



Eastside Transit Corridor Study

Summary of Results

Re-Evaluation/Major Investment Study

February 4, 2000

By

Eastside Corridor Transit Consultants

Joint Venture of PBQ&D and Jenkins/Gales/Martinez

Major Study Outcomes

- Recommended an alternative that reduced costs by 50%.
- Recommended an alternative that best preserves objectives of suspended project and enhances potential for new transit riders.
- Recommended an alternative that has substantive community stakeholders support
- Recommended an alternative that will considerably reduce community impact
- Recommended an alternative that will address the short and long term transportation needs of corridor.
- Recommended an alternative that has the potential to maximize the region's transit system connectivity.



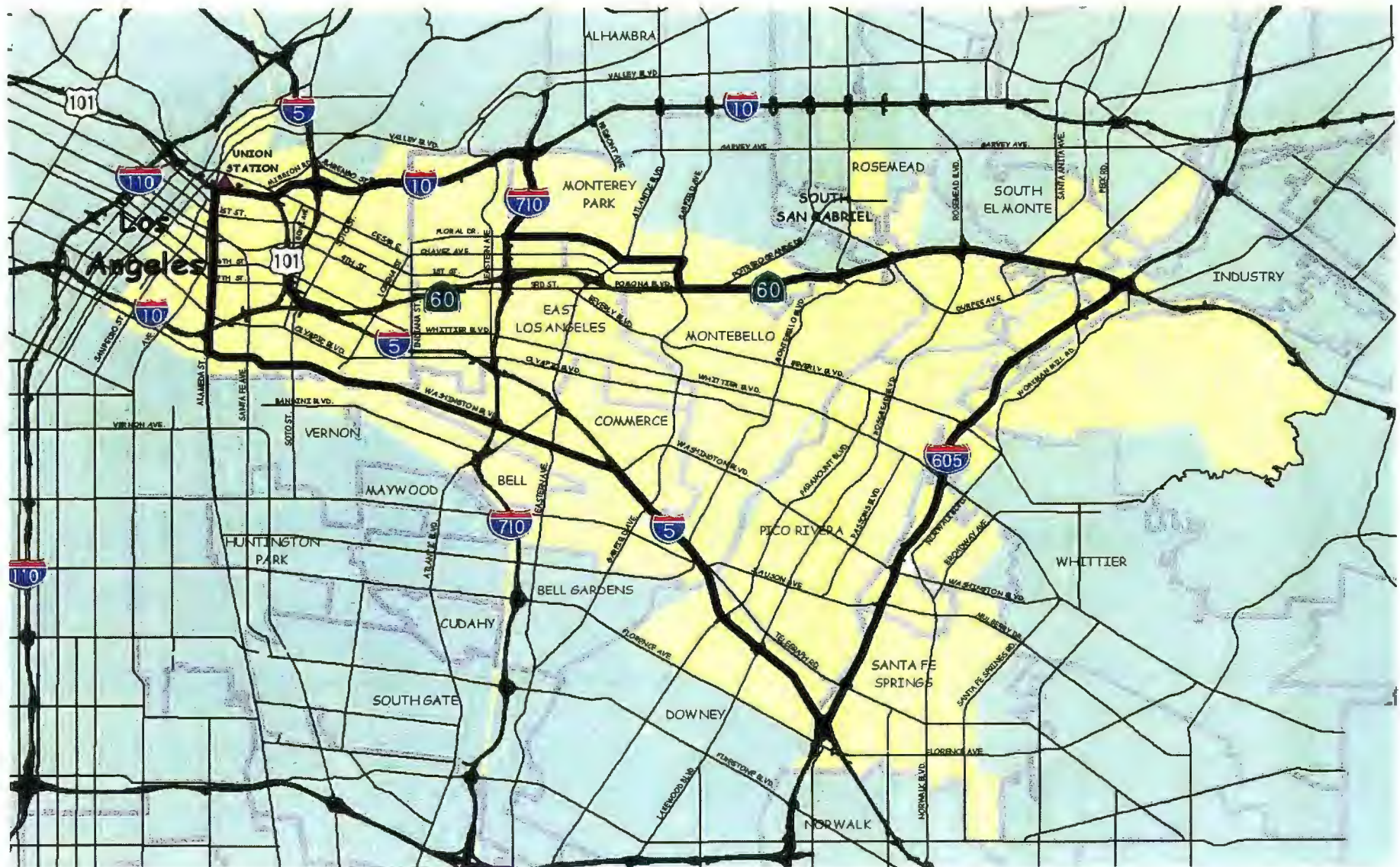
METRO RED LINE EAST SIDE EXTENSION

1994 LPA Adopted
1998 Project Suspended



— PROJECT
— FUTURE EXTENSION

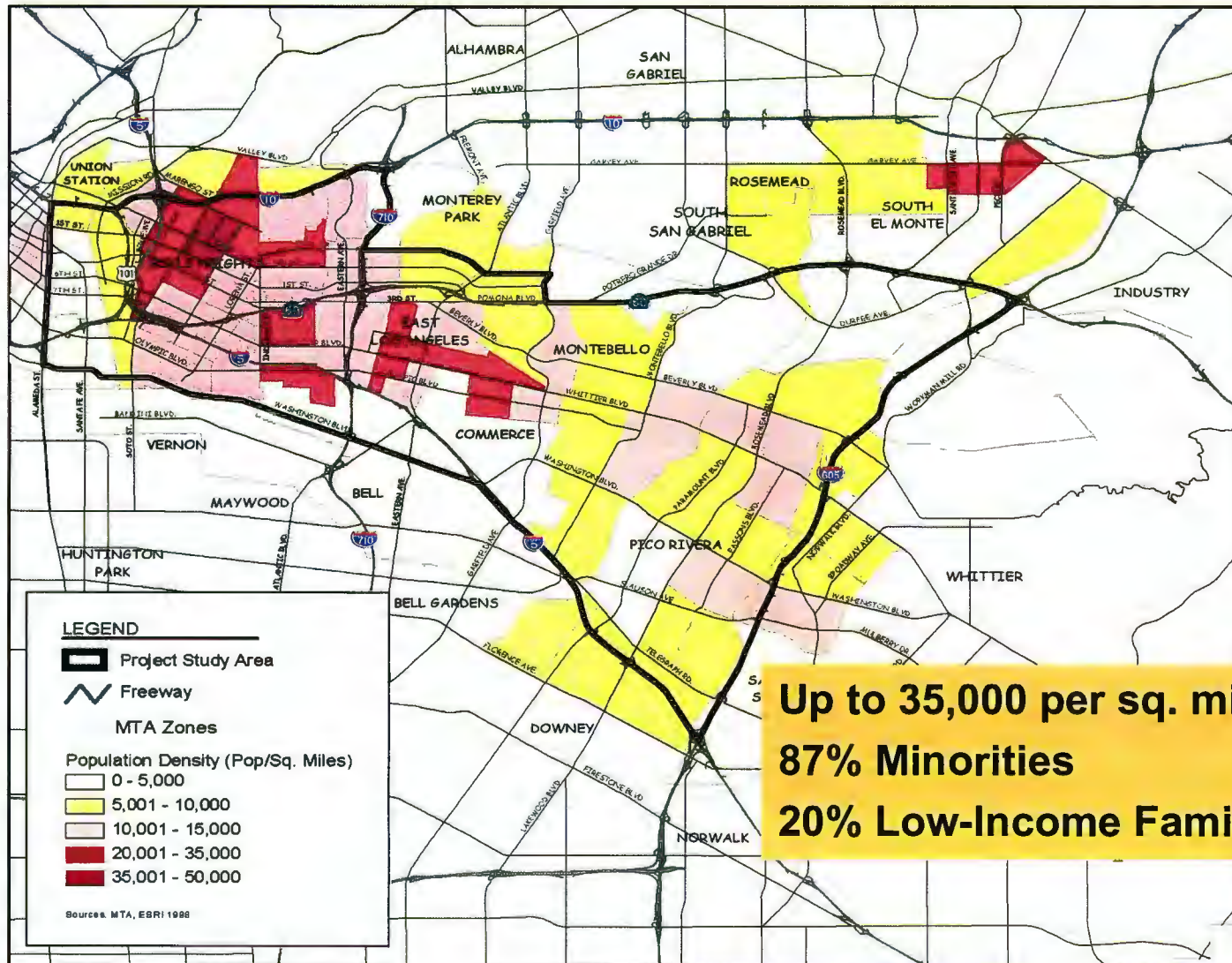
Geographic Study Area



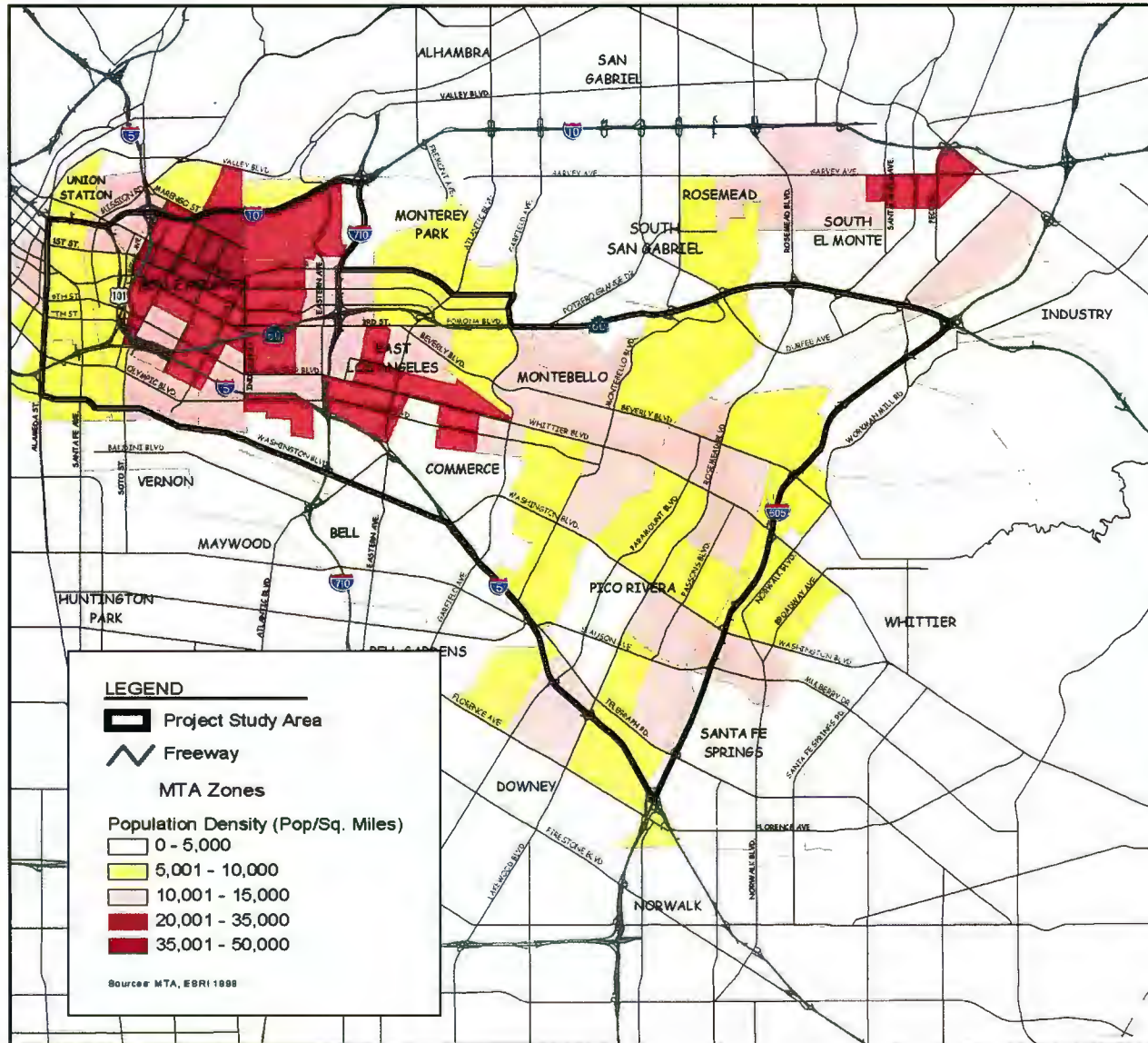
Fixed Guideway Modes Studied

- **Bus Rapid Transit -**
Exclusive Dedicated Bus Lane on Arterial Streets
- **Light Rail Transit -**
Dedicated Light Rail Transit with Low Floor Vehicles and Stations
- **Heavy Rail Transit -**
Metro Red Line subway vehicles

1995 Population Density



2020 Population Density

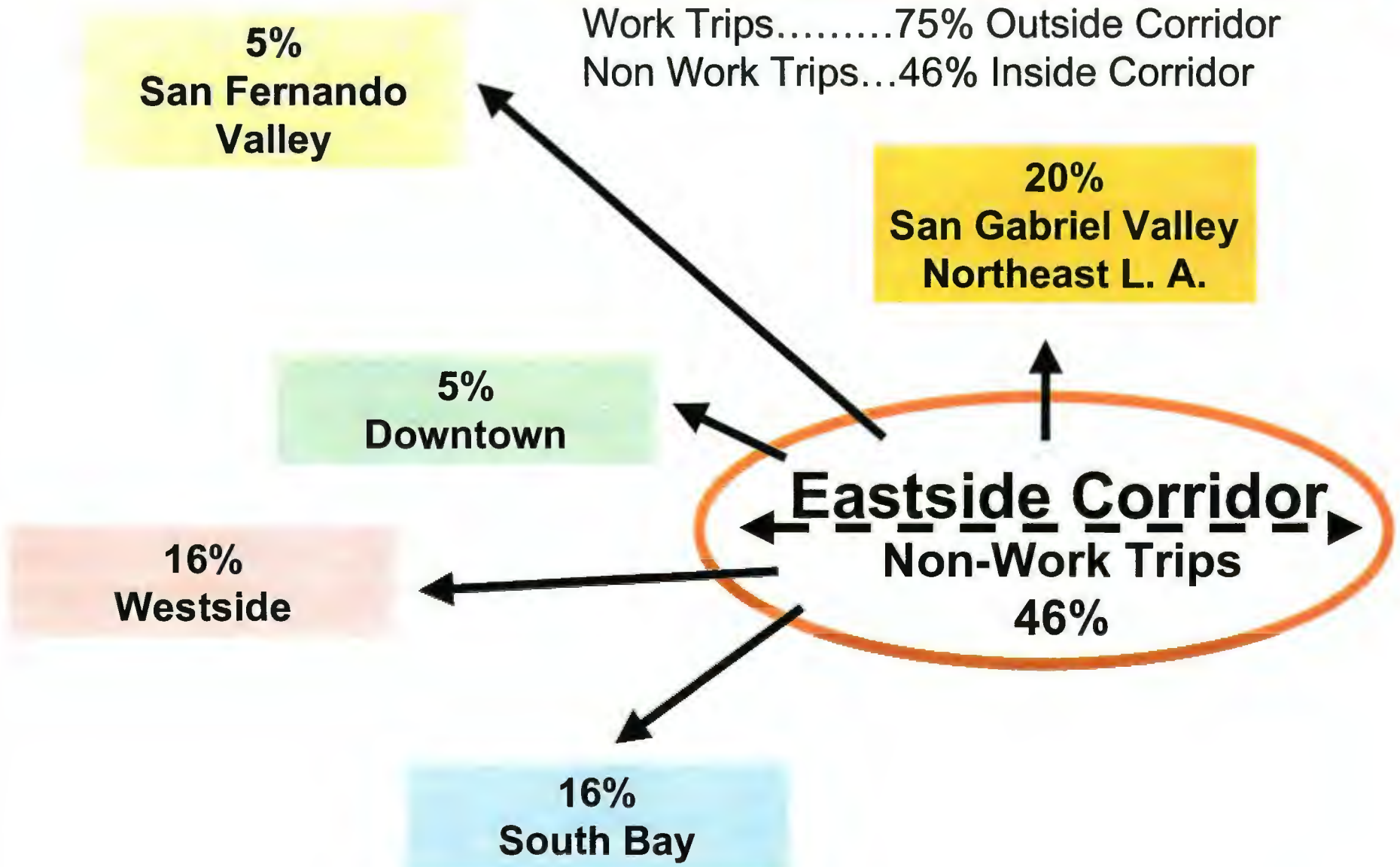


Significant Characteristics / Constraints

Boyle Heights & Portions of East Los Angeles

- **Land Use**
 - Older / Urbanized Communities (1920's)
 - Older / Historic Commercial Corridors
 - Limited Setbacks and Minimal Off-street Parking (similar to Melrose Ave.)
 - Mixed Land Uses - Residential, Commercial, Public Facilities
- **Circulation**
 - Concentration of Freeways (Historical Impacts)
 - Local, Commuter & Freeway Traffic on Surface Streets
 - Very Narrow Roadways
 - Historic Bridges Over L.A. River
- **Demographics**
 - High Population Densities
 - High Percentage of Zero Car Households
 - High Concentration of Pedestrians on Streets

Corridor Transit Patterns



Community Input Planning Process

- Reviewed 47 conceptual alternatives and selected 8 alternatives for the analysis in the Major Investment Study.
- Review was based on previous studies and substantive input from the technical team and community stakeholders.
- Conducted:
 - Ten major community meetings in August & October 1999 and January 2000 throughout the Eastside Corridor and attended by more than 585 community stakeholders.
 - Federal and State Community and Agency Scoping process and published the Notice of Intent and Notice of Preparation in the Federal Register and State Clearinghouse.
 - More than 34 meetings with community based organizations.
 - 33 briefings to various Eastside elected officials and staff.
 - Combined mailing and flyer distribution to more than 67,500 households, businesses, and community organizations.
 - Published meeting notices in the L.A. Times, La Opinion, Eastside Sun, Our Times, and Rafu Shimpo.

Alternatives - Characteristics

- Common Termini - Union Station and Whittier/Norwalk Boulevards
- 12 to 13 miles in length
- 3 At-grade Bus Rapid Transit Alternatives
- 2 At-grade Light Rail Transit Alternatives
- 1 At-grade/Tunnel Light Rail Transit Alternative
- 2 Heavy Rail (Red Line subway extension) “hybrid” alternatives
 - Heavy Rail connected to At-grade Light Rail Transit
 - Heavy Rail connected to At-grade Bus Rapid Transit

Bus Rapid Transit Alternatives

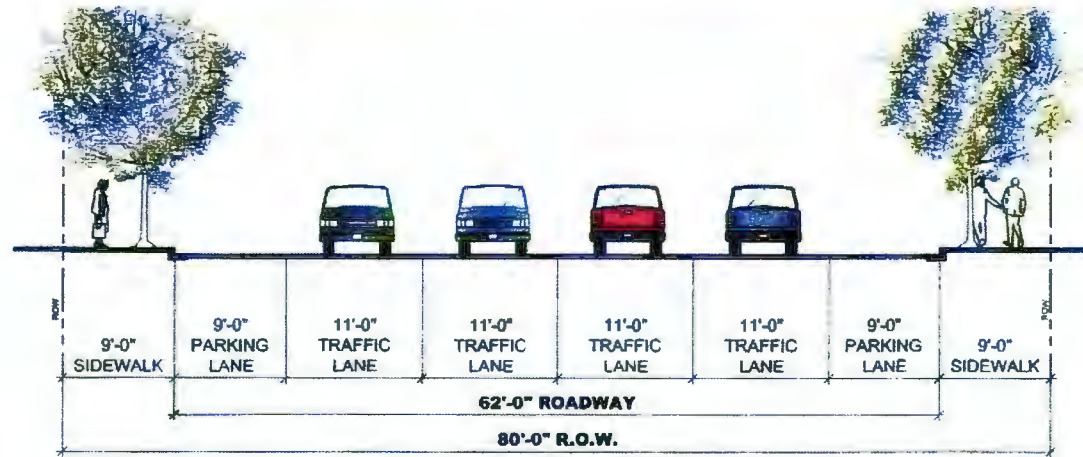


Narrow Roadway Condition - 60-62'

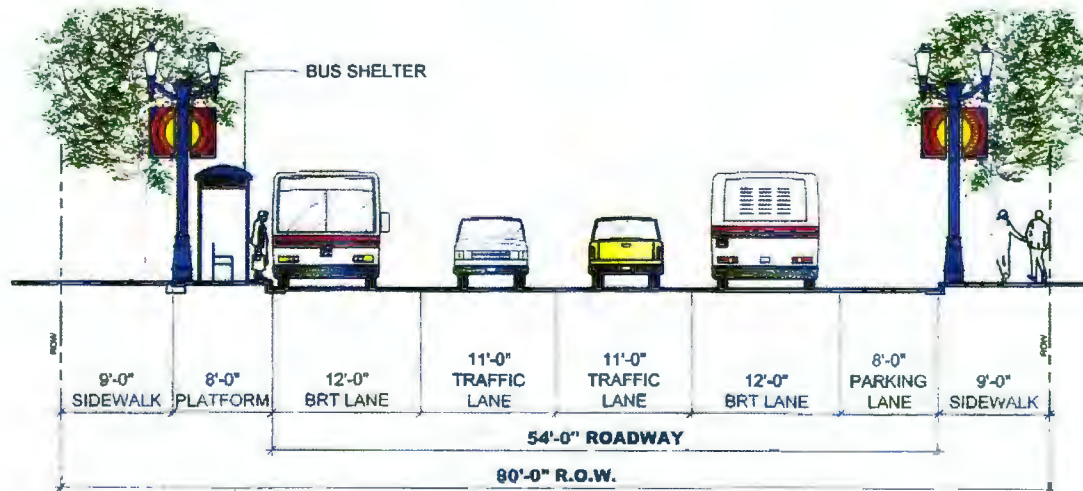
Boyle Heights Community (First & State Streets)



Narrow Roadway Condition - 60-62'

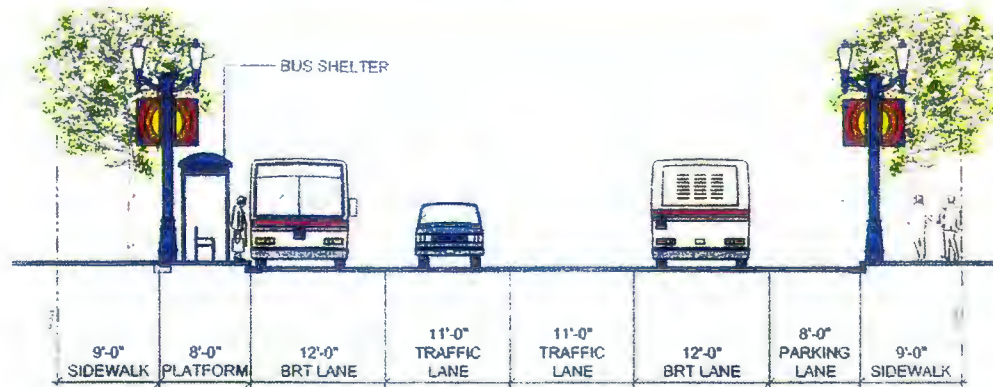


EXISTING STREET CONDITION-NARROW 80' R.O.W.

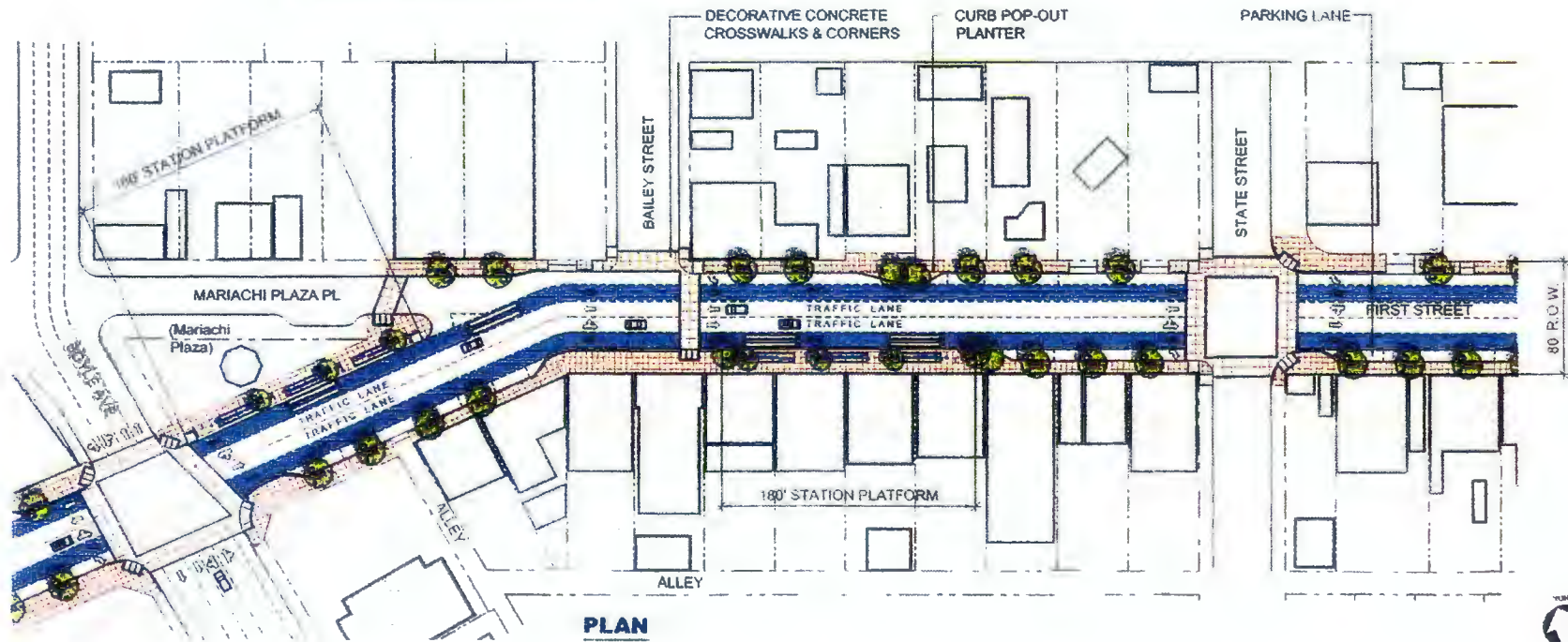


BUS RAPID TRANSIT ALTERNATIVE

Urban Design - First/Boyle Bus Rapid Transit



SECTION AT PLATFORM

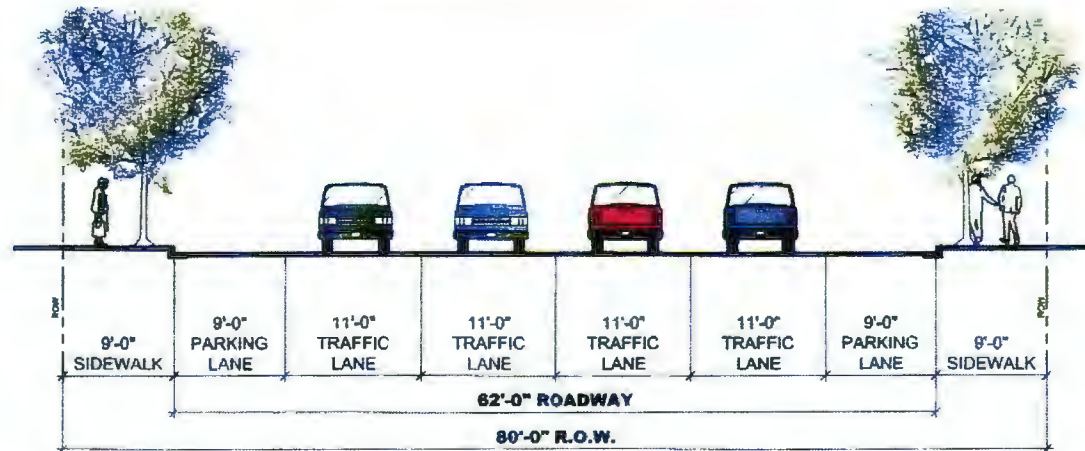


PLAN

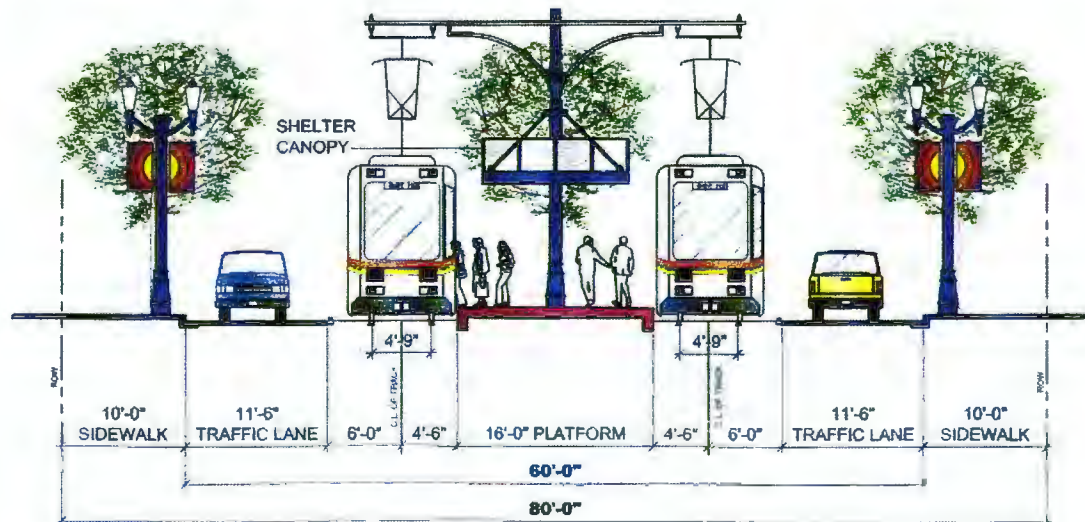
Light Rail Transit (LRT) Alternatives



Narrow Roadway Condition - 60'-62'

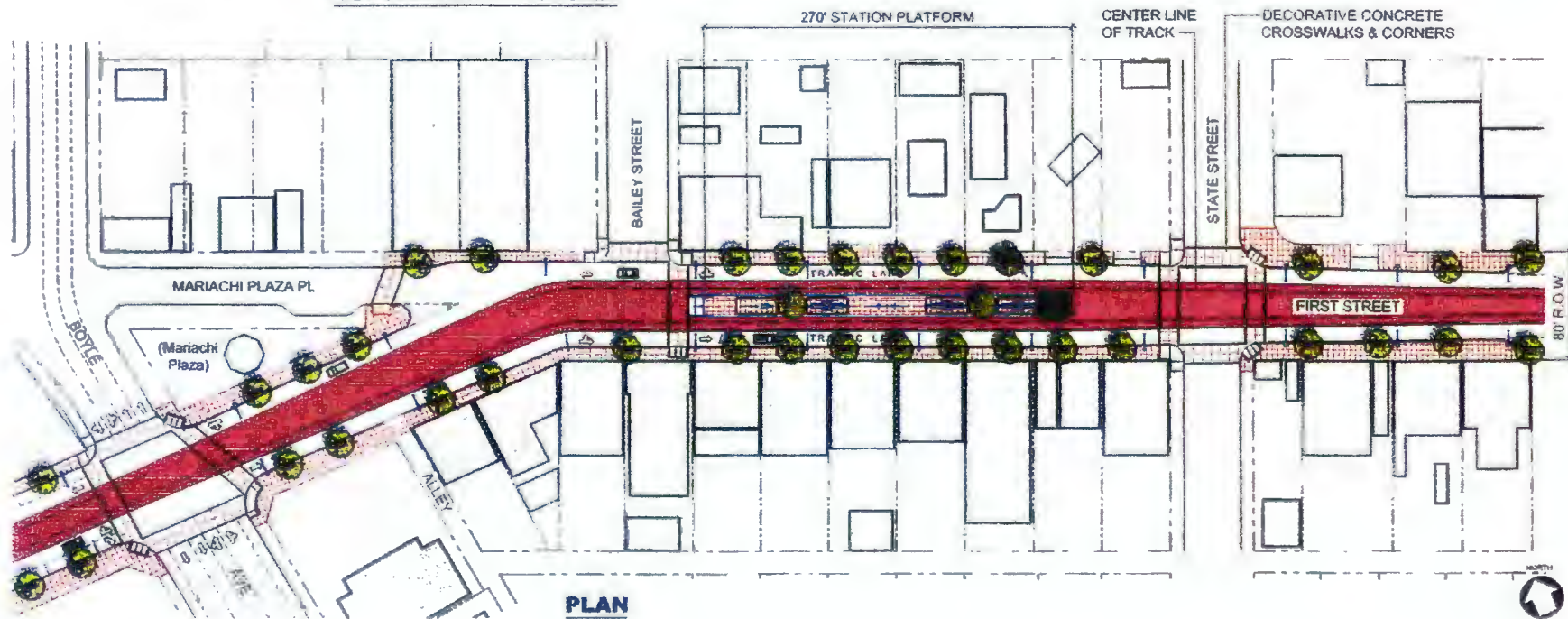
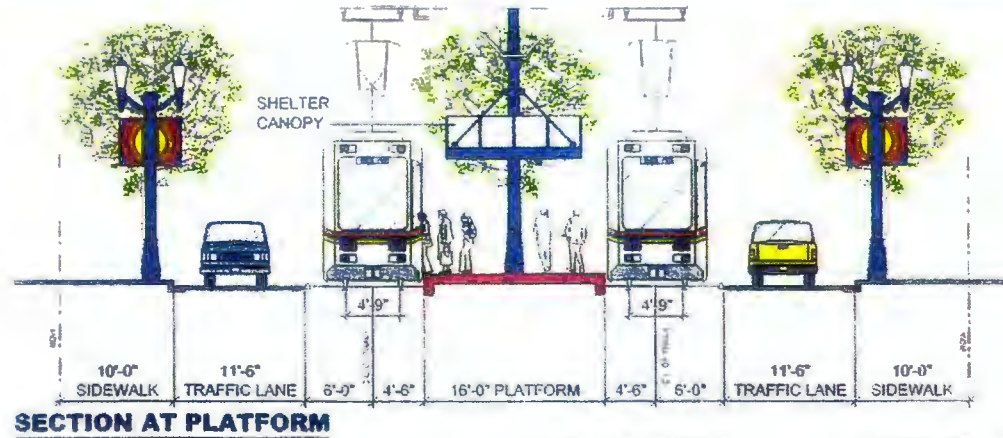


EXISTING STREET CONDITION-NARROW 80' R.O.W.



LIGHT RAIL TRANSIT ALTERNATIVE

Urban Design - First/Boyle Light Rail Transit



Hybrid Transit Alternatives

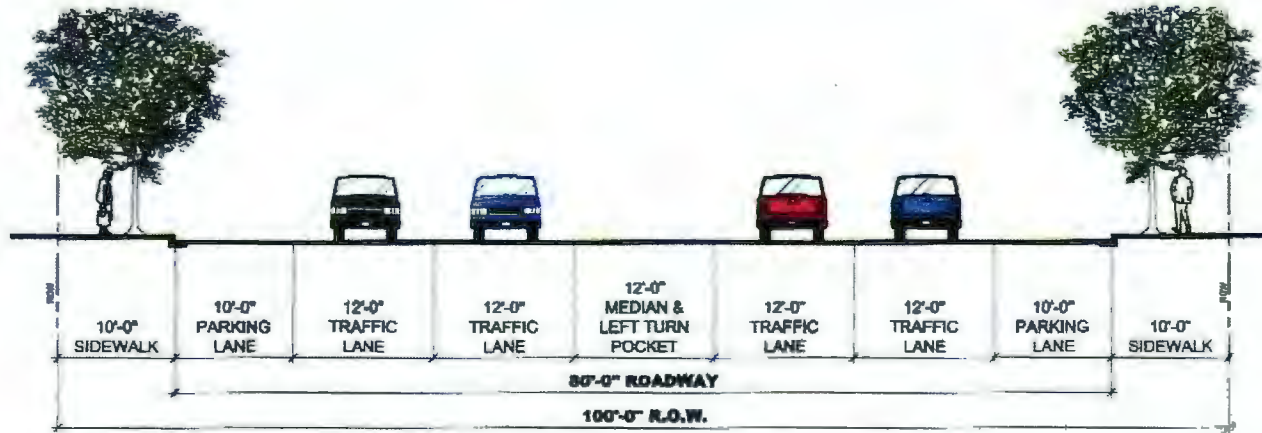


Wider Roadway Condition - 80'

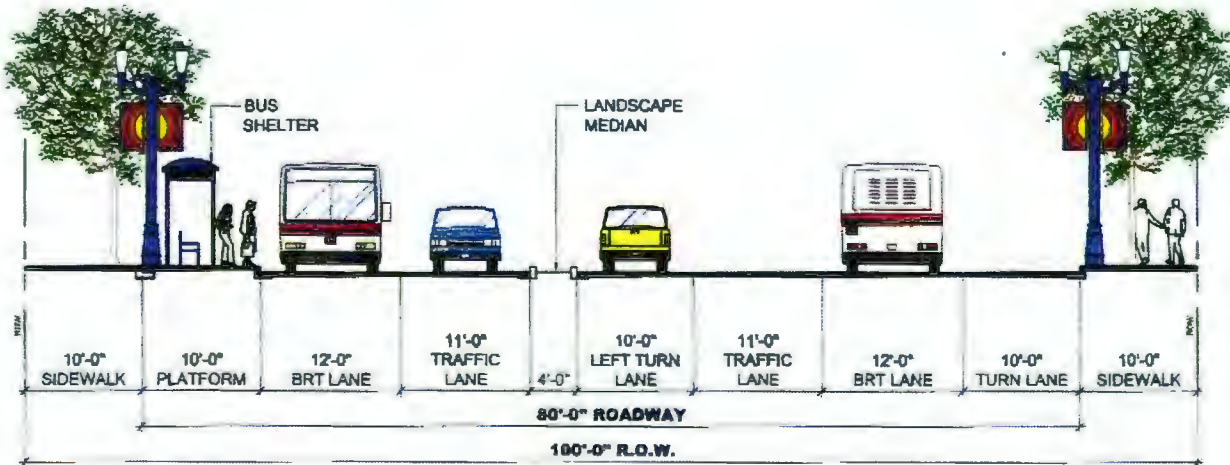
East Los Angeles (Third Street & Mednik Ave.)



Wider Roadway Condition - 80'

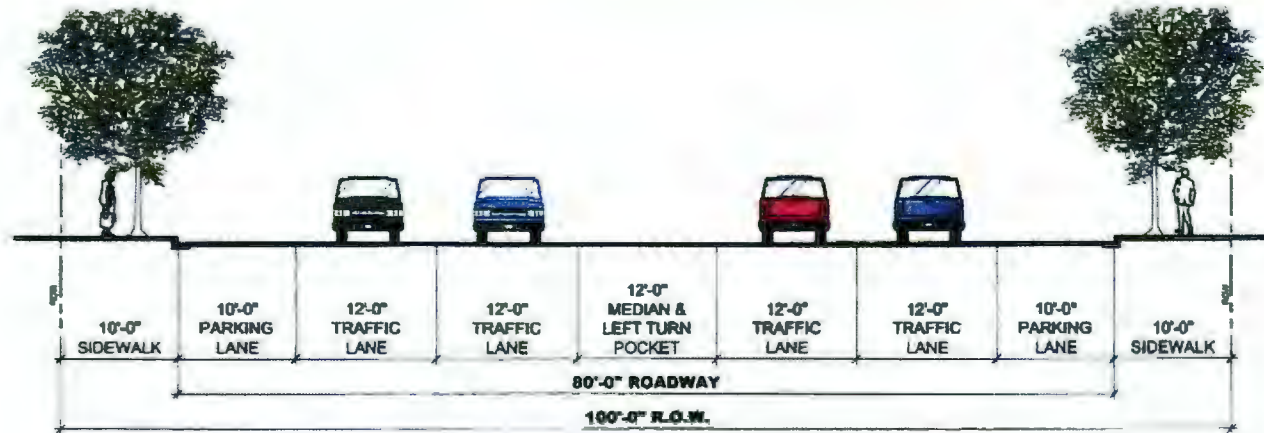


EXISTING STREET CONDITION-WIDER 100' R.O.W.

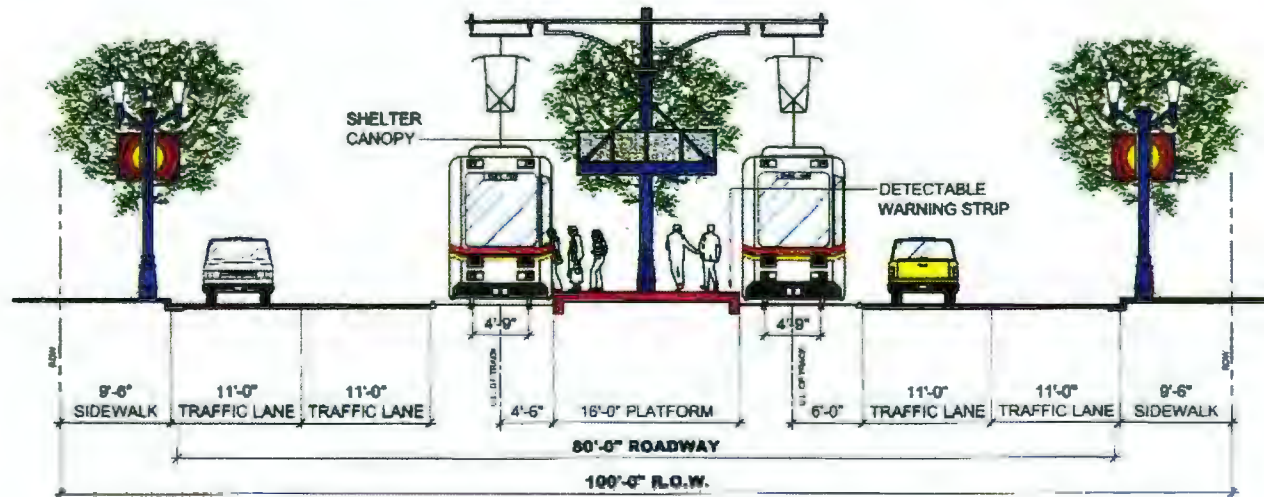


BUS RAPID TRANSIT ALTERNATIVE

Wider Roadway Condition - 80'



EXISTING STREET CONDITION-WIDER 100' R.O.W.



LIGHT RAIL TRANSIT ALTERNATIVE

Evaluation Criteria

- Costs
- Ridership
- Cost-Effectiveness
- Travel Time Savings
- Environmental Issues
- Community Consensus

Capital Cost

	Union Station to First & Lorena (3.75 mi.)	Union Station to Atlantic (7 mi.)	Union Station to Whittier/Norwalk Full Length (13mi.)
Alt. 1 - Busway	\$180 million	\$238 million	\$394 million
Alt. 2 - Busway	\$157 million	\$269 million	\$415 million
Alt. 4 - Busway	\$180 million	\$242 million	\$405 million
Alt. 3 - Light Rail	\$287 million	\$460 million	\$765 million
Alt. 5 - Light Rail	\$289 million	\$420 million	\$749 million
Alt. 6 - Light Rail	\$452 million	\$632 million	\$936 million
Alt. 7 - HR Hybrid	\$604 million	\$828 million	\$1,178 million
Alt. 8 - HR Hybrid	\$618 million	\$681 million	\$839 million
Suspended Project (1st & Lorena 3.75 mi.)	\$1.049 billion		

Annual Operating Costs Compared to the Transportation System Management

Full Length Project Costs

Alt. 1 - Busway	\$24 million
Alt. 2 - Busway	\$24 million
Alt. 4 - Busway	\$26 million
Alt. 3 - Light Rail	\$28 million
Alt. 5 - Light Rail	\$32 million
Alt. 6 - Light Rail	\$27 million
Alt. 7 - H R Hybrid	\$38 million
Alt. 8 - HR Hybrid	\$34 million

Fixed Guideway Daily Transit Boardings

Alt. 1 - Busway	11,500	
Alt. 2 - Busway	12,400	
Alt. 4 - Busway	11,300	
Alt. 3 - Light Rail	17,100	
Alt. 5 - Light Rail	18,000	
Alt. 6 - Light Rail	17,800	(20,500*)
Alt. 7 - H R Hybrid	18,700	(6,700-Red Line 12,000 LRT)
Alt. 8 - HR Hybrid	14,000	(6,100-Red Line 7,900 BRT)

*East L.A. to Pasadena Without Transfer

Daily New Transit Trips Compared to the TSM Alternative

Alt. 1 - Busway	8,722	
Alt. 2 - Busway	7,383	
Alt. 4 - Busway	9,194	
Alt. 3 - Light Rail	11,887	
Alt. 5 - Lgt Rail	13,909	
Alt. 6 - Lgt Rail	12,387	(13,953*)
Alt. 7 - H R Hybrid	14,470	
Alt. 8 - HR Hybrid	10,169	

***East L.A. to Pasadena Without Transfer**

Cost-Effectiveness

Annualized Cost per New Daily Linked Transit Trip Compared to the No-Build Alternative

TSM	\$3.41
Alt. 1 - Busway	\$8.71
Alt. 2 - Busway	\$9.37
Alt. 4 - Busway	\$9.00
Alt. 3 - Light Rail	\$10.94
Alt. 5 - Light Rail	\$10.52
Alt. 6 - Light Rail	\$12.00 (\$11.45*)
Alt. 7 - HR Hybrid	\$14.10
Alt. 8 - HR Hybrid	\$13.18

*East L.A. to Pasadena Without Transfer

Cost-Effectiveness

Annualized Cost per New Daily Linked Transit Trip Compared to the TSM Alternative

Alt. 1 - Busway	\$20.74
Alt. 2 - Busway	\$25.36
Alt. 4 - Busway	\$21.04
Alt. 3 - Light Rail	\$23.56
Alt. 5 - Light Rail	\$20.69
Alt. 6 - Light Rail	\$25.78 (\$22.85*)
Alt. 7 - HR Hybrid	\$30.09
Alt. 8 - HR Hybrid	\$34.19

***East L.A. to Pasadena Without Transfer**

Environmental Issues

Busway

- Up to 154 Buses (Local and BRT) per hour operating along the trunk of Busway (Boyle Heights).

Light Rail

- Up to 24 trains per hour operating along narrow roadway segments.

Heavy Rail

- Heavy rail tunnel operations minimize impacts on street surfaces. Considerable impacts to traffic, business access and pedestrians during construction.

Community Impacts

- **Removal of 300-400 parking spaces would considerably impact local businesses. This impact is comparatively severe in areas where businesses' capitalization is low.**
- **Residential areas immediately abut commercial areas. Creation of off-street parking would impact the housing stock (similar to Melrose Ave.)**
- **Older/Historic commercial corridors are pedestrian oriented. Businesses depend on pedestrian traffic. Older/historic commercial/pedestrian corridors are an asset to the community and its potential for economic development.**
- **Left-hand turns will hold up traffic on narrow street segments. To make right turns drivers will cross bus lane. To parallel park cars would have to cross bus lane.**

Community Consensus

- Boyle Heights and East Los Angeles community prefer the previously adopted LPA and Suspended Project due to less environmental impacts and superior quality of service.
- Due to MTA's financial constraints the Boyle Heights community and areas of East Los Angeles will consider Alt. 6 as an alternative.
- Communities east of Atlantic are undecided about mode and specific alignment

Alternatives Comparison

Alternative	Costs	Ridership	Cost-Effectiveness	Travel Time Savings	Environmental Issues	Community Acceptance
1 Busway	●	○	◐	○	○	○
2 Busway	●	○	◐	○	○	○
3 Light Rail	◐	●	●	◐	◐	◐
4 Busway	●	◐	●	○	○	○
5 Light Rail	◐	●	●	◐	◐	◐
6 Light Rail	◐	●	◐	◐	●	●
7 HR Hybrid	○	●	○	●	●	●
8 HR Hybrid	◐	◐	○	◐	◐	◐

 Best
  Middle
  Worst

Recommendation

- Proceed with Phase II (Draft Environmental Impact Report/Statement) of the Transit Corridor Study of a light rail project (combination of alternative 5 and alternative 6) beginning at Union Station via First St. to First & Lorena, then transition to Third St. and proceed east via Third St./Beverly Blvd. to the Beverly Bl./Atlantic Bl. intersection. This recommendation will study an at-grade option and a tunnel segment option along First St. between the intersections of First/Boyle and First/Lorena with consideration of stations at First/Boyle, First/Soto, and First/Lorena.

Recommendation



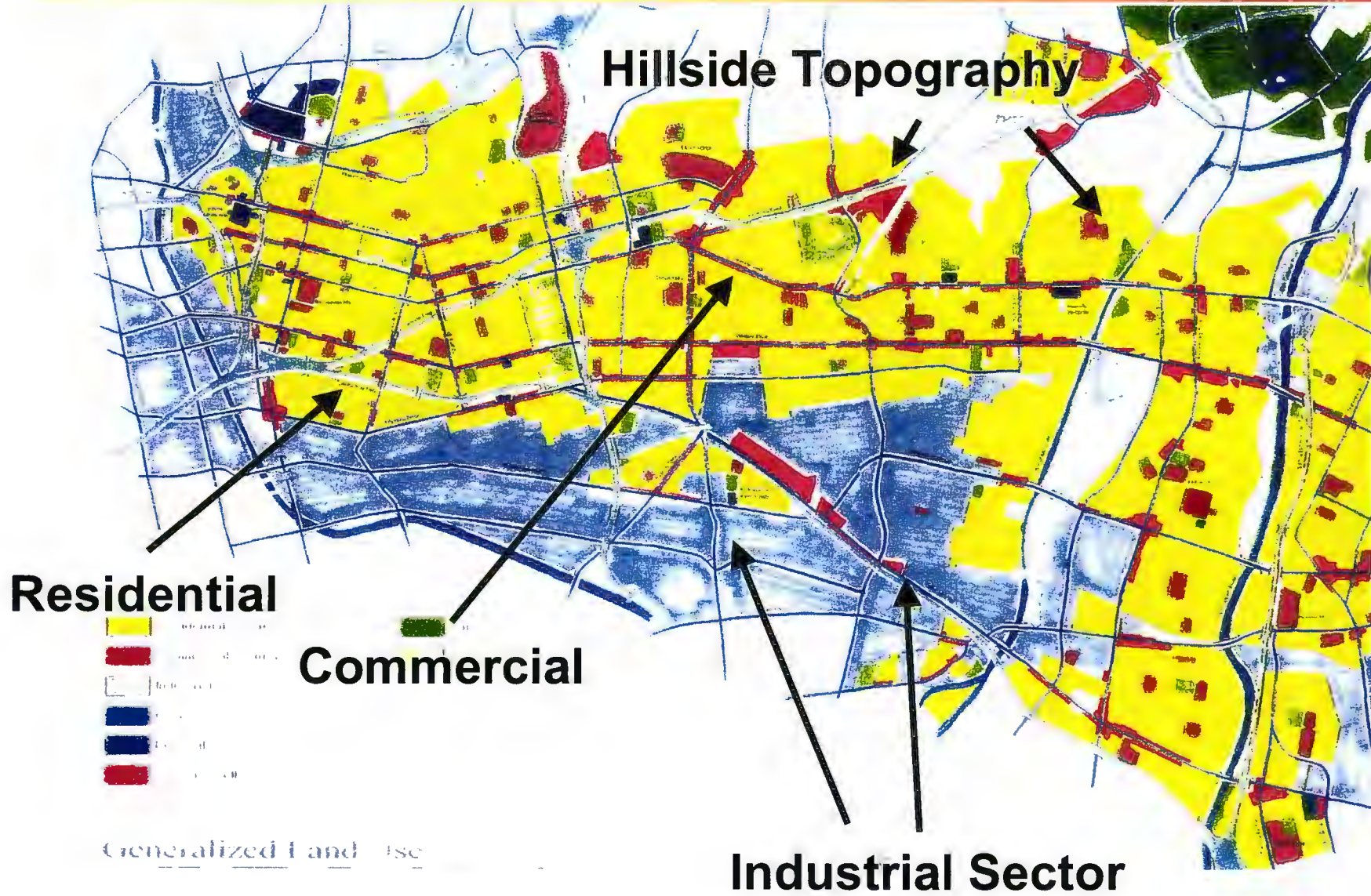
Recommendation



Corridor Demographics

	1995	2020
Total Population	468,750	625,000 (25% Growth)
	L.A. County	Eastside Corridor
Population Density (persons / sq. mile)	3,000	5,000 - 35,000
Minority Population	59%	59 - 100%
Poverty Population	15%	15 - 50%
Zero Car Households	11%	11% - 49%
Public Transit Use by Workers	6.5%	6 - 50%

Corridor Physical Characteristics



Community Redevelopment/Revitalization

- Recommended alternative optimizes the opportunity for community revitalization.
- Redevelopment Areas / Special Zones
 - Ten Existing Redevelopment Areas (Corridor)
 - L.A. City Portion
 - Empowerment Zone
 - Enterprise Zone
 - Targeted Neighborhood Program

Eastside Transit Corridor Study Alternatives Summary Evaluation Matrix

Alternative	Capital Cost, Millions, 1999\$			Annual Operating Cost Millions, 1999\$		New Daily Transit Trips		Daily Fixed Guideway Boardings	Annualized Cost Per New Daily Transit Trip		Operating Cost per System Boarding Compared to the No Build	Average Speed & Maximum Speed (MPH)	Travel Time (Minutes) Union Station to Whittier/ Norwalk	Environmental Issues	Community Support
	Full Length Project	Project to Lorena	Project to Atlantic	Compared to No Build	Compared to TSM	Compared to No Build	Compared to TSM		Compared to No Build	Compared to TSM					

TSM (1 Rapid Bus Line + Added Local Service)	\$53	N. A.	N. A.	\$15	N. A.	19,900	N. A.	N. A.	\$3.41	N. A.	\$0.81	N. A.	70	Existing conditions	Low, not a fixed guideway investment
1. BRT via Chavez and Beverly	\$394	\$180	\$238	\$39	\$24	28,600	8,700	11,500	\$8.71	\$20.74	\$2.13	23.1 Average 35 Maximum	34	Lost Parking Spaces - 339 High Visual Impact	Low
2. BRT via 1 st and Whittier	\$415	\$187	\$269	\$39	\$24	27,200	7,300	12,400	\$9.37	\$25.36	\$2.27	22.1 Average 35 Maximum	35	Lost Parking Spaces - 365 High Visual Impact	Low
3. LRT Via 1 st and Whittier	\$765	\$287	\$460	\$44	\$29	31,700	11,800	17,000	\$10.94	\$23.56	\$1.96	23.5 Average 35 Maximum	32	Lost Parking Spaces - 402 High Visual Impact	Low
4. BRT Via 1 st and Beverly	\$405	\$180	\$242	\$42	\$27	29,100	9,200	11,300	\$9.00	\$21.04	\$2.14	22.5 Average 35 Maximum	34	Lost Parking Spaces - 352 High Visual Impact	Low
5. LRT Via 1 st and Beverly	\$749	\$289	\$420	\$48	\$33	33,800	13,900	18,000	\$10.52	\$20.69	\$1.93	23.9 Average 35 Maximum	32	Lost Parking Spaces - 396 High Visual Impact	Low/Medium

RECOMMENDATION
Eastside Transit Corridor Study
Alternatives Summary Evaluation Matrix

Alternative	Capital Cost, Millions, 1999\$			Annual Operating Cost Millions, 1999\$		New Daily Transit Trips		Daily Fixed Guideway Boardings	Annualized Cost Per New Daily Transit Trip		Operating Cost per System Boarding Compared to the No Build	Average Speed & Maximum Speed (MPH)	Travel Time (Minutes) Union Station to Whittier/ Norwalk	Environmental Issues	Community Support
	Full Length Project	Project to Lorena	Project to Atlantic	Compared to No Build	Compared to TSM	Compared to No Build	Compared to TSM		Compared to No Build	Compared to TSM					
6. Modified LRT At-Grade via 1st and Beverly	\$750	\$290	\$420	\$48	\$33	33,800	13,900	18,000	\$10.52	\$20.69	\$1.93	24.2 Average 35 Maximum	31	Lost Parking Spaces – 400 High Visual Impact	Low/Medium
6. Modified LRT with tunnel segment via 1st and Beverly	\$894	\$452	\$590	\$43	\$28	33,900	14,000	20,500	\$11.13	\$22.16	\$1.76	25.9 Average 55 Maximum	29	Lost Parking Spaces – 235 Low Visual Impact	High

Shaded area is the Recommended Project Cost Estimate Range

RECOMMENDATION
Eastside Transit Corridor Study
Alternatives Summary Evaluation Matrix

Alternative	Capital Cost, Millions, 1999\$			Annual Operating Cost Millions, 1999\$		New Daily Transit Trips		Daily Fixed Guideway Boardings	Annualized Cost Per New Daily Transit Trip		Operating Cost per System Boarding Compared to the No Build	Average Speed & Maximum Speed (MPH)	Travel Time (Minutes) Union Station to Whittier/ Norwalk	Environmental Issues	Community Support
	Full Length Project	Project to Lorena	Project to Atlantic	Compared to No Build	Compared to TSM	Compared to No Build	Compared to TSM		Compared to No Build	Compared to TSM					
6. LRT On 1 st . with Tunnel Segment - via Whittier ¹	\$936	\$452	\$632	\$43	\$28	32,300 (33,800)	12,400 (13,900)	17,800 (20,500)	\$12.00 (\$11.45)	\$25.78 (\$22.85)	\$1.84 (\$1.76)	25.6 Average 55 Maximum	30	Lost Parking Spaces - 236 Low Visual Impact	High
7. HRT with LRT via Beverly	\$1,178	\$604	\$828	\$53	\$38	34,300	14,400	18,700	\$14.10	\$30.09	\$2.11	25.7 Average 60 Maximum	28.5	Lost Parking Spaces - 172 Low visual Impact	Medium
8. HRT with BRT via Beverly	\$849	\$618	\$682	\$49	\$34	30,000	10,100	14,000	\$13.18	\$34.19	\$2.45	22.9 Average 55 Maximum	33	Lost Parking Spaces - 320 Medium/High Visual Impact	Low/Medium

¹ Numbers in () reflect Eastside LRT Line through connected with the Pasadena LRT Line



Eastside Transit Corridor Study

Maps of Alternatives, Station Locations, & Bus Interface

Re-Evaluation/Major Investment Study

February 4, 2000

By

Eastside Corridor Transit Consultants

Joint Venture of PBQ&D and Jenkins/Gales/Martinez



**Eastside Transit Corridor Study
Alternative 1
Station Locations and Characteristics**

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Alameda / 1st	BRT	Yes	DASH A,D; Montebello 40; MTA 30,31,40,42,434,436,442,445,466	Side, on Alameda north of 1st
Union Station	BRT	Yes	Red Line, Pasadena Blue Line, Metrolink, Amtrak AVTA, Santa Clarita, OCTA, Foothill, LADOT, MTA Expresses MTA 33,40,42,55,60,68,70,71,78,79,333,378,379, DASH B,D	Side, on Chavez near Vignes or Alameda
Chavez / Boyle	BRT	No	MTA 68, 250, 620	Side, on Chavez between Boyle and State
Chavez / Soto	BRT	No	MTA 68, 251, 252, 605	Side, on Chavez west of Soto
4th / Soto	BRT	No	Montebello 40; MTA 251, 252, 605	Side, on 4th east of Soto
4th / Evergreen	BRT	No	Montebello 40; MTA 253	Side, on 4th west of Evergreen
4th / Lorena	BRT	No	Montebello 40; MTA 254	Side, on 4th near Lorena
3rd / Rowan	BRT	No	Montebello 40; MTA 65, 255	Side, on 3rd west of Rowan
3rd / Mednik	BRT	Yes	Montebello 40; MTA 258, 259	Side, on 3rd east of Mednik
Beverly / Atlantic	BRT	Yes	Montebello 10, 40, 341, 342, 343; MTA 260; Monterey Park?	Side, on Beverly east of Atlantic
Beverly / Gerhart	BRT	No	Montebello 40, 341, 342, 343; Monterey Park?	Side, on Beverly east of Gerhart
Beverly / Garfield	BRT	Yes	Montebello 40, 341, 342, 343; MTA 262	Side, on Beverly west of Garfield
Beverly / Wilcox	BRT	No	Montebello 40, 70, 341, 342, 343	Side, on Beverly east of Wilcox
Beverly / Montebello	BRT	Yes	Montebello 20, 40, 70, 341, 342, 343	Side, on Beverly west of Montebello

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Beverly / 4th	BRT	No	Montebello 40, 70, 342	Side, on Beverly east of 4th Street
Whittier / Rosemead	BRT	Yes	Montebello 10, 60; MTA 265, 266, 318	Side, on Whittier west of Rosemead
Whittier / Passons	BRT	No	Montebello 10, 60; MTA 265, 318	Side, on Whittier west of Passons
Whittier / Norwalk	BRT	Yes	Norwalk 1; Whittier 1,2; MTA 318	Side, on Whittier west of Norwalk

Alternative 1 : Cesar Chavez, Soto*, 4th Street, 3rd Street, Beverly Blvd, Paramount*, Whittier Blvd

*North-south transition areas subject to further study



**Eastside Transit Corridor Study
Alternative 2
Station Locations and Characteristics**

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Union Station	BRT	Yes	Red Line, Pasadena Blue Line, Metrolink, Amtrak AVTA, Santa Clarita, OCTA, Foothill, LADOT, MTA Expresses MTA 33, 40, 42, 55, 60, 68, 70, 71, 78, 79, 333, 378, 379, DASH B, D	Side, on Alameda in front of Union Station
1st Street / Alameda	BRT	No	DASH A, D; Montebello 40; MTA 30, 31, 40, 42, 434, 436, 442, 445, 466	Side, on Alameda north of 1st Street
1st / Utah	BRT	No	MTA 30, 31	Side, on 1st east of Utah
1st / Boyle	BRT	No	MTA 30, 31, 250, 620	Side, on 1st between Boyle and State
1st / Chicago	BRT	No	MTA 30, 31, 250, 620	Side, on 1st east of Chicago
4th / Soto	BRT	No	Montebello 40; MTA 251, 252, 605	Side, on 4th east of Soto
4th / Evergreen	BRT	No	Montebello 40; MTA 253	Side, on 4th west of Evergreen
4th / Lorena	BRT	No	Montebello 40; MTA 254	Side, on 4th near Lorena
3rd / Rowan	BRT	No	Montebello 40; MTA 65, 255	Side, on 3rd west of Rowan
3rd / Mednik	BRT	Yes	Montebello 40; MTA 258, 259	Side, on 3rd west of Mednik
Whittier / Arizona	BRT	No	MTA 18, 258, 259, 318	Side, on Arizona north of Whittier
Whittier / Atlantic	BRT	Yes	Montebello 10; MTA 18, 260, 318; Commerce all lines	Side, on Whittier east of Atlantic
Whittier / Gerhart	BRT	No	Montebello 10; MTA 18, 318; Commerce all lines	Side, on Whittier west of Gerhart
Whittier / Garfield	BRT	Yes?	Montebello 10, 70; MTA 18, 262, 318	Side, on Whittier west of Garfield

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Whittier / Wilcox	BRT	No	Montebello 10, 70; MTA 318	Side, on Whittier east of Wilcox
Whittier / Montebello	BRT	Yes	Montebello 10, 20, 70, 343; MTA 318	Side, on Whittier west of Montebello
Whittier / Rosemead	BRT	Yes	Montebello 10, 60; MTA 265, 266, 318	Side, on Whittier west of Rosemead
Whittier / Passons	BRT	No	Montebello 10, 60; MTA 265, 318	Side, on Whittier west of Passons
Whittier / Norwalk	BRT	Yes	Norwalk 1; Whittier 1,2; MTA 318	Side, on Whittier west of Norwalk

Alternative 2 : Alameda*, 1st Street, Soto*, 4th Street, 3rd Street, Mednik/Arizona*, Whittier Blvd

*North-south transition areas subject to further study



Alternative 3 Light Rail

**Eastside Transit Corridor Study
Alternative 3
Station Locations and Characteristics**

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Union Station	LRT	Yes	Red Line, Pasadena Blue Line, Metrolink, Amtrak AVTA, Santa Clarita, OCTA, Foothill, LADOT, MTA Expresses MTA 33, 40, 42, 55, 60, 68, 70, 71, 78, 79, 333, 378, 379, DASH B, D	Center, on Alameda or in Union Station possibly connecting with Blue Line tracks
1st Street / Alameda	LRT	No	DASH A, D; Montebello 40; MTA 30, 31, 40, 42, 434, 436, 442, 445, 466	Center, on Alameda north of 1st Street
1st / Utah	LRT	No	MTA 30, 31	Center, on 1st east of Utah
1st / Boyle	LRT	No	MTA 30, 31, 250, 620	Center, on 1st between Boyle and State
1st / Chicago	LRT	No	MTA 30, 31, 250, 620	Center, on 1st east of Chicago
4th / Soto	LRT	No	Montebello 40; MTA 251, 252, 605	Center, on 4th east of Soto
4th / Evergreen	LRT	No	Montebello 40; MTA 253	Center, on 4th west of Evergreen
4th / Lorena	LRT	No	Montebello 40; MTA 254	Center, on 4th near Lorena
3rd / Rowan	LRT	No	Montebello 40; MTA 65, 255	Center, on 3rd west of Rowan
3rd / Mednik	LRT	Yes	Montebello 40; MTA 258, 259	Center, on 3rd west of Mednik
Whittier / Arizona	LRT	No	MTA 18, 258, 259, 318	Center, on Arizona north of Whittier
Whittier / Atlantic	LRT	Yes	Montebello 10; MTA 18, 260, 318; Commerce all lines	Center, on Whittier east of Atlantic
Whittier / Gerhart	LRT	No	Montebello 10; MTA 18, 318; Commerce all lines	Center, on Whittier west of Gerhart
Whittier / Garfield	LRT	Yes?	Montebello 10, 70; MTA 18, 262, 318	Center, on Whittier west of Garfield

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Whittier / Wilcox	LRT	No	Montebello 10, 70; MTA 318	Center, on Whittier east of Wilcox
Whittier / Montebello	LRT	Yes	Montebello 10, 20, 70, 343; MTA 318	Center, on Whittier west of Montebello
Whittier / Rosemead	LRT	Yes	Montebello 10, 60; MTA 265, 266, 318	Center on Whittier west of Rosemead
Whittier / Passons	LRT	No	Montebello 10, 60; MTA 265, 318	Center, on Whittier west of Passons
Whittier / Norwalk	LRT	Yes	Norwalk 1; Whittier 1,2; MTA 318	Center on Whittier west of Norwalk

Alternative 3 : Alameda*, 1st Street, Soto*, 4th Street, 3rd Street, Mednik/Arizona*, Whittier Blvd

*North-south transition areas subject to further study



Alternative 4 Bus Rapid Transit (Dedicated Busway)

**Eastside Transit Corridor Study
Alternative 4
Station Locations and Characteristics**

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Union Station	BRT	Yes	Red Line, Pasadena Blue Line, Metrolink, Amtrak AVTA, Santa Clarita, OCTA, Foothill, LADOT, MTA Expresses MTA 33, 40, 42, 55, 60, 68, 70, 71, 78, 79, 333, 378, 379, DASH B, D	Side, on Alameda in front of Union Station
1st Street / Alameda	BRT	No	DASH A, D; Montebello 40; MTA 30, 31, 40, 42, 434, 436, 442, 445, 466	Side, on Alameda north of 1st Street
1st / Utah	BRT	No	MTA 30, 31	Side, on 1st east of Utah
1st / Boyle	BRT	No	MTA 30, 31, 250, 620	Side, on 1st between Boyle and State
1st / Chicago	BRT	No	MTA 30, 31, 250, 620	Side, on 1st east of Chicago
4th / Soto	BRT	No	Montebello 40; MTA 251, 252, 605	Side, on 4th east of Soto
4th / Evergreen	BRT	No	Montebello 40; MTA 253	Side, on 4th west of Evergreen
4th / Lorena	BRT	No	Montebello 40; MTA 254	Side, on 4th near Lorena
3rd / Rowan	BRT	No	Montebello 40; MTA 65, 255	Side, on 3rd west of Rowan
3rd / Mednik	BRT	Yes	Montebello 40; MTA 258, 259	Side, on 3rd east of Mednik
Beverly / Atlantic	BRT	No	Montebello 10, 40, 341, 342, 343; MTA 260; Monterey Park?	Side, on Beverly east of Atlantic
Beverly / Gerhart	BRT	No	Montebello 40, 341, 342, 343; Monterey Park?	Side, on Beverly east of Gerhart
Beverly / Garfield	BRT	Yes	Montebello 40, 341, 342, 343; MTA 262	Side, on Beverly west of Garfield
Beverly / Wilcox	BRT	No	Montebello 40, 70, 341, 342, 343	Side, on Beverly east of Wilcox

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Beverly / Montebello	BRT	Yes	Montebello 20, 40, 70, 341, 342, 343	Side, on Beverly west of Montebello
Beverly / 4th	BRT	No	Montebello 40, 70, 342	Side, on Beverly east of 4th Street
Whittier / Rosemead	BRT	Yes	Montebello 10, 60; MTA 265, 266, 318	Side, on Whittier west of Rosemead
Whittier / Passons	BRT	No	Montebello 10, 60; MTA 265, 318	Side, on Whittier west of Passons
Whittier / Norwalk	BRT	Yes	Norwalk 1; Whittier 1, 2; MTA 318	Side, on Whittier west of Norwalk

Alternative 4 : Alameda*, 1st Street, Soto*, 4th Street, 3rd Street, Beverly Blvd, Paramount*, Whittier Blvd

*North-south transition areas subject to further study

**Eastside Transit Corridor Study
Alternative 5
Station Locations and Characteristics**

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Union Station	LRT	Yes	Red Line, Pasadena Blue Line, Metrolink, Amtrak AVTA, Santa Clarita, OCTA, Foothill, LADOT, MTA Expresses MTA 33, 40, 42, 55, 60, 68, 70, 71, 78, 79, 333, 378, 379, DASH B, D	Center, on Alameda or in Union Station possibly connecting with Blue Line tracks
1st Street / Alameda	LRT	No	DASH A, D; Montebello 40; MTA 30, 31, 40, 42, 434, 436, 442, 445, 466	Center, on Alameda north of 1st Street
1st / Utah	LRT	No	MTA 30, 31	Center, on 1st east of Utah
1st / Boyle	LRT	No	MTA 30, 31, 250, 620	Center, on 1st between Boyle and State
1st / Chicago	LRT	No	MTA 30, 31, 250, 620	Center, on 1st east of Chicago
4th / Soto	LRT	No	Montebello 40; MTA 251, 252, 605	Center, on 4th east of Soto
4th / Evergreen	LRT	No	Montebello 40; MTA 253	Center, on 4th west of Evergreen
4th / Lorena	LRT	No	Montebello 40; MTA 254	Center, on 4th near Lorena
3rd / Rowan	LRT	No	Montebello 40; MTA 65, 255	Center, on 3rd west of Rowan
3rd / Mednik	LRT	Yes	Montebello 40; MTA 258, 259	Center, on 3rd east of Mednik
Beverly / Atlantic	LRT	No	Montebello 10, 40, 341, 342, 343; MTA 260; Monterey Park?	Center, on Beverly east of Atlantic
Beverly / Gerhart	LRT	No	Montebello 40, 341, 342, 343; Monterey Park?	Center, on Beverly east of Gerhart
Beverly / Garfield	LRT	Yes	Montebello 40, 341, 342, 343; MTA 262	Center, on Beverly west of Garfield
Beverly / Wilcox	LRT	No	Montebello 40, 70, 341, 342, 343	Center, on Beverly east of Wilcox

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Beverly / Montebello	LRT	Yes	Montebello 20, 40, 70, 341, 342, 343	Center, on Beverly west of Montebello
Beverly / 4th	LRT	No	Montebello 40, 70, 342	Center, on Beverly east of 4th Street
Whittier / Rosemead	LRT	Yes	Montebello 10, 60; MTA 265, 266, 318	Center, on Whittier west of Rosemead
Whittier / Passons	LRT	No	Montebello 10, 60; MTA 265, 318	Center, on Whittier west of Passons
Whittier / Norwalk	LRT	Yes	Norwalk 1; Whittier 1, 2; MTA 318	Center, on Whittier west of Norwalk

Alternative 5 : Alameda*, 1st Street, Soto*, 4th Street, 3rd Street, Beverly Blvd, Paramount*, Whittier Blvd

*North-south transition areas subject to further study



Alternative 6 Light Rail

**Eastside Transit Corridor Study
Alternative 6
Station Locations and Characteristics**

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Union Station	LRT	Yes	Pasadena Blue Line, Metrolink, Amtrak AVTA, Santa Clarita, OCTA, Foothill, LADOT, MTA Expresses MTA 33, 40, 42, 55, 60, 68, 70, 71, 78, 79, 333, 378, 379, DASH B, D	Center, on Alameda or in Union Station possibly connecting with Blue Line tracks
1st / Alameda	LRT	No	DASH A, D; Montebello 40; MTA 30, 31, 40, 42, 434, 436, 442, 445, 466	Center, on Alameda north of 1st Street
1st / Utah	LRT	No	MTA 30, 31	Center, on 1st east of Utah
1st / Boyle	LRT	No	MTA 30, 31, 250, 620	Subway Station
1st / Lorena	LRT	No	MTA 30, 31, 65, 254	Subway Station or Center, on 1st west of Lorena
3rd / Rowan	LRT	No	Montebello 40; MTA 65, 255	Center, on 3rd west of Rowan
3rd / Mednik	LRT	Yes	Montebello 40; MTA 258, 259	Center, on 3rd west of Mednik
Whittier / Arizona	LRT	No	MTA 18, 258, 259, 318	Center, on Arizona north of Whittier
Whittier / Atlantic	LRT	Yes	Montebello 10; MTA 18, 260, 318; Commerce all lines	Center, on Whittier east of Atlantic
Whittier / Gerhart	LRT	No	Montebello 10; MTA 18, 318; Commerce all lines	Center, on Whittier west of Gerhart
Whittier / Garfield	LRT	Yes?	Montebello 10, 70; MTA 18, 262, 318	Center, on Whittier west of Garfield
Whittier / Wilcox	LRT	No	Montebello 10, 70; MTA 318	Center, on Whittier east of Wilcox
Whittier / Montebello	LRT	Yes	Montebello 10, 20, 70, 343; MTA 318	Center, on Whittier west of Montebello
Whittier / Rosemead	LRT	Yes	Montebello 10, 60; MTA 265, 266, 318	Center, on Whittier west of Rosemead

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Whittier / Passons	LRT	No	Montebello 10, 60; MTA 265, 318	Center, on Whittier west of Passons
Whittier / Norwalk	LRT	Yes	Norwalk 1; Whittier 1,2; MTA 318	Center, on Whittier west of Norwalk

Alternative 6 : Alameda*, 1st Street (portion between Boyle and Lorena in subway), Indiana*, 3rd Street, Mednik/Arizona*, Whittier Blvd

*North-south transition areas subject to further study



Alternative 7 Heavy Rail and Light Rail

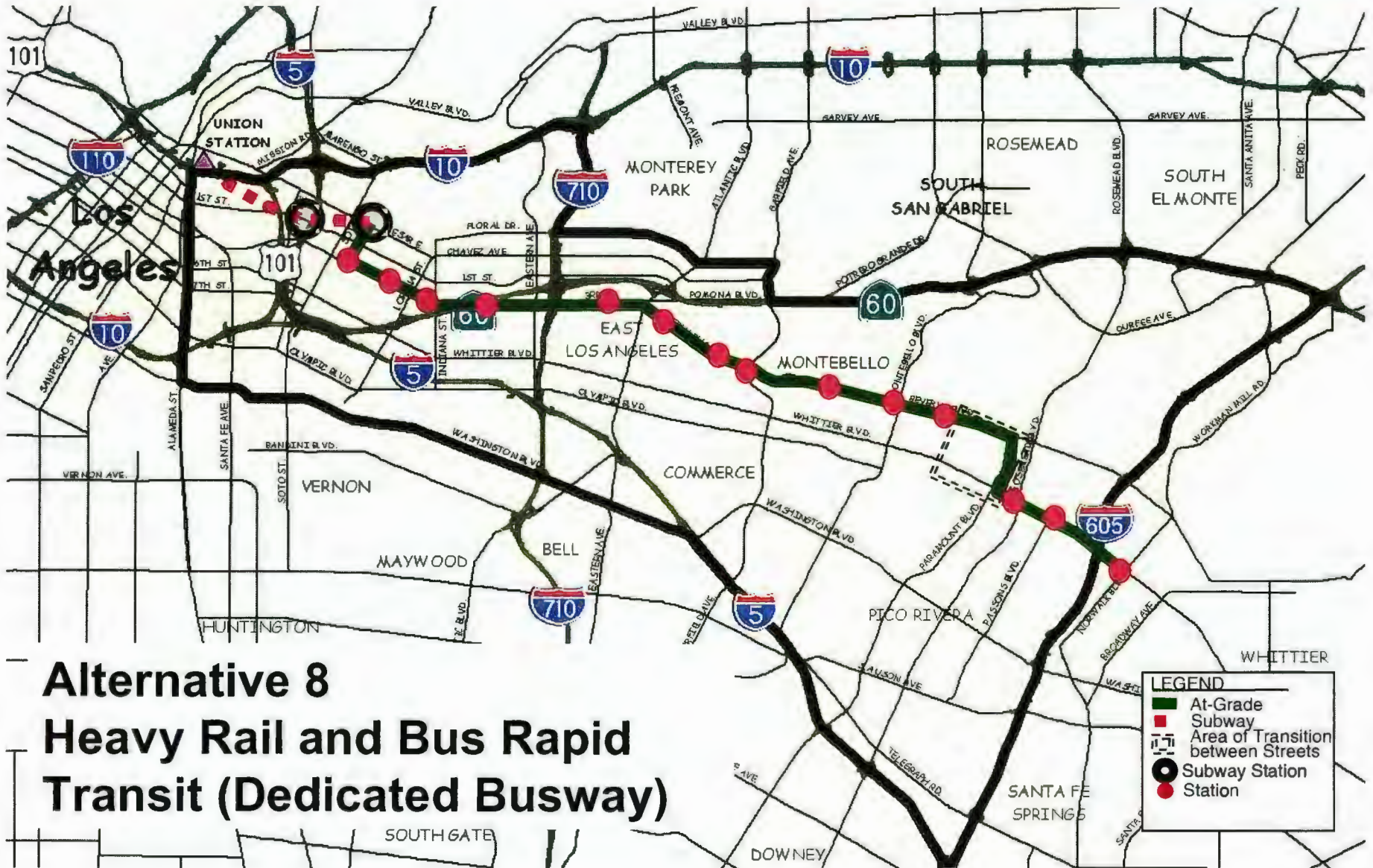
**Eastside Transit Corridor Study
Alternative 7
Station Locations and Characteristics**

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Union Station	HRT	Yes	Pasadena Blue Line, Metrolink, Amtrak AVTA, Santa Clarita, OCTA, Foothill, LADOT, MTA Expresses MTA 33, 40, 42, 55, 60, 68, 70, 71, 78, 79, 333, 378, 379, DASH B, D	Existing Red Line Subway Station
1st / Boyle	HRT	No	MTA 30, 31, 250, 620	Subway Station
1st / Lorena	HRT	No	MTA 30, 31, 65, 254	Subway Station
1st / Lorena	LRT	No	MTA 30, 31, 65, 254	Center, on 1st east of Lorena
3rd / Rowan	LRT	No	Montebello 40; MTA 65, 255	Center, on 3rd west of Rowan
3rd / Mednik	LRT	Yes	Montebello 40; MTA 258, 259	Center, on 3rd east of Mednik
Beverly / Atlantic	LRT	No	Montebello 10, 40, 341, 342, 343; MTA 260; Monterey Park?	Center, on Beverly east of Atlantic
Beverly / Gerhart	LRT	No	Montebello 40, 341, 342, 343; Monterey Park?	Center, on Beverly east of Gerhart
Beverly / Garfield	LRT	Yes	Montebello 40, 341, 342, 343; MTA 262	Center, on Beverly west of Garfield
Beverly / Wilcox	LRT	No	Montebello 40, 70, 341, 342, 343	Center, on Beverly east of Wilcox
Beverly / Montebello	LRT	Yes	Montebello 20, 40, 70, 341, 342, 343	Center, on Beverly west of Montebello
Beverly / 4th	LRT	No	Montebello 40, 70, 342	Center, on Beverly east of 4th Street
Whittier / Rosemead	LRT	Yes	Montebello 10, 60; MTA 265, 266, 318	Center, on Whittier west of Rosemead
Whittier / Passons	LRT	No	Montebello 10, 60; MTA 265, 318	Center, on Whittier west of Passons

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Whittier / Norwalk	LRT	Yes	Norwalk 1; Whittier 1, 2; MTA 318	Center, on Whittier west of Norwalk

Alternative 7 : Heavy rail subway from Union Station to 1st/Lorena with 1st/Boyle station; then LRT on 1st Street, Indiana*, 3rd Street, Beverly Blvd, Paramount*, Whittier Blvd

*North-south transition areas subject to further study



Alternative 8 Heavy Rail and Bus Rapid Transit (Dedicated Busway)

**Eastside Transit Corridor Study
Alternative 8
Station Locations and Characteristics**

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Union Station	HRT	Yes	Pasadena Blue Line, Metrolink, Amtrak AVTA, Santa Clarita, OCTA, Foothill, LADOT, MTA Expresses MTA 33, 40, 42, 55, 60, 68, 70, 71, 78, 79, 333, 378, 379, DASH B, D	Existing Red Line Subway Station
1st / Boyle	HRT	No	MTA 30, 31, 250, 620	Subway Station
Chavez / Soto	HRT	No	MTA 68, 251, 252, 605	Subway Station
Chavez / Soto	BRT	No	MTA 68, 251, 252, 605	Side, on Chavez east of Soto
4th / Soto	BRT	No	Montebello 40; MTA 251, 252, 605	Side, on 4th east of Soto
4th / Evergreen	BRT	No	Montebello 40; MTA 253	Side, on 4th west of Evergreen
4th / Lorena	BRT	No	Montebello 40; MTA 254	Side, on 4th near Lorena
3rd / Rowan	BRT	No	Montebello 40; MTA 65, 255	Side, on 3rd west of Rowan
3rd / Mednik	BRT	Yes	Montebello 40; MTA 258, 259	Side, on 3rd east of Mednik
Beverly / Atlantic	BRT	No	Montebello 10, 40, 341, 342, 343; MTA 260; Monterey Park?	Side, on Beverly east of Atlantic
Beverly / Gerhart	BRT	No	Montebello 40, 341, 342, 343; Monterey Park?	Side, on Beverly east of Gerhart
Beverly / Garfield	BRT	Yes	Montebello 40, 341, 342, 343; MTA 262	Side, on Beverly west of Garfield
Beverly / Wilcox	BRT	No	Montebello 40, 70, 341, 342, 343	Side, on Beverly east of Wilcox
Beverly / Montebello	BRT	Yes	Montebello 20, 40, 70, 341, 342, 343	Side, on Beverly west of Montebello

Station Location	Mode	Park/Ride	Bus Routes which Interface (operator and route)	Station Configuration
Beverly / 4th	BRT	No	Montebello 40, 70, 342	Side, on Beverly east of 4th Street
Whittier / Rosemead	BRT	Yes	Montebello 10, 60; MTA 265, 266, 318	Side, on Whittier west of Rosemead
Whittier / Passons	BRT	No	Montebello 10, 60; MTA 265, 318	Side, on Whittier west of Passons
Whittier / Norwalk	BRT	Yes	Norwalk 1; Whittier 1, 2; MTA 318	Side, on Whittier west of Norwalk

Alternative 8 : Heavy rail subway from Union Station to Chavez/Soto with 1st/Boyle station; then BRT on Soto, 4th Street, 3rd Street, Beverly Blvd, Paramount*, Whittier Blvd

*North-south transition areas subject to further study

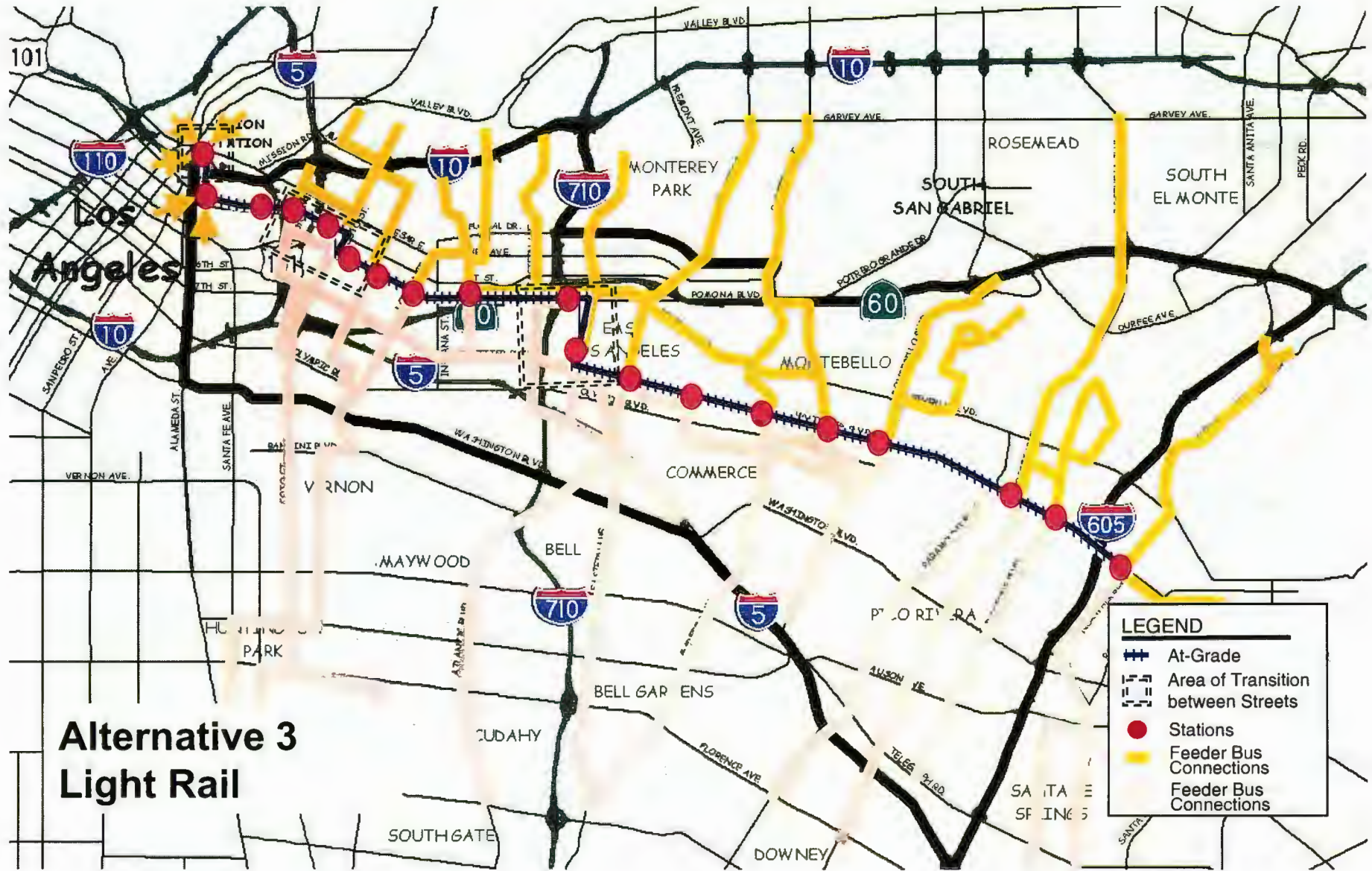
Operating Plans



Operating Plans

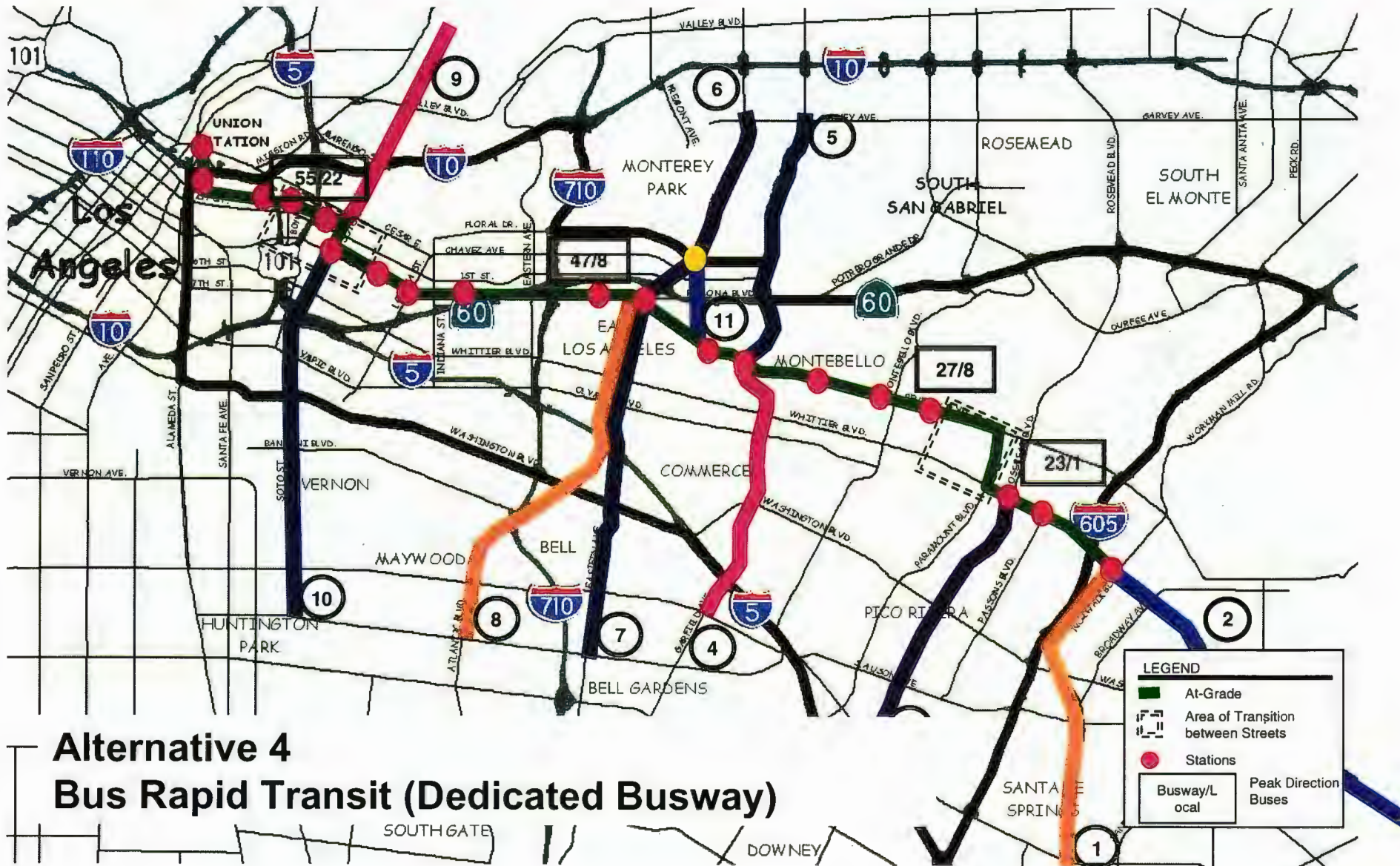


Operating Plans

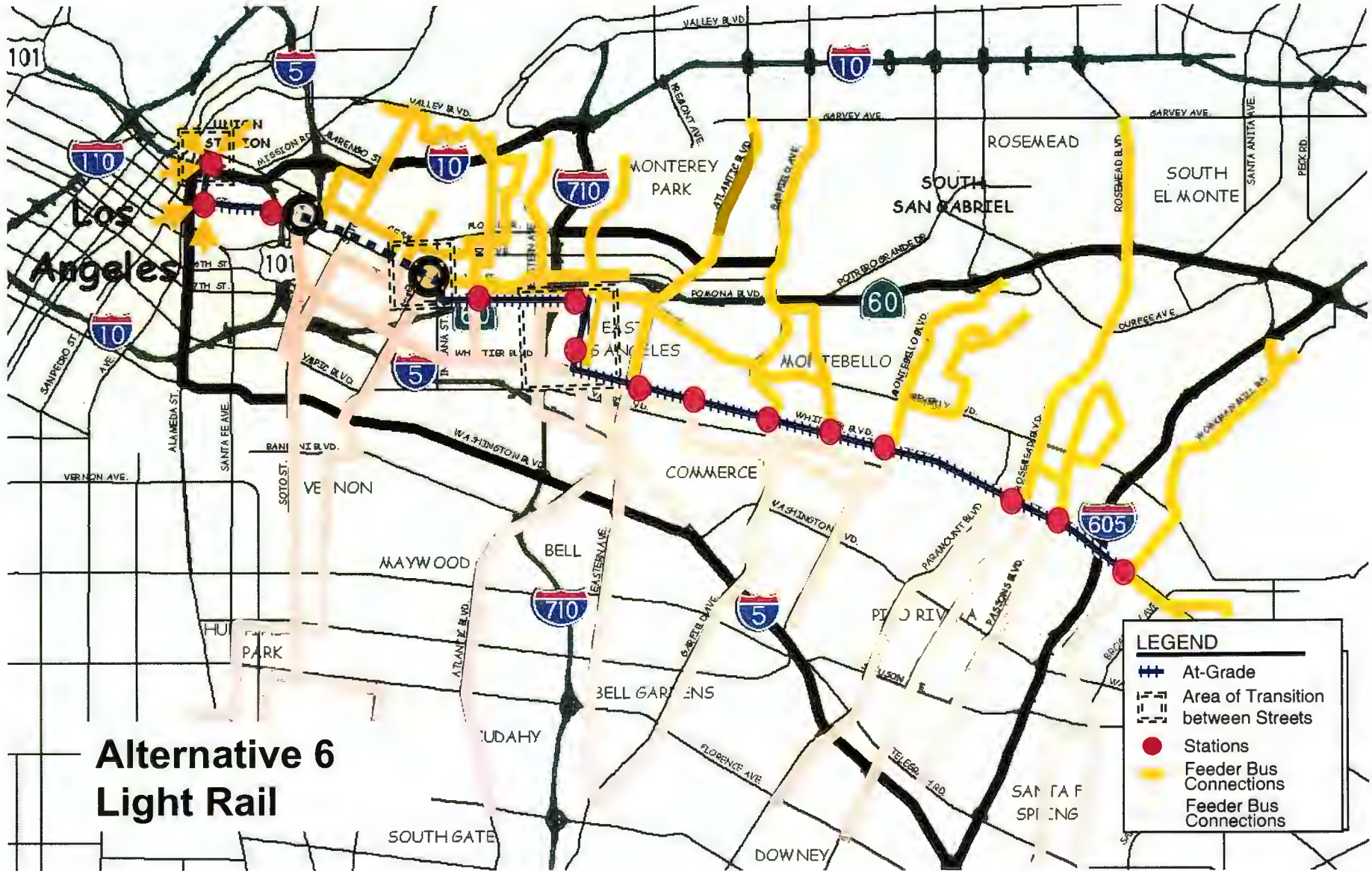


**Alternative 3
Light Rail**

Operating Plans



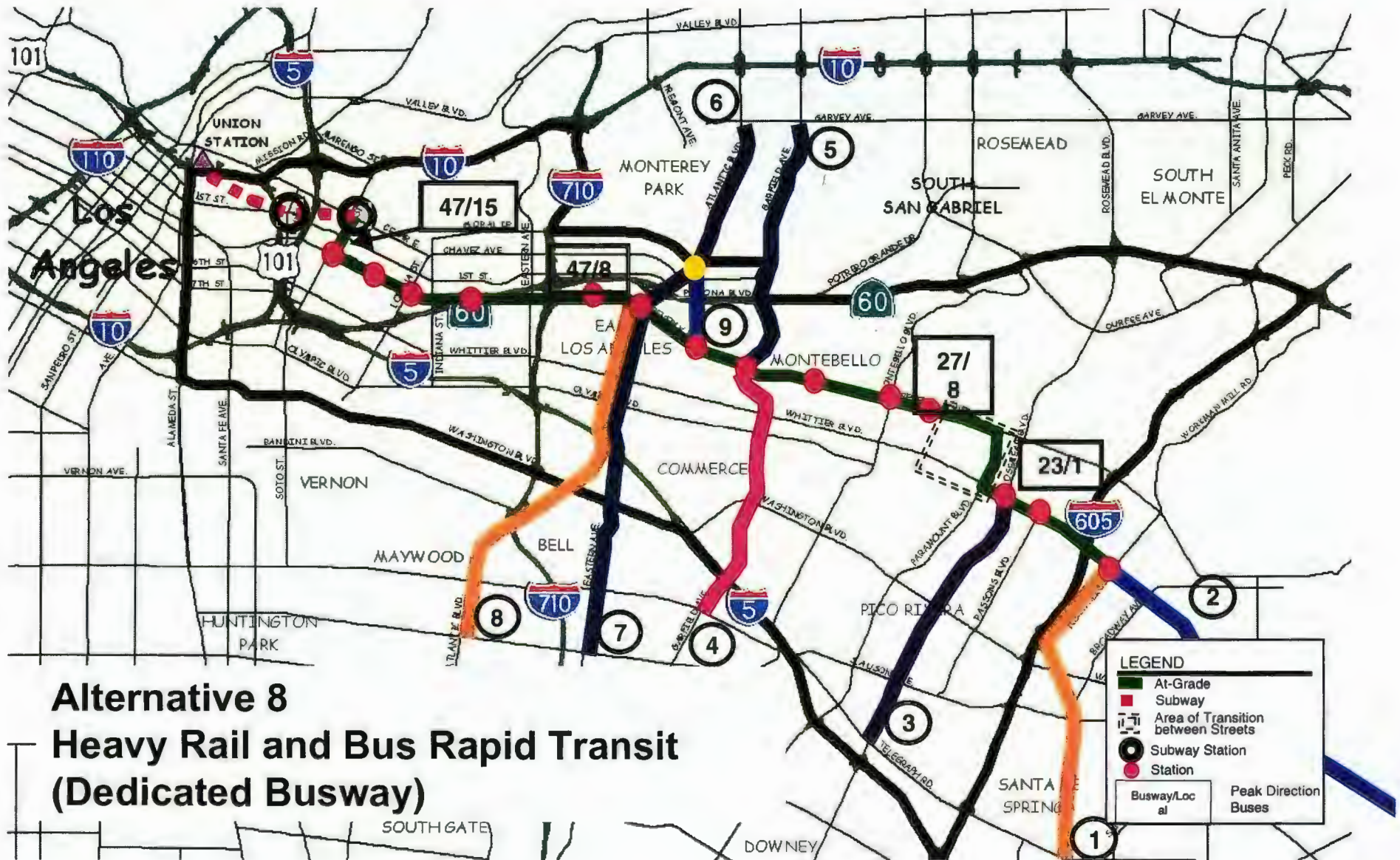
Operating Plans



**Alternative 6
Light Rail**

LEGEND	
	At-Grade
	Area of Transition between Streets
	Stations
	Feeder Bus Connections
	Feeder Bus Connections

Operating Plans



**Alternative 8
Heavy Rail and Bus Rapid Transit
(Dedicated Busway)**