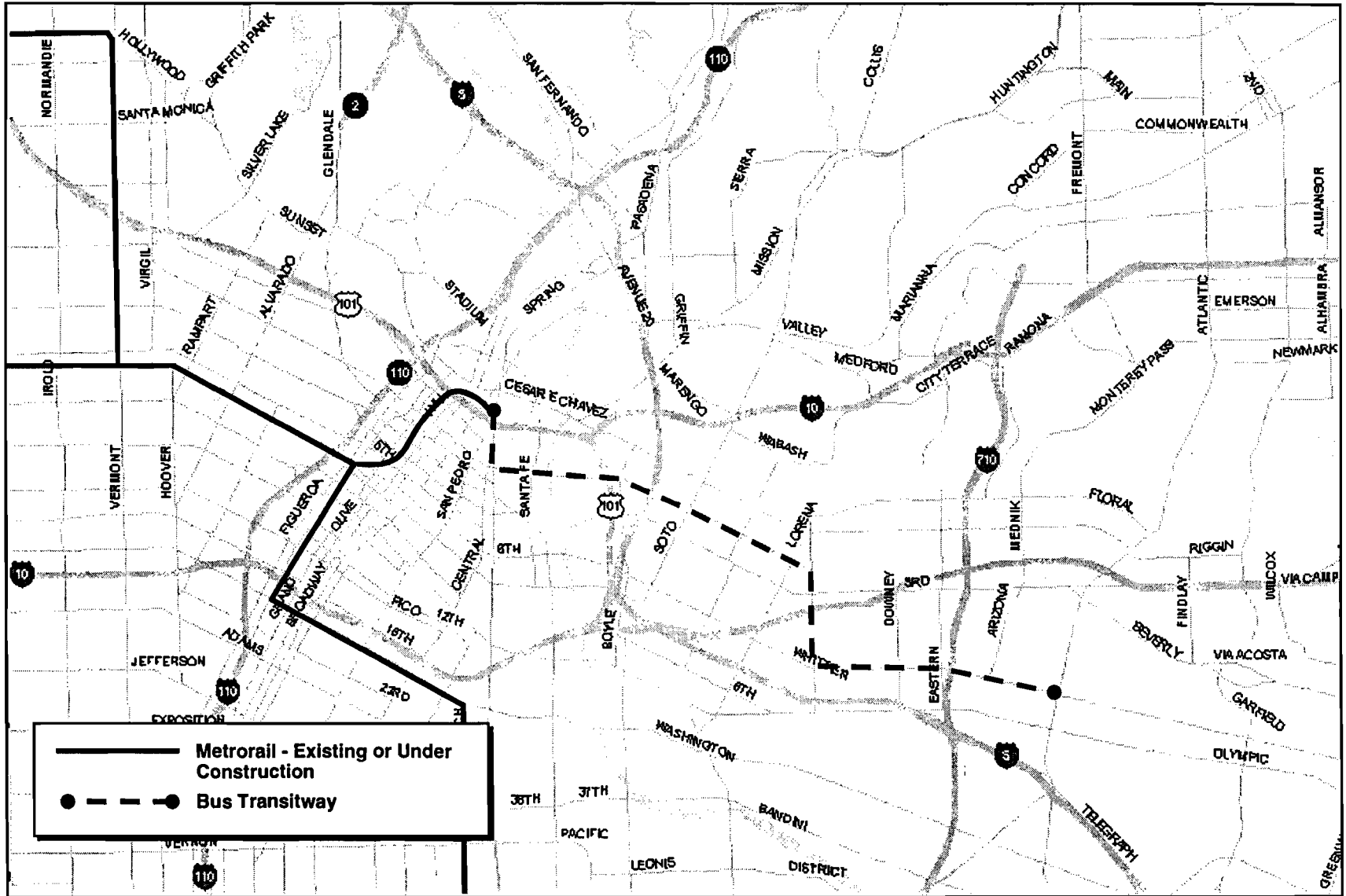
Station Locations: Little Tokyo, First/Boyle, First/Soto, First/Indiana
Whittier/Rowan, Whittier/Arizona, Whittier/Atlantic

No. Vehicles: 34

Vehicles	Consist Length	Route Miles	Speed (MPH)	One-Way Time (Min)	Peak Headway (Min)	Off-Peak Headway (Min)	Planned Peak-Hour Capacity (Passengers per Hour)	Maximum Build-Out Peak-Hour Capacity (Passengers Per Hour)
34	2	5.9	13.4	26.5	5.0	12.0	5,453	10,224

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Meets Travel Market Demands 2. Lower Costs 3. Deepest Penetration Through Eastside 4. Expands Pasadena Blue Line Network 5. Can Provide Connection to Little Tokyo if Chavez/Soto Subway Alternative is Preferred 	<ol style="list-style-type: none"> 1. Dedicated Right-of-Way Requires Reduction in the number of Travel Lanes 2. Station Construction Requires Significant Right-of-Way Purchase and Condemnation of Residential/Business Property 3. Mixed Flow Alternative Significantly Reduces System Speed and Significantly Impacts Street Congestion 4. Requires Modification or New EIR 5. System Design Must Be Done 6. Requires Transfer to Travel West 7. Requires New Maintenance Facility

EASTSIDE CORRIDOR - BUS TRANSITWAY



THE BUS TRANSITWAY FOLLOWS THE SAME ALIGNMENT AS THE LIGHT RAIL ALTERNATIVE AND PROVIDES BUS SERVICE TO SERVE THE TRAVEL MARKET NEEDS OF THE EASTSIDE CORRIDOR

- The characteristics of the alignment include...

Alignment Limits: Union Station to Atlantic Blvd.

Station Locations: Little Tokyo, First/Boyle, First/Soto, First/Indiana
Whittier/Rowan, Whittier/Arizona, Whittier/Atlantic

No. Vehicles: 34

Vehicles	Consist Length	Route Miles	Speed (MPH)	One-Way Time (Min)	Peak Headway (Min)	Off-Peak Headway (Min)	Planned Peak-Hour Capacity (Passengers per Hour)	Maximum Build-Out Peak-Hour Capacity (Passengers Per Hour)
34	2	5.9	13.4	26.5	5.0	12.0	1,996	6,732

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Meets Travel Market Demands 2. Lowest Cost 3. Deepest Penetration Through Eastside 4. Less Community Disruption than Light Rail Alternative 	<ol style="list-style-type: none"> 1. Dedicated Lane Requires Reduction in the number of Travel Lanes 2. Requires Transfer to Travel West 3. Dedicated Lane Limits Parking

Eastside Corridor Alternatives – Project Timeline

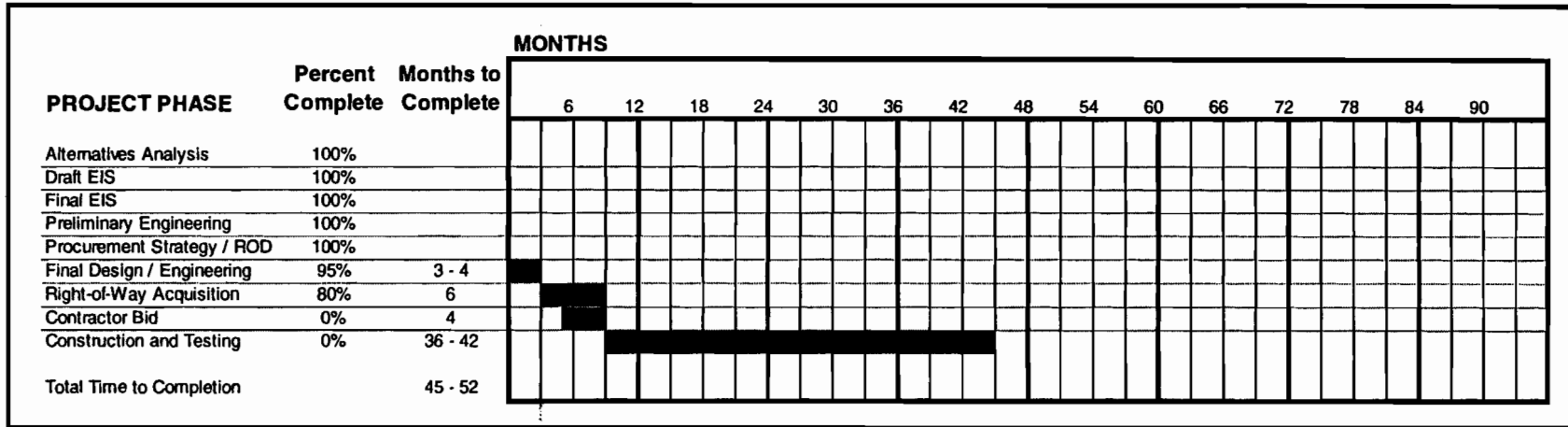
EACH OF THE ALTERNATIVES SELECTED FOR FINAL EVALUATION IN THE EASTSIDE CORRIDOR ARE AT DIFFERENT STAGES IN THE PLANNING AND DESIGN PROCESS

- The suspended project to First and Lorena is for all intents and purposes ready to go, but adequate funding is not available to build this segment of subway
- The other projects in this corridor are at different stages in the planning process and must pass a number of steps prior to implementation

Alternative	STEPS TO IMPLEMENTATION										
	Alternatives Analysis				Prepare Draft EIS (9 mo.)	FTA, Public, & Board Review (6 mo.)	Prepare Final EIS (4 mo.)	Develop ROD (6 mo.)	Final Design (12 mo.)	Bid (4 mo.)	Total Months to Construction
	Scope & Purpose (3 mo.)	Develop & Screen Alternatives (5 mo.)	Detailed Alternative Definition (10 mo.)	Evaluate Alternatives (3 mo.)							
Heavy Rail Subway: Union Station to First / Lorena (Suspended Project)	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	95% 3 mo.	4 mo.	7 mo.
Heavy Rail Subway: Union Station to Chavez / Soto	Complete	Complete	Complete	Complete	65% 3 mo.	0% 6 mo.	0% 4 mo.	0% 6 mo.	50% 9 mo.	4 mo.	32 mo.
Light Rail At-Grade: Union Station to Atlantic / Whittier	0% 3 mo.	0% 5 mo.	0% 10 mo.	0% 3 mo.	0% 9 mo.	0% 6 mo.	0% 4 mo.	0% 6 mo.	0% 12 mo.	4 mo.	62 mo.
Bus Transitway At-Grade: Gateway Plaza to Atlantic / Whittier	0% 3 mo.	0% 5 mo.	0% 10 mo.	0% 3 mo.	0% 9 mo.	0% 6 mo.	0% 4 mo.	0% 6 mo.	0% 12 mo.	4 mo.	62 mo.

NO PROJECT IN THE EASTSIDE CORRIDOR IS READY TO GO AND ADDITIONAL PLANNING OR FUNDING IS NEEDED IN THE FY04 PERIOD PRIOR TO IMPLEMENTATION

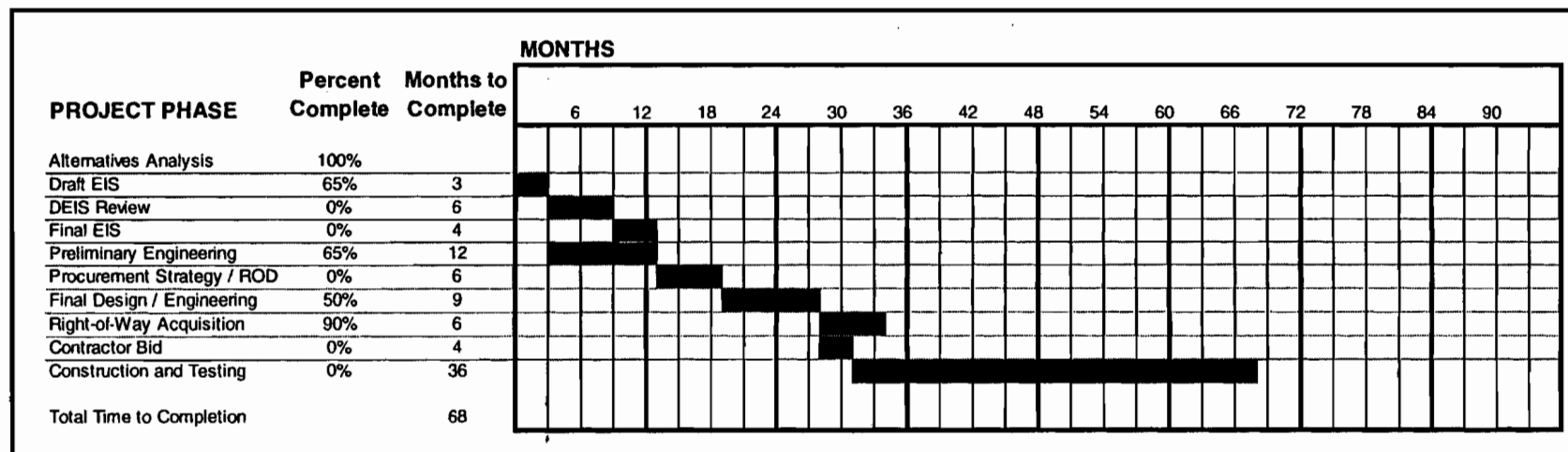
IMPLEMENTATION TIMEFRAME FOR SUSPENDED PROJECT TO FIRST / LORENA



THE SUSPENDED PROJECT TO THE EASTSIDE COULD CONTINUE WITH ONLY FINAL DESIGN ELEMENTS AND CONSTRUCTION REMAINING

- All environmental documents for the full Suspended Project are complete
- Five percent of the design and engineering work remains
- Completion of construction to First and Lorena and the revenue testing period is estimated to require an additional 3 to 3 ½ years

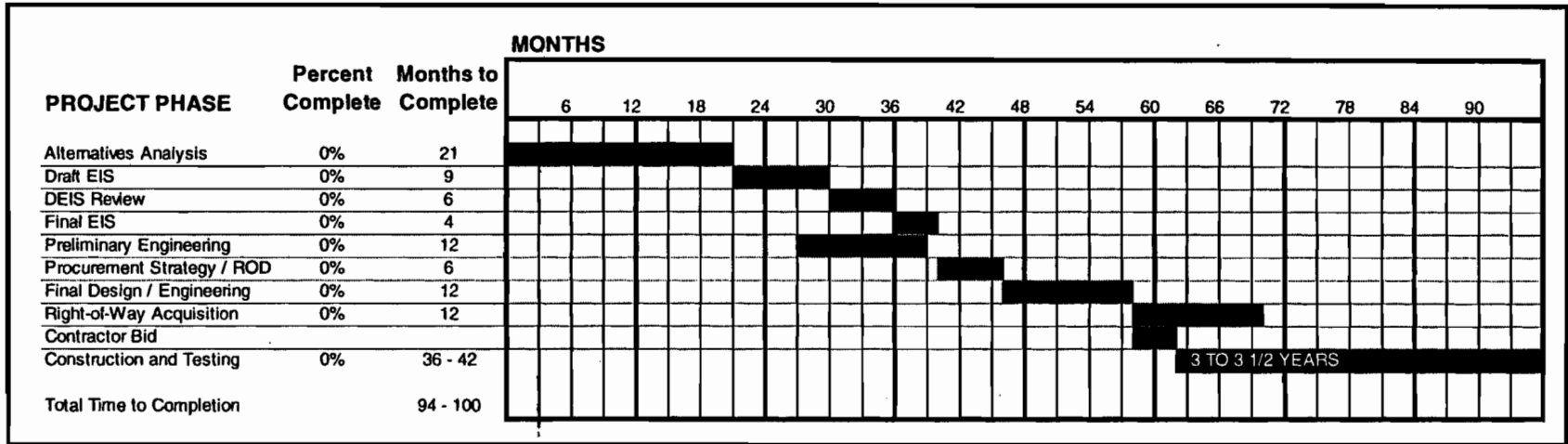
IMPLEMENTATION TIME FRAME FOR MODIFIED ALIGNMENT TO CHAVEZ / SOTO



THE MODIFIED ALIGNMENT TO CHAVEZ / SOTO REQUIRES REVISIONS TO DESIGN FOR THE NEW TUNNEL ALIGNMENT. CONSTRUCTION TIME CAN DECREASE BUT ADDITIONAL ENVIRONMENTAL TIME TO PREPARE ENVIRONMENTAL DOCUMENTS IS REQUIRED

- The Modified Alignment to Chavez / Soto requires a reselection of the Locally Preferred Alternative. This process, which takes place normally during the development of the Draft EIS, is expected to take 9 months
- New tunnel designs must be completed for the shortened tunnel between Union Station and the station at First and Boyle. Although station designs for the First / Boyle and Chavez / Soto stations are nearly complete, they may require minor revisions. These design revisions and completion of the Final Environmental Impact Statement can occur as the Locally Preferred Alternative is being revised
- Right-of-way acquisition for the Modified Alignment is nearly complete and requires just an additional 6 months
- Construction for this shortened subway alternative can be complete in two years. Testing and final preparations are estimated to require up to an additional year

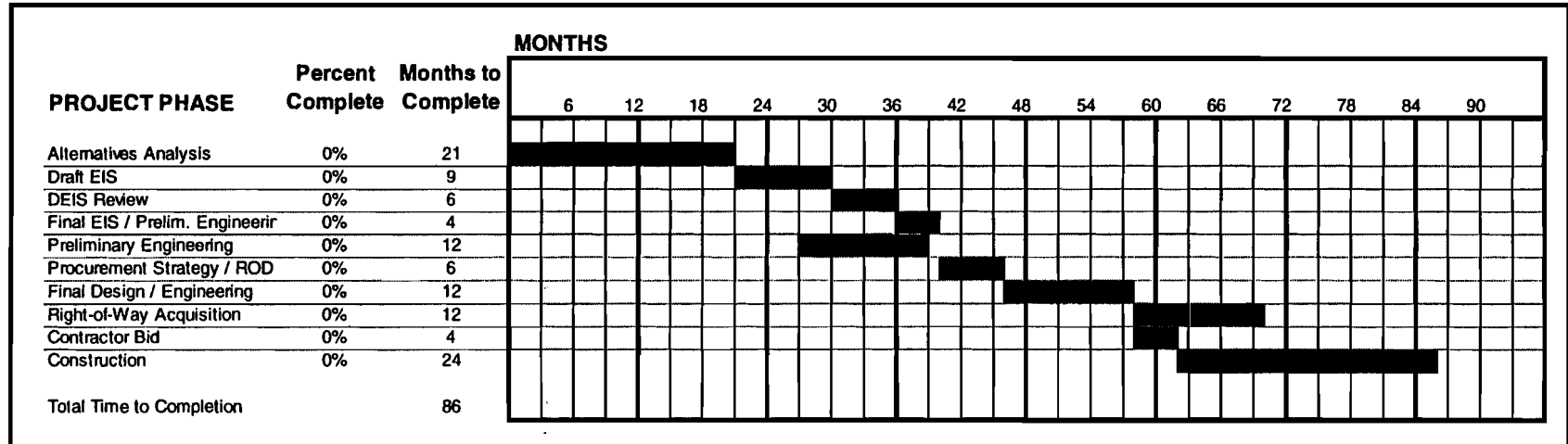
IMPLEMENTATION TIME FRAME FOR LIGHT RAIL EXTENSION TO WHITTIER / ATLANTIC



AN EXTENSION OF LIGHT RAIL TO THE EASTSIDE REQUIRES AN ENTIRELY NEW PROJECT DEVELOPMENT PROCESS

- Choosing a light rail option on the Eastside will require a new alternatives analysis process which can last approximately 21 months
- Development of a new Draft EIS and adoption of a Locally Preferred Alternative will require approximately 15 months
- Completion of the Final Environmental Impact Statement requires four additional months
- Construction and testing of an Eastside light rail alternative will require approximately three to four years. Additional time to mitigate impacts to street traffic and commercial businesses occurs within this time frame
- The construction process is complicated by the need to build a bridge over the existing US – 101 freeway. The need to maintain traffic flow requires an elongated construction schedule

IMPLEMENTATION TIME FRAME FOR BUS TRANSITWAY TO WHITTIER / ATLANTIC

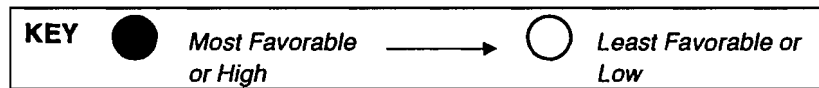


THE DEVELOPMENT OF A BUSWAY TO THE EASTSIDE REQUIRES AN ENTIRELY NEW PROJECT DEVELOPMENT PROCESS

- Choosing a bus transitway option on the Eastside will require a new alternatives analysis process which can last approximately 21 months
- Development of a new Draft EIS and adoption of a Locally Preferred Alternative will require approximately 15 months
- Completion of the Final Environmental Impact Statement requires four additional months
- Construction of an Eastside bus transitway alternative will require approximately two years. Additional time to mitigate impacts to street traffic and commercial businesses may be necessary

SUMMARY RESULTS FOR EASTSIDE CORRIDOR ALTERNATIVES

Alternative	Capital Costs (\$M)	Operating Costs (\$M)	Estimated Ridership	Estimated Time Before Construction (months)	Mobility	Transit Dependence	Reliability	Community Impact	Cost Effectiveness
Heavy Rail Subway: Union Station to First / Lorena (Suspended Project)	922.6	10.5	10,400	7					
Heavy Rail Subway: Union Station to Chavez / Soto	481.1	3.4	6,100	32					
Light Rail At-Grade: Union Station to Atlantic / Whittier	430.9	15.5	11,500	62					
Bus Transitway At- Grade: Gateway Plaza to Atlantic / Whitter	88.2	9.9	11,400	62					



SUMMARY OF WESTSIDE CORRIDOR ALTERNATIVES

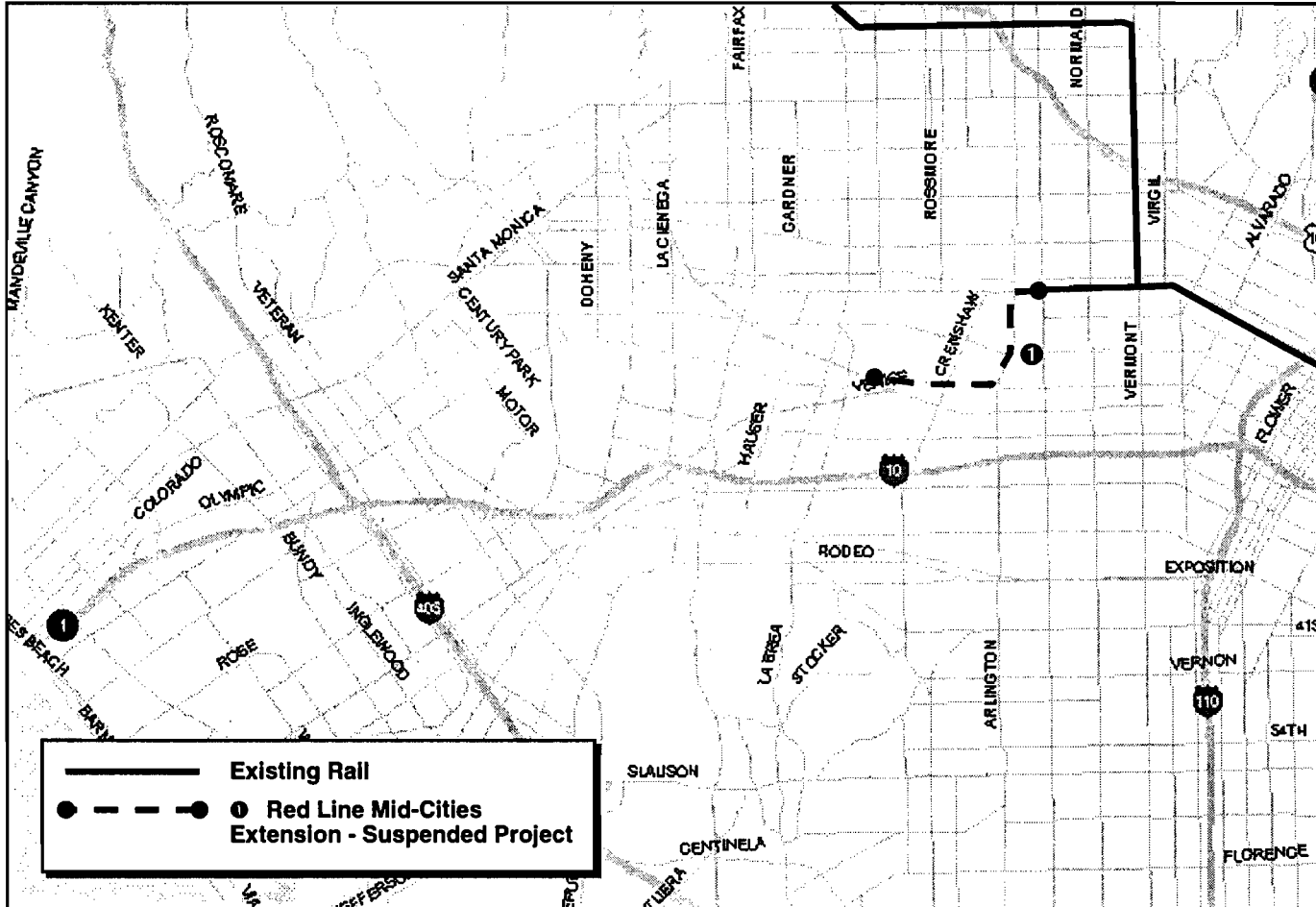
Alternative	Alignment	Mode	Grade	No. of Stations	No. of Stations with Park and Ride Lots	Route Length (miles)	One-Way Travel Time (minutes)	Average Speed (mph)	Peak Headway (minutes)	Off-Peak Headway (minutes)
Heavy Rail to Pico / San Vicente— Suspended Project, subway	Wilshire / Western to Pico San Vicente via Wilton and Arlington	Heavy Rail	Subway	2	1	2.1	2.8	45.0	8.5	10.0
Heavy Rail to Wilshire / Fairfax	Wilshire Boulevard subway or aerial to Fairfax	Heavy Rail	Subway or Aerial	3	None	3.0	4.4	29.2	8.5	10.0
Light Rail At-Grade Expo Right-of-Way: 7 th / Flower to 4 th / Colorado	7 th /Flower LACBD to Exposition via existing Long Beach Blue Line alignment, Exposition to 4 th / Colorado	Light Rail	At-Grade	16 (2 existing)	7	18	51	21.2	5.0	12.0
Bus Transitway At-Grade Expo Right-of-Way: Gateway Plaza to 4 th / Colorado	Union Station To 4 th / Colorado	Bus	At-Grade	24	6	18	57	19.5	5.0	12.0

FOUR ALTERNATIVES IN THE WESTSIDE CORRIDOR ADVANCED TO EVALUATION

- Red Line Extension to Pico/San Vicente (Suspended Project)
- Red Line subway extension to Fairfax via Wilshire Boulevard
- Light Rail to downtown Santa Monica via Exposition right-of-way
- Bus Transitway to downtown Santa Monica via Exposition right-of-way

THE PHYSICAL AND OPERATING CHARACTERISTICS OF EACH ALTERNATIVE ARE DEFINED FOR FURTHER ANALYSIS

WESTSIDE CORRIDOR – SUSPENDED PROJECT



THE SUSPENDED PROJECT TO THE WESTSIDE EXTENDS EXISTING RED LINE SUBWAY SERVICE FURTHER INTO THE WILSHIRE DISTRICT

- The characteristics of the alignment include...

Alignment Limits: Wilshire/Western to Pico/San Vicente

Station Locations: Olympic/Arlington
Pico/San Vicente

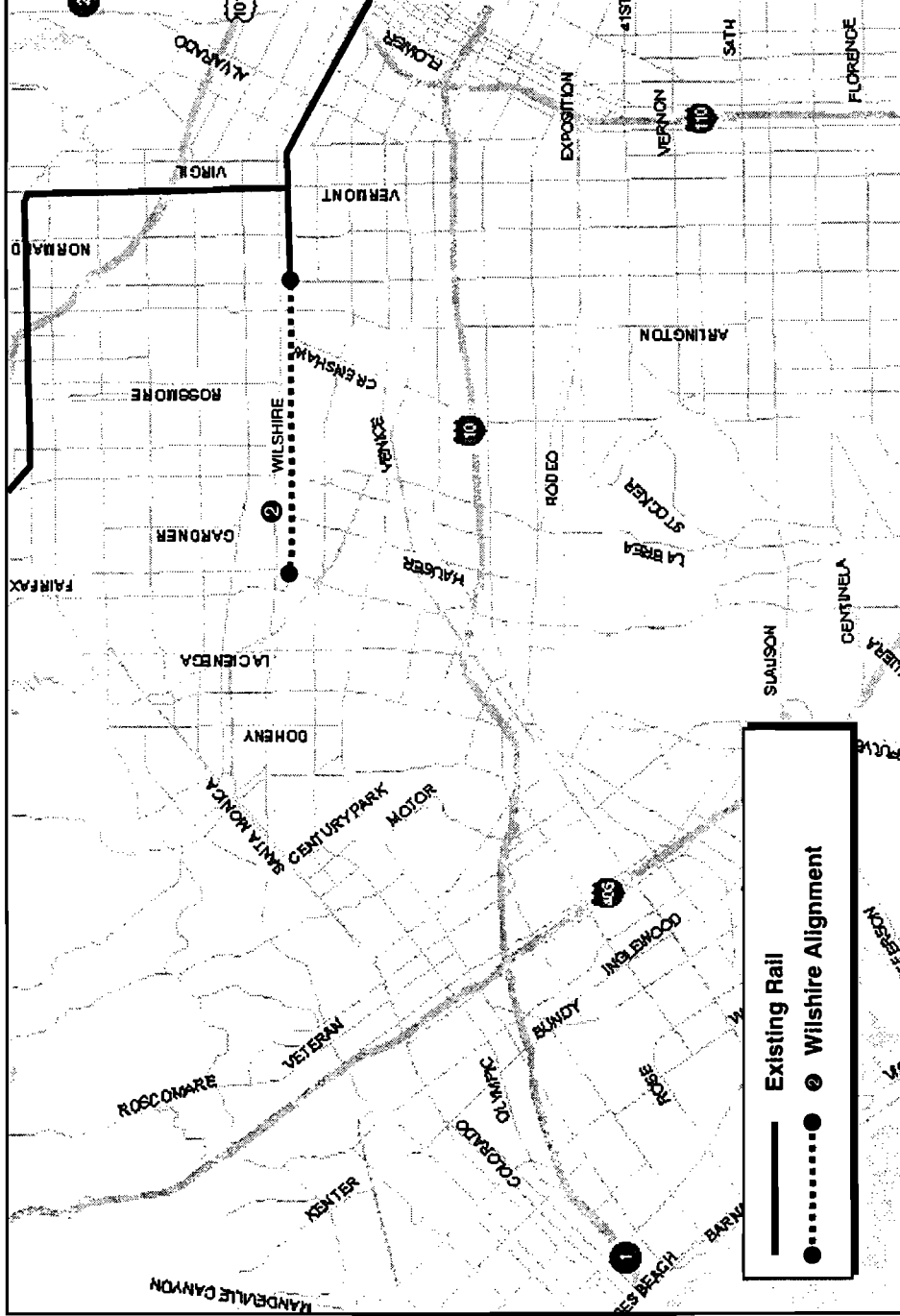
No. Vehicles: None, extension of Red Line and utilizes existing Fleet

- This is the locally preferred alternative and as such has a number of benefits which come at a high cost

Vehicles	Consist Length	Route Miles	Speed (MPH)	One-Way Time (Min)	Peak Headway (Min)	Off-Peak Headway (Min)	Planned Peak-Hour Capacity (Passengers per Hour)	Maximum Build-Out Peak-Hour Capacity (Passengers Per Hour)
Not Req'd	4	2.2	33.8	3.9	4.25	5	8,621	18,320

Strengths	Weaknesses
1. Serves Travel Demand Corridor 2. Minimal Community Impacts 3. Strong Community Support 4. Approved EIR 5. Design is nearly Complete 6. Extends Existing Red Line Service 7. Utilizes Existing Maintenance Facility Utilizes Existing Red Line Fleet	1. High Cost

WESTSIDE CORRIDOR – WILSHIRE ALIGNMENT



THE WILSHIRE HEAVY RAIL SUBWAY ALIGNMENT EXTENDS RED LINE SERVICE DOWN WILSHIRE BOULEVARD TO FAIRFAX

- The characteristics of the alignment include...

Alignment Limits: Wilshire/Western to Wilshire/Fairfax

Station Locations: Wilshire/Crenshaw

Wilshire/La Brea

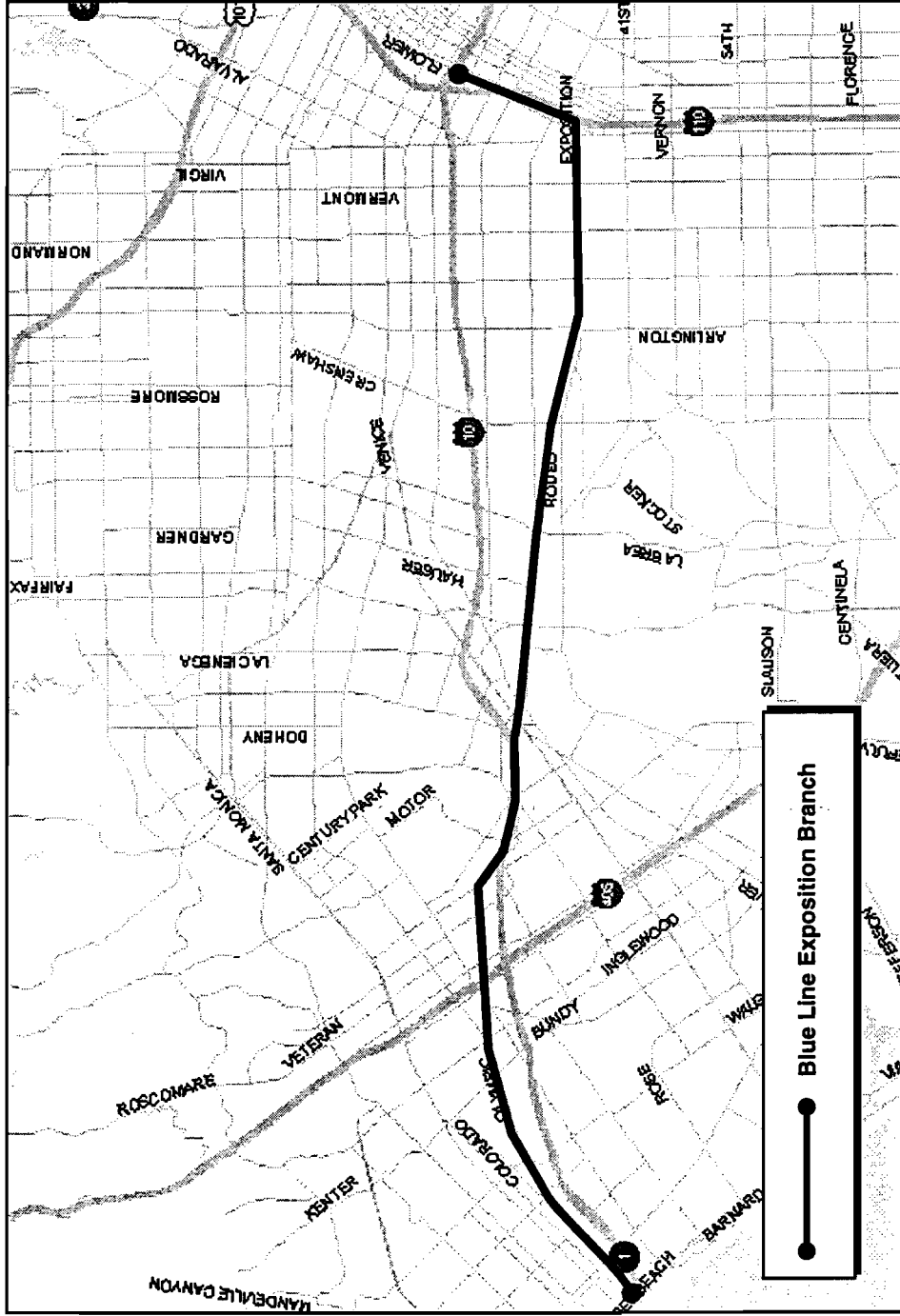
Wilshire/Fairfax

No. Vehicles: None, extension of Red Line and utilizes existing Fleet

Vehicles	Consist Length	Route Miles	Speed (MPH)	One-Way Time (Min)	Peak Headway (Min)	Off-Peak Headway (Min)	Planned Peak-Hour Capacity (Passengers per Hour)	Maximum Build-Out Peak-Hour Capacity (Passengers Per Hour)
Not Req'd	4	3.03	41.3	4.4	4.25	5	11,874	25,232

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Serves Travel Demand Corridor 2. Minimal Community Impacts 3. Extends Existing Red Line Service 4. Utilizes Existing Maintenance Facility 5. Utilizes Existing Red Line Fleet 6. Provides Deepest Penetration into Westside of all Subway Alternatives 	<ol style="list-style-type: none"> 1. High Cost 2. Legislative Restriction will have to be Overturned 3. Requires Design

WESTSIDE CORRIDOR – EXPOSITION LIGHT RAIL



Westside Corridor Alternatives Descriptions - Exposition Light Rail

THE EXPOSITION LIGHT RAIL ALIGNMENT BRANCHES OFF THE LONG BEACH BLUE LINE SERVICE AND UTILIZES EXISTING RIGHT-OF-WAY ALONG EXPOSITION BOULEVARD

- The characteristics of the alignment include...

Alignment Limits: 7th/Flower (L.A.) to 4th/Colorado (Santa Monica)

Station Locations: 2 Existing on Long Beach Blue Line Alignment

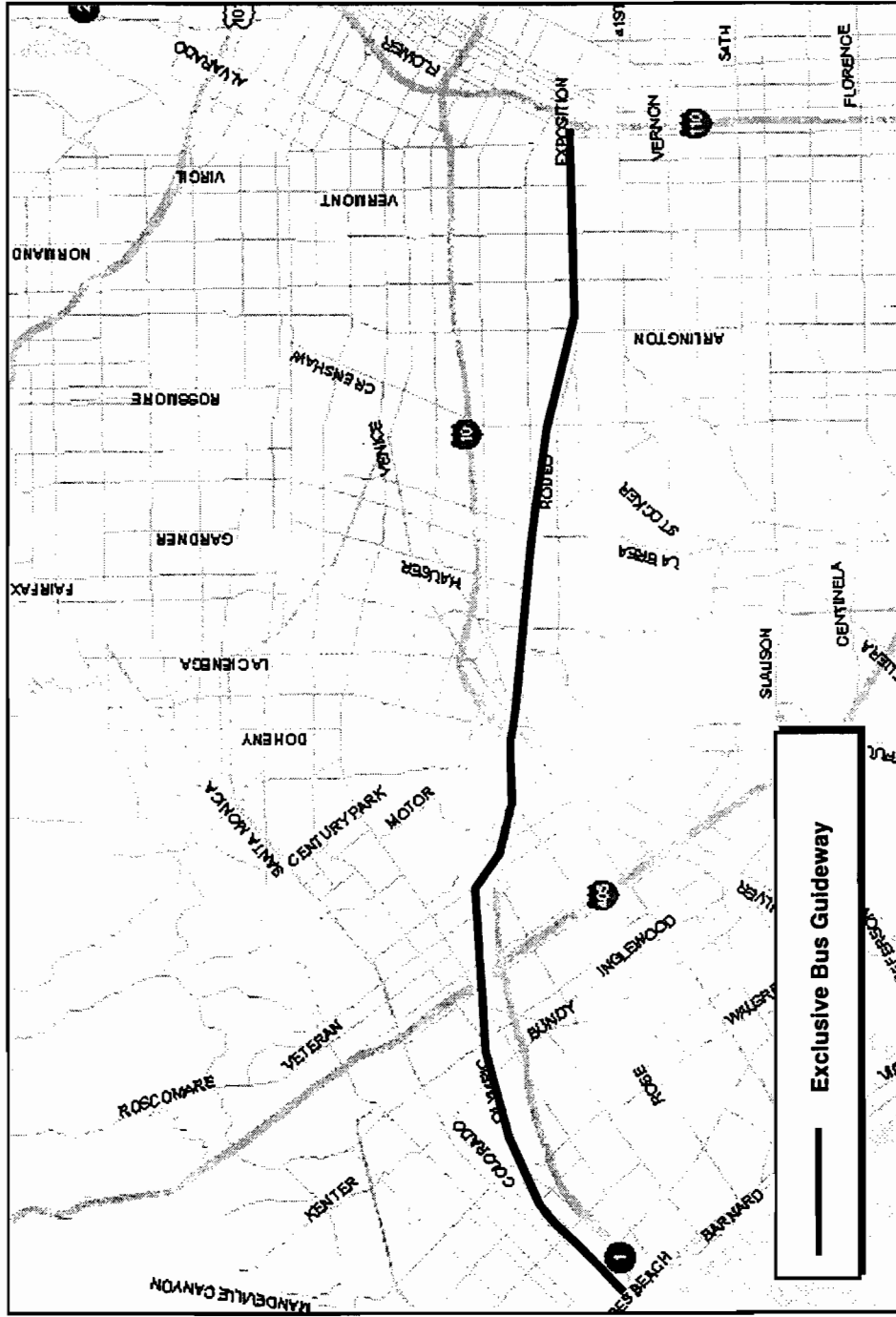
14 New Stations along Exposition (Locations To Be Determined)

No. Vehicles: 39

Vehicles	Consist Length	Route Miles	Speed (MPH)	One-Way Time (Min)	Peak Headway (Min)	Off-Peak Headway (Min)	Planned Peak-Hour Capacity (Passengers per Hour)	Maximum Build-Out Peak-Hour Capacity (Passengers Per Hour)
39	2	18	21.2	51	5	12	16,635	31,190

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Utilizes Existing Right-of-Way 2. Serves Transit Dependent Corridor 3. Provides Rail Access to Convention Center, Staples Center, USC, Coliseum and Sports Arena 4. Extends Existing Blue Line Service 5. Expands Regional Connectivity 6. A Number of Branch Alternatives can Further expand Regional Connectivity 	<ol style="list-style-type: none"> 1. Some Community Opposition 2. Does Not Serve Travel Demand Corridor of Suspended Project 3. Requires Environmental Process 4. Requires Design 5. At-Grade Alignment Poses Some Safety Considerations

WESTSIDE CORRIDOR – EXPOSITION BUS TRANSITWAY



THE EXPOSITION BUS TRANSITWAY PROVIDES A BUS ALTERNATIVE TO ALONG THE EXISTING EXPOSITION RIGHT-OF-WAY

- The characteristics of the alignment include...

Alignment Limits: Union Station (L.A.) to 4th/Colorado (Santa Monica)
 Station Locations: 24 New Stations (Locations To Be Determined)
 No. Vehicles: 29

Vehicles	Consist Length	Route Miles	Speed (MPH)	One-Way Time (Min)	Peak Headway (Min)	Off-Peak Headway (Min)	Planned Peak-Hour Capacity (Passengers per Hour)	Maximum Build-Out Peak-Hour Capacity (Passengers Per Hour)
29	N/A	18.5	21.2	51	5	12	6,090	20,538

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Utilizes Existing Right-of-Way 2. Serves Transit Dependent Corridor 3. Provides Transitway Access to Convention Center, Staples Center, USC, Coliseum and Sports Arena 4. Low Cost 5. Expands Regional Connectivity 6. A Number of Branch Alternatives can Further expand Regional Connectivity 	<ol style="list-style-type: none"> 1. Some Community Opposition 2. Does Not Serve Travel Demand Corridor of Suspended Project 3. Requires Environmental Process 4. Requires Design 5. At-Grade Alignment Poses Some Safety Considerations 6. Lower Capacities

Westside Corridor Alternatives – Project Timelines

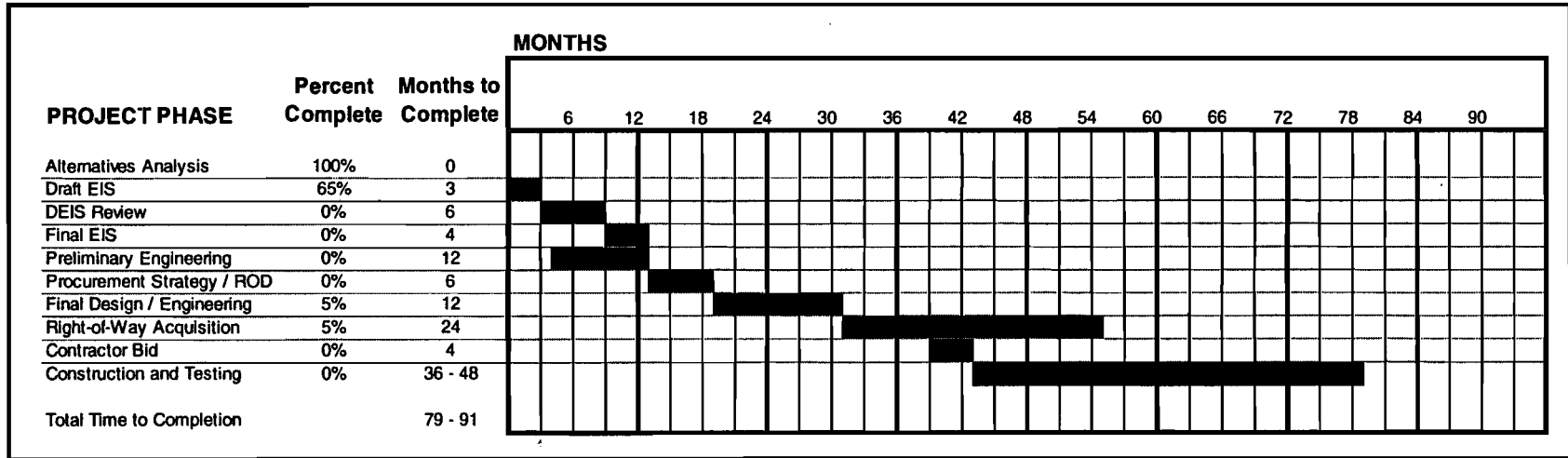
ALL ALTERNATIVES WITHIN THE WESTSIDE CORRIDOR REQUIRE ADDITIONAL PLANNING

- No project in the Westside corridor is ready to move into construction at this time
- The suspended project must still go through a supplemental EIS process, as well as design prior to moving to construction

Alternative	STEPS TO IMPLEMENTATION										
	Alternatives Analysis				Prepare Draft EIS (9 mo.)	FTA, Public, & Board Review (6 mo.)	Prepare Final EIS (4 mo.)	Develop ROD (6 mo.)	Final Design (12 mo.)	Bid (4 mo.)	Total Months to Construction
	Scope & Purpose (3 mo.)	Develop & Screen Alternatives (5 mo.)	Detailed Alternative Definition (10 mo.)	Evaluate Alternatives (3 mo.)							
Heavy Rail Subway: Wilshire / Western to Pico / San Vicente (Suspended Project)	Complete	Complete	Complete	Complete	65% 3 mo.	0% 6 mo.	0% 4 mo.	6 mo.	5% 12 mo.	4 mo.	35 mo.
Heavy Rail Subway: Wilshire / Western to Wilshire / Fairfax	0% 3 mo.	40% 3 mo.	40% 6 mo.	0% 3 mo.	65% 3 mo.	0% 6 mo.	0% 4 mo.	6 mo.	5% 12 mo.	4 mo.	50 mo.
Light Rail At-Grade Expo Right-of-Way: 7 th / Flower to 4 th / Colorado	0% 3 mo.	0% 5 mo.	0% 10 mo.	0% 3 mo.	0% 9 mo.	0% 6 mo.	0% 4 mo.	6 mo.	0% 12 mo.	4 mo.	62 mo.
Bus Transitway At-Grade Expo Right-of-Way: Gateway Plaza to 4 th / Colorado	0% 3 mo.	0% 5 mo.	0% 10 mo.	0% 3 mo.	0% 9 mo.	0% 6 mo.	0% 4 mo.	6 mo.	0% 12 mo.	4 mo.	62 mo.

NO PROJECT IN THE WESTSIDE CORRIDOR IS READY TO MOVE INTO CONSTRUCTION AND ADDITIONAL PLANNING MUST BE DONE DURING THE FY04 PERIOD

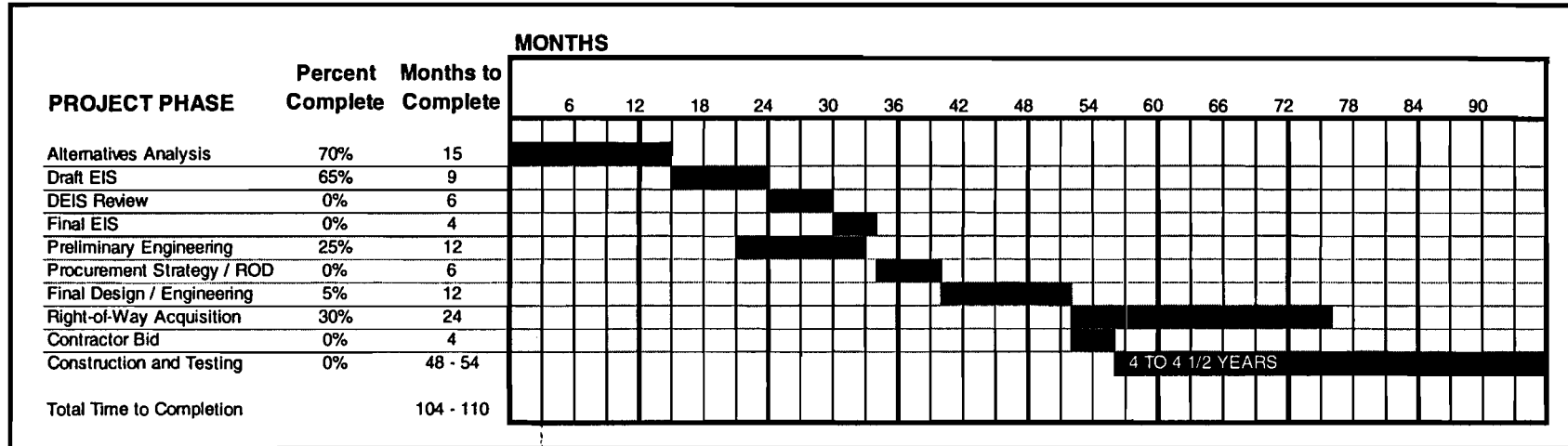
IMPLEMENTATION TIME FRAME FOR SUSPENDED PROJECT TO PICO / SAN VICENTE



THE IMPLEMENTATION OF THE SUSPENDED HEAVY RAIL PROJECT TO PICO / SAN VICENTE RESUMES A PARTIALLY COMPLETE ENVIRONMENTAL CLEARANCE PROCESS

- The completion of the last portion of the Draft Environmental Impact Statement will take approximately nine months
- Completion of the Final Environmental Impact Statement will require an additional four months
- Right-of-way acquisition begins once all engineering work is complete and falls within a two-year time frame
- Once enough real estate is acquired to begin station construction, construction of the project will likely require an additional three to four years

IMPLEMENTATION TIME FRAME FOR WILSHIRE SUBWAY

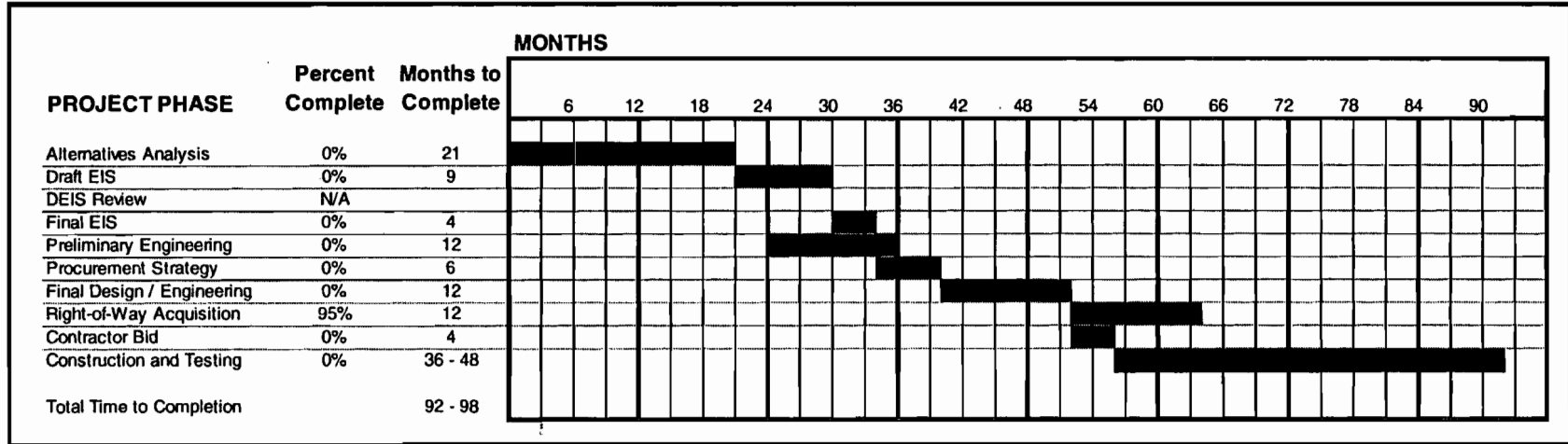


IMPLEMENTATION OF THE WILSHIRE SUBWAY ALIGNMENT TO FAIRFAX AVENUE REQUIRES REVISIONS TO ALREADY COMPLETE ENVIRONMENTAL IMPACT STATEMENTS

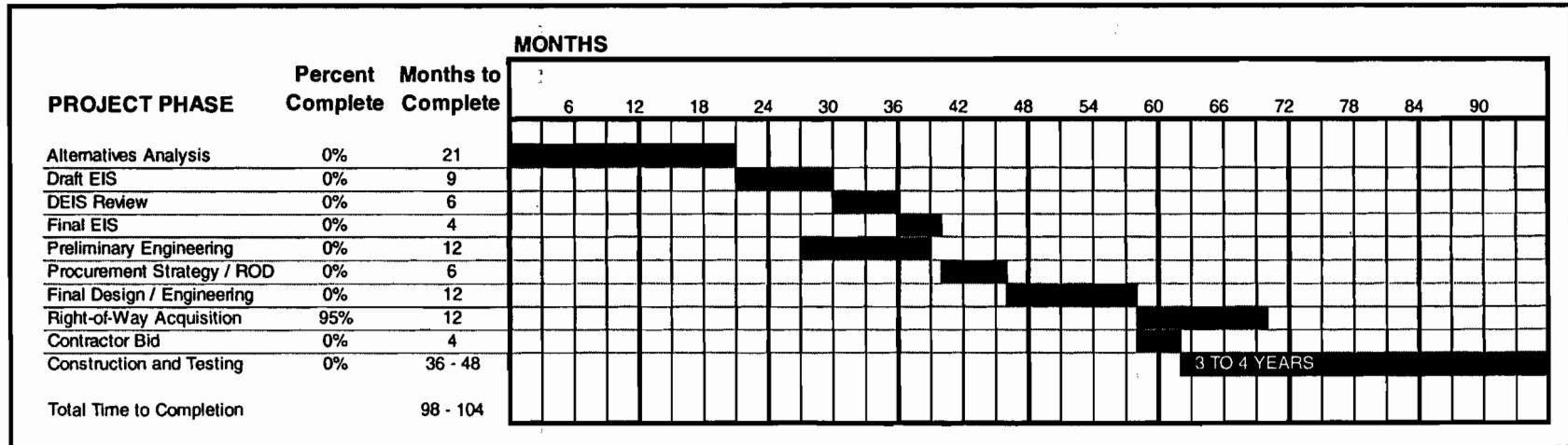
- Environmental clearances for the Wilshire Subway Alignment were completed in 1987. Although environmental documents are complete, new conditions require that these documents be revised. A partial alternatives analysis should be done in order for this option to advance. Such a process may require approximately 15 months
- Completion of the Final Environmental Impact Statement requires an additional year
- Although nearly 20 percent of the required right-of-way is already owned by the MTA, the remaining right-of-way will require an additional two years to purchase
- Since a significant portion of the right-of-way is already owned by the MTA, construction can occur concurrent with the final purchases of right-of-way
- Construction of the full extension to Fairfax Avenue will take approximately three to four years. Testing will require an additional one-half to one year before revenue service can begin

IMPLEMENTATION TIMEFRAME FOR EXPOSITION LIGHT RAIL

STATE FUNDING PROCESS



FEDERAL FUNDING PROCESS

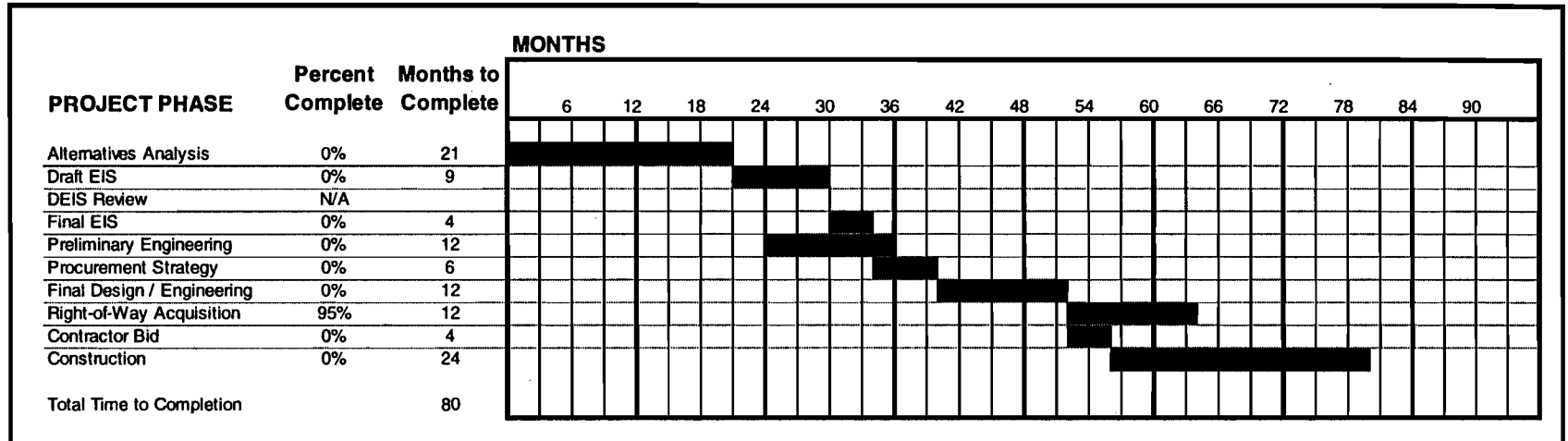


IMPLEMENTATION OF THE LIGHT RAIL ON THE EXPOSITION RIGHT-OF-WAY REQUIRES AN ENTIRELY NEW ENVIRONMENTAL CLEARANCE PROCESS. THE TIME FRAME FOR COMPLETION DEPENDS ON THE SOURCE OF FUNDS

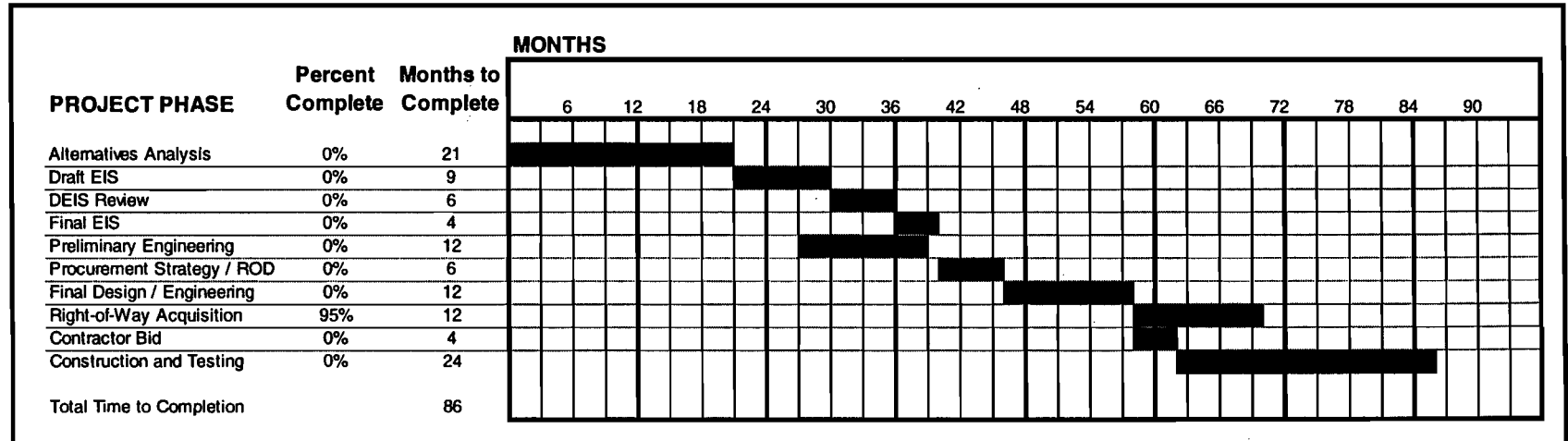
- Funding the Exposition Light Rail project entirely with local and state funds requires that the project satisfy the requirements of the California Environmental Quality Act. The state environmental clearance process can take three to nine months shorter than the federal one
- Funding the Exposition Light Rail project with partial federal funding requires the satisfaction of the federal environmental review process. This lengthens the project time frame by 9 months. The completion of environmental clearance is estimated at 33 months
- Construction of the project and completion of testing are estimated to require an additional three to four years

IMPLEMENTATION TIMEFRAME FOR EXPOSITION BUSWAY

STATE FUNDING PROCESS



FEDERAL FUNDING PROCESS

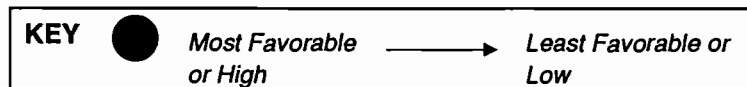


IMPLEMENTATION OF THE EXPOSITION BUSWAY MAY REQUIRE BETWEEN FIVE AND SIX YEARS

- The Exposition Busway could be funded entirely with local and state funds. This funding arrangement requires that the project satisfy the requirements of the California Environmental Quality Act only. The project would not be required to have federal environmental documents. The state environmental clearance process can take 24 months
- Funding the Exposition Busway project with partial federal funding requires the satisfaction of the federal environmental review process. This lengthens the project time frame by 9 months. The completion of environmental clearance is estimated at 33 months
- Busway construction can be completed within approximately 2 years

WESTSIDE CORRIDOR ALTERNATIVES

Alternative	Capital Costs (\$M)	Operating Costs (\$M)	Estimated Ridership	Estimated Time Before Construction (months)	Mobility	Transit Dependence	Reliability	Community Impact	Cost Effectiveness
Heavy Rail Subway: Wilshire / Western to Pico / San Vicente (Suspended Project)	607.4	4.4	16,300	35					
Heavy Rail Subway: Wilshire / Western to Wilshire / Fairfax	859.7	6.5	21,600	50					
Light Rail At-Grade Expo Right-of-Way: 7 th / Flower to 4 th / Colorado	930.8	21.2	36,600	62					
Bus Transitway At-Grade Expo Right-of-Way: Gateway Plaza to 4 th / Colorado	264.3	14.7	33,400	62					



SUMMARY OF SAN FERNANDO VALLEY ALTERNATIVES

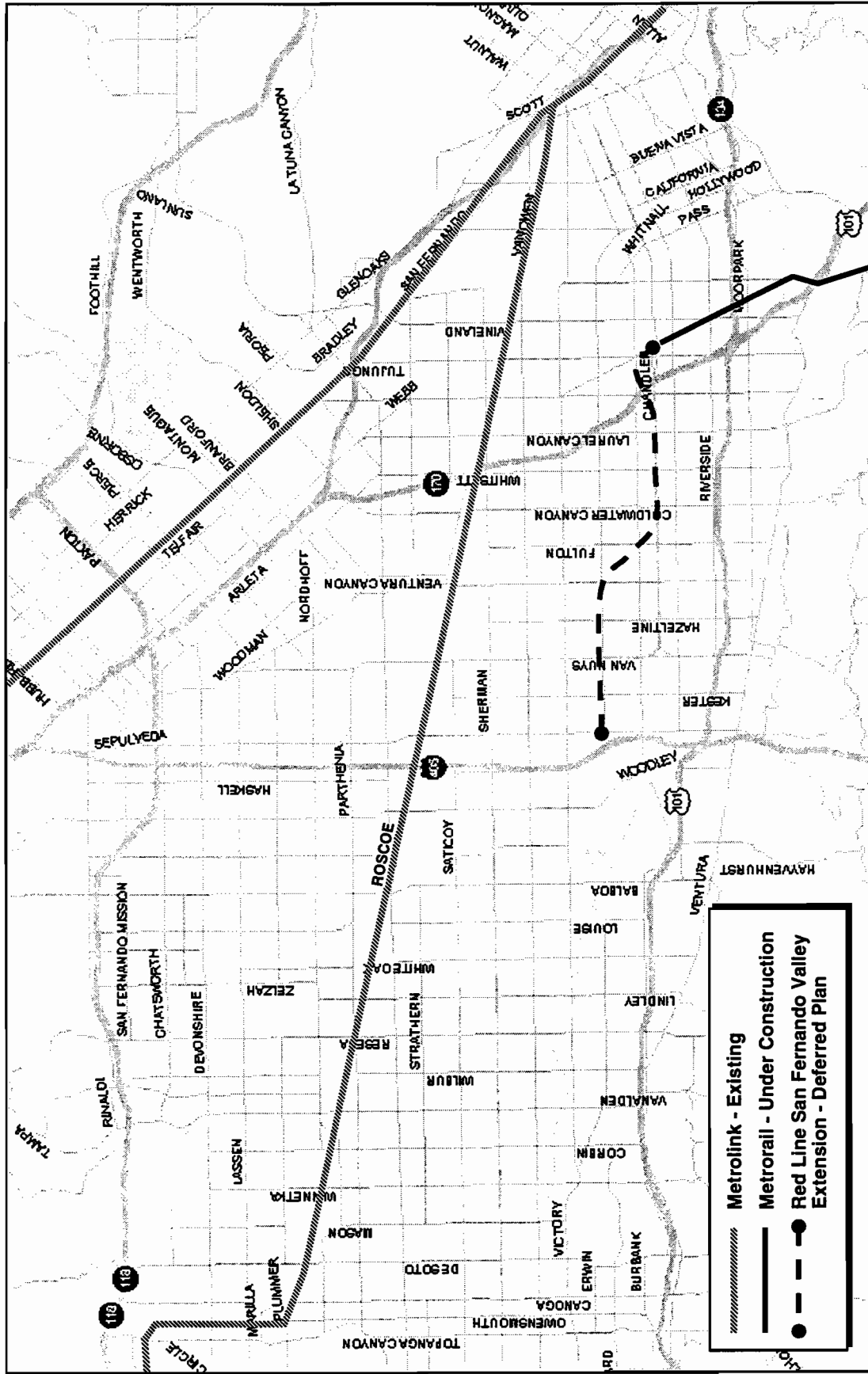
Alternative	Alignment	Mode	Grade	No. of Stations	No. of Stations with Park and Ride Lots	Route Length (miles)	One-Way Travel Time (minutes)	Average Speed (mph)	Peak Headway (minutes)	Off-Peak Headway (minutes)
Heavy Rail to I-405, subway / aerial combination	North Hollywood to I-405 via Burbank / Chandler Right-of-Way	Heavy Rail	Subway / Aerial	4	4	5.6	9.5	35.3	8.5	10.0
Light Rail (or DMU) to Warner Center	North Hollywood to Warner Center via Burbank / Chandler Right-of-Way	Light Rail	At-Grade with Elevated Flyovers	12	10	13.7	24.8	33.1	5.0	12.0
Bus Transitway	North Hollywood to Warner Center via Burbank / Chandler Right-of-Way	Bus	At-Grade in Exclusive Right-of-Way	13	6	13.7	24.8	33.1	5.0	12.0

THREE ALTERNATIVES IN THE SAN FERNANDO CORRIDOR ADVANCED TO FINAL EVALUATION

- Heavy rail extension to the I-405 (Deferred Project)
- Light Rail/DMU alternative from the North Hollywood Station to Warner Center
- Bus Transitway from Red Line North Hollywood Station to Warner Center

THE PHYSICAL AND OPERATING CHARACTERISTICS OF EACH ALTERNATIVE ARE DEFINED FOR FURTHER ANALYSIS

SAN FERNANDO VALLEY - DEFERRED PROJECT



THE DEFERRED PROJECT IN THE SAN FERNANDO VALLEY EXTENDS THE RED LINE NORTH HOLLYWOOD SEGMENT CURRENTLY UNDER CONSTRUCTION

- The characteristics of the alignment include...

Alignment Limits: North Hollywood Station to I-405

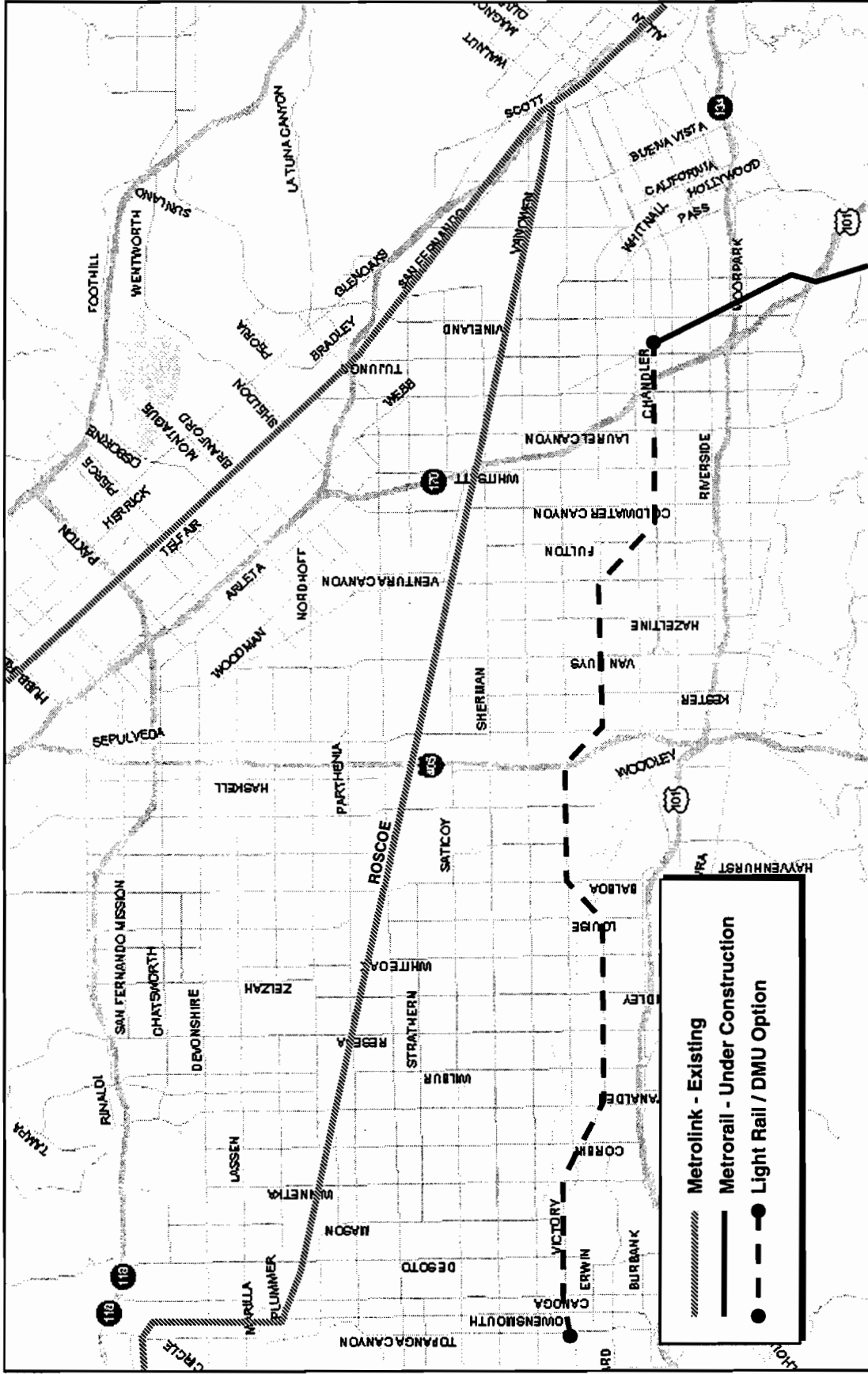
Station Locations: Van Nuys Boulevard
 Valley College
 Laurel Canyon
 Sepulveda Boulevard

No. Vehicles: None, extension of Red Line and utilizes existing Fleet

Vehicles	Consist Length	Route Miles	Speed (MPH)	One-Way Time (Min)	Peak Headway (Min)	Off-Peak Headway (Min)	Planned Peak-Hour Capacity (Passengers per Hour)	Maximum Build-Out Peak-Hour Capacity (Passengers Per Hour)
Not Req'd	6	5.6	35.4	9.5	4.25	5	32,917	46,633

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Serves Travel Demand Corridor 2. Minimal Community Impacts 3. Extends Existing Red Line Service 4. Utilizes Existing Maintenance Facility 5. Utilizes Existing Red Line Fleet 	<ol style="list-style-type: none"> 1. High Cost 2. Does Not Serve Warner Center 3. Some Community Opposition

SAN FERNANDO VALLEY - LIGHT RAIL



THIS ALTERNATIVE PROVIDES AN AT-GRADE LIGHT RAIL ALIGNMENT TO WARNER CENTER UTILIZING THE BURBANK/CHANDLER RIGHT-OF-WAY

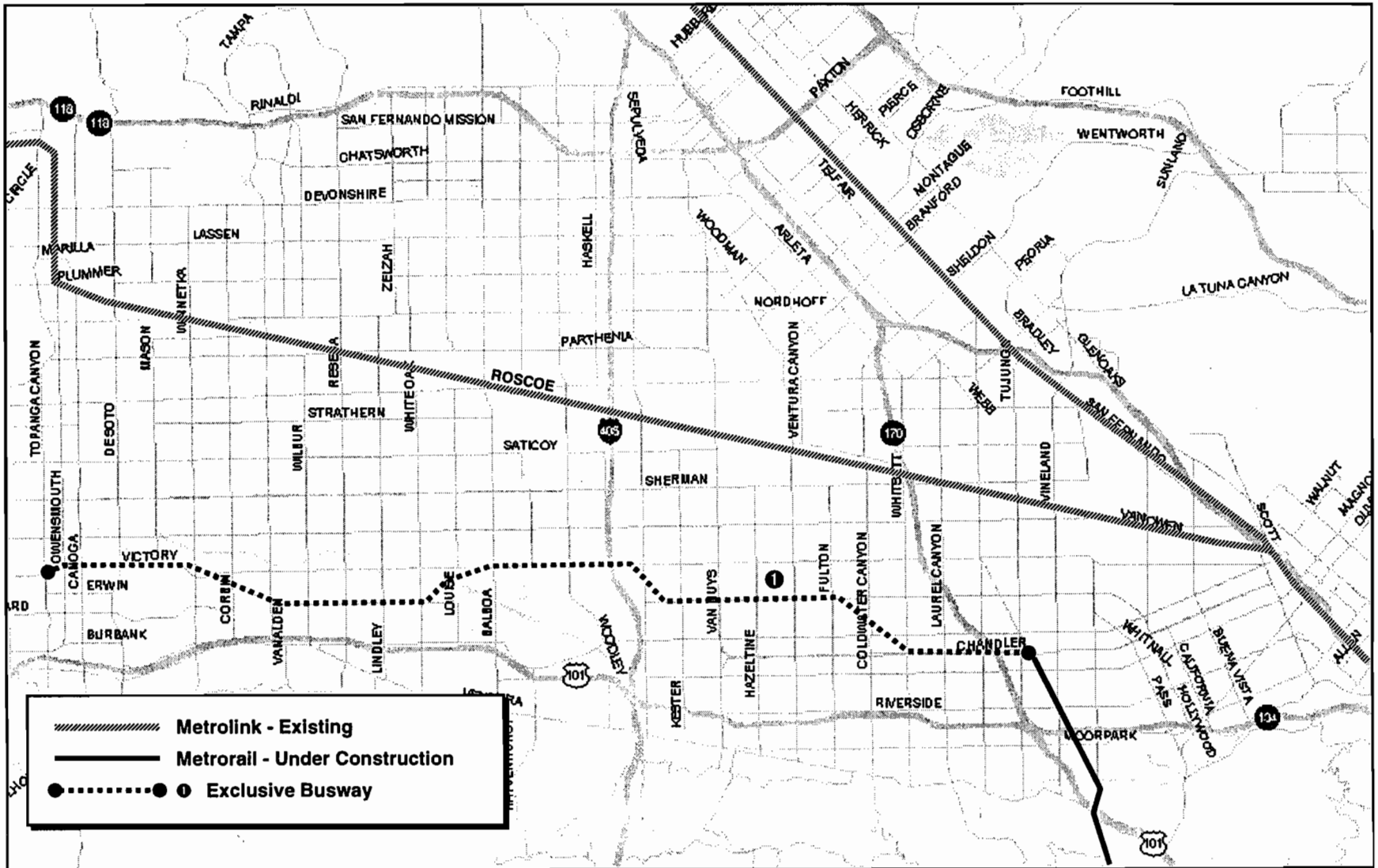
- The characteristics of the alignment include...

Alignment Limits: North Hollywood Red Line Station to Warner Center
 Station Locations: 12 New Stations (Locations To Be Determined)
 No. Vehicles: 33

Vehicles	Consist Length	Route Miles	Speed (MPH)	One-Way Time (Min)	Peak Headway (Min)	Off-Peak Headway (Min)	Planned Peak-Hour Capacity (Passengers per Hour)	Maximum Build-Out Peak-Hour Capacity (Passengers Per Hour)
33	2	13.8	33.1	25	5	12	12,753	23,913

Strengths	Weaknesses
<ol style="list-style-type: none"> Utilizes Existing Right-of-Way Serves Warner Center Lower Cost than Subway Minimizes Community Impacts Could be Implemented using DMU Technology A Number of Branch Alternatives can Further expand Regional Connectivity 	<ol style="list-style-type: none"> Robbin’s Bill prohibits at-grade alternative over a section of proposed alignment Segment Operates Independently and Does Not Expand any Current System Requires Environmental Process Requires Design At-Grade Alignment Poses Some Safety Considerations Requires transfer to downtown L.A.

SAN FERNANDO VALLEY - BUS TRANSITWAY



THIS TRANSITWAY ALTERNATIVE PROVIDES AN AT-GRADE BUS OPTION TO WARNER CENTER UTILIZING THE BURBANK/CHANDLER RIGHT-OF-WAY

- The characteristics of the alignment include...

Alignment Limits: North Hollywood Red Line Station to Warner Center
 Station Locations: 13 New Stations (Locations To Be Determined)
 No. Vehicles: 22

Vehicles	Consist Length	Route Miles	Speed (MPH)	One-Way Time (Min)	Peak Headway (Min)	Off-Peak Headway (Min)	Planned Peak-Hour Capacity (Passengers per Hour)	Maximum Build-Out Peak-Hour Capacity (Passengers Per Hour)
22	N/A	13.8	33.1	25	5	12	4,669	15,746

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Utilizes Existing Right-of-Way 2. Serves Warner Center 3. Lowest Cost Option 4. Minimizes Community Impacts 	<ol style="list-style-type: none"> 1. Robbin's Bill prohibits at-grade alternative over a section of proposed alignment 2. Requires Environmental Process 3. Requires Design 4. At-Grade Alignment Poses Some Safety Considerations 5. Lower Capacities 6. Requires Transfers

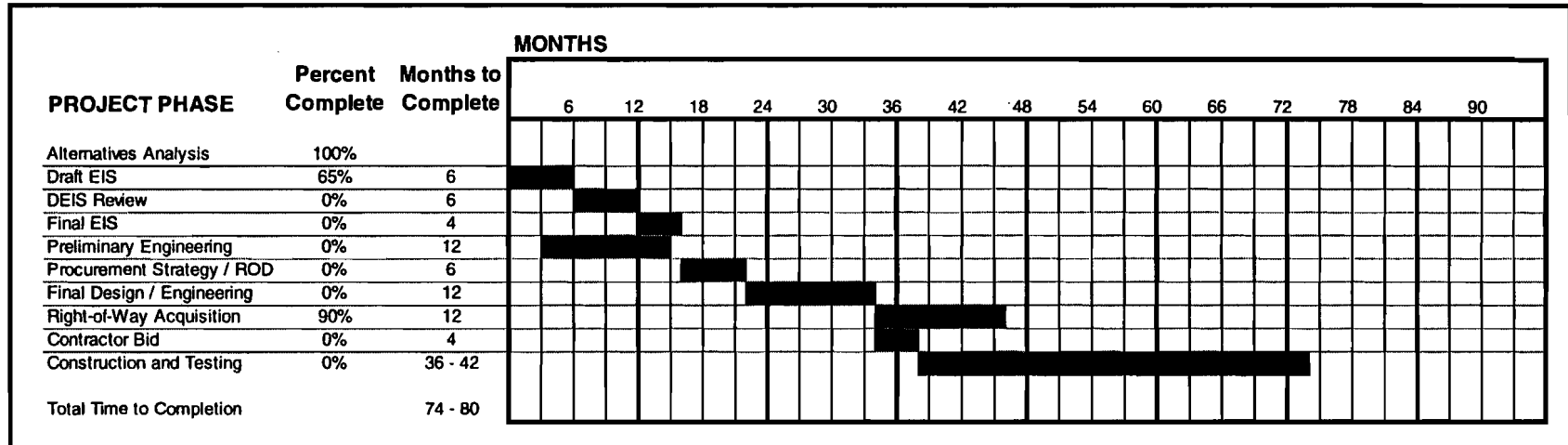
IN THE SAN FERNANDO CORRIDOR THE LOCALLY PREFERRED ALTERNATIVE STILL MUST BE SELECTED

- The three projects identified for final evaluation in the RTAA are at a point in the process where the Locally Preferred Alternative (LPA) is to be selected
- Once the LPA has been determined, the selected project can begin the process to construction

Alternative	STEPS TO IMPLEMENTATION										
	Alternatives Analysis				Prepare Draft EIS (9 mo.)	FTA, Public, & Board Review (6 mo.)	Prepare Final EIS (4 mo.)	Develop ROD (6 mo.)	Final Design (12 mo.)	Bid (4 mo.)	Total Months to Construction
Scope & Purpose (3 mo.)	Develop & Screen Alternatives (5 mo.)	Detailed Alternative Definition (10 mo.)	Evaluate Alternatives (3 mo.)								
Heavy Rail: North Hollywood Station to I-405	Complete	Complete	Complete	Complete	35% 6 mo.	0% 6 mo.	0% 4 mo.	6 mo.	0% 12 mo.	4 mo.	38 mo.
Light Rail At-Grade Burbank / Chandler Right-of-Way: North Hollywood Station to Warner Center	Complete	Complete	Complete	Complete	35% 6 mo.	0% 6 mo.	0% 4 mo.	6 mo.	0% 12 mo.	4 mo.	38 mo.
Bus Transitway At-Grade Burbank / Chandler Right-of-Way: North Hollywood Station to Warner Center	Complete	Complete	Complete	Complete	35% 6 mo.	0% 6 mo.	0% 4 mo.	6 mo.	0% 12 mo.	4 mo.	38 mo.

NO PROJECT IN THE SAN FERNANDO VALLEY CORRIDOR IS READY TO MOVE INTO CONSTRUCTION. THE LOCALLY PREFERRED ALTERNATIVE MUST BE DETERMINED AND THE PLANNING PROCESS COMPLETED PRIOR TO IMPLEMENTATION

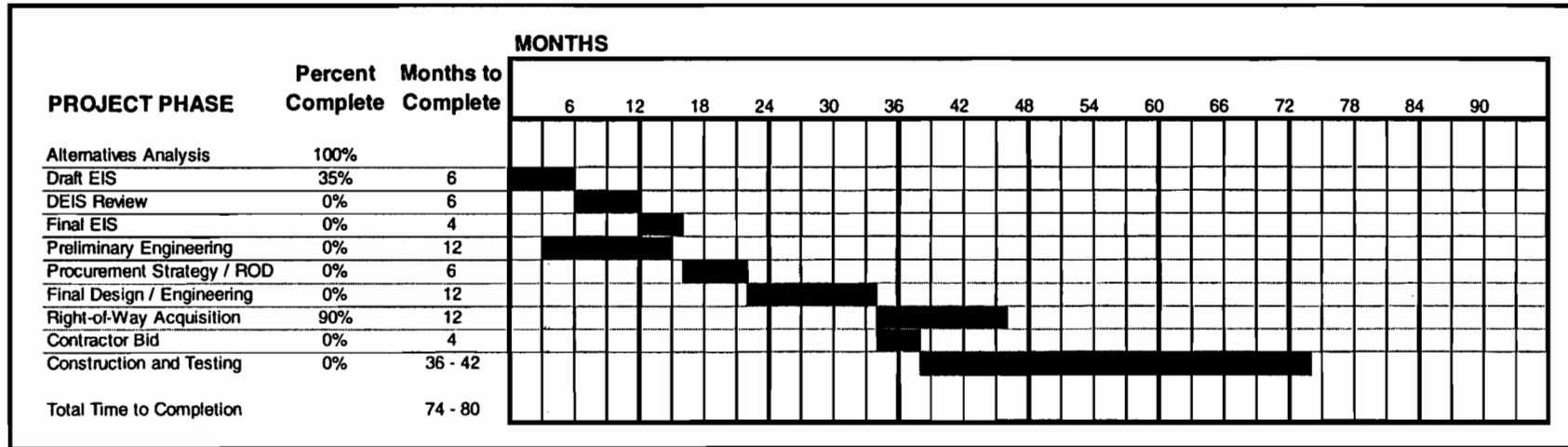
IMPLEMENTATION TIMEFRAME FOR DEFERRED PROJECT -- NORTH HOLLYWOOD TO I-405



THE IMPLEMENTATION OF THE DEFERRED HEAVY RAIL PROJECT TO I-405 RESUMES THE ENVIRONMENTAL CLEARANCE PROCESS

- The planning process for a San Fernando East-West rail line was deferred before the Locally Preferred Alternative was selected. An additional nine months is required to complete the Draft Environmental Impact Statement and select the Locally Preferred Alternative
- Completion of the Final Environmental Impact Statement requires four additional months
- Right-of-way acquisition begins once all engineering work is complete and falls within a one-year time frame. Most of the right-of-way along the Burbank / Chandler right-of-way is already owned by the MTA
- Completion of construction and testing will require approximately 3 to 3 ½ years

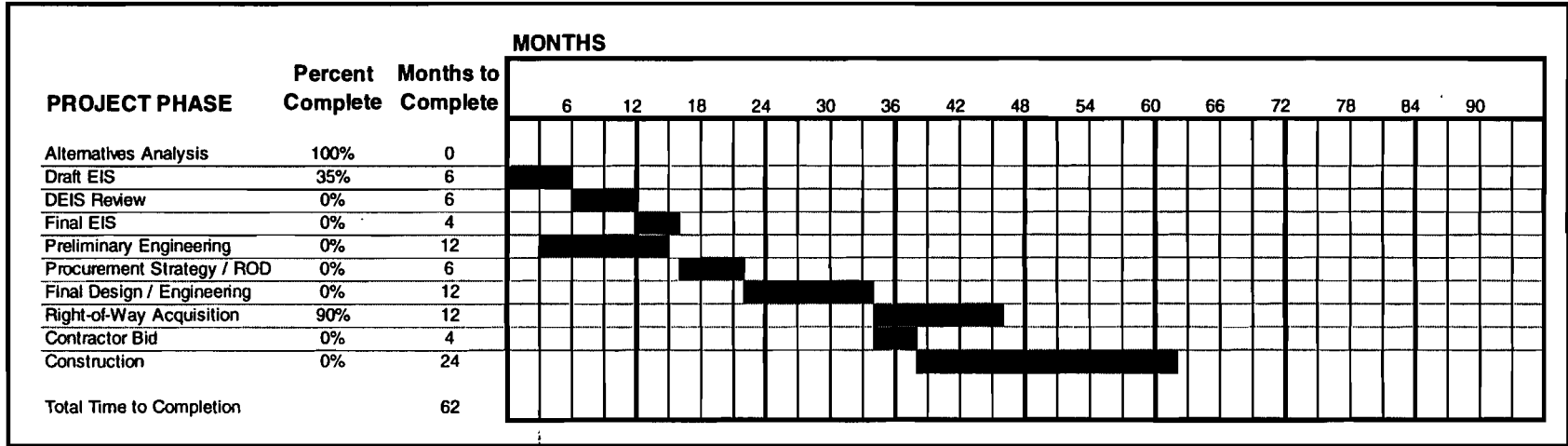
IMPLEMENTATION TIME FRAME FOR SAN FERNANDO VALLEY LIGHT RAIL



THE IMPLEMENTATION OF LIGHT RAIL ON THE BURBANK / CHANDLER RIGHT-OF-WAY CAN USE WORK COMPLETED FROM THE DEFERRED PLANNING PROCESS

- Most of the environmental clearance work for the right-of-way between the North Hollywood station and the I-405 freeway is complete. A new environmental process must be initiated for the portion of the route west of the I-405 freeway
- An additional year is required to complete the Draft EIS and select the Locally Preferred Alternative
- Completion of the Final Environmental Impact Statement will require an additional four months
- Right-of-way acquisition begins once all engineering work is complete and falls within a one-year time frame. Most of the right-of-way along the Burbank / Chandler right-of-way is already owned by the MTA
- Completion of construction and testing will require approximately 3 to 4 years

IMPLEMENTATION TIME FRAME FOR SAN FERNANDO VALLEY BUSWAY

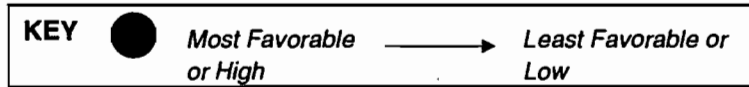


THE IMPLEMENTATION OF A BUSWAY ON THE BURBANK / CHANDLER RIGHT-OF-WAY TO WARNER CENTER CAN BORROW FROM WORK COMPLETED IN THE DEFERRED PLANNING PROCESS

- Most of the environmental clearance work for the right-of-way east of the I-405 freeway is complete. A new environmental process must be initiated for the portion of the route west of the I-405 freeway. An additional year is required to complete the Draft EIS and select the Locally Preferred Alternative
- Completion of the Final Environmental Impact Statement requires an additional four months
- Right-of-way acquisition begins once all engineering work is complete and falls within a one-year time frame. Most of the right-of-way along the Burbank / Chandler right-of-way is already owned by the MTA
- Completion of construction will require approximately 3 years

SUMMARY RESULTS FOR SAN FERNANDO CORRIDOR ALTERNATIVES

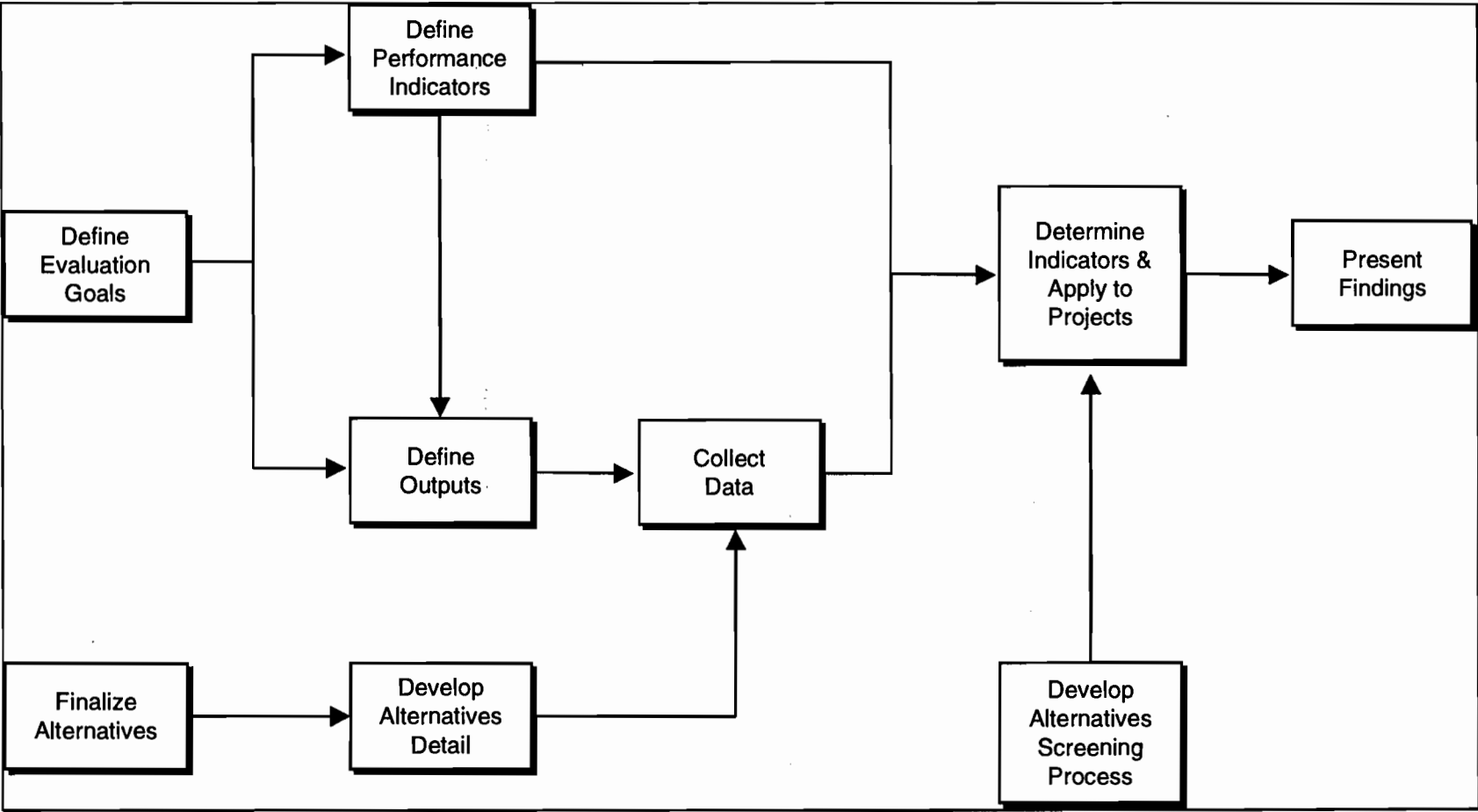
Alternative	Capital Costs (\$M)	Operating Costs (\$M)	Estimated Ridership	Estimated Time Before Construction (months)	Mobility	Transit Dependence	Reliability	Community Impact	Cost Effectiveness
Heavy Rail: North Hollywood Station to I-405	920.0	12.7	15,900	38					
Light Rail At-Grade Burbank / Chandler Right-of-Way: North Hollywood Station to Warner Center	1,126.1	22.6	23,400	38					
Bus Transitway At-Grade Burbank / Chandler Right-of-Way: North Hollywood Station to Warner Center	173.0	14.0	16,100	38					



APPENDIX 3.1
EVALUATION OF ALTERNATIVES

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PERFORMANCE EVALUATION MAIN TASKS



PERFORMANCE EVALUATION FOR THE MTA ALTERNATIVES HAS NOW BEEN COMPLETED

- The Project teams utilized the "short list" of options developed for Milestone 2
- Project teams fleshed out each alternative in terms of individual data fields necessary to calculate the performance measures, both quantitatively and qualitatively
- The MTA regional travel demand model constituted one of the key inputs for trip generation, vehicle delay and other mobility and environmental issues
- Input from community focus groups, government ad-hoc, peer review panels was incorporated throughout the process

THE EXISTING FRAMEWORK INCORPORATES EIGHT GOALS



OUTREACH INPUT TO EVALUATION GOALS

Performance Area	Average Ranking
Mobility/Accessibility	1.98
Transit Dependency	2.88
Reliability	2.92
Cost Effectiveness	3.74
Community Impacts	4.02
Economic	4.10
Safety	4.59
Environmental	4.61

Performance Evaluation Framework

EACH ALTERNATIVE IS PRESENTED BASED ON A TWO-TIER EVALUATION SYSTEM, REFLECTING EXTERNAL FEEDBACK RECEIVED (E.G., AD-HOC, PEER REVIEW) VIS-A-VIS THE RELATIVE IMPORTANCE OF EACH MEASUREMENT AREA

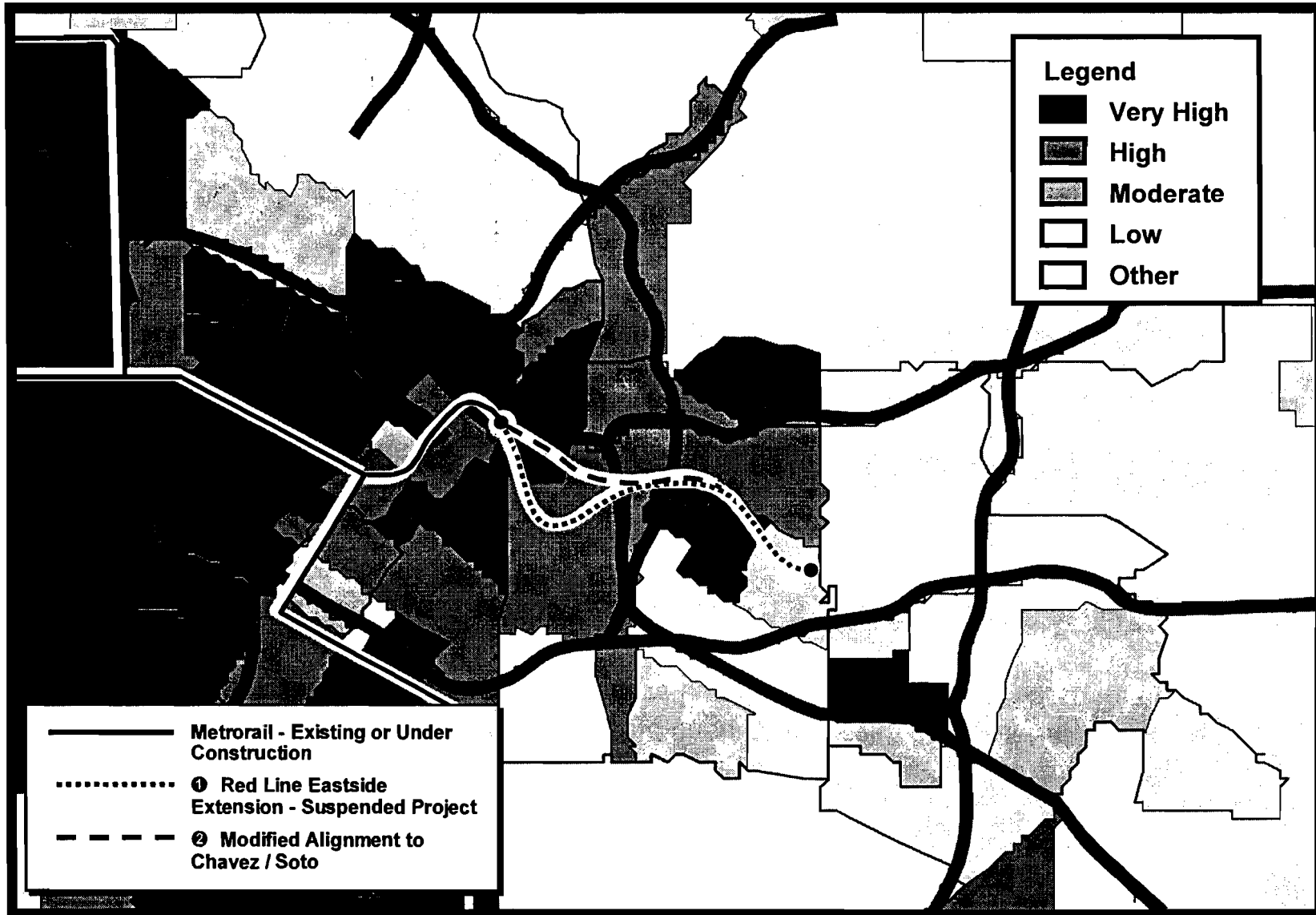
TIER 1...	
Key Evaluation Areas: <ul style="list-style-type: none">• Mobility• Transit Dependence• Cost Effectiveness• Reliability• Community Impacts	
	TIER 2...
	Key Evaluation Areas: <ul style="list-style-type: none">• Economic measures• Safety• Environmental

MOBILITY EVALUATION INCLUDES FOUR SEPARATE SERIES OF PERFORMANCE MEASURES

- **Market Size** corresponds to the total number of additional transit trips generated as a result of each alternative, compared to the base case for 2010. Total transit trips in the County are listed, as well as the alternative transit trip percentage of those total trips
- **Mobility Index** corresponds to the average person throughput for the county. The mobility index is presented compared to the base case and as percentage increase over the base case
- **Vehicle Delay** represents the total number of hours lost due to congestion for all Los Angeles County trip makers
- **Job Accessibility** is the percent of total employment that can be reached within one hour of transit travel time (including waiting, walking, and the travel time on the bus or rail system)

TRANSIT DEPENDENCE INDEX MAP

Eastside Corridor - Heavy Rail Options










THE DEGREE OF TRANSIT DEPENDENCE FORMS A CRITICAL COMPONENT OF THE EVALUATION FRAMEWORK

- **Transit Dependence Index** - This Index corresponds to a geographic superposition of three critical drivers to transit dependency: population density, income level, and low auto ownership. The overall Index is developed by comparing the alignments of each alternative with transit dependence "zones" and overall Origin-Destination patterns for the Community Statistical Area. The end result is a transit dependence Index which varies from "low" to "very high" for each alternative
- **Job Accessibility** - The percent of total employment that can be reached within one hour of transit travel time for the transit dependent public (including waiting, walking, and the travel time on the bus or rail system)

COST EFFECTIVENESS AIMS TO ANSWER TWO QUESTIONS: HOW MUCH AND HOW EFFICIENTLY ARE THE DOLLARS SPENT

- **Project Costs** include capital and operating costs. Capital costs typically last only for the construction period, while operating and maintenance costs last for the entire life of the project
- **Cost Efficiency** is listed in terms of cost per trip and cost per passenger mile. The first measure addresses each trip made, the second incorporates also the length of each trip

THE RELIABILITY MEASURE REFERS TO EXPECTED SERVICE RELIABILITY FROM ALTERNATIVES, BUT IT IS BASED ON PAST MTA EXPERIENCE

ALTERNATIVE	Model Notes	RELIABILITY		
		 Very Reliable	 Reliable	 Moderately Reliable
HR to First / Lorena	E-1 Suspended			
HR to Chavez/ Soto (Without Little Tokyo Station)	E-2 HRT			
LR from Union Station to Whittier/Atlantic Blvd.	E-5 LRT			
Rapid Bus (Atlantic Blvd. / Santa Monica)	E-4 BusWay			

WESTSIDE CORRIDOR COMMUNITY IMPACT RATINGS

1

GENERAL COMMUNITY IMPACTS	ALTERNATIVES														
	HR to Pico / San Vincent (Suspended)			HR to Wilshire / Fairfax			Blue Line Exposition Branch			Rapid Bus (Atlantic Blvd./Santa Monica)			Bus Transitway along Exposition Blvd.		
	-5	0	+5	-5	0	+5	-5	0	+5	-5	0	+5	-5	0	+5
	Negative	No Effect	Positive	Negative	No Effect	Positive	Negative	No Effect	Positive	Negative	No Effect	Positive	Negative	No Effect	Positive
Impacts on Property Values			✓			✓			✓			✓			✓
Impacts on Businesses			✓			✓			✓			✓			✓
Impacts on Security		✓			✓			✓			✓			✓	
Impacts on Aesthetics		✓			✓			✓			✓			✓	
Noise Impacts		✓			✓			✓			✓			✓	
Impacts on Traffic Lanes		✓			✓			✓			✓			✓	
Community Response *		✓			✓			✓			✓			✓	

2

COMMUNITY IMPACTS ON RELOCATIONS	ALTERNATIVES														
	HT to Pico / San Vincent (Suspended)			HR to Wilshire / Fairfax			Blue Line Exposition Branch			Rapid Bus (Atlantic Blvd./Santa Monica)			Bus Transitway along Exposition Blvd.		
	Minor	Major	Major	Minor	Major	Major	Minor	Major	Major	Minor	Major	Major	Minor	Major	Major
Household Relocations	✓			✓			✓			✓			✓		
Community Facility Relocations	✓			✓			✓			✓			✓		
Historic Site Relocations	✓			✓			✓			✓			✓		

COMMUNITY IMPACTS ARE CRITICAL IN CONSIDERING ANY MAJOR ALTERNATIVE AND INCORPORATE TEN INDIVIDUAL ELEMENTS

COMMUNITY IMPACT	EXAMPLE
Impact on Property Values	Positive impact on property values due to new heavy rail line
Impact on Businesses	Positive impact due to neighborhood attractiveness
Impacts on Security	Reduced community security due to vagrants drawn by station
Impacts on Aesthetics	Reduce aesthetics due to elevated light rail line and associated catenary
Noise Impacts	Negligible surface impact with subterranean metro
Impacts on Traffic Lanes	Negative due to transforming a lane to a dedicated bus transitway
Community Response	Negative if despite environmental mitigation, significant components of the community are against the project
Household Relocations	Significant impact with light rail system construction
Community Facility Relocations	Negligible with subterranean metro
Historic Site Relocations	Probably significant even if only one or two facilities need relocation



Performance Evaluation Framework...Combined Tier 1 Measures

COMBINED TIER ONE MEASURES CAN BE COMPARED WITHIN SEPARATE CORRIDORS OR ACROSS CORRIDORS AS NEEDED

ALTERNATIVE	MOBILITY				TRANSIT DEPENDENCE		COST EFFECTIVENESS			RELIABILITY	COMMUNITY IMPACT MATRIX
	Increase In Market Share	Increase In Mobility Index	Vehicle Delay	Job Accessibility	Transit Dependence Index	Increase In Job Accessibility Index	Magnitude of Project Costs	Cost Efficiency / Total Trips	Subsidy / Trip		
WESTSIDE											
HR to Pico / San Vicente									-		-
HR to Wilshire/ Fairfax									-		-
Blue Line Exposition Branch									-		-
Rapid Bus (Atlantic Blvd. / Santa Monica)									-		-
Bus Transitway Along Exposition Blvd.				-		-	-	-	-		-

ADDITIONAL MEASURES CONSIDERED IN THE PROJECT WILL INCLUDE ECONOMIC IMPACTS, ENVIRONMENTAL EMISSIONS, AND SAFETY

ECONOMIC IMPACTS	ENVIRONMENTAL EMISSIONS	SAFETY
Jobs Supported <ul style="list-style-type: none"> - jobs supported by capital expenditures - jobs supported by operating expenditures 	Auto Emissions <ul style="list-style-type: none"> - includes Reactive Organic Gases, hydrocarbons and nitrous oxides 	Passenger Accidents/Boarding
Gross Area Product	Bus Emissions	Pedestrian Accidents/100,000 train miles (trains) Pedestrian Accidents/100,000 VMT (bus)
		Vehicle Accidents/100,000 train miles (trains) Vehicle Accidents/100,000 VMT (bus)

BOTH TIER 1 AND TIER 2 MEASURES ARE INCLUDED IN THE FINAL PROJECT EVALUATION MATRIX

Results...

PERFORMANCE EVALUATION RESULTS ARE PRESENTED IN THE NEXT THREE PAGES

- Top Down Summaries provide "Harvey Ball" results for each alternative, by study corridor (i.e., Eastside, Westside, San Fernando Valley)
- While the definitions of the harvey balls vary by performance measure (e.g., higher degree of safety versus lower degree of safety, higher mobility impact versus lower mobility impact), each alternative can consistently be compared based on a "most favorable", "least favorable" basis.
- The five performance measurement categories in Tier 1 are presented first, followed by the three categories in Tier 2.

DETAILED HARVEY BALL AND NUMERIC RESULTS PER ALTERNATIVE ARE PROVIDED IN APPENDIX 3.2

EASTSIDE CORRIDOR RESULTS INCLUDE...

TIER 1 MEASURES

Alternative	Model Note	Mobility	Transit Dependency	Reliability	Community Impacts	Cost Effectiveness
Heavy Rail to First/Lorena	E-1 Suspended					
Heavy Rail to Chavez/Soto (without Little Tokyo Station)	E-2 HRT					
Light Rail from Union Station to Whittier / Atlantic	E-5 LRT					
Bus Transitway from Union Station to Whittier / Atlantic	E-4 Transitway					

TIER 2 MEASURES

Alternative	Model Note	Economic	Safety	Environmental
Heavy Rail to First/Lorena	E-1 Suspended			
Heavy Rail to Chavez/Soto (without Little Tokyo Station)	E-2 HRT			
Light Rail from Union Station to Whittier / Atlantic	E-5 LRT			
Bus Transitway from Union Station to Whittier / Atlantic	E-4 Transitway			

KEY

	Most Favorable or High		Least Favorable or Low
--	------------------------	--	------------------------

WESTSIDE CORRIDOR RESULTS INCLUDE...

TIER 1 MEASURES

Alternative	Model Note	Mobility	Transit Dependency	Reliability	Community Impacts	Cost Effectiveness
Heavy Rail to Pico/San Vicente	W-1 Suspended					
Heavy Rail to Wilshire/Fairfax	W-4 HRT					
Blue Line to Exposition Branch	W-3 LRT					
Bus Transitway along Exposition Branch	W-2 Busway					

TIER 2 MEASURES

Alternative	Model Note	Economic	Safety	Environmental
Heavy Rail to Pico/San Vicente	W-1 Suspended			
Heavy Rail to Wilshire/Fairfax	W-4 HRT			
Blue Line to Exposition Branch	W-3 LRT			
Bus Transitway along Exposition Branch	W-2 Busway			

KEY

	Most Favorable or High		Least Favorable or Low
--	------------------------	--	------------------------

SAN FERNANDO VALLEY CORRIDOR RESULTS INCLUDE...

TIER 1 MEASURES

Alternative	Model Note	Mobility	Transit Dependency	Reliability	Community Impacts	Cost Effectiveness
Heavy Rail to I-405 (Subway / Aerial combination)	V-1 HRT					
Light Rail (or DMU) to Warner Center	V-2 LRT					
Bus Transitway (North Hollywood to Warner Center)	V-3 transitway					

TIER 2 MEASURES

Alternative	Model Note	Economic	Safety	Environmental
Heavy Rail to I-405 (Subway / Aerial combination)	V-1 HRT			
Light Rail (or DMU) to Warner Center	V-2 LRT			
Bus Transitway (North Hollywood to Warner Center)	V-3 Transitway			

KEY

	Most Favorable or High		Least Favorable or Low
--	------------------------	--	------------------------

APPENDIX 3.2
PERFORMANCE MEASURE EVALUATION
RESULTS DETAIL

ALTERNATIVE	Model Notes	Route Miles	MOBILITY							TRANSIT DEPENDENCE				COST EFFECTIVENESS				RELIABILITY
			Market			Mobility Index			Annual Transit Travel Time Decrease	Job Accessibility	Transit Dependence Index	Index Composition	Job Accessibility Index	Project Unit Costs		Cost Efficiency		
			Additional Daily Transit Trips Generated	Daily Transit Trips	Percent of Total	Alternative Specific	Base 2010	Percent Change						Capital Costs / Mile of TA	O&M Costs / Mile (BAH)	Annualized Lifecycle Cost / Trip	Subsidy / Trip	
HR to First / Lorenz	E-1 Suspended	3.62	1,715	883,619	0.19%	43.37	43.32	0.12%	3,432	16.29	3.3	50% Very High, 40% High, 10% Low	21.98	\$254,861,878	\$2,000,552.49	\$32,886	\$5,907	Very low to low
HR to Chavez/ Solo (Without Little Tokyo Station)	E-2 HRT	1.92	349	882,253	0.04%	43.42	43.32	0.23%	1,552	16.26	3.5	70% Very High, 20% High, 10% Low	21.95	\$250,572,817	\$1,770,333.33	\$84,241	\$9,527	Very low to low
LR from Union Station to Whittier/Atlantic Street	E-5 LRT	5.9	1,782	883,868	0.20%	43.40	43.32	0.18%	4,173	16.40	2.95	60% Very High, 15% High, 10% Low, 15% Very Low	22.10	\$73,033,898	\$1,877,986.10	\$15,551	\$5,403	Low
Bus Transway - (Union Station to Whittier/Atlantic Blvd.)	E-4 Transway	5.9	-2,262	879,522	-0.26%	43.24	43.32	-0.18%	1,266	16.20	2.95	60% Very High, 15% High, 10% Low, 15% Very Low	21.90	\$14,525,424	\$1,067,796.61	N/A	N/A	Low

ALTERNATIVE	Model Notes	Route Miles	MOBILITY							TRANSIT DEPENDENCE				COST EFFECTIVENESS				RELIABILITY
			Market			Mobility Index			Annual Transit Travel Time Decrease	Job Accessibility	Transit Dependence Index	Work Destination	Job Accessibility Index	Project Unit Costs		Cost Efficiency		
			Additional Daily Transit Trips Generated	Daily Transit Trips	Percent of Total	Alternative Specific	Base 2010	Percent Change						Capital Costs / Mile (M/A)	O&M Costs / Mile (BAH)	Annualized Lifecycle Cost / Trip	Subsidy / Trip	
HR to First / Lorenz	E-1 Suspended	3.62					N/A											
HR to Chavez/ Solo (Without Little Tokyo Station)	E-2 HRT	1.92					N/A											
LR from Union Station to Whittier/Atlantic Street	E-5 LRT	5.9					N/A											
Bus Transway - (Union Station to Whittier/Atlantic Blvd.)	E-4 Transway	5.9					N/A									N/A	N/A	

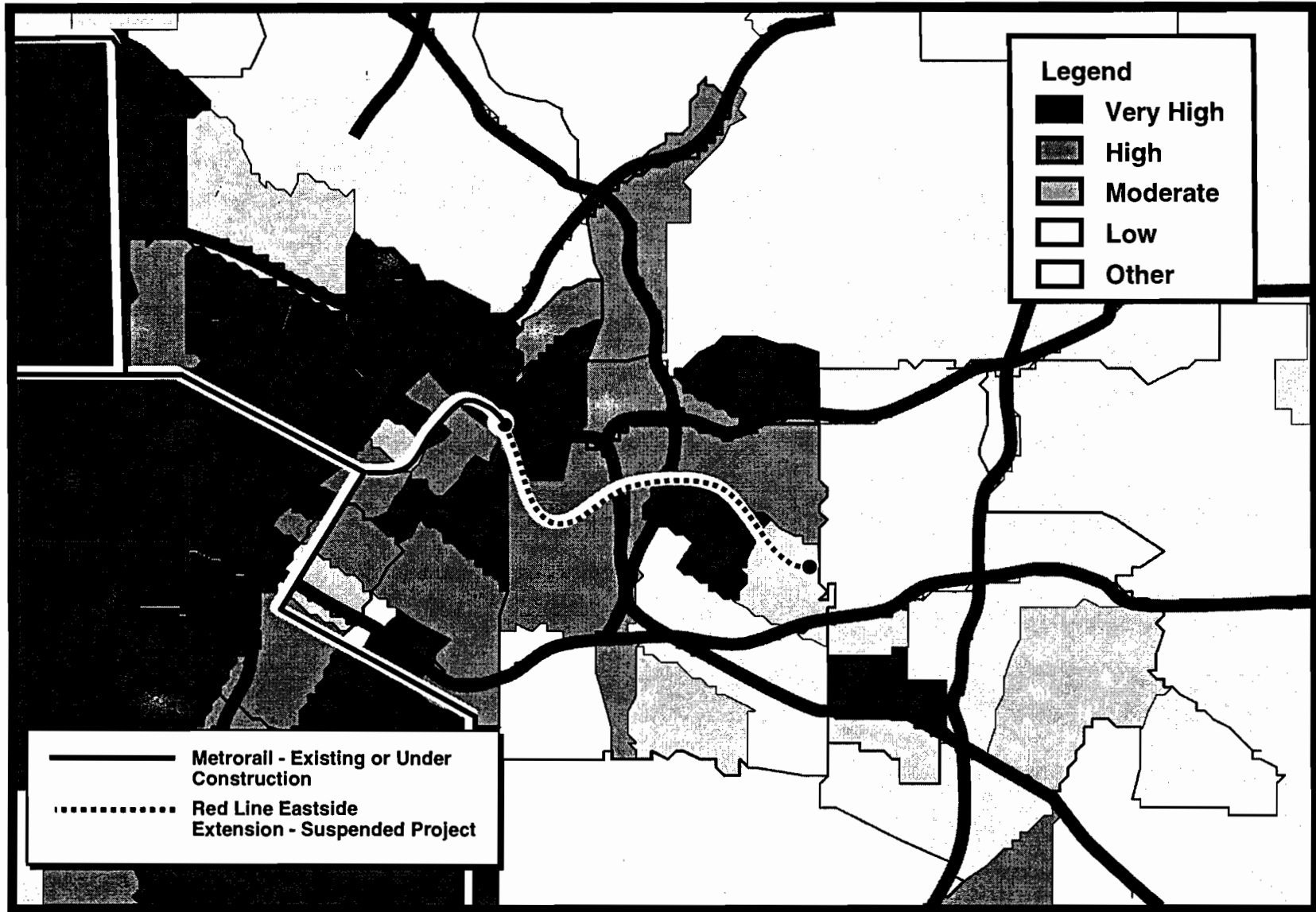
ALTERNATIVE	Model Note	Route Miles	MOBILITY							TRANSIT DEPENDENCE				COST EFFECTIVENESS				RELIABILITY
			Market			Mobility Index			Annual Transit Travel Time Decrease	Job Accessibility	Transit Dependence Index	Index Composition	Job Accessibility Index	Project Unit Costs		Cost Efficiency		Reliability per Mode
			Additional Daily Transit Trips Generated	LA County Daily Transit Trips	Percent of Total	Alternative Specific	Base 2010	Percent Change						Capital Costs / Mile (MTA)	O&M Costs / Mile (BART)	Annualized Lifecycle Cost / Trip	Subsidy / Trip	
HR to Pico / San Vincent	W-1 Suspended	2.58	1,925	883,829	0.22%	43.39	43.32	0.16%	8,858	16.34	1.35	15% Very High, 25% High, 60% Very Low	22.08	\$237,265,625	\$1,718,750	\$18,028	\$2,070	Very low to low
HR to Wilshire/ Fairfax	W-4 HRT	3.17	2,142	864,048	0.24%	43.38	43.32	0.14%	9,464	16.38	1.6	30% High, 70% Low	22.17	\$271,168,738	\$2,050,473	\$24,276	\$2,819	Very low to low
Blue Line Exposition Branch	W-3 LRT	16	3,395	885,299	0.38%	43.34	43.32	0.05%	15,145	16.33	1.9	30% Very High, 70% Low	22.12	\$54,861,111	\$1,177,778	\$17,781	\$8,029	Low
Exposition Busway	W-2 Busway	16.5	8,663	880,567	0.97%	43.33	43.32	0.02%	22,334	16.54	1.5	20% Very High, 70% Low, 10% Very Low	22.46	\$16,889,189	\$297,297	\$2,738	\$420	Low

ALTERNATIVE	Model Note	Route Miles	MOBILITY							TRANSIT DEPENDENCE				COST EFFECTIVENESS				RELIABILITY	
			Market			Mobility Index			Annual Transit Travel Time Decrease	Job Accessibility	Transit Dependence Index	Work Destination	Job Accessibility Index	Project Unit Costs		Cost Efficiency		Reliability per Mode	
			Additional Daily Transit Trips Generated	LA County Daily Transit Trips	Percent of Total	Alternative Specific	Base 2010	Percent Change						Capital Costs / Mile (MTA)	O&M Costs / Mile (BART)	Annualized Lifecycle Cost / Trip	Subsidy / Trip		
HR to Pico / San Vincent	W-1 Suspended	2.58	●	●	●	●	N/A	●	●	●	●	●	●	○	●	●	●	●	●
HR to Wilshire/ Fairfax	W-4 HRT	3.17	●	●	●	●	N/A	●	●	●	●	●	●	○	●	●	●	●	●
Blue Line Exposition Branch	W-3 LRT	16	●	●	●	●	N/A	●	●	●	●	●	●	●	●	●	●	●	●
Exposition Busway	W-2 Busway	16.5	●	●	●	●	N/A	●	●	●	●	●	●	●	●	●	●	●	●

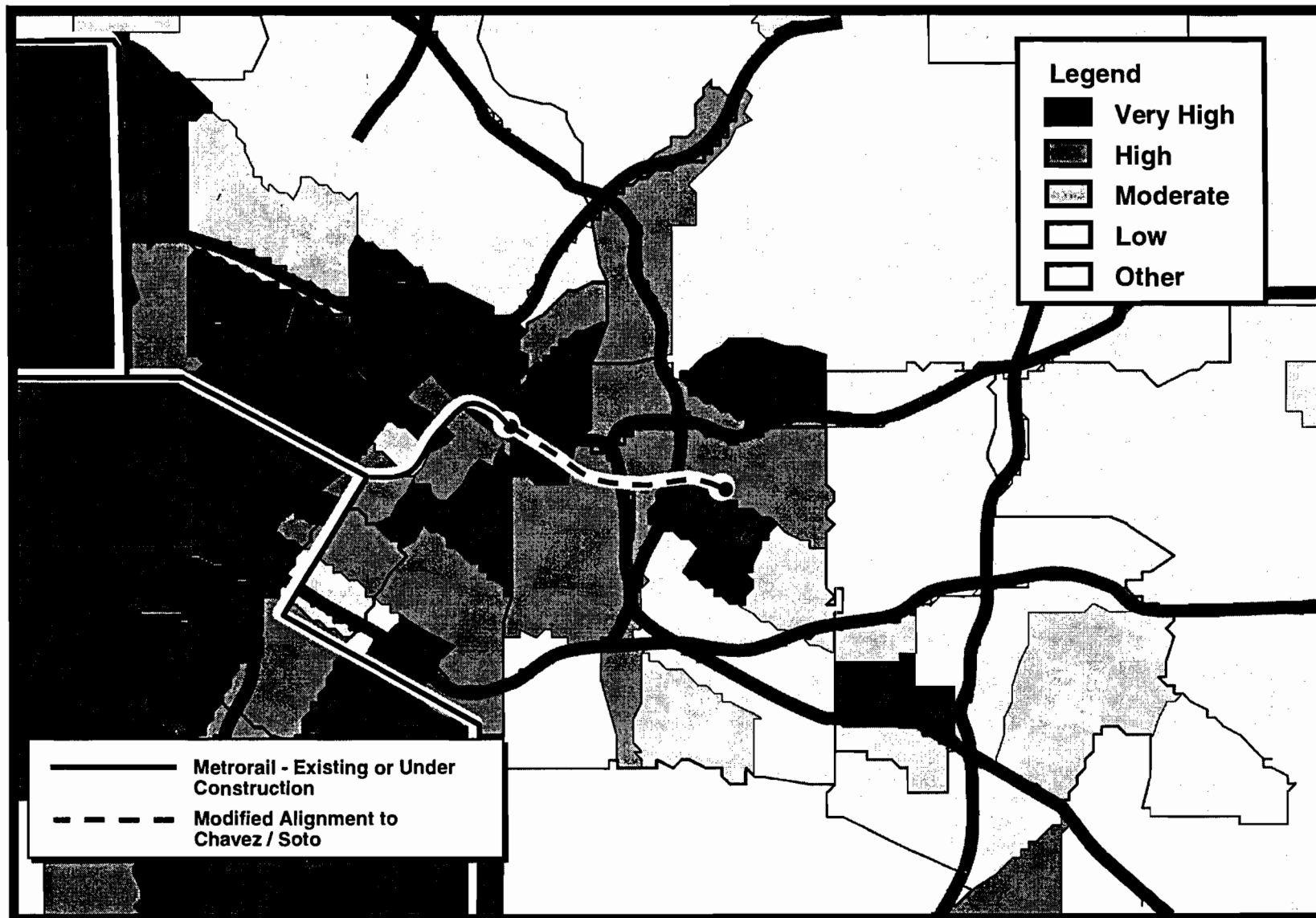
ALTERNATIVE	Model Notes	Route Miles	MOBILITY							TRANSIT DEPENDENCE			COST EFFECTIVENESS				RELIABILITY	
			Market			Mobility Index			Annual Transit Travel Time Decrease	Job Accessibility	Transit Dependence Index	Index Composition	Job Accessibility Index	Project Unit Costs		Cost Efficiency		Reliability per Mode
			Additional Daily Transit Trips Generated	LA County Daily Transit Trips	Percent of Total	Alternative Specific	Base 2010	Percent Change						Capital Costs / Mile (MTA)	O&M Costs / Mile (SAV)	Annualized Lifecycle Cost / Trip	Subsidy / Trip	
HR to I - 405 (Subway / Aerial Combination)	V-1 HRT	8.01	7,389	889,283	0.83%	43.39	43.32	0.18%	10,043	18.32	1	100% Low	22.03	\$153,078,203	\$2,113,144.78	\$7,931	\$1,503	Very low to low
LR (or DMU) to Warner Center	V-2 LRT	13.8	(534)	881,370	-0.06%	43.32	43.32	0.00%	8,330	18.15	1	100% Low	21.78	\$81,601,448	\$1,837,681.18	N/A	N/A	Low
Bus Transitway (N. Hollywood / Warner Center)	V-3 Transitway	14	3,969	885,873	0.45%	43.34	43.32	0.05%	7,732	18.23	1	100% Low	21.92	\$13,478,571	\$350,000.00	\$3,250	\$1,019	Low

ALTERNATIVE	Model Notes	Route Miles	MOBILITY							TRANSIT DEPENDENCE			COST EFFECTIVENESS				RELIABILITY		
			Market			Mobility Index			Annual Transit Travel Time Decrease	Job Accessibility	Transit Dependence Index	Work Destination	Job Accessibility Index	Project Unit Costs		Cost Efficiency		Reliability per Mode	
			Additional Daily Transit Trips Generated	LA County Daily Transit Trips	Percent of Total	Alternative Specific	Base 2010	Percent Change						Capital Costs / Mile (MTA)	O&M Costs / Mile (SAV)	Annualized Lifecycle Cost / Trip	Subsidy / Trip		
HR to I - 405 (Subway / Aerial Combination)	V-1 HRT	8.01	●	●	●	●	N/A	●	●	●	●	●	●	●	●	●	●	●	●
LR (or DMU) to Warner Center	V-2 LRT	13.8	◐	◑	○	◑	N/A	◑	●	○	◐	◑	○	◑	◑	N/A	N/A	●	●
Bus Transitway (N. Hollywood / Warner Center)	V-3 Transitway	14	◑	●	◑	◑	N/A	◑	●	◑	◑	◑	◑	●	●	●	◑	◑	●

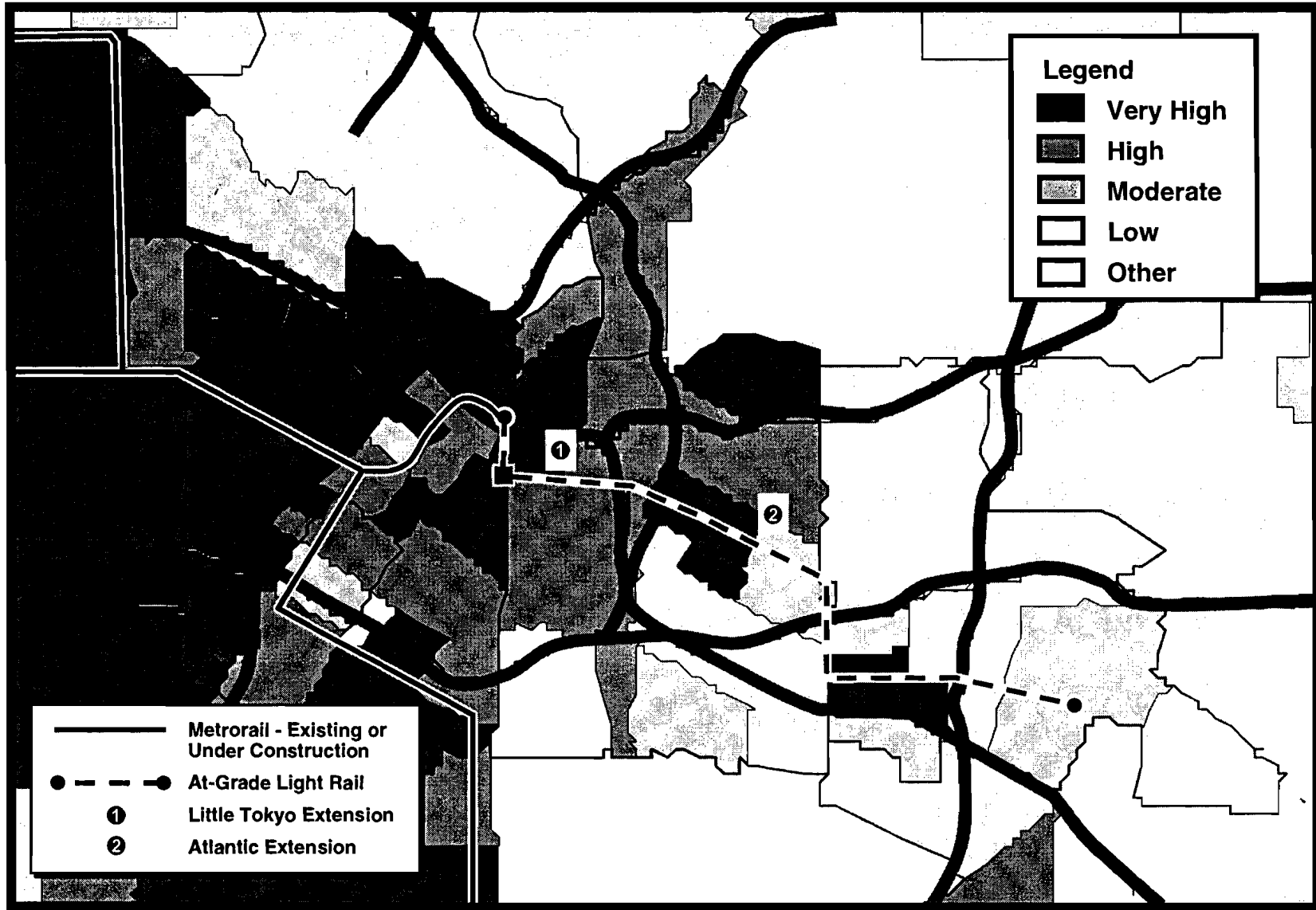
EASTSIDE CORRIDOR - SUSPENDED PROJECT



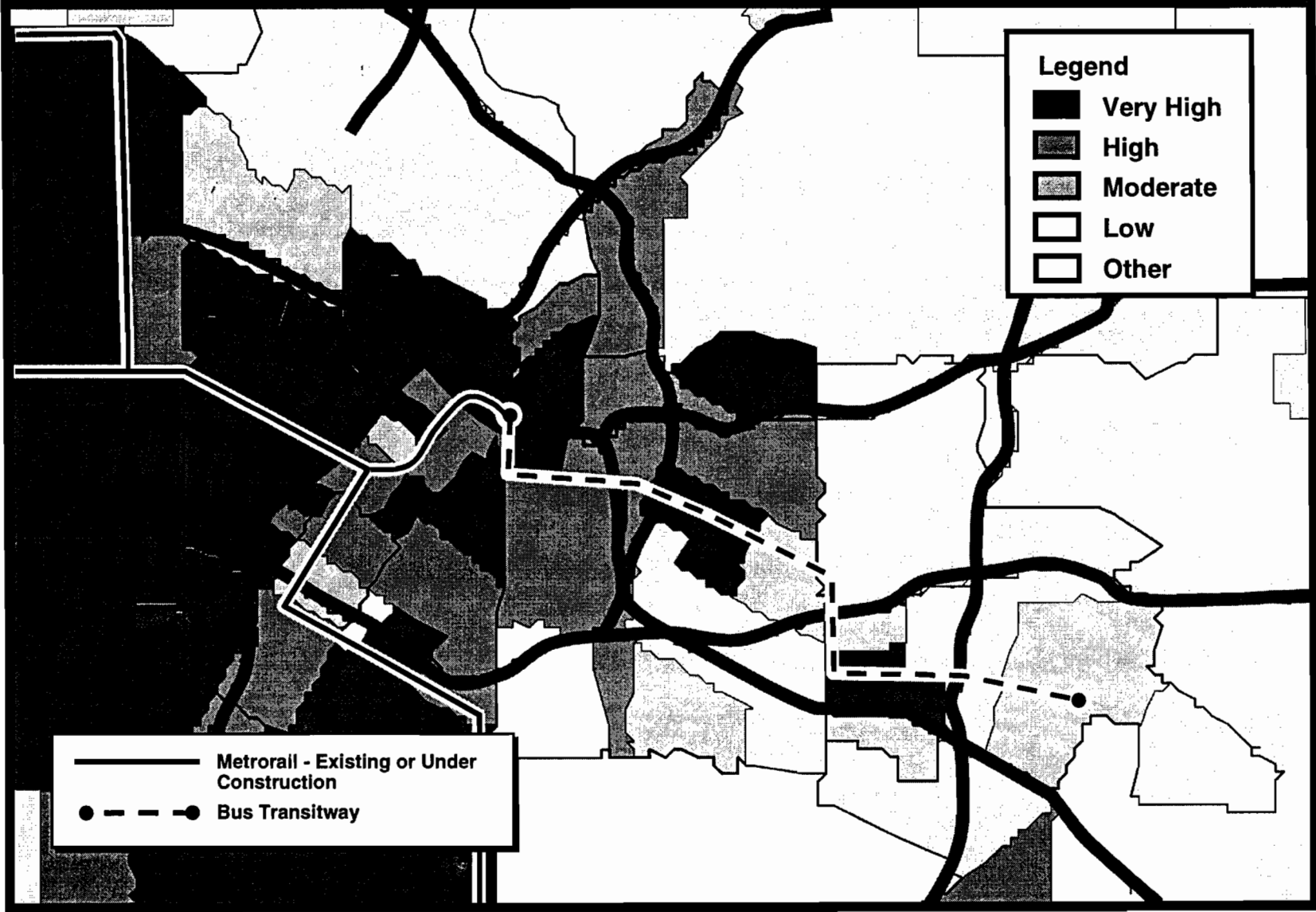
EASTSIDE CORRIDOR - MODIFIED ALIGNMENT TO CHAVEZ/SOTO



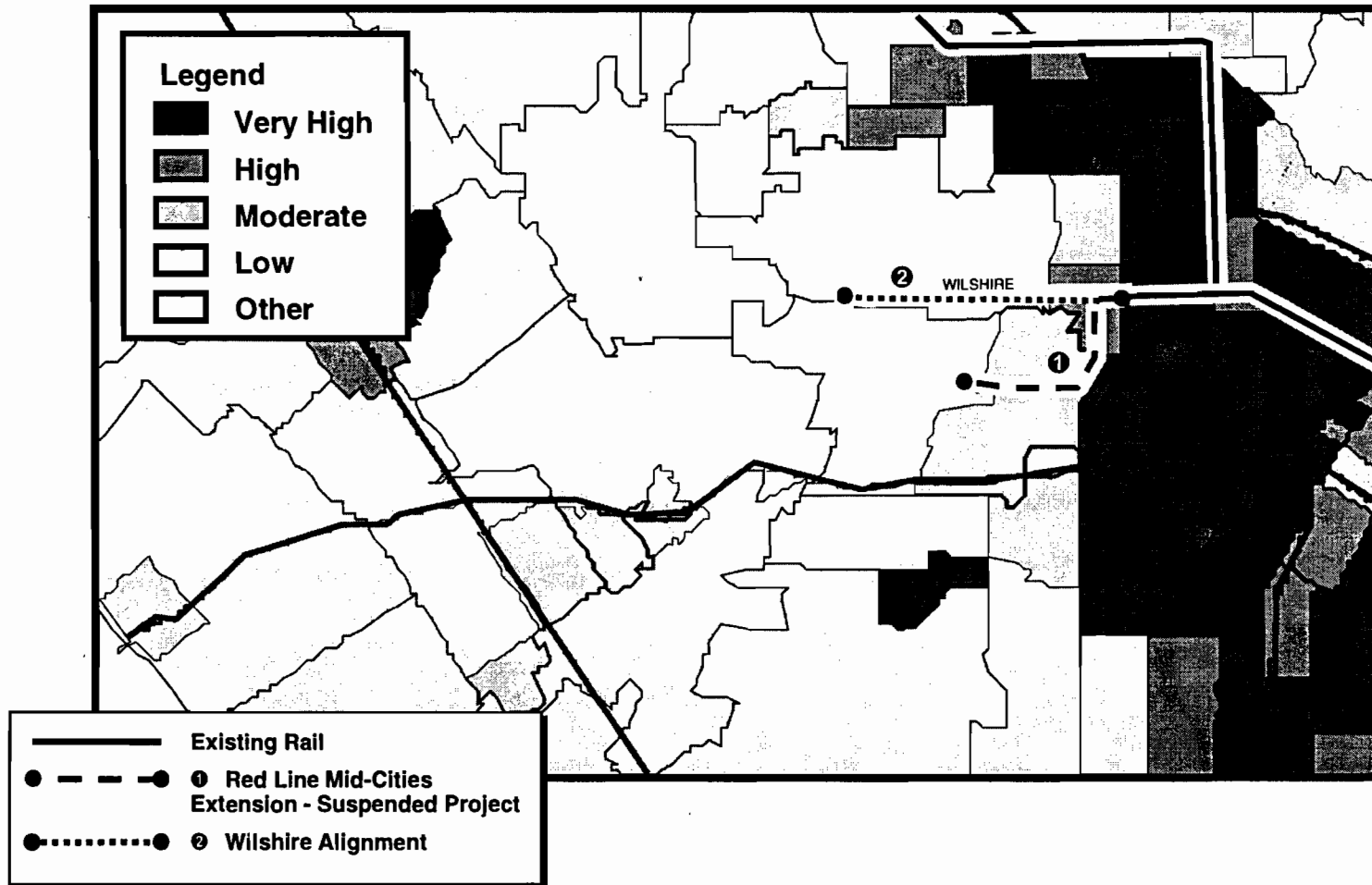
EASTSIDE CORRIDOR - LIGHT RAIL ALIGNMENT



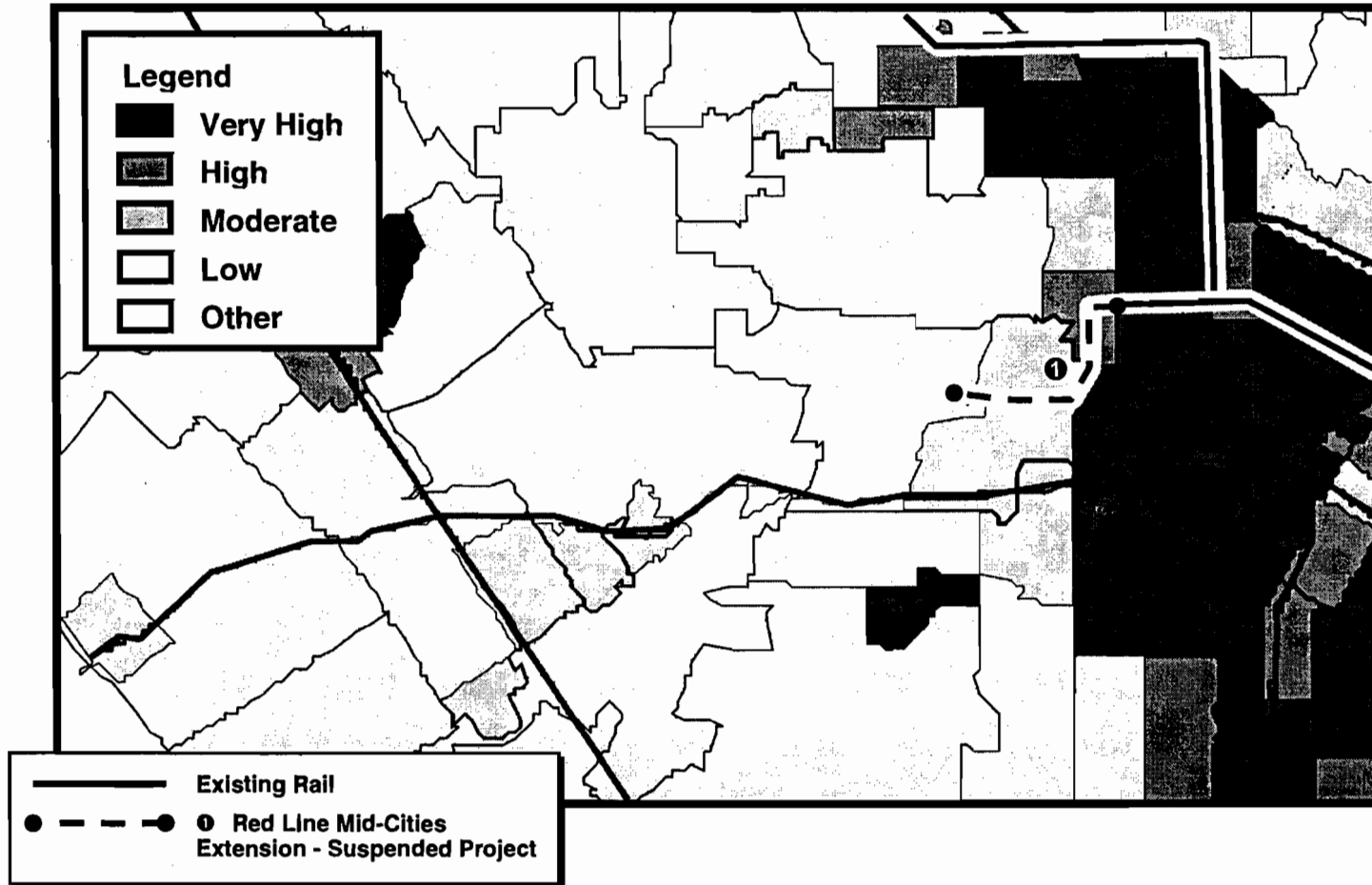
EASTSIDE CORRIDOR - BUS TRANSITWAY



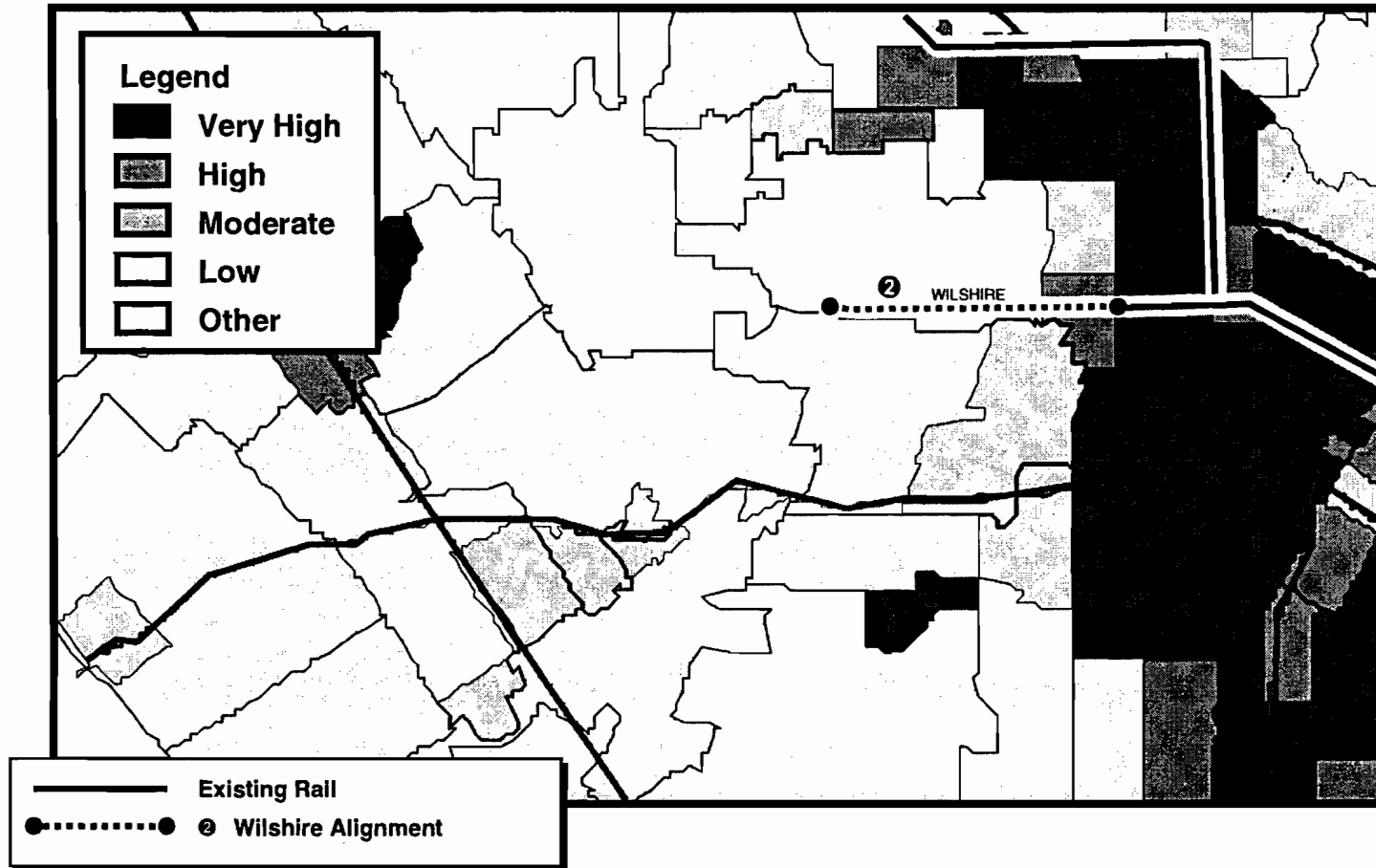
WESTSIDE CORRIDOR - HEAVY RAIL OPTIONS



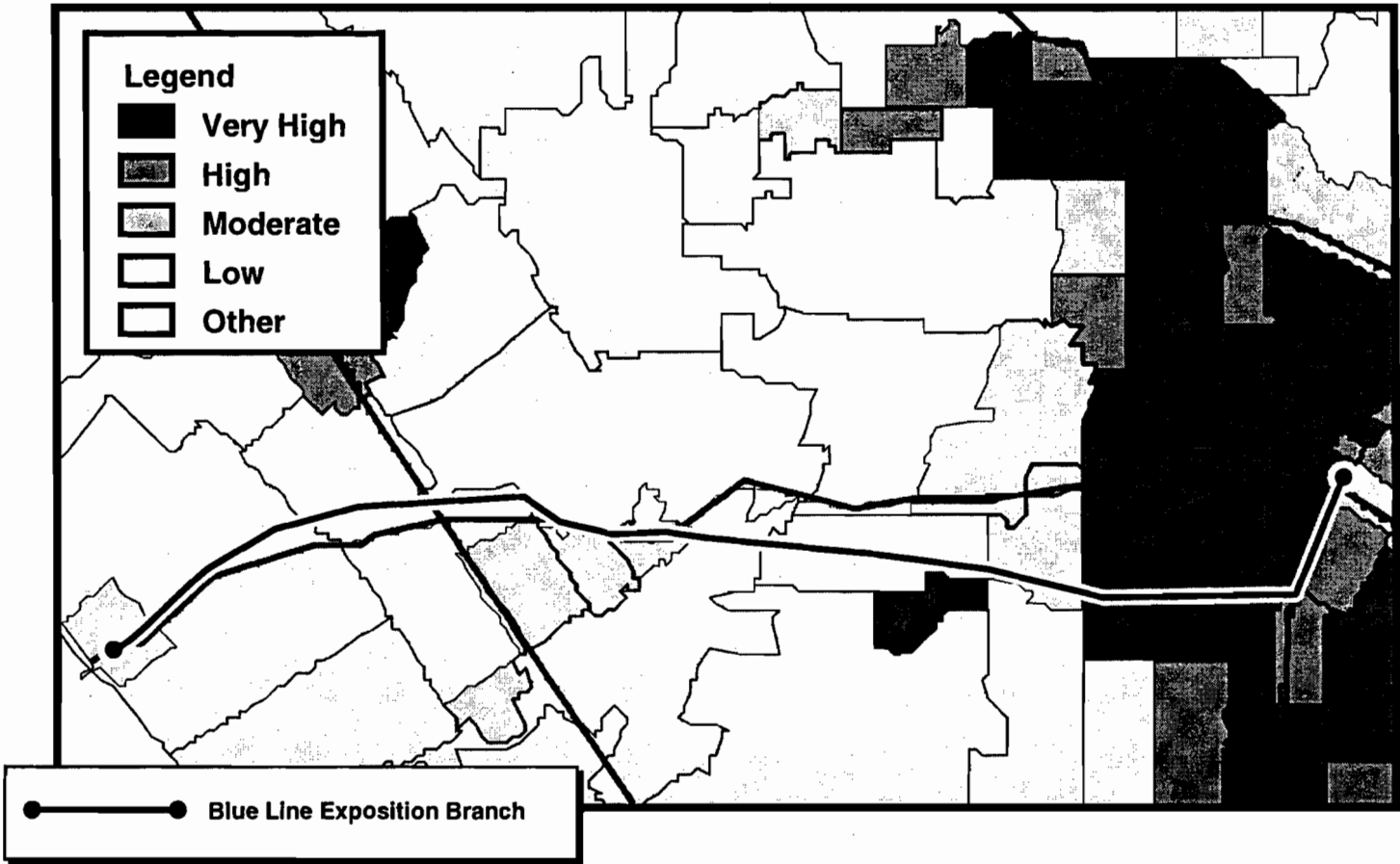
WESTSIDE CORRIDOR - SUSPENDED PROJECT



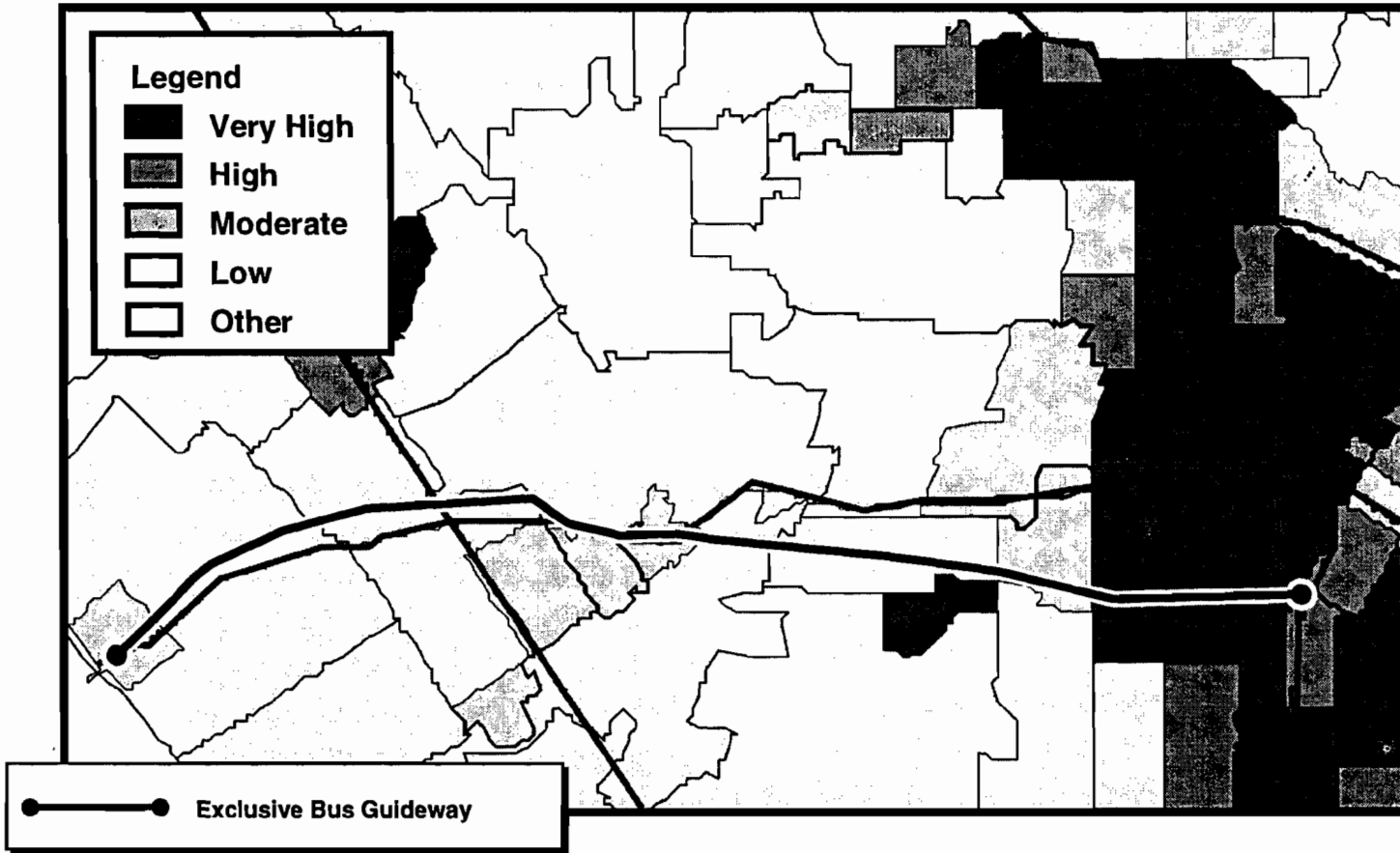
WESTSIDE CORRIDOR - WILSHIRE ALIGNMENT



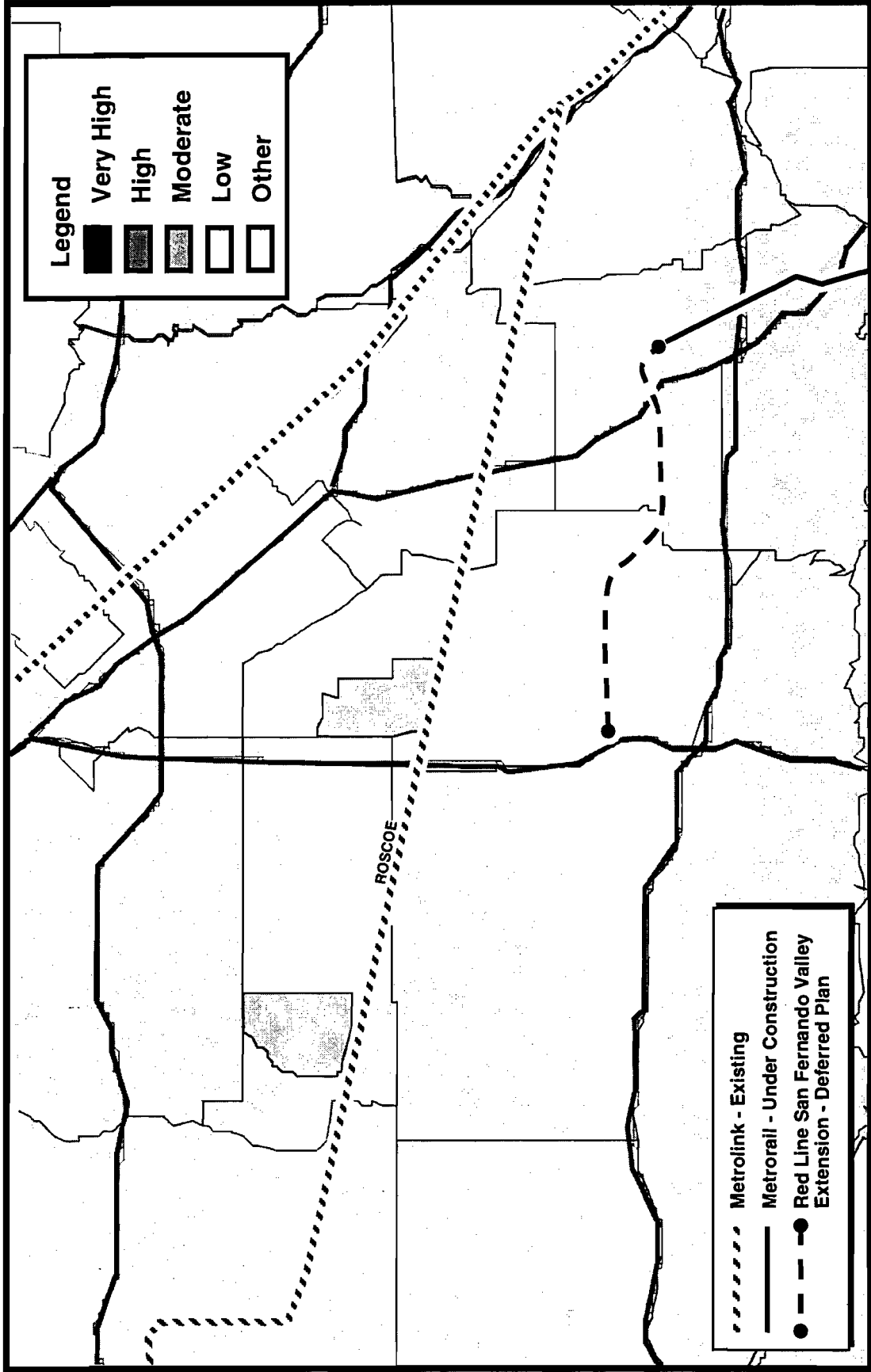
WESTSIDE CORRIDOR - EXPOSITION LIGHT RAIL



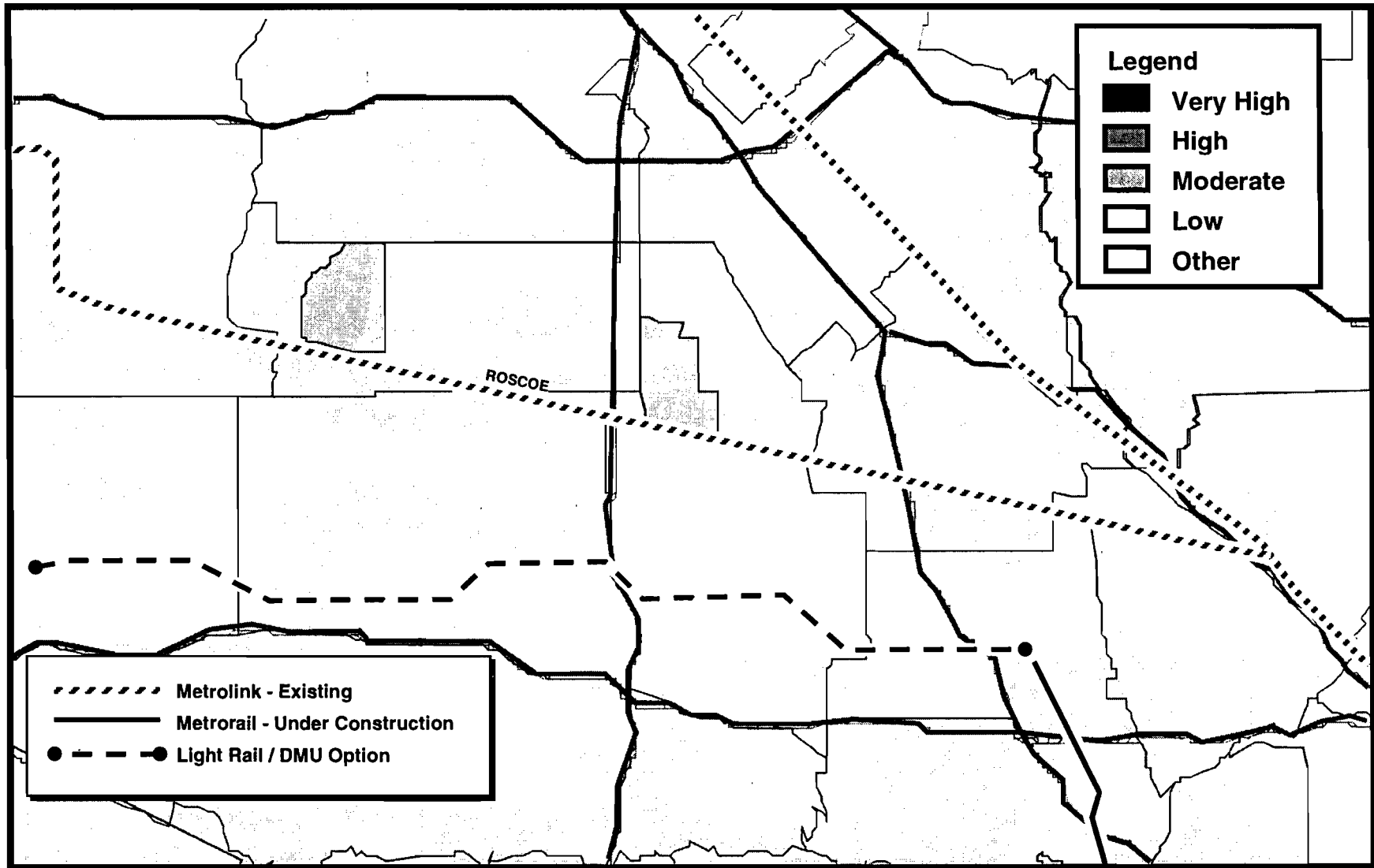
WESTSIDE CORRIDOR - EXPO BUS TRANSITWAY



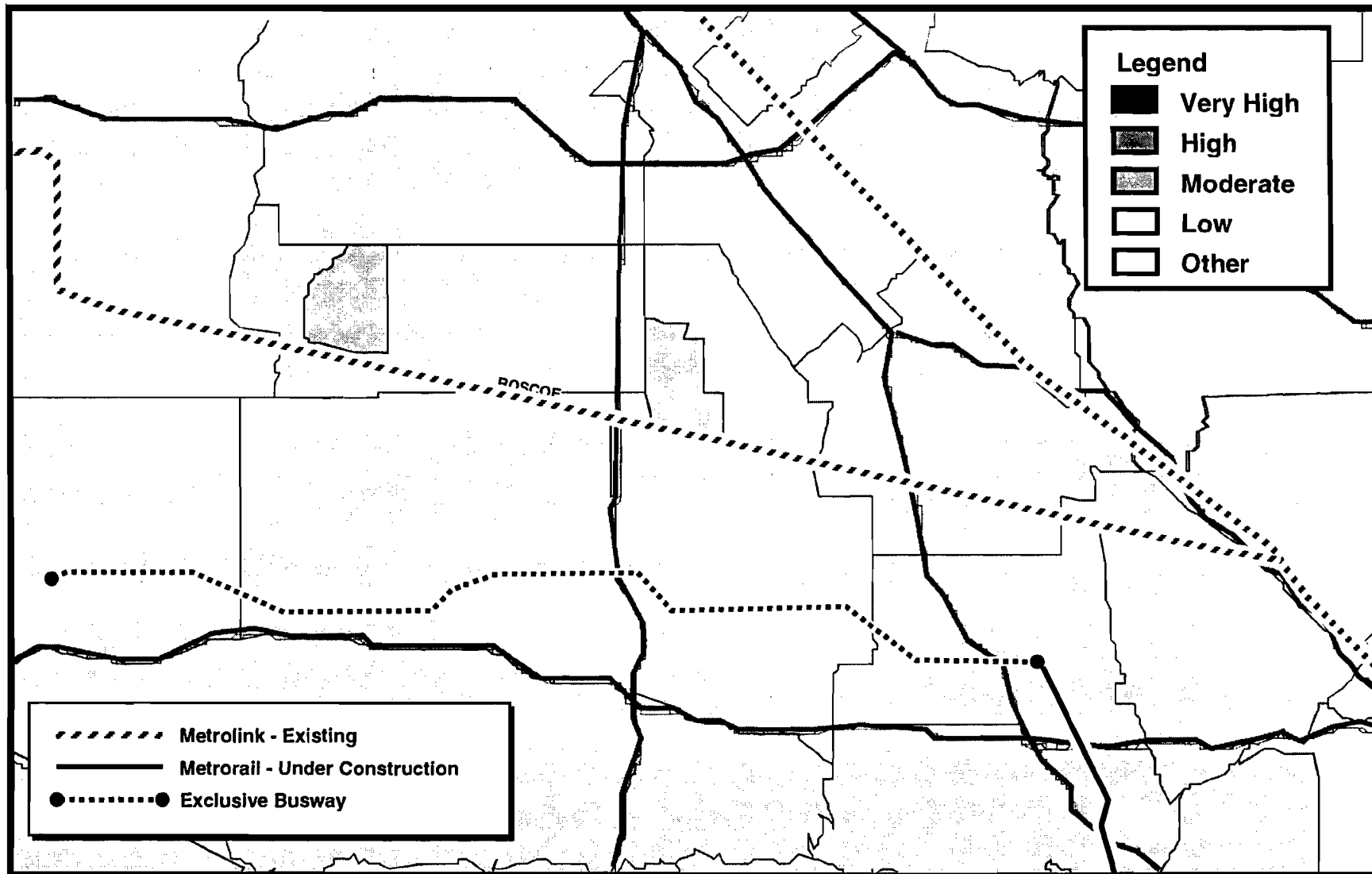
SAN FERNANDO VALLEY - DEFERRED PROJECT



SAN FERNANDO VALLEY - LIGHT RAIL



SAN FERNANDO VALLEY - BUS TRANSITWAY




The Eastside Corridor

1

GENERAL COMMUNITY IMPACTS	ALTERNATIVES											
	HR to First / Lorena (Suspended)			HR to Chavez / Soto (Without Lrt. Tokyo Sta.)			LR from Union Sta. To Whittier/Atlantic Blvd.			Bus Transway (Union Station To Whittier/Atlantic Blvd.)		
	-5	0	+5	-5	0	+5	-5	0	+5	-5	0	+5
	Negative	No Effect	Positive	Negative	No Effect	Positive	Negative	No Effect	Positive	Negative	No Effect	Positive
Impacts on Property Values			✓			✓			✓		✓	
Impacts on Businesses		✓			✓			✓			✓	
Impacts on Security		✓			✓			✓			✓	
Impacts on Aesthetics			✓			✓		✓			✓	
Noise Impacts		✓			✓			✓			✓	
Impacts on Traffic Lanes		✓			✓			✓			✓	
Community Response *			✓			✓		✓			✓	

* Where Applicable



Positive Positive Slight Mitigable Neutral

2

COMMUNITY IMPACTS ON RELOCATIONS	ALTERNATIVES											
	HR to First / Lorena (Suspended)			HR to Chavez / Soto (Without Lrt. Tokyo Sta.)			LR from Union Sta. To Whittier/Atlantic Blvd.			Bus Transway (Union Station To Whittier/Atlantic Blvd.)		
	Minor	Major	Major	Minor	Major	Major	Minor	Major	Major	Minor	Major	Major
Household Relocations			✓			✓			✓	✓		
Community Facility Relocations	✓				✓			✓		✓		
Historic Site Relocations	✓				✓			✓		✓		






Less Positive Neutral Slight Mitigable Positive

The Westside Corridor

1

GENERAL COMMUNITY IMPACTS	ALTERNATIVES											
	HR to Pico / San Vincent (Suspended)			HR to Wilshire / Fairfax			Blue Line Exposition Branch			Exposition Bus Transitway		
	-5	0	+5	-5	0	+5	-5	0	+5	-5	0	+5
	Negative	No Effect	Positive	Negative	No Effect	Positive	Negative	No Effect	Positive	Negative	No Effect	Positive
Impacts on Property Values			✓			✓			✓			✓
Impacts on Businesses			✓			✓			✓			✓
Impacts on Security		✓			✓			✓			✓	
Impacts on Aesthetics		✓			✓			✓			✓	
Noise Impacts		✓			✓			✓			✓	
Impacts on Traffic Lanes		✓			✓			✓			✓	
Community Response *		✓			✓			✓			✓	

* Where Applicable

Positive

Positive

Neutral

Less Positive

2

COMMUNITY IMPACTS ON RELOCATIONS	ALTERNATIVES											
	HT to Pico / San Vincent (Suspended)			HR to Wilshire / Fairfax			Blue Line Exposition Branch			Exposition Busway		
	Minor	Major	Major	Minor	Major	Major	Minor	Major	Major	Minor	Major	Major
Household Relocations	✓			✓			✓			✓		
Community Facility Relocations	✓			✓			✓			✓		
Historic Site Relocations	✓			✓			✓			✓		

Positive

Positive

Positive

Positive

The San Fernando Valley Corridor

1

GENERAL COMMUNITY IMPACTS	ALTERNATIVES								
	HR to I-405 (subway / aerial Comb.)			LR (or DMU) to Warner Center			Bus Transitway (N. Holly'd. / Warner Center)		
	-5	0	+5	-5	0	+5	-5	0	+5
	Negative	No Effect	Positive	Negative	No Effect	Positive	Negative	No Effect	Positive
Impacts on Property Values			✓			✓			✓
Impacts on Businesses			✓			✓			✓
Impacts on Security		✓			✓			✓	
Impacts on Aesthetics		✓			✓			✓	
Noise Impacts		✓			✓			✓	
Impacts on Traffic Lanes		✓			✓			✓	
Community Response *		✓			✓			✓	

* Where Applicable



Less Positive



Slight Mitigable



Neutral

2

COMMUNITY IMPACTS ON RELOCATIONS	ALTERNATIVES								
	HR to I-405 (subway / aerial Comb.)			LR (or DMU) to Warner Center			Bus Transitway (N. Holly'd. / Warner Center)		
	Minor		Major	Minor		Major	Minor		Major
Household Relocations	✓			✓			✓		
Community Facility Relocations		✓			✓			✓	
Historic Site Relocations	✓			✓			✓		

The Eastside Corridor

ALTERNATIVE	Model Notes	ECONOMIC				ENVIRONMENT			SAFETY			
		Job Supported, Operating	Jobs Supported, Capital	Gross Area Product, Operating (\$98Millions)	Gross Area Product, Capital (\$98Millions)	Air Quality Index			Safety Index			Safety Index
						Additional Transit Emissions	Non Transit Vehicular Emissions (kgs)	Percent of NTVE	Pass. Accidents per 100,000 Boardings	Pass. Accidents per 100,000 Hub/Train Miles	Traffic Accidents per 100,000 Hub/Train Miles	
HR to First / Lorena	E-1 Suspended	311	22189	10.43	1099.74	N/A (stationary source)	242,992	N/A	0.08	0.00	1.33	Composite
HR to Chavez/ Soto (Without Little Tokyo Station)	E-2 HRT	101	11,570	3.38	573.47	N/A (stationary source)	243,024	N/A	0.08	0.00	1.33	Composite
LR to Little Tokyo	E-5 LRT	293	10,363	9.83	513.63	N/A (stationary source)	243,026	N/A	0.15	0.83	4.17	Composite
Bus Transitway -- (Union Station to Whittier Atlantic Blvd.)	E-4 Transitway	186	2,061	6.26	102.15	5,725	243,031	2.36%	0.40	0.06	2.69	Composite

ALTERNATIVE	Model Notes	ECONOMIC				ENVIRONMENT			SAFETY			
		Job Supported, Operating	Jobs Supported, Capital	Gross Area Product, Operating	Gross Area Product, Capital	Air Quality Index			Safety Index			Safety Index
						Additional Transit Emissions	Non Transit Vehicular Emissions (kgs)	Percent of NTVE	Pass. Accidents per 100,000 Boardings	Pass. Accidents per 100,000 Hub/Train Miles	Traffic Accidents per 100,000 Hub/Train Miles	
HR to First / Lorena	E-1 Suspended	●	●	●	●	●	●	●	●	●	●	●
HR to Chavez/ Soto (Without Little Tokyo Station)	E-2 HRT	○	●	○	●	●	●	●	●	●	●	●
LR to Little Tokyo	E-5 LRT	●	●	●	●	●	●	●	●	●	●	●
Bus Transitway -- (Union Station to Whittier Atlantic Blvd.)	E-4 Transitway	●	○	●	○	●	●	●	●	●	●	●

The Westside Corridor

ALTERNATIVE	Model Notes	ECONOMIC				ENVIRONMENT			SAFETY			
		Job Supported, Operating	Jobs Supported, Capital	Gross Area Product, Operating (\$98Millions)	Gross Area Product, Capital (\$98Millions)	Air Quality Index			Safety Index			
						Additional Transit Emissions	Non Transit Vehicular Emissions (kgs)	Percent of NTVE	Pass. Accidents per 100,000 Boardings	Pass. Accidents per 100,000 Hub/Train Miles	Traffic Accidents per 100,000 Hub/Train Miles	Safety Index
HR to Pico / San Vincent	W-1 Suspended	130	14,608	4.37	724.02	N/A (stationary source)	243,021	N/A	0.08	0.00	1.33	Composite
HR to Wilsher / Fairfax	W-4 HRT	192	20,676	6.45	1024.76	N/A (stationary source)	243,023	N/A	0.08	0.00	1.33	Composite
Blue Line Exposition Branch	W-3 LRT	627	23,749	21.05	1177.10	N/A (stationary source)	243,021	N/A	0.15	0.83	4.17	Composite
Exposition Busway	W-2 Busway	163	7,559	5.46	374.65	5,638	243,005	2.32%	0.40	0.06	2.69	Composite

ALTERNATIVE	Model Notes	ECONOMIC				ENVIRONMENT			SAFETY				
		Job Supported, Operating	Jobs Supported, Capital	Gross Area Product, Operating	Gross Area Product, Capital	Air Quality Index			Safety Index				
						Additional Transit Emissions	Non Transit Vehicular Emissions (kgs)	Percent of NTVE	Pass. Accidents per 100,000 Boardings	Pass. Accidents per 100,000 Hub/Train Miles	Traffic Accidents per 100,000 Hub/Train Miles	Safety Index	
HR to Pico / San Vincent	W-1 Suspended												Safest
HR to Wilsher / Fairfax	W-4 HRT												Safest
Blue Line Exposition Branch	W-3 LRT												Safe
Exposition Busway	W-2 Busway												Safer

The San Fernando Valley Corridor

ALTERNATIVE	Model Notes	ECONOMIC				ENVIRONMENT			SAFETY			
		Job Supported, Operating	Jobs Supported, Capital	Gross Area Product, Operating (\$98Millions)	Gross Area Product, Capital (\$98Millions)	Air Quality Index			Safety Index			Safety Index
						Additional Transit Emissions	Non Transit Vehicular Emissions (kgs)	Percent of NTVE	Pass. Accidents per 100,000 Boardings	Pass. Accidents per 100,000 Hub/Train Miles	Traffic Accidents per 100,000 Hub/Train Miles	
HR to I - 405 (Subway / Aerial Combination)	V-1 HRT	376	22126	12.61	1096.64	N/A (stationary source)	243,004	N/A	0.08	0.00	1.33	Composite
LR (or DMU) to Warner Center	V-2 LRT	669	27083	22.44	1342.31	N/A (stationary source)	243,026	N/A	0.15	0.83	4.17	Composite
Bus Transitway (N. Hollywood / Warner Center)	V-3 Busway	145	4538	4.87	224.93	5,622	242,980	2.31%	0.40	0.06	2.69	Composite

ALTERNATIVE	Model Notes	ECONOMIC				ENVIRONMENT			SAFETY				
		Job Supported, Operating	Jobs Supported, Capital	Gross Area Product, Operating	Gross Area Product, Capital	Air Quality Index			Safety Index				
						Additional Transit Emissions	Non Transit Vehicular Emissions (kgs)	Percent of NTVE	Pass. Accidents per 100,000 Boardings	Pass. Accidents per 100,000 Hub/Train Miles	Traffic Accidents per 100,000 Hub/Train Miles		
HR to I - 405 (Subway / Aerial Combination)	V-1 HRT												Safest
LR (or DMU) to Warner Center	V-2 LRT												Safe
(N. Hollywood / Warner Center)	V-3 Busway												Safer

APPENDIX 4
DETAILS OF COST ESTIMATES

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PROJECT UNIT COSTS FOR THE INITIAL RED LINE SEGMENT WERE GENERALLY HIGHER THAN THE NATIONAL AVERAGE*

Select Red Line Unit Costs Relative to National Average for Heavy Rail Projects

Category	Sub-Category	Units	Ratio of MTA Unit Costs to National Average*
Guideway	Underground Guideway	Linear Feet	92%
	Track	Track Feet	154%
Systems	Signal System	Track Feet	106%
	Electrification	Track Feet	146%
Stations	Subway	Station	165%
Vehicles	Revenue Vehicles	Rev. Vehicle	141%
Soft-Costs	Engineering & Design	Linear Feet	792%
	Construction Management	Linear Feet	429%
	Project Management	Linear Feet	556%
	Project Initiation	Linear Feet	668%
	Training/Start-up-Testing	Linear Feet	504%

* National average values inflated to LA price levels, Source: Booz-Allen & Hamilton Inc.

CAPITAL COSTS WERE DEVELOPED FOR EACH ALTERNATIVE BASED ON THE ALIGNMENT DEFINITIONS PRODUCED BY THE ALTERNATIVES ANALYSIS TEAM

- Three sets of independent capital cost estimates were developed for each alternative:
 1. *MTA Estimates* — Capital cost estimates based on MTA's current cost experience
 2. *Independent Estimates* — Independent capital cost estimates based on the average capital cost experience of other US transit operators.
 3. *Best Estimate Capital Costs* — These cost estimates represent the lowest believed to be attainable by MTA and include alternate contracting and management approaches (e.g. Design-Build)

- This costing approach was designed to address concerns that MTA capital costs are frequently higher than industry averages
 - The MTA Estimates provide an upper bound to the cost of each alternative
 - The Independent Estimates provide lower bound cost ranges based on the actual cost and construction experience of other operators — these lower bound estimates may not be attainable by MTA given local cost levels, labor agreements, etc.
 - The Best Estimate Capital Costs utilize:
 - a) MTA unit costs when the MTA costs are at the lower bound, are not significantly different from the independent costs or are believed to be more realistic for local conditions
 - b) Independent costs where attainable by MTA and significantly lower than MTA costs
 - c) A combination of the MTA and Independent based (primarily for soft-costs) based on the level of cost savings believed to be attainable by MTA (e.g., through alternate contracting and management techniques)

THE CAPITAL UNIT COSTS USED TO ESTIMATE THE TOTAL COST OF EACH ALTERNATIVE WERE DERIVED FROM MTA RECORDS AND FROM NATIONAL CAPITAL COSTING EXPERIENCE

- MTA estimates of capital costs for each alternative utilized MTA's "Planning Level" cost estimates:
 - These costs are regularly adjusted to reflect MTA's actual cost experience
 - Level of detail coincides with the asset types definitions defined for this study
 - Costing structure includes MTA's overhead (soft) costs including start-up costs, insurance, design and project management costs and contingencies

- The Independent unit capital cost estimates were derived from Booz •Allen's national capital cost database:
 - Database captures unit capital costs from all light rail, heavy rail and Busway/HOV projects completed in the US over the past 20-year period
 - Level of detail coincides with the asset types definitions defined for this study (see above)
 - Database identifies over 400 capital cost line items
 - Provides detailed descriptions of project alignments, design philosophy and other characteristics
 - Identifies year of project construction
 - Includes right-of-way, environmental mitigation, demolitions, utility relocation
 - Includes all soft-costs (engineering & design, construction management, project management, insurance, testing and start-up, etc.)

- All National Database costs have been converted to a common \$1998 baseline using FTA's Transit Capital Cost Price Index developed by Booz •Allen & Hamilton Inc.

Capital Unit Costs

SAMPLE UNIT COSTS FOR SYSTEMS, STATIONS AND VEHICLES AS USED FOR THE MTA AND INDEPENDENT COST ESTIMATES

DRAFT UNIT CAPITAL COSTS — Guideway and Facilities (\$1998)†

CATEGORY	SUB-CATEGORY	MTA COSTS			INDEPENDENT COSTS*		
		Units	Heavy Rail	Light Rail	Units	Heavy Rail	Light Rail
Guideway	At-Grade-Ballast Guideway	Route Feet	\$2,580	\$900	Route Feet	\$1,000	\$760
	At-Grade-In-Street Guideway	Route Feet	NA	Not Available	Route Feet	NA	\$2,460
	Aerial Structure Guideway	Route Feet	\$6,500	\$6500	Route Feet	\$6,125	\$3,750
	Elevated Fill Guideway	Route Feet	\$3,500	\$3,500	Route Feet	\$1,760	\$690
	Underground Guideway – Cut & Cover	Route Feet	\$12,000	\$8,500	Route Feet	\$12,200	\$12,200
	Underground Guideway - Tunnel	Route Feet	\$10,000	Not Available	Route Feet	\$10,300	\$10,300
	Open Trench Guideway	Route Feet	\$6,500	\$3,500	Route Feet	\$5,500	\$4,500
	Grade Crossing		NA	\$250,000	Each	NA	\$180,000
	Trackwork (Incl. Special Trackwork)	Route Feet	\$420 – \$575	\$420 – \$480	Track Feet	\$675	\$140 – \$260
Facilities	Building	Lump Sum	\$2,000,000	\$25,000,000	Rev. Vehicle	\$7,700,000	\$650,000
	Storage Yard		to	to	Track Feet	\$440	\$160
	Major Shops		\$50,000,000	\$35,000,000	Rev. Vehicle	\$157,000	\$42,000

* National averages based on experience of other US transit operators

† Draft cost estimates — estimates currently under review

UNIT COSTS FOR SYSTEMS, STATIONS AND VEHICLES AS USED FOR THE MTA AND INDEPENDENT COST ESTIMATES

DRAFT UNIT CAPITAL COSTS — Systems, Stations and Vehicles (\$1998)†

CATEGORY	SUB-CATEGORY	MTA COSTS			INDEPENDENT COSTS*		
		Units	Heavy Rail	Light Rail	Units	Heavy Rail	Light Rail
Systems	Train Control	Route Feet	\$2,200	\$1,500	Route Feet	\$1080	\$485
	Traction Power	Route Feet	\$258	\$296	Route Feet	\$660	\$370
	Communications	Route Feet	\$1,500	\$230	Route Feet	\$180	\$83
	Fare Collection	Station	\$750,000	\$240,000	Station	\$1,000,000	\$130,000
Stations	At-Grade	Station	\$36,000,000	\$3,500,000	Station	\$18,000,000	\$1,135,000
	Subway	Station	\$65,000,000	NA	Station	\$53,000,000	NA
	Aerial	Station	\$30,000,000	\$7,500,000	Station	\$22,000,000	\$4,000,000
	Open Trench Station	Station	\$35,000,000	\$28,700,000	Station	\$24,000,000	\$21,000,000
	Retained Fill (Elevated) Station	Station	\$20,000,000	NA	Station	\$18,500,000	NA
	Parking Lots	Space	\$3,161	\$3,000	Space	\$5,500	\$2,437
	Parking Garages	Each	\$5,000,000	Not Available	Space	\$10,000	Not Available
	Signage & Graphics	Station	\$1,500,000		Station	\$300,000	\$35,157
Vehicles	Revenue Vehicles ("LA" Vehicle)	Rev. Vehicle	NA	\$3,200,000	Rev. Vehicle	NA	\$2,002,000
	Revenue Vehicles (Low Floor LRT)	Rev. Vehicle	NA	\$2,400,000	Rev. Vehicle	NA	
Environmental	Hazardous Waste Handling	Route Feet	\$500-\$1,000	\$200	Route Feet	\$100	\$100

* National averages based on experience of other US transit operators

† Draft cost estimates — estimates currently under review

SOFT-COST AS A PERCENT OF HARD-COSTS AND CONTINGENCY FACTORS

DRAFT UNIT CAPITAL COSTS — Soft Cost and Contingency Factors

CATEGORY	SUB-CATEGORY	Units	MTA	INDEPENDENT
Soft Cost Factors	Pre-Revenue Operations	Percent	2.5%	2.0%
	Owners Project Insurance	of	8.0%	6.5%
	Master Agreements	Total	2.5%	2.5%
	“Art for Transit” – Station Artwork	Hard	0.5%	NA
	Professional Services	Costs †	30%-45%	22% to 25%
Contingencies	Guideways & Structures	Percent	10% - 12%	10% - 12%
	Hazardous Waste Handling	of	10% - 12%	10% - 12%
	Stations	Total	12% - 17%	12% - 17%
	Yards, Systems and Vehicles	Cost	8% - 10%	8% - 10%
	Pre-Rev. Operations, Insurance	by	10%	10%
	Right-of-Way	Category ‡	10%	10%
	Professional Services		10%	10%

* National averages based on experience of other US transit operators

† Total hard costs include costs for all guideway, trackwork, stations, systems, vehicles, facilities and other “hard” assets

‡ Ranges reflect the degree of completion/design (i.e., contingency factor declines as a project becomes more defined).

OPERATING AND MAINTENANCE (O&M) COSTS FOR EACH ALTERNATIVE HAVE BEEN DEVELOPED USING MTA'S EXISTING O&M COST MODEL

- O&M Model developed using MTA's detailed budget (approx. 700 line items)
- MTA's O&M model provided the flexibility required to analyze the cost impacts of independent changes in service levels for the Red Line, Blue Line, Green Line and bus system.
- Budget level detail permitted analysis of O&M cost impacts resulting from new technologies (e.g., new farebox systems)
- Model was recalibrated to the FY1 998 budget
- Analysis of the O&M costs for each alternative used input data derived from the alternative's operating plan and travel demand analysis

CAPITAL AND OPERATING COSTS RESULTS

Alternative Capital and Operating Costs

CAPITAL AND OPERATING COSTS (Millions \$1998)

Planning Area	Model Notes	Alternative	Alignment	Route Miles	Total Cost			Cost Per Mile			Annual O&M Costs
					MTA	Lower Bound	Best Est.	MTA	Lower Bound	Best Est.	
Eastside	E1	Suspended Red Line	Union Station east to First/Lorena	3.62	\$922.6	\$739.9	\$794.9	\$254.9	\$204.4	\$219.6	\$10.5
	E2	Red Line 2 Station Extension	Union Station to Chavez / Soto	1.92	\$481.1	\$385.0	\$414.8	\$250.6	\$200.5	\$216.0	\$3.4
	E4*	Busway - At-Grade (with branching routes)	Union Station to Whittier & Atlantic	5.9	\$88.2	\$68.2	\$70.4	\$14.9	\$11.6	\$11.9	\$15.5
	E5*	Light Rail - At-Grade	Union Station to Whittier & Atlantic	5.9	\$430.9	\$351.3	\$371.0	\$73.0	\$59.5	\$62.9	\$9.9
	E6	Light Rail - At-Grade	Union Station south to Little Tokyo	0.4	\$63.4	\$41.8	\$53.1	\$151.0	\$99.5	\$126.4	\$0.2
Westside	W1	Suspended Red Line	Wilshire & Western to Pico & San Vicente	2.6	\$607.4	\$471.6	\$489.3	\$237.3	\$184.2	\$191.1	\$4.4
	W4	Subway Red Line	Below grade to Wilshire	3.17	\$859.7	\$684.0	\$733.6	\$271.2	\$215.8	\$231.4	\$6.5
	W2*	Busway	Exposition	18.5	\$264.3	\$316.1	\$231.1	\$14.3	\$17.1	\$12.5	\$14.7
	W3*	Light Rail	Exposition	18	\$930.8	\$739.2	\$842.9	\$51.7	\$41.1	\$46.8	\$21.2

* Cost estimates for these options do not include extensive analysis of condemnation and/or mitigation requirements. Actual development costs may be higher.

Alternative Capital and Operating Costs

CAPITAL AND OPERATING COSTS – Continued (Millions \$1998)

Planning Area	Model Notes	Alternative	Alignment	Route Miles	Total Cost			Cost Per Mile			Annual O&M Costs
					MTA	Lower Bound	Best Est.	MTA	Lower Bound	Best Est.	
San Fernando Valley	V1	Red Line Extension to I-405	North Hollywood to I-405 Sepulveda	6.01	\$920.0	\$728.1	\$827.7	\$153.1	\$121.1	\$137.7	\$12.7
	V3*	Busway	Warner Center to North Hollywood Red Line Station	14	\$173.0	\$140.8	\$143.8	\$12.4	\$10.1	\$10.3	\$14.0
	V2	Light Rail	Warner Center to North Hollywood Red Line Station	13.8	\$1,126	\$878.4	\$934.5	\$81.6	\$34.6	\$67.7	\$22.6
Systemwide Bus	B5	Expanded Rapid Bus Network (Includes Rapid Bus Base Routes plus additional routes. Costs are in addition to those included in the high technology option))		338.5	\$221.4	\$199.2	\$206.9	\$0.7	\$0.6	\$0.6	\$80.6

* Cost estimates for these options do not include extensive analysis of condemnation and/or mitigation requirements. Actual development costs may be higher.

DETAILED CAPITAL COSTS HAVE BEEN DEVELOPED FOR EACH OF THE PROJECT ALTERNATIVES

- For most capital items, MTA costs were not significantly different from the national average (when adjusted to LA price levels)
- Significant exceptions to this observation include the following asset types:
 - Stations
 - Vehicles
 - Communications
 - Signage and Graphics
 - Project Soft-Costs
- Each of these items offers the potential for project cost savings — in the case of stations, vehicles and soft-costs, these savings may be significant:

Item	Potential Savings (% of asset cost)	Share of Total Project Cost
Stations	5% to 40%	10% to 15%
Vehicles	10% to 25%	10% to 15%
Soft-Costs	20% to 30%	30% to 45%

- The total cost savings attainable from these areas is captured by the “Best Estimates” Costs

BOOZ·ALLEN AND PEER-GROUP ANALYSIS IDENTIFIED BOTH STATION AND VEHICLE COSTS AS HIGHER THAN AVERAGE

Vehicles

- Vehicle costs might be reduced through the use of performance specification which facilitates the use of “off the shelf” technology
- Peer review team members identified MTA as having specification requirements which are considerably more strenuous than the industry average
- Given these requirements, MTA has paid per vehicle costs which are 10% to 25% higher than the industry average for similar vehicles

Stations

- Similarly, the peer review group suggested the station costs might be reduced by:
 - Creating a standardized station design
 - Utilizing less amenities than traditional MTA station facilities
 - Building smaller stations

A VARIETY OF OPTIONS EXIST TO REDUCE PROJECT SOFT COSTS

- “Learning by Doing” — capital development costs tend to decline as agencies expand their rail networks
 - Decreased costs reflect reduced design needs and increased agency construction experience
 - Development costs for the Red Line extension to North Hollywood are less than that for the initial Red Line segment
 - Inflation adjusted capital costs for Washington Metro (WMATA) decreased by between 25% and 33% over the period 1974 and 1988 during which WMATA constructed 10 rail segments

- Design–Build
 - Use of turnkey contracting by US operators is yielding cost savings to sponsoring agencies
 - The highest cost savings originate from reductions in the time required to complete project development
 - The capital costing team will provide order of magnitude estimates of the potential cost savings

SAVINGS IDENTIFIED THROUGH THIS PROCESS WERE APPLIED TO “BEST ESTIMATE” COSTS

PROJECT UNIT COSTS TEND TO DECLINE WHEN NEW SEGMENTS ARE ADDED TO AN EXISTING RAIL NETWORK (I.E., RELATIVE TO THE INITIAL NETWORK INVESTMENT)

- A variety of factors contribute to this cost decrease including:
 - Reduced design costs (components only need to be designed once)
 - Increased agency procurement, project and construction management experience
 - Supplier agreements (refined through successive procurements)
 - One time costs (control center, admin, revenue counting)

- MTA may achieve similar reductions in cost savings by learning from past projects
 - Perform most construction management in-house using MTA staff
 - Limit contracting of construction management duties to specialized areas such as geotechnical and advanced systems
 - Bid more engineering and design work on a competitive basis to greater number of small, specialty contractors

Design–Build (Turnkey)

USE OF DESIGN–BUILD CONTRACTING CAN REDUCE PROJECT CAPITAL COSTS BY 5% TO 10%¹ (HIGHER FOR DBOM – DESIGN/BUILD/OPERATE/MAINTAIN)

- Under a Design–Build contract, a single contractor completes the final design, construction, systems procurement and start-up/tasting of the full project

- D/B reduces costs through the following mechanisms:
 - Schedule compression and reduced price escalation
 - reduced funding constraints
 - elimination of task sequencing buffers
 - overlapping of sequential tasks (where possible)
 - Reduced construction management and administrative costs
 - shorter project duration
 - fewer contract interfaces to coordinate
 - Increased efficiencies of a single contractor
 - consolidated PM functions
 - pooling of risks (performance bonds, insurance)
 - more effective utilization of labor (reduced downtime and delay claims)
 - Reduced incentive for design and delay claims
 - leads to reduced contingency requirements

¹ Based on BAH research for FTA and "Pasadena Turnkey Implementation Analysis" report prepared for MTA by BAH January, 1996.

Design-Build Cost Savings

ESTIMATED COST SAVINGS FROM A DESIGN-BUILD PROCUREMENT BY FUNCTION (AS A PERCENT OF TOTAL PROJECT CAPITAL COSTS)

	<u>(PERCENT OF TOTAL CAPITAL COSTS)</u>	
	Design-Build	DBOM
• Reduced Escalation	2.75	2.75
• Reduced Construction Management Costs	1.63	4.88
• Reduced MTA Project Administration	0.75	0.75
• Economies of Scale	1.3	1.38
• Reduced Contingency	0.75	0.75
• Added Consultant and Legal Support	(1.00)	(1.00)
	<hr/>	<hr/>
CAPITAL COST SAVINGS	6.25%	9.50%
• O&M Cost Savings	0.00	11.88
	<hr/>	<hr/>
O&M AND CAPITAL COST SAVINGS	6.25%	21.38%

THESE ESTIMATES OF D/B COST SAVINGS MAY BE CONSERVATIVE — MARYLAND MTA IS EXPECTING HIGHER OVERALL SAVINGS FOR ITS DESIGN-BUILD LRT EXTENSION PROJECTS

THE O&M COST MODEL'S INPUT, OUTPUT AND PARAMETER SETTINGS HAVE BEEN REVIEWED FOR REASONABILITY AND ACCURACY

- O&M costing team has verified the recalibrated of the MTA O&M model
- The O&M costing team has assessed the reasonability of the model's internal cost parameters (e.g., for fuel, wages, staffing rates, etc.) against industry standards
 - Model estimates are considered reasonable given the modes, network structure and service levels proposed
 - Confidence in the model's predictive accuracy
- The O&M costing team has verified the model parameter settings for each alternative to ensure they accurately reflect the alternative's service characteristics — including number of vehicles, revenue miles, service hours, unit costs and other input values
- The O&M team has assessed the reasonability of model output for each alternative
 - Model output is considered reasonable



CAPITAL COSTS DETAILS



VERSION DATE:

11/6/98 10:59

CAPITAL COSTS BY ALTERNATIVE

Planning Area	Model Run Ranking	Model Notes	Alternative	Alignment	Characteristics	Route Miles	Capital Cost		BEST BEST ESTIMATE	Cost per Mile		BEST BEST ESTIMATE	Annualized Cap Cost		BEST BEST ESTIMATE	Annual O&M Costs	
							MTA	LOWER BOUND		MTA	BAH		MTA	BAH			
Baseline	0	BASE	Baseline		Consent decree to 2006, 1973 + 100 buses, Pasadena light rail to Del Mar Station beginning service in June 2002		NA	NA		NA	NA					NA	
Eastside	1	E1	Suspended Red Line	Union Station east to First/Lorena	Tunnel Sections and Cut and Cover Stations	3.62	\$922.6	\$739.9	\$794.9	\$254.9	\$204.4	\$219.6	\$65.9	\$52.6	\$56.4	\$10.5	
	3	E2	Red Line 2 Station Extension	Union Station to Chavez / Solo	Tunnel Sections and Cut and Cover Stations	1.92	\$481.1	\$385.0	\$414.8	\$250.6	\$200.5	\$216.0	\$34.4	\$27.4	\$29.4	\$3.4	
	5	E4	Busway - At-Grade (with branching routes)	Union Station south along Alameda, eastward along First to Whittier & Atlantic	At-grade dedicated bus lanes in arterial highways	5.9	\$88.2	\$69.2	\$70.4	\$14.9	\$11.6	\$11.9	\$7.2	\$5.6	\$5.8	\$15.5	
	6	E5	Light Rail - At-Grade	Union Station south along Alameda, First, Indiana, and Whittier to Whittier & Atlantic	At-grade in arterial highways	5.9	\$430.9	\$351.3	\$371.0	\$73.0	\$59.5	\$62.9	\$31.8	\$26.2	\$27.4	\$9.9	
			E6	Light Rail - At-Grade	Union Station south to Little Tokyo	At-grade in arterial highways	0.4	\$63.4	\$41.8	\$53.1	\$151.0	\$99.5	\$126.4	\$4.7	\$3.2	\$3.9	\$0.2
	Westside	1	W1	Suspended Red Line	Wilshire & Western to Pico & San Vicente with subway following Wilton and Arlington	Subway	2.6	\$607.4	\$471.6	\$489.3	\$237.3	\$184.2	\$191.1	\$43.4	\$33.5	\$34.7	\$4.4
5		W4	Subway Red Line	Below grade along Wilshire	Subway	3.17	\$859.7	\$684.0	\$733.6	\$271.2	\$215.8	\$231.4	\$61.3	\$48.5	\$52.0	\$6.5	
3		W2	Busway - At-Grade (with branching routes)	LA CBD to Santa Monica (4th and Colorado) via Exposition ROW	At-grade, separate and mixed ROW (Use Exposition ROW)	18.5	\$264.3	\$316.1	\$231.1	\$14.3	\$17.1	\$12.5	\$19.5	\$23.0	\$17.0	\$14.7	
2		W3	Light Rail - At-Grade	Figueroa St. to Santa Monica (4th and Colorado) via Exposition ROW	At-grade, separate and mixed ROW (Use Exposition ROW)	18	\$930.8	\$739.2	\$842.9	\$51.7	\$41.1	\$46.8	\$67.1	\$52.8	\$60.4	\$21.2	



Planning Area	Model Run Ranking	Model Notes	Alternative	Alignment	Characteristics	Route Miles	Capital Cost		BEST BEST ESTIMATE	Cost per Mile		BEST BEST ESTIMATE	Annualized Cap Cost		BEST BEST ESTIMATE	Annual O&M Costs				
							MTA	LOWER BOUND		MTA	BAH		MTA	BAH						
San Fernando Valley	1	V1	Red Line Extension to I-405	North Hollywood to I-405 Sepulveda	Burbank/Chandler ROW	6.01	\$920.0	\$728.1	\$827.7	\$153.1	\$121.1	\$137.7	\$65.3	\$51.7	\$58.6	\$12.7				
	3	V3	Busway (with branching routes)	Warner Center to North Hollywood Red Line Station	Burbank/Chandler ROW	14	\$173.0	\$140.8	\$143.8	\$12.4	\$10.1	\$10.3	\$13.0	\$10.6	\$10.8	\$14.0				
	2	V2	Light Rail	Warner Center to North Hollywood Red Line Station	Burbank/Chandler ROW	13.8	\$1,126.1	\$878.4	\$934.5	\$81.6	\$34.6	\$67.7	\$80.7	\$61.7	\$66.7	\$22.6				
Systemwide	5	B5	Expanded Rapid Bus Network (Includes Rapid Bus Base Routes plus additional routes. Costs are in addition to those included in the high technology option))	Ventura (Univ. City to Warner Ctr.)	At-grade, peak-hour exclusive lane, bus priority signalization	338.5	\$221.4	\$199.2	\$206.9	\$0.7	\$0.6	\$0.6	\$19.4	\$17.6	\$18.2	\$80.6				
				Sherman Way (No. Hollywood to Warner Ctr.)																
				Van Nuys (San Fernando / Sylmer to Ventura to Univ. City)																
				Santa Monica Boulevard																
				Vermont Avenue																
				Western Avenue																
				Crenshaw Avenue																
				Long Beach Boulevard																
				Hollywood - Pasadena																
				Florence																
				Atlantic Garvey																

Notes: Per mile O&M costs for busways is \$92 thousand for Pittsburgh (including snow removal) and \$100 thousand for CALTRANS
 Use \$ 100,000 per lane mile

Safety and Security
 Use \$ 0.11 per pax mile

COST ESTIMATE COVERSHEET

PROJECT: SYSTEMWIDE RAPID BUS
16 LINES
 _____ 0
 _____ 0

EST. HTL
 DATE 11/5/98
 REV.: 2
 \$: 1988 Dollars

SHT. 1
 OF 2

ITEM DESCRIPTION		MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES		\$0	\$0	\$0
1B) HAZARDOUS WASTE HANDLING ALLOWANCE		\$0	\$0	\$0
2) STATIONS		\$43,350,000	\$43,350,000	\$43,350,000
3) MAIN YARD AND SHOP		\$10,830,240	\$10,830,240	\$10,830,240
4) SYSTEMWIDE EQUIPMENT		\$33,468,000	\$33,468,000	\$33,468,000
5) VEHICLES		\$76,500,000	\$73,158,200	\$73,158,200
SUBTOTAL (A) (see page 2 for details)		\$164,148,240	\$160,806,440	\$160,806,440
6) PRE REVENUE OPERATION	2.9%	\$4,760,299	\$4,663,387	\$4,663,387
7) OWNERS INSURANCE	0.0%	\$0	\$0	\$0
8) MASTER AGREEMENTS	0.0%	\$0	\$0	\$0
SUBTOTAL (B)		\$4,760,299	\$4,663,387	\$4,663,387
9) ART FOR TRANSIT (C)	0.0%	\$0	\$0	\$0
SUBTOTAL (C)		\$0	\$0	\$0
10) RIGHT OF WAY (D) ALLOWANCE		\$0	\$0	\$0
SUBTOTAL (D)		\$0	\$0	\$0
11) PROF. SERVICES (E)		\$32,342,989	\$15,639,237	\$22,616,349
SUBTOTAL (E)		\$32,342,989	\$15,639,237	\$22,616,349
12) CONTINGENCY (F)				
A) ITEM 1A	12%	\$0	\$0	\$0
ITEM 1B	12%	\$0	\$0	\$0
B) ITEM 2	10%	\$4,335,000	\$4,335,000	\$4,335,000
C) ITEM 3, 4, & 5	10%	\$12,079,824	\$11,745,644	\$11,745,644
D) ITEM 6, 7, & 8	10%	\$476,030	\$466,339	\$466,339
E) ITEM 10	10%	\$0	\$0	\$0
F) ITEM 11	10%	\$3,234,299	\$1,563,924	\$2,261,635
SUBTOTAL (F)		\$20,125,153	\$18,110,906	\$18,808,618
GRAND TOTAL - 1998 DOLLARS		\$221,376,660	\$199,219,970	\$206,894,793

PROJECT: SYSTEMWIDE RAPID BUS
16 LINES

EST. HTL
 DATE 11/5/98
 REV. 2
 \$: 1998 Dollars

SHT. 2
 OF 2
 XLS _____

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
SUBTOTAL (GUIDEWAY COST)	0				\$0	\$0	\$0
HAZARDOUS WASTE HANDLING ALLOWANCE							
HAZARDOUS WASTE HANDLING ALLOWANCE	0	\$1,500,000	NA	LS	\$0	\$0	\$0
SUBTOTAL (HAZ MAT)					\$0	\$0	\$0
STATION COST							
RAPID BUS STATION STOPS (total cost per directional pair including shelters, pedestrian crosswalks, landscaping, lighting, signage, information kiosks, bus pads)	387	\$50,000	\$50,000	EA	\$19,350,000	\$19,350,000	\$19,350,000
TRANSIT CENTERS	6	\$4,000,000	\$4,000,000	EA	\$24,000,000	\$24,000,000	\$24,000,000
SUBTOTAL (STATION COST)					\$43,350,000	\$43,350,000	\$43,350,000
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)	200	\$54,151	\$54,151	VEH	\$10,830,240	\$10,830,240	\$10,830,240
SUBTOTAL (MAINT. FACIL.)					\$10,830,240	\$10,830,240	\$10,830,240
VEHICLE COST							
REVENUE VEHICLE (including diagnostics, counters, onboard G)	200	\$382,500	\$365,791	EA	\$76,500,000	\$73,158,200	\$73,158,200
SUBTOTAL (VEHICLE COST)					\$76,500,000	\$73,158,200	\$73,158,200
SYSTEM WIDE EQUIPMENT COST							
PRIORITY SIGNALIZATION (BY INTERSECTION)	1255	\$25,000	\$25,000	EA	\$31,375,000	\$31,375,000	\$31,375,000
UNIFIED FARE SYSTEM (INCL RAIL COSTS, EXCL BUS VEH.)		\$22,315,960	\$22,315,960	LS	\$0	\$0	\$0
UNIFIED FARE SYSTEM - BUS FARE BOXES	200	\$5,500	\$5,500	VEH	\$1,100,000	\$1,100,000	\$1,100,000
UNIFIED FARE SYSTEM - CARD/TRANSFER PROCESSORS	200	\$3,600	\$3,600	VEH	\$720,000	\$720,000	\$720,000
UNIFIED FARE SYSTEM - PARTS AND SERVICES	1	\$273,000	\$273,000	LS	\$273,000	\$273,000	\$273,000
GPS/AVL - ON-BOARD VEHICLE EQUIP.	0	\$25,000	\$25,000	VEH	\$0	\$0	\$0
GPS/AVL - TRANSMISSION TOWERS		\$394,000	\$394,000	EA	\$0	\$0	\$0
GPS/AVL - CENTRAL CONTROL		\$1,800,000	\$1,800,000	EA	\$0	\$0	\$0
BUS DIAGNOSTICS PACKAGE (new vehicles only)	0	\$5,000	\$5,000	VEH	\$0	\$0	\$0
ON-BOARD PASSENGER COUNTERS W/ AVL	0	\$2,500	\$2,500	VEH	\$0	\$0	\$0
ON-BOARD PASSENGER COUNTERS W/O AVL		\$7,500	\$7,500	VEH	\$0	\$0	\$0
PASSENGER COUNTER SYSTEM SOFTWARE		\$30,000	\$30,000	RF	\$0	\$0	\$0
ON-BOARD CAMERAS	0	\$3,500	\$3,500	VEH	\$0	\$0	\$0
SUBTOTAL (SYSTEM COST)					\$33,468,000	\$33,468,000	\$33,468,000
TOTAL ESTIMATED COST - 1998 DOLLARS					\$164,148,240	\$160,606,440	\$160,606,440

COST ESTIMATE COVERSHEET

PROJECT: RAPID BUS DEMONSTRATION
3 LINES
0
0

EST. HTL
DATE 11/5/98
REV.: 2
\$: 1988 Dollars

SHT. 1
OF 2

ITEM DESCRIPTION		MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES		\$0	\$0	\$0
1B) HAZARDOUS WASTE HANDLING ALLOWANCE		\$0	\$0	\$0
2) STATIONS		\$7,250,000	\$7,250,000	\$7,250,000
3) MAIN YARD AND SHOP		\$2,166,048	\$2,166,048	\$2,166,048
4) SYSTEMWIDE EQUIPMENT		\$5,418,600	\$5,418,600	\$5,418,600
5) VEHICLES		\$15,300,000	\$14,631,640	\$14,631,640
SUBTOTAL (A) (see page 2 for details)		\$30,134,648	\$29,466,288	\$29,466,288
6) PRE REVENUE OPERATION	2.9%	\$873,905	\$854,522	\$854,522
7) OWNERS INSURANCE	0.0%	\$0	\$0	\$0
8) MASTER AGREEMENTS	0.0%	\$0	\$0	\$0
SUBTOTAL (B)		\$873,905	\$854,522	\$854,522
9) ART FOR TRANSIT (C)	0.0%	\$0	\$0	\$0
SUBTOTAL (C)		\$0	\$0	\$0
10) RIGHT OF WAY (D) ALLOWANCE		\$0	\$0	\$0
SUBTOTAL (D)		\$0	\$0	\$0
11) PROF. SERVICES (E)		\$5,497,993	\$2,658,025	\$3,843,847
SUBTOTAL (E)		\$5,497,993	\$2,658,025	\$3,843,847
12) CONTINGENCY (F)				
A) ITEM 1A	12%	\$0	\$0	\$0
ITEM 1B	12%	\$0	\$0	\$0
B) ITEM 2	10%	\$725,000	\$725,000	\$725,000
C) ITEM 3, 4, & 5	10%	\$2,288,465	\$2,221,629	\$2,221,629
D) ITEM 6, 7, & 8	10%	\$87,390	\$85,452	\$85,452
E) ITEM 10	10%	\$0	\$0	\$0
F) ITEM 11	10%	\$549,799	\$265,803	\$384,385
SUBTOTAL (F)		\$3,650,655	\$3,297,884	\$3,416,466
GRAND TOTAL - 1998 DOLLARS		\$40,157,201	\$38,278,719	\$37,581,123

PROJECT: RAPID BUS DEMONSTRATION
3 LINES

EST. HTL
 DATE 11/5/98
 REV. 2
 \$: 1998 Dollars

SHT. 2
 OF 2
 XLS _____

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
SUBTOTAL (GUIDEWAY COST)	0				\$0	\$0	\$0
HAZARDOUS WASTE HANDLING ALLOWANCE							
SUBTOTAL (HAZ MAT)	0	\$1,500,000	NA	LS	\$0	\$0	\$0
STATION COST							
RAPID BUS STATION STOPS (total cost per directional pair including shelters, pedestrian crosswalks, landscaping, lighting, signage, information kiosks, bus pads)	65	\$50,000	\$50,000	EA	\$3,250,000	\$3,250,000	\$3,250,000
TRANSIT CENTERS	1	\$4,000,000	\$4,000,000	EA	\$4,000,000	\$4,000,000	\$4,000,000
SUBTOTAL (STATION COST)					\$7,250,000	\$7,250,000	\$7,250,000
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)	40	\$54,151	\$54,151	VEH	\$2,166,048	\$2,166,048	\$2,166,048
SUBTOTAL (MAINT. FACIL.)					\$2,166,048	\$2,166,048	\$2,166,048
VEHICLE COST							
REVENUE VEHICLE (including diagnostics, counters, onboard G)	40	\$382,500	\$365,791	EA	\$15,300,000	\$14,631,640	\$14,631,640
SUBTOTAL (VEHICLE COST)					\$15,300,000	\$14,631,640	\$14,631,640
SYSTEM WIDE EQUIPMENT COST							
PRIORITY SIGNALIZATION (BY INTERSECTION)	200	\$25,000	\$25,000	EA	\$5,000,000	\$5,000,000	\$5,000,000
UNIFIED FARE SYSTEM (INCL RAIL COSTS, EXCL BUS VEH.)		\$22,315,960	\$22,315,960	LS	\$0	\$0	\$0
UNIFIED FARE SYSTEM - BUS FARE BOXES	40	\$5,500	\$5,500	VEH	\$220,000	\$220,000	\$220,000
UNIFIED FARE SYSTEM - CARD/TRANSFER PROCESSORS	40	\$3,600	\$3,600	VEH	\$144,000	\$144,000	\$144,000
UNIFIED FARE SYSTEM - PARTS AND SERVICES	1	\$54,600	\$54,600	LS	\$54,600	\$54,600	\$54,600
GPS/AVL - ON-BOARD VEHICLE EQUIP.	0	\$25,000	\$25,000	VEH	\$0	\$0	\$0
GPS/AVL - TRANSMISSION TOWERS		\$394,000	\$394,000	EA	\$0	\$0	\$0
GPS/AVL - CENTRAL CONTROL		\$1,800,000	\$1,800,000	EA	\$0	\$0	\$0
BUS DIAGNOSTICS PACKAGE (new vehicles only)	0	\$5,000	\$5,000	VEH	\$0	\$0	\$0
ON-BOARD PASSENGER COUNTERS W/ AVL	0	\$2,500	\$2,500	VEH	\$0	\$0	\$0
ON-BOARD PASSENGER COUNTERS W/O AVL		\$7,500	\$7,500	VEH	\$0	\$0	\$0
PASSENGER COUNTER SYSTEM SOFTWARE		\$30,000	\$30,000	RF	\$0	\$0	\$0
ON-BOARD CAMERAS	0	\$3,500	\$3,500	VEH	\$0	\$0	\$0
SUBTOTAL (SYSTEM COST)					\$5,418,600	\$5,418,600	\$5,418,600
TOTAL ESTIMATED COST - 1998 DOLLARS					\$30,134,640	\$29,466,280	\$29,466,280

COST ESTIMATE COVERSHEET

PROJECT: EASTSIDE HEAVY RAIL
UNION STATION TO 1ST/LORENA

EST. HTL
DATE 11/5/98
REV.: 0
\$: 1988 Dollars

SHT. 1
OF 2

ITEM DESCRIPTION		MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES		\$211,839,000	\$198,384,257	\$211,839,000
1B) HAZARDOUS WASTE HANDLING ALLOWANCE		\$2,470,000	\$2,470,000	\$2,470,000
2) STATIONS		\$220,000,000	\$206,652,593	\$206,652,593
3) MAIN YARD AND SHOP		\$0	\$0	\$0
4) SYSTEMWIDE EQUIPMENT		\$66,806,700	\$51,900,046	\$49,860,695
5) VEHICLES		\$0	\$0	\$0
SUBTOTAL (A) (see page 2 for details)		\$501,115,700	\$459,406,896	\$470,822,288
6) PRE REVENUE OPERATION	2.5%	\$12,527,893	\$11,485,172	\$11,770,557
7) OWNERS INSURANCE	8.0%	\$40,089,256	\$36,752,552	\$37,665,783
8) MASTER AGREEMENTS	2.5%	\$12,527,893	\$11,485,172	\$11,770,557
SUBTOTAL (B)		\$65,145,041	\$59,722,897	\$61,206,897
9) ART FOR TRANSIT (C)	0.5%	\$2,505,579	\$2,297,034	\$2,354,111
SUBTOTAL (C)		\$2,505,579	\$2,297,034	\$2,354,111
10) RIGHT OF WAY (D) INCL. COST TO DATE (\$17,728,000)		\$36,609,000	\$36,609,000	\$36,609,000
SUBTOTAL (D)		\$36,609,000	\$36,609,000	\$36,609,000
11) PROF. SERVICES (E) INCL. COST TO DATE (\$90,000,000)		\$242,150,128	\$122,803,491	\$159,877,843
SUBTOTAL (E)		\$242,150,128	\$122,803,491	\$159,877,843
12) CONTINGENCY (F)				
A) ITEM 1A	10%	\$21,183,900	\$19,838,426	\$21,183,900
ITEM 1B	10%	\$247,000	\$247,000	\$247,000
B) ITEM 2	8%	\$17,600,000	\$16,532,207	\$16,532,207
C) ITEM 3, 4, & 5	8%	\$5,344,536	\$4,152,004	\$3,988,856
D) ITEM 6, 7, & 8	10%	\$6,514,504	\$5,972,290	\$6,120,690
E) ITEM 10 B	0%	INCL. IN ITEM	INCL. IN ITEM	INCL. IN ITEM
F) ITEM 11	10%	\$24,215,013	\$12,280,349	\$15,987,784
SUBTOTAL (F)		\$75,104,953	\$59,022,276	\$64,060,437
GRAND TOTAL - 1998 DOLLARS		\$922,630,400	\$739,861,594	\$794,930,577

PROJECT: EASTSIDE HEAVY RAIL
UNION STATION TO 1ST/LORENA

EST. HTL
DATE 11/5/98
REV. 0
\$: 1988 Dollars

SHT. 2
OF 2
XLS _____

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
TWIN TUNNEL	19124	\$11,000	\$10,296	RF	\$210,364,000	\$196,909,257	\$210,364,000
SEISMIC SECTION ADDER	295	\$5,000	\$5,000	RF	\$1,475,000	\$1,475,000	\$1,475,000
<hr/>							
SUBTOTAL (GUIDEWAY COST)	19124				\$211,839,000	\$198,384,257	\$211,839,000
HAZARDOUS WASTE HANDLING ALLOWANCE							
	3800	\$650	NA	RF	\$2,470,000	\$2,470,000	\$2,470,000
<hr/>							
SUBTOTAL (HAZ MAT)					\$2,470,000	\$2,470,000	\$2,470,000
STATION COST							
SUBWAY STATIONS	2	\$40,000,000	\$36,663,148	EA	\$80,000,000	\$73,326,297	\$73,326,297
SUBWAY STATIONS W/ CROSSOVER	2	\$70,000,000	\$66,663,148	EA	\$140,000,000	\$133,326,297	\$133,326,297
<hr/>							
SUBTOTAL (STATION COST)					\$220,000,000	\$206,652,593	\$206,652,593
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)				LS	\$0	\$0	\$0
<hr/>							
SUBTOTAL (MAINT. FACIL.)					\$0	\$0	\$0
VEHICLE COST							
REVENUE VEHICLE				EA	\$0	\$0	\$0
<hr/>							
SUBTOTAL (VEHICLE COST)					\$0	\$0	\$0
SYSTEM WIDE EQUIPMENT COST							
TRACKWORK (INCL. SPECIAL TRACKWORK)	19124	\$575	\$674	RF	\$10,996,300	\$12,890,891	\$10,996,300
TRAIN CONTROL STA.	4	\$1,100,000	NA	EA	\$4,400,000	NA	\$4,400,000
TRAIN CONTROL GDWY	19124	\$1,100	\$880	RF	\$21,036,400	\$16,835,347	\$21,036,400
TRACTION POWER STA. (XFMR)	3	\$1,750,000	\$4,235,377	EA	\$5,250,000	\$12,706,132	\$5,250,000
COMMUNICATIONS	19124	\$1,000	\$208	RF	\$19,124,000	\$3,969,375	\$3,969,375
FARE COLLECTION	4	\$750,000	\$1,072,420	LS	\$3,000,000	\$4,289,681	\$3,000,000
SIGNAGE & GRAPHICS	4	\$750,000	\$302,155	LS	\$3,000,000	\$1,208,620	\$1,208,620
<hr/>							
SUBTOTAL (SYSTEM COST)					\$66,806,700	\$51,900,046	\$49,860,695

TOTAL ESTIMATED COST - 1988 DOLLARS	\$501,115,700	\$458,406,896	\$470,822,288
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COST ESTIMATE COVERSHEET

PROJECT: EASTSIDE HEAVEY RAIL EST. HTL SHT. 1
UNION STATION TO CHAVEZ/SOTO DATE 11/5/98 OF 2
 REV.: 0
 \$: 1988 Dollars

ITEM DESCRIPTION		MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES		\$112,751,000	\$105,633,861	\$112,751,000
1B) HAZARDOUS WASTE HANDLING ALLOWANCE		\$2,470,000	\$2,470,000	\$2,470,000
2) STATIONS		\$110,000,000	\$103,326,297	\$103,326,297
3) MAIN YARD AND SHOP		\$0	\$0	\$0
4) SYSTEMWIDE EQUIPMENT		\$35,760,300	\$27,294,227	\$26,848,285
5) VEHICLES		\$0	\$0	\$0
SUBTOTAL (A) (see page 2 for details)		\$260,981,300	\$238,724,385	\$245,395,582
6) PRE REVENUE OPERATION	2.5%	\$6,524,533	\$5,968,110	\$6,134,890
7) OWNERS INSURANCE	8.0%	\$20,878,504	\$19,097,951	\$19,631,647
8) MASTER AGREEMENTS	2.5%	\$6,524,533	\$5,968,110	\$6,134,890
SUBTOTAL (B)		\$33,927,569	\$31,034,170	\$31,901,426
9) ART FOR TRANSIT (C)	0.5%	\$1,304,907	\$1,193,622	\$1,226,978
SUBTOTAL (C)		\$1,304,907	\$1,193,622	\$1,226,978
10) RIGHT OF WAY (D) INCL. COST TO DATE (\$17,728,000)		\$19,402,770	\$19,402,770	\$19,402,770
SUBTOTAL (D)		\$19,402,770	\$19,402,770	\$19,402,770
11) PROF. SERVICES (E) INCL. COST TO DATE (approx \$32,500,000)		\$126,246,618	\$63,896,616.02	\$83,419,491.57
SUBTOTAL (E)		\$126,246,618	\$63,896,616	\$83,419,492
12) CONTINGENCY (F)				
A) ITEM 1A	10%	\$11,275,100	\$10,563,386	\$11,275,100
ITEM 1B	10%	\$247,000	\$247,000	\$247,000
B) ITEM 2	8%	\$8,800,000	\$8,266,104	\$8,266,104
C) ITEM 3, 4, & 5	8%	\$2,860,824	\$2,183,538	\$2,147,863
D) ITEM 6, 7, & 8	10%	\$3,392,756.90	\$3,103,417.00	\$3,190,142.57
E) ITEM 10 B	0%	INCL. IN ITEM	INCL. IN ITEM	INCL. IN ITEM
F) ITEM 11	10%	\$12,624,661.82	\$6,389,661.60	\$8,341,949.16
SUBTOTAL (F)		\$39,200,343	\$30,753,107	\$33,468,158
GRAND TOTAL - 1998 DOLLARS		\$481,053,506	\$385,004,669	\$414,814,405

PROJECT: EASTSIDE HEAVY RAIL
UNION STATION TO CHAVEZ/SOTO

EST. HTL
DATE 11/5/98
REV. 0
\$: 1988 Dollars

SHT. 2
OF 2
XLS _____

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
TWIN TUNNEL	10116	\$11,000	\$10,296	RF	\$111,276,000	\$104,158,861	\$111,276,000
SEISMIC SECTION ADDER	295	\$5,000	\$5,000	RF	\$1,475,000	\$1,475,000	\$1,475,000
<hr/>							
SUBTOTAL (GUIDEWAY COST)	10116				\$112,751,000	\$105,633,861	\$112,751,000
HAZARDOUS WASTE HANDLING							
ALLOWANCE	3800	\$650	NA	RF	\$2,470,000	\$2,470,000	\$2,470,000
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SUBTOTAL (HAZ MAT)					\$2,470,000	\$2,470,000	\$2,470,000
STATION COST							
SUBWAY STATIONS	1	\$40,000,000	\$36,663,148	EA	\$40,000,000	\$36,663,148	\$36,663,148
SUBWAY STATIONS W/ CROSSOVER	1	\$70,000,000	\$66,663,148	EA	\$70,000,000	\$66,663,148	\$66,663,148
<hr/>							
SUBTOTAL (STATION COST)					\$110,000,000	\$103,326,297	\$103,326,297
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)				LS	\$0	\$0	\$0
<hr/>							
SUBTOTAL (MAINT. FACIL.)					\$0	\$0	\$0
VEHICLE COST							
REVENUE VEHICLE				EA	\$0	\$0	\$0
<hr/>							
SUBTOTAL (VEHICLE COST)					\$0	\$0	\$0
SYSTEM WIDE EQUIPMENT COST							
TRACKWORK (INCL. SPECIAL TRACKWORK)	10116	\$575	\$674	RF	\$5,816,700	\$6,818,879	\$5,816,700
TRAIN CONTROL STA.	2	\$1,100,000	NA	EA	\$2,200,000	NA	\$2,200,000
TRAIN CONTROL GDWY	10116	\$1,100	\$880	RF	\$11,127,600	\$8,905,374	\$11,127,600
TRACTION POWER STA. (XFMR)	2	\$1,750,000	\$3,360,574	EA	\$3,500,000	\$6,721,148	\$3,500,000
COMMUNICATIONS	10116	\$1,000	\$208	RF	\$10,116,000	\$2,099,675	\$2,099,675
FARE COLLECTION	2	\$750,000	\$1,072,420	LS	\$1,500,000	\$2,144,841	\$1,500,000
SIGNAGE & GRAPHICS	2	\$750,000	\$302,155	LS	\$1,500,000	\$604,310	\$604,310
<hr/>							
SUBTOTAL (SYSTEM COST)					\$35,760,300	\$27,294,227	\$26,848,285
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TOTAL ESTIMATED COST - 1998 DOLLARS					\$260,981,300	\$238,724,385	\$245,395,582

COST ESTIMATE COVERSHEET

PROJECT: EASTSIDE LRT
UNION STATION TO WHITTIER/ATLANTIC

EST. HTL
 DATE 11/5/98
 REV.: 0
 \$: 1988 Dollars

SHT. 1
 OF 2

ITEM DESCRIPTION		MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES		\$84,025,000	\$77,334,311	\$84,025,000
1B) HAZARDOUS WASTE HANDLING ALLOWANCE		\$1,500,000	\$1,500,000	\$1,500,000
2) STATIONS		\$3,500,000	\$4,593,819	\$3,500,000
3) MAIN YARD AND SHOP		\$35,000,000	\$27,048,316	\$35,000,000
4) SYSTEMWIDE EQUIPMENT		\$37,657,050	\$46,792,559	\$37,657,050
5) VEHICLES		\$85,000,000	\$68,281,115	\$68,281,115
SUBTOTAL (A) (see page 2 for details)		\$246,682,050	\$225,550,120	\$229,963,165
6) PRE REVENUE OPERATION	2.5%	\$6,167,051	\$5,638,753	\$5,749,079
7) OWNERS INSURANCE	8.0%	\$19,734,564	\$18,044,010	\$18,397,053
8) MASTER AGREEMENTS	2.5%	\$6,167,051	\$5,638,753	\$5,749,079
SUBTOTAL (B)		\$32,068,667	\$29,321,516	\$29,895,211
9) ART FOR TRANSIT (C)	0.5%	\$1,233,410	\$1,127,751	\$1,149,816
SUBTOTAL (C)		\$1,233,410	\$1,127,751	\$1,149,816
10) RIGHT OF WAY (D)		\$5,000,000	\$5,000,000	\$5,000,000
SUBTOTAL (D)		\$5,000,000	\$5,000,000	\$5,000,000
11) PROF. SERVICES (E)		\$110,195,811	\$61,624,777	\$74,482,294
SUBTOTAL (E)		\$110,195,811	\$61,624,777	\$74,482,294
12) CONTINGENCY (F)				
A) ITEM 1A	10%	\$8,402,500	\$7,733,431	\$8,402,500
ITEM 1B	10%	\$150,000	\$150,000	\$150,000
B) ITEM 2	8%	\$280,000	\$367,505	\$280,000
C) ITEM 3, 4, & 5	8%	\$12,612,564	\$11,369,759	\$11,275,053
D) ITEM 6, 7, & 8	10%	\$3,206,867	\$2,932,151.56	\$2,989,521
E) ITEM 10	0%	\$0	\$0	\$0
F) ITEM 11	10%	\$11,019,581	\$6,162,478	\$7,448,229
SUBTOTAL (F)		\$35,671,512	\$28,715,325	\$30,545,304
GRAND TOTAL - 1998 DOLLARS		\$430,851,450	\$351,339,488	\$371,035,790

PROJECT: EASTSIDE LRT
UNION STATION TO WHITTIER/ATLANTIC

EST. HTL
DATE 11/5/98
REV. 0
\$: 1988 Dollars

SHT. 2
OF 2
XLS

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
BRIDGE OVER 101 FREEWAY (SEGMENTAL)	800	\$10,500	\$3,750	RF	\$8,400,000	\$3,000,045	\$8,400,000
AT-GRADE-GUIDEWAY (including street restoration @ \$250 RF and sidewalk reconstruction @ \$400 RF)	30250	\$2,500	\$2,457	RF	\$75,625,000	\$74,334,266	\$75,625,000
SUBTOTAL (GUIDEWAY COST)					\$84,025,000	\$77,334,311	\$84,025,000
HAZARDOUS WASTE HANDLING ALLOWANCE							
	1	\$1,500,000		LS	\$1,500,000	\$1,500,000	\$1,500,000
SUBTOTAL (HAZ MAT)					\$1,500,000	\$1,500,000	\$1,500,000
STATION COST							
PASSENGER LOADING/UNLOADING FACILITIES	7	\$500,000	\$656,260	EA	\$3,500,000	\$4,593,819	\$3,500,000
SUBTOTAL (STATION COST)					\$3,500,000	\$4,593,819	\$3,500,000
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)	1	\$35,000,000		LS	\$35,000,000	\$27,048,316	\$35,000,000
SUBTOTAL (MAINT. FACIL.)					\$35,000,000	\$27,048,316	\$35,000,000
VEHICLE COST							
REVENUE VEHICLE	34	\$2,500,000	\$2,008,268		\$85,000,000	\$68,281,115	\$68,281,115
SUBTOTAL (VEHICLE COST)					\$85,000,000	\$68,281,115	\$68,281,115
SYSTEM WIDE EQUIPMENT COST							
TRACKWORK (INCL. SPECIAL TRACKWORK)	31050	\$421	\$522	RF	\$13,072,050	\$16,207,294	\$13,072,050
TRAIN CONTROL STA.	6	\$160,000	Included below	EA	\$960,000	Included below	\$960,000
TRAIN CONTROL GDWY	31050	\$500	\$485	RF	\$15,525,000	\$15,055,647	\$15,525,000
TRACTION POWER STA. (XFMR)	6	\$1,100,000	\$1,927,875	EA	\$6,600,000	\$11,567,248	\$6,600,000
COMMUNICATIONS	31050	\$0	\$90	RF	\$0	\$2,807,414	\$0
FARE COLLECTION	6	\$250,000	\$151,477	EA	\$1,500,000	\$908,860	\$1,500,000
SIGNAGE & GRAPHICS	6	\$0	\$41,016	EA	\$0	\$246,097	\$0
SUBTOTAL (SYSTEM COST)					\$37,657,050	\$46,792,559	\$37,657,050
TOTAL ESTIMATED COST - 1998 DOLLARS					\$246,682,050	\$226,550,120	\$229,963,165

COST ESTIMATE COVERSHEET

PROJECT: <u>EASTSIDE BUS TRANSITWAY</u>	EST. <u>HTL</u>	SHT. <u>1</u>	
<u>0</u>	DATE <u>11/6/98</u>	OF <u>2</u>	
<u>UNION STATION TO</u>	REV.: <u>0</u>		
<u>WHITTIER/ATLANTIC VIA ALAMEDA</u>	\$: <u>1988 Dollars</u>		

ITEM DESCRIPTION	MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES	\$15,499,200	\$17,882,006	\$15,499,200
1B) HAZARDOUS WASTE HANDLING ALLOWANCE	\$1,500,000	\$1,500,000	\$1,500,000
2) STATIONS	\$3,535,000	\$3,684,224	\$3,535,000
3) MAIN YARD AND SHOP	\$5,000,000	\$5,000,000	\$5,000,000
4) SYSTEMWIDE EQUIPMENT	\$11,640,000	\$5,873,817	\$5,873,817
5) VEHICLES	\$11,900,000	\$11,331,894	\$11,331,894
SUBTOTAL (A) (see page 2 for details)	\$49,074,200	\$45,271,941	\$42,739,911
6) PRE REVENUE OPERATION	2.5% \$1,226,855	\$1,131,799	\$1,068,498
7) OWNERS INSURANCE	8.0% \$3,925,936	\$3,621,755	\$3,419,193
8) MASTER AGREEMENTS	5.0% \$2,453,710	\$2,263,597	\$2,136,996
SUBTOTAL (B)	\$7,606,501	\$7,017,151	\$6,624,686
9) ART FOR TRANSIT (C)	0.5% \$245,371	\$226,360	\$213,700
SUBTOTAL (C)	\$245,371	\$226,360	\$213,700
10) RIGHT OF WAY (D)	\$0	\$0	\$0
SUBTOTAL (D)	\$0	\$0	\$0
11) PROF. SERVICES (E)	\$22,770,429	\$8,897,055	\$13,881,923
SUBTOTAL (E)	\$22,770,429	\$8,897,055	\$13,881,923
12) CONTINGENCY (F)			
A) ITEM 1A	12%	\$1,859,904	\$1,859,904
ITEM 1B	12%	\$180,000	\$180,000
B) ITEM 2	17%	\$600,950	\$600,950
C) ITEM 3, 4, & 5	10%	\$2,854,000	\$2,220,571
D) ITEM 6, 7, & 8	10%	\$760,650	\$662,469
E) ITEM 10	10%	\$0	\$0
F) ITEM 11	10%	\$2,277,043	\$889,705
SUBTOTAL (F)	\$8,532,547	\$6,764,150	\$6,912,086
GRAND TOTAL: 1988 DOLLARS	\$86,229,048	\$88,178,656	\$70,372,306

PROJECT: EASTSIDE BUS TRANSITWAY
UNION STATION TO
WHITTIER/ATLANTIC VIA ALAMEDA

EST. HTL
DATE 11/6/98
REV. 0
\$: 1998 Dollars

SHT. 2
OF 2
XLS

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
AT GRADE BUSWAY	29370	\$320	\$466	RF	\$9,398,400	\$13,685,288	\$9,398,400
AT GRADE BUSWAY @ STATION	2880	\$535	Incl in above	RF	\$1,540,800	Incl in above	\$1,540,800
STREET IMPROVEMENTS @ XINGS	30	\$152,000	\$139,891	EA	\$4,560,000	\$4,196,718	\$4,560,000
SUBTOTAL (GUIDEWAY COST)	32280				\$15,499,200	\$17,882,006	\$15,499,200
HAZARDOUS WASTE HANDLING ALLOWANCE							
ALLOWANCE	1	\$1,500,000	NA	LS	\$1,500,000	\$1,500,000	\$1,500,000
SUBTOTAL (HAZ MAT)					\$1,500,000	\$1,500,000	\$1,500,000
STATION COST							
AT GRADE STATION (120 FT. SIDE PLATFORM) (including finishes, landscaping, canopies, lighting & signage)	7	\$505,000	\$526,318	EA	\$3,535,000	\$3,684,224	\$3,535,000
SUBTOTAL (STATION COST)					\$3,535,000	\$3,684,224	\$3,535,000
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)	1	\$5,000,000	\$5,000,000		\$5,000,000	\$5,000,000	\$5,000,000
SUBTOTAL (MAINT. FACIL.)					\$5,000,000	\$5,000,000	\$5,000,000
VEHICLE COST							
REVENUE VEHICLE	34	\$350,000	\$333,291		\$11,900,000	\$11,331,894	\$11,331,894
SUBTOTAL (VEHICLE COST)					\$11,900,000	\$11,331,894	\$11,331,894
SYSTEM WIDE EQUIPMENT COST							
PRIORITY SIGNALIZATION	1	\$2,580,000	\$750,000	LS	\$2,580,000	\$750,000	\$750,000
TICKET VENDING MACHINES	52	\$75,000	NA	EA	\$3,900,000	\$908,859	\$908,859
COMMUNICATIONS	32250	\$50	\$24	RF	\$1,612,500	\$774,418	\$774,418
GUIDEWAY LIGHTING INCL. ELECTRIFICATION	32250	\$60	\$60	RF	\$1,935,000	\$1,935,000	\$1,935,000
SECURITY	32250	\$30	\$30	RF	\$967,500	\$967,500	\$967,500
SIGNAGE/GRAPHICS (OTHER THAN STATIONS)	32250	\$20	\$17	RF	\$645,000	\$538,040	\$538,040
SUBTOTAL (SYSTEM COST)					\$11,640,000	\$5,873,817	\$5,873,817
TOTAL ESTIMATED COST - 1998 DOLLARS					\$49,074,200	\$45,271,941	\$42,739,911

COST ESTIMATE COVERSHEET

PROJECT: WESTSIDE HEAVY RAIL
WILSHIRE/WESTERN TO
VENICE/SAN VICENTE
SUBWAY

EST. HTL
DATE 11/5/98
REV.: 0
\$: 1988 Dollars

SHT. 1
OF 2

ITEM DESCRIPTION		MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES		\$136,959,000	\$137,766,958	\$136,959,000
1B) HAZARDOUS WASTE HANDLING ALLOWANCE		\$6,773,500	\$6,773,500	\$6,773,500
2) STATIONS		\$108,000,000	\$84,954,348	\$84,954,348
3) MAIN YARD AND SHOP		\$0	\$0	\$0
4) SYSTEMWIDE EQUIPMENT		\$44,938,225	\$35,619,075	\$33,307,348
5) VEHICLES		\$0	\$0	\$0
SUBTOTAL (A) (see page 2 for details)		\$296,670,725	\$265,113,881	\$261,994,196
6) PRE REVENUE OPERATION	2.5%	\$7,416,768	\$6,627,847	\$6,549,855
7) OWNERS INSURANCE	8.0%	\$23,733,658	\$21,209,110	\$20,959,536
8) MASTER AGREEMENTS	2.5%	\$7,416,768	\$6,627,847	\$6,549,855
SUBTOTAL (B)		\$38,567,194	\$34,464,805	\$34,059,245
9) ART FOR TRANSIT (C)	0.5%	\$1,483,354	\$1,325,569	\$1,309,971
SUBTOTAL (C)		\$1,483,354	\$1,325,569	\$1,309,971
10) RIGHT OF WAY (D) ALLOWANCE EQUIVALENT TO ADOPTED ALIGNMENT		\$44,000,000	\$44,000,000	\$44,000,000
SUBTOTAL (D)		\$44,000,000	\$44,000,000	\$44,000,000
11) PROF. SERVICES (E) INCL. COST TO DATE		\$162,129,050	\$75,900,945	\$95,581,755
SUBTOTAL (E)		\$162,129,050	\$75,900,945	\$95,581,755
12) CONTINGENCY (F)				
A) ITEM 1A	12%	\$16,435,080	\$16,532,035	\$16,435,080
ITEM 1B	12%	\$812,820	\$812,820	\$812,820
B) ITEM 2	17%	\$18,360,000	\$14,442,239	\$14,442,239
C) ITEM 3, 4, & 5	10%	\$4,493,823	\$3,561,908	\$3,330,735
D) ITEM 6, 7, & 8	10%	\$3,856,719	\$3,446,480	\$3,405,925
E) ITEM 10	10%	\$4,400,000	\$4,400,000	\$4,400,000
F) ITEM 11	10%	\$16,212,905	\$7,590,094	\$9,558,176
SUBTOTAL (F)		\$64,571,347	\$50,785,576	\$52,384,974
GRAND TOTAL - 1998 DOLLARS		\$607,421,670	\$471,590,776	\$489,330,142

PROJECT: WESTSIDE HEAVY RAIL
WILSHIRE/WESTERN TO
VENICE/SAN VICENTE
SUBWAY

EST. HTL
DATE 11/5/98
REV. 0
\$: 1988 Dollars

SHT. 2
OF 2
XLS

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
TWIN TUNNEL	10190	\$10,000	\$10,296	RF	\$101,900,000	\$104,920,798	\$101,900,000
CUT & COVER GUIDEWAY	2407	\$12,000	\$12,255	RF	\$28,884,000	\$29,497,228	\$28,884,000
OPEN TRENCH GUIDEWAY	950	\$6,500	\$3,525	RF	\$6,175,000	\$3,348,933	\$6,175,000
					\$0	\$0	\$0
					\$0	\$0	\$0
SUBTOTAL (GUIDEWAY COST)	13547				\$136,959,000	\$137,766,958	\$136,959,000
HAZARDOUS WASTE HANDLING							
ALLOWANCE (incl. La Brea Tar Pits)	13547	\$500	NA	RF	\$6,773,500	\$6,773,500	\$6,773,500
SUBTOTAL (HAZ MAT)					\$6,773,500	\$6,773,500	\$6,773,500
STATION COST							
SUBWAY STATION	1	\$65,000,000	\$53,037,724	EA	\$65,000,000	\$53,037,724	\$53,037,724
OPEN TRENCH STATION	1	\$35,000,000	\$23,916,624	EA	\$35,000,000	\$23,916,624	\$23,916,624
BUS FACILITIES	1	\$3,000,000	\$3,000,000	EA	\$3,000,000	\$3,000,000	\$3,000,000
PARKING STRUCTURE	1	\$5,000,000	\$5,000,000	EA	\$5,000,000	\$5,000,000	\$5,000,000
SUBTOTAL (STATION COST)					\$108,000,000	\$84,954,348	\$84,954,348
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)					\$0	\$0	\$0
SUBTOTAL (MAINT. FACIL.)					\$0	\$0	\$0
VEHICLE COST							
REVENUE VEHICLE					\$0	\$0	\$0
SUBTOTAL (VEHICLE COST)					\$0	\$0	\$0
SYSTEM WIDE EQUIPMENT COST							
TRACKWORK (INCL. SPECIAL TRACKWORK)	13547	\$575	\$674	RF	\$7,789,525	\$9,131,609	\$7,789,525
TRAIN CONTROL STA.	2	\$1,100,000	NA	EA	\$2,200,000	NA	\$2,200,000
TRAIN CONTROL GDWY	13547	\$1,100	\$880	RF	\$14,901,700	\$11,925,771	\$14,901,700
TRACTION POWER STA. (XFMR)	2	\$1,750,000	\$4,500,365	EA	\$3,500,000	\$9,000,731	\$3,500,000
COMMUNICATIONS	13547	\$1,000	\$208	RF	\$13,547,000	\$2,811,813	\$2,811,813
FARE COLLECTION	2	\$750,000	\$1,072,420	LS	\$1,500,000	\$2,144,841	\$1,500,000
SIGNAGE & GRAPHICS	2	\$750,000	\$302,155	LS	\$1,500,000	\$604,310	\$604,310
SUBTOTAL (SYSTEM COST)					\$44,938,225	\$35,619,075	\$33,307,348
TOTAL ESTIMATED COST - 1988 DOLLARS					\$296,670,725	\$265,113,881	\$261,994,196

COST ESTIMATE COVERSHEET

PROJECT: WESTSIDE HEAVY RAIL
WILSHIRE/WESTERN TO
WILSHIRE/FAIRFAX
SUBWAY ALIGNMENT

EST. HTL
DATE 11/5/98
REV.: 0
\$: 1988 Dollars

SHT. 1
OF 2

ITEM DESCRIPTION		MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES		\$184,250,000	\$172,465,492	\$184,250,000
1B) HAZARDOUS WASTE HANDLING ALLOWANCE		\$16,750,000	\$16,750,000	\$16,750,000
2) STATIONS		\$150,000,000	\$147,789,673	\$147,789,673
3) MAIN YARD AND SHOP		\$0	\$0	\$0
4) SYSTEMWIDE EQUIPMENT		\$57,856,250	\$44,765,287	\$43,239,342
5) VEHICLES		\$0	\$0	\$0
SUBTOTAL (A) (see page 2 for details)		\$408,856,250	\$381,770,452	\$392,029,015
6) PRE REVENUE OPERATION	2.5%	\$10,221,406	\$9,544,261	\$9,800,725
7) OWNERS INSURANCE	8.0%	\$32,708,500	\$30,541,636	\$31,362,321
8) MASTER AGREEMENTS	2.5%	\$10,221,406	\$9,544,261	\$9,800,725
SUBTOTAL (B)		\$53,151,313	\$49,630,159	\$50,963,772
9) ART FOR TRANSIT (C)	0.5%	\$2,044,281	\$1,908,852	\$1,960,145
SUBTOTAL (C)		\$2,044,281	\$1,908,852	\$1,960,145
10) RIGHT OF WAY (D) ALLOWANCE EQUIVALENT TO ADOPTED ALIGNMENT		\$66,000,000	\$66,000,000	\$66,000,000
SUBTOTAL (D)		\$66,000,000	\$66,000,000	\$66,000,000
11) PROF. SERVICES (E) INCL. COST TO DATE	(MTA - 45%, BAH - 22%)	\$238,523,330	\$109,879,943	\$143,066,821.09
SUBTOTAL (E)		\$238,523,330	\$109,879,943	\$143,066,821
12) CONTINGENCY (F)				
A) ITEM 1A	12%	\$22,110,000	\$20,695,859	\$22,110,000
ITEM 1B	12%	\$2,010,000	\$2,010,000	\$2,010,000
B) ITEM 2	17%	\$25,500,000	\$25,124,244	\$25,124,244
C) ITEM 3, 4, & 5	10%	\$5,785,625	\$4,476,529	\$4,323,934
D) ITEM 6, 7, & 8	10%	\$5,315,131	\$4,963,016	\$5,096,377
E) ITEM 10	10%	\$6,600,000	\$6,600,000	\$6,600,000
F) ITEM 11	10%	\$23,852,333	\$10,987,994	\$14,306,682
SUBTOTAL (F)		\$91,173,089	\$74,857,642	\$79,571,238
GRAND TOTAL - 1998 DOLLARS		\$859,748,263	\$684,047,049	\$733,590,991

PROJECT: WESTSIDE HEAVY RAIL
WILSHIRE/WESTERN TO
WILSHIRE/FAIRFAX
SUBWAY ALIGNMENT

EST. HTL
DATE 11/5/98
REV. 0
\$: 1988 Dollars

SHT. 2
OF 2
XLS

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
TWIN BORE TUNNEL	16750	\$11,000	\$10,296	RF	\$184,250,000	\$172,465,492	\$184,250,000
					\$0	\$0	
					\$0	\$0	
SUBTOTAL (GUIDEWAY COST)	16750				\$184,250,000	\$172,465,492	\$184,250,000
HAZARDOUS WASTE HANDLING							
ALLOWANCE (incl. La Brea Tar Pits)	16750	\$1,000	NA	RF	\$16,750,000	\$16,750,000	\$16,750,000
SUBTOTAL (HAZ MAT)					\$16,750,000	\$16,750,000	\$16,750,000
STATION COST							
WILSHIRE/CRENSHAW STATION	1	\$40,000,000	\$39,263,224	EA	\$40,000,000	\$39,263,224	\$39,263,224
WILSHIRE/LA BREA STATION	1	\$40,000,000	\$39,263,224	EA	\$40,000,000	\$39,263,224	\$39,263,224
WILSHIRE/FAIRFAX STATION & XOVER	1	\$70,000,000	\$69,263,224	EA	\$70,000,000	\$69,263,224	\$69,263,224
SUBTOTAL (STATION COST)					\$150,000,000	\$147,789,673	\$147,789,673
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)					\$0	\$0	\$0
SUBTOTAL (MAINT. FACIL.)					\$0	\$0	\$0
VEHICLE COST							
REVENUE VEHICLE					\$0	\$0	\$0
SUBTOTAL (VEHICLE COST)					\$0	\$0	\$0
SYSTEM WIDE EQUIPMENT COST							
TRACKWORK (INCL. SPECIAL TRACKWORK)	16750	\$575	\$674	RF	\$9,631,250	\$11,290,651	\$9,631,250
TRAIN CONTROL STA.	3	\$1,100,000	NA	EA	\$3,300,000	NA	\$3,300,000
TRAIN CONTROL GDWY	16750	\$1,100	\$880	RF	\$18,425,000	\$14,745,454	\$18,425,000
TRACTION POWER STA. (XFMR)	3	\$1,750,000	\$3,709,610	EA	\$5,250,000	\$11,128,829	\$5,250,000
COMMUNICATIONS	16750	\$1,000	\$208	RF	\$16,750,000	\$3,476,627	\$3,476,627
FARE COLLECTION	3	\$750,000	\$1,072,420	LS	\$2,250,000	\$3,217,261	\$2,250,000
SIGNAGE & GRAPHICS	3	\$750,000	\$302,155	LS	\$2,250,000	\$906,465	\$906,465
SUBTOTAL (SYSTEM COST)					\$57,856,250	\$44,765,287	\$43,239,342
TOTAL ESTIMATED COST - 1998 DOLLARS					\$406,856,250	\$381,770,452	\$392,029,015

Note: Vehicle costs are zero as vehicles have already been purchased for this line. MPA estimates 4 vehicle fleet required to operate this segment.

COST ESTIMATE COVERSHEET

PROJECT: WESTSIDE CORRIDOR
EXPOSITION LINE
USC TO SANTA MONICA
LRT

EST. HTL
DATE 11/5/98
REV.: 0
\$: 1988 Dollars

SHT. 1
OF 2

ITEM DESCRIPTION		MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES		\$27,617,000	\$30,206,742	\$27,617,000
1B) HAZARDOUS WASTE HANDLING ALLOWANCE		\$0	\$0	\$0
2) STATIONS		\$3,600,000	\$2,268,784	\$2,268,784
3) MAIN YARD AND SHOP		\$0	\$0	\$0
4) SYSTEMWIDE EQUIPMENT		\$19,066,885	\$13,219,217	\$17,830,355
5) VEHICLES		\$0	\$0	\$0
SUBTOTAL (A) (see page 2 for details)		\$50,283,885	\$45,694,742	\$47,716,139
6) PRE REVENUE OPERATION	2.5%	\$1,257,097	\$1,142,369	\$1,192,903
7) OWNERS INSURANCE	8.0%	\$4,022,711	\$3,655,579	\$3,817,291
8) MASTER AGREEMENTS	2.5%	\$1,257,097	\$1,142,369	\$1,192,903
SUBTOTAL (B)		\$6,536,905	\$5,940,317	\$6,203,098
9) ART FOR TRANSIT (C)	0.5%	\$251,419	\$228,474	\$238,581
SUBTOTAL (C)		\$251,419	\$228,474	\$238,581
10) RIGHT OF WAY (D) PER BUDGET OF 8/25/92		\$12,292,553	\$12,292,553	\$12,292,553
SUBTOTAL (D)		\$12,292,553	\$12,292,553	\$12,292,553
11) PROF. SERVICES (E)		\$20,809,429	\$15,147,945	\$18,606,104
SUBTOTAL (E)		\$20,809,429	\$15,147,945	\$18,606,104
12) CONTINGENCY (F)				
A) ITEM 1A	11%	\$3,037,870	\$3,322,742	\$3,037,870
ITEM 1B	11%	\$0	\$0	\$0
B) ITEM 2	11%	\$396,000	\$249,566	\$249,566
C) ITEM 3, 4, & 5	11%	\$2,097,357	\$1,454,114	\$1,961,339
D) ITEM 6, 7, & 8	11%	\$719,060	\$653,434.82	\$682,341
E) ITEM 10	25%	\$3,073,138	\$3,073,138	\$3,073,138
F) ITEM 11	10%	\$2,080,943	\$1,514,795	\$1,860,610
SUBTOTAL (F)		\$11,404,368	\$10,267,789	\$10,864,865
GRAND TOTAL - 1998 DOLLARS		\$101,578,560	\$89,571,821	\$95,921,340
GRAND TOTAL Including USC to Santa Monica Segment - 1998 DOLLARS		\$830,840,960	\$739,170,790	\$842,876,711

PROJECT: WESTSIDE CORRIDOR
EXPOSITION LINE
USC TO SANTA MONICA
LRT

EST. HTL
DATE 11/5/98
REV. 0
\$: 1988 Dollars

SHT. 2
OF 2
XLS _____

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
AT GRADE (IN STREET CONST.)	7755	\$1,800	\$2,457	RF	\$13,959,000	\$19,056,603	\$13,959,000
AERIAL GUIDEWAY	1760	\$4,500	\$5,284	RF	\$7,920,000	\$9,300,139	\$7,920,000
AERIAL GUIDEWAY (OVER 110 FRWY)	720	\$5,400	included above	RF	\$3,888,000	included above	\$3,888,000
SPECIAL BENT STRUCTURES	3	\$350,000	\$350,000	EA	\$1,050,000	\$1,050,000	\$1,050,000
SPECIAL TRAFFIC MAINTENANCE	1	\$800,000	\$800,000	LS	\$800,000	\$800,000	\$800,000
SUBTOTAL (GUIDEWAY COST)					\$27,617,000	\$30,206,742	\$27,617,000
HAZARDOUS WASTE HANDLING ALLOWANCE							
				RF	\$0	\$0	
SUBTOTAL (HAZ MAT)					\$0	\$0	
STATION COST							
AT GRADE STATION (2 CAR PLATFORM)	3	\$1,200,000	\$756,261	EA	\$3,600,000	\$2,268,784	\$2,268,784
SUBTOTAL (STATION COST)					\$3,600,000	\$2,268,784	\$2,268,784
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)					\$0	\$0	\$0
SUBTOTAL (MAINT. FACIL.)					\$0	\$0	\$0
VEHICLE COST							
REVENUE VEHICLE (all vehicle costs covered in USC to Santa Monica sheet)					\$0	\$0	\$0
SUBTOTAL (VEHICLE COST)					\$0	\$0	\$0
SYSTEM WIDE EQUIPMENT COST							
TRACKWORK (INCL. SPECIAL TRACKWORK)	10235	\$421	\$288	RF	\$4,308,935	\$2,943,540	\$4,308,935
TRAIN CONTROL STA.	3	\$160,000	included below	EA	\$480,000	included below	\$480,000
TRAIN CONTROL GDWY	10235	\$500	\$485	RF	\$5,117,500	\$4,962,787	\$5,117,500
TRACTION POWER STA. (XFMR)	3	\$1,100,000	\$309,956	EA	\$3,300,000	\$929,869	\$3,300,000
TRACTION POWER GDWY. (CATENARY)	10235	\$270	\$282	RF	\$2,763,450	\$2,883,038	\$2,763,450
COMMUNICATIONS	10235	\$200	\$98	RF	\$2,047,000	\$1,005,000	\$1,005,000
FARE COLLECTION	3	\$250,000	\$129,837	EA	\$750,000	\$389,511	\$750,000
SIGNAGE & GRAPHICS	3	\$100,000	\$35,157	EA	\$300,000	\$105,470	\$105,470
SUBTOTAL (SYSTEM COST)					\$19,066,885	\$13,219,217	\$17,830,355
TOTAL ESTIMATED COST - 1998 DOLLARS					\$50,283,885	\$45,694,742	\$47,716,139

COST ESTIMATE COVERSHEET

PROJECT: WESTSIDE CORRIDOR	EST. HTL	SHT. 1
EXPOSITION LINE	DATE 11/5/98	OF 2
USC TO SANTA MONICA	REV.: 0	
LRT	\$: 1988 Dollars	

ITEM DESCRIPTION	MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES	\$142,147,750	\$117,300,154	\$142,147,750
1B) HAZARDOUS WASTE HANDLING ALLOWANCE	\$1,738,438	\$1,738,438	\$1,738,438
2) STATIONS	\$40,166,667	\$26,235,735	\$26,235,735
3) MAIN YARD AND SHOP	\$35,000,000	\$31,026,010	\$35,000,000
4) SYSTEMWIDE EQUIPMENT	\$107,290,400	\$81,812,117	\$99,565,790
5) VEHICLES	\$97,500,000	\$78,322,456	\$78,322,456
SUBTOTAL (A) (see page 2 for details)	\$423,843,255	\$336,434,910	\$383,010,169
6) PRE REVENUE OPERATION	2.5% \$10,596,081	\$8,410,873	\$9,575,254
7) OWNERS INSURANCE	8.0% \$33,907,460	\$26,914,793	\$30,640,814
8) MASTER AGREEMENTS	2.5% \$10,596,081	\$8,410,873	\$9,575,254
SUBTOTAL (B)	\$55,099,623	\$43,736,538	\$49,791,322
9) ART FOR TRANSIT (C)	0.5% \$2,119,216	\$1,682,175	\$1,915,051
SUBTOTAL (C)	\$2,119,216	\$1,682,175	\$1,915,051
10) RIGHT OF WAY (D) PER UPDATE OF 11/23/93	\$82,588,736	\$82,588,736	\$82,588,736
SUBTOTAL (D)	\$82,588,736	\$82,588,736	\$82,588,736
11) PROF. SERVICES (E)	\$172,923,592	\$109,659,862	\$144,845,478
SUBTOTAL (E)	\$172,923,592	\$109,659,862	\$144,845,478
12) CONTINGENCY (F)			
A) ITEM 1A	11%	\$15,636,253	\$12,903,017
ITEM 1B	11%	\$191,228	\$191,228
B) ITEM 2	11%	\$4,418,333	\$2,885,931
C) ITEM 3, 4, & 5	11%	\$26,376,944	\$21,027,664
D) ITEM 6, 7, & 8	11%	\$6,060,959	\$4,811,019.21
E) ITEM 10	28%	\$22,711,903	\$22,711,903
F) ITEM 11	10%	\$17,292,359	\$10,965,986
SUBTOTAL (F)		\$92,687,978	\$75,496,748
GRAND TOTAL - 1998 DOLLARS			
	\$829,262,401	\$649,566,969	\$746,956,371

PROJECT: WESTSIDE CORRIDOR
EXPOSITION LINE
USC TO SANTA MONICA
LRT

EST. HTL
DATE 11/5/98
REV. 0
\$: 1988 Dollars

SHT. 2
OF 2
XLS

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
AT GRADE (IN STREET CONST.)	6500	\$1,800	\$2,457	RF	\$11,700,000	\$15,972,652	\$11,700,000
AT GRADE (IN RAILROAD ROW)	43350	\$1,200	\$757	RF	\$52,020,000	\$32,828,779	\$52,020,000
AERIAL GUIDEWAY (FLYOVER)	12600	\$4,500	\$3,750	RF	\$56,700,000	\$47,250,706	\$56,700,000
SUBWAY GUIDEWAY (UNDERCROSSING)	1500	\$11,400	\$12,867	RF	\$17,100,000	\$19,299,817	\$17,100,000
BRIDGE WIDENING	450	\$2,000	\$2,000	RF	\$900,000	\$900,000	\$900,000
REMOVE EXISTING TRACKS	57350	\$65	\$18	TF	\$3,727,750	\$1,048,199	\$3,727,750
SUBTOTAL (GUIDEWAY COST)	121750				\$142,147,750	\$117,300,154	\$142,147,750
HAZARDOUS WASTE HANDLING							
ALLOWANCE	1	\$1,738,438	NA	RF	\$1,738,438	\$1,738,438	\$1,738,438
SUBTOTAL (HAZ MAT)					\$1,738,438	\$1,738,438	\$1,738,438
STATION COST							
AT GRADE STATION (2 CAR PLATFORM)	9	\$1,500,000	\$756,261	EA	\$13,500,000	\$6,806,352	\$6,806,352
AERIAL STATION (2 CAR PLATFORM)	5	\$4,333,333	\$2,667,216	EA	\$21,666,667	\$13,336,080	\$13,336,080
PARK & RIDE (SURFACE LOT)	2500	\$2,000	\$2,437	Spaces	\$5,000,000	\$6,093,304	\$6,093,304
SUBTOTAL (STATION COST)					\$40,166,667	\$26,235,735	\$26,235,735
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)	1	\$35,000,000	\$31,026,010		\$35,000,000	\$31,026,010	\$35,000,000
SUBTOTAL (MAINT. FACIL.)					\$35,000,000	\$31,026,010	\$35,000,000
VEHICLE COST							
REVENUE VEHICLES (for complete Expo alignment, LA LRT Vehicle)	39	\$2,500,000	\$2,002,330		\$97,500,000	\$78,322,456	\$78,322,456
SUBTOTAL (VEHICLE COST)					\$97,500,000	\$78,322,456	\$78,322,456
SYSTEM WIDE EQUIPMENT COST							
TRACKWORK (INCL. SPECIAL TRACKWORK)	64400	\$421	\$288	RF	\$27,112,400	\$18,521,152	\$27,112,400
TRAIN CONTROL STA.	11	\$160,000	Included below	EA	\$1,760,000	Included below	\$1,760,000
TRAIN CONTROL GDWY	64400	\$500	\$485	RF	\$32,200,000	\$31,226,528	\$32,200,000
TRACTION POWER STA. (XFMR)	11	\$1,100,000	\$531,897	EA	\$12,100,000	\$5,850,862	\$12,100,000
TRACTION POWER GDWY. (CATENARY)	64400	\$270	\$282	RF	\$17,388,000	\$18,140,466	\$17,388,000
COMMUNICATIONS	64400	\$200	\$89	RF	\$12,880,000	\$5,763,195	\$5,763,195
FARE COLLECTION	11	\$250,000	\$165,247	EA	\$2,750,000	\$1,817,719	\$2,750,000
SIGNAGE & GRAPHICS	11	\$100,000	\$44,745	EA	\$1,100,000	\$492,195	\$492,195
SUBTOTAL (SYSTEM COST)					\$107,290,400	\$81,812,117	\$99,565,790
TOTAL ESTIMATED COST - 1988 DOLLARS					\$423,843,255	\$338,434,910	\$383,010,169

COST ESTIMATE COVERSHEET

PROJECT: EXPOSITION BUS TRANSITWAY EST. HTL SHT. 1
SANTA MONICA TO 0 DATE 11/6/98 OF 2
GATEWAY REV.: 2
\$: 1988 Dollars

ITEM DESCRIPTION		MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES		\$87,624,600	\$154,066,577	\$87,624,600
1B) HAZARDOUS WASTE HANDLING ALLOWANCE		\$1,500,000	\$1,500,000	\$1,500,000
2) STATIONS		\$15,405,000	\$17,007,758	\$16,029,337
3) MAIN YARD AND SHOP		\$5,000,000	\$5,000,000	\$5,000,000
4) SYSTEMWIDE EQUIPMENT		\$19,870,500	\$17,552,349	\$15,696,299
5) VEHICLES		\$10,150,000	\$9,665,439	\$9,665,439
SUBTOTAL (A) (see page 2 for details)		\$139,550,100	\$204,792,123	\$135,515,676
6) PRE REVENUE OPERATION	2.5%	\$3,488,753	\$5,119,803	\$3,387,892
7) OWNERS INSURANCE	8.0%	\$11,164,008	\$16,383,370	\$10,841,254
8) MASTER AGREEMENTS	5.0%	\$6,977,505	\$10,239,606	\$6,775,784
SUBTOTAL (B)		\$21,630,266	\$31,742,779	\$21,004,930
9) ART FOR TRANSIT (C)	0.5%	\$697,751	\$1,023,961	\$677,578
SUBTOTAL (C)		\$697,751	\$1,023,961	\$677,578
10) RIGHT OF WAY (D) ALLOWANCE FOR 4 PARK-N-RIDES		\$4,900,000	\$4,900,000	\$4,900,000
SUBTOTAL (D)		\$4,900,000	\$4,900,000	\$4,900,000
11) PROF. SERVICES (E)		\$70,927,410	\$41,076,859	\$45,387,491
SUBTOTAL (E)		\$70,927,410	\$41,076,859	\$45,387,491
12) CONTINGENCY (F)				
A) ITEM 1A	12%	\$10,514,952	\$18,487,989	\$10,514,952
ITEM 1B	12%	\$180,000	\$180,000	\$180,000
B) ITEM 2	17%	\$2,618,850	\$2,891,319	\$2,724,987
C) ITEM 3, 4, & 5	10%	\$3,502,050	\$3,221,779	\$3,036,174
D) ITEM 6, 7, & 8	10%	\$2,163,027	\$3,174,278	\$2,100,493
E) ITEM 10	10%	\$490,000	\$490,000	\$490,000
F) ITEM 11	10%	\$7,092,741	\$4,107,686	\$4,538,749
SUBTOTAL (F)		\$26,561,620	\$32,553,051	\$23,585,355
GRAND TOTAL - 1998 DOLLARS		\$264,267,146	\$316,088,772	\$231,071,031

PROJECT: EXPOSITION BUS TRANSITWAY
SANTA MONICA TO
GATEWAY

EST. HTL
DATE 11/6/98
REV. 2
\$: 1998 Dollars

SHT. 2
OF 2
XLS _____

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
AT GRADE BUSWAY	63360	\$320	\$1,676	RF	\$20,275,200	\$106,195,985	\$20,275,200
AT GRADE BUSWAY @ STATION	7800	\$535	Incl in above	RF	\$4,173,000	Incl in above	\$4,173,000
STREET IMPROVEMENTS @ XINGS	110	\$152,000	\$139,891	EA	\$16,720,000	\$15,387,966	\$16,720,000
TRACK REMOVAL	63360	\$65	\$18	RF	\$4,118,400	\$1,114,819	\$4,118,400
AERIAL OVERPASS	5400	\$5,000	\$2,708	RF	\$27,000,000	\$14,620,824	\$27,000,000
BELOW GRADE UNDERPAS	1	\$5,000,000	\$5,000,000	EA	\$5,000,000	\$5,000,000	\$5,000,000
RAILROAD BRIDGE REPLACEMENT	3	\$2,000,000	\$2,000,000	EA	\$6,000,000	\$6,000,000	\$6,000,000
MIXED FLOW DEDICATED BUSWAY	2020	\$150	\$2,845	RF	\$303,000	\$5,746,982	\$303,000
DOWNTOWN CONNECTOR (GRAND/OLIVE)	26900	\$150	Incl in above	RF	\$4,035,000	Incl in above	\$4,035,000
SUBTOTAL (GUIDEWAY COST)	168954				\$87,624,600	\$154,066,577	\$87,624,600
HAZARDOUS WASTE HANDLING							
ALLOWANCE	1	\$1,500,000	NA	LS	\$1,500,000	\$1,500,000	\$1,500,000
SUBTOTAL (HAZ MAT)					\$1,500,000	\$1,500,000	\$1,500,000
STATION COST							
AERIAL STATION (80 FT. SIDE PLATFORM) (including 2 elevators, finishes, canopies, lighting & signage)	1	\$1,505,000	\$1,681,666	EA	\$1,505,000	\$1,681,666	\$1,681,666
AT GRADE STATION (120 FT. SIDE PLATFORM) (including finishes, landscaping, canopies, lighting & signage)	21	\$505,000	\$526,318	EA	\$10,605,000	\$11,052,672	\$11,052,672
CURBSIDE STATION (INCL. CANOPY, BENCHES)	2	\$27,500	\$25,000	EA	\$55,000	\$50,000	\$55,000
PARKING FACILITIES (MINIMAL AMENITIES)	1800	\$1,800	\$2,346	Spaces	\$3,240,000	\$4,223,421	\$3,240,000
SUBTOTAL (STATION COST)					\$15,405,000	\$17,007,758	\$16,029,337
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)	1	\$5,000,000	\$5,000,000		\$5,000,000	\$5,000,000	\$5,000,000
SUBTOTAL (MAINT. FACIL.)					\$5,000,000	\$5,000,000	\$5,000,000
VEHICLE COST							
REVENUE VEHICLE	29	\$350,000	\$333,291		\$10,150,000	\$9,665,439	\$9,665,439
SUBTOTAL (VEHICLE COST)					\$10,150,000	\$9,665,439	\$9,665,439
SYSTEM WIDE EQUIPMENT COST							
PRIORITY SIGNALIZATION	1	\$5,596,500	\$2,750,000	LS	\$5,596,500	\$2,750,000	\$2,750,000
TICKET VENDING MACHINES	46	\$75,000	NA	EA	\$3,450,000	\$2,856,414	\$2,856,414
COMMUNICATIONS	63360	\$50	\$38	RF	\$3,168,000	\$2,433,885	\$2,433,885
GUIDEWAY LIGHTING INCL. ELECTRIFICATION	63360	\$60	\$60	RF	\$3,801,600	\$3,801,600	\$3,801,600
SECURITY	63360	\$30	\$30	RF	\$1,900,800	\$1,900,800	\$1,900,800
SIGNAGE/GRAPHICS (OTHER THAN STATIONS)	97680	\$20	\$39	RF	\$1,953,600	\$3,809,649	\$1,953,600
SUBTOTAL (SYSTEM COST)					\$19,870,500	\$17,552,349	\$15,696,299
TOTAL ESTIMATED COST - 1998 DOLLARS					\$139,550,100	\$204,792,123	\$135,515,670

COST ESTIMATE COVERSHEET

PROJECT: VALLEY HEAVY RAIL
NO HOLLYWOOD TO I-405
STA 420+00 TO 736+00

EST. HTL
DATE 11/5/98
REV.: 0
\$: 1988 Dollars

SHT. 1
OF 2

ITEM DESCRIPTION		MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES		\$324,776,949	\$253,711,325	\$324,776,949
1B) HAZARDOUS WASTE HANDLING ALLOWANCE		\$861,973	\$861,973	\$861,973
2) STATIONS		\$85,750,000	\$79,040,019	\$79,040,019
3) MAIN YARD AND SHOP		\$0	\$0	\$0
4) SYSTEMWIDE EQUIPMENT		\$101,443,115	\$80,009,482	\$75,250,477
5) VEHICLES		\$0	\$0	\$0
SUBTOTAL (A) (see page 2 for details)		\$512,832,037	\$413,622,799	\$479,929,418
6) PRE REVENUE OPERATION	2.5%	\$12,820,801	\$10,340,570	\$11,998,235
7) OWNERS INSURANCE	8.0%	\$41,026,563	\$33,089,824	\$38,394,353
8) MASTER AGREEMENTS	2.5%	\$12,820,801	\$10,340,570	\$11,998,235
SUBTOTAL (B)		\$66,668,165	\$53,770,964	\$62,390,824
9) ART FOR TRANSIT (C)	0.5%	\$2,564,160	\$2,068,114	\$2,399,647
SUBTOTAL (C)		\$2,564,160	\$2,068,114	\$2,399,647
10 A) RIGHT OF WAY (MTA)		\$79,500,000	\$79,500,000	\$79,500,000
10 B) RIGHT OF WAY (PROPOSED TAKES)		\$9,711,568	\$9,711,568	\$9,711,568
SUBTOTAL (D)		\$89,211,568	\$89,211,568	\$89,211,568
11) PROF. SERVICES (E) INCL. COST TO DATE		\$165,962,524	\$105,448,734	\$119,493,017
SUBTOTAL (E)		\$165,962,524	\$105,448,734	\$119,493,017
12) CONTINGENCY (F)				
A) ITEM 1A	12%	\$38,973,234	\$30,445,359	\$103,437
ITEM 1B	10%	\$86,197	\$86,197	\$7,904,002
B) ITEM 2	12%	\$10,290,000	\$9,484,802	\$0
C) ITEM 3, 4, & 5	10%	\$10,144,312	\$8,000,948	\$55,517,989
D) ITEM 6, 7, & 8	10%	\$6,666,816	\$5,377,096	\$0
E) ITEM 10 B		INCL. IN ITEM	INCL. IN ITEM	INCL. IN ITEM
F) ITEM 11	10%	\$16,596,252	\$10,544,873	\$11,949,302
SUBTOTAL (F)		\$82,756,812	\$63,939,277	\$75,474,730
GRAND TOTAL - 1988 DOLLARS		\$919,995,266	\$728,061,455	\$828,899,204

PROJECT: VALLEY HEAVY RAIL
NO HOLLYWOOD TO I-405
STA 420+00 TO 736+00

EST. HTL
DATE 11/5/98
REV. 0
\$: 1988 Dollars

SHT. 2
OF 2
XLS

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
AERIAL	6750	\$6,500	\$6,125	RF	\$43,875,000	\$41,341,930	\$43,875,000
AT-GRADE	1100	\$2,250	\$1,005	RF	\$2,475,000	\$1,105,212	\$2,475,000
OPEN GUIDEWAY	1660	\$6,500	\$3,525	RF	\$9,906,949	\$5,851,819	\$9,906,949
RETAINED FILL	1500	\$4,500	\$1,763	RF	\$6,750,000	\$2,643,894	\$6,750,000
BORED TUNNEL	2939	\$10,000	\$10,296	RF	\$29,390,000	\$30,261,259	\$29,390,000
CUT & COVER GUIDEWAY	17690	\$12,000	\$8,615	RF	\$212,280,000	\$152,407,212	\$212,280,000
OTHER IMPROVEMENTS	1	\$10,000,000	\$10,000,000	LS	\$10,000,000	\$10,000,000	\$10,000,000
BRIDGE WORK	100	\$101,000	\$101,000	RF	\$10,100,000	\$10,100,000	\$10,100,000
SUBTOTAL (GUIDEWAY COST)	31740				\$324,776,949	\$253,711,325	\$324,776,949
HAZARDOUS WASTE HANDLING							
ALLOWANCE	31739	\$27	NA	RF	\$861,973	\$861,973	\$861,973
SUBTOTAL (HAZ MAT)					\$861,973	\$861,973	\$861,973
STATION COST							
AERIAL (6 CAR PLATFORM)	3	\$15,000,000	\$9,086,250	EA	\$45,000,000	\$27,258,751	\$27,258,751
OPEN STATION (6 CAR PLATFORM W/ XOVER)	1	\$36,000,000	\$40,888,127	EA	\$36,000,000	\$40,888,127	\$40,888,127
PARK & RIDE (SURFACE)	2000	\$2,375	\$5,447	EA	\$4,750,000	\$10,893,141	\$10,893,141
SUBTOTAL (STATION COST)					\$85,750,000	\$79,040,019	\$79,040,019
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)	0	\$2,045,000		LS	\$0	\$0	\$0
SUBTOTAL (MAINT. FACIL.)					\$0	\$0	\$0
VEHICLE COST							
REVENUE VEHICLE	0			EA	\$0	\$0	\$0
SUBTOTAL (VEHICLE COST)					\$0	\$0	\$0
SYSTEM WIDE EQUIPMENT COST							
TRACKWORK (INCL. SPECIAL TRACKWORK)	31739	\$575	\$595	RF	\$18,249,925	\$18,895,149	\$18,249,925
TRAIN CONTROL STA.	3	\$1,100,000	NA	EA	\$3,300,000	NA	\$3,300,000
TRAIN CONTROL GDWY	31739	\$1,100	\$880	RF	\$34,912,900	\$27,940,655	\$34,912,900
TRACTION POWER STA. (XFMR)	3	\$1,750,000	\$3,435,027	EA	\$5,250,000	\$10,305,082	\$5,250,000
TRACTION POWER GDWY (THIRD RAIL)	31739	\$110	\$340	EA	\$3,491,290	\$10,782,553	\$3,491,290
COMMUNICATIONS	31739	\$1,000	\$208	RF	\$31,739,000	\$6,587,742	\$6,587,742
FARE COLLECTION	3	\$750,000	\$1,429,894	LS	\$2,250,000	\$4,289,681	\$2,250,000
SIGNAGE & GRAPHICS	3	\$750,000	\$402,873	LS	\$2,250,000	\$1,208,620	\$1,208,620
SUBTOTAL (SYSTEM COST)					\$101,443,115	\$80,009,482	\$75,250,477
TOTAL ESTIMATED COST - 1988 DOLLARS					\$512,832,037	\$413,622,799	\$479,929,418

COST ESTIMATE COVERSHEET

PROJECT: VALLEY LRT
NO HOLLYWOOD TO WARNER CTR
STA 4+54 TO 736+00

EST. HTL
DATE 11/5/98
REV.: 0
\$: 1988 Dollars

SHT. 1
OF 2

ITEM DESCRIPTION		MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES		\$222,484,500	\$158,390,776	\$221,476,728
1B) HAZARDOUS WASTE HANDLING ALLOWANCE		\$1,723,947	\$1,723,947	\$1,723,947
2) STATIONS		\$62,091,667	\$47,572,248	\$49,041,837
3) MAIN YARD AND SHOP		\$25,000,000	\$26,252,777	\$25,000,000
4) SYSTEMWIDE EQUIPMENT		\$121,066,086	\$91,311,432	\$111,756,307
5) VEHICLES		\$79,200,000	\$64,659,492	\$64,659,492
SUBTOTAL (A) (see page 2 for details)		\$511,566,200	\$389,910,673	\$473,658,312
6) PRE REVENUE OPERATION	2.5%	\$12,789,155	\$9,747,767	\$11,841,458
7) OWNERS INSURANCE	8.0%	\$40,925,296	\$31,192,854	\$37,892,665
8) MASTER AGREEMENTS	2.5%	\$12,789,155	\$9,747,767	\$11,841,458
SUBTOTAL (B)		\$66,503,606	\$50,688,387	\$61,575,581
9) ART FOR TRANSIT (C)	0.5%	\$2,557,831	\$1,949,553	\$2,368,292
SUBTOTAL (C)		\$2,557,831	\$1,949,553	\$2,368,292
10 A) RIGHT OF WAY (MTA PROPERTIES)		\$159,000,000	\$159,000,000	\$159,000,000
10) RIGHT OF WAY (PROPOSED TAKES)		\$57,464,899	\$57,464,899	\$57,464,899
SUBTOTAL (D)		\$216,464,899	\$216,464,899	\$216,464,899
11) PROF. SERVICES (E)		\$241,327,646	\$155,600,215	\$211,138,783
SUBTOTAL (E)		\$241,327,646	\$155,600,215	\$211,138,783
12) CONTINGENCY (F)				
A) ITEM 1A	12%	\$26,698,140	\$19,006,893	\$26,577,207
ITEM 1B	10%	\$172,395	\$172,395	\$172,395
B) ITEM 2	12%	\$7,451,000	\$5,708,670	\$5,885,020
C) ITEM 3, 4, & 5	10%	\$22,526,609	\$18,222,370	\$20,141,580
D) ITEM 6, 7, & 8	10%	\$6,650,361	\$5,068,839	\$6,157,558
E) ITEM 10	0% INCLUDED IN ITEM	\$0	\$0	\$0
F) ITEM 11	10%	\$24,132,765	\$15,560,021	\$21,113,878
SUBTOTAL (F)		\$87,631,268	\$63,739,188	\$80,047,639
GRAND TOTAL - 1998 DOLLARS		\$1,126,051,450	\$878,352,915	\$934,515,141

PROJECT: VALLEY LRT
NO HOLLYWOOD TO WARNER CTR
STA 4+54 TO 736+00

EST. HTL
DATE 11/5/98
REV. 0
\$: 1988 Dollars

SHT. 2
OF 2
XLS

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
AT GRADE	44175	\$1,800	\$1,557	RF	\$79,515,000	\$68,790,468	\$79,515,000
RETAINED GUIDEWAY	15225	\$3,500	\$711	RF	\$53,287,500	\$10,822,340	\$53,287,500
AERIAL GUIDEWAY	13196	\$4,500	\$3,750	RF	\$59,382,000	\$49,485,740	\$59,382,000
BRIDGES LA River, Arroyo Seco (Actuals)	100	\$100,000	\$100,000	EA	\$10,000,000	\$10,000,000	\$10,000,000
OTHER GUIDEWAY IMPROVEMENTS	1	\$16,550,000	\$16,550,000	EA	\$16,550,000	\$16,550,000	\$16,550,000
GRADE CROSSINGS	15	\$250,000	\$182,815	LS	\$3,750,000	\$2,742,228	\$2,742,228
SUBTOTAL (GUIDEWAY COST)	72712				\$222,484,500	\$158,390,776	\$221,476,728
HAZARDOUS WASTE HANDLING							
ALLOWANCE	1	\$1,723,947	NA	RF	\$1,723,947	\$1,723,947	\$1,723,947
SUBTOTAL (HAZ MAT)					\$1,723,947	\$1,723,947	\$1,723,947
STATION COST							
AT GRADE STATION (2 CAR PLATFORM)	5	\$1,500,000	\$756,261	EA	\$7,500,000	\$3,781,307	\$3,781,307
AERIAL STATION (2 CAR PLATFORM)	5	\$3,333,333	\$1,778,144	EA	\$16,666,667	\$8,890,720	\$8,890,720
AERIAL STATION (2 CAR PLATFORM W/XOVER)	1	\$3,333,333	\$1,778,144	EA	\$3,333,333	\$1,778,144	\$1,778,144
OPEN STATION (2 CAR PLAT. W/ CROSSOVER)	1	\$16,666,667	\$16,666,667	EA	\$16,666,667	\$16,666,667	\$16,666,667
PASSENGER TRANSFER PORTAL AT NO. HOLLEY	1	\$5,000,000	\$5,000,000	EA	\$5,000,000	\$5,000,000	\$5,000,000
PARK & RIDE (SURFACE LOT)	4700	\$2,750	\$2,437	Spaces	\$12,925,000	\$11,455,411	\$12,925,000
SUBTOTAL (STATION COST)					\$62,091,667	\$47,672,248	\$49,041,837
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)	1	\$25,000,000	\$26,252,777		\$25,000,000	\$26,252,777	\$25,000,000
SUBTOTAL (MAINT. FACIL.)					\$25,000,000	\$26,252,777	\$25,000,000
VEHICLE COST							
REVENUE VEHICLE	33	\$2,400,000	\$1,959,379		\$79,200,000	\$64,659,492	\$64,659,492
SUBTOTAL (VEHICLE COST)					\$79,200,000	\$64,659,492	\$64,659,492
SYSTEM WIDE EQUIPMENT COST							
TRACKWORK (INCL. SPECIAL TRACKWORK)	73146	\$421	\$288	RF	\$30,794,466	\$21,036,462	\$30,794,466
TRAIN CONTROL STA.	12	\$160,000	NA	EA	\$1,920,000	NA	\$1,920,000
TRAIN CONTROL GDWY	73146	\$500	\$485	RF	\$36,573,000	\$35,467,323	\$36,573,000
TRACTION POWER STA. (XFMR)	12	\$1,100,000	\$2,270,794	EA	\$13,200,000	\$27,249,530	\$13,200,000
TRACTION POWER GDWY. (CATENARY)	73146	\$270	NA	RF	\$19,749,420	Included in Tract	\$19,749,420
COMMUNICATIONS	73146	\$200	\$83	RF	\$14,629,200	\$6,097,540	\$6,097,540
FARE COLLECTION	12	\$250,000	\$86,558	LS	\$3,000,000	\$1,038,697	\$3,000,000
SIGNAGE & GRAPHICS	12	\$100,000	\$35,157	LS	\$1,200,000	\$421,881	\$421,881
SUBTOTAL (SYSTEM COST)					\$121,066,086	\$91,311,432	\$111,756,307
TOTAL ESTIMATED COST - 1998 DOLLARS					\$511,666,200	\$389,910,673	\$473,658,312

COST ESTIMATE COVERSHEET

PROJECT: VALLEY BUS TRANSITWAY
0
NORTH HOLLYWOOD TO
WARNER CENTER

EST. HTL
DATE 11/6/98
REV.: 0
\$: 1988 Dollars

SHT. 1
OF 2

ITEM DESCRIPTION		MTA ESTIMATED COST	LOWER BOUND COST	PROJECTED FINAL COST
1A) GUIDEWAYS AND STRUCTURES		\$43,102,480	\$46,082,214	\$43,102,480
1B) HAZARDOUS WASTE HANDLING ALLOWANCE		\$1,500,000	\$1,500,000	\$1,500,000
2) STATIONS		\$15,502,000	\$18,491,733	\$15,502,000
3) MAIN YARD AND SHOP		\$5,000,000	\$5,000,000	\$5,000,000
4) SYSTEMWIDE EQUIPMENT		\$17,794,400	\$12,386,283	\$12,190,686
5) VEHICLES		\$7,700,000	\$7,332,402	\$7,332,402
SUBTOTAL (A) (see page 2 for details)		\$90,598,880	\$90,792,631	\$84,627,568
6) PRE REVENUE OPERATION	2.5%	\$2,264,972	\$2,269,816	\$2,115,689
7) OWNERS INSURANCE	8.0%	\$7,247,910	\$7,263,410	\$6,770,205
8) MASTER AGREEMENTS	2.5%	\$2,264,972	\$2,269,816	\$2,115,689
SUBTOTAL (B)		\$11,777,854	\$11,803,042	\$11,001,584
9) ART FOR TRANSIT (C)	0.5%	\$452,994.40	\$453,963.16	\$423,138
SUBTOTAL (C)		\$452,994	\$453,963	\$423,138
10) RIGHT OF WAY (D) ALLOWANCE FOR 4 PARK-N-RIDES		\$4,680,000	\$4,680,000	\$4,680,000
SUBTOTAL (D)		\$4,680,000	\$4,680,000	\$4,680,000
11) PROF. SERVICES (E)		\$48,008,577	\$18,251,323	\$28,205,041
SUBTOTAL (E)		\$48,008,577	\$18,251,323	\$28,205,041
12) CONTINGENCY (F)				
A) ITEM 1A	12%	\$5,172,298	\$5,529,866	\$5,172,298
ITEM 1B	12%	\$180,000	\$180,000	\$180,000
B) ITEM 2	17%	\$2,635,340	\$3,143,595	\$2,635,340
C) ITEM 3, 4, & 5	10%	\$3,049,440	\$2,471,868	\$2,452,309
D) ITEM 6, 7, & 8	10%	\$1,177,785	\$1,180,304	\$1,100,158
E) ITEM 10	10%	\$468,000	\$468,000	\$468,000
F) ITEM 11	10%	\$4,800,858	\$1,825,132	\$2,820,504
SUBTOTAL (F)		\$17,483,721	\$14,798,765	\$14,828,609
GRAND TOTAL - 1988 DOLLARS		\$173,002,027	\$140,779,725	\$143,765,940

PROJECT: VALLEY BUS TRANSITWAY
NORTH HOLLYWOOD TO
WARNER CENTER

EST. HTL
DATE 11/6/98
REV. 0
\$: 1998 Dollars

SHT. 2
OF 2
XLS

DESCRIPTION	QTY	MTA UNIT PRICE	BAH UNIT PRICE	UNIT	MTA COST	LOWER BOUND	ESTIMATED PROJECT COST
GUIDEWAY COSTS							
AT GRADE BUSWAY	72864	\$320	\$466	RF	\$23,316,480	\$33,975,158	\$23,316,480
AT GRADE BUSWAY @ STATION	7200	\$535	Incl in above	RF	\$3,852,000	Incl in above	\$3,852,000
STREET IMPROVEMENTS @ XINGS	42	\$152,000	\$139,891	EA	\$6,384,000	\$5,875,405	\$6,384,000
TRACK REMOVAL	70000	\$65	\$18	RF	\$4,550,000	\$1,231,650	\$4,550,000
SPECIAL BRIDGE WORK @ TUJUNGA WASH	1	\$5,000,000	\$5,000,000	LS	\$5,000,000	\$5,000,000	\$5,000,000
SUBTOTAL (GUIDEWAY COST)	150107				\$43,102,480	\$46,082,214	\$43,102,480
HAZARDOUS WASTE HANDLING ALLOWANCE							
	1	\$1,500,000	NA	LS	\$1,500,000	\$1,500,000	\$1,500,000
SUBTOTAL (HAZ MAT)					\$1,500,000	\$1,500,000	\$1,500,000
STATION COST							
AT GRADE STATION (120 FT. SIDE PLATFORM) (including finishes, landscaping, canopies, lighting & signage)	13	\$505,000	\$526,318	EA	\$6,565,000	\$6,842,130	\$6,565,000
PARKING FACILITIES (MINIMAL AMENITIES)	4965	\$1,800	\$2,346	Spaces	\$8,937,000	\$11,649,603	\$8,937,000
SUBTOTAL (STATION COST)					\$15,502,000	\$18,491,733	\$15,502,000
MAINT. FACIL & YARD COSTS							
MAINTENANCE FACILITIES (ALLOWANCE)	1	\$5,000,000	\$5,000,000		\$5,000,000	\$5,000,000	\$5,000,000
SUBTOTAL (MAINT. FACIL.)					\$5,000,000	\$5,000,000	\$5,000,000
VEHICLE COST							
REVENUE VEHICLE	22	\$350,000	\$333,291		\$7,700,000	\$7,332,402	\$7,332,402
SUBTOTAL (VEHICLE COST)					\$7,700,000	\$7,332,402	\$7,332,402
SYSTEM WIDE EQUIPMENT COST							
PRIORITY SIGNALIZATION	1	\$4,336,800	\$1,050,000	LS	\$4,336,800	\$1,050,000	\$1,050,000
TICKET VENDING MACHINES	24	\$75,000	NA	EA	\$1,800,000	\$1,687,881	\$1,687,881
COMMUNICATIONS	72860	\$50	\$20	RF	\$3,643,000	\$1,438,205	\$1,438,205
GUIDEWAY LIGHTING INCL. ELECTRIFICATION	72860	\$60	\$60	RF	\$4,371,600	\$4,371,600	\$4,371,600
SECURITY	72860	\$30	\$30	RF	\$2,185,800	\$2,185,800	\$2,185,800
SIGNAGE/GRAPHICS (OTHER THAN STATIONS)	72860	\$20	\$23	RF	\$1,457,200	\$1,652,797	\$1,457,200
SUBTOTAL (SYSTEM COST)					\$17,794,400	\$12,386,283	\$12,190,686
TOTAL ESTIMATED COST - 1998 DOLLARS					\$90,598,880	\$90,792,631	\$84,627,868

TRANSIT alternative analysis

TESTIMONY

for
Councilman Richard Alarcon

ASSEMBLY TRANSPORTATION COMMITTEE HEARING
October 16, 1998

"Regional Transit Alternatives Analysis"

Mr. Chairman, members of the Committee, I appreciate the opportunity to address you regarding the "Regional Transit Alternatives Analysis" (RTAA) Study, developed by Booz-Allen & Hamilton, for the MTA.

As all of you are aware, the California Transportation Commission (CTC) approved the MTA's Rail Recovery Plan, and provided approximately \$134 million in construction funds on June 2, 1998.

However, these construction funds are contingent upon the MTA developing a viable transportation plan to reprogram approximately \$409 million, in State Transportation Improvement Program (STIP) funds, currently being held in reserve.

As you are also aware, the RTAA has been developed to respond to the request of the CTC, which is very simple: how should we reprogram the \$409 million in STIP funds, since work has been suspended on transit improvements in the East Side, Mid-City, Pasadena, and San Fernando Valley.

I want to thank you and the CTC for asking the "right question," and I will do my very best to provide the "right answers" to help solve the transportation problems facing not only

the City of Los Angeles, but the Region, as a whole.

With the recent signing of State legislation by the Governor to establish a Joint Powers Authority for constructing the Pasadena Blue Line, there will be more local control over the delivery of transportation services, an arrangement I support.

In addition, the City of Los Angeles has developed a project entitled "The Priority Bus Project" to serve transit-dependent communities throughout the City. This project will initially be utilized in the East Los Angeles and in the Mid-City areas as an interim solution in response to the suspension of the Metro Red Line Project in these two (2) corridors.

At my Transportation Committee Meeting, on October 14,

OCT 16 1998 08:54AM COUNCILMAN FERRON P.3

1998, I considered and recommended for approval by the City Council, various recommendations to improve bus services to residents in the Eastside and Mid-City areas. Once adopted by the City Council, this report will be transmitted to the MTA for approval and implementation. These Priority Bus Corridors will include: priority signalization, improved transit amenities (lighting, landscaping) and fewer stops.

As far as the San Fernando Valley is concerned, the North Hollywood leg of the Metro Red Line Project will be opening in the Year 2000. Currently, the City is in negotiations with the MTA regarding the financial agreement to assist with the construction of rail projects to the North Hollywood, East L.A., and Mid-City areas. As you may be aware, when this agreement

was approved by the City Council and MTA there were several milestones which MTA had to attain to maintain this agreement.

When the Federal Government required the MTA to develop a realistic construction plan, the MTA put the development of the East L.A. and Mid-City Line on hold, indefinitely, creating a default in the agreement. It is my intent to develop a new agreement with the MTA which continues the City's commitment to complete the North Hollywood Line.

The current RTAA is studying alternative rail projects, as well as bus improvements, to extend and expand transit services in East L.A., Mid-city and the Valley areas.

As you may know, I introduced a Motion in the Los Angeles

City Council, almost a year ago, to create a "San Fernando Valley Transportation Zone," to improve transit service in the Valley and provide for local control in the delivery of services to residents.

My efforts, along with those of my colleagues, representatives of nine jurisdictions, and staff, have led to the completion of a "Notice of Intent to File" a transportation zone application to the MTA. I am very excited about the establishment of a transportation zone in this area, because I believe that it can be successful, and that we can provide the type of seamless transportation system that will become a model throughout the L.A. region, for other cities in the State, and possibly, the Nation.

We are currently working with eight (8) other cities, and the

OCT 18 95 02:35PM COUNCIL CHAMBER

County of Los Angeles, and we will submit, to the MTA, an application for a transportation zone to help improve transit services in the San Fernando Valley.

In inviting me to attend this hearing, you requested my viewpoint on how the MTA can provide adequate transit services to all parts of Los Angeles.

The MTA's dual role of being both the regional planning and programming agency, and the second largest transit agency in the Nation, has created a conflict of interest in some respect.

Therefore, when the MTA addresses the question of "the adequate need of transit services, and how they can provide that

service," it is necessary for the MTA to "look outside the box" as a transit operator, and look at itself as a planning and programming agency, in order to find better ways to provide transit service.

I believe that the MTA has access to a great deal of funds from various sources and has an opportunity and a responsibility to improve public transit service in Los Angeles, and there is a toolbox of ideas to make this happen. It must continue to focus on the two concepts I touched on earlier - greater local control and improved bus service.

As previously explained, I have recommended, and received support for, the creation of a Transportation Zone in the San Fernando Valley. We are talking about saving at least 25% in

operating costs from current MTA costs. We believe we can do this while maintaining the collective bargaining arrangement and upholding existing agreements.

If those costs could be converted into providing more service, obviously we can increase service in the San Fernando Valley.

There are other members of the MTA Board, and members of our community, who are talking about the possibility of additional zones in the rest of the region—which I believe should be fully explored.

Inclusive in the Bus Priority proposal that I will be submitting to the MTA will be the complete reconfiguration of the City's

previous \$200 million to assist with the construction of the three rail segments. As previously stated, it is my intent that the City continue its commitment to the completion of the North Hollywood segment, which I believe will be approximately \$93 million total. Additionally, I am proposing funds to be used to purchase 20 new buses and expand the City's highly successful community DASH service by four new lines. The community DASH is a popular bus service that the City of L.A. provides in communities throughout the City. The service uses clean fuel buses to operate on circular routes and provide trips for only 25 cents. Recently, the City has also begun to purchase low-floor vehicles, which will improve services for both the elderly and disabled. In addition to the DASH services, my plan includes funds for new Park-and-Ride, additional street resurfacing of

transit street to improve bus service, purchasing and operation of 40 new shuttles which can provide flexible and/or paratransit trips to better serve our residents, and the priority bus corridors that I mentioned previously. The plan will also include funding to provide a required local match to the federally approved ISTEA-2 or TEA-21 projects in the MTA's own Call-for-Project process allowing the City to leverage its critical transportation dollars. This proposal may provide a model of services for all jurisdictions to consider to implement as they develop programs to better serve their residents.

The MTA has funded \$2.5 million of transit restructuring studies in the City of Los Angeles, and has funded a couple of other studies outside the City, in the San Gabriel Valley, and in the

Oct 15 '98 08:58AM COUNCILMAN ALARCON P.13

Southeastern Los Angeles County.

These transit restructuring studies were intended to improve transit service through the entire MTA service area, help eliminate service redundancy, and better coordinate MTA service with the municipal operators. In this vein, the MTA has spent over a year in each community in the region, obtaining input to improve transit service and efficiency. As such, the MTA should expeditiously move to implement the recommendations from the restructuring studies, and work to eliminate barriers that prohibit their implementation.

The MTA should also seek partnerships, as in the Priority Bus Project that we are recommending in the East Los Angeles and the

Mid-City areas, to help improve both surface street operations, and streetscapes along transit corridors.

We should continue to work with local jurisdictions and CALTRANS to develop projects to move buses more quickly in the existing street system, and in that manner, we could save operating costs for the MTA.

It is my observation that the MTA should also take a leadership role in technology, and advocate high-capacity, clean-fuel, low-floor buses with electronic fare media, and other ITS technologies, to improve boarding and alighting of bus passengers, to improve the efficiency of our bus system—both locally and on a regional basis.

In closing, I would like to thank you for providing me the opportunity to express my viewpoints on this important matter, and I hope that we can continue our dialog on improving transportation services for resident in the greater Los Angeles area.

Thank you Mr. Chairman and members.

Purpose and Direction of the RTAA

- The Metro Rail System Plan defined the “mission” of the MTA
- Suspension of the rail projects required a re-examination of the mission statement
- Board adopted Restructuring Plan on May 13, 1998 and required study of “viable and effective options” for all parts of the County (with an emphasis on the corridors with the suspended rail lines)

Subsequent Developments

- MOU with California Transportation Commission required re-programming of 1998 STIP and completion of RTAA
- New Funding provided by TEA-21 and requirement to amend the 1998 STIP expanded the scope of the study

Framework of RTAA

- Addresses funding allocations
- Examines transit dependency
- Studies “viable and effective options”
- Identifies immediate improvements
- Sets the direction for further project development

What the RTAA is and What it is Not

It Is

It Is Not

<ul style="list-style-type: none">• A policy framework	<ul style="list-style-type: none">• (except with respect to the STIP amendment submitted for Board approval) adoption of a budget or procurement authorization
<ul style="list-style-type: none">• A funding plan which generally coincides with the STIP and TEA-21 funding cycles (1999-2004)	<ul style="list-style-type: none">• A Long Range Plan (a new LRP will begin in FY '99 and will be completed in FY '00)

RTAA Accomplishments/Limitations

Accomplishments

- Equitable allocation of funds between:

	<u>%</u>	<u>Dollars</u>
Highway	31	5,242
Rail	22	3,771
Bus	47	7,913

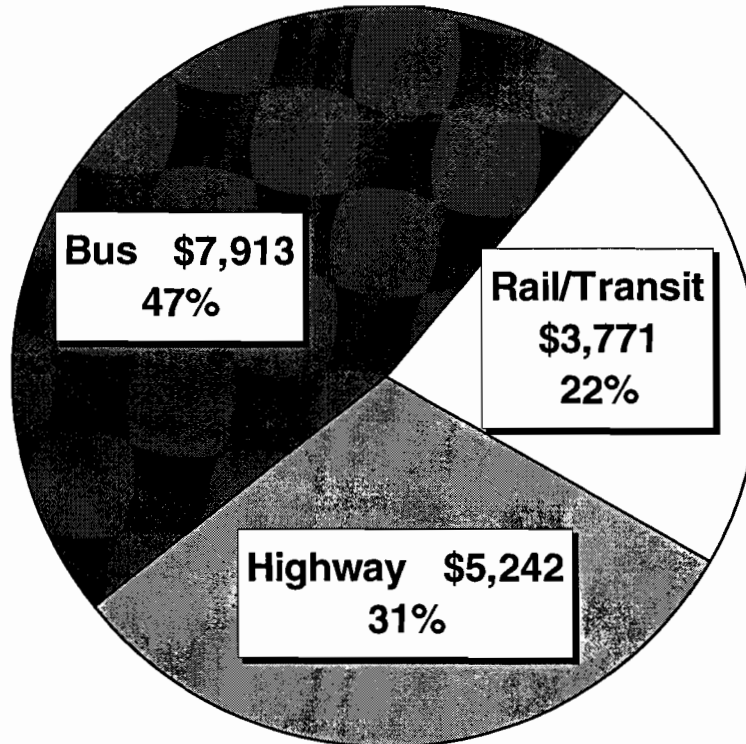
Limitations

- Subject to final approval of the Board of funding for Call-for-Projects, Rapid Bus and Technology purchases
- MTA operating deficit not resolved

RTAA Distribution of Funds FY 1999 - FY 2004 (\$millions)

Major Examples

Bus Operations	\$3,819
Bus Purchases	717
Bus Capital	534
Munis	1,959
ADA	356



Major Examples

Red Line	\$1,218
Blue Line	265
Pasadena	478
Metrolink	218

Major Examples

Highway Ops	\$1,279
Call-forProjects	1,255

RTAA Accomplishments/Limitations

Accomplishments

- Satisfies requirements of CTC MOU
- \$151 million programmed to fully funded projects
- Rapid Bus/Fixed Guideway Study/plan to respond to needs of transit dependent in parts of L.A. County

Limitations

- Pasadena Blue Line not fully funded

RTAA Accomplishments/Limitations

Accomplishments

- Rapid Bus will improve service to transit dependent in all parts of the county
- Priority to East Side, Mid-Cities and San Fernando Valley with suspended rail projects

Limitations

- Rapid Bus does not replace the commitment to fixed guideway transit in the corridors with suspended subway projects

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Los Angeles County
Metropolitan Transportation

Regional transit

DUE DATE	DUE DATE
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OCT 04 2000	
SEP 22 2008	
FEB 06 2009	

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