LAX INTERAGENCY TRANSIT STUDY TASK FORCE

MINUTES OF THE JOINT POLICY AND TECHNICAL GROUP MEETINGS

AUGUST 1991 - JANUARY 1992

Minutes of the meetings and planning studies were prepared by the Los Angeles County Transportation Commission with the Cooperation of the City of Los Angeles Department of Airports and the following firms:

Bechtel Civil, Inc.
Gruen Associates
Manuel Padron Associates
Wilbur Smith Associates

DIRECTORY OF PARTICIPANTS

THE POLICY GROUP

Honorable Jacki Bacharach
Commissioner
Los Angeles County
Transportation Commission

Honorable Deane Dana
Supervisor, District 4
County of Los Angeles

Phil Depoian
Special Assistant
Office of the Mayor
City of Los Angeles

Jane Ellison
Counsel to the Mayor
Office of the Mayor
City of Los Angeles

Honorable Ruth Galanter
Councilwoman, District 6
City of Los Angeles

Clifton A. Moore
General Manager
Department of Airports
City of Los Angeles

Neil Peterson
Executive Director
Los Angeles County
Transportation Commission

Leland Wong
Commissioner
Department of Airports
City of Los Angeles

TECHNICAL TASK FORCE

Dan Beal
Chief Legislative Analyst
City of Los Angeles

Michael Bustamente
Media Relations
Los Angeles County
Transportation Commission

Tom Carmichael
Rail Construction Corporation/
Los Angeles County
Transportation Commission

Roslyn Carter
Chief Legislative Analyst Office
City of Los Angeles

Robert Cashin
Director, South Bay Area Team
Los Angeles County
Transportation Commission

Nelia Custodio
South Bay Area Team
Los Angeles County
Transportation Commission

Joseph Dale
Rail Construction Corporation/
Los Angeles County
Transportation Commission

Tim Davis/Bob Ree
Program Management
Rail Construction Corportation/
Los Angeles County
Transportation Commission

Rodney Dawson
Acting Executive Vice President
Rail Construction Corporation/
Los Angeles County
Transportation Commission

Ken Dietz
Department of Transportation
City of Los Angeles

Norm Emerson
Emerson & Associates

Harry Fackler/Don Holman
Real Estate
Los Angeles County
Transportation Commission

Douglas R. Failing
Project Development
Caltrans, District 7

Emily Gabel
Department of Planning
City of Los Angeles

Jack Graham
Chief, Aviation Planning
Department of Airports
City of Los Angeles

Rubell Helgeson
Planning Deputy
District 6
City of Los Angeles

Carol Inge/Steve Lantz
Westside Area Team
Los Angeles County
Transportation Commission

Brynn Kernaghan
South Bay Area Team
Los Angeles County
Transportation Commission

James McLaughlin
Area Teams
Los Angeles County
Transportation Commission

TECHNICAL TASK FORCE (CONTINUED)

Ed McSpedon
President/CEO
Rail Construction Corporation/
Los Angeles County
Transportation Commission

Ken Nelson
Caltrans, District 7

James M. Okazaki
Department of Transportation
City of Los Angeles

Mal Packer
Chief Airports Engineer
Department of Airports
City of Los Angeles

William Schoenfeld
Deputy Executive Director
Department of Airports
City of Los Angeles

David Sievers/Lynn Struthers
Green Line Project
Rail Construction Corportation/
Los Angeles County
Transportation Commission

Gary Spivack
Assistant General Manager
Southern California Rapid
Transit District

George Swede
Transportation Development
Specialist
Los Angeles County
Transportation Commission

Barna Szabo
Chair, LAX Blue Ribbon Committee
LAX Technical Task Force

Al Thiede
Vice President - Engineering
Los Angeles County
Transportation Commission/
Rail Construction Corporation

Haripal Vir
Department of Transportation
City of Los Angeles

Enrique Valenzuela
Community Relations
Rail Construction Corportation/
Los Angeles County
Transportation Commission

Jim Wiley
Real Estate Department
Los Angeles County
Transportation Commission

Judith (Weiss) Wilson
Deputy Executive Director
Los Angeles County
Transportation Commission

Howard Yoshioka
Supervisor, Planning Section
Federal Aviation Administration

CONSULTANTS

Avionics Center, Ohio University
- Dr. Richard H. McFarland

Bechtel, Civil Inc.
- Ben Beasley
- Les Hewison
- Gordon Anderson

Fairbank, Maullin & Associates
- Richard Maullin
- Suzanne Reed
- Debra Weiss

Gruen & Associates
- John Stutsman
- Sheila Murphy

JWC Associates
- Jerry Chavkin

Manuel Padron & Associates

Transcal
- Joe Sheard

Wilbur Smith & Associates
- Ken Ross
- David Nagerib
- Irene Ulbrich

sn:LAXTASK.ls1

LAX INTERAGENCY TRANSIT STUDY TASK FORCE

JOINT POLICY AND TECHNICAL GROUP MEETINGS

AUGUST 1991 - JANUARY 1992

TABLE OF CONTENTS

Item	Page
Meeting #1 INTERAGENCY TRANSIT STUDY POLICY GROUP August 19, 1991	1
Meeting #2 INTERAGENCY TRANSIT STUDY JOINT POLICY GROUP AND TECHNICAL TASK FORCE September 23, 1991	17
Meeting #3 INTERAGENCY TRANSIT STUDY JOINT POLICY GROUP AND TECHNICAL TASK FORCE October 10, 1991	44
Meeting #4 INTERAGENCY TRANSIT STUDY JOINT POLICY GROUP AND TECHNICAL TASK FORCE October 21, 1991	51
Meeting #5 INTERAGENCY TRANSIT STUDY JOINT POLICY GROUP AND TECHNICAL TASK FORCE November 18, 1991	86
Meeting #6 INTERAGENCY TRANSIT STUDY JOINT POLICY GROUP AND TECHNICAL TASK FORCE December 19,1991	165
Meeting #7 INTERAGENCY TRANSIT STUDY JOINT POLICY GROUP AND TECHNICAL TASK FORCE January 30, 1992	212

INTERAGENCY TRANSIT STUDY POLICY GROUP
August 19, 1991, 10:00 a.m.
Proud Bird Restaurant

TABLE OF CONTENTS FOR MEETING #1

Item	Page
Agenda	2
Minutes	3
Metro Green Line/LAX Work Schedule	5
Preliminary Work Plan	6
Summary of Major Ground Transportation Improvements and Related Plans	8
Key Assumptions Summary	9
LAX Bus Tour Map	11
Green Line Northern Extension Map	12
LAX-Palmdale Base Map	13
Sign-in Sheets	14

INTERAGENCY TRANSIT STUDY POLICY GROUP
August 19, 1991, 10:00 a.m., Proud Bird Restaurant
11022 Aviation Blvd., 111th Street (Adjacent to LAX)

AGENDA

1. Welcome and Self-Introductions

2. Overview of the Study and the Policy Group - Neil Peterson

3. Summary of Accomplishments to Date

   o Project presentations:

      - Green Line Northern Ext. - Bob Cashin

      - LAX People Mover - Jack Graham

      - LAX-Palmdale Rail - George Swede

      - Transit Center - Gary Spivack

   o Key assumptions for this interagency planning effort - Judy Weiss

   o Overview of work program and where we are - John Stutsman

4. Public Participation Process Strategies - Barna Szabo

5. Set Date and Place for Next Policy Meeting

6. Project Tour

7. Lunch at Proud Bird Restaurant; Recap of Tour and Action Areas; Set Agenda for Next Policy Meeting.

nc4:polmtg1

MINUTES OF

LAX INTERAGENCY TRANSIT STUDY POLICY GROUP

MEETING NUMBER 1

AUGUST 19, 1991 - 10:00 A.M.

This was the first meeting of the Policy Group for the LAX Interagency Transit Study. Comments regarding these minutes can be directed to Bob Cashin at (213) 244-6441, or can be addressed at the beginning of our next meeting.

ISSUES AND CONCERNS

- The entire 3 miles of the North Coast alignment will be revisited from the Aviation Boulevard Station north. This will include issues of neighborhood sensitivity, and a continued commitment to serve Westchester, although the decision on alignment and technology will be open for discussion. The ultimate solution should not preclude future service to Marina Del Rey.

- Re-examining the alignment provides opportunities, such as:

  - A chance to develop consensus.
  - Make the whole system come together by looking at the whole package of needs.

  - Contribute to synergistic approach.
  - Include the public fairly early in the process.

- All of the area west of the 405 could reasonably be considered for alignments -- remaining flexible to both alignment and technology options without unreasonable delays.

- Make sure that Policy Committee members are involved -- Don't delegate participation to others.

- To be effective as the main point of arrival to LAX the Transit Center will need to provide adequate "arrival" amenities, such as luggage drop and flight arrival and departure information. However, if luggage drop becomes a service of the Transit Center, the vehicles/methods used to transport luggage to the CTA should not impact CTA traffic. The Transit Center also needs good access to the regional freeway system.

- Alignment of the North Coast link through to Playa Vista will be restricted to the east side of Lincoln because of the wetland enhancement areas west of Lincoln. Playa Vista development (McGuire/Thomas) is studying the possibility of a powered roadway which would require no additional right-of-way. The transportation problem in the Playa Vista area will be solved as part of the whole community. Parcel A - another large parcel - needs a quick look.

- The goal is to get people out of their cars. Of the people arriving at LAX each day, 80% arrive by auto (including rentals), 3/4 come by private car, 5-6% use shuttles, 4-5% use taxis and actual transit use is small. An average of 61,000 cars come into LAX daily carrying passengers and employees.

- If the development of the Green Line, People Mover, and Transit Center are successful in reducing vehicle trips, future parking area development will be reduced proportionately.

PUBLIC PARTICIPATION

- The public should be involved as early as possible to foster trust and ownership in the process.

- A broader definition of "Public" should be developed to include not only the residents of the immediate vicinity of LAX, but also other interest(ed) groups, such as the Greater Los Angeles Chamber of Commerce, employees of the Westchester-Inglewood area, Supervisors Hann, Edelman, Antonovich and Molina, and Chambers of Commerce from the San Fernando Valley and inland areas that would be affected by transportation improvements at LAX.

  A definition of the interested "public" will be provided by the Technical Task Force with participation by the Policy Group.

- Public Participation will be scheduled for October, both to allow for adequate notification and appropriate preparation of forum and presentation of alternatives.

- The Technical Task Force will propose a Public Participation program which will not sacrifice the schedule.

NEXT POLICY GROUP MEETING

- The next Policy Group meeting will be scheduled to occur in the next 3 to 4 weeks.

The Technical Task Force Action Items for the next Policy Group meeting are:

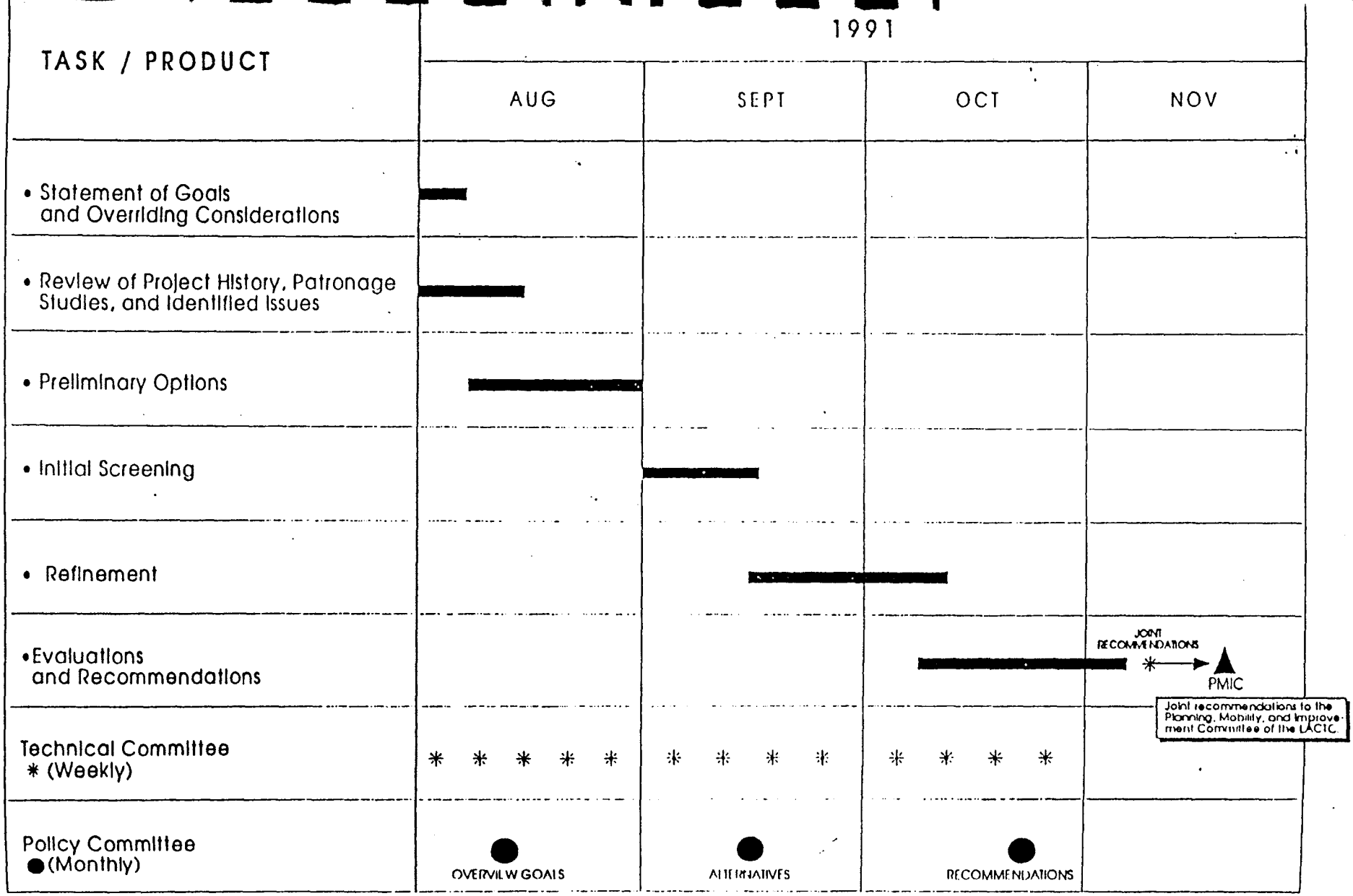
- Definition of interested Publics.

- Proposed Public Participation Program.

- Presentations of 3-4 alignment alternatives, including locations for the Transit Center.

TOUR

The meeting was followed by a tour of the project alignment and sites.



METRO GREEN LINE • LAX
Interagency Transit Study

Work Schedule

INTERAGENCY TRANSIT STUDY
PRELIMINARY WORK PLAN

	ACTIVITY	RECOMMENDED RESPONSIBILITY	DATE
1.	**Statement of Goals & Overriding Consideration** o Metro Green Line o LAX People Mover o SCRTD Transit Center o LAX-Palmdale Rail Project o LAX Master Plan - Goals Statement	DOA; LACTC; SCRTD; LA CITY	August 6
2.	**Review of Project History, Patronage Studies, and Issues** o DOA: LAX 2000 Plan; Ground Access Study; Capital Program; Project Description; Goals; Planning Parameters; Funding Schedule. o LACTC: Metro Green Line Northern Extension LAX-Palmdale Rail Project	DOA; LACTC	August 15
3.	**Development of Preliminary Options**	PBQ&D; WSA; GRUEN	August 30

ACTIVITY	RECOMMENDED RESPONSIBILITY	DATE
4. **Initial Screening of Preliminary Options** o Patronage o Cost Comparisons; Funding Implications o Land Use/CMP Implications o Timing o Service to the Public o Interface Between Modes o Major Environmental Issues o Public/Political Acceptability	PBQ&D; WSA; MP; GRUEN; JDRP	September 15
5. **Refine Selected Alternatives**	PBQ&D; GRUEN	October 12
6. **Refinement & Evaluation of Alternatives.**	PBQ&D; GRUEN	November 5
7. **Technical Task Force Recommendations.**	Judy Weiss	November 13

PBQ&D = Parsons Brinckerhoff Quade & Douglas, Inc.
WSA = Wilbur Smith Associates
MP = Manuel Padron
GRUEN = Gruen Associates
JDRP = Jones, Day, Reavis and Pogue

WRKPLN1.NC

PROJECT NAME	PROJECT DESCRIPTION	PROJECT FUNDING STATUS	DECISION/ IMPLEMENTATION TIMELINE	PROJECT COMPLETION DATE	KEY DECISION MAKERS	COMMENTS
METRO GREEN LINE NORTHERN EXTENSION: AVIATION TO WESTCHESTER PARKWAY	The first phase of the Green Line Northern Extension is a three-mile segment that begins at Aviation Blvd. and Imperial Hwy., runs north through LAX Lot C, and ends at a temporary terminus at Westchester Pkwy. It will have two stations, one (to be identified) to serve the LAX area and the other at Westchester Pkwy. west of Sepulveda. It will be an aerial, automated/computer-operated (driverless) line.	$215 million (in mid-1992 dollars)	The Project is in final engineering and initially scheduled for construction in late 1991.	April 1995	LACTC Commissioners	Project alignment and technology to be reconsidered as part of Task Force effort.
LAX PEOPLE MOVER						
LAX / PALMDALE RAIL PROJECT	71 mile rail system from LAX to Palmdale Regional Airport, 30 miles aerial and 40 miles at grade, following the median of the 405, 5 and 14 freeways. Thirteen stations are proposed.	Approximately $5 billion. To be privately financed with public sector repayment to be determined.	•RFP released in August, 1991 •Proposals due in January, 1992 •Recommendation for contract award in October, 1992 •If built, revenue service scheduled for July, 2001	July 2001	•LACTC Commissioners •Department of Airports •Los Angeles City Mayor and Council •Los Angeles County Board of Supervisors •Katz/Legislature	
SCRTD / MUNICIPAL TRANSIT CENTER	Existing transit center is located at Lot C with fourteen bus bays, serving 300,000 bus trips annually. Riders transfer to other buses or shuttles or walk to final destinations.	(built)			•SCRTD •Municipal Operators •DOA	The transit center must have linkage to LAX and the Green Line Station so may be relocated depending on interface location.

August 19, 1991

SUMMARY OF KEY STUDY ASSUMPTIONS AND UNDERSTANDINGS

GreenLine Northern Extension

- The northerly extension of the GreenLine, i.e., north of the Aviation Station, will be given a "fresh look" as part of this Task Force effort. Accordingly, the final design effort has been put on hold pending outcome of the Task Force effort.

- The North Coast must be served. The alignment and technology are open for discussion.

- Use of the GreenLine to bring passengers to LAX is an important goal; therefore, linkages to People Mover and Transportation Center are important.

LAX People Mover System

- An LAX People Mover System will be developed to provide fast/efficient transfer among terminals (including proposed west-end terminal) and convenient service from LAX parking lots (C, B and proposed west end).

- CTA loop and connection to Transportation Center is first priority.

LAX Transportation Center

- A transportation center will be developed at LAX which:

  -- Consolidates rental car facilities and shuttle van service.

  -- Provides an auto drop-off/pick-up location outside the CTA.

  -- Provides a GreenLine connection.

  -- Serves SCRTD and the other municipal operators.

  -- Provides an LAX-Palmdale connection, if that line is built.

  -- Provides access to LAX People Mover.

- The GreenLine LAX Station, LAX Transportation Center, and LAX People Mover should interface at one, optimal location.

- The optimal location for the Transportation Center must feature good ground access (most likely to be satisfied to east of Central Terminal Area).

- A lot C location for the Transportation Center is the currently preferred site; thus, the LAX-Palmdale Project terminal has focused on Lot C.

General

- The Technical Task Force will focus on achieving consensus on the optimal integrated ground access solution to the LAX area and environs, from both a local and regional standpoint, within the three month framework.

- Transportation issues and their successful resolution will be the focus of this effort. Joint development issues will not be a primary driver in determining the most optimal course of action.

- The LAX Master Plan, under preparation by City Planning, will be considered as a key guide in the conduct of this effort.

- Planning for improved ground access to Lot B should be accomplished now, even if construction is not in the immediate future.

- The FAA needs good, reliable information, which will not change significantly, in order to provide timely review and approval on proposed construction projects. The FAA must review and approve all notices of construction, and they must also approve the use of airport land for "non-airport uses" (see attachment).

JMS/reve/keyassum.sum

LAX BUS TOUR

METRO GREEN LINE
LAX–PALMDALE
HIGH-SPEED RAIL
TOUR ROUTE

1 Aviation/Imperial
Metro Green Line Station

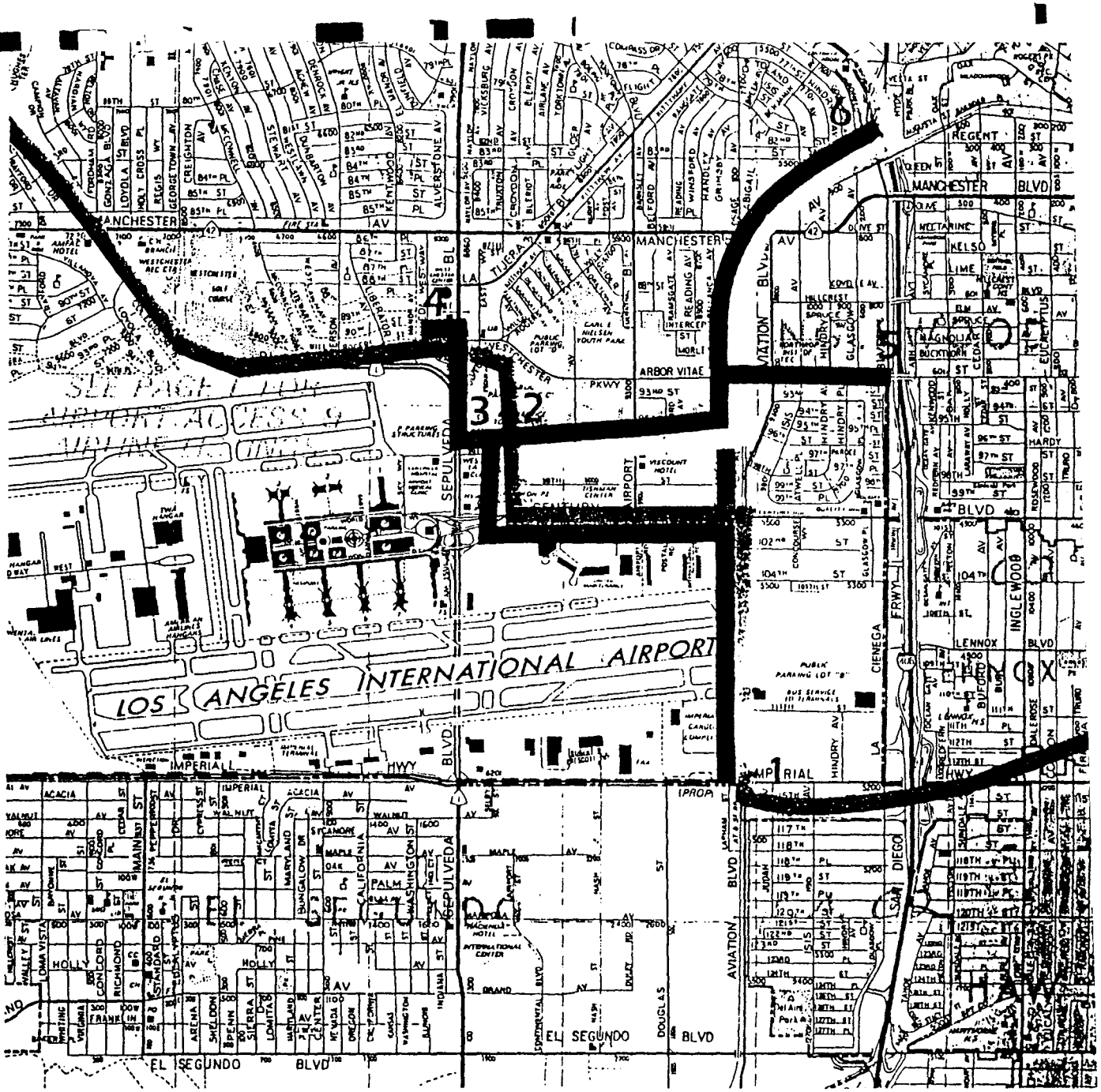
2 Lot C Transit Center

3 96th Street Overcrossing

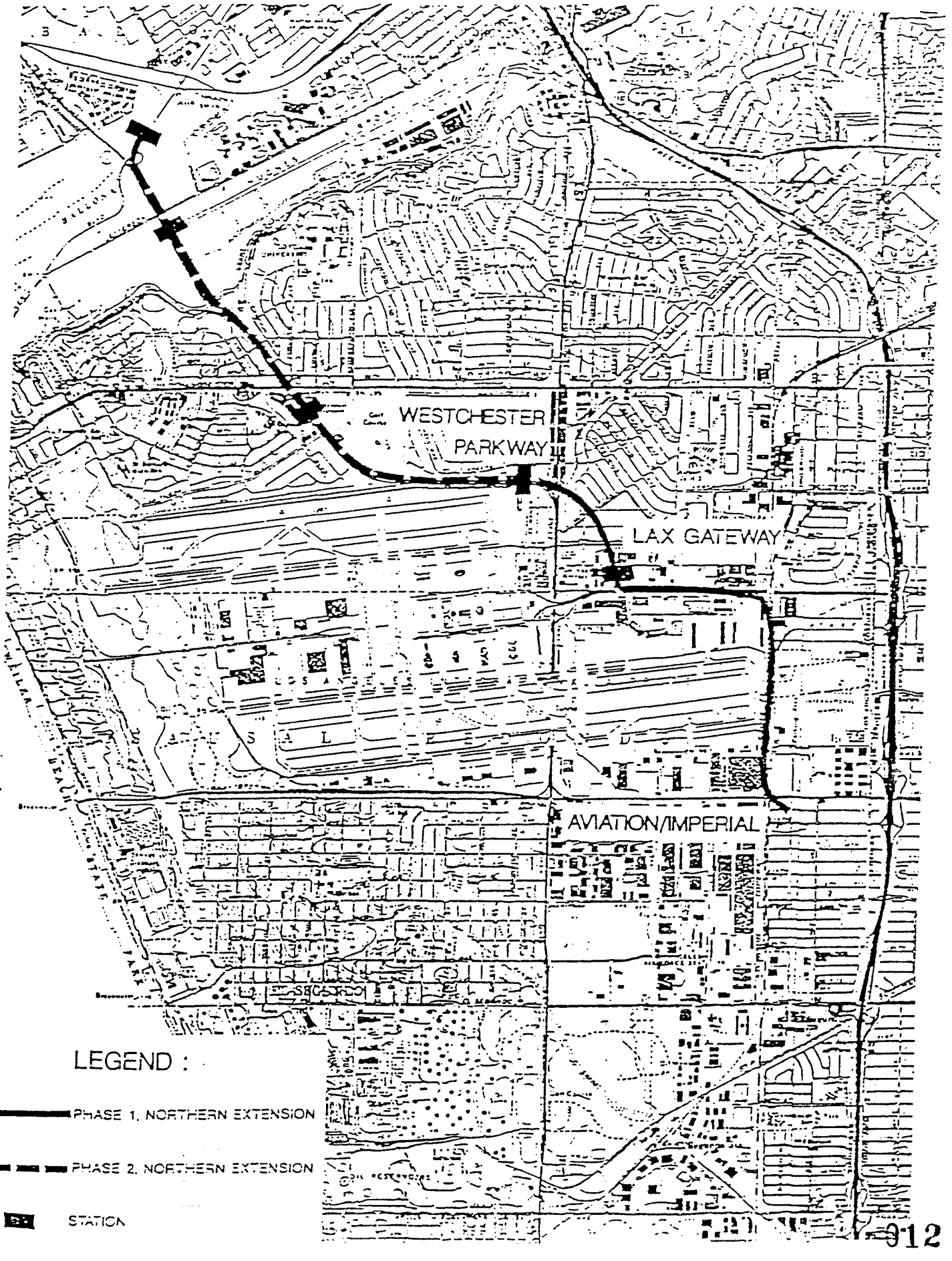
4 Westchester Parkway Station

5 Arbor Vitae/405 Interchange

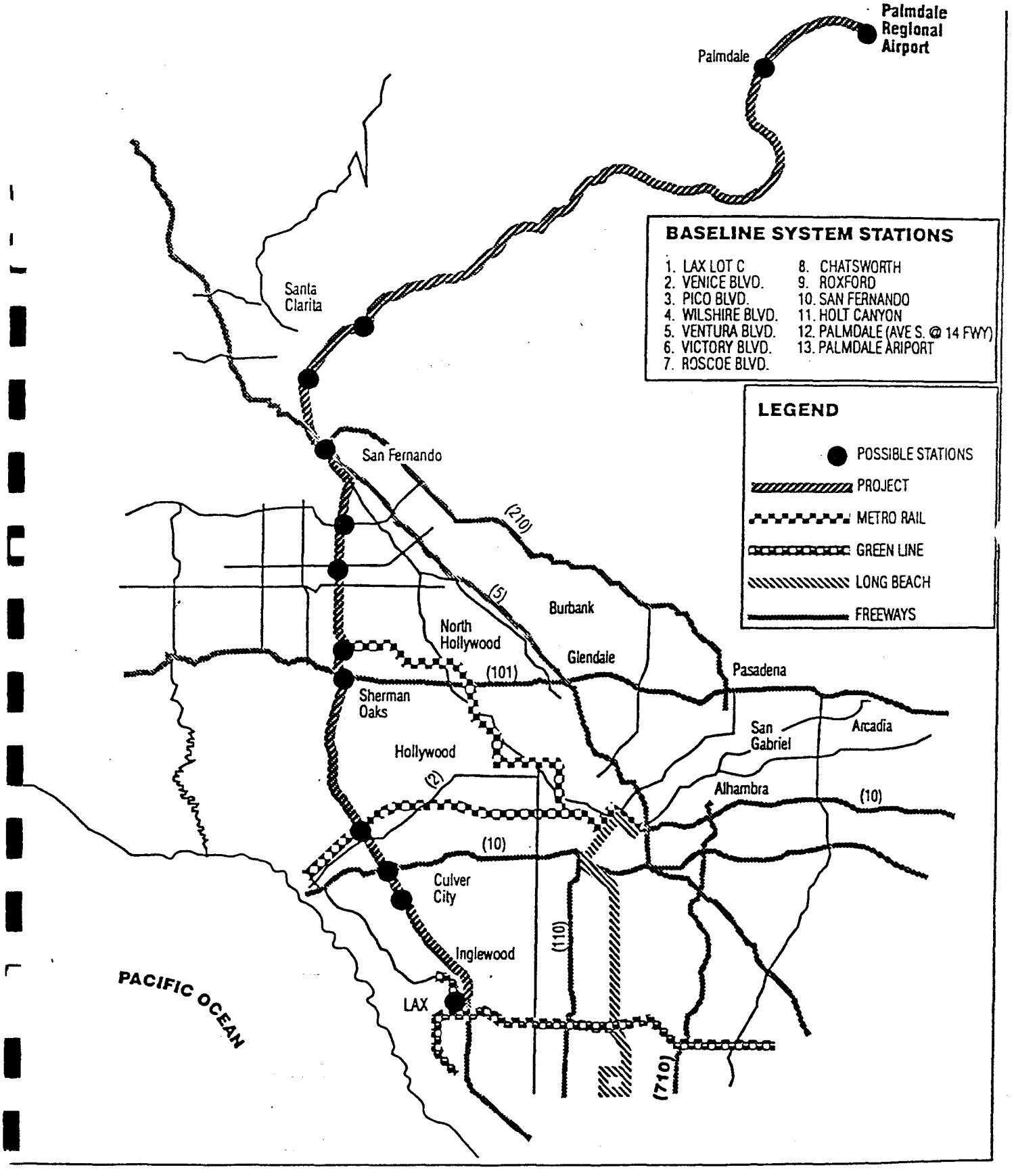
6 LAX–Palmdale High-Speed Rail



GREEN LINE NORTHERN EXTENSION



LAX-PALMDALE
Base Map



SIGN-IN SHEET

e: 8-19-91

action: LAX Interagency Policy Committee Meeting

Name	Title/Agency	Phone/Fax Numbers
NEIL PETERSON	EX DIR / LACTC	625-1194
CLIFTON A. MOORE	EX DIR / LADOA	646-6250 FAX 6460523
LELAND WONG	COMMISSIONER – LADOA	646-6263 -
RUTH GALANTER	CITY COUNCIL, CD6	485-3357
PHILIP DEPOIAN	MAYOR'S OFFICE	485-3315
CAROL INGE	LACTC – Westside Area Team	244-6896
Rubeel Dalgleish	City of LA, CD6	485-3357
James M. Okazaki	City of LA, DOT	485-3039
Lynn Kernaghan	LACTC – So. Bay Area Team	244-6533; fax 244-6009

SIGN-IN SHEET

Date: 8-19-91

Function: LAX Interagency Policy Committee Meeting

Name	Title/Agency	Phone/Fax Numbers
George Swede	LAX/Palmdale Project Mgr LACTC	(213) 244-6558
Roslyn Carter	L.A. City Council - Chief Legislative Analyst Office	213/485-3975
J. P. Ellman	L.A. City Council Cheif Legislative Analyst Ofc	(213) 485-6269
David Kessler	FAA - Airports Div. Western-Pacific Region	213/297-1534
LEE NICHOLS	L.A. DEPT of AIRPORTS Public Relations Director	213-646-5260
Sara Hirsch	Supervisor Deane Dana's Office	213-974-4444
Chuck O'Connell	Dep Dist Director CALTRANS - Dist 7	213-620-3874
JOHN JUTTSMAN	VICE PRESIDENT, GRUEN ASSOCIATES	(213) 937-4270
BOB CASHIN	LACTC	213 244 6441
DAN BEAL	LA. City Council - CLA's Off.	(213) 485-6632
Judith Weiss	Deputy Exec. Director LACTC	213-244-6576
DEANE DANA	SUPERVISOR, 4TH DISTRICT L.A. Co	213-974-1042

SIGN-IN SHEET

Date: 8-19-91

Function: LAX Interagency Policy Committee Meeting

Name	Title/Agency	Phone/Fax Numbers
Emily Gabel	City Planning	213-237-0124
Ann Jirasek	City Planning Dept	(213) 237-1818
Julia S. Custodio	LACTC	(213) 244-6732
SHEILA M. MURPHY	GRUEN ASSOCIATES	(213) 937-4270
Mal M. Packer	L A Dept of Airports	213 646-3254
W. M. SCHOENFELD	" " "	-7393
Jack Graham	" " "	-7116
Dana Woodbury	SCRTD	213 972-4841
BARNA SZABO	LAX. Blue Ribbon Committee / Sig Dana	(213) 284-7243
NORMAN EMERSON	EMERSON & ASSOCIATES	(213) 481-3731
Tom TANKA	LACTC / RCC	(213) 244-6887
Al Fried	" "	" " 6885

INTERAGENCY TRANSIT STUDY
JOINT POLICY GROUP AND TECHNICAL TASK FORCE
September 23, 1991 330 p.m.
LACTC Conference Room, 10th Floor

TABLE OF CONTENTS FOR MEETING #2

Item	Page
Agenda	18
Minutes	19
Alternate Alignments for Green Line North Coast Extension	21
Map of Alignments	22
People Mover Technologies	27
Cost Comparison, Linehaul & People Mover Technologies	37
LAX Interagency Task Force Proposed Public Outreach Program	38
Sign-in Sheets	41

Agenda

INTERAGENCY TRANSIT STUDY
JOINT POLICY GROUP AND TECHNICAL TASK FORCE MEETING NO. 2
September 23, 1991, 3:30 p.m., Los Angeles Conference Room
LACTC, 818 W. 7th Street, 10th Floor

AGENDA

1. Approve Minutes

2. Recap of Interagency Transit Study Goals and Assumptions, Overriding Considerations, and Summary of Project Issues

3. Technology Review - George Swede

4. Overview of FAA Issues

5. Summary of Alignments and Results of Technical Task Force Preliminary Screen - Bechtel/Gruen

6. Evaluation of Preliminary Alternatives; Direction to Technical Task Force on Associated Issues

7. Presentation of the Public Process Program - Barna Szabo

8. Set Date and Place of Next Policy Meeting

9. Adjourn

nc4:polmtg2

MINUTES OF

LAX INTERAGENCY TRANSIT STUDY POLICY GROUP

MEETING NUMBER 2

SEPTEMBER 23, 1991 - 3:30 P.M.

This was the second meeting of the Policy Group for the LAX Interagency Transit Study. Comments regarding these minutes can be directed to Bob Cashin at (213) 244-6441, or can be addressed at the beginning of our next meeting.

ISSUES AND CONCERNS

- **A change of technology from GreenLine to People Mover would be acceptable.** Whether to make that change at Aviation station, Lot B or Lot C is still a matter for further discussion.

- **A primary goal is to minimize transfers.** A passenger of the GreenLine, LAX-Palmdale, or the CTA People Mover should only need to make one transfer at a single location to ride to any other place served by any of the three systems. This indicates the desire for a single point Transit Center station which would serve all three systems.

- **Provide a direct connection of the GreenLine to the LAX-Palmdale.** The ability of the LAX-Palmdale line to connect to a single transfer point should be a primary consideration in selecting the location of the Transit Center.

- **A relocation of Westchester Station would be acceptable.** A relocation of the Westchester station closer to the CBD would be preferable, either at 89th Street west of Sepulveda or north of Westchester Parkway along Sepulveda Eastway. The siting of the Westchester station and the choice of technology should consider the possibilities of future extension of the North Coast transit system.

- **Service to Lot B may be a lower priority than previously expressed.**

ADDITIONAL OPTIONS IDENTIFIED THROUGH TASK FORCE DISCUSSION

1. The GreenLine Subway alignment could become more cost-effective if it terminated at Lot C, the CTA People Mover was not extended to Lot B but was extended to Westchester to provided continuation of service to the CBD. With this option, People Mover would be the technology used to serve Playa Vista as part of any future extension of transit service.

2. If LAX-Palmdale could be connected at Lot B, a change of technology from GreenLine to People Mover could be made at Lot B. The alignment option for GreenLine from Aviation to Lot B could combine with the option for all People Mover north of Lot B.

PUBLIC PARTICIPATION

- The Public Participation Program has been developed, and the firm of Fairbank, Bregman and Maullin has been retained to run the public meetings.

- Proposed Public Participation Program had been scheduled to begin on September 25th, but will be adjusted to begin after the next Policy Group Meeting.

- A general presentation of alternatives will be developed, introducing the public to the options being considered. The forum will be one of information gathering and exchange.

NEXT POLICY GROUP MEETING

- The next Policy Group meeting will be scheduled to occur in the next 2 weeks.

The Technical Task Force **Action Items** for the next Policy Group meeting are:

- Presentations of 4 alignment alternatives, including revised alternatives for the GreenLine Subway, and People Mover to Lot B, to achieve single transfer maximum with LAX-Palmdale, and lower cost.

- More detailed cost, schedule and potential for ridership information will be provided for each alternative presented.

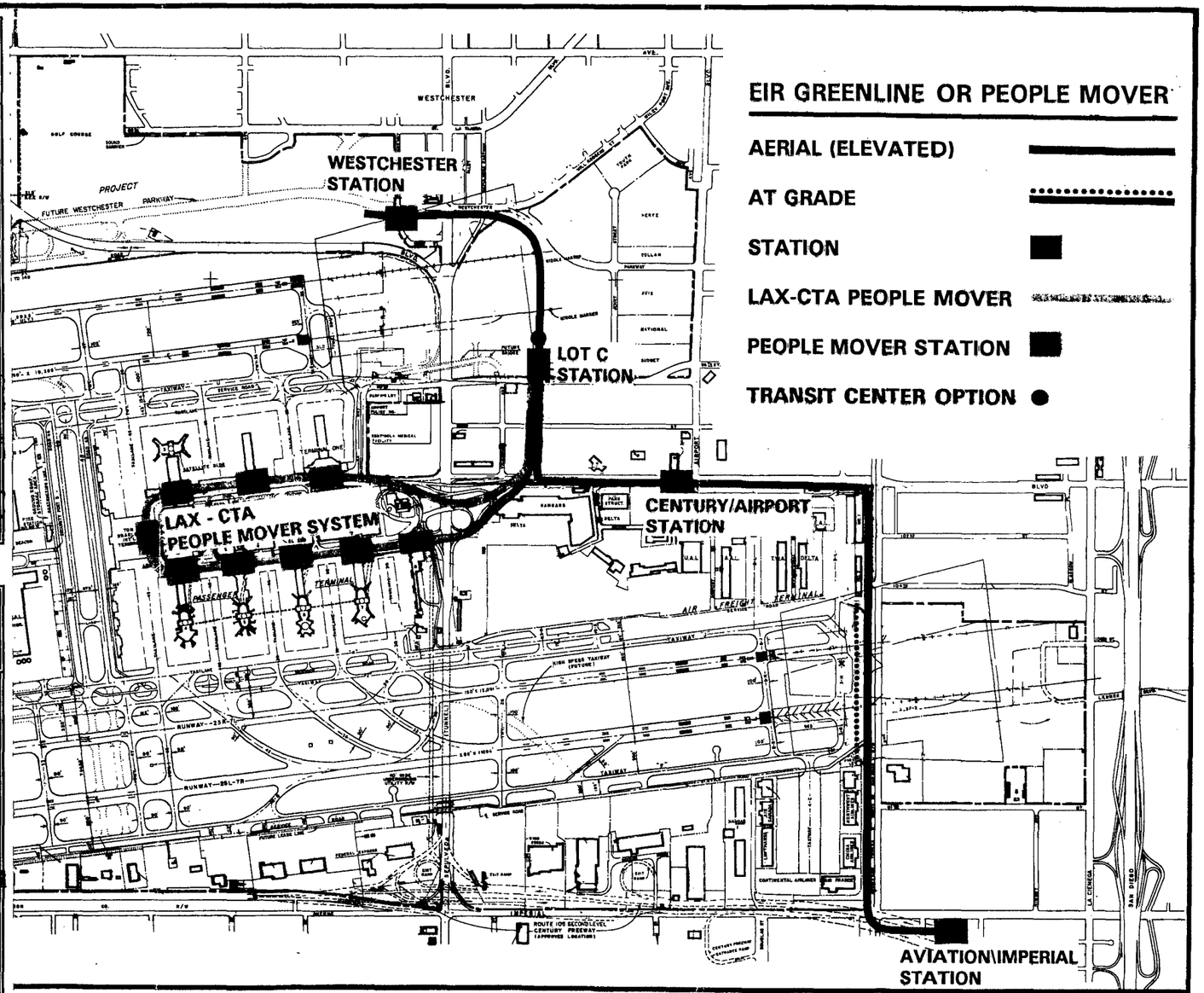
ALTERNATE ALIGNMENTS FOR GREENLINE NORTH COAST EXTENSION

DESCRIPTION	ALNMT #1	ALNMT #1A	ALNMT #2	ALNMT #2A	ALNMT #3	ALNMT #4	ALNMT #5	ALNMT #6	ALNMT #3A	ALNMT #3Z	ALNMT #Z
LRT-TECHNOLOGY											
AT GRADE GUIDEW	1600	1600									
CUT & COVER	N/A	2000			1000				2000	2000	1000
AERIAL GUIDEWAY	13900	9800			5000	18500			5400	5400	
TUNNEL	N/A	2100			8000				7400	11000	7768
AERIAL STATIONS	3	3				4					
SUBWAY STATIONS	N/A	1			1				1	1	1
VEHICLES	ALLOWANCE	ALLOWANCE			ALLOWANCE	ALLOWANCE			ALLOWANCE	ALLOWANCE	
P\M-TECHNOLOGY											
AERIAL GUIDEWAY	12300	12300	26200	23200	26100	12350	29800	31300	26100	26100	
AT GRADE GUIDEW			1600	1600							
C & C GUIDWAY				800							
TUNNEL				2200							
AERIAL STATIONS	9	9	12	12	13	9	14	13	13	13	
SUBWAY STATION				1							
MAINT. FACILITY	1	1	1	1	1	1	1	1	1	1	
VEHICLES	15	15	30	30	30	15	30	30	30	30	
COST											
LIGHT RAIL	$219 049 357	$290 780 457			$446 878 250	$274 685 892			$316 340 935	$370 388 141	$224 299 211
PEOPLE MVR	$226 216 885	$226 216 885	$423 327 382	$489 157 066	$407 763 076	$226 660 320	$443 250 828	$451 186 387	$407 763 076	$407 763 076	
TOTAL	$445 266 242	$516 997 342	$423 327 382	$489 157 066	$854 641 326	$501 346 212	$443 250 828	$451 186 387	$724 104 011	$778 151 217	$224 299 211

SEPTEMBER 16, 1991

EIR ALIGNMENT - GREENLINE				
	COSTS*		LENGTH/STATIONS	
TOTAL		$386.1		27,323
CTA		$164.8		
CTA LOOP	$122.6		10,800	
DOUBLE WYE				
LINK TO LOT C	$13.6		1,200	
YARD	$28.6			
NORTH COAST LINE		$221.2		15,323
GL	$188.3		15,323	
PM				
GL STATIONS	$33.0		3	
PM STATIONS				

EIR ALIGNMENT- PEOPLE MOVER				
	COSTS*		LENGTH/STATIONS	
TOTAL		$347.5		26,423
CTA		$153.3		
CTA LOOP	$122.6		10,800	
DOUBLE WYE	$2.1		300	
LINK TO LOT C				
YARD	$28.6			
NORTH COAST LINE		$194.3		15,323
GL				
PM	$178.4		15,323	
GL STATIONS				
PM STATIONS	$15.9		3	



* These costs exclude any real estate aquisition costs.

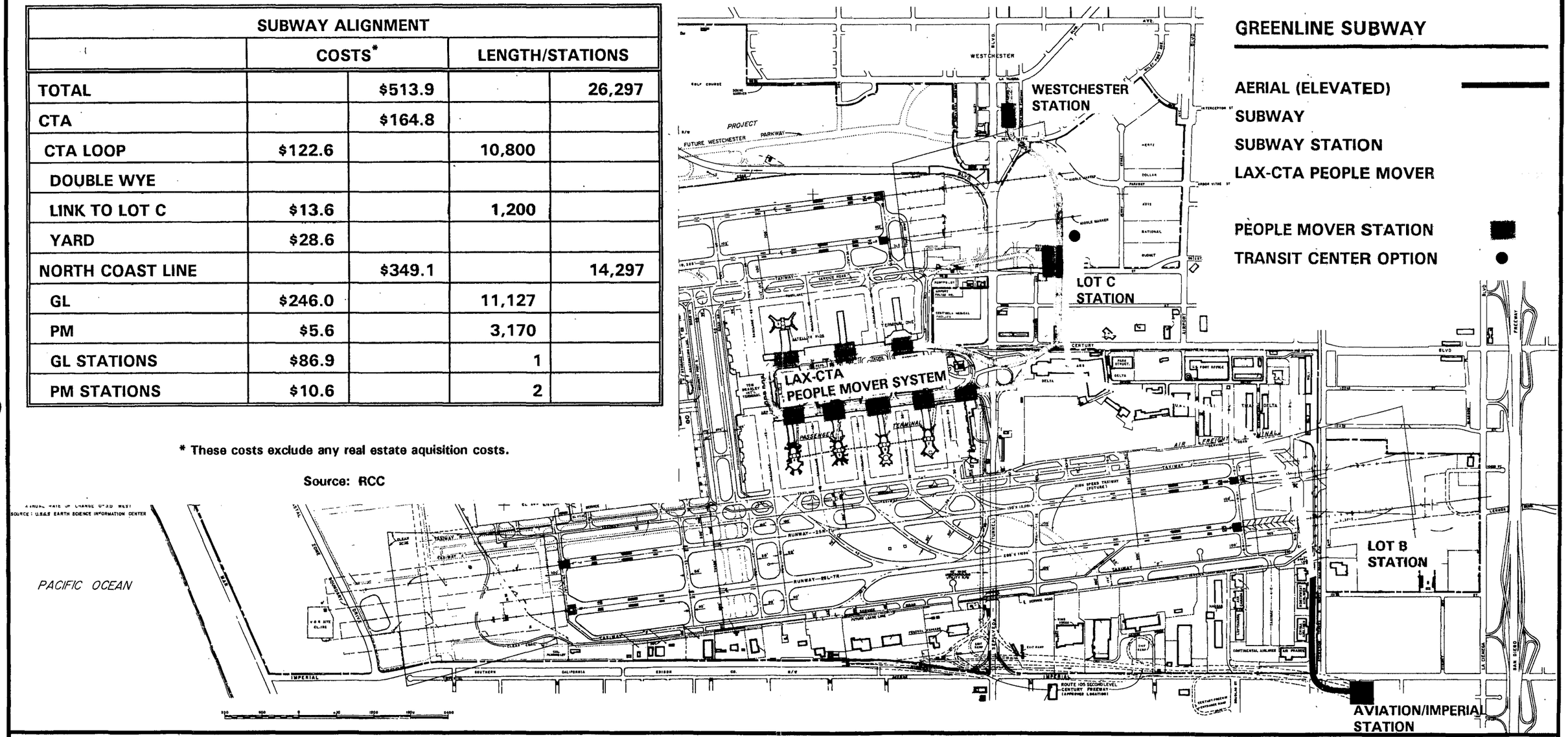
Source: RCC

9/91

SUBWAY ALIGNMENT				
	COSTS*		LENGTH/STATIONS	
TOTAL		$513.9		26,297
CTA		$164.8		
CTA LOOP	$122.6		10,800	
DOUBLE WYE				
LINK TO LOT C	$13.6		1,200	
YARD	$28.6			
NORTH COAST LINE		$349.1		14,297
GL	$246.0		11,127	
PM	$5.6		3,170	
GL STATIONS	$86.9		1	
PM STATIONS	$10.6		2	

* These costs exclude any real estate aquisition costs.

Source: RCC

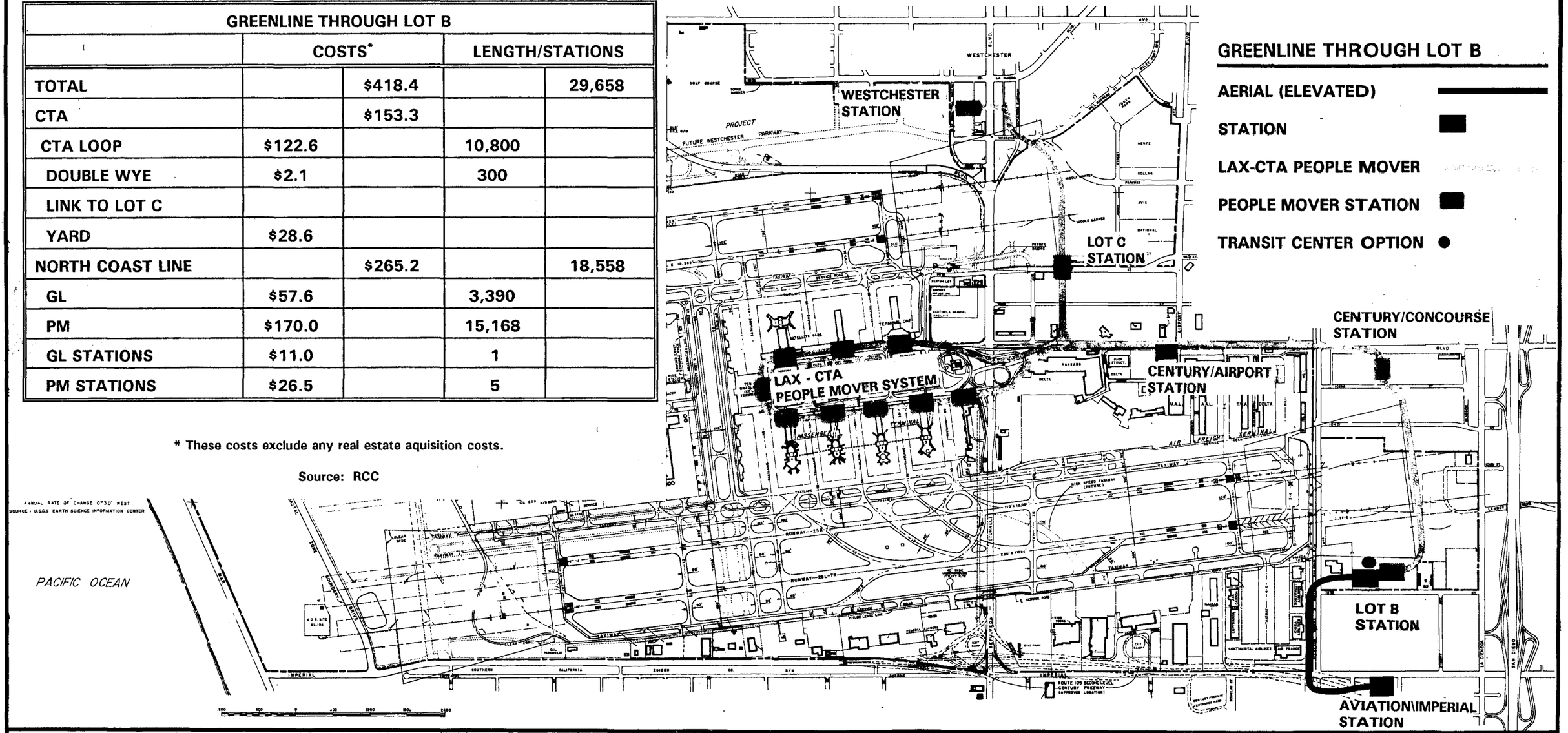


9/91

GREENLINE THROUGH LOT B				
	COSTS*		LENGTH/STATIONS	
TOTAL		$418.4		29,658
CTA		$153.3		
CTA LOOP	$122.6		10,800	
DOUBLE WYE	$2.1		300	
LINK TO LOT C				
YARD	$28.6			
NORTH COAST LINE		$265.2		18,558
GL	$57.6		3,390	
PM	$170.0		15,168	
GL STATIONS	$11.0		1	
PM STATIONS	$26.5		5	

* These costs exclude any real estate aquisition costs.

Source: RCC

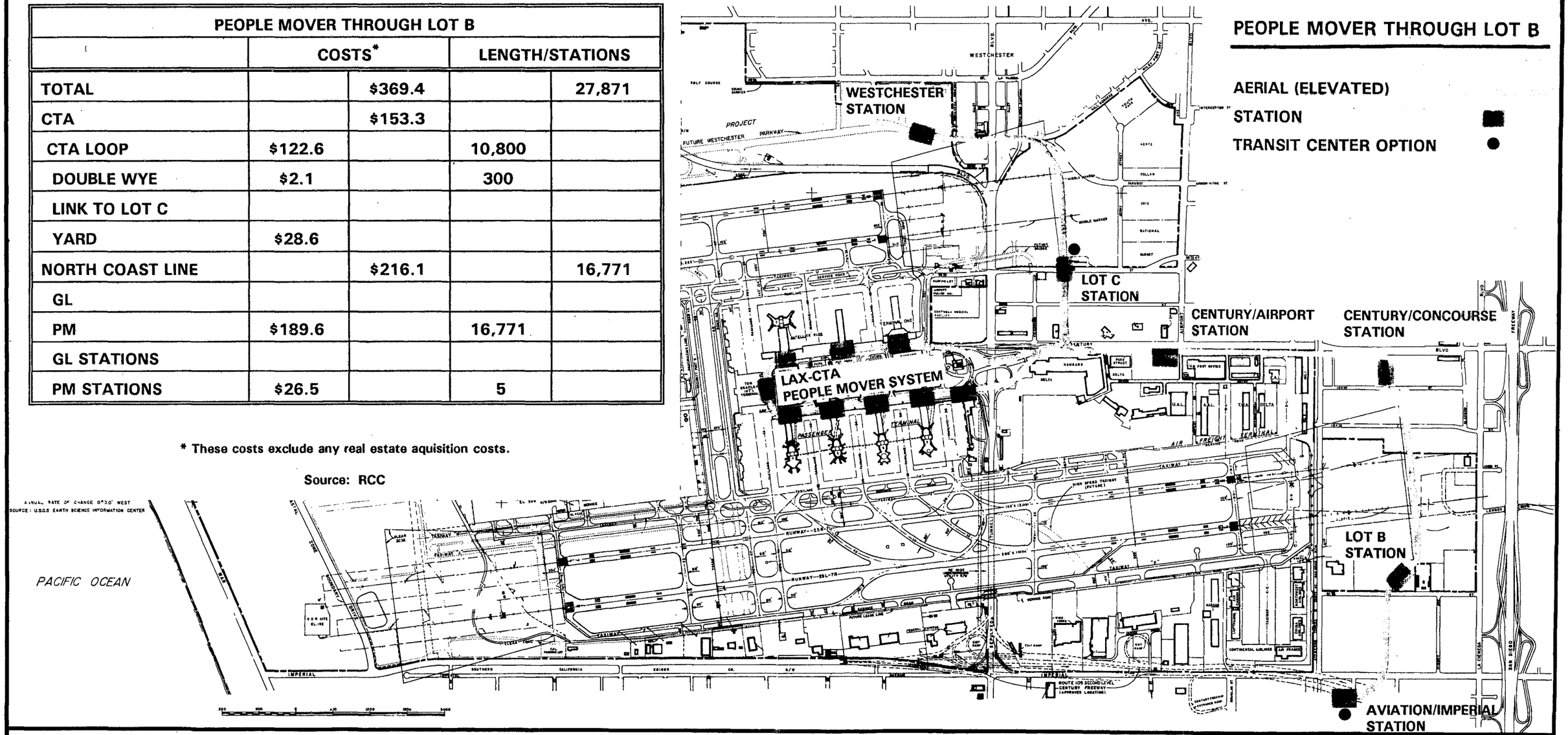


9/91

PEOPLE MOVER THROUGH LOT B				
	COSTS*		LENGTH/STATIONS	
TOTAL		$369.4		27,871
CTA		$153.3		
CTA LOOP	$122.6		10,800	
DOUBLE WYE	$2.1		300	
LINK TO LOT C				
YARD	$28.6			
NORTH COAST LINE		$216.1		16,771
GL				
PM	$189.6		16,771	
GL STATIONS				
PM STATIONS	$26.5		5	

* These costs exclude any real estate aquisition costs.

Source: RCC



9/91

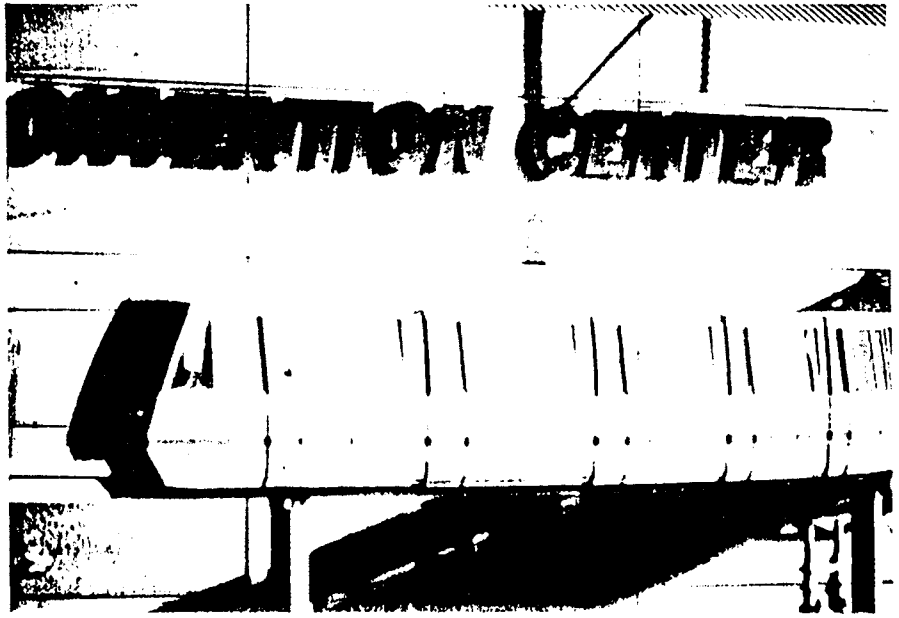
SUMMARY EVALUATION OF ALIGNMENT OPTIONS

EVALUATION CRITERIA	EIR ALIGNMENT GREEN LINE	EIR ALIGNMENT PEOPLE MOVER	SUBWAY GREEN LINE	AVIATION VIA-LOT B GREENLINE	LOT-B PEOPLE MOVER
COMPLIANCE WITH FAA REGULATIONS (CLEAR ZONE, OTHERS)	– Unresolved EI problems. – Possible construction problems. – Subway closes 104th. – Cut & cover may interfere.	– Unresolved EI problems. – Possible construction problems. + Subway avoids 50:1 and keeps 104th open. – Cut & cover may interfere.	✓ OK if mined.	✓ Better for navigation aids. + Out of Clear Zone.	✓ Better for navigation aids. + Out of Clear Zone.
TRANSPORTATION CENTER LOCATION: INTERFACE WITH PEOPLE MOVER, LAX-PALMDALE, & BUSES	✓ OK to Lot C.	✓ OK to Lot C.	– Not compatible (no Lot B access). ✓ OK to Lot C.	+ Can access Lot C or Lot B.	✓ Can access Lot C or Lot B.
INTERFACE WITH GROUND TRANSPORTATION (RENTAL CARS & HOTEL SHUTTLE)	– No link to Lot B. – Subway closes 104th.	No link to Lot B. –	– No immediate link to Lot B. – No stations between Aviation and Lot C.	+ Serves Lot C & Lot B.	✓ Serves Lot C & Lot B (no direct street access).
COST TO CONSTRUCT	✓ $445 ✓ $516 (w/Subway)	+ $423 ✓ $489 (w/Subway)	– $778 (All Subway)	✓ $501	✓ $436
CONSTRUCTIBILITY •Consistency with accepted and/or approved systems design criteria •Timing to construct •Engineering constraints	✓ Problems - limited hours. ✓ Possible cut and cover interference.	✓ Limited hours. ✓ Possible cut and cover interference.	– Work site limits. – Possible subsidence. – Limited access. – Requires more study. (May have HazMat)	✓ Curves tight for Greenline.	✓ Tight interface with railroad bridge at Aviation and Century.
AREAS/USERS SERVICED •Lot B •LAX-Employees •Lot C •Westchester	– No Lot B.	– No Lot B.	– Lot B w/ extra $.	+ Serves all.	+ Serves all.
LOCAL CIRCULATION IMPACT •Construction •Operation	✓ OK - Construction. + Operation. ✓ OK - Construction. – Closes 104th.	✓ Construction. + Operation.	– Construction. + Operation.	✓ OK Construction. ✓ OK Operation.	+ Operation.
POTENTIAL FOR FUTURE EXTENSION OF THE TRANSIT SYSTEM NORTH TO PLAYA VISTA AND MARINA DEL REY	✓ Possible - needs study.	+✓ Needs study - More flexible. Less cost.	– Costly to continue.	✓ Possible - needs study.	+✓ Needs study - More flexible. Less cost.
ADDITIONAL STUDIES REQUIRED, INCLUDING EIR	✓ EIR Clear Supplement required. ✓ More design required	✓ EIR Clear Addendum required. – Requires revised design for technology changes.	– New EIR. – All new alignment study. – New constructability analysis.	✓ Supplemental EIR. ✓ Some new alignment study.	✓ Supplemental EIR. ✓ More new alignment study. – Alignment revision for technology.
INSTITUTIONAL RELATIONSHIPS	• Separately supported systems.	• Joint system.	• Overlapping service. • Separate systems.	• Separate systems.	• Joint system.

PEOPLE MOVER TECHNOLOGIES

Technology Fact Summary

Technology	**People Mover "UM IV Series" Monorail (Automated)**
Suppliers	**Transportation Group Inc. (TGI)**
Development Status	Mature
Primary Application	Circulation/Distribution
SERVICE/OPERATIONAL CHARACTERISTICS	
Vehicle Capacity (Pass)	Design 40, Crush 56
Train Formation	Variable
Train Size (# Cars)	2 to 8
Speed (mph)	Cruise 18, Max 22
Acceleration (mph/sec/sec)	2.2
Deceleration (mph/sec/sec)	4.4
Switching	Complicated
Curve Radius, Minimum (feet)	100
Directional Capability	Bi-Directional
Max. Sustained Grade	8%
Failure Mgmt Concerns	Emergency Evacuation
VEHICLE CHARACTERISTICS	
Dimensions (feet)	
- Length	"A" Car 23.5, "B" Car 16.8
- Width	7.5
- Height	9.6
Doors, No. per Side	1
Type of Entry	High
Airconditioned	Yes
Type of Guidance	Rubber Tires
POWER SUPPLY	
Voltage (VAC)	480
Power Pickup	Bottom Brushes
Substation Spacing (Miles)	1 to 2
GUIDEWAY	
Type	Concrete Beam
Material	Concrete
ROW Width, Single Lane, feet	10
ROW Width, Double Lane, feet	18
Adaptability to Locale:	
- At-Grade	Above Average Cost
- Aerial	More Costly
- Tunnel	Most Costly
Grade Separation	Exclusive ROW



SYSTEM STANDARDS	
Built to Transit Standards	
- Operational Safety	Yes
- Fire Safety	Yes
- Construction	Yes
Areas Needing Development	Emergency Evacuation, Train Control
DEGREE OF AUTOMATION	
Fully Automated (Driverless)	Yes
Partially Automated	No
Fixed/Moving Block Train Control	Moving
HANDICAPPED ACCESSIBILITY	
Provided	Yes
Adaptable	Not Required
ENVIRONMENTAL CONSIDERATIONS	
Noise (dBA @ 22 mph)	62
Vibration	None
Emissions	None

Technology Fact Summary

Technology	**People Mover "MR III" Monorail (Automated)**
Suppliers	**Von Roll Transport Inc.**
Development Status	Mature
Primary Application	Circulation/Distribution
SERVICE/OPERATIONAL CHARACTERISTICS	
Vehicle Capacity (Pass)	Design 18, Crush 24
Train Formation	Variable
Train Size (# Cars)	2 to 9
Speed (mph)	Cruise 30, Max 37
Acceleration (mph/sec/sec)	2.3
Deceleration (mph/sec/sec)	4.3
Switching	Complicated
Curve Radius, Minimum (feet)	66
Directional Capability	Bi-Directional
Max. Sustained Grade	6%
Failure Mgmt Concerns	Emergency Evacuation
VEHICLE CHARACTERISTICS	
Dimensions (feet)	
- Length	A" Car 18, "B" Car 13.5
- Width	6.8
- Height	8.5
Doors, No. per Side	1
Type of Entry	High
Airconditioned	Yes
Type of Guidance	Rubber Tires
POWER SUPPLY	
Voltage (VAC)	500
Power Pickup	Bottom Brushes
Substation Spacing (Miles)	1 to 2
GUIDEWAY	
Type	Steel Beam
Material	Steel
ROW Width, Single Lane, feet	10.3
ROW Width, Double Lane, feet	18
Adaptability to Locale:	
- At-Grade	Above Average Cost
- Aerial	More Costly
- Tunnel	Most Costly
Grade Separation	Exclusive ROW

SYSTEM STANDARDS	
Built to Transit Standards	
- Operational Safety	Yes
- Fire Safety	Yes
- Construction	Yes
Areas Needing Development	Emergency Evacuation
DEGREE OF AUTOMATION	
Fully Automated (Driverless)	Yes
Partially Automated	No
Fixed/Moving Block Train Control	Fixed
HANDICAPPED ACCESSIBILITY	
Provided	Yes
Adaptable	Not Required
ENVIRONMENTAL CONSIDERATIONS	
Noise (dBA @ 37 mph)	66
Vibration	None
Emissions	None

Technology Fact Summary

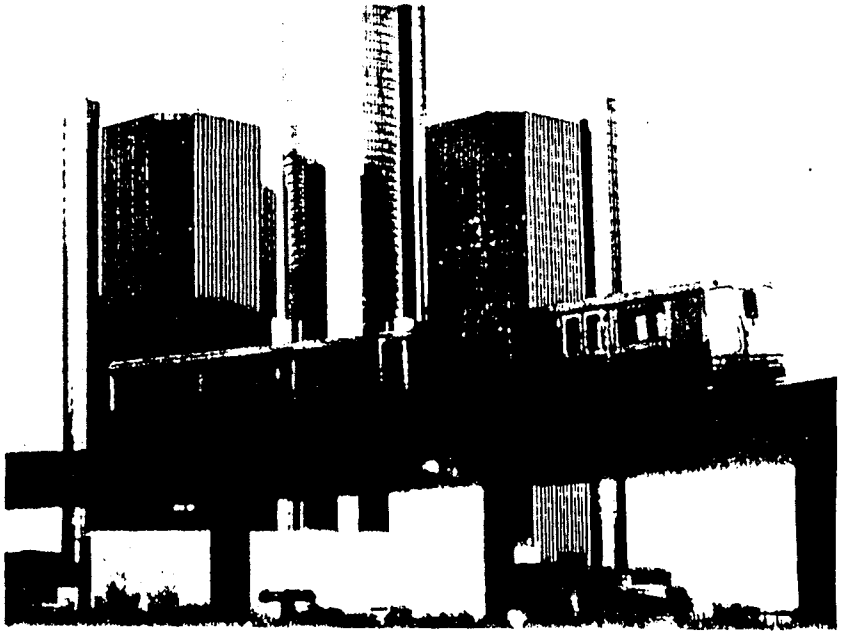
Technology	**People Mover (Automated)**
Suppliers	**Lavelin (UTDC)**
Development Status	Mature. First Deployed in Detroit, MI. DPM
Primary Application	Circulation/Distribution

SERVICE/OPERATIONAL CHARACTERISTICS	
Vehicle Capacity (Pass)	Design 102, Crush 147
Train Formation	Variable
Train Size (# Cars)	1 to 3
Speed (mph)	Cruise 32, Max 50
Acceleration (mph/sec/sec)	3
Deceleration (mph/sec/sec)	3.2
Switching	Simple
Curve Radius, Minimum (feet)	60
Directional Capability	Bi-Directional
Max. Sustained Grade	0.08
Failure Mgmt Concerns	Train Control

VEHICLE CHARACTERISTICS	
Dimensions (feet)	
- Length	41.6
- Width	8.2
- Height	10.2
Doors, No. per Side	2
Type of Entry	High
Airconditioned	Yes
Type of Guidance	Steel Wheels

POWER SUPPLY	
Voltage (VDC)	600
Power Pickup	Side Brushes
Substation Spacing (Miles)	1 to 2

GUIDEWAY	
Type	Conventional Rail
Material	Steel
ROW Width, Single Lane, feet	11.7
ROW Width, Double Lane, feet	21
Adaptability to Locale:	
- At-Grade	Above Average Cost
- Aerial	Expensive
- Tunnel	Very Expensive
Grade Separation	Exclusive ROW



SYSTEM STANDARDS	
Built to Transit Standards	
- Operational Safety	Yes
- Fire Safety	Yes
- Construction	Yes
Areas Needing Development	Train Control

DEGREE OF AUTOMATION	
Fully Automated (Driverless)	Yes
Partially Automated	No
Fixed/Moving Block Train Control	Moving

HANDICAPPED ACCESSIBILITY	
Provided	Yes
Adaptable	Not Required

ENVIRONMENTAL CONSIDERATIONS	
Noise (dBA @ 50 mph)	65
Vibration	Low
Emissions	None

Technology Fact Summary

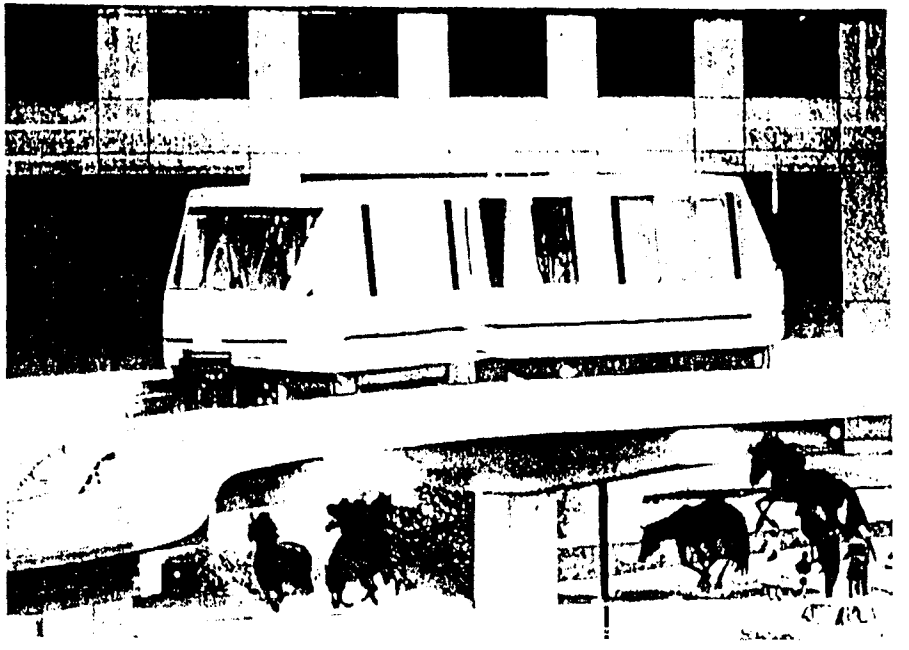
Technology	**People Mover Rubber Tired C 45 Vehicle**
Suppliers	**AEG Westinghouse**
Development Status	Mature. First Deployed in Las Colinas, Texas
Primary Application	Circulation/Distribution

SERVICE/OPERATIONAL CHARACTERISTICS	
Vehicle Capacity (Pass)	Design 45, Crush 70
Train Formation	Variable
Train Size (# Cars)	1 to 4
Speed (mph)	Cruise 26, Max 30
Acceleration (mph/sec/sec)	2
Deceleration (mph/sec/sec)	3.6
Switching	Slightly Complicated
Curve Radius, Minimum (feet)	60
Directional Capability	Bi-Directional
Max. Sustained Grade	10%
Failure Mgmt Concerns	None

VEHICLE CHARACTERISTICS	
Dimensions (feet)	
- Length	26.5
- Width	9
- Height	10.5
Doors, No. per Side	2
Type of Entry	High
Airconditioned	Yes
Type of Guidance	Rubber Tires on Center Beam

POWER SUPPLY	
Voltage (VDC)	600
Power Pickup	Side Brushes
Substation Spacing (Miles)	1 to 2

GUIDEWAY	
Type	Steel or Concrete
Material	Steel or Concrete
ROW Width, Single Lane, feet	12.5
ROW Width, Double Lane, feet	22
Adaptability to Locale:	
- At-Grade	Above Average Cost
- Aerial	Expensive
- Tunnel	Very Expensive
Grade Separation	Exclusive ROW



SYSTEM STANDARDS	
Built to Transit Standards	
- Operational Safety	Yes
- Fire Safety	Yes
- Construction	Yes
Areas Needing Development	None

DEGREE OF AUTOMATION	
Fully Automated (Driverless)	Yes
Partially Automated	No
Fixed/Moving Block Train Control	Fixed

HANDICAPPED ACCESSIBILITY	
Provided	Yes
Adaptable	Not Required

ENVIRONMENTAL CONSIDERATIONS	
Noise (dBA @ 30 mph)	68
Vibration	Low
Emissions	None

Technology Fact Summary

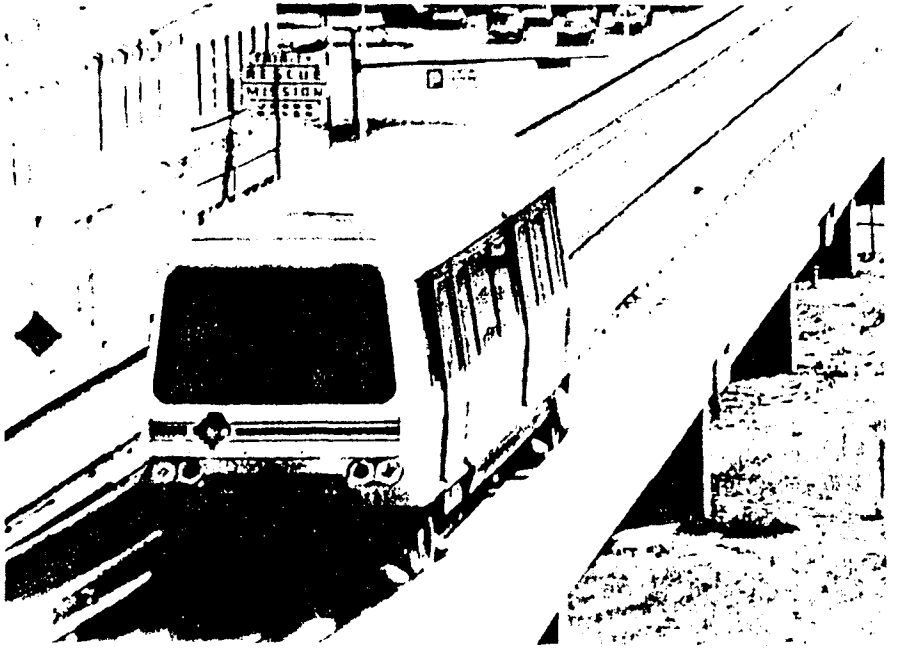
Technology	**People Mover (Automated)**
Suppliers	**Matra Transport Inc.**
Development Status	Mature. Jacksonville, FL. PM & Under Const. in Chicago & Newalk Airports
Primary Application	Circulation/Distribution

SERVICE/OPERATIONAL CHARACTERISTICS	
Vehicle Capacity (Pass)	Design 160, Crush 208
Train Formation	Variable
Train Size (# Cars)	1 to 3
Speed (mph)	Cruise 32, Max 50
Acceleration (mph/sec/sec)	2.9
Deceleration (mph/sec/sec)	2.9
Switching	Reasonably Simple
Curve Radius, Minimum (feet)	100
Directional Capability	Bi-Directional
Max. Sustained Grade	0.07
Failure Mgmt Concerns	None

VEHICLE CHARACTERISTICS	
Dimensions (feet)	
- Length	45.3
- Width	8.5
- Height	11.5
Doors, No. per Side	3
Type of Entry	High
Airconditioned	Yes
Type of Guidance	Rubber Tires on Side Rails

POWER SUPPLY	
Voltage (VDC)	750
Power Pickup	Side Brushes
Substation Spacing (Miles)	1 to 2

GUIDEWAY	
Type	Concrete Trough
Material	Concrete
ROW Width, Single Lane, feet	12
ROW Width, Double Lane, feet	22
Adaptability to Locale:	
- At-Grade	Above Average Cost
- Aerial	Expensive
- Tunnel	Very Expensive
Grade Separation	Exclusive ROW



SYSTEM STANDARDS	
Built to Transit Standards	
- Operational Safety	Yes
- Fire Safety	Yes
- Construction	Yes
Areas Needing Development	None

DEGREE OF AUTOMATION	
Fully Automated (Driverless)	Yes
Partially Automated	No
Fixed/Moving Block Train Control	Fixed

HANDICAPPED ACCESSIBILITY	
Provided	Yes
Adaptable	Not Required

ENVIRONMENTAL CONSIDERATIONS	
Noise (dBA @ 50 mph)	72
Vibration	Low
Emissions	None

Technology Fact Summary

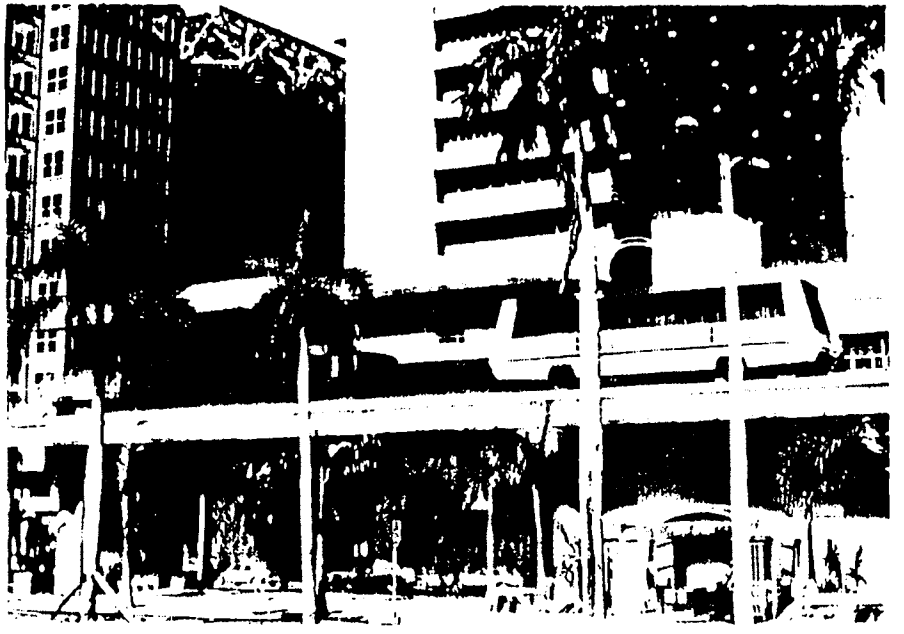
Technology	**People Mover Rubber Tired C 100 Vehicle**
Suppliers	**AEG Westinghouse**
Development Status	Mature. Miami MetroMover & Many Airport Applications
Primary Application	Circulation/Distribution

SERVICE/OPERATIONAL CHARACTERISTICS	
Vehicle Capacity (Pass)	Design 96, Crush 150
Train Formation	Variable
Train Size (# Cars)	1 to 3
Speed (mph)	Cruise 26, Max 30
Acceleration (mph/sec/sec)	2
Deceleration (mph/sec/sec)	3.6
Switching	Slightly Complicated
Curve Radius, Minimum (feet)	90
Directional Capability	Bi-Directional
Max. Sustained Grade	10%
Failure Mgmt Concerns	None

VEHICLE CHARACTERISTICS	
Dimensions (feet)	
- Length	39
- Width	10
- Height	11
Doors, No. per Side	2
Type of Entry	High
Airconditioned	Yes
Type of Guidance	Rubber Tires on Center Beam

POWER SUPPLY	
Voltage (VDC)	600
Power Pickup	Side Brushes
Substation Spacing (Miles)	1 to 2

GUIDEWAY	
Type	Steel Beam
Material	Steel
ROW Width, Single Lane, feet	13.5
ROW Width, Double Lane, feet	24
Adaptability to Locale:	
- At-Grade	Above Average Cost
- Aerial	Expensive
- Tunnel	Very Expensive
Grade Separation	Exclusive ROW



SYSTEM STANDARDS	
Built to Transit Standards	
- Operational Safety	Yes
- Fire Safety	Yes
- Construction	Yes
Areas Needing Development	None

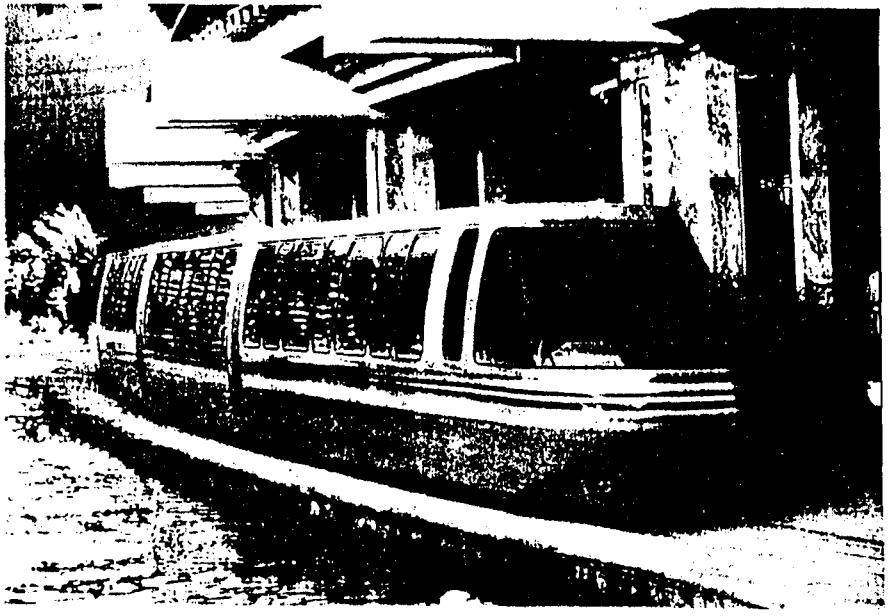
DEGREE OF AUTOMATION	
Fully Automated (Driverless)	Yes
Partially Automated	No
Fixed/Moving Block Train Control	Fixed

HANDICAPPED ACCESSIBILITY	
Provided	Yes
Adaptable	Not Required

ENVIRONMENTAL CONSIDERATIONS	
Noise (dBA @ 30 mph)	68
Vibration	Low
Emissions	None

Technology Fact Summary

Technology	People Mover (Automated)
Suppliers	**VSL Corporation**
Development Status	Mature
Primary Application	Circulation/Distribution
SERVICE/OPERATIONAL CHARACTERISTICS	
Vehicle Capacity (Pass)	Design 54, Crush 81
Train Formation	Variable
Train Size (# Cars)	1 to 3
Speed (mph)	Cruise 22, Max 30
Acceleration (mph/sec/sec)	3.0
Deceleration (mph/sec/sec)	3.2
Switching	Simple
Curve Radius, Minimum (feet)	120
Directional Capability	Bi-Directional
Max. Sustained Grade	6%
Failure Mgmt Concerns	None
VEHICLE CHARACTERISTICS	
Dimensions (feet)	
- Length	76.8
- Width	6.4
- Height	7.2
Doors, No. per Side	9
Type of Entry	Low
Airconditioned	Yes
Type of Guidance	Rubber Tires
POWER SUPPLY	
Voltage (VAC)	480
Power Pickup	Side Brushes
Substation Spacing (Miles)	1 to 2
GUIDEWAY	
Type	Concrete
Material	Concrete
ROW Width, Single Lane, feet	10
ROW Width, Double Lane, feet	18
Adaptability to Locale:	
- At-Grade	Above Average Cost
- Aerial	Expensive
- Tunnel	Very Expensive
Grade Separation	Exclusive ROW



SYSTEM STANDARDS	
Built to Transit Standards	
- Operational Safety	Yes
- Fire Safety	Yes
- Construction	Yes
Areas Needing Development	None
DEGREE OF AUTOMATION	
Fully Automated (Driverless)	Yes
Partially Automated	No
Fixed/Moving Block Train Control	Fixed
HANDICAPPED ACCESSIBILITY	
Provided	Yes
Adaptable	Not Required
ENVIRONMENTAL CONSIDERATIONS	
Noise(dBA @ 25 mph)	65
Vibration	Low
Emissions	None

Technology Fact Summary

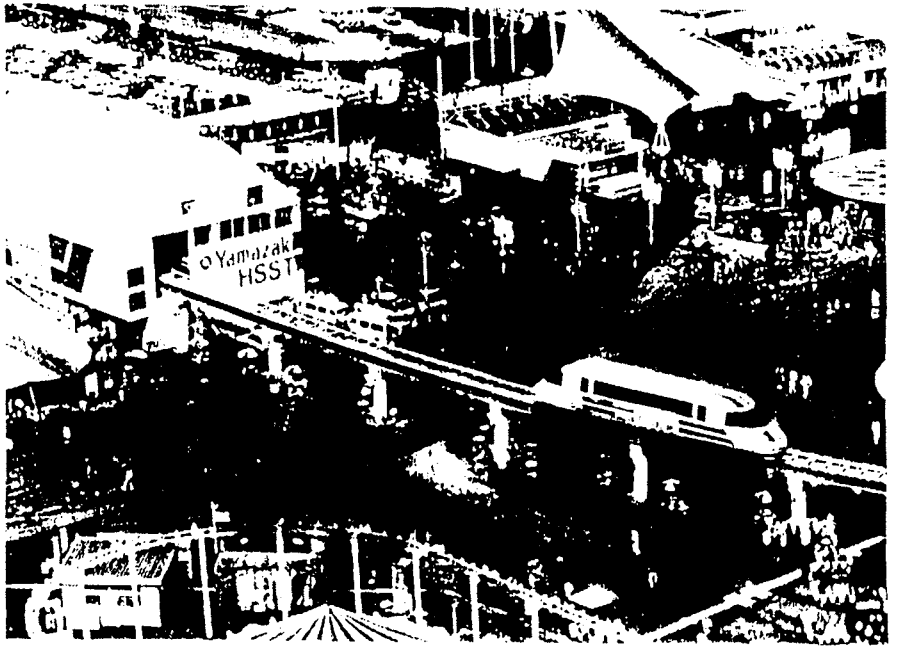
Technology	**People Mover Magnetic Levitation Series 100 (Automated)**
Suppliers	**HSST**
Development Status	Never Deployed in Transit Application
Primary Application	Circulation/Distribution

SERVICE/OPERATIONAL CHARACTERISTICS	
Vehicle Capacity (Pass)	Design 40, Crush 56
Train Formation	Variable
Train Size (# Cars)	1 to 6
Speed (mph)	Cruise 30, Max 60
Acceleration (mph/sec/sec)	2
Deceleration (mph/sec/sec)	3
Switching	Complicated
Curve Radius, Minimum (feet)	80
Directional Capability	Bi-Directional
Max. Sustained Grade	8%
Failure Mgmt Concerns	Emergency Evacuation

VEHICLE CHARACTERISTICS	
Dimensions (feet)	
- Length	A" Car 35.6, "B" Car 26.3
- Width	9.8
- Height	10.3
Doors, No. per Side	1
Type of Entry	High
Airconditioned	Yes
Type of Guidance	Guide Magnets

POWER SUPPLY	
Voltage (VDC)	750
Power Pickup	Side Brushes
Substation Spacing (Miles)	1 to 2

GUIDEWAY	
Type	Steel Beam
Material	Steel
ROW Width, Single Lane, feet	13.3
ROW Width, Double Lane, feet	24
Adaptability to Locale:	
- At-Grade	Above Average Cost
- Aerial	Expensive
- Tunnel	Very Expensive
Grade Separation	Exclusive ROW



SYSTEM STANDARDS	
Built to Transit Standards	
- Operational Safety	Yes
- Fire Safety	Yes
- Construction	Yes
Areas Needing Development	Emergency Evacuation

DEGREE OF AUTOMATION	
Fully Automated (Driverless)	Yes
Partially Automated	No
Fixed/Moving Block Train Control	Fixed

HANDICAPPED ACCESSIBILITY	
Provided	Yes
Adaptable	Not Required

ENVIRONMENTAL CONSIDERATIONS	
Noise (dBA @ 50 mph)	65
Vibration	None Reported
Emissions	None

Technology Fact Summary

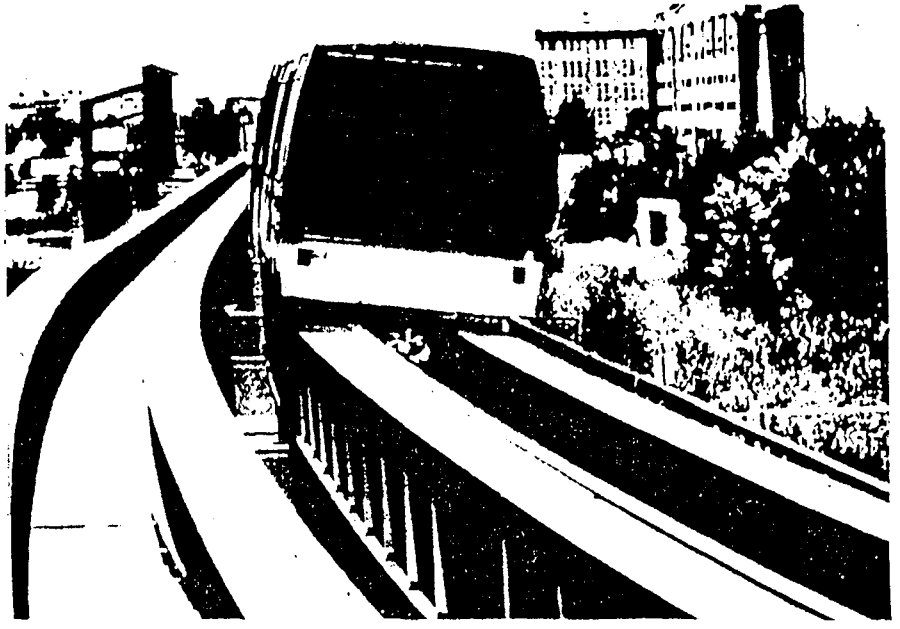
Technology	**People Mover Magnetic Levitation "M-Bahn" Type**
Suppliers	**AEG Westinghouse**
Development Status	First Deployed in W. Berlin Under Const. in Las Vegas
Primary Application	Circulation/Distribution

SERVICE/OPERATIONAL CHARACTERISTICS	
Vehicle Capacity (Pass)	Design 70, Crush 108
Train Formation	Variable
Train Size (# Cars)	1 to 6
Speed (mph)	Cruise 30, Max 60
Acceleration (mph/sec/sec)	2.2
Deceleration (mph/sec/sec)	3
Switching	Complicated
Curve Radius, Minimum (feet)	90
Directional Capability	Bi-Directional
Max. Sustained Grade	7%
Failure Mgmt Concerns	Emergency Evacuation

VEHICLE CHARACTERISTICS	
Dimensions (feet)	
- Length	39
- Width	8
- Height	10
Doors, No. per Side	2
Type of Entry	High
Airconditioned	Yes
Type of Guidance	Rubber Tires on Side Rails

POWER SUPPLY	
Voltage (VDC)	750
Power Pickup	Side Brushes
Substation Spacing (Miles)	1 to 2

GUIDEWAY	
Type	Steel Beam
Material	Steel
ROW Width, Single Lane, feet	11.5
ROW Width, Double Lane, feet	21
Adaptability to Locale:	
- At-Grade	Above Average Cost
- Aerial	Expensive
- Tunnel	Very Expensive
Grade Separation	Exclusive ROW



SYSTEM STANDARDS	
Built to Transit Standards	
- Operational Safety	Yes
- Fire Safety	Yes
- Construction	Yes
Areas Needing Development	Emergency Evacuation

DEGREE OF AUTOMATION	
Fully Automated (Driverless)	Yes
Partially Automated	No
Fixed/Moving Block Train Control	Fixed

HANDICAPPED ACCESSIBILITY	
Provided	Yes
Adaptable	Not Required

ENVIRONMENTAL CONSIDERATIONS	
Noise (dBA @ 50 mph)	65
Vibration	Low
Emissions	None

COST COMPARISON

LINEHAUL & PEOPLE MOVER TECHNOLOGIES

CAPITAL COST PER MILE ($ MILLIONS)

LINEHAUL TECHNOLOGIES (1)

TECHNOLOGY	COST/MILE ($ MILLIONS)		
	AT-GRADE	AERIAL	SUBWAY
Light Rail	$32	$56	$82
Heavy Rail	N.A.	$60	$95
Monorail	N.A.	$46	$80
Magnetic Levitation	N.A.	$50	$82

PEOPLE MOVER TECHNOLOGIES (2)

TECHNOLOGY	COST/MILE ($ MILLIONS)		
	AT-GRADE	AERIAL	SUBWAY
Monorail (TGI UM Series)	N.A.	$45	N.A.
Steel Wheel (UTDC)	N.A.	$55	N.A.
Rubber Tire (Westinghouse)	N.A.	$55	N.A.
Mag Lev (HSST 100 Series)	N.A.	$52	N.A.

NOTES:

1. Costs per mile based on ten (10) mile double track system with 11 stations and 5,000 passengers per peak hour/peak direction throughput requirement.

2. Costs per mile based on three (3) mile double track system with eight (8) stations and 2,500 passengers per peak hour/peak direction throughput requirement.

LAX INTERAGENCY TASK FORCE

PROPOSED PUBLIC OUTREACH PROGRAM

for REVIEW OF RAIL/TRANSIT OPTIONS

DURING SEPTEMBER/OCTOBER 1991

Below are three categories of outreach:

(1) Proposed groups to be briefed with known meeting dates (12);

(2) Proposed groups to be briefed with date to be set (19);

(3) Proposed groups to receive letters requesting input instead of briefings (10).

GROUPS WITH PROPOSED BRIEFING DATES

September

Sept. 18 - 10 a.m. Lomita City Hall	South Bay Corridor Steering Committee TAC (alternate date is Oct. 16)
Sept. 24 - 7:30 a.m. Chamber office	Greater Los Angeles Transportation Coalition (alternative date is Oct. 15)
Sept. 26 - 7 p.m. Westchester office	Galanter's CPACs (3) (possible date; alternatives are Oct. 3 or 17)
Sept. 26 - 6:30 p.m. San Pedro	South Bay Corridor Steering Committee (alternative date is Oct. 24)

October

Oct. 2 - 7:30 a.m.	Los Angeles Area Chamber of Commerce Surface Transportation Committee and Aerospace and Air Transportation Committee Joint Meeting (optional dates are Oct. 8,9,10,14,15,16,17)
*Oct. 3 - 7 p.m. * *Westchester office*	*Galanter's CPACs (alternate date)*
Oct. 8 - 8 a.m. Location not set	Joint Westchester/LAX Chamber Committees and TMA meeting
Oct. 8 - 8 a.m.	South Bay Association of Chambers of Commerce Torrance Chamber

Oct. 9 - 7:30 a.m. El Segundo	El Segundo Chamber of Commerce
Oct. 10 - 10 a.m. location not set	LAX Blue Ribbon Committee (tentative date)
Oct. 10 - 7:30 p.m. LAX	LAX Area Advisory Committee
Oct. 15 - 7:30 a.m. *Chamber office*	*GLATC (alternate date)*
Oct. 16 - 10 a.m. *Lomita City Hall*	*South Bay Corridor Steering Committee TAC (alternative date)*
Oct. 17 - 9 a.m. Westchester	Mayor Bradley's Mobility Action Committee for Weschester
Oct. 17 - 7 p.m. *Westchester office*	*Galanter's CPACs (alternate date)*
Oct. 17 - 7:30 p.m. LAX	LAX Citywide Advisory Committee
Oct. 24 - 6:30 p.m. *San Pedro*	*South Bay Corridor Steering Committee (alternative date)*

* **Meetings in italics are alternate dates to earlier meetings of the same groups.**

ADDITIONAL BRIEFINGS TO BE SET

Air Line Pilots Association
Assemblymember Curtis Tucker
Assemblymember Gwen Moore
Senator Diane Watson
ATA
ALTA
McGuire Thomas (Playa Vista)
Representatives of San Fernando Valley businesses and residents (LACTC's San Fernando Valley Area Team will assist in arranging.)
Members of the Board of Supervisors
City of Culver City
Los Angeles City Transportation Commission
El Segundo City Council/staff
Inglewood City Council/staff
Municipal bus operators operating out of Lot C (Culver City, Santa Monica, Torrance)
Mayor Bradley's Mobility Action Committee for Venice

PROPOSED GROUPS TO RECEIVE LETTERS REQUESTING WRITTEN RESPONSE TO OPTIONS

El Segundo Employers Association (letter to them by Sept. 15 for presentation by their staff to their Sept. 24 Board Meeting)
League of California Cities (letter to them by late September for individual response - no October meeting due to Annual Conference)
Los Angeles County Department of Beaches and Harbors
Marina del Rey residents/businesses
Howard Drollinger
Playa del Rey Business Association
Assorted homeowners groups (unless covered by CPAC)
Alan Borstein
Westchester concerned citizens groups (unless covered by CPAC)
Westchester Revitalization
SCAG

pp.wp51 BK9

SIGN-IN SHEET

Date: September 23, 1991

Function: LAX Joint Policy & Technical Task Force Meeting

Name	Title/Agency	Phone/Fax Numbers
SHEILA M. MURPHY	GRUEN ASSOCIATES	937-4270
Jack Graham	LA Dept of Airports	646-7116
Lee Nichols	" " "	646-5260
Ken Nelson	Caltrans	620-4428
Russell Helgeson	City of LA - CDD	485-3357
LES HENDISON	TECHTEC	213 620 7010
JOHN STUTSMAN	GRUEN ASSOCIATES	937-4270
James M. O'Leary	LADOT	485-3039
Jerry Charlton	VWC Assoc - Aviation Consult	544-4145
Mal M. Packer	City of LA - Airports	646-3254
DOUG FAILING	CALTRANS	620-3277
Ben Bradley	Bechtel	620-7010

SIGN-IN SHEET

Date: September 23, 1991

Function: Joint Policy Group & Technical Task Force Meeting

Name	Title/Agency	Phone/Fax Numbers
Richard Haggstrom	LADOT	485-4274
Debra Weiss	Fairbank Bregman & Maullin	828 1183
Eujin K. Valenzuela	RCC/LACTC	224-6657
Howard S. Yoshioka	FAA Airports	(213) 297-1250
AL THIEME	RCC	(213) 244-6404
BARNA SZABO	Bike Ribbon Committee	(213) 284-7243
Bob CARLTON	LACTC	213 244 6411
GARY SPIVACK	SCRTD	213-972-4640
Richard Maullin	Fairbank, Bregman & Maullin	213-828-1183
Bryan Kennaghan	LACTC	244-6533
JIM MCKELLAR	LADOT	[illegible]
Suzanne Reed	Fairbank, Bregman & Maullin	213-828-1183

SIGN-IN SHEET

Date: September 23, 1991

Function: LAX Joint Policy Group & Technical Task Force

Name	Title/Agency	Phone/Fax Numbers
Ruth Galanter	6th District, City of L.A.	
Neil Peterson	LACTC	
Jack Sacharach		
Leland Wong	DOA	
Clifton Moore	DOA	
Phil Depoian	LA City Mayor's office	
Jane Ellison	LA City Mayor's office	
Celia S. Custodio	LACTC	

DSK/LS:\Sign.mtg

INTERAGENCY TRANSIT STUDY
JOINT POLICY GROUP AND TECHNICAL TASK FORCE
October 10, 1991, 10:00 a.m.
Los Angeles Airport Marriott Hotel

TABLE OF CONTENTS FOR MEETING #3

Item	Page
Agenda	45
Minutes	46
Sign-in Sheets	48

Agenda

INTERAGENCY TRANSIT STUDY
JOINT POLICY GROUP AND TECHNICAL TASK FORCE
Meeting No. 3
October 10, 1991, 10:00 a.m. to 1:00 p.m.
Los Angeles Airport Marriott Hotel
5855 West Century Boulevard
Los Angeles, CA 90045

1. Approve Minutes
2. Present Overview of Alignments, including Westchester Parkway Segment and Service Issues - Sheila Murphy
3. Review LAX-Palmdale Interface: Opportunities and Constraints - Ben Beasley
4. Authorize Alignments to be taken to the Public
5. Present Public Process Update - Barna Szabo
6. Set Next Meeting Objectives
7. Identify Possible Dates of Remaining Policy Group Meetings
8. Adjourn

Attachments

- Minutes of September 23rd Policy Group Meeting
- Minutes of October 1st Technical Task Force Meeting
- Revised Alignment Maps

DSK:\N4:MTG3.POL

Los Angeles County Transportation Commission
LACTC
818 West Seventh Street
Suite 1100
Los Angeles, CA 90017
Tel 213 623-1194

MINUTES OF

LAX INTERAGENCY TRANSIT STUDY POLICY GROUP

MEETING NUMBER 3

OCTOBER 10, 1991 - 10:00 A.M.

This was the third meeting of the Policy Group for the LAX Interagency Transit Study. On a motion by Dean Dana, second by Phil Depoian, the minutes of the September 23rd Policy Group Meeting were approved. Comments regarding these minutes can be directed to Bob Cashin at (213) 244-6441, or can be addressed at the beginning of our next meeting.

ISSUES AND CONCERNS

- **All alignment options will operate with 4-minute headways.** Bruce Emory of Manuel Padron Associates has reviewed the alignment options and has based operating headways on the Green Line headways along the I-105 trunk, and the stations being served by the North Coast Branch. His estimation is that both Green Line and People Mover will have equal operating times.

- **Eliminate the EIR alignment from the options presented to the Public.** Ruth Gallanter expressed concern with showing the public a previously approved alignment which would violate aviation safety standards.

- **People Mover is the preferred technology in the area of Playa Vista.** Deane Dana's conversations with Maquire Thomas have indicated that a smaller transit technology without an overhead catenary would be preferred visually, and spatially would afford more flexibility of alignment options.

- **Present an alignment which avoids the Clear Zone of the north runways.** To stay above grade and avoid the Clear Zone in Westchester, the alignment would need to displace houses in the residential neighborhood east of Sepulveda Eastway. However, a subway under the current aerial alignment could be considered to avoid the Clear Zone.

- **The goal of a single transfer for all patrons can only be achieved at Aviation station.** South Coast patrons will be required to make a transfer at Aviation station to go north, regardless of technology or alignment selected (there is no double "wye" at Aviation to allow north-south service). Unless LAX-Palmdale, and the CTA People Mover connect at Aviation station, South Coast patrons will be required to make two transfers to use either of those systems. Either Lot B or Lot C could serve as a single point of transfer for the other area patrons of the three systems.

- **Provide a direct connection of the Green Line to the LAX-Palmdale.** LAX-Palmdale can successfully connect to the Green Line and People Mover at Lot C, Lot B and at Aviation station, including adequate space for a Transit Center with bus service. However, Lot C is the location preferred by DOA (as closest to the CTA).

ADDITIONAL OPTIONS IDENTIFIED THROUGH TASK FORCE DISCUSSION

1. The Green Line Subway alignment to Westchester station should be re-added to the array of options, as one which would not use any of the Clear Zone. The subway station location in Westchester would be at 89th street, under the same location as the aerial station.

2. The options for a station along Sepulveda Eastway would displace parking sufficient to require full takes of most of the business between Westchester Parkway and 89th Street, on the east side of Sepulveda. This would be compounded by the need to provide 500 park-n-ride spaces adjacent to the station. Consequently, this station location will be eliminated from further consideration.

PUBLIC PARTICIPATION

- Proposed Public Participation Program will be postponed until after the presentation of cost estimates for each alignment at the Policy Group meeting on October 21.

UPCOMING POLICY GROUP MEETING

- **October 21st from 3:30 to 5:30 in the LAX area.**
  The focus of this meeting will be to review the cost, schedule and patronage/service estimates of the alignment options to be taken to the public.

- **November 18th from 3:30 to 5:30 at LACTC.**
  The focus of this meeting will be to choose the preferred alternative to be recommended to the respective Boards, to be carried forward into the EIR process and design development.

The Technical Task Force **Action Items** for the next Policy Group meeting are:

- Matrix comparison of the station options and operational characteristics.

- Presentations of 3 basic alignment alternatives, of which 2 have variations in technology used along part of the alignments: including revised alternatives for the GreenLine Subway, and People Mover to Lot B, to achieve single transfer maximum with LAX-Palmdale, and lower cost.

- More detailed cost, schedule and potential for ridership information will be provided for each alternative presented.

SIGN-IN SHEET

Date: October 10, 1991

Function: Joint Policy Group & Technical Task Force

Name	Title/Agency	Phone/Fax Numbers
Keith S Comrie	LACTC	(213) 244-0732
SHEILA M. MURPHY	GRUEN ASSOCIATES	(213) 937-4270
IVM SCHOENFELD	LA DOA	213-646-7393
Philip Neporani	Mayor's Office	485-3315
Leland Weiss	L.A. DOA	646-6263
JANE ELLISON USHER	MAYOR'S OFFICE	213/485-3304
DEANE DANA	SUPERVISOR, L.A. COUNTY	213/974-4444
Doris Dana	—	—
Sara Hirsch	Supervisor Deane Dana	213 974-4444
Suzanne Reed	FB+M	213-828-1183

SIGN-IN SHEET

Date: October 10, 1991

Function: Joint Policy Group & Technical Task Force

Name	Title/Agency	Phone/Fax Numbers
Jack Graham	LA Dept of Airports	213-646-7116
Chuck O'Connell	Caltrans	897-0362
Mal M. Packer	City of LA - Airports	646-3254
Jane Okaya	LADOT	485-3079
Al Thin	LACTC/Rail	244-6871
Hanpal VW	LADOT	485-2286
KEN DIETZ	LADOT	485-4274
JOHN JUDSMAN	GRUEN	937-4270
Debra Weiss	FBDM	828-1183
Ben Beasley	BECHTEL	620-7010
Howard S. Yoshioka	FAA	297-1250
THOMAS WINFREY	Dept of Airports	646-5260 / FAX 646-1894

049

DSK/LS:\Sign.mtg

SIGN-IN SHEET

Date: October 10, 1991

Function: Joint Policy & Technical Task Force

Name	Title/Agency	Phone/Fax Numbers
Rubell Helgeson	CDG	485-3357
LES HEWISON	$ECIFTEC	620 7010
Jerry Clarke	JWC Associates, Aviation Consult	544-4145
JIM MCCARTHEN	LACTC	244-6262
Michael Bustamante	LACTC	244-6591
VASAN SRINIVASAN	SCRTD	972-3829
DAN BEAL	LA-CLG	485-6632
Barna S. SZABO	LAX Blue Ribbon Committee	284-7243
Bryan Kunaglan	LACTC	244-6533
[illegible]	[illegible]	[illegible]
AL THOMAS	LACDC/RCC	(213) 244-6805
Haripal Vij	LADOT	213-485-2246

INTERAGENCY TRANSIT STUDY
JOINT POLICY GROUP AND TECHNICAL TASK FORCE
October 21, 1991, 3:30 p.m.
Proud Bird Restaurant

TABLE OF CONTENTS FOR MEETING #4

Item	Page
Agenda	52
Minutes	53
Summary of LAX/Metro Green Line Impacts - McFarland Report	56
Cost Estimate Worksheet Light Rail Application	58
Cost Estimate Coversheet Light Rail Application	59
Cost Estimate Coversheet Rubber Tire People Mover	61
Cost Estimate Worksheet Rubber Tire People Mover	62
Sign-in Sheets	82

INTERAGENCY TRANSIT STUDY
JOINT POLICY GROUP AND TECHNICAL TASK FORCE MEETING NO.4
October 21, 1991, 3:30 p.m., Proud Bird Restaurant
11022 Aviation Blvd., 111th Street (Adjacent to LAX)

AGENDA

1. Approve Minutes

2. Brief Recap of Alignments - Bob Cashin

3. Summary of the McFarland Report - Jerry Chavkin

4. Patronage Study - Jack Graham

5. Preliminary Operations Report on Various Alignments - Manuel Padron

6. Cost Estimates - Jim Wiley/Tim Davis

7. Public Process Update - Barna Szabo

8. Set Agenda for November 18 Meeting at LACTC (3:30 - 5:30)

9. Adjourn

nc4:polmtg4

MINUTES OF

LAX INTERAGENCY TRANSIT STUDY POLICY GROUP

MEETING NUMBER 4

OCTOBER 21, 1991 - 3:30 P.M.

This was the fourth meeting of the Policy Group for the LAX Interagency Transit Study. On a motion by Bill Schoenfeld, second by Phil Depoian, the minutes of the October 10th Policy Group Meeting were approved. Comments regarding these minutes can be directed to Bob Cashin at (213) 244-6441, or can be addressed at the beginning of our next meeting.

SUMMARY OF ITEMS DISCUSSED

- **FAA will require a formal description of the Westchester alignment for approval.** FAA needs detailed engineering information (longitude, latitude, and altitude) of the Westchester Parkway portion of the alignment, where it runs in the footprint of the Clear Zone, before it can make a determination of acceptability. This review and approval process (Form 7460 process) requires level of detail that would normally be available much further in the design development process. Bechtel will meet with FAA to determine the time and specificity needed for the Form 7460 process before full engineering is done on a preferred alignment.

- **Patronage.** Ken Ross, of Wilbur-Smith, presented patronage projections by station daily boardings. Estimates were based on SCAG forecasts with the addition of airport-related trips, and all options included LAX-Palmdale connection at Lot C. (Wilbur-Smith Associates will revise its estimates based on LAX-Palmdale connecting to Lot B for Option 3 and Aviation station for Options 5 and 6.) SCAG projections weight transfers at a rate of 2.5 times the running time associated with non-transfer trips, while second transfers are weighted at an even higher rate. Comparisons of available seating versus standing ride times were not taken into account. George Swede has commissioned from SCAG new projections based on LAX-Palmdale to Lot B or Aviation stations. The options with the greater numbers of stations (#3, #4, and #5) indicated the greatest patronage (55,956 - 56,620 boardings daily). Lot C would have the greatest number of daily boardings as primary entry point into the CTA, and assuming the location of LAX-Palmdale at that point.

- **The goal of a single transfer for all patrons can only be achieved at Aviation station.** South Coast patrons will be required to make a transfer at Aviation station to go north, regardless of technology or alignment selected (double "wye" at Aviation which would have allowed north-south service is not currently part of the Green Line design). Unless LAX-Palmdale, and the CTA People Mover connect at Aviation station, South Coast patrons will be required to make two transfers to use either of those systems. Either Lot B or Lot C could serve as a single point of transfer for the other area patrons of the three systems. However, Lot C, being the closest to the CTA, is the location preferred by DOA.

- **Operating times.** Manual Padron has based operating headways on the North Coast extension of the Green Line on the headways along the I-105 trunk. The Green Line vehicle out of Norwalk will have 2 minute headways, with every other vehicle destined for North or South Coast Branches. This results in 4 minute headways on North Coast branch if it is an extension of the Green Line. However, if the technology change to People Mover were made at Aviation station, the North Coast Branch could achieve 2 minute headways on an all-People Mover system, with a grade separated double "wye" at Century. This service could be timed to alternate with the 2 minute headways of vehicles arriving at Aviation station, so that patrons need only wait 1 to 2 minutes to board a connecting train.

  Relative operating expenses of the alignment options would be lower for the alignments 1 and 2, medium for alignment 4 and, high for 3 or five (based on miles travelled per year and number of stations served).

- **Change of all Green Line to People Mover technology.** The question was raised as to whether the Green Line could use People Mover technology from Norwalk throughout the system. The guideway construction requirements would be completely different and the issue of adequate width of right-of-way would need to be verified. The estimated speeds of the available technologies are 45 MPH for the People Mover, 65 MPH for the Green Line and 55 MPH for the Blue Line, with the Green Line and the People Mover having the same acceleration/deceleration rates.

- **Types of People Movers.** Either the Matra or UTDC vehicles could serve both the line-haul objective of the Green Line systems, as well as the tight turns required in the CTA. Smaller Westinghouse vehicles are used in airports such as Tampa, Chicago, Honolulu and Paris, the same vehicles being considered for LAX.

- Cost Estimates are based on the current alignment options 1 through 6, and include costs for construction, vehicle purchase, right-of-way acquisition, and contingency for hazardous materials. Real estate costs were developed using low and high end estimates, assuming full market price for land owned by the DOA or the City of Los Angeles as the high end, and no cost of acquisition for land within Lot C and Lot B as the low end (however, LAX-Northside was valued under each case). Additional savings of 16-20% might be gained by using precast guideway for regular span sections of the People Mover guideway (a savings of $20 million on #5). However, it was agreed that cast-in-place would be used for all baseline cost estimates, with the exception of #6, which assumes steel construction.

COSTS OF THE ALIGNMENTS ARE AS FOLLOWS:

	#1	#2	#3	#4	#5	#6
TOTAL COST (million $)	$645-665	$529-547	$489-524	$531-574	$490-534	$460-488
(CTA - PM)	$181	$181	$190	$181	$190	$190
Through Alignment	$464-484	$348-366	$299-334	$350-393	$300-344	$270-298

- **Caltrans Air space issues.** Caltrans plans to lease its airspace right at the Aviation station within the next month. However, they would be willing to work with the Task Force on areas needed.

- **DOA must support the most efficient use of airport funds.** Any alignment on DOA property using DOA funds must serve the highest and best use of airport needs, i.e. the most number of patrons from Lot C into the CTA with the minimum waiting time.

- **Public Participation Program** will begin October 23rd. The EIR alignment will not be presented as an alignment option, but will be available, as needed, to illustrate the previous alignment, with the disclaimer that additional information has been raised which was not known at the time that alignment was selected. The presentation of alternatives will include cost estimates (with sub-totals for the CTA People Mover system) for each alignment.

UPCOMING POLICY GROUP MEETING

- **November 18th from 3:30 to 5:00 at LACTC.**
  The focus of this meeting will be to choose the preferred alternative to be recommended to the respective Boards, which will subsequently be carried forward into the EIR process and design.

The Technical Task Force **Action Items** for the next Policy Group meeting are:

- Cost (including operation costs), schedule (including Revenue Operation Date) and potential for ridership information will be provided for each alternative.

- Time and cost impacts of converting the entire Green Line to People Mover Technology.

SUMMARY OF LAX/

METRO GREEN LINE IMPACTS-

McFARLAND REPORT

The McFarland Report is a 143 page document which describes, in detail, the impact of the original Green Line EIR alignment on the electronic navigation, communication, and radar systems which serve Los Angeles International Airport (LAX). It provides valuable, detailed, technical information regardless of the choice of the final alignment. In reviewing 50 facilities operating at LAX, Dr. McFarland concludes that only 5 of these will be significantly affected by the EIR Green Line alignment.

Three of these facilities make up the far-field monitor system for runway 24R where the line of sight of these units to the respective localizer would be blocked by the proposed alignment of the MGL through Lot C. These three individual units, essentially simple antennas, comprising the far field monitor need only to be raised approximately 9 feet to resolve this problem. No risks are foreseen for this corrective action.

The next problem is the localizer at the east end of runway 25L which serves to align aircraft landing on 07R from the west. It is proposed to relocate the localizer westward onto the concrete surface which places it approximately 920 feet from the threshold and west of the MGL, the airport patrol road, the Santa Fe Railway, and Aviation Boulevard. This will improve the performance of the localizer over existing conditions and little technical risk is envisioned. Only the logistics (sequence) of its relocation represent any matter of concern. Even though this relocation is into an area in near proximity of the inner marker, no interference was found.

The last problem, and the most technically challenging, is the localizer at the east end of runway 25R. This localizer, like the one at the east end of runway 25L, is currently degraded by automobile and train traffic and the MGL may reduce performance to an unacceptable level. This unit, unlike the localizer east of 25L, cannot be relocated westerly with the same ease. The runway for 25R extends approximately 1000 feet further to the east than 25L. This extended portion is used primarily for takeoffs. This presents a situation where only approximately 260 feet exists between the rear of aircraft taking off and the MGL alignment in which to place the localizer.

Several alternate designs of a relocated antenna assembly were examined. These included a ground level location immediately in front of the blast fence, a second configuration immediately behind and slightly above the blast fence utilizing a short counterpoise, and a third design elevated on a counterpoise structure over the MGL alignment.

All three of these solutions appear technically feasible but require varying degrees of development analysis, design and testing. The McFarland report discusses these technical concerns in detail. A complete plan for implementation would need to be developed, including design and capital cost estimates in order to assist the FAA and DOA in approving the proposed solution.

In summary, all potential impacts of this proposed MGL alignment on the operations of the airport have been examined. Of the five problems that require remedial action four are considered somewhat routine. Only the localizer for 25R/07L presents any risk. One of the available alternatives uses proven technology. While the other two alternatives do not use technology proven in airport conditions, they appear viable and at least one alternative has low technical risk. We believe a careful program can minimize concerns and allow acceptance of the MGL alignment by all parties involved.

In the event that the Green Line EIR alignment could be constructed in a depressed box at the end of Runways 25L and R, then both of the Runway 25L and R localizer problems would be un-impacted by the Green Line. However, this alternative requires relocation of 104th Street.

The Runway 24R far field monitor units would still require elevation due to the elevated portion of the MGL though Lot C.

A:Summary.LAX

COST ESTIMATE WORKSHEET

LIGHT RAIL APPLICATION

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 2
ITEM: ALIGNMENT #1 (LRT/P-M) | DATE 9/26/91 | OF 3
REVISION: #3

DESCRIPTION	QTY	UNIT/ PRICE	UNIT	TOTAL
GUIDEWAY COSTS				
GUIDEWAY @ GRADE-(LRT)	1366	$900	RF	$1 229 400
CUT & COVER (SHALLOW)	0	$10 000	RF	$0
AERIAL GUIDEWAY-(LRT)	13957	$4 500	RF	$62 806 500
AERIAL GUIDEWAY-(PEOPLE MOVER)	12000	$3 375	RF	$40 500 000
SUBTOTAL (GUIDEWAY COST)				$104 535 900
STATION COST				
AERIAL STATION	3	$5 000 000	EA	$15 000 000
AERIAL STATION (PEOPLE MOVER)	9	$2 000 000	EA	$18 000 000
SUBTOTAL (STATION COST)				$33 000 000
MAINT. FACIL & YARD COSTS				
MAINT FACIL-(PEOPLE MOVER)	1	$17 500 000	LS	$17 500 000
SUBTOTAL (MAINT. FACIL.)				$17 500 000
VEHICLE COST				
GREEN LINE (LRT)	0	ALLOWANCE	EA	$8 208 000
PEOPLE MOVER	15	$1 550 000	EA	$23 250 000
SUBTOTAL (VEHICLE COST)				$31 458 000
SYSTEM WIDE EQUIPMENT COST				
TRKWRK (INCL. SPECIAL TRACKWORK)	15323	$320	RF	$4 903 360
SIGNS & GRAPHICS (PER STATION)	12	$100 000	EA	$1 200 000
TRAIN CONTROL STA. (LRT)	3	$280 000	EA	$840 000
TRAIN CNTRL STA.(PEOPLE MOVER)	9	$210 000	EA	$1 890 000
TRAIN CONTROL GDWY (LRT)	15323	$718	RF	$11 001 914
TRAIN CNTRL GDWY.(PEOPLE MOVER)	12000	$538	RF	$6 456 000
TRACTION POWER STA. (LRT)	3	$1 100 000	EA	$3 300 000
TRCTN PWR STA.(PEOPLE MOVER)	9	$760 000	EA	$6 840 000
TRACTION POWER GDWY (LRT)	15323	$270	RF	$4 137 210
TRCTN PWR GDWY.(PEOPLE MOVER	12000	$132	RF	$1 584 000
COMMUNICATIONS	27323	$200	RF	$5 464 600
FARE COLLECTION (LRT)	3	$250 000	EA	$750 000
FARE COLLECTION (PEOPLE MOVER)	9	$175 000	EA	$1 575 000
SUBTOTAL (SYSTEM COST)				$49 942 084
TOTAL ESTIMATED COST				$236 435 984

COST ESTIMATE COVERSHEET
LIGHT RAIL APPLICATION

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 1
ITEM: ALIGNMENT #1 (LRT/P-M) | DATE 9/26/91 | OF 3
REVISION: #3

ITEM DESCRIPTION	ESTIMATED COST
1) GUIDEWAYS AND STRUCTURES	$104 535 900
2) STATIONS	$33 000 000
3) MAIN YARD AND SHOP	$17 500 000
4) SYSTEMWIDE EQUIPMENT	$49 942 084
5) VEHICLES	$31 458 000
SUBTOTAL (A)	$236 435 984
6) PRE REVENUE OPERATION	$5 910 900
7) OWNERS INSURANCE	$18 914 879
8) MASTER AGREEMENTS	$5 910 900
SUBTOTAL (B)	$30 736 678
9) RIGHT OF WAY	$0
SUBTOTAL (C)	$0
10) PROF. SERVICES	$80 151 799
11) CONTINGENCY	
A) OF SUBTOTAL A, B	$18 702 086
B) OF SUBTOTAL (C)	$0
C) OF SUBTOTAL ITEM 10	$20 037 950
SUBTOTAL (ITEMS 10 & 11)	$118 891 835
GRAND TOTAL	$386 064 496

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 3
ITEM: ALIGNMENT #1 (LRT/P-M) | DATE 9/26/91 | OF 3
REVISION: #3

NOTES

1) INCLUDES 15,323 FT OF LRT GUIDEWAY W/ 3 STATIONS AND AN ALLOWANCE OF $8,208,000 FOR ADDITIONAL GREENLINE TYPE CARS. ALSO INCLUDED IS 12,000 FT OF PEOPLE MOVER TYPE GUIDEWAY W/ 9 STATIONS, 15 CARS, AND AN ALLOWANCE OF $17,500,000 FOR MAINTAINENCE FACILITIES.

2) COST FOR REMOVAL OF HAZARDOUS WASTE NOT INCLUDED

3) REAL ESTATE COST NOT INCLUDED.

COST ESTIMATE COVERSHEET
RUBBER TIRE PEOPLE MOVER

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 1
ITEM: ALIGNMENT #2 P/M | DATE 9/26/91 | OF 3
REVISION: #3

ITEM DESCRIPTION	ESTIMATED COST
1) GUIDEWAYS AND STRUCTURES	$87 467 345
2) STATIONS	$24 000 000
3) MAIN YARD AND SHOP	$17 500 000
4) SYSTEMWIDE EQUIPMENT	$38 325 973
5) VEHICLES	$46 500 000
SUBTOTAL (A)	$213 793 318
6) PRE REVENUE OPERATION	$5 344 833
7) OWNERS INSURANCE	$17 103 465
8) MASTER AGREEMENTS	$4 275 866
SUBTOTAL (B)	$26 724 165
9) RIGHT OF WAY	$0
SUBTOTAL (C)	$0
10) PROF. SERVICES	$72 155 245
11) CONTINGENCY	
A) OF SUBTOTAL A, B	$16 836 224
B) OF SUBTOTAL (C)	$0
C) OF SUBTOTAL ITEM 10	$18 038 811
SUBTOTAL (ITEMS 10 & 11)	$107 030 280
GRAND TOTAL	$347 547 763

COST ESTIMATE WORKSHEET
RUBBER TIRE PEOPLE MOVER

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 2
ITEM: ALIGNMENT #2 P/M | DATE 9/26/91 | OF 3
REVISION: #3

DESCRIPTION	QTY	UNIT/ PRICE	UNIT	TOTAL
GUIDEWAY COSTS				
GUIDEWAY @ GRADE	2024	$2 530	RF	$5 120 720
CUT & COVER (SHALLOW - 20 FT)	0	$10 000	RF	$0
AERIAL GUIDEWAY CONSTRUCTION	24399	$3 375	RF	$82 346 625
SUBTOTAL (GUIDEWAY COST)				$87 467 345
STATION COST				
AERIAL STATION	12	$2 000 000	EA	$24 000 000
SUBTOTAL (STATION COST)				$24 000 000
MAINT. FACIL & YARD COSTS				
FACILITIES & EQUIPMENT PER LOCATION	1	$17 500 000	LS	$17 500 000
SUBTOTAL (MAINT. FACIL.)				$17 500 000
VEHICLE COST				
FULLY AUTOMATED RUBBER TIRED VEHI	30	$1 550 000	EA	$46 500 000
SUBTOTAL (VEHICLE COST)				$46 500 000
SYSTEM WIDE EQUIPMENT COST				
SIGNS & GRAPHICS (PER STATION)	12	$100 000	EA	$1 200 000
TRAIN CONTROL (STATION)	12	$210 000	EA	$2 520 000
TRAIN CONTROL (GUIDEWAY)	26423	$538	RF	$14 215 574
TRACTION POWER (STATION)	12	$760 000	EA	$9 120 000
TRACTION POWER (GUIDEWAY)	26423	$132	RF	$3 487 836
COMMUNICATIONS	26423	$181	RF	$4 782 563
FARE COLLECTION (PER STATION)	12	$250 000	EA	$3 000 000
SUBTOTAL (SYSTEM COST)				$38 325 973
TOTAL ESTIMATED COST				$213 793 318

PROJECT: NORTH COAST EXTENSION EST. T. DAVIS SHT. 3
ITEM: ALIGNMENT #2 P/M DATE 9/26/91 OF 3
REVISION: #3

NOTES

1) INCLUDES 26,423 FT OF GUIDEWAY W/ 12 STATIONS, 30 CARS, AND AN ALLOWANCE OF $17,500,000 FOR MAINTAINENCE FACILITIES.

2) REAL ESTATE COST NOT INCLUDED.

3) COST FOR REMOVAL OF HAZARDOUS WASTE NOT INCLUDED.

COST ESTIMATE COVERSHEET
LIGHT RAIL APPLICATION

PROJECT: NORTH COAST EXTENSION EST. T. DAVIS SHT. 1
ITEM: ALIGNMENT "#3-Z"(MODIFIED) DATE 9/26/91 OF 3
REVISION: #2

ITEM DESCRIPTION	ESTIMATED COST
1) GUIDEWAYS AND STRUCTURES	$123 606 250
2) STATIONS	$72 000 000
3) MAIN YARD AND SHOP	$17 500 000
4) SYSTEMWIDE EQUIPMENT	$46 922 416
5) VEHICLES	$54 708 000
SUBTOTAL (A)	$314 736 666
6) PRE REVENUE OPERATION	$7 868 417
7) OWNERS INSURANCE	$25 178 933
8) MASTER AGREEMENTS	$7 868 417
SUBTOTAL (B)	$40 915 767
9) RIGHT OF WAY	$0
SUBTOTAL (C)	$0
10) PROF. SERVICES	$106 695 730
11) CONTINGENCY	
A) OF SUBTOTAL A, B	$24 895 670
B) OF SUBTOTAL (C)	$0
C) OF SUBTOTAL ITEM 10	$26 673 932
SUBTOTAL (ITEMS 10 & 11)	$158 265 332
GRAND TOTAL	$513 917 765

COST ESTIMATE WORKSHEET
LIGHT RAIL APPLICATION

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 2
ITEM: ALIGNMENT "#3-Z"(MODIFIED) | DATE 9/26/91 | OF 3
REVISION: #2

DESCRIPTION	QTY	UNIT/ PRICE	UNIT	TOTAL
GUIDEWAY COSTS				
GUIDEWAY @ GRADE	0	$900	RF	$0
CUT & COVER (SHALLOW)	1200	$10 000	RF	$12 000 000
AERIAL GUIDEWAY	2059	$4 500	RF	$9 265 500
TUNNELED	7868	$6 500	RF	$51 142 000
AERIAL GUIDEWAY (PEOPLE MOVER)	15170	$3 375	RF	$51 198 750
SUBTOTAL (GUIDEWAY COST)				$123 606 250
STATION COST				
AERIAL STATION (PEOPLE MOVER)	11	$2 000 000	EA	$22 000 000
SUBWAY STATION	1	$50 000 000	EA	$50 000 000
SUBTOTAL (STATION COST)				$72 000 000
MAINT. FACIL & YARD COSTS				
FACILITIES & EQUIPMENT PER LOCATION	1	$17 500 000	LS	$17 500 000
SUBTOTAL (MAINT. FACIL.)				$17 500 000
VEHICLE COST				
GREEN LINE (LRT)		ALLOWANCE	EA	$8 208 000
PEOPLE MOVER	30	$1 550 000	EA	$46 500 000
SUBTOTAL (VEHICLE COST)				$54 708 000
SYSTEM WIDE EQUIPMENT COST				
TRKWRK (INCL. SPECIAL TRACKWORK)	11127	$320	RF	$3 560 640
SIGNS & GRAPHICS (LRT)	1	$580 000	EA	$580 000
SIGNS & GRAPHICS (PEOPLE MOVER)	11	$100 000	EA	$1 100 000
TRAIN CONTROL STA. (LRT)	1	$900 000	EA	$900 000
TRAIN CONTROL STA. (PEOPLE MOVER)	11	$210 000	EA	$2 310 000
TRAIN CONTROL GDWY(LRT)	11127	$718	RF	$7 989 186
TRAIN CONTROL GDWY(PEOPLE MOVER)	15170	$538	RF	$8 161 460
TRACTION POWER STA. (LRT)	1	$1 100 000	EA	$1 100 000
TRACTION PWR STA. (PEOPLE MOVER)	11	$760 000	EA	$8 360 000
TRACTION POWER GDWY (LRT)	11127	$270	RF	$3 004 290
TRACTION POWER GDWY (PEOPLE MOVE	15170	$132	RF	$2 002 440
COMMUNICATIONS (LRT)	11127	$200	RF	$2 225 400
COMMUNICATIONS (PEOPLE MOVER)	15170	$200	RF	$3 034 000
FARE COLLECTION (LRT)	1	$670 000	EA	$670 000
FARE COLLECTION (PEOPLE MOVER)	11	$175 000	EA	$1 925 000
SUBTOTAL (SYSTEM COST)				$46 922 416
TOTAL ESTIMATED COST				$314 736 666

PROJECT: NORTH COAST EXTENSION EST. T. DAVIS SHT. 1
ITEM: ALIGNMENT "#3-Z"(MODIFIED) DATE 9/26/91 OF 3
REVISION: #2

NOTES

1) INCLUDES 11,127 FT OF LRT GUIDEWAY W/ 1 SUBWAY STATION AND AN ALLOWANCE OF $8,208,000 FOR ADDITIONAL GREENLINE TYPE CARS. ALSO INCLUDED IS 15,170 FT OF PEOPLE MOVER TYPE GUIDEWAY W/ 11 STATIONS, 30 CARS, AND AN ALLOWANCE OF $17,500,000 FOR MAINTAINENCE FACILITIES

2) COST FOR REMOVAL OF HAZARDOUS WASTE IS NOT INCLUDED

3) REAL ESTATE COST NOT INCLUDED.

COST ESTIMATE COVERSHEET

LIGHT RAIL APPLICATION

PROJECT: NORTH COAST EXTENSION EST. T. DAVIS SHT. 1
ITEM: ALIGNMENT #4 (LRT/P-M) DATE 9/26/91 OF 3
REVISION: #3

ITEM DESCRIPTION	ESTIMATED COST
1) GUIDEWAYS AND STRUCTURES	$103 909 500
2) STATIONS	$33 000 000
3) MAIN YARD AND SHOP	$17 500 000
4) SYSTEMWIDE EQUIPMENT	$47 125 280
5) VEHICLES	$54 708 000
SUBTOTAL (A)	$256 242 780
6) PRE REVENUE OPERATION	$6 406 070
7) OWNERS INSURANCE	$20 499 422
8) MASTER AGREEMENTS	$6 406 070
SUBTOTAL (B)	$33 311 561
9) RIGHT OF WAY	$0
SUBTOTAL (C)	$0
10) PROF. SERVICES	$86 866 302
11) CONTINGENCY	
A) OF SUBTOTAL A, B	$20 268 804
B) OF SUBTOTAL (C)	$0
C) OF SUBTOTAL ITEM 10	$21 716 576
SUBTOTAL (ITEMS 10 & 11)	$128 851 682
GRAND TOTAL	$418 406 023

COST ESTIMATE WORKSHEET

LIGHT RAIL APPLICATION

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 2
ITEM: ALIGNMENT #4 (LRT/P-M) | DATE 9/26/91 | OF 3
REVISION: #3

DESCRIPTION	QTY	UNIT/ PRICE	UNIT	TOTAL
GUIDEWAY COSTS				
GUIDEWAY @ GRADE-(LRT)	0	$900	RF	$0
CUT & COVER (SHALLOW)	0	$10 000	RF	$0
AERIAL GUIDEWAY-(LRT)	3390	$4 500	RF	$15 255 000
AERIAL GUIDEWAY-(PEOPLE MOVER)	26268	$3 375	RF	$88 654 500
SUBTOTAL (GUIDEWAY COST)				$103 909 500
STATION COST				
AERIAL STATION	1	$5 000 000	EA	$5 000 000
AERIAL STATION (PEOPLE MOVER)	14	$2 000 000	EA	$28 000 000
SUBTOTAL (STATION COST)				$33 000 000
MAINT. FACIL & YARD COSTS				
MAINT FACIL-(PEOPLE MOVER)	1	$17 500 000	LS	$17 500 000
SUBTOTAL (MAINT. FACIL.)				$17 500 000
VEHICLE COST				
GREEN LINE (LRT)	0	ALLOWANCE	EA	$8 208 000
PEOPLE MOVER	30	$1 550 000	EA	$46 500 000
SUBTOTAL (VEHICLE COST)				$54 708 000
SYSTEM WIDE EQUIPMENT COST				
TRKWRK (INCL. SPECIAL TRACKWORK)	3390	$320	RF	$1 084 800
SIGNS & GRAPHICS (PER STATION)	15	$100 000	EA	$1 500 000
TRAIN CONTROL STA. (LRT)	1	$280 000	EA	$280 000
TRAIN CNTRL STA.(PEOPLE MOVER)	14	$210 000	EA	$2 940 000
TRAIN CONTROL GDWY (LRT)	3390	$718	RF	$2 434 020
TRAIN CNTRL GDWY.(PEOPLE MOVER)	26268	$538	RF	$14 132 184
TRACTION POWER STA. (LRT)	1	$1 100 000	EA	$1 100 000
TRCTN PWR STA.(PEOPLE MOVER)	14	$760 000	EA	$10 640 000
TRACTION POWER GDWY (LRT)	3390	$270	RF	$915 300
TRCTN PWR GDWY.(PEOPLE MOVER	26268	$132	RF	$3 467 376
COMMUNICATIONS	29658	$200	RF	$5 931 600
FARE COLLECTION (LRT)	1	$250 000	EA	$250 000
FARE COLLECTION (PEOPLE MOVER)	14	$175 000	EA	$2 450 000
SUBTOTAL (SYSTEM COST)				$47 125 280
TOTAL ESTIMATED COST				$256 242 780

PROJECT: NORTH COAST EXTENSION EST. T. DAVIS SHT. 3
ITEM: ALIGNMENT #4 (LRT/P-M) DATE 9/26/91 OF 3
REVISION: #3

NOTES

1) INCLUDES 3,390 FT OF LRT GUIDEWAY W/ 1 STATIONS AND AN ALLOWANCE OF $8,208,000 FOR ADDITIONAL GREENLINE TYPE CARS. ALSO INCLUDED IS 27,168 FT OF PEOPLE MOVER TYPE GUIDEWAY W/ 14 STATIONS, 30 CARS, AND AN ALLOWANCE OF $17,500,000 FOR MAINTAINENCE FACILITIES.

2) COST FOR REMOVAL OF HAZARDOUS WASTE NOT INCLUDED

3) REAL ESTATE COST IS NOT INCLUDED

COST ESTIMATE COVERSHEET
RUBBER TIRE PEOPLE MOVER

PROJECT: NORTH COAST EXTENSION EST. T. DAVIS SHT. 1
ITEM: ALIGNMENT #5 P/M DATE 9/26/91 OF 3
REVISION: #4

ITEM DESCRIPTION	ESTIMATED COST
1) GUIDEWAYS AND STRUCTURES	$94 064 625
2) STATIONS	$28 000 000
3) MAIN YARD AND SHOP	$17 500 000
4) SYSTEMWIDE EQUIPMENT	$41 148 221
5) VEHICLES	$46 500 000
SUBTOTAL (A)	$227 212 846
6) PRE REVENUE OPERATION	$5 680 321
7) OWNERS INSURANCE	$18 177 028
8) MASTER AGREEMENTS	$4 544 257
SUBTOTAL (B)	$28 401 606
9) RIGHT OF WAY	$0
SUBTOTAL (C)	$0
10) PROF. SERVICES	$76 684 336
11) CONTINGENCY	
A) OF SUBTOTAL A, B	$17 893 012
B) OF SUBTOTAL (C)	$0
C) OF SUBTOTAL ITEM 10	$19 171 084
SUBTOTAL (ITEMS 10 & 11)	$113 748 431
GRAND TOTAL	$369 362 883

COST ESTIMATE WORKSHEET
RUBBER TIRE PEOPLE MOVER

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 2
ITEM: ALIGNMENT #5 P/M | DATE 9/26/91 | OF 3
REVISION: #4

DESCRIPTION	QTY	UNIT/ PRICE	UNIT	TOTAL
GUIDEWAY COSTS				
GUIDEWAY @ GRADE		$2 530	RF	$0
CUT & COVER (SHALLOW - 20 FT)		$10 000	RF	$0
AERIAL GUIDEWAY CONSTRUCTION	27871	$3 375	RF	$94 064 625
AERIAL GUIDEWAY W/ CROSSOVER		$3 375	RF	$0
SUBTOTAL (GUIDEWAY COST)				$94 064 625
STATION COST				
AERIAL STATION	14	$2 000 000	EA	$28 000 000
AT GRADE STATION		$1 300 000	EA	$0
SUBTOTAL (STATION COST)				$28 000 000
MAINT. FACIL & YARD COSTS				
FACILITIES & EQUIPMENT PER LOCATION	1	$17 500 000	LS	$17 500 000
SUBTOTAL (MAINT. FACIL.)				$17 500 000
VEHICLE COST				
FULLY AUTOMATED RUBBER TIRED VEHI	30	$1 550 000	EA	$46 500 000
SUBTOTAL (VEHICLE COST)				$46 500 000
SYSTEM WIDE EQUIPMENT COST				
SIGNS & GRAPHICS (PER STATION)	14	$100 000	EA	$1 400 000
TRAIN CONTROL (STATION)	14	$210 000	EA	$2 940 000
TRAIN CONTROL (GUIDEWAY)	27871	$538	RF	$14 994 598
TRACTION POWER (STATION)	14	$760 000	EA	$10 640 000
TRACTION POWER (GUIDEWAY)	27871	$132	RF	$3 678 972
COMMUNICATIONS	27871	$181	RF	$5 044 651
FARE COLLECTION (PER STATION)	14	$175 000	EA	$2 450 000
SUBTOTAL (SYSTEM COST)				$41 148 221
TOTAL ESTIMATED COST				$227 212 846

PROJECT: NORTH COAST EXTENSION EST. T. DAVIS SHT. 3
ITEM: ALIGNMENT #5 P/M DATE 9/26/91 OF 3
REVISION: #4

NOTES

0

1) INCLUDES 27,571 FT OF GUIDEWAY W/ 14 STATIONS, 30 CARS, AND AN ALLOWANCE OF $17,500,000 FOR MAINTAINENCE FACILITIES.

2) REAL ESTATE COST NOT INCLUDED

3) COST FOR REMOVAL OF HAZARDOUS WASTE NOT INCLUDED

COST ESTIMATE WORKSHEET
LIGHT RAIL APPLICATION

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 2
ITEM: ALIGNMENT #3 (LRT-P/M) | DATE 9/16/91 | OF 3
REVISION: #3

DESCRIPTION	QTY	UNIT/ PRICE	UNIT	TOTAL
GUIDEWAY COSTS				
GUIDEWAY @ GRADE	0	$900	RF	$0
CUT & COVER (SHALLOW)	2000	$10 000	RF	$20 000 000
AERIAL GUIDEWAY	5400	$4 500	RF	$24 300 000
TUNNELED	7400	$6 500	RF	$48 100 000
AERIAL GUIDEWAY (PEOPLE MOVER)	26100	$3 375	RF	$88 087 500
SUBTOTAL (GUIDEWAY COST)				$180 487 500
STATION COST				
AERIAL STATION (PEOPLE MOVER)	13	$2 000 000	EA	$26 000 000
SUBWAY STATION	1	$50 000 000	EA	$50 000 000
SUBTOTAL (STATION COST)				$76 000 000
MAINT. FACIL & YARD COSTS				
FACILITIES & EQUIPMENT PER LOCATION	1	$17 500 000	LS	$17 500 000
SUBTOTAL (MAINT. FACIL.)				$17 500 000
VEHICLE COST				
GREEN LINE (LRT)		ALLOWANCE	EA	$8 208 000
PEOPLE MOVER	30	$1 550 000	EA	$46 500 000
SUBTOTAL (VEHICLE COST)				$54 708 000
SYSTEM WIDE EQUIPMENT COST				
TRKWRK (INCL. SPECIAL TRACKWORK)	14800	$320	RF	$4 736 000
SIGNS & GRAPHICS (LRT)	1	$580 000	EA	$580 000
SIGNS & GRAPHICS (PEOPLE MOVER)	13	$100 000	EA	$1 300 000
TRAIN CONTROL STA. (LRT)	1	$900 000	EA	$900 000
TRAIN CONTROL STA. (PEOPLE MOVER)	13	$210 000	EA	$2 730 000
TRAIN CONTROL GDWY(LRT)	14800	$718	RF	$10 626 400
TRAIN CONTROL GDWY(PEOPLE MOVER)	26100	$538	RF	$14 041 800
TRACTION POWER STA. (LRT)	1	$1 100 000	EA	$1 100 000
TRACTION PWR STA. (PEOPLE MOVER)	13	$760 000	EA	$9 880 000
TRACTION POWER GDWY (LRT)	14800	$270	RF	$3 996 000
TRACTION POWER GDWY (PEOPLE MOVE	26100	$132	RF	$3 445 200
COMMUNICATIONS (LRT)	14800	$200	RF	$2 960 000
COMMUNICATIONS (PEOPLE MOVER)	26100	$200	RF	$5 220 000
FARE COLLECTION (LRT)	1	$670 000	EA	$670 000
FARE COLLECTION (PEOPLE MOVER)	13	$175 000	EA	$2 275 000
SUBTOTAL (SYSTEM COST)				$64 460 400
TOTAL ESTIMATED COST				$393 155 900

COST ESTIMATE COVERSHEET
LIGHT RAIL APPLICATION

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 1
ITEM: ALIGNMENT #3 (LRT-P/M) | DATE 9/16/91 | OF 3
REVISION: #3

ITEM DESCRIPTION	ESTIMATED COST
1) GUIDEWAYS AND STRUCTURES	$180 487 500
2) STATIONS	$76 000 000
3) MAIN YARD AND SHOP	$17 500 000
4) SYSTEMWIDE EQUIPMENT	$64 460 400
5) VEHICLES	$54 708 000
SUBTOTAL (A)	$393 155 900
6) PRE REVENUE OPERATION	$9 828 898
7) OWNERS INSURANCE	$31 452 472
8) MASTER AGREEMENTS	$9 828 898
SUBTOTAL (B)	$51 110 267
9) RIGHT OF WAY	$44 520 000
SUBTOTAL (C)	$44 520 000
10) PROF. SERVICES	$146 635 850
11) CONTINGENCY	
A) OF SUBTOTAL A, B	$31 098 632
B) OF SUBTOTAL (C)	$20 924 400
C) OF SUBTOTAL ITEM 10	$36 658 963
SUBTOTAL (ITEMS 10 & 11)	$235 317 844
GRAND TOTAL	$724 104 011

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 1
ITEM: ALIGNMENT #3 (LRT-P/M) | DATE 9/16/91 | OF 3
REVISION: #3

NOTES

1) INCLUDES 14,800 FT OF LRT GUIDEWAY W/ 1 SUBWAY STATION AND AN ALLOWANCE OF $8,208,000 FOR ADDITIONAL GREENLINE TYPE CARS. ALSO INCLUDED IS 26,100 FT OF PEOPLE MOVER TYPE GUIDEWAY W/ 13 STATIONS, 30 CARS, AND AN ALLOWANCE OF $17,500,000 FOR MAINTAINENCE FACILITIES

2) COST FOR REMOVAL OF HAZARDOUS WASTE IS NOT INCLUDED

3) REAL ESTATE COST IS BASED ON $35.00 PER SQUARE FT, AND ASSUMES A 30 FT R.O.W.. ALSO INCLUDED IS A 45,000 SF MAINT. AREA WHICH IS BASED ON AN ALLOWANCE OF 1500 SF OF MAINT. AREA PER CAR.

4) COST BREAKDOWN
LRT - $316,340,935.00
P\M - $407,763,076.00

COST ESTIMATE COVERSHEET
LIGHT RAIL APPLICATION

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 1
ITEM: ALIGNMENT "#3-Z" (LRT-P/M) | DATE 9/16/91 | OF 3
REVISION: #0

ITEM DESCRIPTION	ESTIMATED COST
1) GUIDEWAYS AND STRUCTURES	$203 887 500
2) STATIONS	$76 000 000
3) MAIN YARD AND SHOP	$17 500 000
4) SYSTEMWIDE EQUIPMENT	$69 889 200
5) VEHICLES	$54 708 000
SUBTOTAL (A)	$421 984 700
6) PRE REVENUE OPERATION	$10 549 618
7) OWNERS INSURANCE	$33 758 776
8) MASTER AGREEMENTS	$10 549 618
SUBTOTAL (B)	$54 858 011
9) RIGHT OF WAY	$48 300 000
SUBTOTAL (C)	$48 300 000
10) PROF. SERVICES	$157 542 813
11) CONTINGENCY	
A) OF SUBTOTAL A, B	$33 378 990
B) OF SUBTOTAL (C)	$22 701 000
C) OF SUBTOTAL ITEM 10	$39 385 703
SUBTOTAL (ITEMS 10 & 11)	$253 008 506
GRAND TOTAL	$778 151 217

COST ESTIMATE WORKSHEET
LIGHT RAIL APPLICATION

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 2
ITEM: ALIGNMENT "#3-Z" (LRT-P/M) | DATE 9/16/91 | OF 3
REVISION: #0

DESCRIPTION	QTY	UNIT/ PRICE	UNIT	TOTAL
GUIDEWAY COSTS				
GUIDEWAY @ GRADE	0	$900	RF	$0
CUT & COVER (SHALLOW)	2000	$10 000	RF	$20 000 000
AERIAL GUIDEWAY	5400	$4 500	RF	$24 300 000
TUNNELED	11000	$6 500	RF	$71 500 000
AERIAL GUIDEWAY (PEOPLE MOVER)	26100	$3 375	RF	$88 087 500
SUBTOTAL (GUIDEWAY COST)				$203 887 500
STATION COST				
AERIAL STATION (PEOPLE MOVER)	13	$2 000 000	EA	$26 000 000
SUBWAY STATION	1	$50 000 000	EA	$50 000 000
SUBTOTAL (STATION COST)				$76 000 000
MAINT. FACIL & YARD COSTS				
FACILITIES & EQUIPMENT PER LOCATION	1	$17 500 000	LS	$17 500 000
SUBTOTAL (MAINT. FACIL.)				$17 500 000
VEHICLE COST				
GREEN LINE (LRT)		ALLOWANCE	EA	$8 208 000
PEOPLE MOVER	30	$1 550 000	EA	$46 500 000
SUBTOTAL (VEHICLE COST)				$54 708 000
SYSTEM WIDE EQUIPMENT COST				
TRKWRK (INCL. SPECIAL TRACKWORK)	18400	$320	RF	$5 888 000
SIGNS & GRAPHICS (LRT)	1	$580 000	EA	$580 000
SIGNS & GRAPHICS (PEOPLE MOVER)	13	$100 000	EA	$1 300 000
TRAIN CONTROL STA. (LRT)	1	$900 000	EA	$900 000
TRAIN CONTROL STA. (PEOPLE MOVER)	13	$210 000	EA	$2 730 000
TRAIN CONTROL GDWY(LRT)	18400	$718	RF	$13 211 200
TRAIN CONTROL GDWY(PEOPLE MOVER)	26100	$538	RF	$14 041 800
TRACTION POWER STA. (LRT)	1	$1 100 000	EA	$1 100 000
TRACTION PWR STA. (PEOPLE MOVER)	13	$760 000	EA	$9 880 000
TRACTION POWER GDWY (LRT)	18400	$270	RF	$4 968 000
TRACTION POWER GDWY (PEOPLE MOVE	26100	$132	RF	$3 445 200
COMMUNICATIONS (LRT)	18400	$200	RF	$3 680 000
COMMUNICATIONS (PEOPLE MOVER)	26100	$200	RF	$5 220 000
FARE COLLECTION (LRT)	1	$670 000	EA	$670 000
FARE COLLECTION (PEOPLE MOVER)	13	$175 000	EA	$2 275 000
SUBTOTAL (SYSTEM COST)				$69 889 200
TOTAL ESTIMATED COST				$421 984 700

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 1
ITEM: ALIGNMENT "#3-Z" (LRT-P/M) | DATE 9/16/91 | OF 3
REVISION: #0

NOTES

1) INCLUDES 18,400 FT OF LRT GUIDEWAY W/ 1 SUBWAY STATION AND AN ALLOWANCE OF $8,208,000 FOR ADDITIONAL GREENLINE TYPE CARS. ALSO INCLUDED IS 26,100 FT OF PEOPLE MOVER TYPE GUIDEWAY W/ 13 STATIONS, 30 CARS, AND AN ALLOWANCE OF $17,500,000 FOR MAINTAINENCE FACILITIES

2) COST FOR REMOVAL OF HAZARDOUS WASTE IS NOT INCLUDED

3) REAL ESTATE COST IS BASED ON $35.00 PER SQUARE FT, AND ASSUMES A 30 FT R.O.W.. ALSO INCLUDED IS A 45,000 SF MAINT. AREA WHICH IS BASED ON AN ALLOWANCE OF 1500 SF OF MAINT. AREA PER CAR.

4) COST BREAKDOWN
LRT - $370,388,141.00
P\M - $407,763,076.00

COST ESTIMATE COVERSHEET
LIGHT RAIL APPLICATION

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 1
ITEM: ALIGNMENT "Z" (LRT) | DATE 9/16/91 | OF 3
REVISION: #0

ITEM DESCRIPTION	ESTIMATED COST
1) GUIDEWAYS AND STRUCTURES	$60 492 000
2) STATIONS	$50 000 000
3) MAIN YARD AND SHOP	$0
4) SYSTEMWIDE EQUIPMENT	$16 472 144
5) VEHICLES	$0
SUBTOTAL (A)	$126 964 144
6) PRE REVENUE OPERATION	$3 174 104
7) OWNERS INSURANCE	$10 157 132
8) MASTER AGREEMENTS	$3 174 104
SUBTOTAL (B)	$16 505 339
9) RIGHT OF WAY	$9 206 400
SUBTOTAL (C)	$9 206 400
10) PROF. SERVICES	$45 802 765
11) CONTINGENCY	
A) OF SUBTOTAL A, B	$10 042 864
B) OF SUBTOTAL (C)	$4 327 008
C) OF SUBTOTAL ITEM 10	$11 450 691
SUBTOTAL (ITEMS 10 & 11)	$71 623 328
GRAND TOTAL	$224 299 211

COST ESTIMATE WORKSHEET
LIGHT RAIL APPLICATION

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 2
ITEM: ALIGNMENT "Z" (LRT) | DATE 9/16/91 | OF 3
REVISION: #0

DESCRIPTION	QTY	UNIT/ PRICE	UNIT	TOTAL
GUIDEWAY COSTS				
GUIDEWAY @ GRADE	0	$900	RF	$0
CUT & COVER (SHALLOW)	1000	$10 000	RF	$10 000 000
AERIAL GUIDEWAY	0	$4 500	RF	$0
TUNNELED	7768	$6 500	RF	$50 492 000
SUBTOTAL (GUIDEWAY COST)				$60 492 000
STATION COST				
SUBWAY STATION	1	$50 000 000	EA	$50 000 000
SUBTOTAL (STATION COST)				$50 000 000
MAINT. FACIL & YARD COSTS				
FACILITIES & EQUIPMENT PER LOCATION	0	$25 000 000	LS	$0
SUBTOTAL (MAINT. FACIL.)				$0
VEHICLE COST				
GREEN LINE (LRT)	0	$0	EA	$0
SUBTOTAL (VEHICLE COST)				$0
SYSTEM WIDE EQUIPMENT COST				
TRKWRK (INCL. SPECIAL TRACKWORK)	8768	$320	RF	$2 805 760
SIGNS & GRAPHICS (LRT)	1	$580 000	EA	$580 000
TRAIN CONTROL STA. (LRT)	1	$900 000	EA	$900 000
TRAIN CONTROL GDWY(LRT)	8768	$718	RF	$6 295 424
TRACTION POWER STA. (LRT)	1	$1 100 000	EA	$1 100 000
TRACTION POWER GDWY (LRT)	8768	$270	RF	$2 367 360
COMMUNICATIONS (LRT)	8768	$200	RF	$1 753 600
FARE COLLECTION (LRT)	1	$670 000	EA	$670 000
SUBTOTAL (SYSTEM COST)				$16 472 144
TOTAL ESTIMATED COST				$126 964 144

PROJECT: NORTH COAST EXTENSION | EST. T. DAVIS | SHT. 1
ITEM: ALIGNMENT "Z" (LRT) | DATE 9/16/91 | OF 3
REVISION: #0

NOTES

1) INCLUDES 8,768 FT OF LRT GUIDEWAY W/ 1 SUBWAY STATION.

2) COST FOR REMOVAL OF HAZARDOUS WASTE IS NOT INCLUDED

3) REAL ESTATE COST IS BASED ON $35.00 PER SQUARE FT, AND ASSUMES A 30 FT R.O.W..

SIGN-IN SHEET

Date: 10-21-91

Function: Jt. Policy & Technical Task Force Meeting No. 4
Proud Bird Restaurant, 11022 Aviation Blvd.

Name	Title/Agency	Phone/Fax Numbers
ENRIQUE R. VALENZUELA	RCC	244-6857
James Okazaki	LADOT	485-3039
Ken Nelson	Caltrans	897-4650
VASAN SRINIVASAN	SCRTD	972-3829.
Howard S. Yoshioka	FAA	(213) 297-1250
DAN BEAN	LACLA	485-6632
Jack Hartman	DOA	646-7116
Albert Perdon	SCRTD	972-3910
Phillip Depoian	Mayor's Office	485-3215
Jerry Carter	LWC Assoc. Aviation Consultant	544-4145
Sara Hirsch	Supervisor Deane Dana	974-4444
Thane ULBRICH	WSA	645-3186

SIGN-IN SHEET

Date: 10-21-91

Function: Jt. Policy & Technical Task Force Meeting No. 4
Proud Bird Restaurant, 11022 Aviation Blvd.

Name	Title/Agency	Phone/Fax Numbers
KEN ROSS	WILBUR SMITH ASSOC.	(213) 645-3186
CYNTHIA ROBBINS (John Phillips)	HALL & PHILLIPS Attys	(213) 470-2001 or 641-2191 FAX 474-1083
LYNN STRUTHERS	RCC	213 244 6823 FX 244 6016
LES HEWISON.	BECHTEL.	213 620 7010
BEN BEASLEY	BECHTEL.	213 620 7010.
LARRY TACKLER	LACTC	213 244-6214
Mal M. Packer	L.A City - Airports	213 - 646 - 3054
MANUEL PADRON	Consultant to LACTC	213-627-1145
Bob (illegible)	LACTC	213 [illegible]
Bellur Devaraj	City of El Segundo	213 322-4670
Don Hulsman	LACTC Real Estate	213 244 6725
Rubell Helgum	City of LA - CDD	213-485-3357

SIGN-IN SHEET

Date: 10-21-91

Function: Jt. Policy & Technical Task Force Meeting No. 4
Proud Bird Restaurant, 11022 Aviation Blvd.

Name	Title/Agency	Phone/Fax Numbers
John Stutsman	Gruen Assoc	937-4270
Jacki Bacharach	LACTC	372-8987
Clifton A. Moore	LA DOA	646-6257
Helen S. Custodio	LACTC	244-6732
Brynn Kernaghan	LACTC	244-6533
Bob Cashin	LACTC	

SIGN-IN SHEET

Date: 10-21-91

Function: Jt. Policy & Technical Task Force Meeting No. 4
Proud Bird Restaurant, 11022 Aviation Blvd.

Name	Title/Agency	Phone/Fax Numbers
SHEILA M. MURPHY	GRUEN ASSOCIATES	(213) 937-4270
MANUEL PADRON	MPA - Consultant to LACFC	(213) 827-1145

INTERAGENCY TRANSIT STUDY
JOINT POLICY GROUP AND TECHNICAL TASK FORCE
November 18, 1991, 3:30 p.m.
LACTC Conference Room, 10th Floor

TABLE OF CONTENTS FOR MEETING #5

Item	Page
Agenda	87
Minutes	88
Description of Alignment Options	92
Summary of Alignments	94
Evaluation of Alignments	95
Cost Summary	97
Cost by Segment/Other Items	99
Metro Green Line North South Connector at Aviation/Imperial	100
LAX People Mover/Green Line Patronage Study, Wilbur Smith Associates	101
LAX People Mover and Green Line Options Operational Analysis	107
Approximate Run Times for Rail Alternatives to LAX/Weschester	115
Memorandum - Public Outreach Final Report: Fairbanks, Maullin & Assoc.	116
Sign-In Sheets	162

INTERAGENCY TRANSIT STUDY
JOINT POLICY GROUP AND TECHNICAL TASK FORCE MEETING No.5
November 18, 1991, 3:30 p.m., Los Angeles Conference Room
LACTC, 818 W. 7th Street, 10th Floor

AGENDA

1. Approve Minutes

INFORMATION AND PRESENTATIONS - 30 MINS

2. Review of Alignments, Cost Estimates, and Project Schedule - Judy Wilson/Bob Cashin

3. Overview of the FAA Issues, including the McFarland Report - Al Thiede/Lynn Struthers

4. Update on the Double "Wye" at Aviation - Lynn Struthers

5. Update on the Form 7460 Process - Ben Beasley/Mal Packer

6. Update on Patronage - Wilbur Smith Associates

7. Update on Preliminary Operations Plan - Manuel Padron

8. Summary of Public Comments/Update on the Public Outreach Process - Barna Szabo

DISCUSSION - 1 HOUR

9. Recommendation on LAX/Green Line Alignment(s) for Further Action

10. Adjourn - 5:00 p.m.

nc4:polmtg5

MINUTES OF

LAX INTERAGENCY TRANSIT STUDY POLICY GROUP

MEETING NUMBER 5

NOVEMBER 18, 1991 - 3:30 P.M.

The minutes of the October 21th Policy Group Meeting were approved. Comments regarding these minutes can be directed to Bob Cashin at (213) 244-6441, or can be addressed at the beginning of our next meeting.

SUMMARY OF ITEMS DISCUSSED

- **Introduction of Mitigated EIR Alignment.** In response to public concerns regarding the number of stations and the projected revenue operations date, the Technical Task Force re-examined the possibility of mitigating the EIR alignment by running the portion of the alignment at the end of 25L and 25R in subway from just south of 111th to north of 104th. This option should be able to maintain 111th open in its present location, but 104th might need to be relocated slightly.

  COSTS OF THE ALIGNMENTS (in million $):

	EIR-MIT	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**
TOTAL	$494-499	$645-665	$489-524	$531-574	$490-534	$477-467	$447-467
(CTA)	$172	$172	$172	$179	$172	$179	$179
(w/o	$322-327	$473-493	$357-375	$310-345	$360-403	$312-356	$268-288

  ESTIMATED REVENUE OPERATION DATE (ROD)

Jul 97	Dec 98	Jun 98	Jan 98	Dec 97	Jun 98	Jun 98

- **McFarland Report.** There appear to be technically feasible solutions to the five specific problems which could be presented by the Metro Green Line (details presented in summary handout).

- **FAA Form 7460 review process.** Based on the technical group meeting with FAA held on November 7, DOA will officially submit a partial Form 7460 application to FAA for the review of the alignment north of 96th Street to Westchester. Bechtel will have drawings and filing material prepared to submit by November 26, 1991. With "best-case" assumptions for a guideway located in the median of Westchester Parkway, the People Mover would not penetrate the 50:1 surface, but the Green Line catenary poles would penetrate 4 feet into the 50:1. Based on a 90-day review, the process should be completed by early March 1992.

- **North South Connector (Double Wye) at Aviation/Imperial.** Although either an at-grade (aerial) or flyover connector would be possible, an at-grade connector would limit headway to about 6 minutes and require platform to be 3 car lengths. The construction cost of providing an at-grade connector now would be $5.5 million versus $6.6 million (1991 $) if added in the future. A flyover connector would cost $28 million if completed now. The minimal construction cost of a not-to-preclude a flyover connector in the future is estimated at $2.4 million now and a total of $40 million (1991 $) if completed in the future. Both the at-grade and flyover options could go into subway without needing to relocate 111th Street. However, a subway station a Lot B would not be possible with the flyover connector.

- **Patronage.** Wilbur-Smith presented its projections of patronage for the Mitigated EIR Green Line based on the SCAG 2010 projections, adjusted to reflect special generator characteristics (such as the airport). The Mitigated EIR Green Line had the same daily boardings as Option 1 Green Line subway, with variations limited to a shift of 914 boardings from the Lot C station to the Century/Airport station, and consequently 914 less boardings at the Transit Center (Lot C, in this case).

- **Public Participation.** Public meetings will be concluded this week, with the last meeting occurring Thursday evening. Although presentations have not been heavily attended, the turn-out has been characteristic of the organizations themselves. The public meeting schedule for November 13,has been widely publicized and may be a better indicator of public interest.

- **Operating times.** Manual Padron has based operating headways on the North Coast extension of the Green Line on the headways along the I-105 trunk. The Green Line vehicle out of Norwalk will have 2 minute headways, with eery other vehicle destined for North of South Coast branches. This results in 4 minute headways on North Coast branch if it is an extension of the Green Line. However, if the technology change to People Mover were made at Aviation station, the North Coast Branch could achieve 2 minute headways on an all-People Mover system, with a grade separated double "wye" at Century. This service could be timed to alternate with the 2 minute headways of vehicles arriving at Aviation station, so that patrons need only wait 1 to 2 minutes to board a connecting train.

  Relative operating expenses of the alignment options would be lower for the alignments 1 and 2, medium for alignment 4 and, high for 3 or five (based on miles traveled per year and number of stations served).

DISCUSSION OF PREFERRED ALIGNMENT OPTIONS

Preliminary analysis indicated that the EIR Mitigated Alignment is the least expensive and could be completed within the shortest time. DOA's preferred alignment was Option 4. The Westchester Chamber of Commerce preferred Option 5. LADOT was split between the EIR Mitigated Alignment and a variation of Option 5 which was proposed by Ruth Galanter. The variation 5 RG proposed that Option 5 People Mover include a future phase using Green Line technology to Lot C via the existing Sepulveda subway tunnel. This would provide an opportunity to connect the LAX-Palmdale at Lot C (or Aviation) so the Green Line and LAX-Palmdale could serve regional transit needs, while the People Mover could serve the area needs of LAX and the Marina.

UPCOMING POLICY GROUP MEETING

- **December 9th from 3:30 to 5:30 at LACTC.**
  The focus of this meeting will be to chose the preferred alternative to be recommended to the respective Boards, to be carried forward into the EIR process and design development. (The meeting date has been changed to December 19, 1991.)

Meeting Handouts

FILING SCHEDULE FAA FORM 7460 NORTH OF 96TH STREET
MINUTES OF MEETING ON THE FORM 7460 PROCESS (November 7, 1991)
METRO GREEN LINE NORTH SOUTH CONNECTOR AT AVIATION/IMPERIAL
LAX People Mover-Green Line Station Daily Boardings

Mitigated EIR Alignment Option map
LAX INTERAGENCY TRANSIT STUDY **COST SUMMARY**
RAIL CONSTRUCTION COMPANY [ALIGNMENT SCHEDULES]
LAX INTERAGENCY TRANSIT STUDY **SUMMARY OF ALIGNMENTS**
LAX People Mover Patronage Study
Green Line/LAX Alternatives Preliminary Operations Analysis
SUMMARY OF LAX/METRO GREEN LINE IMPACTS - McFARLAND REPORT

The Technical Task Force **Action Items** for the next Policy Group meeting are:

- Matrix of the 4 remaining alignments against Task Force Goals for priority rating.

- Cost (including operation costs) and preliminary operations analysis of Alternative 5 RG.

nc:sus2:nov18.min/Dec.12, 1991

alignment would be completely aerial.

Potential Impacts of People Mover through Lot B. A supplemental EIR would be required to address the land use impacts along the new alignment sections (including real estate impacts), and the traffic impacts occasioned by crossing Imperial, 111th, 104th, 102nd and Aviation at Century. A constructability analysis would also be required.

- The alignments as described all follow the EIR approved alignment from the Caruso property through Lot C. Therefore, it could be possible to cross-match alignment options north and south of Lot C to combine the preferred Westchester Parkway alignment with the preferred Lot B alignment.

NOTE: These alignments have not been evaluated in detail regarding their impact on the electronic portion of the LAX airport system. The assessment of the impact of the original EIR alignment leads the Technical Committee to believe that any issues can be resolved between the LACTC, LADOA and FAA.

October 17, 1991

DESCRIPTION OF ALIGNMENT OPTIONS

- **GreenLine Subway to Westchester.** (ALIGNMENT OPTION 1)
The north coast extension would follow the EIR alignment north of Aviation station in an aerial alignment until 111th Street where it would descend into subway along the end of the south runway, curving west by northwest toward Century and the Caruso property where it would turn north to a subway station in Lot C, then continuing in subway to 89th Street, with a subway station in the parking lot east of Sepulveda Westway. The CTA would be served via a Lot C connection to People Mover.

  Potential Impacts of a Subway alignment. A constructability analysis (engineering constraints) of this option would be required. A new EIR would be required to analyze the impacts associated with this alignment, including real estate impacts. FAA would need to evaluate the possibility of risks from cut-and-cover and boring at the end of the south runways.

- **GreenLine Subway to Lot C.** (ALIGNMENT OPTION 2)
The north coast extension would follow the EIR alignment north of Aviation station in an aerial alignment until 111th Street where it would descend into subway along the end of the south runway, curving west by northwest toward Century and the Caruso property where it would turn north to a subway station in Lot C, where the GreenLine technology would terminate. The CTA would be served via a People Mover system which could connect to the GreenLine at Lot C. This People Mover system would continue on to Westchester CBD, with an aerial People Mover station in the parking lot west of Sepulveda Eastway. This option would not include a station at Century and Airport Boulevards, as with the EIR alignment, or a station to serve Lot B.

  Potential Impacts of a Subway alignment. A constructability analysis (engineering constraints) of this option would be required. A new EIR would be required to analyze the impacts associated with this alignment, including real estate impacts. FAA would need to evaluate the possibility of risks from cut-and-cover and boring at the end of the south runways.

- **GreenLine north along Aviation via Lot B.** (ALIGNMENT OPTION 3)
The GreenLine will follow the EIR approved alignment along Aviation north of Imperial until it reaches 111th Street where it would turn and run east along the north side of the street where it would terminate mid-block at an aerial station. From that point, a People Mover system would continue east along 111th Street until roughly parallel with the edge of the Clear Zone, turn north through Lot B (just east of the Clear Zone), through the parking lots west of 5340 & 5341 104th Street, through the parking lots between 5330 and 5432 102nd, curving to align due north along the west side of Concourse Way, turning west along the south side of Century to join the EIR approved alignment west of Aviation to Westchester Parkway where the alignment would cross north into the parking lot west of Sepulveda Eastway, turn west along 89th Street, with a station in the parking lot east of Sepulveda Westway. This People Mover system would continue into the CTA. This option would include all the stations described in the EIR alignment, plus

a Lot B station located along the north side of 111th, just east of the Proud Bird property boundary, plus an option for a station at Century and Concourse. This alignment would be completely aerial.

Potential Impacts of GreenLine through Lot B. A supplemental EIR would be required to address land use impacts along new alignment sections (including real estate impacts), and the potential traffic impacts occasioned by two additional crossing of Aviation (at 111th and Century, as well as along 89th Street). A constructability analysis would also be required.

- **GreenLine through Lot C.** (ALIGNMENT OPTION 4)
The GreenLine would follow the EIR approved alignment along Aviation north of Imperial until it reaches 111th Street where it would turn and run east along the north side of the street with a Lot B station mid block, continue east along 111th Street until roughly parallel with the edge of the Clear Zone, turn north through Lot B (just east of the Clear Zone), through the parking lots west of 5340 & 5341 104th Street, through the parking lots between 5330 and 5432 102nd, curving to align due north along the west side of Concourse Way, turning west along the south side of Century to join the EIR approved alignment west of Aviation to Lot C, where it would terminate. At that point, an extension of the CTA People Mover system would continue to Westchester Parkway where the alignment would cross north into the parking lot west of Sepulveda Eastway, turn west along 89th Street, with a station in the parking lot east of Sepulveda Westway. This People Mover system would continue into the CTA. This option would include all the stations described in the EIR alignment, plus a Lot B station located along the north side of 111th, just east of the Proud Bird property boundary, plus an option for a station at Century and Concourse. This alignment would be completely aerial.

Potential Impacts of GreenLine through Lot C. A supplemental EIR would be required to address land use impacts along new alignment sections (including real estate impacts), and the potential traffic impacts occasioned by two additional crossing of Aviation (at 111th and Century, as well as along 89th Street). A constructability analysis would also be required.

- **People Mover through Lot B.** (ALIGNMENT OPTION 5)
A People Mover would come east from the Aviation station, curving north along the east boundary of the Continental City property, continuing north across 111th and through Lot B first northeast and then north, just east of the Clear Zone and navigation aids, through the parking lots west of 5340 & 5341 104th Street, through the parking lots between 5330 and 5432 102nd (flying over the northeast corner of the 1 story building), curving to align due north along the west side of Concourse Way, turning west along the south side of Century to join the EIR approved alignment west of Aviation to Westchester Parkway where the alignment would move into the median of Westchester Parkway from east of Sepulveda Eastway to west of Sepulveda Westway, placing the Westchester station in the median mid-block west of Sepulveda Westway. As with the People Mover option using the EIR alignment, this People Mover system would continue into the CTA. This option would include all the stations described in the EIR alignment plus a Lot B station just south of the Clear Zone and an option for a station at Concourse Way. This

LAX INTERAGENCY TRANSIT STUDY

SUMMARY OF ALIGNMENTS

	APPROVED EIR WITH SUBWAY AT AVIATION	1 SUBWAY TO WESTCHESTER	2 SUBWAY TO LOT C	3 GREEN LINE TO LOT B	4 GREEN LINE TO LOT C	5 PEOPLE MOVER VIA LOT B	6 PEOPLE MOVER VIA LOT B
LENGTH (W/O CTA; IN FEET)							
•AERIAL	11,753	2,059	5,709	17,413	17,413	16,463	19,408
•AT-GRADE	3,504						
•SUBWAY		11,468	7,838				
TOTAL	15,257	13,527	13,547	17,413	17,413	16,463	19,408
STATIONS GREEN LINE (GL) PEOPLE MOVER (PM)							
•AVIATION						1 PM	1 PM
•LOT B				1 GL + 1 PM	1 GL	1 PM	
•CENTURY/CONCRSE				1 PM	1 GL	1 PM	OPTIONAL
•CENTURY AIRPORT	1 GL			1 PM	1 GL	1 PM	1 PM
•LOT C	1 GL	1 GL	1 GL + 1 PM	1 PM	1 GL + 1 PM	1 PM	1 PM
•WESTCHESTER	1 GL	1 GL	1 PM	1 PM	1 PM	1 PM	1 PM
TOTAL	3	2	2	5	5	6	4
VEHICLES REQUIRED							
•GREEN LINE	4	4	1	1	4	0	0
•PEOPLE MOVER	0	3	3	5	3	16	16
TOTAL	4	7	4	6	7	16	16
COST (in millions)							
•CONSTRUCTION	$254	$389	$277	$213	$254	$216	$188
•HAZARDOUS WASTE	$15-20	$35-50	$35-50	$5-10	$5-10	$5-10	$5-10
•REAL ESTATE	$46	$42-47	$38-41	$85-115	$94-132	$84-123	$68-84
•PARKING-WEST.	$7.3	$7.3	$7.3	$7.3	$7.3	$7.3	$7.3
TOTAL	$322-327	$473-493**	$357-375**	$310-345**	$360-403**	$312-356**	$268-288***

* Cut and Cover.

** Cost does not include CTA or Maintenance Shop.

*** Guideway cost based on steel.

NOTE: ALL COST ARE 1991 DOLLARS AND ARE NOT ESCALATED TO MID-POINT OF CONSTRUCTION - WITH THE EXCEPTION OF THE EIR ESTIMATE.

Source: RCC/LACTC, Bechtel Civil, November 5, 1991.

LAX INTERAGENCY TRANSIT STUDY
EVALUATION OF ALIGNMENTS

	MITIGATED EIR GREEN LINE		ALTERNATIVE 4		ALTERNATIVE 5	
Description	Follows approved EIR alignment with a subway segment along south runways using Green Line technology.		Using Green Line technology, runs aerial from Aviation, turns easterly to Lot B, runs north to Century and continues to the Westchester Parkway as in the mitigated EIR alignment.		Follows Alternative 4 using People Mover technology.	
Length (miles) (w/o CTA)	2.9		3.3		3.1	
Stations	3		5		5	
Cost (in millions)						
a. Capital Cost	$327		$362/382		$334	
b. Operating & Maintenance Cost						
• LAX People Mover	$ 3.23		$ 4.58		$12.58	
• Green line (Regional PM)	37.0		35.8		32.5	
• Combined	40.23		40.38		45.08	
Daily Boardings	21,523		26,108		29,704	
Peak Headways (minutes)	(3-way wye)		(2-way wye)		("Wye" at Century)	
Norwalk-Westchester	5		5		-	
Norwalk-Aviation	-		-		-	
Aviation-Westchester	-		-		5	
Aviation-CTA	-		-		5	
Norwalk-Marine Blvd.	5		5		-	
Marine-Westchester	5		-		-	
CTA Internal Loop	5		5		5	
CTA Internal Loop Avg.	2.5		2.5		1.7	
Travel times (minutes)	Time	Transfers	Time	Transfers	Time	Transfers
Norwalk-Lot C	29	none	31	none	33	@A
Norwalk-Westchester	31	none	36	@C	35	@A
Norwalk-CTA	37	@C	39	@C	38	@A
Marine Blvd.-Westchester						
2-way	17	@A	21	@A&C	20	@A
3-way	15	none				
Marine Blvd.-CTA						
2-way	24	@A&C	26	@A&C	23	@A
3-way	22	@C				

	MITIGATED EIR GREEN LINE	ALTERNATIVE 4	ALTERNATIVE 5
Implementation Schedule (years)	5 1/2	6	6 1/2
Requires Joint Implementation and Operations Agreement	NO	NO	YES
Other Planning and Implementation Issues	•Needs Addendum •Needs DOA concurrence on subway segment.	•Needs EIR •Tight curves •Possible impact on middle markers & far-field monitor antennas (runway 24R & L)	•Needs EIR •Tight curves •Possible impact on middle markers & far-field monitor antennas (runway 24R & L) •Schedule of DOA implementation for its People Mover System (technology choice, capital funding)
	•Requires FAA Form 7460 and release from DOA's grant agreement with FAA for the north segment from Lot C to Westchester Parkway.	•Requires FAA Form 7460 and release from DOA's grant agreement with FAA for the north segment from Lot C to Westchester Parkway.	•Requires FAA Form 7460 and release from DOA's grant agreement with FAA for the north segment from Lot C to Westchester Parkway.

Notes:

1. Alternative 4 could have either Green Line technology all the way to Westchester Parkway or People Mover from Lot C to Westchester Parkway. Capital and O & M costs, as well as the preliminary operations plan, shown here assume the use of a People Mover. An additional $20 million in capital costs will be required to have an all-Green Line alignment. Additionally, if required, this could be included in the final preliminary operations plan.

2. The number of stations shown for each alignment does not include the Aviation station. That station, however, was included for estimating cost of the all-People Mover Alternative 5.

3. Capital and O & M costs for the Mitigated EIR alignment assume the operation of a 3-way "Wye" at Aviation, adding a not-to-preclude cost of $2.4 million. Capital and O & M cost of Alternative 5 assume the operation of a grade - separated "Wye" at Century Boulevard. Adjustments were made to earlier data to reflect these assumptions.

4. Peak trunk headways for Alternative 5 is 2.5 minutes resulting in headways of 5 minutes for CTA-bound trains and express trains (bypassing CTA) to Westchester Parkway. A CTA internal shuttle is included and would run at 5 minute headways.

5. @A = @Aviation Station
   @C = @Lot C Station
   None = No Transfer Necessary

nc:sus:eval.tbl

LAX INTERAGENCY TRANSIT STUDY

COST SUMMARY

ALIGNMENTS COST (1991 $ MILLIONS)	APPROVED EIR WITH SUBWAY AT AVIATION STATIONS = 3	ALTERNATIVE 1 SUBWAY TO WESTCHESTER STATIONS = 2	ALTERNATIVE 2 SUBWAY TO LOT C STATIONS = 2	ALTERNATIVE 3 GREEN LINE TO LOT B STATIONS = 5	ALTERNATIVE 4 GREEN LINE TO LOT C STATIONS = 5	ALTERNATIVE 5 PEOPLE MOVER AVIATION TO WESTCHESTER VIA LOT B STATIONS = 5	ALTERNATIVE 6 PEOPLE MOVER AVIATION TO WESTCHESTER VIA LA CIENEGA STATIONS = 4
CONSTRUCTION **	$433	$568	$456	$399	$433	$402	$373
RIGHT-OF-WAY *	$46	$42-47	$38-41	$85-115	$94-132	$84-123	$69-84
CONTINGENCY FOR HAZARDOUS MATERIALS	15-20	35-50	35-50	5-10	5-10	5-10	5-10
GRAND TOTAL	$494-499	$645-665	$529-547	$489-524	$531-574	$490-534	$447-467
(CTA PEOPLE MVR)	(172)	(172)	(172)	(179)	(172)	(179)	(179)
TOTAL (W/O CTA)	$322-327	$473-493	$357-375	$310-345	$360-403	$312-356	$268-288

* Low number does not include cost of ROW at the Department of Airports' (DOA) parking lots B and C, but includes cost of ROW at LAX Northside.
High number includes cost of ROW at lots B and C and LAX Northside.

** Includes cost for Parking Structure @ Westchester.

Source: RCC-LACTC, November 5, 1991.
sus:cost.tbl

OTHER COST ASSUMPTIONS:

1. Except for contingencies unique to each alignment (subway, People Mover), a consistent contingency rate was applied to all other cost items following the LACTC/RCC cost methodology. Adjusted contingencies used for this project are as follows:

   - Construction: 15 % guideway cost on all alignments
     + 5 % on tunnel segment
     + 7 % on People Mover
   - Right-of-Way: 25 % on all alignments.
   - Professional Services: 25 % on all alignments.

2. All real estate estimates are preliminary and will be refined as alignments are further studied.

3. The real estate cost for the EIR-approved alignment includes estimates of all rights-of-way except Los Angeles City/DOA property and the Drollinger property along the Westchester segment.

4. Vehicle costs are based upon preliminary operations analysis and exclude vehicles required for CTA service.

5. The cost of an aerial People Mover/Green Line station is approximately $10-13 million.

6. Green Line technology was assumed for the entire EIR alignment.

7. Alignment 6 cost estimate assumes the use of steel guideway and columns with a concrete deck.

8. All costs are in 1991 dollars.

nc4:assump.out

LAX INTERAGENCY TRANSIT STUDY

COST BY SEGMENT/OTHER ITEMS

(MILLION $, 1991)

ALIGNMENTS / SEGMENTS	APPROVED EIR WITH SUBWAY AT AVIATION	1 SUBWAY TO WESTCHESTER	2 SUBWAY TO LOT C	3 GREEN LINE TO LOT B	4 GREEN LINE TO LOT C	5 PEOPLE MOVER VIA LOT B	6 PEOPLE MOVER VIA LA CIENEGA
AVIATION - LOT B				41	41	38	
LOT B CENTURY/CONCOURSE				52	52	36	
CENTURY/CONCOURSE CENTURY AIRPORT	137			35	43	35	90
CENTURY/AIRPORT LOT C	42	217	217	32	42	32	27
LOT C WESTCHESTER	54	144	46	35	46	35	31
VEHICLE COST	21	28	14	18	30	39	40
SUBTOTAL ALIGNMENT COST	254	389	277	213	254	215	188
HAZARDOUS WASTE	15-20	35-50	35-50	5-10	5-10	5-10	5-10
REAL ESTATE COST	46	42-47	38-41	85-115	94-132	84-123	68-84
PARKING STRUCTURE @ WESTCHESTER	7.3	7.3	7.3	7.3	7.3	7.3	7.3
TOTAL	$322-327	$473-493	$357-375	$310-345	$360-403	$312-356	$268-288

Source: RCC/LACTC, Bechtel Civil Corporation, November 5, 1991.
sus:segment.tbl

November 11, 1991

METRO GREEN LINE
NORTH SOUTH CONNECTOR AT
AVIATION/IMPERIAL

- Connection can be at grade or via flyover.
- If at grade, future headway will be limited to about 6 minutes ±. This would require changing platform length on Metro Green Line from 2 car length to 3 car length at an earlier date to meet increasing demand.
- Cost of providing at grade connection:

Now	$5.5m
Future	$6.6m (now year dollars)

- A flyover connection can be constructed complete now for $28m.
- Minimal not to preclude flyover construction cost now is $2.4m.
- With this minimal investment and work completed in future, total cost is $40.8m (now year dollars).

Handout

LAX People Mover Patronage Study

Wilbur Smith Associates
November 5, 1991

LAX People Mover-Green Line Station Daily Boardings

Options	Daily Boardings at LAX Area Stations								
	Westchester	CTA Trips Originating at Lot C	Other Trips Boarding at Lot C	Century/ Airport	Century/ Concourse	Lot B	Aviation/ Imperial	Total	Total W/O CTA Trips originating at Lot C
1	1,447	31,716*	15,418	NA	NA	NA	4,658	53,239	21,523
2	1,085	31,716*	16,503	NA	NA	NA	4,658	53,962	22,246
3	1,085	27,871	494	3,742	274	19,819*	4,658	57,943	30,072
4	1,085	31,201*	17,520	548	366	1,931	4,658	57,309	26,108
5	1,085	27,871	494	3,742	274	2,575	21,534*	57,575	29,704
6	1,085	28,386	494	4,016	NA	NA	21,534*	55,515	27,129

Notes: * denotes a transfer location
NA denotes not applicable
Palmdale Line terminates at Lot C, Lot B or Aviation/Imperial depending on the alignment option

Daily Boardings at People Mover/Green Line/Palmdale Line Transfer Stations

Options	Transfer Station	People Mover	Green Line	Transfer			Total
				Green Line/People	Palmdale/Green Line	Palmdale/People	
1	Lot C	31,716	1,571	7,220	689	5,938	47,134
2	Lot C	31,716	1,571	8,305	689	5,938	48,219
3	Lot B	2,575	0	9,319	517	7,408	19,819
4	Lot C	31,201	657	10,236	689	5,938	48,721
5	Aviation/Imperial	0	4,241	9,736	517	7,040	21,534
6	Aviation/Imperial	0	4,241	9,736	517	7,040	21,534

GREEN LINE				LAX - PALMDALE LINE			
Station	Daily Boardings			Station	Daily Boardings		
	Airport Passenger Trips	Work Trips	TOTAL		Airport Passenger Trips	Work Trips	TOTAL
Norwalk	750	4497	5247	LAX-Lot C	3289	5297	8586
Lakewood	415	2340	2755	Venice Blvd.	784	3459	4243
Lynwood	179	3473	3652	Pico Blvd.	416	2313	2729
Wilmington	194	8264	8458	Wilshire	674	6903	7577
Avalon	287	1444	1731	Ventura Blvd.	175	1730	1905
Harbor Freeway	289	6594	6883	Victory Blvd.	184	5450	5634
Vermont	363	1227	1590	Roscoe Blvd.	124	1942	2066
Crenshaw	455	3481	3936	Devonshire	62	1780	1842
Hawthorne	545	1319	1864	Sylmar	246	1189	1435
Aviation/Imperial	417	4241	4658	Santa Clarita	252	1817	2069
Century/Lot C	6562	2229	8791	Holt Canyon	123	185	308
Mariposa	144	1684	1828	Ave. S @ 14 Fwy	121	658	779
El Segundo	172	985	1157	Palmdale Airport	128	448	576
Douglas Street	125	1037	1162				
Space Park	40	1281	1321				
166th/Hawthorne	51	454	505				
Artesia/Hawthorne	304	785	1089				
190th/Hawthorne	350	863	1213				
Del Amo Fshn. Ctr.	316	1570	1886				
Lomita/Hospital	54	1071	1125				
Crenshaw/Lomita	272	761	1033				
TOTAL	12284	49600	61884	TOTAL	6578	33171	39749

NOTES: Airport passenger trips are based on the "LAX Ground Access Study" and the "LAX Air Passenger Survey Report". Work trips are obtained from the SCAG ridership estimates for the Green Line.

Wilbur Smith Associates

LAX People Mover-Green Line Boardings at Lot C

Components of Originating Boardings at Lot C Station	Options					
	1	2	3	4	5	6
Parking Lot C	2,231	2,231	1,716	1,716	1,716	2,231
Parking Lot D	4,590	4,590	4,590	4,590	4,590	4,590
RTD Buses (LAX passengers & employees)	1,894	1,894	1,894	1,894	1,894	1,894
Car Rentals	11,089	11,089	8,317	11,089	8,317	8,317
Hotel Vans	3,729	3,729	3,729	3,729	3,729	3,729
Door-to-Door/Chartered Vans	7,067	7,067	7,067	7,067	7,067	7,067
Other Parking Location Vans	1,116	1,116	558	1,116	558	558
Sub-Total CTA Trips Originating at Lot C	31,716	31,716	27,871	31,201	27,871	28,386
Palmdale Line LAX Passengers	3,289	3,289	0	3,289	0	0
Green Line LAX Passengers	6,562	6,562	0	6,562	0	0
CTA Palmdale Work Trips	2,649	2,649	0	2,649	0	0
Green Line Work Trips	2,229	2,229	494	1,315	494	494
Westchester Station	NA	1,085	NA	1,085	NA	NA
Parking Lot B	NA	NA	NA	1,931	NA	NA
Transfer Palmdale/Green Line	689	689	0	689	0	0
Total Boardings	47,134	48,219	28,365	48,721	28,365	28,880

Notes: Trips reduce by 25% because of transferring, Palmdale Line ends at transfer station Lot C, Lot B or Aviation/Imperial.
26% of Palmdale Line work trips (non-CTA) transferring to Greenline

Wilbur Smith Associates

10-30-91

LAX People Mover-Green Line Boardings

Stations	Options					
	1	2	3	4	5	6
Westchester						
People Mover	NA	1,085	1,085	1,085	1,085	1,085
Green Line	1,447	NA	NA	NA	NA	NA
Lot C						
Transfer Palmdale Line-Green Line	689	689		689		
Transfer Palmdale Line-People Mover	5,938	5,938		5,938		
Transfer Green Line-People Mover	7,220	8,305	NA	10,236	NA	NA
People Mover	31,716	31,716	28,365	31,201	28,365	28,880
Green Line	1,571	1,571	NA	657	NA	NA
Century/Airport						
People Mover	NA	NA	3,742	NA	3,742	4,016
Green Line	NA	NA	NA	548	NA	NA
Century/Concourse						
People Mover	NA	NA	274	NA	274	NA
Green Line	NA	NA	NA	366	NA	NA
Lot B						
Transfer Palmdale Line-Green Line			517			
Transfer Palmdale Line-People Mover			7,408			
Transfer Green Line-People Mover	NA	NA	9,319	NA	NA	NA
People Mover	NA	NA	2,575	NA	2,575	NA
Green Line	NA	NA	0	1,931	NA	NA
Aviation/Imperial						
Transfer Palmdale Line-Green Line					517	517
Transfer Palmdale Line-People Mover					7040	7,040
Transfer Green Line-People Mover	NA	NA	NA	NA	9,736	9,736
People Mover	NA	NA	NA	NA	0	0
Green Line	4,658	4,658	4,658	4,658	4,241	4,241

Wilbur Smith Associates 10-28-91

LAX People Mover-Green Line Station Daily Boardings

Options	Daily Boardings at LAX Area Stations								
	Westchester	CTA Trips Originating at Lot C	Other Trips Boarding at Lot C	Century/ Airport	Century/ Concourse	Lot B	Aviation/ Imperial	Total	Total W/O CTA Trips originating at Lot C
A	1,447	31,716*	14,504*	914	NA	NA	4,658	53,239	21,523
1	1,447	31,716*	15,418*	NA	NA	NA	4,658	53,239	21,523
2	1,085	31,716*	16,503*	NA	NA	NA	4,658	53,962	22,246
3	1,085	27,871	494	3,742	274	19,819*	4,658	57,943	30,072
4	1,085	31,201*	17,520*	548	366	1,931	4,658	57,309	26,108
5	1,085	27,871	494	3,742	274	2,575	21,534*	57,575	29,704
6	1,085	28,386	494	4,016	NA	NA	21,534*	55,515	27,129

Notes: * denotes a transfer location
NA denotes not applicable
Palmdale Line terminates at Lot C, Lot B or Aviation/Imperial depending on the alignment option
"A" denotes Mitigated EIR Alignment Option with Green Line extending to Westchester

Daily Boardings at People Mover/Green Line/Palmdale Line Transfer Stations

Options	Transfer Station	People Mover	Green Line	Transfer			Total
				Green Line/People	Palmdale/Green Line	Palmdale/People	
A	Lot C	31,716	657	7,220	689	5,938	46,220
1	Lot C	31,716	1,571	7,220	689	5,938	47,134
2	Lot C	31,716	1,571	8,305	689	5,938	48,219
3	Lot B	2,575	0	9,319	517	7,408	19,819
4	Lot C	31,201	657	10,236	689	5,938	48,721
5	Aviation/Imperial	0	4,241	9,736	517	7,040	21,534
6	Aviation/Imperial	0	4,241	9,736	517	7,040	21,534

LAX PEOPLE MOVER AND GREEN LINE OPTIONS
OPERATIONAL ANALYSIS

This report is a summary of an operating analysis of the final Green Line and the LAX People Mover options. The initial seven options (1-6 and A) were previously analyzed and compared. From this analysis, presented last November 18, 1991, three final options were selected. These were:

Option A: This option is a modification of the EIR alignment of the Green Line to eliminate conflicts with airplane operations. A People Mover would connect with the Green Line at Lot C. The People Mover would run from Lot C to the Central Terminal Area (CTA). Either the Green Line or the LAX People Mover would continue to Westchester.

Option 4: The North Coast Branch of the Green Line would run through Lot B and terminate at Lot C, where it would connect to the LAX People Mover. The LAX People Mover would connect Lot C, Lot B and the CTA, and would provide service to Westchester.

Option 5: The Green Line would not have a North Coast Branch. Instead, the LAX People Mover would connect to the Green Line at Aviation Station, and providing service to the CTA, Lot C and Westchester. A possible long-term version of this option (Option 5-RG) would extend the Green Line west to Sepulveda and then north (in subway) to connect to the LAX-Palmdale Line at Lot C, if this location is chosen for the south terminus of that line.

Option A was evaluated with and without a grade-separation for the Aviation Wye of the Green Line. This grade separation would allow three-way train movement (Norwalk-El Segundo, Norwalk-Westchester and Westchester-El Segundo). Current Wye design (with at-grade crossings) only permits two-way train movements, because of the high cost of the grade separation and the small projected north-south passenger demand.

With two-way operations through the Wye, passengers from the south (El Segundo) would have to transfer at Aviation if destined for North Coast stations (e.g. Lot C). With three-way operations, this transfer would not be required. However, this would require grade-separating the Aviation Wye, as mentioned above.

In options 4, and 5-RG it is not physically feasible to grade-separate the Wye west of Aviation and permit three-way train movement for Green Line trains. In Option 5, Green Line trains would be confined to one movement (Norwalk to El Segundo, and points south).

To allow high-frequency service for all movements in People Mover operations, it was assumed that the Wye of the People Mover at Century Boulevard (in Options 5 and 5-RG) would be grade-separated. This design is reflected in the cost of these options.

GREEN LINE OPERATIONS

Table 1 shows the operating plans for the Green Line in the different options. Option A is shown with two and three-way operations through the Aviation Wye. Five-minute headways with one-car trains were assumed in the peak periods for each service, consistent with the minimum operational headway. (The train control system of the Green Line is to be designed for a minimum headway of 2.0 minutes, which would allow a 2.5 minute headway in actual operations). With three-way service this would produce 2.5 minute headways in both the trunk (Century Freeway) and branches (North and South Coast). With two-way train operations, each of the branches would have 5-minute service, with 2.5 minute (combined) service in the trunk.

In Option 5, one-car Green Line trains would run every 5 minutes from Norwalk to El Segundo (Marine Boulevard) and every 5 minutes from Norwalk to Aviation, where they would turn back. This would result in 2.5-minute headways between Norwalk and Aviation, and 5-minute headway south of Aviation, since the demand of the South Coast Branch does not warrant operating all trains through El Segundo. This level of service is also consistent with that of the other options.

In options 4 and 5-RG it is not possible to grade-separate the Wye west of Aviation to provide 3-way train movement. For that reason, train service is provided only from Norwalk to Lot C and from Norwalk to El Segundo.

LAX PEOPLE MOVER OPERATIONS

Operating plans for the LAX People Mover appear in Table 2. In Option A, trains would run from Lot C to the CTA every 5 minutes in the peak periods. Trains would also circulate counter-clockwise around the CTA loop every 5 minutes. Thus, trains around the loop would run every 2.5 minutes in one direction.

In Option 4 there would be a shuttle from Westchester through Lot C, which would continue to the CTA (every 5 minutes). As in Option A, trains would also circulate counter-clockwise around the CTA loop every 5 minutes. Therefore, trains around the loop would run every 2.5 minutes in one direction.

In Option 5 there would be three train services: (1) from Westchester through Lot C and then along Century Blvd. to Lot B and to Aviation Station; (2) from Westchester through Lot C and to the CTA loop; (3) around the CTA loop. Each of these train services would run every 5 minutes. This operating plan would provide 2.5 minute service from Westchester and Lot C to the CTA, and 1.7 minute service around the CTA loop. The same operating plan was assumed for the People Mover in Option 5-RG.

OPERATING & MAINTENANCE COSTS

Operating and maintenance (O&M) costs were estimated separately for the Green Line and the LAX People Mover, for each of the options, and are shown in Table 3. O&M costs for the Green Line were estimated with a cost model developed by MPA for LACTC. The Green Line's operating statistics shown in Table 1 were used in running the model, together with the physical characteristics of the Green Line in the different options.

The cost of operating and maintaining the LAX People Mover in the different options was calculated with a special model developed by MPA with data from the Downtown Miami People Mover, as reported to UMTA for FY1989. The model was adjusted using estimates produced by WS&A for the Department of Aviation. The People Mover O&M cost model also accounts for its physical characteristics and the operating levels (shown in Table 2).

TRAVEL TIME

Table 4 shows travel times between selected points that would be provided by the different options, assuming the level of service described above. Travel times include train running time, wait and transfer time. The number and location(s) of transfers required for each origin and destination pair is also indicated in the matrix.

Prepared by Manuel Padron & Associates
November 29, 1991

Table 1
Green Line/LAX Options
Green Line Operating Plans

From	To	Run Time (min.)	Distance (miles)	Headway Peak	Headway Base	Headway E/L	Consist Peak	Consist Base	Consist E/L	Vehicles Peak	Vehicles Total	Annual Statistics Car-Mi. (million)	Annual Statistics Tr-Hrs. (thous.)	Patronage Pk.Hr. MLP	Patronage Load Factor	Patronage Max. Load Point Location
Option A: Green Line Branch to Westchester (EIR Alignment)														*Patronage for 2010:*		
I. Two-way operation																
Norwalk(I-605)	Marine Blvd.	32.7	19.6	5.0	5.0	10.0	1	1	1	14		2.68	80.0	1600	2.02	Avia.>Mariposa
Norwalk(I-605)	Westchester	30.6	19.0	5.0	5.0	10.0	1	1	1	13		2.60	75.8	1800	2.27	Avia.>LAX
		Totals:								27	35	5.28	155.8			
		I-105 Trunk Avg:		2.5	2.5	5.0								3300	2.08	LB Blvd>Wilming.
II. Three-way operation, all 5-minute headways														*Patronage for 2010:*		
Norwalk(I-605)	Marine Blvd.	32.7	19.6	5.0	5.0	10.0	1	1	1	14		2.68	80.0	1300	1.64	Avia.>Mariposa
Norwalk(I-605)	Westchester	30.6	19.0	5.0	5.0	10.0	1	1	1	13		2.60	75.8	1500	1.89	Avia.>LAX
Marine Blvd.	Westchester	14.5	5.8	*5.0*	*5.0*	*10.0*	1	1	1	7		0.80	41.6	400	0.51	Thru N-S + new?
		Totals:								34	44	6.08	197.4			
		I-105 Trunk Avg:		2.5	2.5	5.0								3300	2.08	LB Blvd>Wilming.
Option 4: Green Line Branch to Lot C via Lot B														*Patronage for 2010:*		
Norwalk(I-605)	Marine Blvd.	32.7	19.6	5.0	5.0	10.0	1	1	1	14		2.68	80.0	1600	2.02	Avia.>Mariposa
Norwalk(I-605)	Lot C	31.0	18.8	5.0	5.0	10.0	1	1	1	14		2.57	80.0	1800	2.27	Avia.>LAX
		Totals:								28	37	5.25	159.9			
		I-105 Trunk Avg:		2.5	2.5	5.0								3300	2.08	LB Blvd>Wilming.

Table 1 (Cont'd)
Green Line/LAX Options
Green Line Operating Plans

From	To	Run Time (min.)	Distance (miles)	Headway Peak	Headway Base	Headway E/L	Consist Peak	Consist Base	Consist E/L	Vehicles Peak	Vehicles Total	Annual Statistics Car-Mi. (million)	Annual Statistics Tr-Hrs. (thous.)	Patronage Pk.Hr. MLP	Patronage Load Factor	Patronage Max. Load Point Location
Option 5. No North Coast Branch														*Patronage for 2010:*		
Norwalk(I-605)	Marine Blvd.	32.7	19.6	5.0	5.0	10.0	1	1	1	14		2.68	80.0	1600	2.02	Avia.>Mariposa
Norwalk(I-605)	Aviation TB	25.1	16.4	5.0	5.0	10.0	1	1	1	11		2.24	64.4	NA		
		Totals:								25	33	4.92	144.4			
		I-105 Trunk Avg:		2.5	2.5	5.0								3300	2.08	LB Blvd>Wilming.
Option 5-RG: Green Line Branch to Lot C via Sepulveda Tunnel														*Patronage for 2010:*		
Norwalk(I-605)	Marine Blvd.	32.7	19.6	5.0	5.0	10.0	1	1	1	14		2.68	80.0	1600	2.02	Avia.>Mariposa
Norwalk(I-605)	Lot C	28.5	18.7	5.0	5.0	10.0	1	1	1	13		2.56	75.8	1800	2.27	Avia.>LAX
		Totals:								27	35	5.24	155.8			
		I-105 Trunk Avg:		2.5	2.5	5.0								3300	2.08	LB Blvd>Wilming.

27-Nov-91 LACTC\GREEN\OPGR-LAX

NOTES:
(1) Patronage includes transfers from LAX-Palmdale Line, intersecting at LAX-Lot C Station (SCAG test 5/91, adjusted by MPA).
(2) Run times based on LTK May 1990 runs, with extensions extrapolated by MPA (2/91).
(3) Minimum turnaround time assumed to be 2.0 minutes each end.
(4) Spares based on 20% of peak vehicles plus 1 standby car for each terminal.
(5) Assumes automated operation; car size = 66 seats.
Prepared by Manuel Padron & Associates

Table 2
Green Line/LAX Options
LAX People-Mover Operations

From	To	Service Type(6)	Run Time (min.)	Distance (miles)	Headway Peak	Headway Base	Headway E/L	Consist Peak	Consist Base	Consist E/L	Vehicles Peak	Vehicles Total	Annual Statistics Car-Mi. (million)	Annual Statistics Tr-Hrs. (thous.)	Patronage Pk.Hr. MLP	Patronage Load Factor	Patronage Max. Load Point Location
Option A: Green Line Branch to Westchester People-Mover to Lot C & return																	
Lot C	CTA	*SH*	5.8	1.4	5.0	5.0	10.0	3	2	2	12		0.43	22.8	2500	1.74	To CTA
			half of loop														
CTA Internal Loop		*IL*	5.0	0.8	5.0	5.0	10.0	1	1	1	3		0.11	18.7			
			half of loop														
			Totals:								15	20	0.54	41.6			
			CTA Loop Avg:		2.5	2.5	5.0										
Option 4: Green Line Branch to Lot C People-Mover to Westchester																	
Westchester	CTA	*SH*	7.4	2.0	5.0	5.0	10.0	3	2	2	12	15	0.61	22.8	2500	1.74	To CTA
			half of loop														
CTA Internal Loop		*IL*	5.0	0.8	5.0	5.0	10.0	1	1	1	3		0.11	18.7			
			half of loop														
			Totals:								15	20	0.72	41.6			
			CTA Loop Avg:		2.5	2.5	5.0										
Option 5. People-Mover via Lot B to Aviation; no North Coast Branch																	
Westchester	Aviation	*X*	8.1	3.1	5.0	5.0	10.0	1	1	1	4		0.42	22.8			
West. via CTA	Aviation	*L*	18.1	5.1	5.0	5.0	10.0	2	2	2	16		1.39	45.7	2000	2.08	Lot C to CTA
CTA Internal Loop		*IL*	5.0	0.8	5.0	5.0	10.0	1	1	1	3		0.11	18.7			
			half of loop														
			Totals:								23	30	1.92	68.7	1900	1.32	Avia.>LAX
			CTA Loop Avg:		1.7	1.7	3.3								2500	1.30	Into CTA-both ways

NOTES:
(1) Patronage includes transfers from LAX-Palmdale Line, intersecting at LAX Station (SCAG test 5/91, adjusted by MPA).
(2) Run times based on same accel/decel characteristics as Green Line, but maximum speed 45 mph.
(3) Minimum turnaround time assumed to be 2.0 minutes each end.
(4) Spares based on 20% of peak vehicles plus 1 standby car for each terminal.
(5) Option 5 assumes grade-separated people-mover junction; same operating plan would apply to Option 5-RG.
(6) Assumes automated operation; car size = 40 seats.
(7) Service Types: SH = shuttle to CTA; X = express (bypasses CTA); L = local via CTA; IL = internal CTA loop.

Prepared by Manuel Padron & Associates
27-Nov-91 LACTC\GREEN\OPLAXPM5

LAX PEOPLE MOVER & GREEN LINE OPTIONS
ANNUAL OPERATIONS & MAINTENANCE COSTS

Table 3

OPTION>	4	5	5-RG	A	A
LAX PEOPLE MOVER					
Peak Cars	15	23	23	15	15
Annual V-M (Millions)	0.72	1.92	1.92	0.54	0.54
Track Miles	3.6	8.2	8.2	2.4	2.4
ANNUAL O&M COST (Millions)	$5.92	$13.74	$13.74	$4.85	$4.85
Cost per V-M	$8.23	$7.16	$7.16	$8.99	$8.99
GREEN LINE	2-WAY	1-WAY	2-WAY	2-WAY	3-WAY
Peak Cars	28	25	27	27	34
Annual V-M (Millions)	5.25	4.92	5.24	5.28	6.08
Annual Train Hours (000s)	159.9	144.4	155.8	155.8	197.4
Route Miles (2-Way)	22.2	19.6	22	22.3	22.3
Stations	18	14	15	16	16
ANNUAL O&M COST (Millions)	$35.80	$32.50	$34.20	$35.30	$37.00
Cost per V-M	$6.82	$6.61	$6.53	$6.69	$6.09
COMBINED O&M COSTS	$41.72	$46.24	$47.94	$40.15	$41.85

NOTES:

1. People Mover O&M costs are based on cost and operating data of Downtown Miami People Mover as reported to UMTA for FY1989, adjusted using estimates by WS&A prepared for LAX.
2. Green Line O&M costs were estimated with cost model developed by MPA for LACTC.

Prepared by Manuel Padron & Associates
29-Nov-91

Green Line/LAX Options
Travel Time Summary

Table 4

Origin	Destination		Option A Time	Option A Trf's	Option 4 Time	Option 4 Trf's	Option 5 Time	Option 5 Trf's	Option 5-RG Time	Option 5-RG Trf's
Norwalk	Lot C		29	none	31	none	33	@ A	29	none
Norwalk	Westchester		31	none	36	@ C	35	@ A	33	@ C
Norwalk	CTA		37	@ C	39	@ C	38	@ A	37	@ C
Downtown L.A.	Westchester		52	@I/W	56	@I/W & C	55	@I/W & A	54	@I/W & C
Downtown L.A.	CTA		59	@I/W & C	61	@I/W & C	57	@I/W & A	57	@I/W & A
Long Beach	CTA		52	@I/W & C	64	@I/W & C	60	@I/W & A	60	@I/W & A
Marine Blvd.	Westchester	2-way	17	@ A	21	@ A & C	20	@ A	20	@ A
		3-way	15	none						
Marine Blvd.	CTA	2-way	24	@ A & C	26	@ A & C	23	@ A	23	@ A
		3-way	22	@ C						
Aviation	Lot C		5	none	7	none	6	none	5	none
Aviation	Westchester		7	none	12	@ C	8	none	6	none
Aviation	CTA		13	@ C	15	@ C	11	none	11	none

NOTES:

Travel times (in minutes) include transfer times, but not first wait times.

Transfer locations: A = Aviation Station; C = Lot C; I/W = Imperial/Wilmington Station.

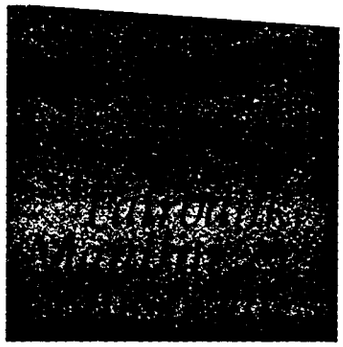
02-Dec-91 LACTC\GREEN\LAX-TIME.wk1

Manuel Padron & Associates

APPROXIMATE RUN TIMES FOR RAIL ALTERNATIVES
TO LAX/WESTCHESTER
(in minutes)

	ALTERNATIVE 1 SUBWAY TO WESTCHESTER	ALTERNATIVE 2 SUBWAY TO LOT C	ALTERNATIVE 3 GREEN LINE TO LOT B	ALTERNATIVE 4 GREEN LINE TO LOT C	ALTERNATIVE 5 PEOPLE MOVER VIA LOT B	ALTERNATIVE 6 PEOPLE MOVER VIA LA CIENEGA	MITIGTD. EIR (SUBWAY)
NORWALK TO LOT C	27	27	35	31	34	34	29
NORWALK TO WESTCHESTER	29	31	37	35	36	36	31-33
NORWALK TO CTA	35	35	39	39	39	39	37
HAWTHORNE TO LOT C	14	14	20	17	19	19	16
HAWTHORNE TO WESTCHESTER	16	18	22	21	21	21	18-20
HAWTHORNE TO CTA	22	22	24	25	24	24	24
DOWNTOWN LOS ANGELES TO LOT C	49	49	57	53	54	54	51
DOWNTOWN L.A. TO WESTCHESTER	51	53	59	57	56	56	53-55
DOWNTOWN LOS ANGELES TO CTA	57	57	61	61	59	59	59
DOWNTOWN LONG BEACH TO LOT C	52	52	60	56	57	57	54
DOWNTOWN LONG BEACH TO WESTCHR.	54	56	62	60	59	59	56-58
DOWNTOWN LONG BEACH TO CTA	60	60	64	64	62	62	62
CIRCULATE CTA (TERMINAL 1 TO TERMINAL 9)	7-8	7-8	7-8	7-8	7-8	7-8	7-8

Source: Manuel Padron, LACTC, October 1991.
sus:approx.tbl



Opinion Research & Public Policy Analysis

MEMORANDUM

DATE: November 18, 1991

TO: LAX Interagency Task Force Technical Advisory Committee

FROM: Fairbank, Maullin & Associates

SUBJECT: Public Outreach Final Report

Between September 26 and November 14, 1991 members of the Technical Advisory Committee staff and consultants presented alternative LAX/Westchester area transit alignments to various interested groups, organizations and officials. A general public meeting, advertised in local newspapers and by mail, was held on the evening of November 13th at the Airport Marina Hotel. Twenty-one formal presentations were conducted as listed in Attachment A.

Attachment B includes summary sheets highlighting statements made and questions asked at each of the presentations. Except as noted otherwise, the groups did not reach a consensus on a technology or route preference. On November 14, an article summarizing the general public meeting appeared in the Outlook (Attachment C).

A Task Force representative also briefed Supervisors Edelman and Dana and a staffmember of Supervisor Hahn all of whom offered no comments but appreciated the information. Briefings for Supervisors Antonovich and Molina will be scheduled in the near future. In addition, Councilwoman Ruth Galanter sent an information packet to each member of the Los Angeles City Council.

People attending the various meetings were consistently interested in the technical details of the alternative alignments: technology characteristics and differences including noise levels, capacity and safety; comparative costs, operational start dates, ridership and travel times between various origins and destinations for the route/technology combination alternatives; and the legal process requirements for obtaining approval of the chosen alternative. The question of whether there would be access for the disabled was also raised at a few meetings.

Those issues pertaining to selection of the most preferable route/technology combination alternatives that were raised most consistently among the various groups were:

1. **Transfers.** The view that whatever alternative was selected should minimize transfers in order to maximize ridership, was frequently expressed.

2. **Technology Choice.** The question of whether People Mover technology was as capable as the Green Line of continuing North and West was raised in several meetings. The feeling among some Westchester area residents is that if Green Line is not used there will be no relief from LAX traffic in the City.

2401 Colorado Ave., Ste. 180
Santa Monica, CA 90404
Phone: (310) 828-1183
Fax: (310) 453-6562

3. **The LAX\Palmdale Line.** Several people in various groups were interested in where this line would terminate and when it would be built.

4. **Areas Serviced.** The need for the system to serve hotels and businesses on Century Boulevard was raised in several meetings. Some participants took the position that more than one station was necessary to adequately serve this area and that the subway would interfere with this objective.

5. **Cost.** The issue of source of funding for the system, including what portion would be paid by DOA was raised in several meetings. An adjunct to this issue was the question of how responsibility for operating the system would be divided between DOA and LACTC.

6. **Security.** Members of the audience in several meetings asked how security on the trains (including the CTA People Mover) and the platforms would be provided and whether it would be the same as for the Blue Line.

7. **Luggage.** Many people asked how luggage would be handled on the trains. This issue was considered critical to whether people would use transit, rather than their cars to get to the airport especially from the more remote stations on the line such as Norwalk.

8. **Westchester Station.** Interest in this station location appeared to differ between area residents and the area business owners/operators. Many area residents seemed skeptical that a station at Westchester would relieve LAX related traffic in the area and were, in fact, concerned that the station would attract more traffic, cause Westchester to become another LAX parking lot and generate growth. The business people expressed a strong interest in having Westchester served in a way that would not cut into parking capacity at private businesses or create a need for private property acquisition.

Information packets containing a questionnaire soliciting views on the route/technology combination alternatives were handed out at each of the meetings and mailed to other organizations and individuals with whom the Task Force representatives were unable to meet (see Attachment D).

Only 19 questionnaires had been returned to LACTC by November 18. This is not a large enough sample of the communities and interests in the area to be considered representative or to produce statistically significant results. Therefore, even though the responses and written comments on the questionnaires are instructive of the kinds of concerns and views some people have about the options for Westchester to LAX transit service, it is not possible to draw conclusions about how widely those views and concerns are held within the population effected by the project. (Anyone wishing to review the questionnaires may do so by contacting Brynn Kernaghan at (213) 244-6533.)

With these caveats in mind, the results of the questionnaire responses can be summarized as follows:

1. **Preferred route/technology combination alternative.** Alternative #5, the People Mover through Lots B and C to Westchester, was ranked the most preferred by 31 percent of those responding to the questionnaire. The next most preferred at 21 percent was Alternative #1, Green Line Subway through Lot C to Westchester which also received the most votes for least preferred (32 percent). It should be noted that the Mitigated EIR alternative which was developed mid-way through the public outreach process was not listed among the alternatives to be ranked.

   Those who gave reasons for choosing Alternative #1, the subway as least preferred indicated that the costs were not justified by the benefits. Reasons for preferring it included avoiding FAA concerns and creating less noise. Lower cost was frequently given as a reason for preferring Alternative #5.

2. **Preferred Technology.** Forty-two percent of those answering this question selected People Mover as their preferred technology. Sixteen percent preferred Light Rail and 37 percent had no preference.

   Several of those who preferred People Mover technology believed it would cost less and be less intrusive. Some of those who preferred Light Rail saw it as being more able to accommodate future growth.

3. **Westchester Station Location.** Thirty-seven percent of the respondents chose Sepulveda West Way at 89th as the preferred station location. Eleven percent chose Westchester Parkway and 37 percent said it made no difference to them.

   Some people commented in response to this question that having service to Westchester would not benefit the community.

Two interests to whom the information packet and questionnaire was sent, The City of Torrance and the El Segundo Employers Association responded with letters stating their views. Copies of their letters are found in Attachment E together with letters sent in response to the presentation, by the Air Transport Association (ATA) and the Westchester/LAX Chamber of Commerce, and the City of El Segundo.

The El Segundo Employers Association (ESEA) has taken a position "strongly supporting Alternative #5" and recommending against the "wye" at Aviation /Imperial. Among their reasons for preferring Alternative #5 are that it has the greatest number of stops (five), the lowest number of transfers, and the lowest costs. ESEA opposes the "wye" because it would cost an extra $28 to 40 million and would limit headways on the system to 12 minutes.

The City of Torrance felt that it did not have enough information to chose a preferred alternative but took the position that there should be as few transfers as possible and that a station should be provided as close as possible to the airport.

ATTACHMENT A

LAX INTERAGENCY TASK FORCE
PUBLIC OUTREACH PRESENTATIONS

9/26/91-11/14/91

Airline Pilots Association & ATA	September 26
South Bay Corridor Steering Committee TAC	October 23
Los Angeles City Transportation Commission	October 24
Congressman Anthony Beilenson	October 24
South Bay Corridor Steering Committee	October 24
Councilwoman Ruth Galanter's CPACs	October 24
Culver City City Council	October 28
Inglewood City Council	October 29
Congressman Julian Dixon	October 29
Congressman Mel Levine	October 30
Los Angeles Area Chamber of Commerce Surface Transportation Committee	October 31
Los Angeles City Planning Commission	October 31
South Bay Association of Chambers of Commerce	November 5
Westchester/LAX Chamber of Commerce	November 5
El Segundo City Council	November 5
Assemblymember Curtis Tucker	November 7
Department of Airports Commission	November 13
Community Meeting	November 13
LAX Blue Ribbon Committee	November 14
SCRTD and Municipal Bus Operators out of Lot C	November 14
LAX Area Advisory Committee	November 14

BACKGROUND BRIEFINGS:

McGuire Thomas	September 25
Greater Los Angeles Transportation Coalition	October 15
Mayor Bradley's Mobility Action Committee for Westchester	October 17

ATTACHMENT B

PUBLIC OUTREACH PRESENTATION SUMMARY SHEETS

ORGANIZATION: Airline Pilots Association (ALPA)/Air Transport Association (ATA)

Date of Meeting: September 26, 1991

Notes:

On November 7, 1991 ATA sent a follow-up letter to LACTC. The letter stated that their bottom line concerns were that no operational constraints be placed on the airport runways during any construction or actual operation of rail lines.

In responding to the mitigated EIR alternative, the letter raised several issues including: the need to construct at night when tunnelling under the runway lengths at the east end of the airport, the impact of above ground construction equipment on the Runway 07 ILS localizer, and the necessity for a protective structure above the tunnel.

The letter went on to say that Alternatives #1 & #2 would pose severe problems during the construction for all of the airlines.

Alternatives #3, #4, #5 and #6, with the exception of the transgression into the northeast portions of the runways 24 clear zone, are completely clear of any airspace penetration and would pose no operational problems during construction or activation. These would be the most desirable avenues to explore from the ATA/airline view.

Technology Preference:

Statements Made:

Neither group favors overhead catenary technology.

ALPA prefers an underground system.

Route Preference:
No issues raised.

Transportation Center Location:
No issues raised.

Areas Serviced:
No issues raised.

Constructability:

Statements Made:

ATA does not want a ditch at the end of the runway because of takeoff and landing concerns.

-continued on next page-

Operation:

Statements Made:

ALPA concerned with safety and navigation issues:

- having a large number of people in an area where there might be an accident
- interference with navigation signals.

ATA concerned about:

- electronic interference/protection of airport and navigation aides
- maintaining length of runways, preserving and improving landing/take off environment
- avoiding visual distractions for the last one and one half mile of touchdown.

Cost:
No issues raised.

Other Issues:

Statements Made:

Both groups wished they wish they had been brought into the decision making process earlier and asked to be kept informed.

ORGANIZATION: South Bay Corridor Steering Committee Technical Advisory Committee

Date of Meeting: October 23, 1991

Technology Preference:

Statements Made:
The City of Hawthorne is on record supporting a fully automated system.

Route Preference:

Questions Asked:
Which alternatives does the airport prefer?

Transportation Center Location:
No issues raised.

Areas Serviced:

Statements Made:
The group would like to see the system eventually go South to Torrance.

Questions Asked:
Are there any plans to go north of Westchester with this system?

Constructability:

Questions Asked:
Which alternatives require an additional EIR?
Is the EIR Green Line definitely unacceptable to the FAA?
What is the difference between a fully automated and a Blue Line car?

Operation:

Questions Asked:
Which of the runways is the FAA concerned about?
Who will operate the People Mover?
Is the capacity of the People Mover the same as the Green Line?
Will people use the system if there are several different technologies and, therefore, several different transfers?
How do you address the issue of transfers for people going to/from the airport with a lot of luggage?
Would it make sense to have the airport run the whole system so that they could have long-term parking in the South Bay cities?

-continued on next page-

Cost:
No issues raised.

Other Issues:

Questions Asked:
Are there redevelopment opportunities?
If the cars were fully automated, how would security be handled?
What is LAX/Palmdale?

ORGANIZATION: Los Angeles City Transportation Commission

Date of Meeting: October 24, 1991

Technology Preference:
No issues raised.

Route Preference:
No issues raised.

Transportation Center Location:
No issues raised.

Areas Serviced:
No issues raised.

Constructability:
No issues raised.

Operation:

Questions Asked:
- Where will the People Mover be located? Will it be in the CTA, serve rental cars and hotels?
- What is the wait time at transfer points?
- How many vehicles now go into the CTA per day? How many will there be once the People Mover is operational?
- Is limiting the number of vehicles in the CTA one of the airports objectives?
- How do employees parking near Lot C get to the People Mover?

Cost:

Questions Asked:
- How will the funding/cost sharing for the system work?

Other Issues:

Questions Asked:
- Will the system be accessible to handicapped persons and will they have enough time to make transfers while carrying luggage?

ORGANIZATION: Congressman Anthony Beilenson (Saundra Mandel)

Date of Meeting: October 24, 1991

Technology Preference:

Questions Asked:
Explain the differences between the technologies.

Route Preference:
No issues raised.

Transportation Center Location:
No issues raised.

Areas Serviced:
No issues raised.

Constructability:

Questions Asked:
Are there any residential property takes on these routes?

Operation:
No issues raised.

Cost:
No issues raised.

Other Issues:

Statements Made:
As a general transportation policy, Rep. Beilenson talks of one system with an optimum of zero transfers, making it very easy for the patrons to use.
Rep. Beilenson would like to see a system run North/South along the Sepulveda pass (LAX/Palmdale).

Questions Asked:
What does the Westchester community think?

ORGANIZATION: South Bay Corridor Steering Committee

Date of Meeting: October 24, 1991

Technology Preference:

Statements Made:
There are too many different technologies in the countywide rail system.

Route Preference:
No issues raised.

Transportation Center Location:
No issues raised.

Areas Serviced:
No issues raised.

Constructability:
No issues raised.

Operation:

Statements Made:
Concerned about the number of transfers to get from the South Bay to the North.
It is important to have service straight through from the South Bay for the people who want to travel to Lancaster or Palmdale instead of LAX.

Questions Asked:
Can parking lot B be used for the train yard?
What is the status of the double "wye" at Imperial?

Cost:

Questions Asked:
To what extent will LAX pay for the People Mover system?
Is the People Mover less expensive than the Green Line technology?

Other Issues:
No issues raised.

ORGANIZATION: Councilwoman Ruth Galanter's Community Planning Advisory Committees

Date of Meeting: October 24, 1991

Technology Preference:

Statements Made:
- Overhead catenary is "ugly".
- Subway is expensive - will limit number of stations.
- Objective should be to serve entire region as quickly as possible to reduce traffic.
- 30% of LAX traffic goes through Westchester. Unless Green Line is used traffic to Westchester will not be reduced.

Questions Asked:
- What is People Mover capability for expansion/ line haul? Can it serve Marina del Rey, Santa Monica?
- Can People Mover go subway?
- Will LAX restrict or control People Mover use?
- Why can't Green Line go into CTA?

Route Preference:

Statements Made:
- Strong interest/concern for LAX/Palmdale route and terminus.

Transportation Center Location:

Statements Made:
- Lot C should be the hub of all transportation services.

Questions Asked:
- Where would LAX/Palmdale come in?
- What transportation modes will CTA People Mover replace?
- Will there be Park & Ride and Airport Parking at Lot C?

Areas Serviced:

Statements made:
- Need several stations along Century to serve hotels and businesses.

-continued on next page-

Constructability:

Questions Asked:
Will lanes be removed from service on Century?
Will La Cienega route require a lot of real estate acquisition?
Where will yards be located?

Operation:

Statements made:
Need to handle luggage so people will use transit rather than cars to get to LAX from their homes.

Questions Asked:
How will fares be handled? Can someone get onto to system for free through CTA?
Can people travel North to South and South to North w/o going through CTA?
How long will various trips take? How long will it take to get around CTA?

Cost:

Statements made:
If People Mover is cheaper, use it.
Subway is too expensive.

Questions Asked:
How long will it take for the system to pay for itself? Will it ever? Where does money come from?

Other Issues:

Questions Asked:
Won't all of the alternatives require some kind of EIR?
What is the timeframe for completing the project? Can we have a step by step schedule that spans the next ten or fifteen years?

ORGANIZATION: Culver City City Council

Date of Meeting: October 28, 1991

Technology Preference:
No issues raised.

Route Preference:
No issues raised.

Transportation Center Location:
No issues raised.

Areas Serviced:
No issues raised.

Constructability:
No issues raised.

Operation:
No issues raised.

Cost:
No issues raised.

Other Issues:

Statements Made:

Councilmember Boulgarides does not want a system that will bring people, noise and congestion from Los Angeles into his jurisdiction of Culver City.

Councilmember Gourley wanted to make sure that the small cities this was directly affecting (such as El Segundo) had a voice in the planning.

ORGANIZATION: Inglewood City Council

Date of Meeting: October 29, 1991

Technology Preference:
No issues raised.

Route Preference:
No issues raised.

Transportation Center Location:
No issues raised.

Areas Serviced:
No issues raised.

Constructability:
No issues raised.

Operation:
No issues raised.

Cost:
No issues raised.

Other Issues:
No issues raised.

ORGANIZATION: Congressman Julian Dixon (Pat Miller)

Date of Meeting: October 29, 1991

Technology Preference:
No issues raised.

Route Preference:

Question Asked:
Interested in which alignments were subway and which aerial.
Is there a subway portion to the EIR alignment?

Transportation Center Location:
No issues raised.

Areas Serviced:

Statements Made:
It is important to service hotels.

Questions Asked:
Where is the Westchester station?
Will there be parking in Westchester?

Constructability:

Questions Asked:
What is the construction/completion time frame?

Operation:

Statements Made:
Reduce traffic congestion in terminal area.

Cost:

Question Asked:
Does LACTC have the money to build this system?

Other Issues:
No issues raised.

ORGANIZATION: Congressman Mel Levine (Elmy Bermejo & Terri Tippit)

Date of Meeting: October 30, 1991

Technology Preference:
No issues raised.

Route Preference:
No issues raised.

Transportation Center Location:
No issues raised.

Areas Serviced:
No issues raised.

Constructability:

Questions Asked:
What is the height of the overhead structure?

Operation:
No issues raised.

Cost:
No issues raised.

Other Issues:

Statements Made:
Less traffic congestion around the airport is attractive to people in this area.
Lot B is where elected officials park their cars.

Questions Asked:
What has the response from the community been?

ORGANIZATION: Los Angeles Area Chamber of Commerce Surface Transportation Committee

Date of Meeting: October 31, 1991

Technology Preference:
No issues raised.

Route Preference:
No issues raised.

Transportation Center Location:

Questions Asked:
Is Lot C the terminus for LAX/Palmdale?

Areas Serviced:
No issues raised.

Constructability:
No issues raised.

Operation:

Questions Asked:
Working under the assumption that going from the CTA to the rental car area is free, how will you logistically handle people using the system for that purpose versus people paying to use the system to go somewhere else?

Cost:

Questions Asked:
To what extent can airport funds be used to fund the People Mover?
Can the airport fund the system up to Westchester?

Other Issues:

Statements Made:
The LAX/Palmdale vehicle can technologically be used to serve People Mover (i.e. mag-lev in low speed operation).

ORGANIZATION: Los Angeles City Planning Commission

Date of Meeting: October 31, 1991

Technology Preference:
No issues raised.

Route Preference:
No issues raised.

Transportation Center Location:
No issues raised.

Areas Serviced:

Questions Asked:
Is the purpose of the Century/Airport station to serve the commercial district?

Constructability:
No issues raised.

Operation:
No issues raised.

Cost:
No issues raised.

Other Issues:

Statements Made:
Maximizing access for handicapped persons should be an important criteria for the system.
In planning, it is important to locate housing along a transportation corridor.

ORGANIZATION: South Bay Association of Chambers of Commerce

Date of Meeting: November 5, 1991

Technology Preference:
No issues raised.

Route Preference:
Statements Made:
Although Alternatives #5 & #6 require a transfer for patrons from the South Bay, they would allow more Green Line cars to go to El Segundo.

Transportation Center Location:
No issues raised.

Areas Serviced:
No issues raised.

Constructability:
No issues raised.

Operation:

Questions Asked:
What is the timeframe for getting the system up and running?

Cost:

Questions Asked:
What is the cost difference between subway and at grade system?
What is the cost difference between Green Line and People Mover system?
Does cost make one choice more attractive than another?

Other Issues:

Statements Made:
The group appointed an ad hoc committee to take a position on a route/technology preference.

Areas Serviced:

Statements Made:

Need service as far East as possible on Century.
The more stations there are the more people will ride the line.
Whatever can be built the fastest is the most preferable.
Access to Lot B and more stations on Century may be benefits to the business community that would make further delay of a year or so acceptable.
There may be a benefit to business community by tying straight into the CTA without a transfer (i.e., by People Mover).

Questions Asked:

Why has the new Westchester Station location (North of Westchester Parkway at 89th) been introduced? This location may cause the business community considerable concern depending on parking and land acquisition impacts. We prefer the station to be at the Parkway not North of it.
If the subway bypasses Lot B, could there be a subway moving sidewalk to connect the Imperial/Aviation Station to Lot B?
Would you ever be able catch the People Mover on Century and not have to go all the way to Lot C before heading into the CTA?
If Green Line only goes to Lot C what would go to Marina del Rey?

Constructability:

Questions Asked:

Will FAA make temporary allowances for construction under or near the runways?

Operation:

Questions Asked:

Is the purpose of the DOA CTA People Mover to displace shuttle bus/van traffic?
What are the travel times and ridership estimates for the various alternatives?
Can you ride the line between Aviation/Imperial and Westchester without having to go into the CTA?
How will luggage be handled? Can it be carried onto the trains?
Will separate tickets be required for the CTA People Mover?
How much area will People Mover maintenance yard take up and where would it be located?

Cost:

Questions Asked:

How do alternatives compare in cost?
Is one technology cheaper than the other?

Other Issues:

Statements Made:

LAX/Palmdale should not become the tail wagging the Green Line dog.

ORGANIZATION: Westchester/LAX Chamber of Commerce

Date of Meeting: November 5, 1991

Notes:

In a subsequent meeting the Chamber voted Alternative #5 as their most preferred route/technology combination and the Mitigated EIR as their second choice. They prefer the Westchester Station to be located at Westchester Parkway on Airport property. The reasons for their Alternative #5 preference are: good ridership, station location, direct service from the CTA to Westchester, preference for People Mover (because it does not have the overhead catenary wires) and service to Lot B. They want the Century Airport Station preserved but are less concerned about Century/Concourse. A formal letter stating these views is being transmitted to the Task Force.

Technology Preference:

Statements Made:

Number of transfer should be minimized.

Questions Asked:

Why can't People Mover just be run on EIR alignment?
How do People Mover, Green Line and Blue Line technologies compare?

Route Preference:

Statements Made:

We want to react only to the options that are really "in play". Until the "big players" have stated their preferences we are spinning our wheels.

Questions Asked:

What is the current preferred alternative of the Policy Group, DOA?

Transportation Center Location:
No issues raised.

-continued on next page-

ORGANIZATION: El Segundo City Council

Date of Meeting: November 5, 1991

Notes:

The City Council asked that a specific message be carried back to the Task Force as follows:

Before public money is spent to help DOA expand out to it fullest capacity DOA needs to come negotiate with El Segundo on noise mitigation. Please make sure DOA gets that message.

Technology Preference:
No issues raised.

Route Preference:
No issues raised.

Transportation Center Location:
No issues raised.

Areas Serviced:
No issues raised.

Constructability:
No issues raised.

Operation:
No issues raised.

Cost:

Questions Asked:

Won't there be an expensive bullet train built between LAX and Palmdale?

Other Issues:
No issues raised.

ORGANIZATION: Assemblymember Curtis Tucker

Date of Meeting: November 7, 1991

Technology Preference:

Questions Asked:
Will the vehicles be made in the USA?
Which technology can move more people?

Route Preference:
No issues raised.

Transportation Center Location:
No issues raised.

Areas Serviced:

Questions Asked:
What would be the reduction in traffic if there was a Century/Airport station?

Constructability:
No issues raised.

Operation:
No issues raised.

Cost:
No issues raised.

Other Issues:
No issues raised.

ORGANIZATION: Department of Airports Commission

Date of Meeting: November 13, 1991

Technology Preference:

Questions Asked:
How do the driverless trains work?

Route Preference:

Statements Made:
Good progress is being made in choosing an alignment. There are still some details to be firmed up with the engineers.

Questions Asked:
Are you certain that the mitigated EIR alternative will not interfere with Airport operations during construction and once in operation?

Transportation Center Location:
No issues raised.

Areas Serviced:
No issues raised.

Constructability:
No issues raised.

Operation:

Statements Made:
There are still some issues pending on the joint powers agreement that would govern operation of the system that will have to be brought to the Airport Commission at a later date.

Questions Asked:
Is there going to be any interference with the cargo facilities on the side of the clear zone?

Cost:
No issues raised.

Other Issues:
No issues raised.

ORGANIZATION: Westchester Community Meeting

Date of Meeting: November 13, 1991

Notes:
Attended by about 60 people.

Technology Preference:

Statements Made:
It its possible to run both People Mover type and Green Line type technology on the same track. LACTC should look at a technology that has this capability. Building two incompatible systems will raise operating costs and is not in public interest.
The whole system should be kept underground.
The number of transfers should be minimized.

Questions Asked:
Which technology is more compatible with FAA objectives?
Will People Mover passenger capacity be able to accommodate future growth if Los Angeles is successful in promoting density development along the transit corridors?
Can People Mover be used as line haul technology?
Can you switch technologies on the EIR approved route without having to do a new EIR?
How noisy are the two technologies comparatively?
Why does the system that runs on third rail have to be built elevated instead of at grade?
Why can't Green Line go all the way around CTA?
How do people feel about riding a driverless train at 55 mph?

Route Preference:
No issues raised.

Transportation Center Location:

Statements Made:
LAX/Palmdale will have high ridership. Interface with it is important.

Questions Asked:
Isn't Lot C almost saturated, wouldn't it be better to use Lot B for the transportations interface?
Will People Mover reduce busses traveling into airport? Is that its purpose?

-continued on next page-

Areas Serviced:

Statements Made:

The Green Line won't help Westchester. Beach communities need to be served. Let the People Mover serve Airport and Marina del Rey.

There are six busses coming out of Lot C to Westchester now and they are only half full.

When the County negotiated with Playa Vista they should have gotten money to pay for transit service to the development.

It was strictly an afterthought to serve LAX with the Green Line. Let them serve the CTA with People Mover and put the Green Line where it needs to go.

Questions Asked:

What is the purpose of having a line from Lot C?

Will you be able to travel both North and South from Imperial/Aviation station?

Why can't there be a train straight to downtown Los Angeles or to Crenshaw or La Brea?

Is there a possibility that LAX/Palmdale will be able to serve Playa Vista?

What is the difference between the two Westchester Station locations? Why was a second location looked at?

Is Westchester just a remote parking lot for the Airport?

Will locating a station in Westchester stimulate growth and development that we are unaware of?

Constructability:

Questions Asked:

Is subway cut and cover?

Operation:

Questions Asked:

What are earliest and latest completion dates for each technology?

How does start of operation between the mitigated and unmitigated EIR route compare?

Would CTA People Mover operate 24 hours? What about the other system?

Who will provide security on the trains and at the platform for both the Green Line and the CTA People Mover?

How will emergencies be handled on the driverless trains?

Who provides electricity for operation of the system?

Will both systems have disabled access?

What is projected ridership for each segment of the route?

Where will People Mover and Green Line maintenance yards be located?

How will luggage be handled?

-continued on next page-

Cost:

Statements Made:

If there are assessments against businesses along the corridor to pay for the line, it's the DOA that should pay because business can't afford it.

Questions Asked:

What will DOA pay for vs. LACTC (the public)?
Where does the funding come from?
What are most and lest expensive options?
What are the reasons for differences in costs among the options?
What is the most this is going to cost us?

Other Issues:

Questions Asked:

Can LAX/Palmdale come in at all of the alternative proposed Green Line termination stations?
When will the final decision be made?

ORGANIZATION: LAX Blue Ribbon Committee

Date of Meeting: November 14, 1991

Technology Preference:

Questions Asked:
Will the catenary penetrate the clear zone?
If yes, how does FAA feel about this?
Would the People Mover technology serving the CTA be the same as that on the rest of the system?

Route Preference:

Questions Asked:
Do Alternatives #3 & #4 meet all of FAA's concerns?

Transportation Center Location:
No issues raised.

Areas Serviced:
No issues raised.

Constructability:
No issues raised.

Operation:

Questions Asked:
What is the impact of the mitigated EIR alternative on the southern cargo areas?
Have all street capacity issues been resolved?
How will the system interface with the Santa Fe Railroad?
How will the double "wye" work in terms of going North from the South Bay?

Cost:
No issues raised.

Other Issues:
No issues raised.

ORGANIZATION: SCRTD and Municipal Bus Operators Serving Lot C

Date of Meeting: November 14, 1991

Technology Preference:
No issues raised.

Route Preference:

Statements Made:
At this time, RTD will support the mitigated EIR alternative or Alternative #4 if all Green Line. RTD wants a system with one technology.

Questions Asked:
How far does the airport want to extend the People Mover?

Transportation Center Location:

Statements Made:
If transportation center location moves from Lot C, operating expenses for the bus systems will be increased. More buses will be needed to maintain headways.
It would be more expensive for all operators except Torrance to maintain two transportation centers (ie one at Lot C and one at Lot B or Aviation.)
At this time it seems Lot C is preferable for transit area. Will have to study Lot B further before commenting.
It doesn't really matter if hotel and car rental shuttles are in the same location as the transit center.
More space will be needed if hotel and car rental shuttles are in Lot C along with the transit center.

Areas Serviced:

Questions Asked:
If a route has subway to Lot B, why isn't there a station at Lot B?

Constructability:
No issues raised.

Operation:

Statements Made:
Operating costs are important in choosing an alignment.
DOA should maintain authority over airport transit service, (i.e., the CTA People Mover).

Cost
No issues raised.

Other Issues
No issues raised.

ORGANIZATION: LAX Area Advisory Committee

Date of Meeting: November 14, 1991

Technology Preference:

Statements Made:
One person said the People Mover alternative is more desirable.
It may be better to serve the area close to LAX (i.e. hotels) with a People Mover system.

Questions Asked:
Is it shortsighted to bring the People Mover into Westchester if the system will eventually continue to the Marina?

Route Preference:
No issues raised.

Transportation Center Location:
No issues raised.

Areas Serviced:

Statements Made:
The Westchester station should be placed to the where there is ample parking and parking won't be taken away from the businesses.

Questions Asked:
What is the time frame for the Southern Extension?
Are there plans to run the line down Hawthorne Blvd?

Constructability:

Questions Asked:
What will the construction impact be?

Operation:

Questions Asked:
Are the trains bi-directional?
Is the right-of-way double or single track?
How will luggage be handled?
How much will it cost to ride the system?
Is the system standard gage so that it can handle freight?

Cost:

Questions Asked:
What is the cost of the alignments?

-continued on next page-

Other Issues:

Questions Asked:

What noise impact will the Hawthorne maintenance yard have?
What is the noise level of the trains?
What is the noise level difference between the technologies?
What is the status of LAX/Palmdale?
Can light freight be shipped from LAX to Norwalk on the Green Line?
Is the policy group meeting open to the public?
Where do you expect most of the rush hour patronage to be?
What are the North/South and East/West patronage numbers?
What are the People Mover vs. Green Line patronage numbers?
Will it be possible to ship cargo containers on the LAX/Palmdale line?
Safety comparison for Light Rail/People Mover and overhead catenary/third rail.

ATTACHMENT C

The Outlook

THURSDAY
November 14, 1991 ★

Westside route proposals unveiled

By Tom Jennings
STAFF WRITER

LIGHT RAIL TRANSIT

County transportation officials at a public hearing Wednesday night unveiled seven proposals for routes to bring light rail service to the Westchester area.

The plans are part of the county's Green Line light rail project that will run from Norwalk to the Los Angeles International Airport.

The northern extension of the line, starting at Aviation Boulevard and Imperial Highway and running north to Westchester, was the topic of discussion at the Marina Airport Hotel that attracted 50 residents.

The transportation officials said they had been moving forward with a route plan that would have light rail trains riding a mostly elevated track running north on Aviation, west on Century Boulevard, north along airport Parking Lot C and west on Lincoln Boulevard, terminating at Manchester Avenue.

But a recent announcement by airport officials that they will install a "people mover" train system — a smaller, lighter rail line — at the airport by the year 2000 has county transportation workers rethinking their plans.

Bob Cashin, director of the South Bay area of the county Transportation Commission, said the county wants to link its Green Line with the airport system and could use "people mover" technology — or a combination of the two — instead of only the proposed light rail lines.

He offered six alternatives to the original $325 million plan. They include slight changes in routes, or a subway system or elevated tracks.

The least costly plan, which uses "people movers" exclusively on the northern extension of the Green Line, would require $275 million. The most expensive is a light rail system that is completely underground at $480 million.

The project is funded by the a half-cent sales tax and is expected to be completed in 1996.

"Because LAX announced their people mover system, we felt is was necessary go back and look at our plans to see if they best serve the community," Cashin said. He asked that residents submit comments on the proposal to the county before Monday, when public response will be discussed.

Residents were hopeful that a compromise would be worked out and were glad to see the preparation the county was taking.

"It's a good start, but I hope politics don't get in the way," said Robert Kelm of Venice.

"I think they need to underground the whole system. There's no way you're going to see trestles running up Lincoln Boulevard."

ATTACHMENT D

ORGANIZATIONS CONTACTED BY MAIL

Alan Bornstein:
President
Bornstein Enterprises

Howard Drollinger
President
H.B. Drollinger Company

El Segundo Employers Association

Bob Freeman
Corporate Services
Texaco, Inc.

Assemblymember Tom Hayden

Los Angeles Area Chamber of Commerce

Los Angeles County Department of Beaches and Harbors
Ted Reed, Director

Kathy Maguire
District Manager
Southern California Gas Company

Mayors of all Cities in Los Angeles County

Members, Los Angeles City Council

Assemblymember Gwen Moore

Walt Mosher
President
Precision Dynamics Corporation

Southern California Association of Governments

Roger Stanard
Walleck, Shane, Stanard & Blender

Senator Diane Watson

Connie Worden
SCV Environmental Consultants

ATTACHMENT E

LETTERS IN RESPONSE TO PRESENTATIONS AND INFORMATION PACKETS

Air Transport Association ata OF AMERICA

Western Regional Office
8939 S. Sepulveda Boulevard
Suite 408
Los Angeles, California 90045
Phone (213) 670-5183

November 7, 1991

198004

Ms. Judy (Weiss) Wilson
Deputy Executive Director
Los Angeles County Transportation Commission
818 West Seventh Street - Suite 1100
Los Angeles, California 90017

Dear Ms. Wilson:

Thank you for the data received in this office November 6, 1991 on the matter of the proposed rail transit line alternatives in the vicinity of Los Angeles International, and the request for our comments.

As I went on record on behalf of the ATA Member Airlines serving Los Angeles at the LACTC briefing at your offices on September 26, 1991, our primary concern is that although being fully cognizant of the LACTC plans for this area and the requirement for a rail system to serve the airport and West Side communities, our bottom line concerns are that no operational constraints be placed on the airport runways during any construction or actual operation of the rail lines.

As to your request for comments on using a subway along Aviation Boulevard in the vicinity of the Runways 25 Clear Zones and approach path versus the EIR Green Line grade alignment, the following is offered.

1. Assuming that considerable above-ground construction work would be required in both the excavation and tunnelling for the subway line, I can foresee a requirement for displacing the runway lengths at the east end of the airport for possibly as much as 1,000 feet, the final figure having to be arrived at by the FAA and Department of Airports. The loss of 1,000 feet of runway length, which would result in Runway 25R having 11,000 feet available and Runway 25L having 10,000 feet usable, would necessitate construction work being accomplished for the most part during the nocturnal hours of midnight until 0600 hours. Present long haul-wide body aircraft departures to the Pacific Basin (Tokyo, Hong Kong, Seoul, Auckland, Sydney) commence at 0900 hours and continue at various time until 2230 hours. The bulk of these aircraft require the full length of Runway 25R of 12,000 feet or suffer payload penalties.

2. A question which would have to be answered in more detail, possibly by Professor McFarland, would be the impact any above ground construction equipment would have on the Runway 07 ILS localizer installations located east of Aviation Boulevard or the Runway 25 Glide Slope Antenna arrays at the runway approach thresholds.

3. Lastly, since this subway alignment would be in the clear zone in close proximity to the runway thresholds, I would assume that a protective structure would have to be constructed above the tunnel with load bearing capability similar to that existing over the Sepulveda Boulevard which lies underneath the runways at mid-field.

In order that our comments be in your offices by the requested November 13 date my comments on the other alternatives will be brief.

Alternatives 1 and 2, both of which involve subway routings beneath the south runway complex, taxiways and the cargo and airline maintenance areas north of the runways would pose severe problems during the construction phasing for all of the airlines.

Alternatives 3, 4, 5 and 6 which with the exception of the transgression into the northeast portion of the Runways 24 Clear Zone are completely clear of any airspace penetration and would pose no operational problems during construction or activation for the airport users and would be the most desirable avenues to explore from the ATA/airline view.

Sincerely,

George H. Carver
Director -
Operations & Safety

cc: Mr. Dave Jankowski DL-ATL Chairman - LAX AAAC
Mr. J. R. Fleming ATA-DCA
Mr. T. J. Browne ATA-DCA
Mr. Mal Packer LAX DOA

City of El Segundo

CARL IACOBSON, Mayor

November 15, 1991

Los Angeles County
Transportation Commission
818 West Seventh Street
Los Angeles, California 90012

Attention: Policy Committee - Interagency Transit Study
(c/o Robert Cashin)

Interagency Transit Study
Metro Green Line
North Coast Line to LAX etal

Thank you for having your staff make a presentation at the City Council meeting of 11-5-91 on the ongoing study for the North Coast Line.

The City Council did not make a decision or recommendation for the preferred route alignment at that time. City Staff have though reviewed the data provided to us as of that time on the several alternates. Should the Green Line Light Rail technology be capable of servicing the LAX Terminal Buildings individually, we would recommend the North Coast Line be all Green Line technology. However, that appears not to be the case.

Therefore on behalf of the City of El Segundo and based on the hereinafter given understandings, we recommend in order of preference the following alignments with their respective technology:

Robert Cashin
Interagency Transit Study
November 15, 1991

(continued)

Choice	Route	Service from Norwalk to LAX/Westchester/ Playa del Rey *
First	Alternative No. 6	G.L. to Aviation Station - P.M. to LAX/Westchester
Second	Alternative No. 5	G.L. to Aviation Station - P.M. to LAX/Westchester
Third	Original EIR Mitigated	G.L. to LAX/Westchester/ Playa del Rey - P.M. at LAX

* G.L. = Green Line Technology
P.M. = People Mover Technology

Understandings:

- To hold passenger transfers to a minimum.
- To maximize use of automation (non-operator/computer operated vehicles) on both the Green Line and the LAX - CTA People Mover Systems.
- To maximize route passenger carrying capacity.
- To hold headway time to a minimum (maximize frequency of trains).
- To provide least inconvenience to two (2) major users - those persons employed in El Segundo and South Bay area and those using LAX.
- To become operational at the earliest possible date.

Should there be significant changes made hereafter in the data and design parameters for any one or more of the seven (7) alignments, we would appreciate an opportunity to review and comment thereon.

Robert Cashin
Interagency Transit Study
November 15, 1991

(continued)

Should the selected route be one of the following: the EIR Mitigated Green Line, Alternatives 1, 2, 3, or 4, we request that the separated elevated Wye junction structure at the Aviation Station of the original EIR be restored as a part of the overall project so as to facilitate the maximization of train speed, allow variances in train routing to meet time of day/weekday demand usage patterns and minimize transfers.

In that LACTC is now soliciting proposals for the LAX-Palmdale International Airport rail system we recommend that consideration be included for the carrying of air freight containers on the trains to permit the receipt and handling of freight at the Palmdale International Airport. This would provide a viable alternative to increased handling of air freight at LAX.

We reaffirm our earlier (letter of 7-12-91 to LACTC, copy enclosed) support of the early financing and construction of the Metro Green - Coastal Line to the Torrance Area.

Carl Jacobson, Mayor
City of El Segundo

CJ/KP/dr

Enc.:

Copies: Members of City Council
Ronald E. Cano, City Manager
El Segundo Employers Association
Jacki Bacharach, LACTC Commissioner
Ken Putnam, Director of Public Works
Judith Hathaway-Frances, LACTC Commissioner

esea EL SEGUNDO EMPLOYERS ASSOCIATION

P.O. Box 547
El Segundo, CA 90245
(213) 640-3403
FAX: (213) 391-9764

November 18, 1991

TO: Interagency Transit Study Joint Policy Group and Technical Task Force

FROM: Donald H. Camph, Executive Director

RE: Recommended Alternative: Metro Green Line Aviation/ Imperial Station to LAX/Westchester

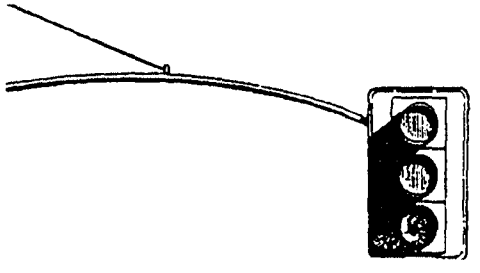
The El Segundo Employers Association would like to go on record as strongly supporting **Alternative 5** (People Mover through Lots B and C). For reasons set forth below, we believe that this makes sense from all perspectives: regional system, South Bay, Westchester/Marina del Rey, and LAX.

LACTC staff has done a good job in spelling out the seven alignment alternatives and the pros and cons of each. The issue was made even more complex by the possibility of an Aviation "wye" which would *in theory* allow through service in all directions should the Green line be extended north of Aviation/Imperial. We believe, however, that a "wye" would be ill-advised; and, if the "wye" is rejected, then any option which would extend the Green Line north makes little sense.

Our reasons for recommending against a "wye" are:

- An "at-grade" wye would limit headways to 12 minutes, thus defeating the whole purpose of automation.
- A "flyover" wye would:
  - Cost an additional $28 to $40 million; and,
  - Eliminate the possibility of a Lot B station.

Accordingly, a wye at Aviation appears to be undesirable, and any option that extends the Green line north of Aviation/Imperial would effectively cut service to the South Bay in half **without** compensating benefits to the region or to users of LAX and the North Coast extension of the Green Line.



THE GREEN LIGHT FOR COMMUTERS

Our support for Alternative 5 is based on the following considerations (summary table attached):

- o Number of Destinations Served: Alternative 5 would add five stations, more than or equal to the number of stations added by any other alternative.

- o Number of Transfers: Alternative 5 has fewer transfers (see table) than other alternatives, and is equitable in the sense that all users would have one (but no more than one) transfer.

- o Cost: Alternative 5 is among the least cost alternatives.

- o Flexibility: Service to LAX and Westchester/Marina del Rey: simply put, the Green Line is the wrong technology to try to "shoe horn" through the LAX area. Technologies exist which have the flexibility to access LAX and provide the line haul capacity needed in the future to Marina del Rey. As noted below, this has the added advantage of keeping options open for regional connection of the Green line to the LAX - Palmdale line.

  Flexibility: LAX - Palmdale Line: if the Green line is extended to Lot C, that probably guarantees that the LAX - Palmdale line will terminate there. Alternative 5 gives the Commission the flexibility to decide the best terminal for the LAX - Palmdale once a fuller understanding of the issues involved is gained.

- o FAA Clearance: we *know with certainty* that the APM technology poses no clearance problems in terms of the 50:1 zone. Any decision on Green line technology north of Lot C would have to be contingent on FAA approval, thereby delaying a final decision for an undetermined period of time.

- o Aesthetics: ESEA has long been on record in support of third rail (as opposed to overhead catenary) power pickup. In the South Bay, the Green Line will traverse principally industrial and commercial areas, so the visual impact of the overhead configuration is perhaps somewhat mitigated. For residential areas north of LAX however, this may be an objectionable feature.

- o Service: Norwalk to South Bay: Alternatives which extend the Green Line north of the Aviation/Imperial station would halve service frequency to the South Bay. This diminution of service is not offset by other benefits gained by extending the Green line north of Aviation/Imperial.

2187

GREEN LINE AVIATION/IMPERIAL STATION TO LAX/WESTCHESTER
ALTERNATIVES ANALYSIS

ALTERNATIVE ALIGNMENTS:	"MITIGATED" EIR	ALT. 1	ALT. 2	ALT. 3	ALT. 4	ALT. 5	ALT. 6
No. of Stations	3	2	2	5	5	5	3
Cost (mid-point of range) ($ millions)	$496.5	$655	$538	$506.5	$552.5	$512	$449
No. of Transfers Required							
- South Bay to LAX Terminals	2	2	2	2	2	1	1
- South Bay to Westchester	1 or 2	1	2	2	2	1	1
- Norwalk to LAX Terminals	1	1	1	2	1	1	1
- Norwalk to Westchester	0 or 1	0	1	1	1	1	1
Norwalk - South Bay Trains Diverted?	YES	YES	YES	YES	YES	NO	NO

158 / 184

CITY OF
TORRANCE

KATY GEISSERT
MAYOR

91 NOV 15 P1:50

November 7, 1991

Ms. Brynn Kernaghan, Manager of Government and Public Affairs
Los Angeles County Transportation Commission
818 West 7th Street, Suite 1100
Los Angeles, CA 90017

Dear Ms. Kernaghan:

SUBJECT: LACTC QUESTIONNAIRE DISCUSSING RAIL TRANSIT SERVICE TO THE LAX/WESTCHESTER AREA

In response to your request for information on the Metro Green Line rail transit project in the LAX/Westchester area, we do not feel knowledgable enough about the local issues surrounding the decision to locate a major transit facility outside our City. Torrance has not been involved in the analysis and subsequent discussion regarding the specifics of this line. We feel these details should be examined and determined by the LAX Interagency Task Force, representatives from LACTC, the City of L.A. Department of Airports and those cities directly affected by this portion of the rail project.

We hope that any proposed rail transit service should be convenient for all transit users. For the LAX/Westchester Green Line, convenience factors should include minimizing the number of transfers and providing a station as close as possible to the airport.

We appreciate the information on the development of the Metro Green Line project and hope to be kept abreast of any changes which may affect the proposed Southern Extension of this line. If you have any questions or comments, please contact our Transportation Planner Helene Buchman at (213) 618-5990.

Sincerely,

Katy Geissert

Katy Geissert
Mayor

Attachment

cc: Council Members
LACTC Commissioners

WESTCHESTER/LAX
CHAMBER OF COMMERCE

5930 WEST CENTURY BOULEVARD, WESTCHESTER, CA 90045 • (213) 645-5151

November 15, 1991

Mr. Bob Cashin
Director, South Bay
Los Angeles County Transportation Commission
818 West 7th Street
Los Angeles, CA 90017-4606

Dear Bob;

We would like to thank you for the opportunity to comment on the LAX Task Force findings. We attempted to get as much accurate information as possible before releasing our comments. The process of reaching an agreement was not an easy one, however we enjoyed the challenge. We are pleased that the Westchester/LAX TMA participated in our review process and is joining us in issuing these joint recommendations.

We first formed a series of general recommendations that would apply to which ever option is eventually chosen. We then attempted to choose the alignment that would fit those recommendations. The general recommendations are:

a. Airport and Century Station is important to the area and should not be deleted.
b. Westchester Station should be located on DOA owned land.
c. The alignment between Lot C and Westchester Station should follow Westchester Parkway.
d. People Mover technology is preferred over the Green Line in the study area.
e. Revenue operations should begin as close to the original EIR date as possible.

One of our major problems was attempting to find out when revenue operations would begin on option "A". Certain other options offered additional benefits to the community, but would those benefits be worth a delay in operations? Based on a 1996/7 revenue operations date of option "A", we found that option Five best fit our criteria. Option five also has one of the highest patronage estimates, which is important in our joint effort of reducing traffic and of course air pollution. Not surprisingly then, our recommendation is for option Five.

We understand that it is now up to the Policy Group to make their recommendation. We are looking forward to hearing their decision.

Sincerely;

Bill Gemmill
for Renate Hild,
President, Westchester/LAX
Chamber of Commerce;
and for Dick Hannan,
Executive Director,
Westchester/LAX TMA.

cc: Renate Hild
Dick Hannan
Chamber Board Members
Traffic+Transportation Committee
TMA ATSC members
Ruth Gallanter
Don Knabe

SIGN-IN SHEET

Date: November 18, 1991

Function: LAX Policy Group Meeting

Name	Title/Agency	Phone/Fax Numbers
Toni Kelma	CDC	640-1520 Fax 414-9279
Donna Finn	LACTC	x7107
Manuel Padron	MPA	310-827-1145
Dan Beal	LA CLA	213-255-4743 / 680-0085
Roslyn Carter	LA CLA	213 485-3975 / 213 680-0085
N.M Schoenfeld	LA DOA	310-646-7393
Haripal Vir	LADOT	213-485-1062
Barna Szabo	LAX Blue Ribbon Committee	(213) 284-7243
Ruth Galanter	City Council	213 / 485-3357
Bill West	HB Drilling Co	213 776-4070
Cynthia Ploehn	Atty City Clerk	213 [illegible] / fax 626 474-7323
Helen S. Custodio	LACTC	213 244-6732

DSK/LS:\Sign.mtg

SIGN-IN SHEET

Date: November 18, 1991

Function: LAX Policy Group Meeting

Name	Title/Agency	Phone/Fax Numbers
KEN DIETL	LADOT	(213) 485-1064
MALM PACKLER	LA City - Airports	(213) 646-3254
[illegible]	SCRTD	972-3029
Ken Nelson	Caltrans	897 4650
Enrique Umanzula	RCE	244 6857
Toward Yoshioka	FAA Airports	(310) 297-1250
JAMES OKAZAKI	CALTRANS	(213) 485-3039
[illegible] MURPHY	Gruen Assoc	(213) 957-9270
[illegible] STEINMAN	"	"
[illegible]	FHWA	8281185
[illegible]	"	"
JERRY CHAVKIN	JWC Assoc.	213-544-4145

DSK/LS:\Sign.mtg

SIGN-IN SHEET

Date: November 18, 1991

Function: LAX Policy Group Meeting

Name	Title/Agency	Phone/Fax Numbers
Robert Cashin	LACTC	244-6441
Brynn Kernaghan	LACTC	244-6533
Tom Carmichael	LACTC	244-6351
Judy Wilson	LACTC	244-6576
Al Thiede	"	244-6885
Lynn Struthers	"	244-6828
Helen S. Cuciodis	"	244-6732

INTERAGENCY TRANSIT STUDY
JOINT POLICY GROUP AND TECHNICAL TASK FORCE
December 19,1991, 12:00 noon
Proud Bird Restaurant

TABLE OF CONTENTS FOR MEETING #6

Item	Page
Agenda	166
Minutes	167
Evaluation of Aignments Table 1. Systemwide Characteristics	169
Evaluation of Alignments Table 2. Impact by Segment	172
Alignment Maps	174
Filing of FAA Form 7460-1 Notice of Proposed Construction	180
LAX People Mover and Green Line Options/Operational Analysis	200
Sign-In Sheets	208

JOINT POLICY GROUP AND TECHNICAL TASK FORCE MEETING #6
December 19, 1991, 12:00 noon, Proud Bird Restaurant
11022 Aviation Boulevard/111th Street (near LAX/LOT B)

AGENDA

1. Approve Minutes

2. Recap of Alignments and Discussion of Related Issues - Bob Cashin/Ben Beasley

3. Update on the McFarland Report - Al Thiede/Lynn Struthers

4. Update on the Form 7460 Process - Ben Beasley/Mal Packer

5. Discussion of the Revised Preliminary Operations Plan - Manuel Padron

6. Recommendation on Preferred LAX/Green Line Alignment for Consideration by the LACTC and DOA.

7. Adjourn

NC3:polmtg6

MINUTES OF LAX INTERAGENCY TRANSIT STUDY POLICY GROUP

MEETING NUMBER 6

DECEMBER 19, 1991 - 12:00 P.M.

This was the sixth meeting of the Policy Group for the LAX Interagency Transit Study. On a motion by Jacki Bacharach, the minutes of the November 18th Policy Group Meeting were approved. Comments regarding these minutes can be directed to Bob Cashin at (213) 244-6441, or can be addressed at the beginning of our next meeting.

SUMMARY OF ITEMS DISCUSSED

- Recap of the Three Preferred Alignments. In response to the public participation process, and Agency/Task Force review, three alignments were favored over the others: the Mitigated EIR Alignment (Option A), Alternative 4 and Alternative 5. An evaluation of system-wide characteristics was prepared and presented by the LACTC comparing the three alignment alternatives, plus the option proposed by Ruth Galanter addressing the possibility of considering a future Greenline extension from Aviation station to Lot C added to Alternative 5. DOA's preferred alignment was Option 4. The Westchester Chamber of Commerce preferred Option 5. LADOT was split between the EIR Mitigated Alignment and a variation of Option 5 which was proposed by Ruth Galanter.

  COST OF THE ALIGNMENTS (in million $):

Cost	EIR-MIT	#4	#5
(w/o CTA)	$327	$362-382	$334

- **Operations.** Manuel Padron presented the complete operational analysis. All alignments would be capable of 5 minute headways for each service (origin to destination). Each of the alignments would have headways of 2.5 minutes on the trunks. The combined (Green Line and People Mover) O&M costs for Option 5 would be $4.4 million (roughly 10%) more than for Option A with a 3-way wye. The trip time through the CTA loop would be approximately 10 minutes.

- **McFarland Report.** Dr. McFarland belatedly identified an additional point of interference with a multiple consist at Runway 24 left. This point of interference, along with the five previously identified, appears to have technically feasible solutions.

- **FAA form 7460 review process.** DOA will officially submit a partial Form 7460 application to FAA for the review of the alignment north of 96th Street to Westchester with drawings and filing material prepared by Bechtel. Based on a 90-day review, the process should be completed by March 1992. Both Option A and Alternative 5 RG would require an additional Form 7460 review process on the southern portions of the alignment, as well as a release of Grant Obligations, from the FAA prior to implementation.

- **North South Connector (Double Wye) at Aviation/Imperial.** For the purpose of Alternatives comparison, Alternatives A and 4 are both assumed to have a 2-way wye at Aviation. Alternative 5, which is a People Mover system north of Aviation, would not require a wye at Aviation, but would be assumed to have a 3-way wye at Century.

- **Multi-Modal Center.** Lot C was considered the preferred location for a multi-modal transit center by Ruth Galanter, as well as by RTD and DOA, regardless of the alternative chosen.

FUTURE ACTIONS

The Policy Group recommended that the three alternatives (A, 4, 5) be taken into the environmental review process, including an analysis of light rail vs people mover technology, alternate locations for a multi-modal transit center, a no project, and an expanded "bus service" alternative serving the CTA (requested by DOA). LACTC & DOA will meet to further determine their mutual responsibilities and funding shares under the EIR. They will report back at the January Task Force meeting.

Meeting Handouts

MINUTES OF POLICY GROUP MEETING NUMBER 5
LAX INTERAGENCY TRANSIT STUDY EVALUATION OF ALIGNMENTS
Update on Response to Questionnaires
Letter to LACTC from Councilwoman Ruth Galanter, dated December 16, 1991.
Letter to DOA from El Segundo Employers Association, dated December 16, 1991.

wp5.1\min12.19

LAX INTERAGENCY TRANSIT STUDY
EVALUATION OF ALIGNMENTS

TABLE 1. SYSTEMWIDE CHARACTERISTICS

ELEMENTS	MITIGATED EIR GREEN LINE	ALTERNATIVE 4	ALTERNATIVE 5	ALTERNATIVE 5 RG
Description	Follows approved EIR alignment with a subway segment along south runways using Green Line technology.	Using Green Line technology, runs aerial from Aviation, turns easterly to Lot B, runs north to Century and continues to the Westchester Parkway as in the mitigated EIR alignment. This option provides for either Green Line or People Mover technology from Lot C to Westchester Parkway.	Follows Alternative 4 using People Mover technology.	A future component of Alternative 5, Option RG would extend Green Line technology form the People Mover/Green Line station at Aviation west along Imperial toward the Sepulveda tunnel where it would descend into subway, turn north and continue in subway to lot C where it would potentially join with the LAX Palmdale line.
Length (miles) (w/o CTA)	2.9	3.3	3.1	2.4
Stations	3	5	5	1
Cost (in millions)				
a. Capital Cost	$327	$362/382	$334	$566 (excl. RG ROW)
b. Operating & Maint.				
• People Mover	$ 4.85	$ 5.92	$ 13.74	$ 13.74
• Green line (Regional PM)	35.30	35.80	32.50	34.20
• **Combined O&M Cost**	**40.15**	**41.72**	**46.24**	**47.94**
Daily Boardings	21,500	26,100	29,700	Not available
Peak Headways (minutes)	(2-way "wye" @ Aviation)	(2-way "wye" @ Aviation)	(3-way "wye" at Century)	
Green Line				
Norwalk-Westchester	5	5	-	5
Norwalk-Marine Blvd.	5	5	-	5
Marine-Westchester	-	-	-	-
People Mover				
Lot C to CTA	5	5	5	5
CTA Internal Loop	5	5	5	5
Lot C to Aviation	-	-	5	5
CTA Internal Loop	2.5	2.5	1.7	1.7

ELEMENTS	MITIGATED EIR GREEN LINE	ALTERNATIVE 4	ALTERNATIVE 5	ALTERNATIVE 5 RG
Travel times (minutes)	Time / Transfers	Time / Transfers	Time / Transfers	Time / Transfers
Norwalk-Lot C	29 / none	31 / none	33 / @A	29 / none
Norwalk-Westchester	31 / none	36 / @C	35 / @A	33 / @C
Norwalk-CTA	37 / @C	39 / @C	38 / @A	37 / @C
Marine Blvd.-West.				
2-way	17 / @A	21 / @A&C	20 / @A	20 / @A
3-way	15 / none	- / -	- / -	- / -
Marine Blvd.-CTA				
2-way	24 / @A&C	26 / @A&C	23 / @A	23 / @A
3-way	22 / @C	- / -	- / -	- / -
Implementation Schedule	5 1/2 years	6 years	6 1/2 years	RG unknown
Requires Joint Implemt. and Operations Agreement	NO	NO	YES	YES
DOA Concurrence; Compliance with FAA Regulations	•Needs DOA concurrence on subway segment along Aviation. •Farfield monitor antennas at runway 24R need to be raised. •Requires FAA Form 7460 and release from DOA's grant agreement with FAA for the use of any airport property.	•Possible impact on middle markers & far-field monitor antennas (runway 24R & L) •Requires FAA Form 7460 and release from DOA's grant agreement with FAA for the use of any airport property.	•Possible impact on middle markers & far-field monitor antennas (runway 24R & L) •Requires FAA Form 7460 and release from DOA's grant agreement with FAA for the use of any airport property.	•Needs DOA concurrence on subway segment at or near Sepulveda tunnel. •Impacts on navigational aids unknown but should be minimal.
Transportation Center Location Interface with CTA People Mover, LAX-Palmdale, Bus Transit	•Lot C - Existing infrastructure for transit center.	•Lot C or Lot B - Existing infrastructure for transit center at Lot C. - Access to Lot B by buses,cars, shuttle needs study.	•Aviation, Lot B., Lot C - Existing infrastructure for transit center at Lot C. - Access to Lot B by buses, cars, shuttle needs study. - Interface at Aviation appears to be tight and needs further study.	•Assumes that LAX-Palmdale would come into Lot C although bus transit could interface at Aviation, Lot B or Lot C.

120

ELEMENTS	MITIGATED EIR GREEN LINE	ALTERNATIVE 4	ALTERNATIVE 5	ALTERNATIVE 5 RG
Areas/Users Served	•No direct rail service to Lot B but could be served cost-effectively by a shuttle service to the MGL Aviation Station.	•Direct service to all.	•Direct service to all.	•Direct service to all.
Local Traffic Circulation				
•Design/Construction	•Minimum impacts throughout alignment.	•Minimum impacts throughout alignment.	•Minimum impacts throughout alignment.	•Minimum impacts thoughout alignment.
•Operations	•No impact throughout alignment.	•No impact throughout alignment.	•No impact throughout alignment.	•No impact throughtout alignment.
Additional Studies Required	•Needs Addendum	•Needs EIR	•Needs EIR	
Impact on Project Implementation	•Can proceed earlier. Some preliminary engineering done. Requires only LACTC/RCC actions.	•Requires only LACTC/RCC actions.	•This alternative assumes an integrated system. Close interface with DOA is imperative. Schedule of DOA People Mover System (technology choice, capital funding) critical in determining actual schedule.	•This option assumes the implementation of Alternative 5 and is not expected to be built in the near term.

Notes:

1. Alternative 4 could have either Green Line technology all the way to Westchester Parkway or People Mover from Lot C to Westchester Parkway. Capital and O & M costs, as well as the preliminary operations plan, shown here assume the use of a People Mover. An additional $20 million in capital costs will be required to have an all-Green Line alignment. Additionally, if required, this could be included in the final preliminary operations plan.

2. The number of stations shown for each alignment does not include the Aviation station. That station, however, was included for estimating cost of the all-People Mover Alternative 5.

3. Capital and O & M costs for the Mitigated EIR alignment assume the operation of a 2-way "wye" at Aviation, adding a not-to-preclude cost of $2.4 million. Capital and O & M cost of Alternative 5 assume the operation of a grade - separated "wye" at Century Boulevard. Adjustments were made to earlier data to reflect these assumptions. Full construction is $28 million + 9 vehicles additional.

4. Peak trunk headways for Alternative 5 is 2.5 minutes resulting in headways of 5 minutes for CTA-bound trains and express trains (bypassing CTA) to Westchester Parkway. A CTA internal shuttle is included and would run at 5 minute headways.

5. @A = @Aviation Station
   @C = @Lot C Station
   None = No Transfer Necessary

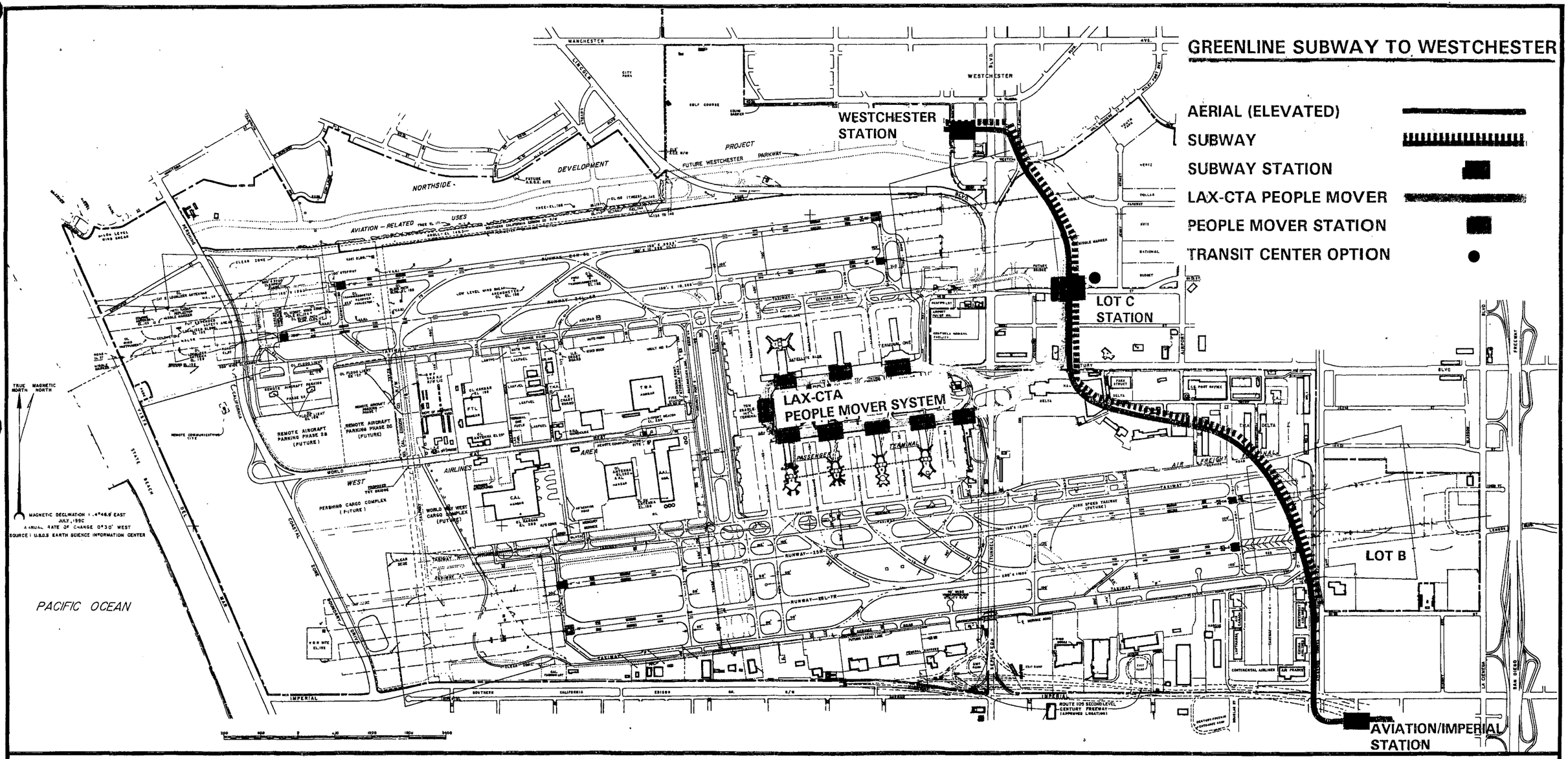
6. Alternative 5RG is not carried through further evaluation in Table 2.

LAX INTERAGENCY TRANSIT STUDY
EVALUATION OF ALIGNMENTS

TABLE 2. IMPACT BY SEGMENT

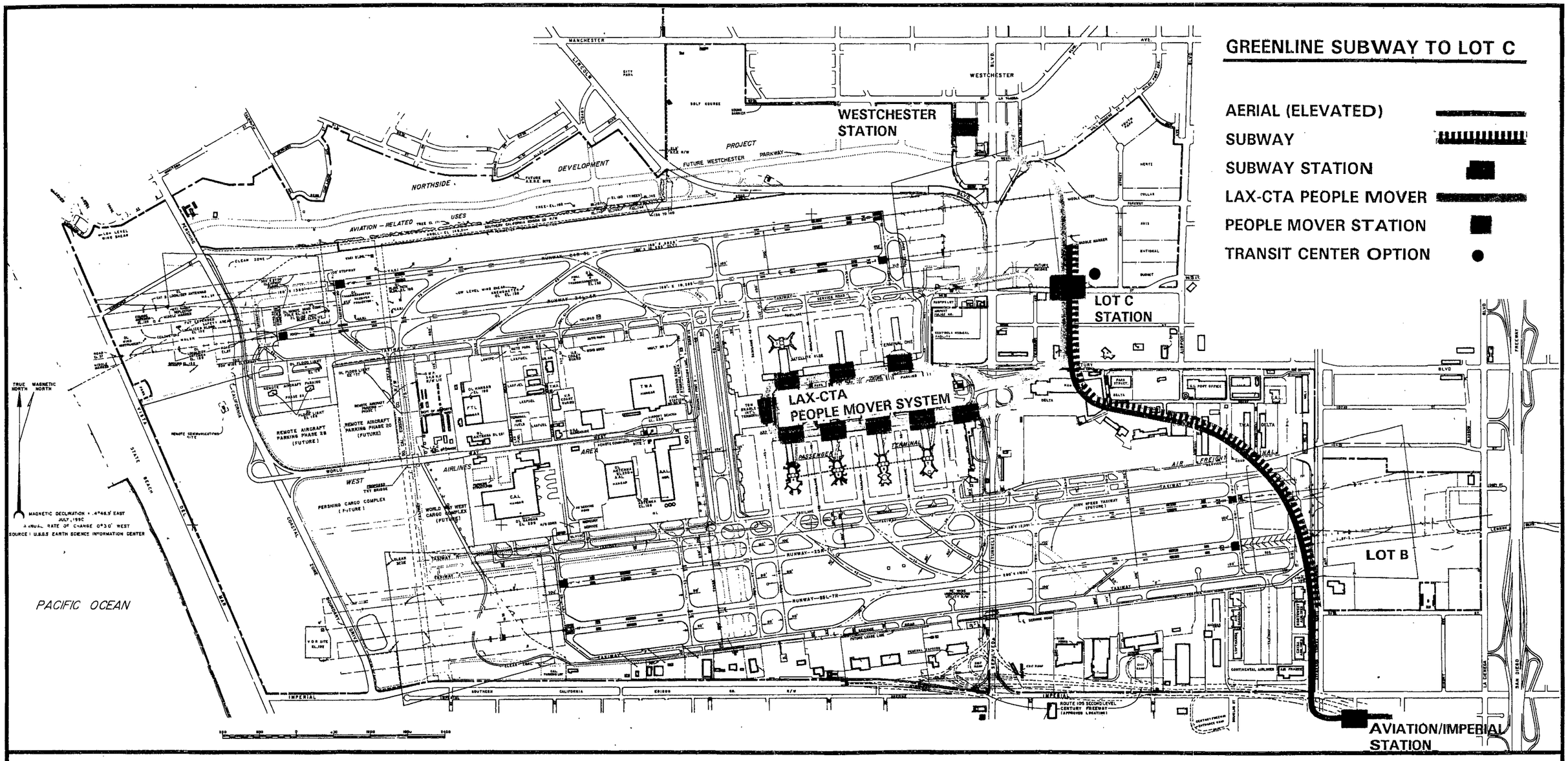
SEGMENTS/AREAS	MITIGATED EIR GREEN LINE	ALTERNATIVE 4	ALTERNATIVE 5
Aviation Design/Construction (Pre-revenue service)	•Impact on airport operations during construction minimized through special construction techniques (underground) and restrictive construction scheduling (nighttime). •Some Sante Fe right-of-way may be required.	•Impact on airport operations during construction minimized or eliminated through special construction techniques and restrictive construction scheduling (nighttime). •Extensive private right-of-way and commercial displacements required. •Serious alignment restrictions in Lot B and ROW restriction north of Lot B.	•Impact on airport operations during construction minimized or eliminated through special construction techniques and restrictive construction scheduling (nighttime). •Extensive private right-of-wayand commercial displacements required. •Serious alignment restrictions in Lot B and ROW restriction north of Lot B
Operations (Pre-revenue service)	•LRT alignment is underground throughout complete limits of Clear Zone - no visual conflicts or physical hazards for operating aircraft. •No penetration of 50:1 imaginary or 7:1 transitional surfaces. •No need to relocate localizer - no impact on airport air navigation aids. •No need to close or relocate 111th and/or 104th street. •No station at Lot B but access to the Metro Green Line can be provided efficiently and cost-effectively by a shuttle to Aviation. •Alignment works with either flyover or flat "wye".	•LRT alignment is aerial and located completely outside limits of Clear Zone. •No penetration of 50:1 imaginary or 7:1 transitional surfaces. •Impact on airport air navigation aids is similar to the north runway complex. •No need to close or relocate 111th and/or 104th street. •2 stations provided (Lot B and 102nd Street). •Alignment only works with flat "wye".	•People Mover alignment is aerial and located completely outside limits of Clear Zone. •No penetration of 50:1 imaginary or 7:1 transitional surfaces. •Impact on airport air navigation aids is similar to the north runway complex. •No need to close or relocate 111th and/or 104th street. •2 stations provided (Lot B and 102nd Street). •No "wye" needed.

SEGMENTS/AREAS	MITIGATED EIR GREEN LINE	ALTERNATIVE 4	ALTERNATIVE 5
Century			
Design/Construction	•No private right-of-way required.	•Major private right-of-way required along portions of Century (east of Aviation).	•Major private right-of-way required along portions of Century (east of Aviation.
Operations	•No impact on airport operations.	•No impact on airport operations.	•No impact on airport operations.
	•1 station provided (Century).	•1 station provided (Century).	•1 station provided (Century).
Century to Westchester Parkway			
Design/Construction	•Impact on airport operations during construction minimized through special construction equipment and restrictive construction scheduling (nighttime).	•Impact on airport operations during construction minimized through special construction equipment and restrictive construction scheduling (nighttime).	•Impact on airport operations during construction minimized through special construction equipment and restrictive construction scheduling (nighttime).
	•Some private right-of-way required.	•Some private right-of-way required if Green Line. Private right-of-way extensive if People Mover.	•Some private right-of-way required if Green Line. Private right-of-way extensive if People Mover.
		•Right-of-way required for yard site.	•Right-of-way required for yard site.
	•Transit (Green Line) can be built in Westchester Parkway without concurrent widening of existing street.	•Transit (Green Line or People Mover) can be built in Westchester Parkway without concurrent widening of existing street.	•People Mover can be built in Westchester Parkway without concurrent widening of existing street.
Operations	•Alignment partially in clear zone at far northeast corner.	•Alignment partially in clear zone at far northeast corner.	•Alignment partially in clear zone at far northeast corner.
	•Green Line catenary poles penetrate 50:1 imaginary and 7:1 transitional surfaces by maximum of 5' at far right edge of runway 24R. Other existing structures currently penetrate surfaces to greater degree and closer to centerline (extended) of runway.	•Alignment does not penetrate either or 50:1 imaginary or 7:1 transitional surfaces, if People Mover.	•Alignment does not penetrate either or 50:1 imaginary or 7:1 transitional surfaces.
	•Impact on airport air navigation aids is eliminated by raising three far field monitor antennas by 9' each.	•Impact on airport air navigation aids is similar to the Mitigated EIR alignment (i.e. eliminated by raising three far field monitor antennas).	•Impact on airport air navigation aids is similar to the Mitigated EIR alignment (i.e. eliminated by raising three far field monitor antennas).



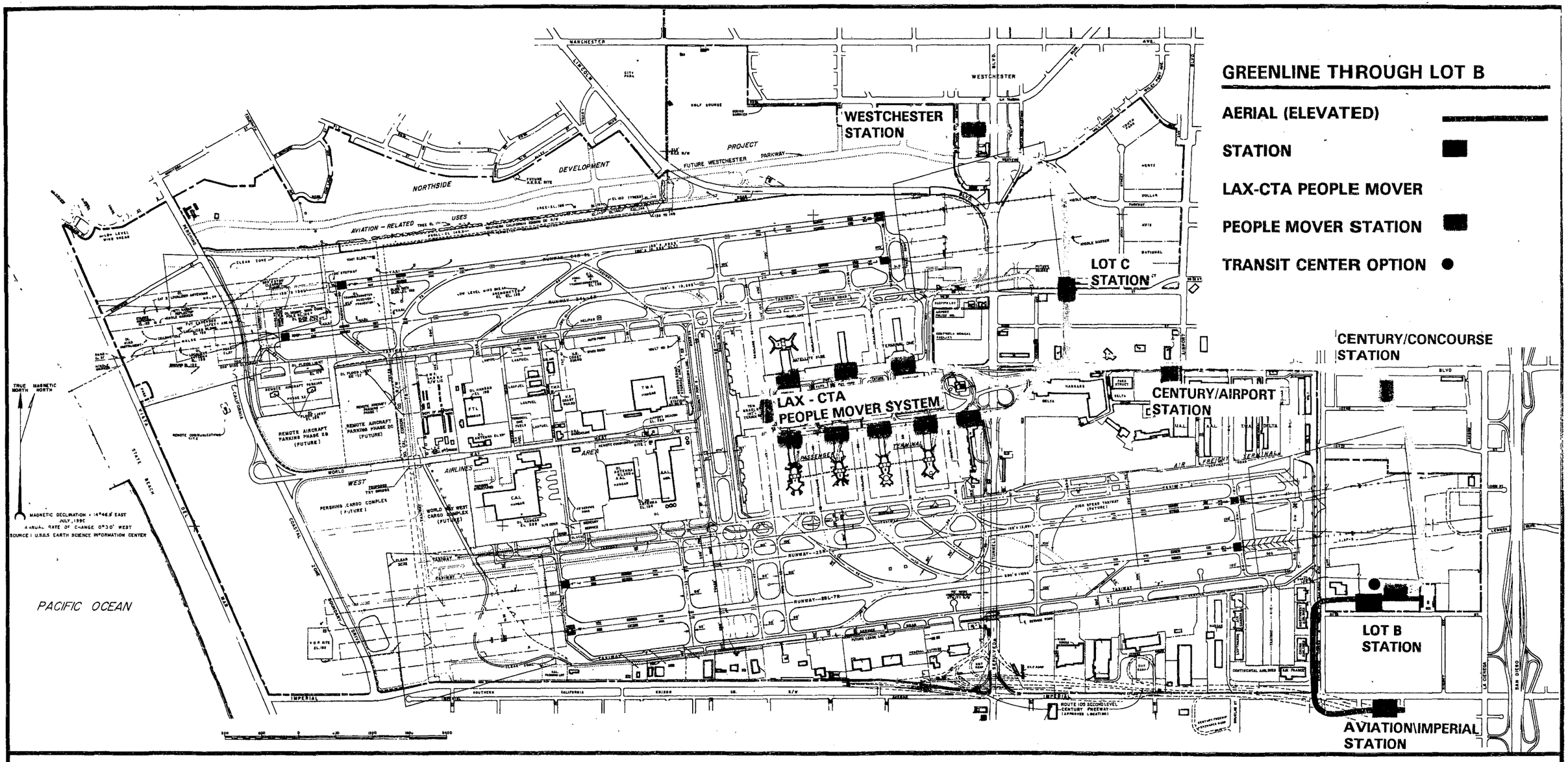
ALIGNMENT OPTION 1

10/17/91



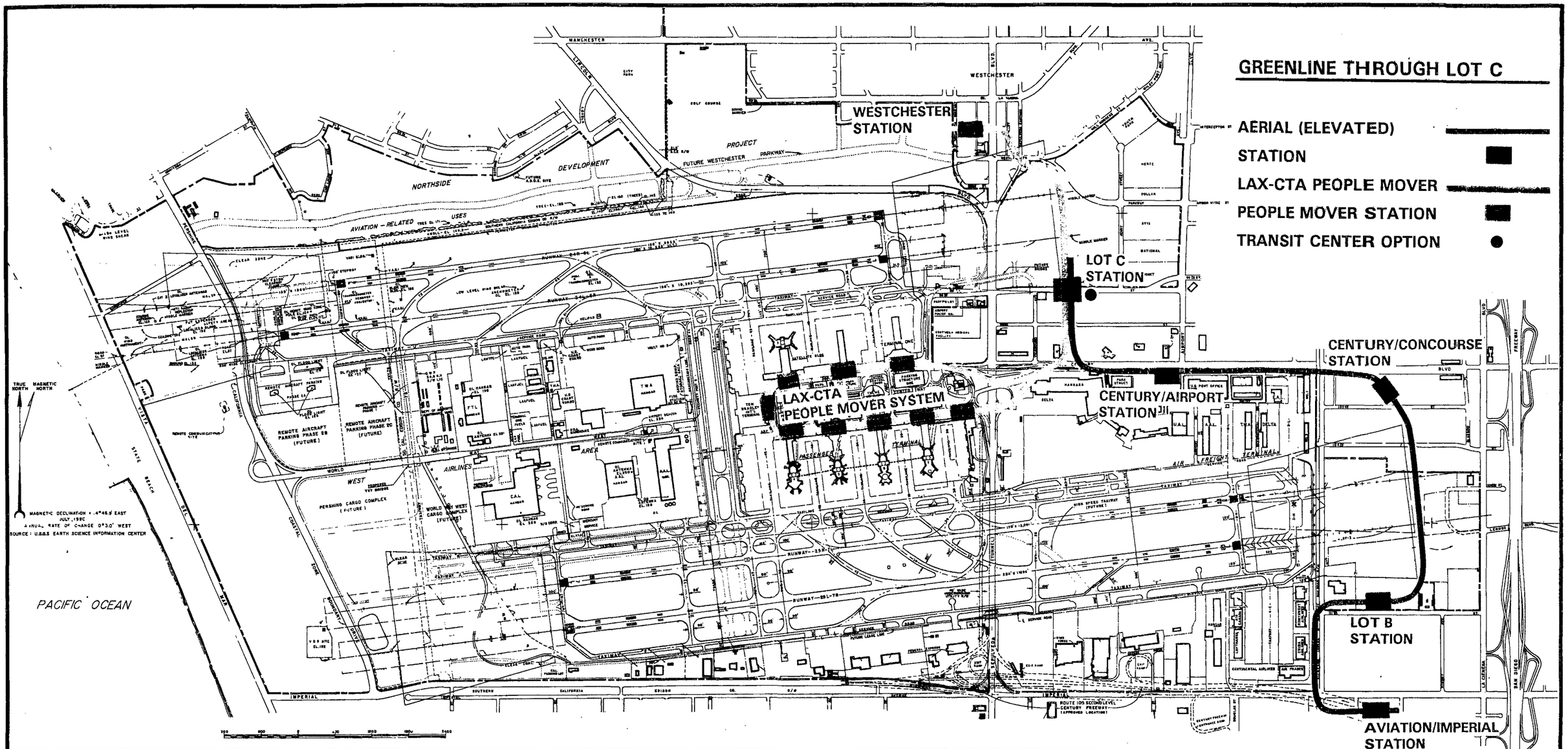
ALIGNMENT OPTION 2

10/17/91



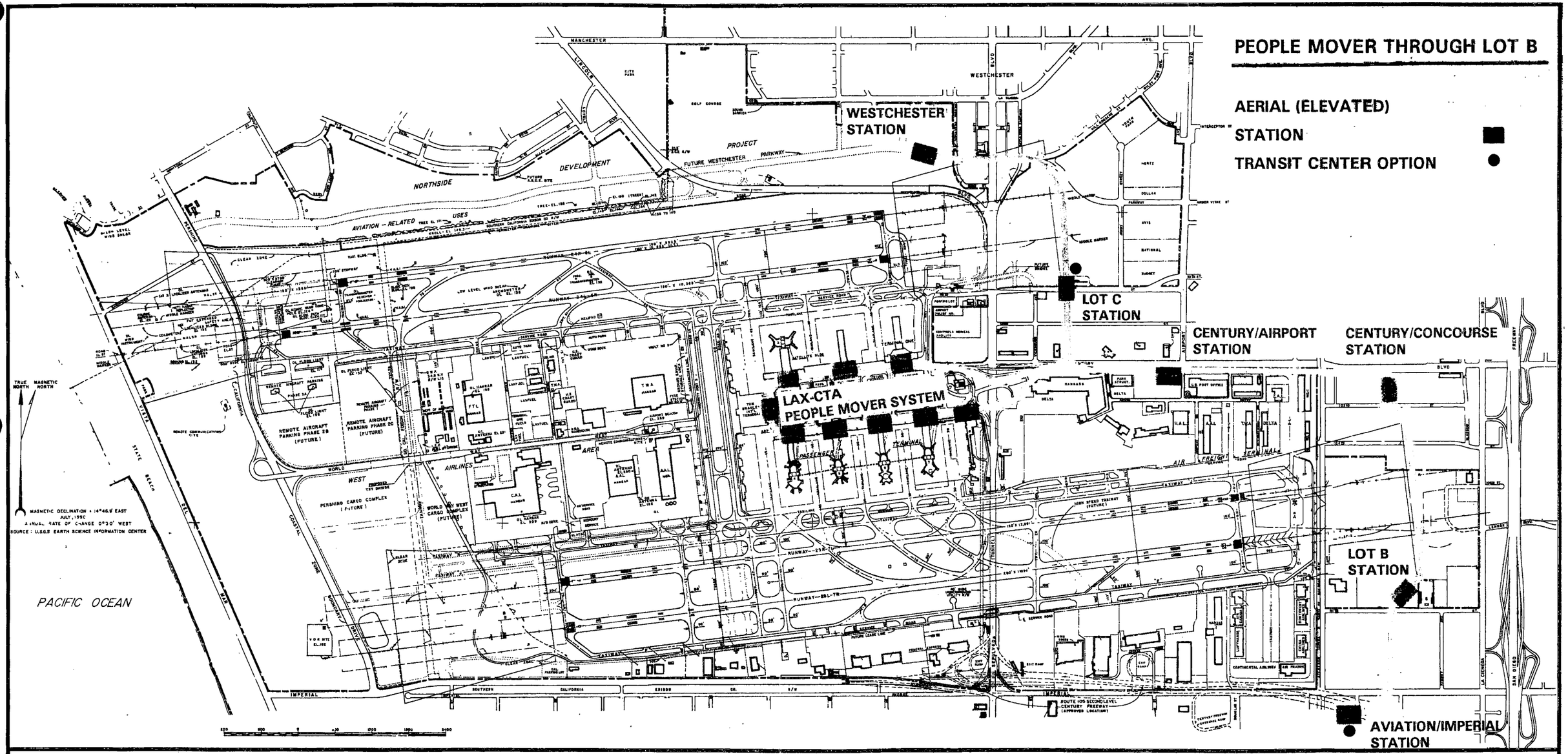
ALIGNMENT OPTION 3

10/8/91



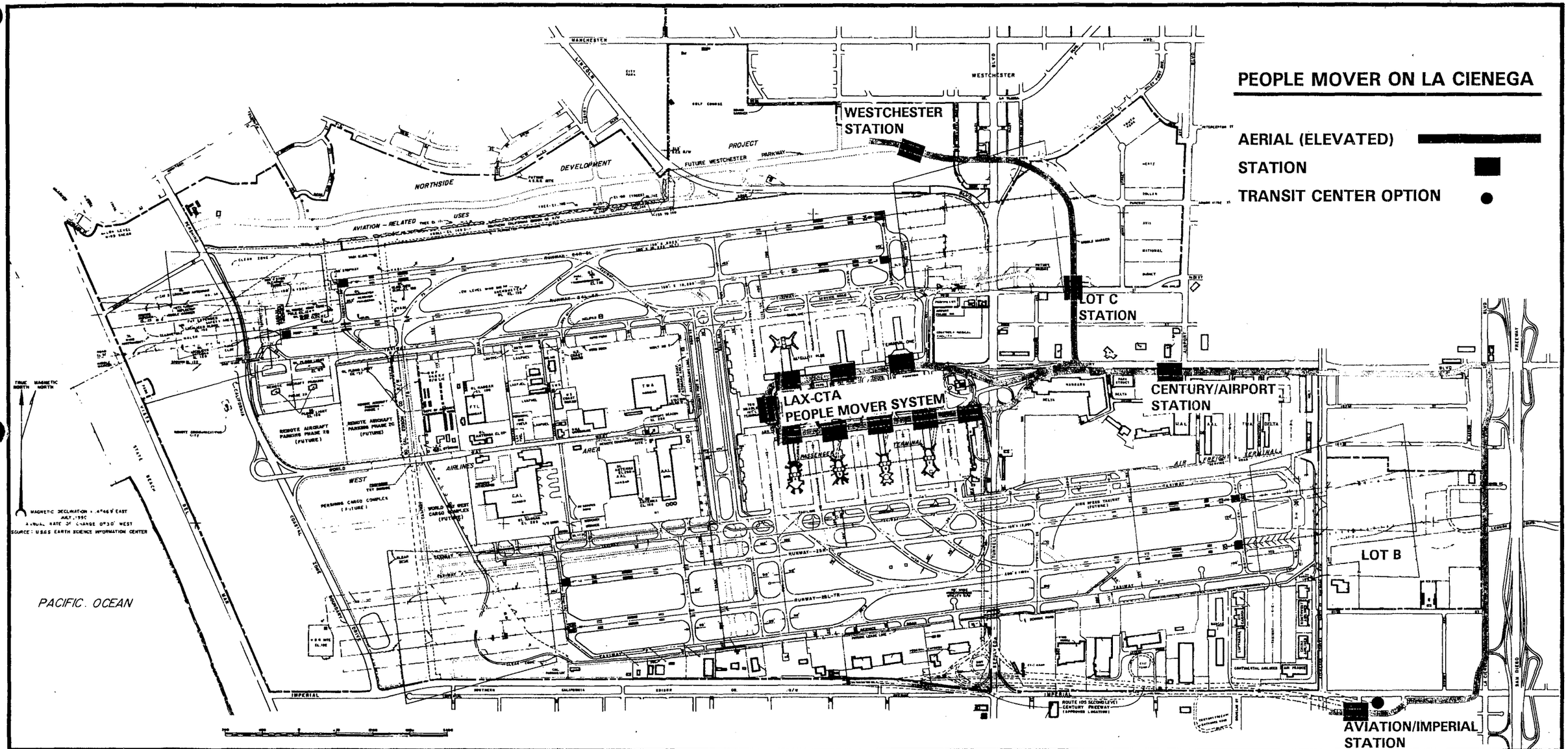
ALIGNMENT OPTION 4

10/8/91



ALIGNMENT OPTION 5

10/8/91



ALIGNMENT OPTION 6

10/21/91

FILING OF FAA FORM 7460-1

NOTICE OF PROPOSED CONSTRUCTION

METRO GREEN LINE PROJECT, NORTH RUNWAY COMPLEX

TABLE OF CONTENTS

		Page
1.	Introduction and Background	1
2.	Summary	2
3.	Project Description	3
	PROJECT SETTING	3
	OPERATIONAL CHARACTERISTICS	3
	NORTH RUNWAY COMPLEX PROTECTION ZONE IMPACTS	4
	Physical Description of Transit Guideway	4
	Existing Environment	5
	Airport Operational Impacts	5
	Construction	6
4.	Schedule for Filing Form 7460 for Entire Project	6
5.	Form 7460 for North Runway Complex	7

LIST OF EXHIBITS

Exhibit Number	Title
1	Regional Map
2	Northern Extension Segment Map
3	Conceptual Engineering Drawings
4	Existing Environment Plan
5	Draft Document entitled, Investigation of all Potential Negative Impacts on Landing Capability Due to Installation of the Metro Green Line at the East Boundary of the Los Angeles International Airport, by Dr. Richard McFarland, Ohio University, October 15, 1991. (Under separate cover).

LIST OF TABLES

Table Number	Title
1	Elevations of Existing Structures in North Runway Complex.
2	Location of Proposed Transit Structure in North Runway Complex

FILING OF FAA FORM 7460-1

NOTICE OF PROPOSED CONSTRUCTION

METRO GREEN LINE PROJECT, NORTH RUNWAY COMPLEX

1. INTRODUCTION AND BACKGROUND

The Los Angeles County Transportation Commission (LACTC) began developing its Rail Transit Implementation Strategy in 1983 to implement the Proposition A Rail Transit System. Early stages of the Rail Transit Implementation Strategy selected high-priority rail corridors, defined representative routes and modes within those corridors, and identified an operating plan.

In 1984, the Commission decided to undertake a route refinement study for the high priority Coast Route, now referred to as the Metro Green Line Northern Extension. This portion of the rail system is depicted on Exhibit 1, the Regional Map, and Exhibit 2, the Northern Extension Segment Map, depicting the transit guideway in the North Runway Complex.

Concurrent with the Commission's plan to undertake this study, the City of Los Angeles began a Coastal Corridor Specific Plan study, with the goal of recommending transportation improvements in the travel corridor encompassing the City of Los Angeles in the surrounds of Los Angeles International Airport. The Commission's route refinement study provided the City of Los Angeles with technical information for incorporation into the Specific Plan.

Furthering the rail development in this high priority corridor, the Commission conducted further route evaluation in 1988, and in August, 1989, certified a Final Environmental Impact Report that was prepared in accordance with the California Environmental Quality Act guidelines. The adopted route is referred to as the EIR alignment, and was previously submitted for Federal Aviation Administration (FAA) approval as Airspace Case Number 88-AWP-0350-NRA.

Initial preliminary engineering of the project ensued in 1990, and full preliminary engineering and detailed final design begin in January, 1991.

Because of FAA restrictions, the EIR alignment was called into question by the FAA in July, 1991. The Commission retained the services of Dr. Richard H. McFarland, Director Emeritus of the Avionics Center of Ohio University, and a national expert on electromagnetic interference, to review the EIR alignment and to respond to issues originally raised by the FAA. Design work was suspended, and an Interagency Task Force was formed to review alternative alignments and transit modes with the objectives of addressing FAA concerns, providing interface with the proposed LAX People Mover

Los Angeles
300-Mile Metro Rail Plan

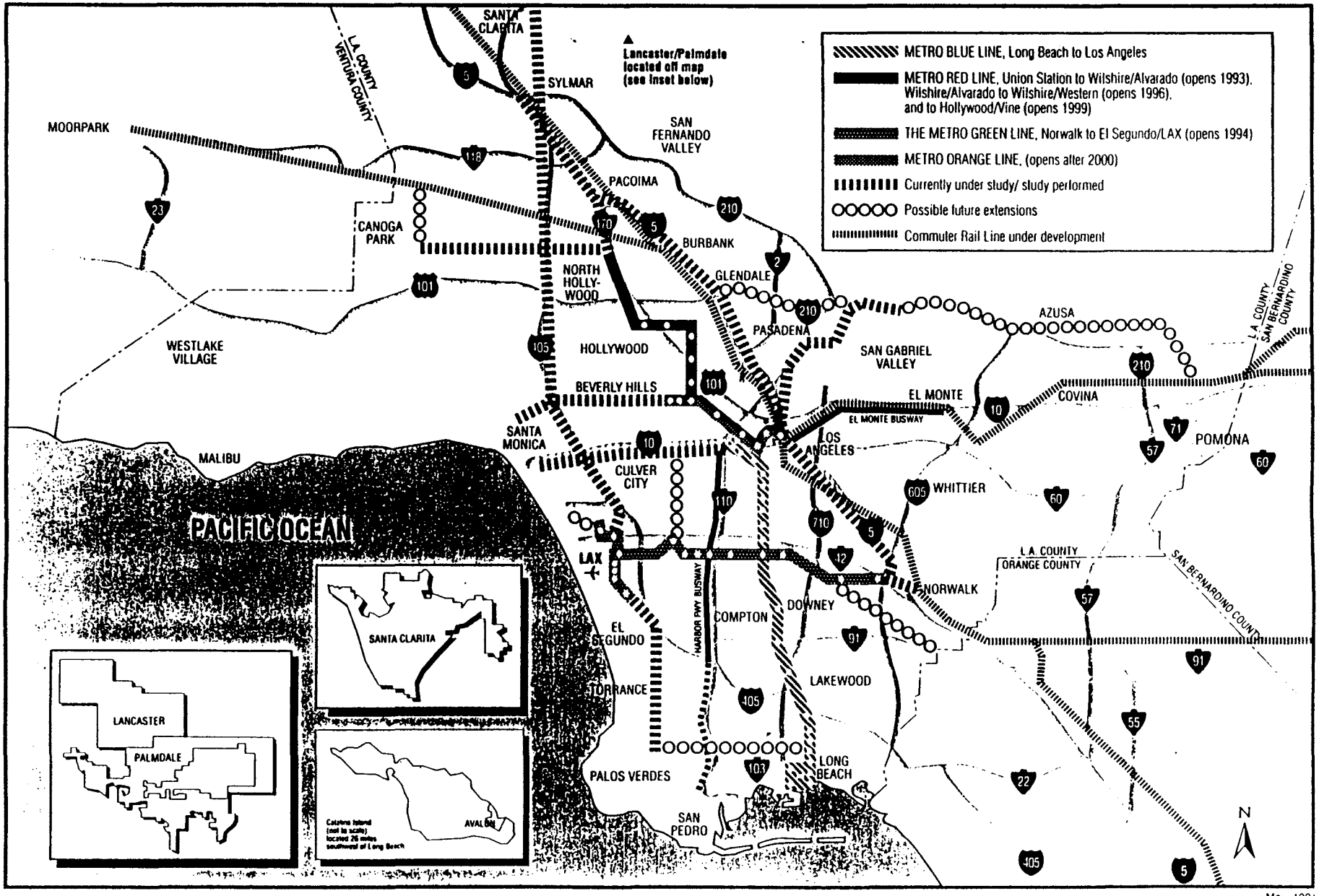
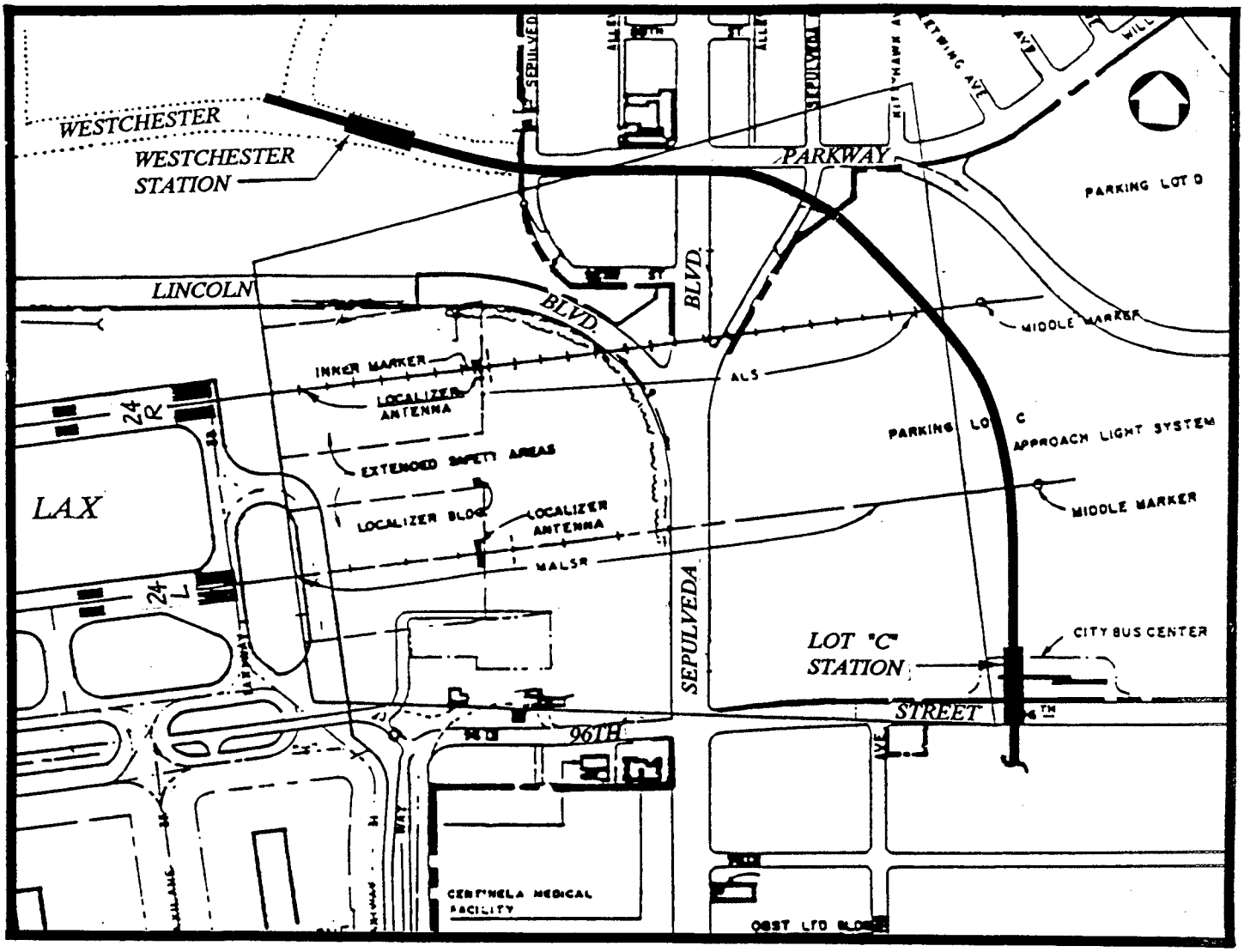


EXHIBIT # 1 - SHEET 1 OF 1

May 1991



METRO GREEN LINE
NORTHERN EXTENSION SEGMENT MAP

EXHIBIT # 2 - SHEET 1 OF 1

system, and interconnecting with the proposed LAX/Palmdale rail line.

The Interagency Task Force adopted a plan to request the FAA to accept a partial Form 7460 application for the portion of the Metro Green Line Northern Extension between 96th Street and the Westchester Business District, in the northeast corner of the Runway 24 Protection Zone. This portion of the alignment is common to all alternative routes under study (please refer to Exhibit 2, the Northern Extension Segment Map).

In a meeting on November 7, 1991, the FAA agreed to accept a partial Form 7460 application for this common portion of the route. Since the Runway Protection Zone contains land owned and managed by the Los Angeles Department of Airports (LADOA), it has been agreed that the LADOA will be the sponsoring agency.

2. SUMMARY

The Metro Green Line Northern Extension, is being developed in concert with the City of Los Angeles with the goal of solving regional transportation problems and also providing an alternative mode of access to LAX.

In response to issues raised by the FAA about the project, an Interagency Task Force was formed with the purpose of addressing FAA concerns. In addition, Dr. Richard H. McFarland of Ohio University was retained to review potential electromagnetic interferences.

It was agreed with the FAA that a partial Form 7460 would be accepted for the portion of the rail project proposed in the North Runway Complex that is common to all alternatives under consideration by the Interagency Task Force, and mostly occupying LADOA property.

The rail guideway in the North Runway Complex traverses the Runway Protection Zone. The Object Free Area and Object Free Zone are not affected. The transit guideway and vehicles stay below the 34:1 and 50:1 imaginary surface slopes. The overhead catenary poles penetrate the 50:1 imaginary surface slope at the very northern edge of the Runway Protection Zone, about the 600 feet from the center line of Runway 24R. This penetration is for less than 300 feet in the horizontal plane and does not exceed 5 feet vertically. Within this area, a number of permanent structures exist, and four of these existing structures penetrate the 50:1 imaginary surface slope. Of these four structures, two penetrate deeper and all four are located closer to Runway 24R than the transit guideway.

The electromagnetic interference study by Dr. McFarland discloses that this portion of the rail project only affects the three far-field monitors, which would simply be raised by about 8 feet to resolve the conflict. The study verified that FAA siting criteria for the middle markers are not violated.

When operational, the Metro Green Line will serve LAX and will contribute to the safe and efficient use of LAX and to the safety of persons and property on the ground by quickly moving patrons, by reducing traffic congestion, and by complementing LAX planning for the year 2000 and beyond.

3. PROJECT DESCRIPTION

PROJECT SETTING

The Los Angeles Metro Rail system is depicted on Exhibit 1. The system is currently undergoing various stages of planning, design, and construction.

The Metro Green Line is presently under construction between the cities of Norwalk and El Segundo. The portion under construction occupies the center of the Route 105 Freeway from Norwalk to near the intersection of Aviation and Imperial Boulevards, then continues southward through El Segundo to Marine Avenue.

The portion of the Green Line under review by the Interagency Task Force is the branch extending northward and westward from the bifurcation at Aviation/Imperial, known as the Northern Extension, and providing service to the LAX and Westchester areas, as shown in Exhibit 2.

The area being subjected to the Form 7460 process at this time, i.e., a partial Form 7460, is the northerly portion of the Northern Extension, beginning at 96th Street and terminating in the Westchester Business District near Sepulveda Westway, all within the North Runway complex. Stations are proposed to be located at Lot C near 96th Street, and in Westchester to the west of Sepulveda Westway in the median of Westchester Parkway.

OPERATIONAL CHARACTERISTICS

Operational statistics for the Green Line were developed from the year 2010 ridership forecasts prepared by the Southern California Association of Governments.

The operating plan specifies fully automated trains operating on aerial guideway at approximate 4 minute headways at peak hours. The trains would be of short consists of one or two cars initially, with ultimate expansive capability to three cars. Each car would provide seating for 76 passengers.

Trains would operate between 35 and 45 mph in this portion of the route. Daily boardings would be approximately 1,000 to 1,500 at Westchester Station and from 28,000 to 32,000 at Lot C Station.

The power is supplied to the vehicles from a wayside distribution equipment through an overhead contact system. Contact is made through a pantograph collector. The nominal rated voltage output will be 750 Volts direct current at 100% load.

NORTH RUNWAY COMPLEX PROTECTION AREA IMPACTS

The North Runway Protection Zone is traversed by the portion of rail transit guideway that is the subject of this Form 7460 application.

Physical Description of Transit Guideway

As depicted on the attached drawings included as Exhibit 3, Conceptual Engineering Drawings, and numbered F-CE-209, 210, 211, and 212, the centerline of the aerial guideway alignment crosses 96th Street (where the Lot C Station is proposed to be constructed) approximately 75 feet east of the southeast corner of the Runway Protection Zone for Runway 24 Complex and proceeds northerly on a bearing of approximately N 0°02'41" W. Curving northwesterly in Lot C, the Runway 24 Protection Zone is entered at civil engineering station 423 + 76, and the centerline of Runway 24R is intersected at civil engineering station 425 + 09.

Continuing northwesterly on a bearing of approximately N 46°30'0" W, the guideway curves westerly as Sepulveda Eastway is crossed approximately 150 feet south of Westchester Parkway, and becomes approximately parallel to and superimposed upon the south curb line of the existing Westchester Parkway. Continuing westerly, the guideway crosses from beneath the Runway Protection Zone between Sepulveda Boulevard and Sepulveda Westway, and temporarily terminates at Westchester Station, which is proposed to be constructed at the intersection of Westchester Parkway and La Tiejra Boulevard.

The vertical alignment places the top of rail approximately 23.5 feet above the existing ground line in the area. Detailed elevations and latitude/longitude are provided in Table 2 at key points along the highest elevation of the guideway structure, which is the top of the catenary poles.

The alignment geometry describes the northbound track. The key points and elevations are provided for both the northbound and southbound tracks. The southbound tracks are nearest to the runways, and therefore contain the highest elevations in the area where the 50:1 imaginary surface slope is penetrated. The 50:1 slopes shown on the drawings attached as Exhibit 3 were calculated utilizing end of runway pavement elevations as depicted on LADOT Drawing 88 000-200A, Sheet 4 of 4, Los Angeles International Airport Approach and Clearzone Layout, dated August 3, 1987, and from end of runway coordinates provided by LADOA Engineering. Those elevations are stated as 111.00 for Runway 24L and 116.80 for Runway 24R.

Just west of Sepulveda Boulevard for less than 300 feet there is a penetration into the 50:1 slope by several feet near the north edge of the protection zone. The maximum penetration is about 5 feet. In no event is the 34:1 slope penetrated.

Existing Environment

As shown on Exhibit 4, Existing Environment Plan, several structures, including billboards and buildings, are located in the northeast corner of the Runway Protection Zone, which is the area traversed by the transit guideway.

The structures are identified by number on the attached plan and described by type and top of structure elevation in the accompanying table. Four billboards located near Sepulveda Boulevard penetrate the 50:1 imaginary surface slope (the American Airlines sign, Reference Point 237, penetrates by almost 16 feet at a distance of 200 feet from the center line of Runway 24R), and the Delta Building substantially encroaches into the 7:1 transitional surface at the edge of the runway protection zone. Please refer to Reference Point Numbers 223, 237, 309, 414, 416, 418, 420 and 444 on Table 1, which compares top of structure elevations to slope elevations.

Several existing commercial buildings housing employees and customers in sizable numbers are located in this area within the Runway Protection Zone. These facilities are shown on Exhibit 4 and listed in Table 1.

In addition to the above tabulation of existing structures in the area, it is our understanding that a city ordinance permits construction of permanent facilities up to 45 feet above existing grade, which would penetrate the 50:1 slope by approximately 8 to 12 feet at the southwest quadrant of the Westchester Parkway/Sepulveda Boulevard intersection.

Airport Operational Impacts

An investigation was conduced to determine if any negative impacts on airport operations might result from construction and operation of the Metro Green Line. This investigation was carried out by Dr. Richard McFarland of Ohio University. We have forwarded to FAA under separate cover his October 15, 1991, draft report entitled: "Investigation of All Potential Negative Impacts On Landing Capability Due to Installation of the Metro Green Line At The East Boundary Of The Los Angeles International Airport". It is our understanding that this report was informally coordinated with the FAA Regional Office.

The segment of the rail project included in this partial submission is essentially common to all the alignment options. Dr. McFarland's report specifically addresses the original EIR alignment and transit mode, which receives power through an overhead contact system. If the final system were to be powered from a third rail or other guideway level system, the

TABLE 2: LOCATION OF PROPOSED TRANSIT STRUCTURE IN NORTH RUNWAY COMPLEX

POINT NO.	DESCRIPTION	STATION	COORDINATES		LATITUDE	LONGITUDE	TOP OF RAIL ELEV-ATION	OVERHEAD CATENARY SYSTEM ELEVATION	50:1 SLOPE ELEV	EXSTNG STREET/ GROUND ELEV	NOTES:
			NORTHING	EASTING							
1	C/L S/B @ END OF 24L CLEAR ZONE	423 + 76.72	95,185.701	168,855.610	33°57'09.60"	118°23'31.73"	132.17	148.17	161.00	108.30	
2	C/L S/B @ C/L OF SEPULVEDA EASTWAY	431 + 19.47	95,706.500	168,330.950	33°57'14.75"	118°23'37.97"	132.80	148.80	157.63	106.00	
3	C/L S/B @ C/L OF SEPULVEDA BOULEVARD	435 + 98.67	95,844.360	167,901.710	33°57'16.11"	118°23'43.06"	131.52	147.52	149.44	107.50	
4	C/L S/B @ RIGHT EDGE 24R CLEAR ZONE	440 + 00.32	95,830.170	167,500.300	33°57'15.96"	118°23'47.83"	130.30	146.30	141.46	108.00	
5	C/L S/B @ BEGIN WESTCHESTER STATION	447 + 19.30	95,902.060	166,783.460	33°57'16.67"	118°23'56.34"	131.66	147.66	165.84	106.70	(1)(2)
6	C/L S/B @ END WESTCHESTER STATION	449 + 89.30	95,959.880	166,619.190	33°57'17.24"	118°23'59.47"	132.25	148.25	179.19	105.60	(1)(2)
7	C/L N/B @ END OF 24L CLEAR ZONE	424 + 02.37	95,215.070	168,852.030	33°57'09.89"	118°23'31.78"	132.41	148.41	161.00	107.60	
8	C/L N/B @ C/L OF SEPULVEDA EASTWAY	431 + 27.88	95,723.530	168,335.250	33°57'14.91"	118°23'37.92"	132.73	148.73	157.75	106.00	
9	C/L N/B @ C/L OF SEPULVEDA BOULEVARD	435 + 98.19	95,859.360	167,901.660	33°57'16.25"	118°23'43.06"	131.52	147.52	149.43	107.50	
10	C/L N/B @ RIGHT EDGE 24R CLEAR ZONE	439 + 37.67	95,847.373	167,562.383	33°57'16.13"	118°23'47.09"	130.51	146.51	142.73	108.00	
11	C/L N/B @ BEGIN WESTCHESTER STATION	447 + 19.30	95,937.330	166,790.650	33°57'17.02"	118°23'56.25"	131.66	147.66	170.37	106.60	(1)(2)
12	C/L N/B @ END WESTCHESTER STATION	449 + 89.30	95,995.060	166,626.850	33°57'17.57"	118°23'59.38"	132.71	148.71	183.72	105.50	(1)(2)
13	C/L S/B @ C/L OF RUNWAY 24R	425 + 21.02	95,294.370	168,763.560	33°57'10.67"	118°23'32.83"	132.25	148.25	165.22	106.10	
14	C/L S/B @ C/L OF SEPULVEDA WESTWAY	441 + 94.91	95,823.230	167,305.240	33°57'15.89"	118°23'50.14"	130.88	146.88	145.61	107.00	(2)
15	C/L N/B @ C/L OF RUNWAY 24R	425 + 09.86	95,296.630	168,782.080	33°57'10.69"	118°23'32.61"	132.70	148.70	165.59	106.10	
16	C/L N/B @ C/L OF SEPULVEDA WESTWAY	441 + 96.58	95,840.450	167,303.130	33°57'16.06"	118°23'50.17"	130.88	146.88	148.09	107.00	(2)
17	C/L S/B @ RIGHT EDGE 24L CLEAR ZONE	427 + 09.11	95,424.599	168,628.889	33°57'11.96"	118°23'34.43"	133.18	149.18	157.08	107.80	
18	C/L N/B @ RIGHT EDGE 24L CLEAR ZONE	427 + 00.09	95,429.273	168,645.757	33°57'12.00"	118°23'34.23"	133.15	149.15	157.42	107.80	

NOTES: (1) REFLECTS STREET ELEVATION OF FUTURE WESTCHESTER PARKWAY.
(2) 7:1 TRANSITIONAL SLOPE APPLIES.

PLEASE REFER TO EXHIBIT 3, CONCEPTUAL ENGINEERING DRAWINGS

LEFT EDGE OF CLEAR ZONE FOR RUNWAY 24L

LIMIT OF CLEAR ZONE FOR RUNWAY 24L

LEFT EDGE OF CLEAR ZONE FOR RUNWAY 24R

LIMIT OF CLEAR ZONE FOR RUNWAY 24L AND 24R

℄ RUNWAY 24L

PARKING LOT "C"

"LOT "C" STATION"

℄ SOUTHBOUND TRACKS

℄ NORTHBOUND TRACKS

MATCH LINE 409+00 SEE DWG. CE-1108 (C1001)

MATCH LINE 420+00 SEE DWG. F-CE-210

96TH STREET

RTD BUS STATION

MIDDLE MARKER

TS 415+56.46

SC 416+56.46

4160

3160

PLAN
SCALE : 1" = 50'

LIMIT OF OVERHEAD CATENARY SYSTEM (TYP.)

TOP OF RAIL (TYP.)

16.00' (TYP.)

-0.30%

T/R NORTHBOUND TRACK

EXIST. GROUND

PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 10'

VERTICAL GRAPHIC SCALE

HORIZONTAL GRAPHIC SCALE

DESIGNED BY	G. Anderson
DRAWN BY	Anil Shah
CHECKED BY	
APPROVED BY	G. Anderson
DATE	20NOV01

Information contained in plans, drawings, specifications, and/or information furnished herewith shall remain the property of the Los Angeles County Transportation Commission and shall not be used for any purpose not provided for in agreements with the Los Angeles County Transportation Commission.

LOS ANGELES COUNTY TRANSPORTATION COMMISSION
Metro Green Line - North Coast Segment

BECHTEL CORPORATION

SUBMITTED: _____

TRANSIT CONSULTANTS OF SOUTHERN CALIFORNIA

APPROVED _____

CONCEPTUAL ENGINEERING DRAWING
96TH ST. TO WESTCHESTER
PLAN & PROFILE
STA 409+00 TO STA 420+00

CONTRACT NO.	C1005
DRAWING NO.	F-CE-209
REV.	
SHEET NO.	7460 - 1
SCALE	AS SHOWN

MATCH LINE 420+00 SEE DWG. F-CE-209

4160

3160

LIMIT OF CLEAR ZONE FOR RUNWAY 24L AND 24R

℄ RUNWAY 24R

STA 423+76.72
ELEV. 161.00
N 95,185.701
E 168,855.610
1

STA 425+21.02
ELEV. 165.22
N 95,294.370
E 168,763.560
13

STA 427+09.11
ELEV. 157.08
N 95,424.599
E 168,628.889
17

RIGHT EDGE OF CLEAR ZONE FOR RUNWAY 24L

℄ SOUTHBOUND TRACKS

STA 431+19.47
ELEV. 157.63
N 95,706.500
E 168,330.950
2

SEPULVEDA BLVD.

SEE DWG. F-CE-211

434+00

435+00

CS 434+46.19

MATCH

3170

4170

425+00

CS 425+29.41

ST 426+29.41

430+00

STA 424+02.37
ELEV. 161.00
N 95,215.070
E 168,852.030
7

STA 425+09.86
ELEV. 165.59
N 95,296.630
E 168,782.080
15

STA 427+00.09
ELEV. 157.42
N 95,429.273
E 168,645.757
18

℄ NORTHBOUND TRACKS

TS 430+80.70

SC 432+10.70

STA 431+27.88
ELEV. 157.75
N 95,723.530
E 168,335.250
8

SEPULVEDA

PARKWAY

WESTCHESTER

EASTWAY

RIGHT EDGE OF CLEAR ZONE FOR RUNWAY 24R

NOTES:

PLEASE REFER TO TABLE # 2 FOR LOCATIONS AND ELEVATIONS

(2) -LOCATION / ELEVATION REFERENCE POINT (REFER TABLE # 2)

PLAN
SCALE 1" = 50'

RUNWAY 24L ← → RUNWAY 24R

50 : 1 GLIDE SLOPE

LIMIT OF OVERHEAD CATENARY SYSTEM (TYP.)

TOP OF RAIL (TYP.)

EXIST. GROUND

0.30%

0.30%

Sta 419+00.00
Elev 142.17

Sta 408+33.33
Elev 133.78

160
150
140
130
120
110
100

MATCH LINE 420+00 SEE DWG. F-CE-209

MATCH LINE 434+00 SEE DWG. F-CE-211

420+00

425+00

430+00

PROFILE
SCALE HORIZ. 1" = 50'
VERT. 1" = 10'

VERTICAL GRAPHIC SCALE

HORIZONTAL GRAPHIC SCALE

REV.	DATE	DESCRIPTION	BY	APP

DESIGNED BY G. Anderson
DRAWN BY Anil Shah
CHECKED BY
APPROVED BY G. Anderson
DATE 20NOV91

LOS ANGELES COUNTY TRANSPORTATION COMMISSION
Metro Green Line - North Coast Segment

BECHTEL CORPORATION

TRANSIT

SUBMITTED:

APPROVED:

CONCEPTUAL ENGINEERING DRAWING
96TH ST. TO WESTCHESTER
PLAN & PROFILE
STA 420+00 TO STA 434+00

CONTRACT NO. C1005
DRAWING NO. F-CE-210
REV.
SHEET NO. 7460 - 2
SCALE AS SHOWN

BLDG. TO BE DEMOLISHED

MATCH LINE 434+00 SEE DWG. F-CE-210

MATCH LINE 448+00 SEE DWG. F-CE-212

STA 435+98.67
ELEV. 149.44
N 95,844.360
E 167,901.710
3

STA 440+00.32
ELEV. 141.46
N 95,830.170
E 167,500.30
4

RIGHT EDGE OF CLEAR ZONE FOR RUNWAY 24R

STA 441+94.91
ELEV. 145.61
N 95,823.230
E 167,305.240
14

STA 447+19.30
ELEV. 165.84
N 95,902.060
E 166,783.460
5

WESTCHESTER STATION

℄ SOUTHBOUND TRACKS

℄ NORTHBOUND TRACKS

WESTCHESTER PARKWAY ROAD

WESTWAY

SEPULVEDA BLVD.

SEPULVEDA

UNDER CONSTRUCTION

4180

3180

435+00

440+00

445+00

CS 434+46.19

ST 435+76.19

TS 440+86.98

SC 442+16.98

CS 442+78.56

ST 444+08.56

STA 435+98.19
ELEV. 149.43
N 95,859.360
E 167,901.660
9

STA 439+32.67
ELEV. 142.73
N 95,847.373
E 167,562.383
10

STA 441+96.58
ELEV. 148.09
N 95,840.450
E 167,303.130
16

STA 447+19.30
ELEV. 170.37
N 95,937.330
E 166,790.650
11

UPPER ASPH. PARKING

PARKING LOT

BLDG.

ASPH.

CB

MH

E 4,167,500

E 4,167,250

E 4,167,000

E 4,166,750

N 4,095,750

N 4,096,000

N 4,096,250

NOTES:

PLEASE REFER TO TABLE # 2 FOR LOCATIONS AND ELEVATIONS

(2) *-LOCATION / ELEVATION REFERENCE POINT (REFER TABLE # 2)*

PLAN

SCALE : 1" = 50'

RUNWAY 24R 50 : 1 GLIDE SLOPE

50 : 1 GLIDE SLOPE 7 : 1 TRANSITIONAL SLOPE

STA 439+99.00 ELEV 135.60

STA 443+55.00 ELEV 130.28

TOP OF RAIL (TYP)

EXIST. GROUND

0.30 %

0.30 %

0.2+ %

16.00' (TYP)

LIMIT OF OVERHEAD CATENARY SYSTEM (TYP)

WESTCHESTER STATION

MATCH LINE 434+00 SEE DWG. F-CE-210

MATCH LINE 448+00 SEE DWG. F-CE-212

160
150
140
130
120
110
100

435+00

441+00

445+00

PROFILE

SCALE: HORIZ. 1" = 50'
VERT. 1" = 10'

0 10 20 50 0 50 100
1"=10' VERTICAL GRAPHIC SCALE
1"=50' HORIZONTAL GRAPHIC SCALE

DESIGNED BY	G. Anderson
DRAWN BY	Anil Shah
CHECKED BY	
APPROVED BY	G. Anderson
DATE	

LOS ANGELES COUNTY TRANSPORTATION COMMISSION
Metro Green Line - North Coast Segment

BECHTEL CORPORATION

TRANS

CONCEPTUAL ENGINEERING DRAWING
96TH ST. TO WESTCHESTER
PLAN & PROFILE
STA 434+00 TO STA 448+00

CONTRACT NO.	C1005
DRAWING NO.	F-CE-211
REV.	SHEET NO. 7460 - 3
SCALE	AS SHOWN

SEE DWG. F-CE-211

MATCH LINE 448+00

WESTCHESTER STATION

STA 449+89.30
ELEV. 179.19
N 95,959.880
E 166,519.190
6

STA 449+89.30
ELEV. 183.72
N 95,995.060
E 166,526.850
12

UNDER CONSTRUCTION

WESTCHESTER

PARKWAY

AVENUE

EMERSON

MATCH LINE 462+00

SEE DWG. F-CE-213

PLAN
SCALE : 1" = 50'

NOTES:

PLEASE REFER TO TABLE # 2 FOR LOCATIONS AND ELEVATIONS

(2) *-LOCATION / ELEVATION REFERENCE POINT (REFER TABLE # 2)*

7 : 1 TRANSITIONAL SLOPE

WESTCHESTER STATION

LIMIT OF OVERHEAD CATENARY SYSTEM (TYP.)

TOP OF RAIL (TYP.)

EXIST. GROUND

16.00' (TYP.)

0.24 Z

PROFILE
SCALE : HORIZ. 1" = 50'
VERT. 1" = 10'

VERTICAL GRAPHIC SCALE

HORIZONTAL GRAPHIC SCALE

DESIGNED BY	G. Anderson
DRAWN BY	Anil Shah
CHECKED BY	
APPROVED BY	G. Anderson
DATE	20NOV91

LOS ANGELES COUNTY TRANSPORTATION COMMISSION
Metro Green Line - North Coast Segment

BECHTEL CORPORATION

SUBMITTED: _____

APPROVED: _____

CONCEPTUAL ENGINEERING DRAWING
96TH ST. TO WESTCHESTER

PLAN & PROFILE
STA 448+00 TO STA 462+00

CONTRACT NO.	C1005
DRAWING NO.	F-CE-212
REV.	
SHEET NO.	7460 - 4
SCALE	AS SHOWN

7 : 1 SLOPE EL. - 172.9
TOP OF BLDG. EL. - 189.8
PENETRATION = 16.9 FEET

7 : 1 SLOPE EL. - 158.5
TOP OF BLDG. EL. - 186.4
PENETRATION = 27.9 FEET

50 : 1 SLOPE EL. - 174.9
TOP OF SIGN EL. - 218.0
PENETRATION = 43.1 FEET

7 : 1 SLOPE EL. - 154.1
TOP OF BLDG. EL. - 172.1
PENETRATION = 18.0 FEET

50 : 1 SLOPE EL. - 150.3
TOP OF SIGN EL. - 154.9
PENETRATION = 4.6 FEET

50 : 1 SLOPE EL. - 144.5
TOP OF SIGN EL. - 147.5
PENETRATION = 3.0 FEET

50 : 1 SLOPE EL. - 147.2
TOP OF SIGN EL. - 159.6
PENETRATION = 12.4 FEET

50 : 1 SLOPE EL. - 150.2
TOP OF SIGN EL. - 166.0
PENETRATION = 15.8 FEET

SEPULVEDA WESTWAY

BLVD.

EASTWAY

SEPULVEDA

WESTCHESTER PARKWAY

OFFICE BLDG.

LIBRARY

RIGHT EDGE OF CLEAR ZONE FOR RUNWAY 24R

LIMIT OF CLEAR ZONE FOR RUNWAY 24R

℄ NORTHBOUND TRACK

℄ SOUTHBOUND TRACK

RIGHT EDGE OF CLEAR ZONE FOR RUNWAY 24L

LIMIT OF CLEAR ZONE FOR RUNWAY 24L 24R

℄ RUNWAY 24R

414 416 418 420 113 125 126 131 503 502 301 305 501 212 223 310 309 444 237 241 422

NOTES:

ALL ELEV. SHOWN IN EACH EXHIBIT AND TABLES ARE ABOVE MEAN SEA LEVEL

(101) - ELEVATION REFERENCE POINT (REFER TABLE #1)

0 50 100
GRAPHIC SCALE

REV.	DATE	DESCRIPTION	BY	APP

Information contained on all plans, drawings, specifications, project estimates furnished herewith shall remain the property of the Los Angeles County Transportation Commission; shall be held confidential; and shall not be used for any purpose not promised for in agreements with the Los Angeles County Transportation Commission.

DESIGNED BY G. ANDERSON
DRAWN BY ANIL SHAH
CHECKED BY
APPROVED BY G. ANDERSON
DATE 22 NOV 91

LACTC LOS ANGELES COUNTY TRANSPORTATION COMMISSION
Metro Green Line - North Coast Segment

BECHTEL CORPORATION
SUBMITTED:

TRANSCAL Transit Consultants of Southern California
APPROVED:

EXISTING ENVIRONMENT PLAN

(PLEASE REFER TO TABLE # 1 FOR VERTICAL DATA)

CONTRACT NO. C1005
DRAWING NO. F-CE-211A
REV.
SHEET NO. 7460-5
SCALE 1" = 50'

EXHIBIT # 4 - SHEET 1 OF 1

TABLE 1: ELEVATIONS OF EXISITING STRUCTURES IN NORTH RUNWAY COMPLEX

TYPE	NAME OR DESCRIPTION	STREET ADDRESS (IF APPLICABLE)	REFERENCE POINT	ELEVATION (HIGHEST POINT)	APPROX ELEV. OF 50:1 SLOPE AT THIS POINT	ENCROACHMENT (FEET)	NOTES
BLDG	AIRPORT OFFICE CENTER ("DELTA BLDG")	8939 SEPULVEDA BLVD	420	172.1	154.1	18.0	(1)(3)
BLDG	DELTA BLDG "HEADHOUSE"	8939 SEPULVEDA BLVD	418	186.4	158.5	27.9	(1)(3)
BLDG	DELTA BLDG "HEADHOUSE"	8939 SEPULVEDA BLVD	416	189.8	172.9	16.9	(1)(3)
SIGN	"J & B SCOTCH" SIGN ATOP DELTA BLDG	8929 SEPULVEDA BLVD	414	218.0	174.9	43.1	(1)(3)
BLDG	BANK OF AMERICA BLDG	8946 SEPULVEDA BLVD	125	130.0	153.7		
BLDG	BANK OF AMERICA "HEADHOUSE"	8946 SEPULVEDA BLVD	126	144.4	152.4		
BLDG	BANK OF AMERICA BLDG A.C. UNIT	8946 SEPULVEDA BLVD	131	134.7	153.5		
SIGN	"INTROSPECT CLOTHING" SIGN ATOP WESTCHESTER PROF. CENTER	8930 SEPULVEDA BLVD	113	164.9	174.7		(1)
BLDG	AIRPORT VALET	9107 SEPULVEDA BLVD	301	130.9	147.7		
SIGN	"GENERAL RENT-A-CAR" SIGN ATOP GENERAL RENT-A-CAR	9147 SEPULVEDA BLVD	309	159.6	147.2	12.4	(2)
BLDG	GENERAL RENT-A-CAR GARAGE	NO ADDRESS	305	122.8	145.7		
BLDG	GENERAL RENT-A-CAR CAR WASH	NO ADDRESS	310	131.4	144.7		
SIGN	"BUDWEISER" SIGN	NO ADDRESS	444	147.5	144.5	3.0	(2)
BLDG	PARADISE BLDG	9100 SEPULVEDA BLVD	212	145.5	152.5		
SIGN	"MARLBORO" SIGN ATOP PARADISE BLDG	9100 SEPULVEDA BLVD	223	154.9	150.3	4.6	(2)
SIGN	"AMERICAN AIRLINES" SIGN ATOP KING COBRA RENT-A-CAR	9200 SEPULVEDA BLVD	237	166.0	150.2	15.8	(2)
SIGN	"GOODYEAR" SIGN ATOP BEST BUY TIRE CENTER	9210 SEPULVEDA BLVD	241	139.9	149.7		
SIGN	"NEWPORT CIGARETTES" SIGN	NO ADDRESS	422	141.0	150.0		
BLDG	"SMITH" OFFICE BLDG	6242 WESTCHESTER PRKWY	501	137.8	159.0		
BLDG	LA CITY LIBRARY	8946 SEPULVEDA EASTWAY	502	127.9	159.6		
BLDG	APARTMENT BLDG	8910 SEPULVEDA EASTWAY	503	138.0	159.6		

NOTES: (1) DENOTES ELEVATION OF 7:1 TRANSITIONAL SLOPE AT THIS POINT
(2) ENCROACHES INTO 50:1 IMAGINARY SURFACE SLOPE
(3) ENCROACHES INTO 7:1 TRANSITIONAL SLOPE

ELEVATIONS ARE PROVIDED ABOVE MEAN SEA LEVEL
PLEASE REFER TO EXHIBIT 4, EXISTING ENVIRONMENT PLAN

X:\GORDON\BLDGSTBL.WK1

02-Dec-91

findings of his report as they relate to the north complex would virtually be unchanged.

Chapter III deals with the Green Line's impact on the north runway complex middle markers and far field course monitors. There was no impact found on the middle markers. However, the report found that the three field monitors for Runway 24R need to be raised about 8 feet at their present location. Any alignment option elevated through Lot C would probably affect the Runway 24R far field monitors. The report indicates that raising these antennas is a relative simple matter. A reimbursable agreement between the FAA and LACTC would be necessary to carry out the change to the far field monitors.

There does not appear to be any other negative operational impact from the Green Line operation contained in this partial submission.

Construction

The aerial transit guideway structure and stations in the Runway 24 complex will comprise the relocation of existing utilities and the installation of concrete pile foundations, the erection of guideway columns and beams, the installation of trackwork, the construction of station superstructure, and the installation and testing of transit systemwide components, such as power supply, train control, and communications.

A tentative duration for construction activity which will include testing and startup operations is estimated for a total duration of approximately 3 years, which includes some intermittent periods of inactivity due to airport activities or construction sequencing. More detailed scheduling of construction will be accomplished during the detailed design of the project for purposes of minimizing, if not eliminating, disruption of LAX operations. Prior to commencing construction, a Form 7460 will be filed with the FAA for purposes of permitting the work.

It is anticipated that construction activity will involve the use of regular heavy construction equipment which will include trucks, loaders, pile driving rigs, cranes, and telescopic concrete pumping equipment. Falsework structures and concrete forming will be required for both guideway and stations.

4. SCHEDULE FOR FILING 7460 FOR ENTIRE PROJECT

At a meeting held with the FAA on November 7, 1991, it was agreed that a schedule would be submitted for filing a Form 7460 for the entire project as a part of this filing.

It is anticipated that LACTC will act on this matter in January, 1992. In any case, when acted upon, we expect the final Form 7460 to be filed within 6 months thereafter.

5. FORM 7460 FOR NORTH RUNWAY COMPLEX (Next Page)

NOT REMOVE CARBONS

Form Approved OMB No 2120-00

Department of Transportation
Federal Aviation Administration

NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

Aeronautical Study Number

Nature of Proposal

A. Type	B. Class	C. Work Schedule Dates
☒ New Construction	☒ Permanent	Beginning: Mid 1993
☐ Alteration	☐ Temporary (Duration _____ months)	End: 1996-1997

1. Name and address of individual, company, corporation, etc. proposing the construction or alteration. (Number, Street, City, State and Zip Code)

213) 646-5700
area code Telephone Number

TO

City of Los Angeles Department of Airports
1 World Way
P.O. Box 92216
Los Angeles, CA 90009

Name, address and telephone number of proponent's representative if different than 3 above.

2. Complete Description of Structure

A. Include effective radiated power and assigned frequency of all existing, proposed or modified AM, FM or TV broadcast stations utilizing this structure

B. Include size and configuration of power transmission lines and their supporting towers in the vicinity of FAA facilities and public airports

C. Include information showing site orientation, dimensions and construction materials of the proposed structure

Elevated concrete rail transit guideway with overhead catenary power supply system in RPZ. Two elevated transit stations proposed, each outside RPZ.

(If more space is required, continue on a separate sheet.)

Location of Structure

A. Coordinates (to nearest second)	B. Nearest City, Town and State	C. Name of nearest airport, heliport, flightpark, or seaplane base
3 °| 57 '| 16 " itude	(1) Distance to 48: 0 Miles	(1) Distance from structure to nearest point of nearest runway: 900 Feet
18°| 23 '| 48 " ngitude	(2) Direction to 48: NA	(2) Direction from structure to airport: Varies

Los Angeles, CA

LAX

5. Height and Elevation (Complete to the nearest foo

A. Elevation of site above mean sea level	108
B. Height of Structure including all appurtenances and lighting (if any) above ground, or water if so situated	40
C. Overall height above mean sea level (A + B)	148

Description of location of site with respect to highways, streets, airports, prominent terrain features, existing structures, etc. Attach a U.S. Geological Survey quadrangle map or equivalent showing the relationship of construction site to nearest airport(s). (If more space is required, continue on a separate sheet of paper and attach to this notice.)

Proposed project is linear and traverses north runway complex protection zone with slight penetration of 50:1 slope in Westchester business district at right edge of Runway 24R protection zone. See Exhibit "3".

Notice is required by Part 77 of the Federal Aviation Regulations (14 C.F.R. Part 77) pursuant to Section 1101 of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1101). Persons who knowingly and willingly violate the Notice requirements of Part 77 are subject to a fine (criminal penalty) of not more than $500 for the first offense and not more than $2,000 for subsequent offenses, pursuant to Section 902(a) of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1472(a)).

I HEREBY CERTIFY that all of the above statements made by me are true, complete, and correct to the best of my knowledge. In addition, I agree to obstruction mark and/or light the structure in accordance with established marking & lighting standards if necessary.

Date	Typed Name/Title of Person Filing Notice	Signature
	Clifton A. Moore, Executive Director, LADOA	

FOR FAA USE ONLY — FAA will either return this form or issue a separate acknowledgement.

The Proposal:

- ☐ Does not require a notice to FAA.
- ☐ Is not identified as an obstruction under any standard of FAR, Part 77, Subpart C, and would not be a hazard to air navigation.
- ☐ Is identified as an obstruction under the standards of FAR Part 77 Subpart C, but would not be a hazard to air navigation.
- ☐ Should be obstruction ☐ MARKED, ☐ lighted per FAA Advisory Circular 70/7460-1, Change ____
- ☐ Obstruction marking and lighting are not necessary.

Supplemental Notice of Construction FAA Form 7460-2 is required any time the project is abandoned, or

- ☐ At least 48 hours before the start of construction.
- ☐ Within five days after the construction reaches its greatest height.

This determination expires on _____ unless

(a) extended, revised or terminated by the issuing office;

(b) the construction is subject to the licensing authority of the Federal Communications Commission and an application for a construction permit is made to the FCC on or before the above expiration date. In such case the determination expires on the date prescribed by the FCC for completion of construction, or on the date the FCC denies the application.

NOTE: Request for extension of the effective period of this determination must be postmarked or delivered to the issuing office at least 15 days prior to the expiration date.

If the structure is subject to the licensing authority of the FCC, a copy of this determination will be sent to that Agency.

Remarks:

Issued In	Signature	Date

193

LAX PEOPLE MOVER AND GREEN LINE OPTIONS
OPERATIONAL ANALYSIS

This report is a summary of an operating analysis of the final Green Line and the LAX People Mover options. The initial seven options (1-6 and A) were previously analyzed and compared. From this analysis, presented last November 18, 1991, three final options were selected. These were:

Option A: This option is a modification of the EIR alignment of the Green Line to eliminate conflicts with airplane operations. A People Mover would connect with the Green Line at Lot C. The People Mover would run from Lot C to the Central Terminal Area (CTA). Either the Green Line or the LAX People Mover would continue to Westchester.

Option 4: The North Coast Branch of the Green Line would run through Lot B and terminate at Lot C, where it would connect to the LAX People Mover. The LAX People Mover would connect Lot C, Lot B and the CTA, and would provide service to Westchester.

Option 5: The Green Line would not have a North Coast Branch. Instead, the LAX People Mover would connect to the Green Line at Aviation Station, and providing service to the CTA, Lot C and Westchester. A possible long-term version of this option (Option 5-RG) would extend the Green Line west to Sepulveda and then north (in subway) to connect to the LAX-Palmdale Line at Lot C, if this location is chosen for the south terminus of that line.

Option A was evaluated with and without a grade-separation for the Aviation Wye of the Green Line. This grade separation would allow three-way train movement (Norwalk-El Segundo, Norwalk-Westchester and Westchester-El Segundo). Current Wye design (with at-grade crossings) only permits two-way train movements, because of the high cost of the grade separation and the small projected north-south passenger demand.

With two-way operations through the Wye, passengers from the south (El Segundo) would have to transfer at Aviation if destined for North Coast stations (e.g. Lot C). With three-way operations, this transfer would not be required. However, this would require grade-separating the Aviation Wye, as mentioned above.

In options 4, and 5-RG it is not physically feasible to grade-separate the Wye west of Aviation and permit three-way train movement for Green Line trains. In Option 5, Green Line trains would be confined to one movement (Norwalk to El Segundo, and points south).

To allow high-frequency service for all movements in People Mover operations, it was assumed that the Wye of the People Mover at Century Boulevard (in Options 5 and 5-RG) would be grade-separated. This design is reflected in the cost of these options.

GREEN LINE OPERATIONS

Table 1 shows the operating plans for the Green Line in the different options. Option A is shown with two and three-way operations through the Aviation Wye. Five-minute headways with one-car trains were assumed in the peak periods for each service, consistent with the minimum operational headway. (The train control system of the Green Line is to be designed for a minimum headway of 2.0 minutes, which would allow a 2.5 minute headway in actual operations). With three-way service this would produce 2.5 minute headways in both the trunk (Century Freeway) and branches (North and South Coast). With two-way train operations, each of the branches would have 5-minute service, with 2.5 minute (combined) service in the trunk.

In Option 5, one-car Green Line trains would run every 5 minutes from Norwalk to El Segundo (Marine Boulevard) and every 5 minutes from Norwalk to Aviation, where they would turn back. This would result in 2.5-minute headways between Norwalk and Aviation, and 5-minute headway south of Aviation, since the demand of the South Coast Branch does not warrant operating all trains through El Segundo. This level of service is also consistent with that of the other options.

In options 4 and 5-RG it is not possible to grade-separate the Wye west of Aviation to provide 3-way train movement. For that reason, train service is provided only from Norwalk to Lot C and from Norwalk to El Segundo.

LAX PEOPLE MOVER OPERATIONS

Operating plans for the LAX People Mover appear in Table 2. In Option A, trains would run from Lot C to the CTA every 5 minutes in the peak periods. Trains would also circulate counter-clockwise around the CTA loop every 5 minutes. Thus, trains around the loop would run every 2.5 minutes in one direction.

In Option 4 there would be a shuttle from Westchester through Lot C, which would continue to the CTA (every 5 minutes). As in Option A, trains would also circulate counter-clockwise around the CTA loop every 5 minutes. Therefore, trains around the loop would run every 2.5 minutes in one direction.

In Option 5 there would be three train services: (1) from Westchester through Lot C and then along Century Blvd. to Lot B and to Aviation Station; (2) from Westchester through Lot C and to the CTA loop; (3) around the CTA loop. Each of these train services would run every 5 minutes. This operating plan would provide 2.5 minute service from Westchester and Lot C to the CTA, and 1.7 minute service around the CTA loop. The same operating plan was assumed for the People Mover in Option 5-RG.

OPERATING & MAINTENANCE COSTS

Operating and maintenance (O&M) costs were estimated separately for the Green Line and the LAX People Mover, for each of the options, and are shown in Table 3. O&M costs for the Green Line were estimated with a cost model developed by MPA for LACTC. The Green Line's operating statistics shown in Table 1 were used in running the model, together with the physical characteristics of the Green Line in the different options.

The cost of operating and maintaining the LAX People Mover in the different options was calculated with a special model developed by MPA with data from the Downtown Miami People Mover, as reported to UMTA for FY1989. The model was adjusted using estimates produced by WS&A for the Department of Aviation. The People Mover O&M cost model also accounts for its physical characteristics and the operating levels (shown in Table 2).

TRAVEL TIME

Table 4 shows travel times between selected points that would be provided by the different options, assuming the level of service described above. Travel times include train running time, wait and transfer time. The number and location(s) of transfers required for each origin and destination pair is also indicated in the matrix.

Prepared by Manuel Padron & Associates
November 29, 1991

Table 1
Green Line/LAX Options
Green Line Operating Plans

From	To	Run Time (min.)	Distance (miles)	Headway Peak	Headway Base	Headway E/L	Consist Peak	Consist Base	Consist E/L	Vehicles Peak	Vehicles Total	Annual Statistics Car-Mi. (million)	Annual Statistics Tr-Hrs. (thous.)	Patronage Pk.Hr. MLP	Load Factor	Max. Load Point Location
Option A: Green Line Branch to Westchester (EIR Alignment)														*Patronage for 2010:*		
I. Two-way operation																
Norwalk(I-605)	Marine Blvd.	32.7	19.6	5.0	5.0	10.0	1	1	1	14		2.68	80.0	1600	2.02	Avia.>Mariposa
Norwalk(I-605)	Westchester	30.6	19.0	5.0	5.0	10.0	1	1	1	13		2.60	75.8	1800	2.27	Avia.>LAX
		Totals:								27	35	5.28	155.8			
		I-105 Trunk Avg:		2.5	2.5	5.0								3300	2.08	LB Blvd>Wilming.
II. Three-way operation, all 5-minute headways														*Patronage for 2010:*		
Norwalk(I-605)	Marine Blvd.	32.7	19.6	5.0	5.0	10.0	1	1	1	14		2.68	80.0	1300	1.64	Avia.>Mariposa
Norwalk(I-605)	Westchester	30.6	19.0	5.0	5.0	10.0	1	1	1	13		2.60	75.8	1500	1.89	Avia.>LAX
Marine Blvd.	Westchester	14.5	5.8	*5.0*	*5.0*	*10.0*	1	1	1	7		0.80	41.6	400	0.51	Thru N-S + new?
		Totals:								34	44	6.08	197.4			
		I-105 Trunk Avg:		2.5	2.5	5.0								3300	2.08	LB Blvd>Wilming.
Option 4: Green Line Branch to Lot C via Lot B														*Patronage for 2010:*		
Norwalk(I-605)	Marine Blvd.	32.7	19.6	5.0	5.0	10.0	1	1	1	14		2.68	80.0	1600	2.02	Avia.>Mariposa
Norwalk(I-605)	Lot C	31.0	18.8	5.0	5.0	10.0	1	1	1	14		2.57	80.0	1800	2.27	Avia.>LAX
		Totals:								28	37	5.25	159.9			
		I-105 Trunk Avg:		2.5	2.5	5.0								3300	2.08	LB Blvd>Wilming.

Table 1 (Cont'd)
Green Line/LAX Options
Green Line Operating Plans

From	To	Run Time (min.)	Distance (miles)	Headway Peak	Headway Base	Headway E/L	Consist Peak	Consist Base	Consist E/L	Vehicles Peak	Vehicles Total	Annual Statistics Car-Mi. (million)	Annual Statistics Tr-Hrs. (thous.)	Patronage Pk.Hr. MLP	Patronage Load Factor	Patronage Max. Load Point Location
Option 5. No North Coast Branch														*Patronage for 2010:*		
Norwalk(I-605)	Marine Blvd.	32.7	19.6	5.0	5.0	10.0	1	1	1	14		2.68	80.0	1600	2.02	Avia.>Mariposa
Norwalk(I-605)	Aviation TB	25.1	16.4	5.0	5.0	10.0	1	1	1	11		2.24	64.4	NA		
		Totals:								25	33	4.92	144.4			
		I-105 Trunk Avg:		2.5	2.5	5.0								3300	2.08	LB Blvd>Wilming.
Option 5-RG: Green Line Branch to Lot C via Sepulveda Tunnel														*Patronage for 2010:*		
Norwalk(I-605)	Marine Blvd.	32.7	19.6	5.0	5.0	10.0	1	1	1	14		2.68	80.0	1600	2.02	Avia.>Mariposa
Norwalk(I-605)	Lot C	28.5	18.7	5.0	5.0	10.0	1	1	1	13		2.56	75.8	1800	2.27	Avia.>LAX
		Totals:								27	35	5.24	155.8			
		I-105 Trunk Avg:		2.5	2.5	5.0								3300	2.08	LB Blvd>Wilming.

27-Nov-91 LACTC\GREEN\OPGR-LAX

NOTES:
(1) Patronage includes transfers from LAX-Palmdale Line, intersecting at LAX-Lot C Station (SCAG test 5/91, adjusted by MPA).
(2) Run times based on LTK May 1990 runs, with extensions extrapolated by MPA (2/91).
(3) Minimum turnaround time assumed to be 2.0 minutes each end.
(4) Spares based on 20% of peak vehicles plus 1 standby car for each terminal.
(5) Assumes automated operation; car size = 66 seats.
Prepared by Manuel Padron & Associates

Table 2
Green Line/LAX Options
LAX People-Mover Operations

From	To	Service Type(6)	Run Time (min.)	Distance (miles)	Headway Peak	Headway Base	Headway E/L	Consist Peak	Consist Base	Consist E/L	Vehicles Peak	Vehicles Total	Annual Statistics Car-Mi. (million)	Annual Statistics Tr-Hrs. (thous.)	Patronage Pk.Hr. MLP	Patronage Load Factor	Patronage Max. Load Point Location
Option A: Green Line Branch to Westchester People-Mover to Lot C & return																	
Lot C	CTA	*SH*	5.8	1.4	5.0	5.0	10.0	3	2	2	12		0.43	22.8	2500	1.74	To CTA
			half of loop														
CTA Internal Loop		*IL*	5.0	0.8	5.0	5.0	10.0	1	1	1	3		0.11	18.7			
			half of loop														
			Totals:								15	20	0.54	41.6			
			CTA Loop Avg:		2.5	2.5	5.0										
Option 4: Green Line Branch to Lot C People-Mover to Westchester																	
Westchester	CTA	*SH*	7.4	2.0	5.0	5.0	10.0	3	2	2	12	15	0.61	22.8	2500	1.74	To CTA
			half of loop														
CTA Internal Loop		*IL*	5.0	0.8	5.0	5.0	10.0	1	1	1	3		0.11	18.7			
			half of loop														
			Totals:								15	20	0.72	41.6			
			CTA Loop Avg:		2.5	2.5	5.0										
Option 5. People-Mover via Lot B to Aviation; no North Coast Branch																	
Westchester	Aviation	*X*	8.1	3.1	5.0	5.0	10.0	1	1	1	4		0.42	22.8			
West. via CTA	Aviation	*L*	18.1	5.1	5.0	5.0	10.0	2	2	2	16		1.39	45.7	2000	2.08	Lot C to CTA
CTA Internal Loop		*IL*	5.0	0.8	5.0	5.0	10.0	1	1	1	3		0.11	18.7			
			half of loop														
			Totals:								23	30	1.92	68.7	1900	1.32	Avia.>LAX
			CTA Loop Avg:		1.7	1.7	3.3								2500	1.30	Into CTA-both ways

NOTES:
(1) Patronage includes transfers from LAX-Palmdale Line, intersecting at LAX Station (SCAG test 5/91, adjusted by MPA).
(2) Run times based on same accel/decel characteristics as Green Line, but maximum speed 45 mph.
(3) Minimum turnaround time assumed to be 2.0 minutes each end.
(4) Spares based on 20% of peak vehicles plus 1 standby car for each terminal.
(5) Option 5 assumes grade-separated people-mover junction; same operating plan would apply to Option 5-RG.
(6) Assumes automated operation; car size = 40 seats.
(7) Service Types: SH = shuttle to CTA; X = express (bypasses CTA); L = local via CTA; IL = internal CTA loop.

Prepared by Manuel Padron & Associates
27-Nov-91 LACTC\GREEN\OPLAXPM5

LAX PEOPLE MOVER & GREEN LINE OPTIONS Table 3
ANNUAL OPERATIONS & MAINTENANCE COSTS

OPTION>	4	5	5-RG	A	A
LAX PEOPLE MOVER					
Peak Cars	15	23	23	15	15
Annual V-M (Millions)	0.72	1.92	1.92	0.54	0.54
Track Miles	3.6	8.2	8.2	2.4	2.4
ANNUAL O&M COST (Millions)	$5.92	$13.74	$13.74	$4.85	$4.85
Cost per V-M	$8.23	$7.16	$7.16	$8.99	$8.99
GREEN LINE	2-WAY	1-WAY	2-WAY	2-WAY	3-WAY
Peak Cars	28	25	27	27	34
Annual V-M (Millions)	5.25	4.92	5.24	5.28	6.08
Annual Train Hours (000s)	159.9	144.4	155.8	155.8	197.4
Route Miles (2-Way)	22.2	19.6	22	22.3	22.3
Stations	18	14	15	16	16
ANNUAL O&M COST (Millions)	$35.80	$32.50	$34.20	$35.30	$37.00
Cost per V-M	$6.82	$6.61	$6.53	$6.69	$6.09
COMBINED O&M COSTS	$41.72	$46.24	$47.94	$40.15	$41.85

NOTES:

1. People Mover O&M costs are based on cost and operating data of Downtown Miami People Mover as reported to UMTA for FY1989, adjusted using estimates by WS&A prepared for LAX.
2. Green Line O&M costs were estimated with cost model developed by MPA for LACTC.

Prepared by Manuel Padron & Associates
29-Nov-91

Green Line/LAX Options
Travel Time Summary

Table 4

Origin	Destination		Option A Time	Option A Trf's	Option 4 Time	Option 4 Trf's	Option 5 Time	Option 5 Trf's	Option 5-RG Time	Option 5-RG Trf's
Norwalk	Lot C		29	none	31	none	33	@ A	29	none
Norwalk	Westchester		31	none	36	@ C	35	@ A	33	@ C
Norwalk	CTA		37	@ C	39	@ C	38	@ A	37	@ C
Downtown L.A.	Westchester		52	@I/W	56	@I/W & C	55	@I/W & A	54	@I/W & C
Downtown L.A.	CTA		59	@I/W & C	61	@I/W & C	57	@I/W & A	57	@I/W & A
Long Beach	CTA		62	@I/W & C	64	@I/W & C	60	@I/W & A	60	@I/W & A
Marine Blvd.	Westchester	2-way	17	@ A	21	@ A & C	20	@ A	20	@ A
		3-way	15	none						
Marine Blvd.	CTA	2-way	24	@ A & C	26	@ A & C	23	@ A	23	@ A
		3-way	22	@ C						
Aviation	Lot C		5	none	7	none	6	none	5	none
Aviation	Westchester		7	none	12	@ C	8	none	6	none
Aviation	CTA		13	@ C	15	@ C	11	none	11	none

NOTES:

Travel times (in minutes) include transfer times, but not first wait times.

Transfer locations: A = Aviation Station; C = Lot C; I/W = Imperial/Wilmington Station.

02-Dec-91 LACTC\GREEN\LAX-TIME wk1

Manuel Padron & Associates

SIGN-IN SHEET

Date: 12-19-91

Function: LAX TECHNICAL & POLICY TASK FORCE
PROUD BIRD RESTAURANT/DOA

Name	Title/Agency	Phone/Fax Numbers
Tom CARMICHAEL	RCC / LAWTC	213-244-6351
LES HENISON	BECHTEL	213 620-7010
JOHN FITZMAURICE	QANTAS	213 937-4277
AL THOMPSON	RCC / LAWTC	213 [illegible]
Ben Bradley	[illegible]	213 629-7010
Bob [illegible]	LAWTC	213 244 6441
MANUEL PADRON	MPA / LAWTC	510-827-1145
Jack Graham	DOA	310-646-7116
Debra Weiss	FAA	310-828 1183
DOUG FARLING	CALTRANS	(213) 897-4281
Ken Nelson	Caltrans	213-897-4650
RUTH GALANTER	CD 6	213 485-3357

SIGN-IN SHEET

ate: 12-19-91

unction: LAX TECHNICAL & POLICY TASK FORCE
PROUD BIRD RESTAURANT/DOA

Name	Title/Agency	Phone/Fax Numbers
Rybell Helgesony	CDC	213 485- 3357
VASAN SRINIVASAN	SCRTD	213 972 - 3329
Howard S. Yoshioka	FAA Airports	310 297-1250
CLIFTON A. MOORE	LADOA	310 646-6250
Leland Wong	LA DOT	" "
WM. SCHOENFELD	DOA	646-7393
James Hagen	CALTOT	485-2295
TOM CONNER	LADOT	485-4281
Jon Duff	LADOT	485-1061
Richard Haygstrom	LADOT	485-1062
Jose Reina	CDC	640-1500
Jackie Bacharach	LACTC	377-8957

203

SIGN-IN SHEET

Date: 12-19-91

Function: LAX TECHNICAL & POLICY TASK FORCE
PROUD BIRD RESTAURANT/DOA

Name	Title/Agency	Phone/Fax Numbers
Fred Silverman	LACTC / Westside Team	213-244-6896
BARNA SZABO	representing Supr D Dana	284-7243 (310)
KATHLEEN MEYERS	ESEH	640-3605
CYNTHIA ROBBINS	ATTNY Hill & Phillips	641-2191 / 474-7083 FAX
ROSLYN CARTER	LACLA	485-3975 / 680.0065
DAN BEAN	LACLA	485-6632
Glynn Kernaghan	LACTC	244-6533
SHEILA MURPHY	GRUEN	937-4270
[illegible]	LACTC	
[illegible]	LACTC	
[illegible]	[illegible]	
[illegible]	DOT	

SIGN-IN SHEET

Date: 12-19-91

Function: LAX TECHNICAL & POLICY TASK FORCE
PROUD BIRD RESTAURANT/DOA

Name	Title/Agency	Phone/Fax Numbers
[illegible]	[illegible]	
Phil Depasquale	"	
Jerry Chiotti	[illegible]	

INTERAGENCY TRANSIT STUDY
JOINT POLICY GROUP AND TECHNICAL TASK FORCE
January 30, 1992, 2:00 p.m.
LACTC Conference Room, 11th Floor

TABLE OF CONTENTS FOR MEETING #7

Item	Page
Agenda	213
Minutes	214
Supervisor Antonovich's Motion	216
Memo to Interagency Transit Study from Judy Wilson: Recent Actions Affecting the Green Line Northern Extension	219
Transportation Study - Bechtel	221
Outline of Proposed Consultant Scope of Work for the Joint LACTC/DOA EIR	243
Action Steps to Initiate EIR	244

INTERAGENCY TRANSIT STUDY
JOINT POLICY GROUP AND TECHNICAL TASK FORCE MEETING #7
January 30, 1992, 2:00 p.m., Long Beach Conference Room
LACTC, 818 W. 7th Street, 11th Floor

AGENDA

1. Approve minutes.

2. Recap/Clarify recent LACTC actions affecting Green Line Northern Extension - Judy Wilson

3. Present preliminary findings of Transportation Center Study - Bechtel/Ben Beasley

4. Present summary of proposed scope of work for the EIR - Bob Cashin

5. Wrap up issues on the function of the Interagency Transit Study Task Force - Judy Wilson

6. Adjourn.

nc5:polmtg7

MINUTES OF LAX INTERAGENCY TRANSIT STUDY
JOINT POLICY GROUP AND TECHNICAL TASK FORCE MEETING NUMBER 7

JANUARY 30, 1992

This was the seventh meeting of the LAX Interagency Task Force Policy Group. The minutes of the December 19, 1991 meeting were approved.

SUMMARY OF ITEMS DISCUSSED

- LACTC actions affecting the Green Line Northern Extension

  In December 1991 and January 1992, LACTC took two actions which impact the Northern Extension:

  1. Approved a motion by Supervisor Antonovich in December 1991 which included the provision of a multi-modal transportation center to serve LAX in the Metro Green Line Norwalk - El Segundo Project, currently under construction. LACTC staff is to work with DOA to provide for a major role for LAX in meeting the transportation needs of the LAX area. The motion further provided that the remainder of the Northern Extension north of the multi-modal center will become a candidate project in the LACTC 30-Year Integrated Transportation Plan.

  2. The January Antonovich motion provides that:

     a. the existing Green Line automated vehicle contract with Sumitomo be terminated, and

     b. the LACTC study the possibility of developing an "LA Car" which could have modules added to it for driverless vehicles in the future, and

     c. that the LACTC study having the Green line travel directly into the Bradley Terminal at LAX.

- Preliminary Findings of the Transportation Center Study

  All three sites (Aviation/Imperial, Lot B and Lot C) are still viable candidates for the multi-modal transportation center. While Caltrans expressed concerns regarding the Aviation/Imperial site because of the planned Caltrans maintenance facility, a transportation center could still be designed there but would have less parking provisions.

- Scope of Work of Environmental Report

  It was agreed that separate environmental work would proceed for the CTA People Mover and the three options for the regional line. Alternative 5 will be examined using a generic/neutral rail technology and considering the most intrusive impacts possible on the community to facilitate environmental clearance of the DOA's People Mover. LACTC and DOA will coordinate on the preparation of their environmental impact reports to allow planning for the two systems to be as integrated as possible. The purpose of each line (People Mover, Green Line, LAX/Palmdale line) will be referenced in the environmental report. LACTC will complete a Supplemental EIR, building on the 1989 EIR and work of this Task Force. Among other items, the environmental document will consider how patronage related between the regional line and the People Mover, baggage handling on both systems, parking needs and impacts at stations, and the purpose of each of the three lines intersecting at LAX (People Mover, Green Line, LAX/Palmdale line). LACTC will act on authorizing the Supplemental EIR at its February meeting.

- Future of Task Force

  LACTC will keep the Task Force informed on progress made during the environmental review and reconvene the group once the environmental document is complete, prior to Commission action on it.

Meeting Handouts

- Minutes of December 1991 meeting
- Copies of the December 1991 and January 1992 Antonovich motions
- Technical Memorandum, Metro Green Line Northern Extension Transportation Study

nc5:\policy7.min

SUPERVISOR ANTONOVICH'S MOTION

ADOPTED BY LACTC 12/18/91

In October the LACTC reaffirmed its decision to automate the Green Line. However, recent proposed increases in the cost of the Norwalk/El Segundo segment, along with the potential for even greater increases in the North Coast extension, are threatening to drive the total project cost above one billion dollars. This inflation of the project budget in turn threatens to drain funds from critical rail corridors in other parts of the county.

While this commission should stand by the earlier commitments it made to the cities and communities along the Green Line, it cannot be blind to the consequences of an escalating budget.

I, THEREFORE, MOVE that this commission:

1. Reaffirm its commitment to automation from Norwalk to El Segundo;

2. Reaffirm that adequate airport access and a multi-modal transportation center be an integral part of the Norwalk to El Segundo line;

3. Direct that the North Coast extension of the Green Line be included among the candidate projects; and,

4 Instruct the staff to work with the Los Angeles International Airport to provide for a major role for LAX in meeting the transportation needs in the area of airport access and the North Coast extension.

January 22, 1992

Motion by Supervisor Antonovich

It is vital to create a transportation system in Los Angeles County which serves the mobility needs of the people.

It is equally vital to create and maintain jobs in Los Angeles County which will maintain a healthy economy. The people of Los Angeles County pay a 1% sales tax toward building and operating transportation systems, and deserve to have as much of their taxes go toward local jobs as possible.

Light rail lines must be safe, convenient for commuters, -- cost-effective and--to the extent possible--complete lines serving destinations at each end of the line. These lines should be standardized with a standardized L.A. Car, to achieve economies of scale for construction, fleet procurement, operations, maintenance, training and inventory.

As the Commission has recently encountered a substantial budgetary shortfall, due to reduced sales tax revenues, it is not advisable to incur the expense of full automation at this time.

It should also be noted that by using a standardized car design, we will be able to significantly increase our order size, thereby ensuring greater competition in bidding by potential carbuilders.

In using a standardized L.A. Car with modular features, we will also retain future flexibility to upgrade to automation or other advanced technologies, when appropriate.

I, therefore, move that the Commission:

1. Approve in principle the attached six-point plan and refer it to a sub-committee of the Board, appointed by the Chairman, for detailed analysis, in conjunction with both LACTC staff and the private sector, and for preparation of a plan of action.

2. Instruct the sub-committee to present its analysis and plan of action to the Commission for final consideration at a special meeting on February 19th.

3. Find that it is in the best interests of the Commission to terminate contract P1900 with Sumitomo for vehicles; terminate the contract for convenience; and authorize the Executive Director to take any necessary related actions.

ADOPTED AT 1/22/92 LACTC MEETING WITH THE FOLLOWING AMENDMENTS:

1. Request the Air Quality Management District and other governmental agencies to cooperate to the maximum extent possible to facilitate the construction of rail cars and buses in Los Angeles County.

2. The subcommittee will consider in its analysis the following proposals, and report back to the LACTC:

   a. Require at least 75% domestic and 60% local Los Angeles County content and manufacturing participation in all rail car production.

   b. Adopt a complete line for the Metro Green Line, from the Amtrak station in Norwalk to the Bradley International Terminal at Los Angeles International Airport, which will serve the commuting needs of Los Angeles County residents and visitors.

3. Include representatives of labor to work with the subcommittee.

Interoffice Memo

DATE: January 30, 1992

TO: Interagency Transit Study
Joint Policy Group and Technical Task Force

FROM: Judy Wilson

SUBJECT: Recent LACTC Actions Affecting
The Green Line Northern Extension

At the December 18th LACTC Board Meeting a motion was passed on automation which included that the Green Line would terminate at a multi-modal transit center at the airport, and that the North Coast extension would become a candidate project.

The LAX Task Force discussed this motion and defined the "base" Green Line budget to mean wherever the multi-modal transit center would be most optimally sited. The staff was requested to prepare site plans for such a multi-modal center at Aviation, at Lot B, and at Lot C. The "candidate line" would then be defined as that part of the alignment north of the multi-modal Transit Center. Today we are ready to present these alternative site plans.

At the January 22 meeting of the LACTC, the Commission rescinded the vote on the Sumitomo contract and established a special ad hoc subcommittee of its members to explore several issues dealing with the Green Line vehicles, as well as an amendment which was offered by Commissioner Judy Hathaway-Francis to "adopt a complete line for the Metro Green Line, from the Amtrak Station in Norwalk to Bradley International Terminal at LAX".

A copy of the January 22 motion by Supervisor Antonovich has been provided in your packet. The Ad Hoc Committee will be reporting back to the Commission on February 19.

It had been our intention in December to wrap up the consideration of alignments today with a review of the multi-modal site plans, and to bring our recommendations forward to the Transportation and Airport Commissions in February. Needless to say, it is important that the LACTC Ad Hoc Subcommittee be briefed on the many months of work that this Interagency Task Force has invested and the reasoning behind the alignments being recommended. As you will recall, direct service to the Bradley International Terminal was an option which was intensively examined, but ultimately put aside by the Task Force because of constructability problems, impact on airport operations, potential toxic problems, extraordinary cost, and difficulty of transfers for those passengers arriving by other modes.

Therefore, the recommendations of the Interagency Task Force and its progress to date need to be communicated fairly expeditiously to the Ad Hoc Committee so that the committee's decisions are not made in a vacuum without the opportunity to consider the work of this group.

JW:df

DRAFT TECHNICAL MEMORANDUM

METRO GREEN LINE NORTHERN EXTENSION

TRANSPORTATION CENTER STUDY

Prepared by Bechtel Corporation
January, 1992

TRANSPORTATION CENTER STUDY

CONTENTS

1.	Introduction and Background		1
2.	Methodology and Criteria		2
3.	Discussion and Findings		5
	3.1	Aviation Station Site	5
	3.2	Lot B Site	8
	3.3	Lot C Site	10
4.	Conclusion		11

LIST OF EXHIBITS

Exhibit Number	Title
1.	Aviation Station with Modified Caltrans Facility
2.	Aviation Station without Caltrans Facility
3.	Section at Aviation Station
4.	Lot B Station
5.	Section at Lot B Station
6.	Lot C Station
7.	Section at Lot C Station

TRANSPORTATION CENTER STUDY

1. INTRODUCTION AND BACKGROUND

During the course of a series of meetings in late 1991, the Metro Green Line Interagency Task Force was briefed by Bechtel regarding the technical feasibility of siting multi-modal transportation centers at Aviation Station, Lot B, and Lot C.

The investigation addressed LRT (Green Line) and/or people mover, the Palmdale Line, and bus connectivity at each site. Bechtel found that all three sites were workable as transportation centers, but the Aviation site was physically constrained by several factors, including:

- The fixed Green Line Aviation Station, presently under construction.
- The existing column locations supporting the 105 Freeway.
- The planned Caltrans maintenance facility at the site (presently under environmental clearance).

At the December 19, 1991, Joint Policy Group and Technical Task Force Meeting, direction was given to proceed with further study of the three sites for feasibility as transportation centers and to more specifically define the "footprint" of the sites.

At a meeting between Bechtel, LACTC, and RCC on January 7, 1992, parameters were set for the study, to include:

- A draft report would be due prior to the January 30 Interagency Task Force Meeting.
- The Aviation site would be the major focus of the effort due to the constrained nature of the site.
- LACTC would coordinate with Caltrans regarding the disposition of the maintenance facility.
- Lots B and C would be treated generically, as space is not a constraint and multiple solutions could be meritorious.

2. METHODOLOGY AND CRITERIA

The approach to the work involved the following items:

- Collection of the best available mapping and decisions on the background detail, scale, reproduction capability, and whether manually or computer drawn.
- Development of an alignment layout for the Palmdale Line and people mover in the vicinity of the Aviation Station.
- Analysis of station platform sizes, locations, and vertical circulation elements.
- Disposition of the planned Caltrans facility at the Aviation Station.
- Coordination with Manual Padron Associates, LACTC, and TRANSCAL II regarding issues of shared platforms, train access, fare collection, tail tracks, crossovers, and other operations issues.
- Consideration of the requirements of the RTD bus operators.
- Interim reviews with LACTC staff.
- Application of siting criteria as appropriate (listed below).

In general, the development of station sites and transit centers should adopt goals and objectives (the objective at present is merely to establish feasibility and set the "footprint"), and would consider the following elements, as appropriate to the specific project:

- Proximity to trip generators and attractors
- Population density in the service area
- Interconnectivity with other transportation modes
- Vehicular access and circulation
- Pedestrian access and movement
- Availability and cost of land
- Capacity to accommodate future expansion
- Joint development and revenue capture potential
- Station spacing

- Line geometry
- Constructibility
- Capital Costs

In the initial level of site planning; conceptual ideas from governmental agencies, elected officials, developers, transportation professionals, and community groups may contribute to the development of a feasible solution. While some of this coordinated planning effort is appropriate now, it will be further evolved and better understood during the route refinement/EIR process.

Because more information will be available, including a definition of capital costs, modifications are generally made through the design process, with the final major changes optimistically taking place as a result of the preliminary (30%) design review, which includes several agencies. Accordingly, the present effort recognizes this evolution and has as its major current objective the assurance that the sites are technically feasible as transportation centers. We have developed workable solutions, but we do not claim them to be the only workable solutions. The major emphasis was on the Aviation site, which contains physical constraints, both existing and planned, as previously discussed.

Some assumptions were made, as follows:

- Common platforms between rail modes eliminate some of the vertical circulation and are desirable.
- The systems are planned as barrier free, even though fares may vary between modes. Should barriers be required at a future date, it may be difficult to share platforms between rail modes.
- The people mover trains will consist of 3 vehicles, at about 40 feet each in length.
- The Palmdale line entering Lot C is assumed to be located as shown in the Palmdale RFP. Development of the Palmdale alignment during the EIR process may explore variations to this alignment; thereby re-orienting the platforms.
- The Palmdale trains will have geometry and platform length requirements similar to the Green Line.
- Crossovers are desirable in front of stations, and beyond stations in the event of tail tracks. All terminal stations for all rail modes provide storage capacity for 2 trains composed of 3 vehicles each.
- Safe stopping distance and storage at terminals are requirements.

- The bus operators desire 12 bus bays.

- Lot B and Lot C sites are depicted in very large existing parking lots. No attempts are made to address parking management policy on such issues as sub-divided parking uses or shuttle bus circulation. Further, no attempt is made to re-evaluate egress/ingress or modifications to the circulation of these large lots.

3. DISCUSSION AND FINDINGS

3.1 Aviation Station Site

Discussion:

The Aviation Station site is depicted in Exhibits 1, 2, and 3. This site contains the Metro Green Line, people mover, the Palmdale Line, vehicle parking, drop-off, pedestrian access, and bus bays, and was evaluated with and without the Caltrans maintenance facility.

The assumption is that new side platforms can be retrofitted to the Green Line Station at Aviation, which is now under construction. Should this prove to be difficult because of seismic considerations, disruptions to Green Line operations during construction, or because of fare collection requirements, then the site is workable as three completely stand alone, side by side aerial stations.

It was also decided that the open space available to the west of both the Palmdale and people mover platforms would be utilized to develop safe stopping and train storage, including a crossover.

Bus bays were determined to be most conveniently located as closely under the elevated Palmdale station area as would reasonably fit.

Findings:

CALTRANS MAINTENANCE FACILITY

Exhibit 2 depicts the transportation center with the Caltrans facility completely relocated to another site. Ample space as well as future expansion is provided for park-ride, and the center works best utilizing the full site.

Should the Caltrans facility remain as presently designed, there would be about 360 parking spaces available for the transportation center, some 390 short of the estimated need of 750 parking spaces.

With the Caltrans facility remaining in place but modified to displace less area (Exhibit 1), the transportation center is inadequate for parking demand by about 23%, or 170 spaces (see next section). Exhibit 1 does not purport to show a specific layout of Caltrans facilities, but only an area the design team, without mobilizing a highway maintenance yard specialist, considered adequate for a functional facility.

A review of the re-arranged facility with Caltrans revealed a concern for adequate site circulation, the placement of the fuel island, and the height allowance for the office building. It was decided that further assessment of the maintenance facility, or its relocation, would be appropriate during the North Coast EIR phase. As a result

of the review with Caltrans, it was decided that Exhibit 1 would not endeavor to arrange the various components and buildings on the site, but would only allocate a space.

Also as a result of the review with Caltrans, an alternate site to the east of the planned site was reviewed. The area investigated is underneath the I-105 Freeway, bounded on the east by La Cienega Boulevard, the north by Imperial Highway, and the south by W. 116th Street. This site appears more than adequate in space for the facility, which requires about 7.5 acres, but may be subject to being leased to a private developer by the Governor's Asset Management Office.

ACCESS AND PARKING

The Metro Green Line demand for station parking has been estimated as 400 park-ride spaces. The station parking lot was designed to accommodate significantly more spaces than required. The planned Caltrans maintenance facility substantially reduced the capacity, but still provided more than the 400 spaces required.

A rough calculation by Manuel Padron Associates of the park-ride demand for the transportation center indicates the need for about 750 spaces. Because the fare structure for the rail modes has not been established, this number does not contain an analysis of riders who may want to avoid an extra fare. Mode change inconvenience was taken into consideration.

Exhibit 1, with the modified Caltrans facility in place, depicts 12 bus bays, 36 short term spaces, and 580 park-ride spaces, which is deficient by about 170 parking spaces. The original Caltrans facility layout would have allowed for only 360 spaces considering the introduction of the two additional rail modes and the bus bays.

Exhibit 2, with the Caltrans facility removed, depicts 12 bus bays, 36 short term spaces, and 931 park-ride spaces.

Exhibit 3 is a cross section of the station platforms.

There is no displacement of existing parking or other facilities at this site.

OPERATIONS

The following items are noted:

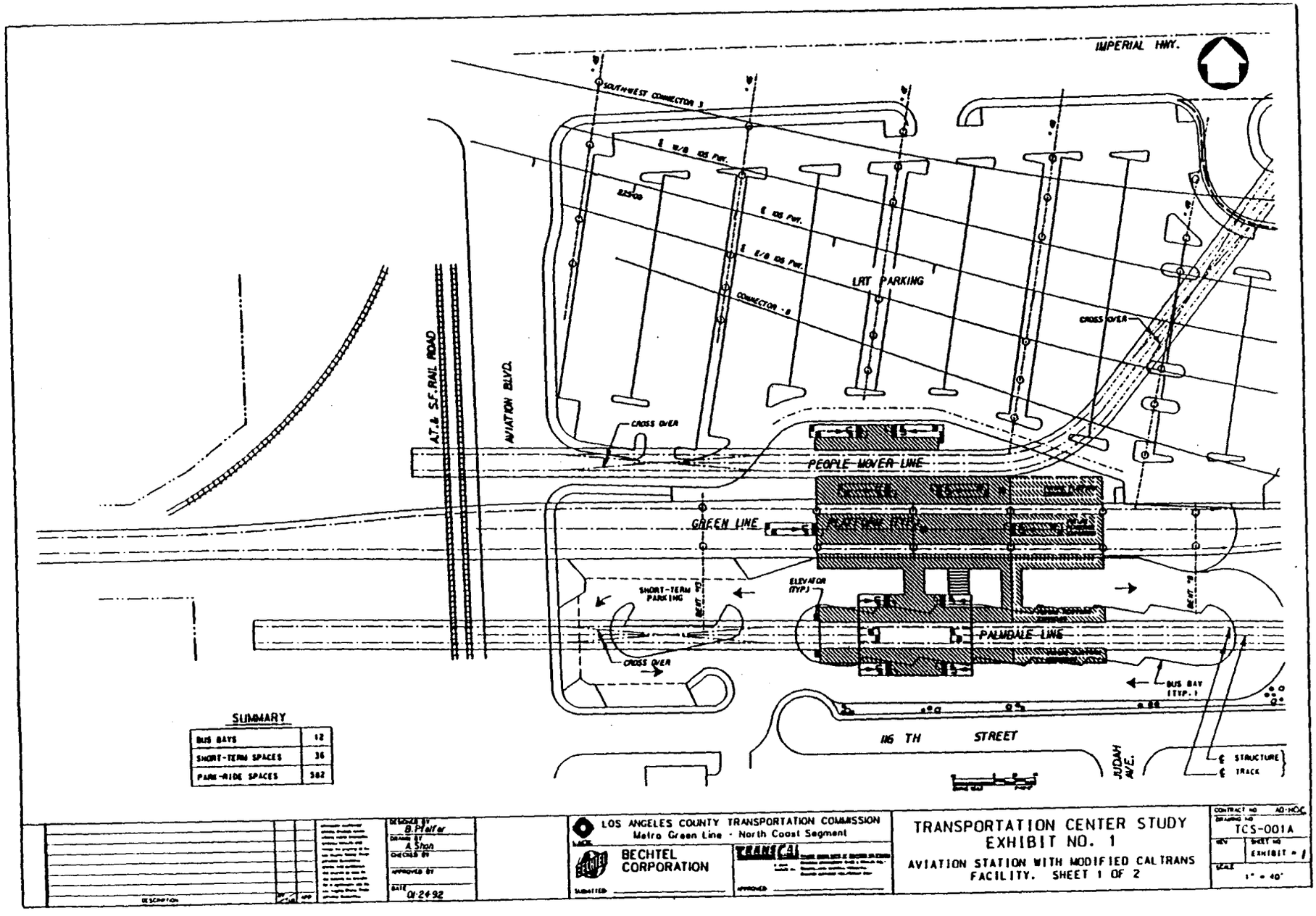
1. The Palmdale Line, as it traverses between columns underneath the 105 Freeway, contains a 300 feet radius curve near the I-405 Freeway that would restrict operation speeds to 25 mph or less, which is undesirable.

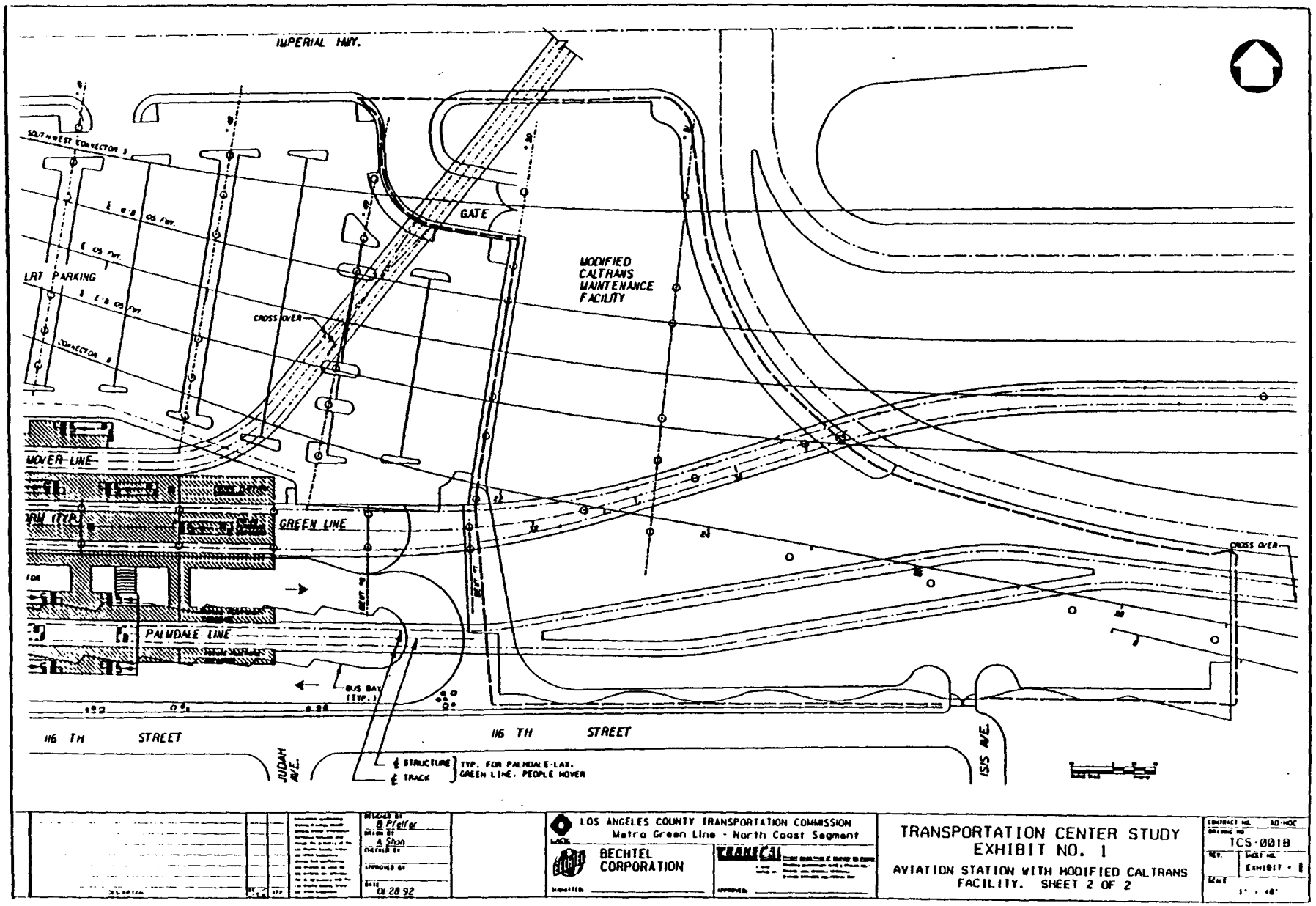
2. For fully automated operations with side or shared platforms, a platform intrusion system would be required in order to shut down electrical power in the event someone jumps into the trackway as a short cut to changing platforms. In this event, the system would have to be re-started. An alternative is to provide a physical barrier along the platforms with doors that operate in concert with train doors. In the latter case, the system would remain in full operation.

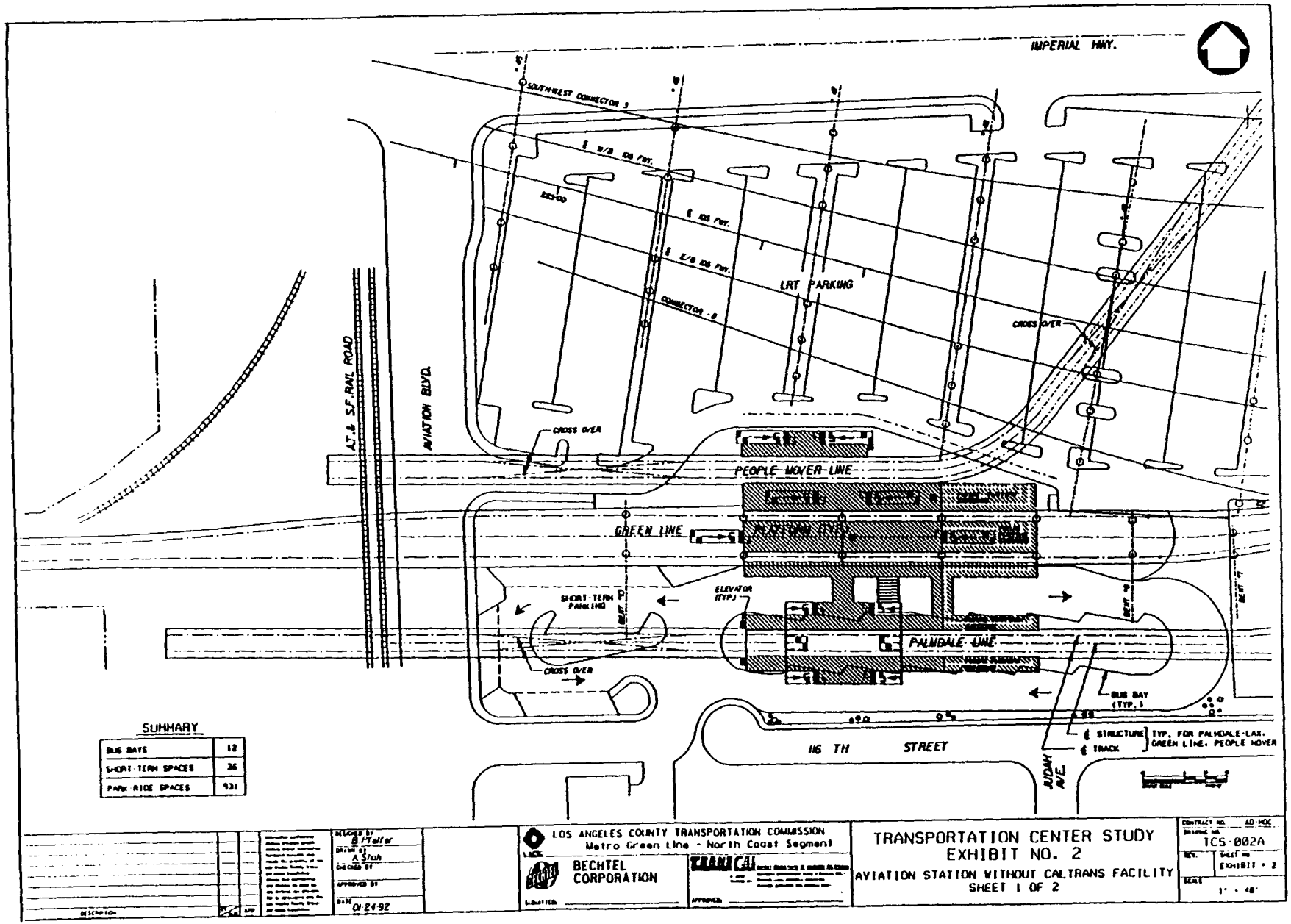
3. Basic assumptions were made concerning end-of-line tail tracks for the Palmdale Line and the people mover. Technology and performance data are not presently known for the Palmdale Line and the people mover. However, it appears that adequate space is not available to fully develop safe stopping distances, crossovers, and full consist train storage beyond the platforms. It was decided that the space is adequate for end-of-line operations by fully utilizing the open space available with recognition that the operating system would likely require one or more of the following provisions to assure safe stopping:

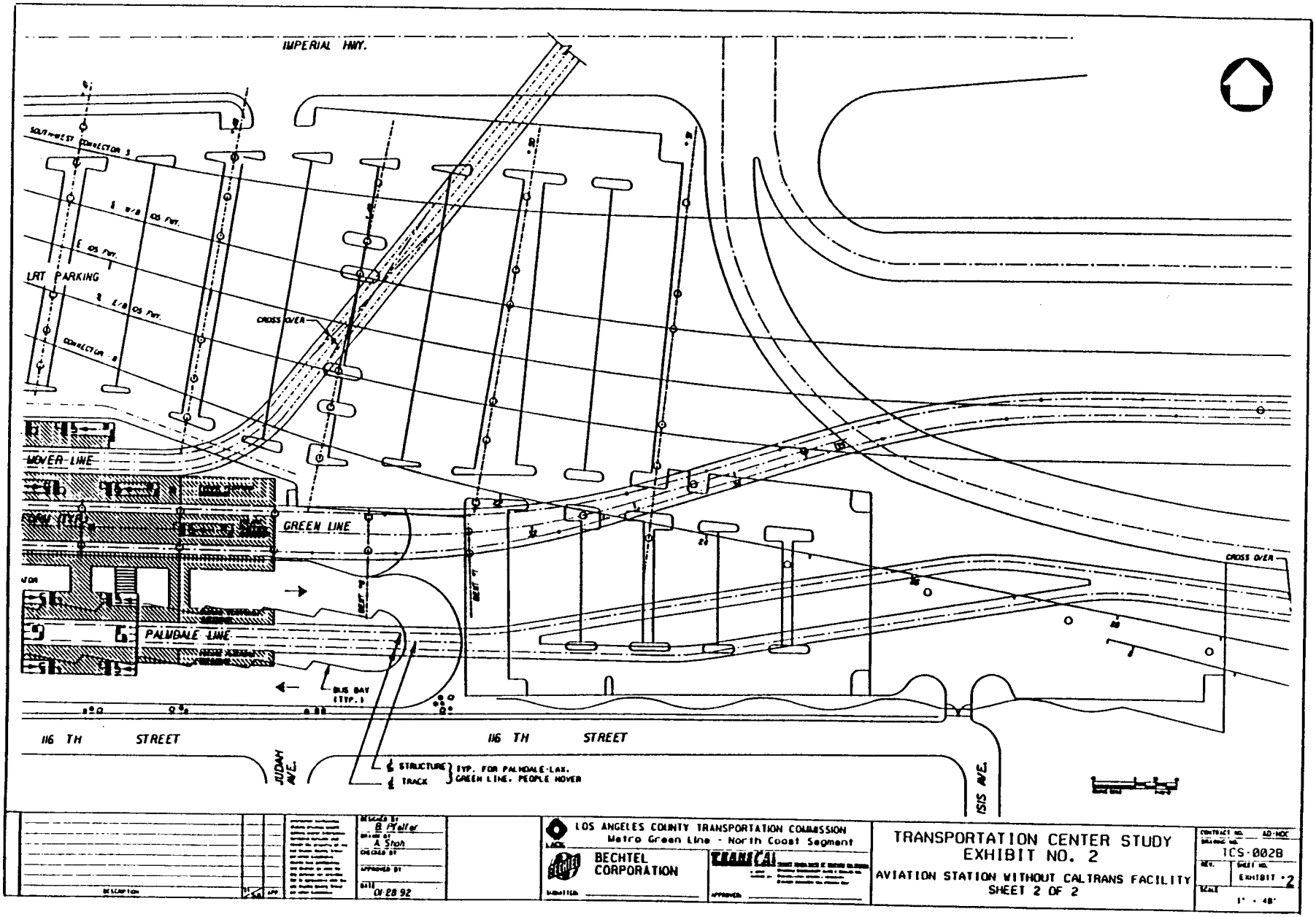
- reduced speed going into the station, which increases travel time
- lower power going into the station
- trip stop provisions, which require outfitting vehicles and installing wayside gear
- sliding bumper installation
- utilization of open track for safe stopping, while storing on one track only, or by providing a parallel third track.

Crossovers and one train consist storage capacity are depicted beyond the Palmdale and people mover station platforms, with recognition that provisions must be made for safe stopping. The most likely requirement would be a reduced speed entering the station.

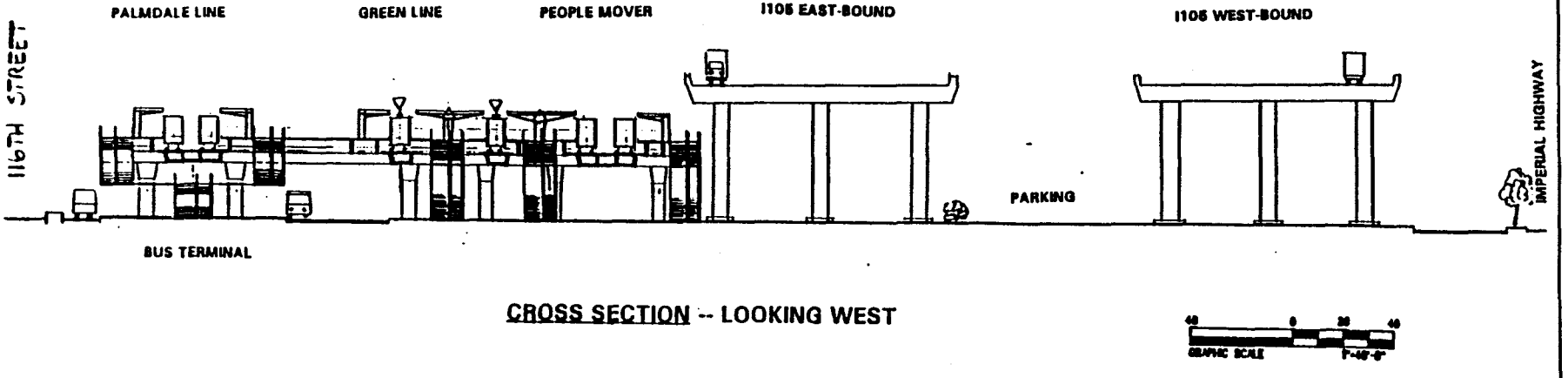

IMPERIAL HWY.
SOUTHWEST CONNECTOR 3
℄ W/B 105 Fwy.
℄ 105 Fwy.
℄ E/B 105 Fwy.
CONNECTOR 2
LRT PARKING
CROSS OVER
A.T.& S.F. RAIL ROAD
AVIATION BLVD.
PEOPLE MOVER LINE
GREEN LINE
SHORT-TERM PARKING
ELEVATOR (TYP.)
PALMDALE LINE
BUS BAY (TYP.)
116 TH STREET
JUDAH AVE.
℄ STRUCTURE
℄ TRACK
SUMMARY
BUS BAYS 12
SHORT-TERM SPACES 36
PARK-RIDE SPACES 582
LOS ANGELES COUNTY TRANSPORTATION COMMISSION
Metro Green Line - North Coast Segment
BECHTEL CORPORATION
TRANS(CAL)
TRANSPORTATION CENTER STUDY
EXHIBIT NO. 1
AVIATION STATION WITH MODIFIED CALTRANS FACILITY. SHEET 1 OF 2
DESIGNED BY B.Pfeifer
DRAWN BY A.Shah
DATE 01-24-92
CONTRACT NO AD-HOC
DRAWING NO TCS-001A
SHEET NO EXHIBIT # 1
SCALE 1" = 40'


IMPERIAL HWY.
GATE
MODIFIED CALTRANS MAINTENANCE FACILITY
LRT PARKING
CROSS OVER
MOVER LINE
GREEN LINE
PALMDALE LINE
BUS BAY (TYP.)
116 TH STREET
116 TH STREET
JUDAH AVE.
ISIS AVE.
℄ STRUCTURE
℄ TRACK
TYP. FOR PALMDALE-LAX, GREEN LINE, PEOPLE MOVER
LOS ANGELES COUNTY TRANSPORTATION COMMISSION
Metro Green Line - North Coast Segment
BECHTEL CORPORATION
TRANSPORTATION CENTER STUDY
EXHIBIT NO. 1
AVIATION STATION WITH MODIFIED CALTRANS FACILITY. SHEET 2 OF 2
TCS-0018
EXHIBIT - 1


IMPERIAL HWY.
SOUTHWEST CONNECTOR 3
℄ E/B 105 FWY.
℄ 105 FWY.
℄ E/B 105 FWY.
CONNECTOR - 2
LRT PARKING
CROSS OVER
A.T. & S.F. RAIL ROAD
AVIATION BLVD.
CROSS OVER
PEOPLE MOVER LINE
GREEN LINE
PLATFORM (TYP.)
ELEVATOR (TYP.)
SHORT-TERM PARKING
CROSS OVER
PALMDALE LINE
BUS BAY (TYP.)
116 TH STREET
JUDAH AVE.
℄ STRUCTURE
℄ TRACK
TYP. FOR PALMDALE-LAX-GREEN LINE-PEOPLE MOVER
SUMMARY
BUS BAYS 12
SHORT TERM SPACES 36
PARK RIDE SPACES 931
LOS ANGELES COUNTY TRANSPORTATION COMMISSION
Metro Green Line - North Coast Segment
BECHTEL CORPORATION
TRANSTECH
TRANSPORTATION CENTER STUDY
EXHIBIT NO. 2
AVIATION STATION WITHOUT CALTRANS FACILITY
SHEET 1 OF 2
TCS-002A
EXHIBIT - 2
1" = 40'



DESIGNED BY B Pfeifer; DRAWN BY A Shah; CHECKED BY; APPROVED BY; DATE 01 28 92	LOS ANGELES COUNTY TRANSPORTATION COMMISSION Metro Green Line - North Coast Segment BECHTEL CORPORATION TRANSCAL	TRANSPORTATION CENTER STUDY EXHIBIT NO. 2 AVIATION STATION WITHOUT CALTRANS FACILITY SHEET 2 OF 2	CONTRACT NO. AD-HOC; BILLING NO. TCS-002B; REV.; SHEET NO. EXHIBIT - 2; SCALE 1" = 40'



CROSS SECTION -- LOOKING WEST

GRAPHIC SCALE 1"=40'-0"

LOS ANGELES COUNTY TRANSPORTATION COMMISSION
Metro Green Line - North Coast Segment

BECHTEL CORPORATION

TRANSTECH

TRANSPORTATION CENTER STUDY
EXHIBIT NO. 3

SECTION AT AVIATION STATION
SHEET 1 OF 1

CONTRACT NO. AD-HOC
DRAWING NO. TCS-003
REV. SHEET NO. EXHIBIT • 3
SCALE 1" • 40'

3.2 Lot B Site

Discussion:

The Lot B site would be considered for a transportation center only if the Green Line should end there, which is not an option presently under consideration by the Interagency Task Force. For purposes of this study, the Green Line ends and the people mover picks up at this location.

The requirements for Lot B are basically the same as Aviation. The platforms are shared between rail modes to a maximum extent, and the people mover and Palmdale Lines are treated as at the Aviation site. The Green Line will require crossover before and after the station, and requires tail tracks.

The location of this site is dictated by the placement of the transportation center south of the Runway Protection Zone (RPZ) in order to congregate people in the safest area, as suggested by the FAA, and to minimize impacts to adjacent properties. The site is also dictated by keeping the Green Line guideway along 111th Street clear of a 120 degree cone from the Runway 25L localizer. This situation will require further analysis during the EIR. Another siting factor was to develop short-term parking adjacent to 111th Street.

Findings:

ACCESS AND PARKING

Exhibits 4 and 5 depict the Lot B site. As discussed, park-ride spaces are not shown, as the site is contained in the LAX Lot B park-ride facility. Twelve bus bays and 21 short term spaces are depicted.

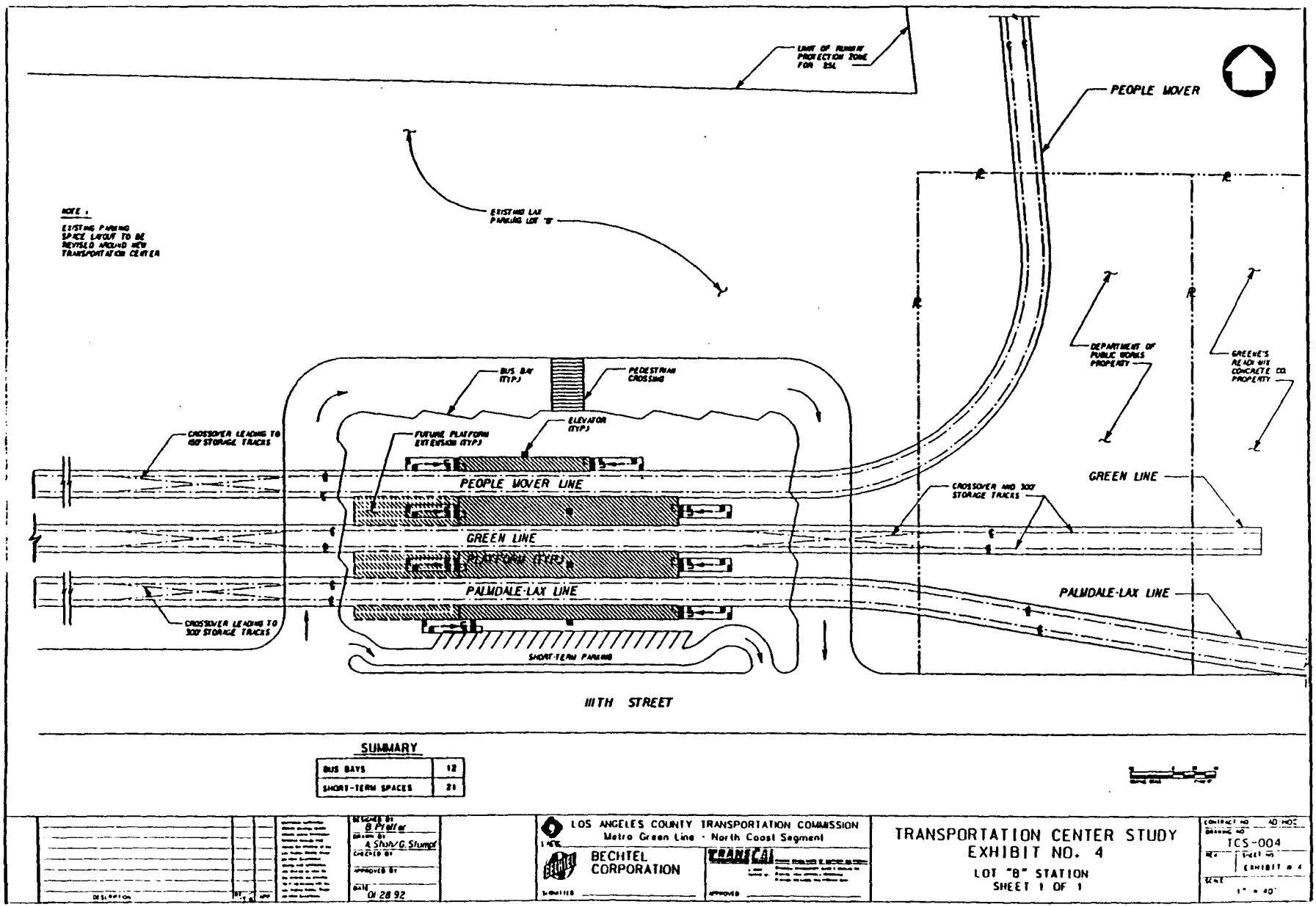
A major finding is that the DWP facility to the east will require relocation due to the tail track and storage requirement for the Green Line operations.

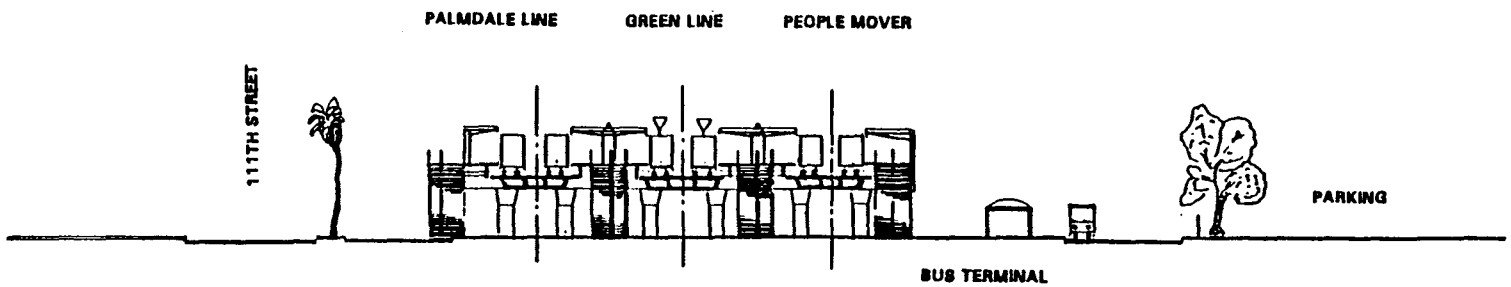
The transportation center footprint displaces approximately 400 parking spaces from the existing Lot B capacity.

OPERATIONS

The Palmdale line contains a relatively slow speed curve departing from the I-405 right-of-way.

Adequate space appears available for safe stopping and storage for all three terminal stations. However, further analysis during the design period when more about the vehicle technology and performance features are known may indicate a need to impose one or more provisions listed in the Aviation Station site section above.


LIMIT OF RUNWAY PROJECTION ZONE FOR FAR
PEOPLE MOVER
NOTE :
EXISTING PARKING SPACE LAYOUT TO BE REVISED AROUND NEW TRANSPORTATION CENTER
EXISTING LAX PARKING LOT "B"
BUS BAY (TYP.)
PEDESTRIAN CROSSING
ELEVATOR (TYP.)
FUTURE PLATFORM EXTENSION (TYP.)
CROSSOVER LEADING TO 600' STORAGE TRACKS
DEPARTMENT OF PUBLIC WORKS PROPERTY
GREENE'S READY MIX CONCRETE CO. PROPERTY
PEOPLE MOVER LINE
GREEN LINE
CROSSOVER AND 300' STORAGE TRACKS
GREEN LINE
PLATFORM (TYP.)
PALMDALE-LAX LINE
PALMDALE-LAX LINE
CROSSOVER LEADING TO 300' STORAGE TRACKS
SHORT-TERM PARKING
111TH STREET
SUMMARY
BUS BAYS 12
SHORT-TERM SPACES 21
DESIGNED BY B. Pfeifer
DRAWN BY A. Shah/G. Stumpf
CHECKED BY
APPROVED BY
DATE 01 28 92
LOS ANGELES COUNTY TRANSPORTATION COMMISSION
Metro Green Line - North Coast Segment
BECHTEL CORPORATION
TRANSCAL
TRANSPORTATION CENTER STUDY
EXHIBIT NO. 4
LOT "B" STATION
SHEET 1 OF 1
CONTRACT NO AD HOC
DRAWING NO TCS-004
EXHIBIT # 4
SCALE 1" = 40'



CROSS SECTION -- LOOKING WEST

40 0 20 40
GRAPHIC SCALE 1"=40'-0"

	B.PFEIFER B.PFEIFER	LOS ANGELES COUNTY TRANSPORTATION COMMISSION Metro Green Line - North Coast Segment BECHTEL CORPORATION TRANSCAL	TRANSPORTATION CENTER STUDY EXHIBIT NO. 5 SECTION AT LOT "B" STATION SHEET 1 OF 1	CONTRACT NO. AD-HOC DRAWING NO. TCS-005 REV. / SHEET NO. EXHIBIT - 5 SCALE 1" = 40'

3.3 Lot C Site

Discussion:

The Lot C site could be studied in several ways. The CTA people mover could end there or continue through to Westchester (Option A), the CTA people mover could end there and the Green Line could continue to Westchester (Option A), or the people mover only (Option 5), could interconnect there with the Palmdale Line. For consistency in comparing with the other two sites, we developed a more complex scheme which terminates the Green Line and extends the people mover through to Westchester.

The Palmdale station is depicted as aerial in order to avoid the expense of underground construction and the disruption to parking and circulation of at-grade construction. The platforms were stopped several hundred feet east of the north-south platforms of the Green Line and the people mover in order to provide a safe stopping distance.

It should be noted that the center will displace Lot C parking, and accordingly we have kept the area as small as possible. The possible relocation of rental car sites to locations within walking distance of the center would further displace parking. Parking demands will probably be increased due to the center being located at Lot C.

Findings:

ACCESS AND PARKING

Exhibits 6 and 7 illustrate a plan for the Lot C center. As mentioned, other schemes are quite possible. In order to avoid the Runway Protection Zone, the Palmdale Line is shown at the same level as the other lines. Better circulation and less parking disruption could be achieved by stacking the Palmdale platforms on top of the north-south platforms, but the tail tracks would extend westerly into the RPZ. It was decided to avoid this possible conflict. (Bringing Palmdale in from the north rather than from the east for purposes of placing the platforms above the Green Line and people mover platforms without entering the RPZ was considered, but not explored further due to difficulties either with geometry or conflicts with residential areas. Also considered was bringing the Palmdale Line in from the east along the south side of 96th Street, and then hooking north in order to place the Palmdale platforms above the Green Line and people mover. This scheme placed the Palmdale platforms considerably to the north of what appears to be the centroid of the site. Further study may be warranted on how to connect to the Palmdale line. This task could be undertaken in the EIR phase).

Because the center lies within a huge parking facility, no attempt has been made to configure park-ride spaces. Twelve bus bays and 37 short term spaces are shown.

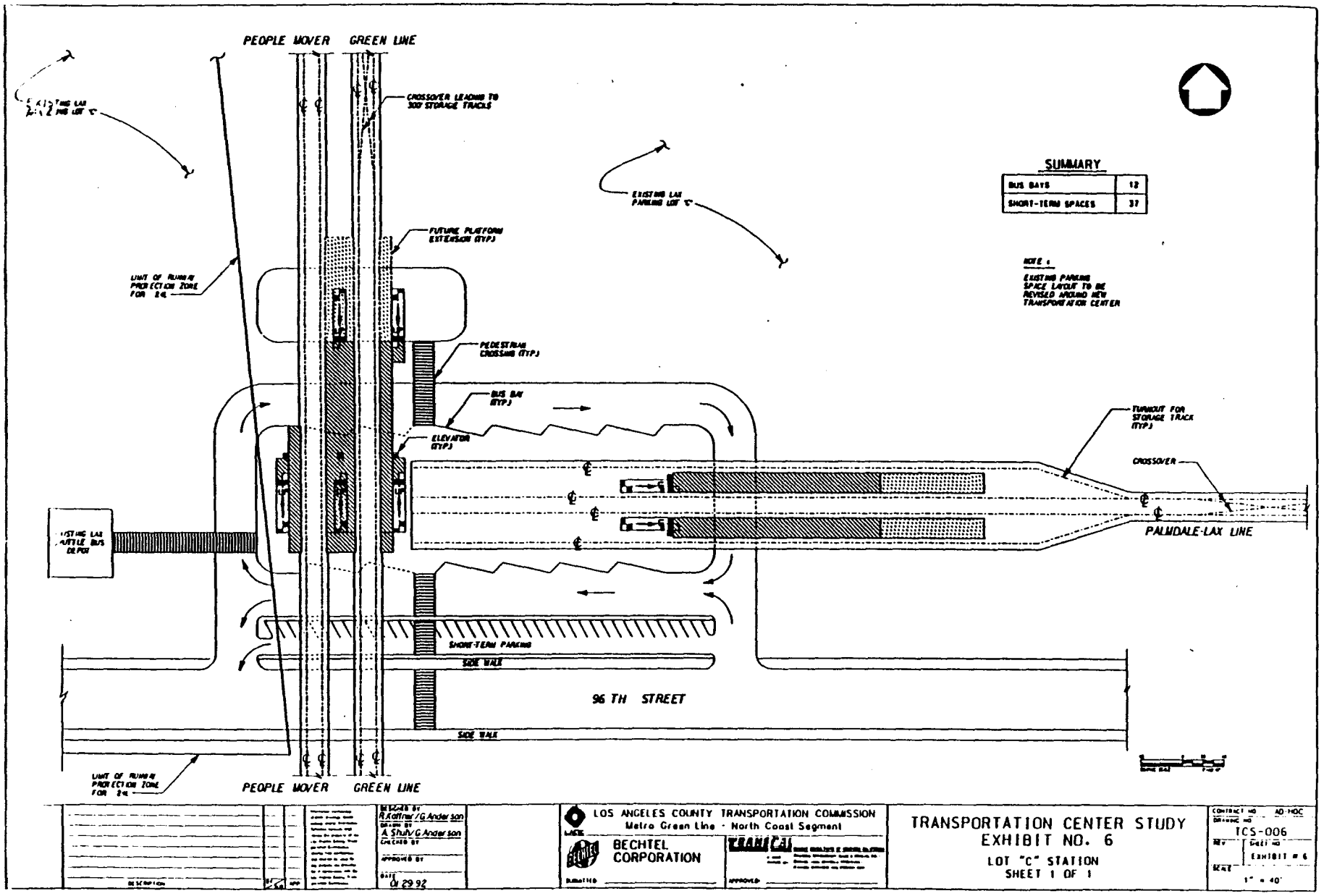
The center as shown in Exhibit 4 would displace about 282 existing parking spaces. Further displacement of spaces would be caused by column supports for the guideway structures as they traverse Lot C.

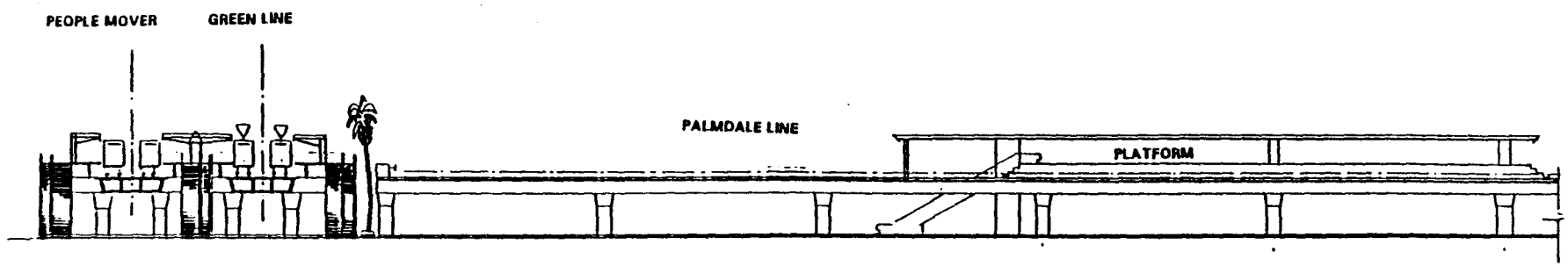
OPERATIONS

Train operations on the Palmdale Line would be slowed by two short radii curves between the I-405 Freeway and the center. While speeds could be maintained above 25 mph, it is doubtful that the desirable 55 mph could be achieved. The detailed geometry has not been developed.

Safe stopping distances and storage are not restrictions for the Green Line and people mover systems. The Palmdale station platforms, as mentioned, are located easterly of the Green Line and people mover platforms in order to provide safe stopping. This will require special provisions as discussed in the above text. End of line storage is tentatively provided for on parallel storage tracks.

Additional solutions to this site should be explored during the EIR phase.


PEOPLE MOVER
GREEN LINE
CROSSOVER LEADING TO 300' STORAGE TRACKS
FUTURE PLATFORM EXTENSION (TYP.)
LIMIT OF RUNWAY PROTECTION ZONE FOR 24L
PEDESTRIAN CROSSING (TYP.)
BUS BAY (TYP.)
ELEVATOR (TYP.)
EXISTING LAX SHUTTLE BUS DEPOT
EXISTING LAX PARKING LOT 'C'
SUMMARY
BUS BAYS 12
SHORT-TERM SPACES 37
NOTE 1
EXISTING PARKING SPACE LAYOUT TO BE REVISED AROUND NEW TRANSPORTATION CENTER
TURNOUT FOR STORAGE TRACK (TYP.)
CROSSOVER
PALMDALE-LAX LINE
SHORT-TERM PARKING
SIDE WALK
96 TH STREET
SIDE WALK
LIMIT OF RUNWAY PROTECTION ZONE FOR 24L
PEOPLE MOVER
GREEN LINE
LOS ANGELES COUNTY TRANSPORTATION COMMISSION
Metro Green Line - North Coast Segment
BECHTEL CORPORATION
TRANSCAL
TRANSPORTATION CENTER STUDY
EXHIBIT NO. 6
LOT "C" STATION
SHEET 1 OF 1
TCS-006
EXHIBIT # 6
1" = 40'



CROSS SECTION/ELEVATION -- LOOKING NORTH

GRAPHIC SCALE 1"=40'-0"

	B. FEIFER B. FEIFER	LOS ANGELES COUNTY TRANSPORTATION COMMISSION Metro Green Line - North Coast Segment BECHTEL CORPORATION	TRANSPORTATION CENTER STUDY EXHIBIT NO. 7 SECTION AT LOT 'C' STATION SHEET 1 OF 1

CONTRACT NO. AD-HOC
DRAWING NO. TCS-007
REV. SHEET NO. EXHIBIT 7
SCALE 1" = 40'

4. CONCLUSION

All three sites are workable, and all have more than one solution. Further work should be done during the EIR phase to address ridership and operations; and to further explore the issues of shared platforms, fare collection, vehicular and pedestrian circulation, safety issues, end-of-line storage requirements, and alignments.

The Aviation site is the most confined and offers fewer possibilities for optional layouts. This site provides ample parking area with expansion capability if the planned Caltrans maintenance facility is completely relocated. Without constructing a deck, it is doubtful that a successful joint-use of the site could be achieved which would provide Caltrans the space it needs and still satisfy the transit parking requirement. At present, the joint-use approach provides inadequate park-ride by about 170 spaces, and Caltrans does not believe their portion of the space allows a functional maintenance facility.

There are multiple solutions to the Lot B and Lot C sites that will function adequately. The final configuration will have more latitude than at Aviation, because of the lack of existing physical constraints.

FOR DISCUSSION ONLY

METRO GREEN LINE NORTHERN EXTENSION
(TRANSPORTATION SERVICE TO THE LAX/WESTCHESTER AREA)

OUTLINE OF PROPOSED CONSULTANT SCOPE OF WORK FOR THE JOINT LACTC/DOA EIR

Task 1

1.1 Refinement of the all-bus transit alternative and the three rail alternatives

1.2 Evaluation of alternative transportation center sites

1.3 Conceptual engineering of the CTA People Mover

Task 2

2.1 Preparation of a Draft EIR

2.2 Public participation process on the Draft EIR

Task 3

3.1 Completion of the Final EIR

3.2 Prepare Findings on Preferred Alternative and FEIR Certification Document

nc5:scopesum

FOR DISCUSSION ONLY

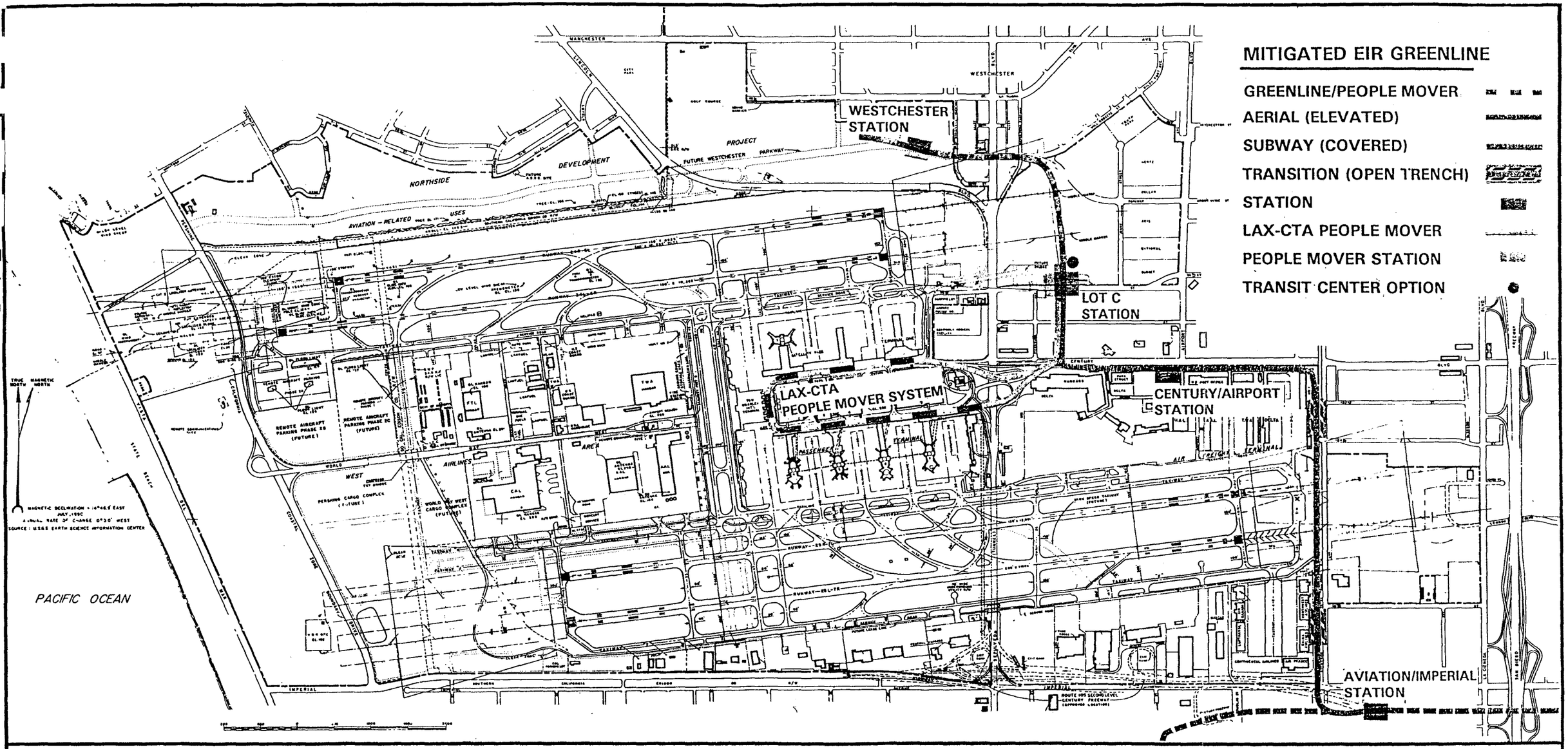
METRO GREEN LINE NORTHERN EXTENSION

(TRANSPORTATION SERVICE TO THE LAX/WESTCHESTER AREA)

ACTION STEPS TO INITIATE EIR

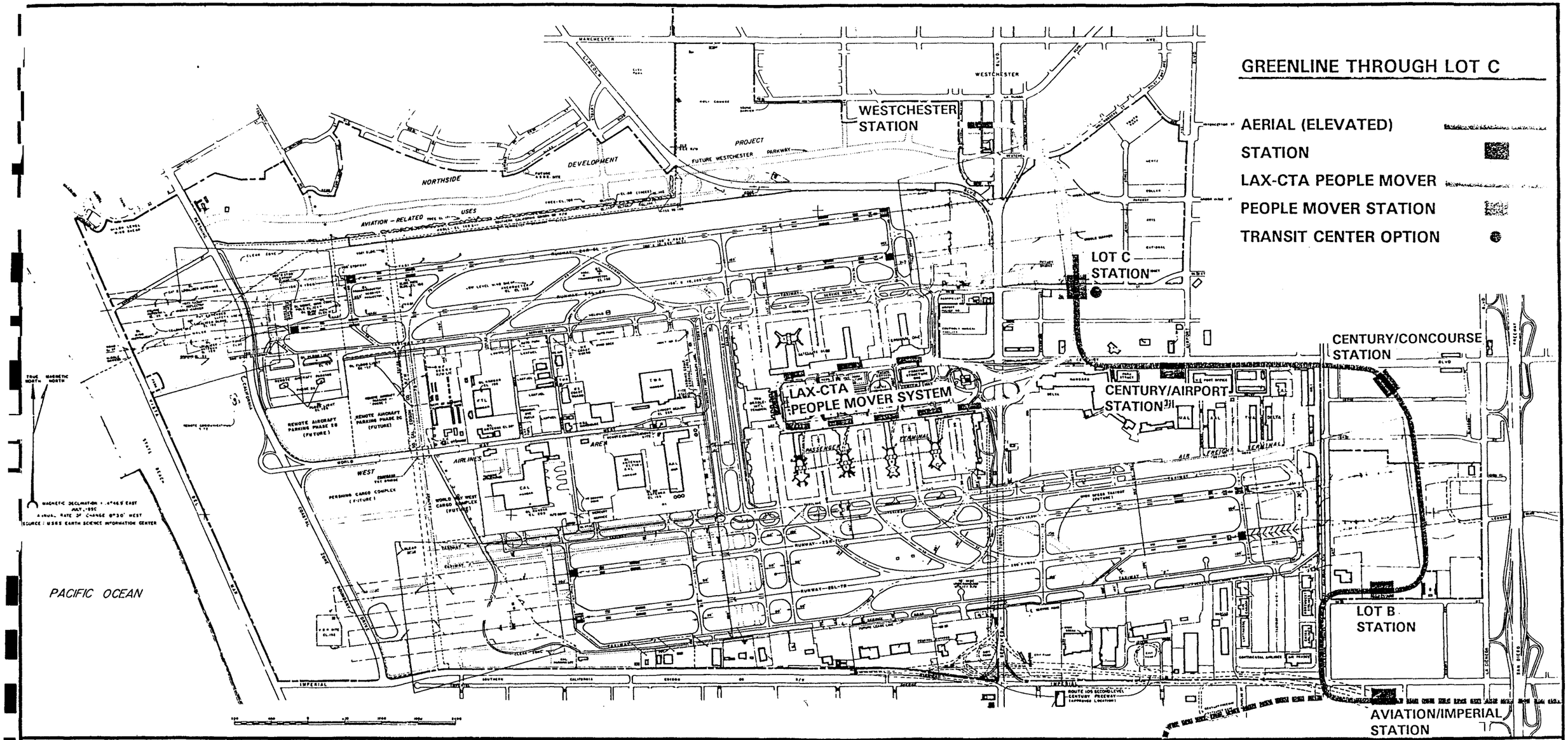
	Activity	RESPONSIBILITY
1.	Develop detailed scope of work, schedule and budget for the joint EIR.	DOA/LACTC
2.	Develop and agree on a recommended work-cost sharing arrangement on the EIR.	DOA/LACTC
3.	Present recommended EIR scope, schedule and budget, as well as work-cost sharing agreement between DOA and LACTC, to respective Commissions.	DOA/LACTC
4.	DOA Commission and LACTC approve: (1) EIR scope, schedule and budget. (2) work-cost sharing agreement.	DOA/LACTC
5.	Lead Agency issues RFP.	LACTC (?)
6.	Select Consultant.	DOA/LACTC

a:sus2:greenjan.adg



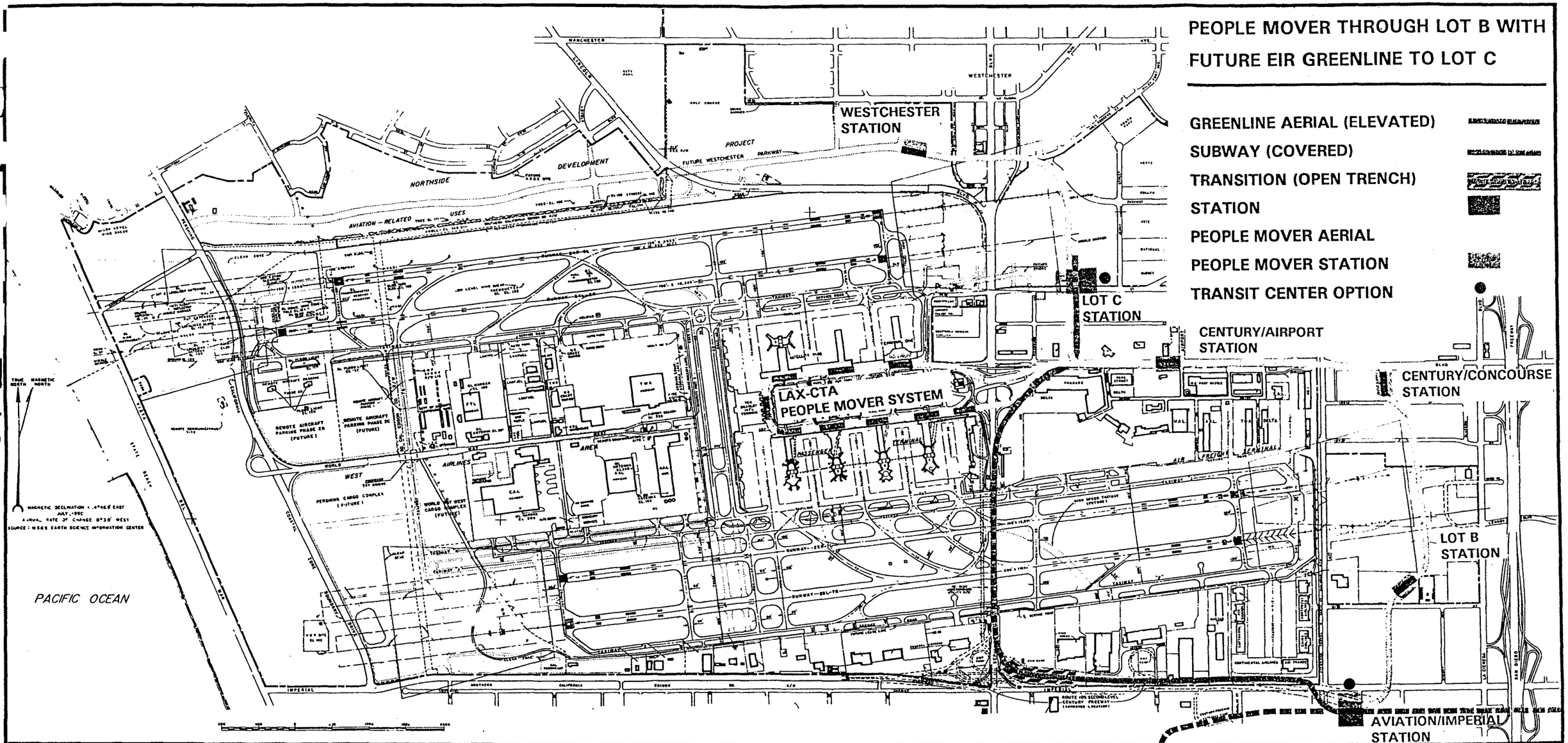
ALIGNMENT OPTION A

12/91



ALIGNMENT OPTION 4

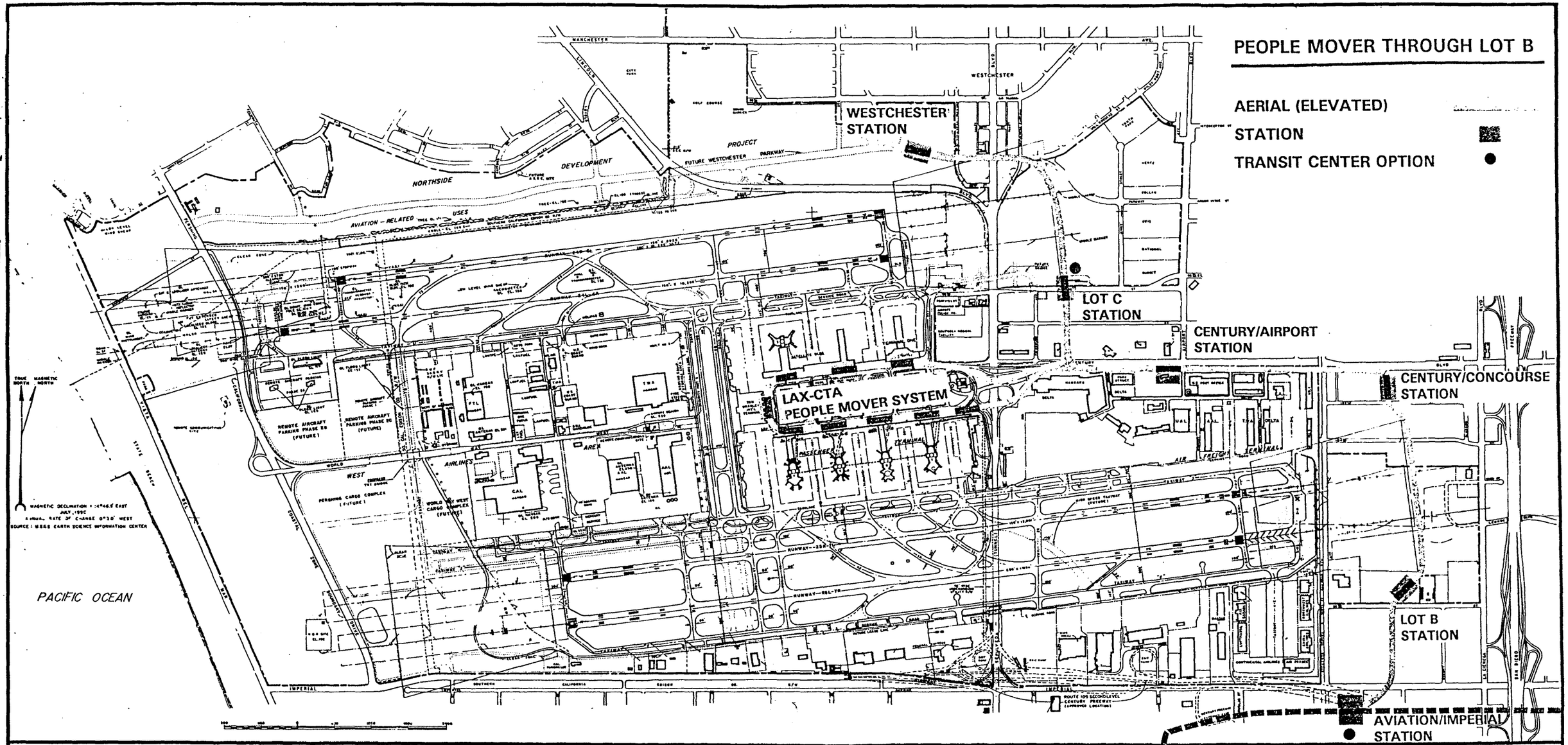
12/91



ALIGNMENT OPTION 5

RG

12/91



ALIGNMENT OPTION 5

12/91