The Regional Transit Development Program:

A Comprehensive Approach To

Balanced Transportation

Southern California Rapid Transit District
Rapid Transit Department
April 20, 1977

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INTRODUCTION

In accordance with the requirements of the federal Urban Mass Transportation Administration (UMTA), the Southern California Rapid Transit District, in cooperation with the State of California, the County and City of Los Angeles, and the Southern California Association of Governments, have recently completed a Regional Transit Alternatives Analysis and Corridor-Level Environmental Impact Report within the broad corridor extending from the San Fernando Valley through Downtown Los Angeles south to the Long Beach/San Pedro Harbor area.

The Alternatives Analysis, the first to be successfully completed after issuance of guidelines by the Urban Mass Transportation Administration, has culminated in the recommendation of a four-element program consisting of:

1. A Regional Transportation System Management (TSM) element refining the existing regional bus system and adding the necessary local buses and freeway flyers and fringe parking lots to provide regionwide bus improvements in the short-range.

2. A Regional High-Level Bus-on-Freeway element, including segments of new busways and achieving free-flow by ramp metering as appropriate to allow high-speed connections throughout the region.

3. A Los Angeles Central Business District Circulation/ Distribution System, including a Downtown People Mover (DPM, as proposed by the City of Los Angeles) to improve access to, and within, the Downtown area.

4. A Rapid Transit element to improve access to, and within the high density "regional core" area which is not directly served by freeways.

This working paper offers a short description of each element of the Program, and discusses the relationship of the RTDP to the comprehensive land use goals and objectives of the region. Also included in the Appendix are several charts and graphs pertinent to the following discussion.

Transportation System Management Element

The Transportation System Management (TSM) element of the RTDP is a direct transportation related goal of the region that seeks to support the need to maximize existing resources by achieving a better utilization of the region's freeways and arterials. The TSM element is an integral part of the SCAG Short Range Transportation Plan and the SCRTD's Transportation Improvement Program, as well as being a statutory requirement that must be included in urban transportation planning programs assisted by the Urban Mass Transportation Administration (UMTA) or Federal Highway Administration (FHWA).*

Many TSM actions have been implemented, are being implemented, or are planned for implementation in the near future. The California Department of Transportation (Caltrans), SCRTD, Los Angeles County, and various cities within the area have all been involved in implementing these actions.

The status of Transportation Systems Management Actions for the SCRTD area is summarized in Figure 1 according to the categories of actions identified in UMTA/FHWA regulations. The highlights of these actions include:

- A demonstration program for preferential treatment for buses and carpools, including the 11-mile busway on the San Bernardino Freeway which already has exceeded its volume estimates and is an unqualified success.

- A freeway ramp metering program that had 178 ramps metered by July, 1976 and has a total of 522 ramps planned for metering by 1979. Approximately 25% of these ramps will provide preferential treatment for buses and carpools.

- Coordinated local bikeway programs which have resulted in several hundred miles of bike paths and lanes, with many more planned. Bike facilities are funded from the area's share of the California State sales tax on gasoline.

- The use of park-and-ride lots to facilitate and encourage transit use. About 55 lots are planned for the region, of which 13 are already in operation.

* U.S. Department of Transportation, "Transportation Improvement Program", Federal Register, September 17, 1975, pp. 42976-42984.

Figure 1

TRANSPORTATION SYSTEMS MANAGEMENT ACTIONS FOR THE LOS ANGELES-LONG BEACH URBANIZED AREA

ACTIONS	STATUS					
	Planned			Implemented		
	Considered	Proposed	Adopted	Pilot	Specific Areas	Gen
Actions to assure the efficient use of existing road space through:						
• Traffic operations improvements to manage and control the flow of motor vehicles, such as:						
Channelization of traffic						*
One-way streets						*
Better signalization and progressive timing of traffic signals						*
Computerized traffic control		*			9 Mi. Sq.	
Metering access to freeways			522 ramps		178 ramps	
Reversible traffic lanes						
• Preferential treatment for transit and other high-occupancy vehicles, such as:						
Reserved or preferential treatment on freeways and city streets			200 Mi.		23 Mi.	
Exclusive lanes to bypass congested points						
Exclusive lanes at toll plazas with provision for no-stop toll collection	N/A					
Conversion of selected downtown streets to exclusive bus use	*					
Exclusive access ramps to freeways			151 ramps		20 ramps	
Bus preemption of traffic signals				*		
Strict enforcement of reserved transit rights-of-way						*
Special turning lanes or exemption of buses from turning restrictions						*
• Appropriate provision for pedestrians and bicycles, such as:						
Bicycle paths and exclusive lanes					*	
Pedestrian malls and other means of separating pedestrian and vehicular traffic					*	
Secure and convenient storage areas for bicycles					*	
Other bicycle facilitation measures					*	
• Management and control of parking through:						
Elimination of on-street parking, especially during peak periods						*
Regulation of the number and price of public and private parking spaces	*					
Favoring parking by short-term users over all-day commuters						*
Provision of fringe and transportation corridor parking to facilitate transfer to transit and other high-occupancy vehicles	*		55 lots		13 lots	
Strict enforcement of parking restrictions						*

Figure _ (continued)

TRANSPORTATION SYSTEMS MANAGEMENT ACTIONS FOR THE LOS ANGELES-LONG BEACH URBANIZED AREA

ACTIONS	STATUS					
	Planned			Implemented		
	Considered	Proposed	Adopted	Pilot	Specific Areas	Gene
• Changes in work schedules, fare structure and automobile tolls to reduce peak period travel and to encourage off-peak use of transportation facilities and transit services, such as:						
Staggered work hours					*	
Flexible work hours					*	
Reduced transit fares for off-peak transit						
Increased peak hour commuter tolls on bridges and access routes to city						
Actions to reduce vehicle use in congested areas through:						
• Encouragement of carpooling and other forms of ride sharing						*
• Diversion, exclusion and metering of automobile access to specific areas	*					
• Area licenses, parking surcharges and other forms of congestion pricing	*					
• Establishment of car-free zones and closure of selected streets to vehicular traffic or to through traffic	*					
• Restrictions on downtown truck delivery during peak hours						*
Actions to improve transit service through:						
• Provision of better collection, distribution and internal circulation services					*	
• Greater flexibility and responsiveness in routing, scheduling and dispatching of transit vehicles					*	
• Provision of express bus services in coordination with local collection and distribution services					*	
• Provision of extensive park-and-ride services from fringe and transportation corridor parking areas					*	
• Provision of shuttle transit services from CBD fringe parking areas to downtown activity centers					*	
• Encouragement of jitneys and other flexible paratransit services and their integration in the metropolitan public transportation system			*			
• Simplified fare collection systems and policies						*
• Provision of shelters and other passenger amenities			*			
• Better passenger information systems and services						*
Actions to increase internal transit management efficiency, such as:						
• Improve marketing						*
• Developing cost accounting and other management tools to improve decion-making					*	
• Establishing maintenance policies that assure greater equipment reliability						*
• Using surveillance and communications technology to develop real time monitoring and control capability			*			
• Using improved Security Techniques to minimize vandalism and improve passenger safety and security						*

- A carpool program consisting of a computer rider matching system in addition to public information and incentives for carpools. Data files on over 60,000 people have been established by the Commuter Computer organization.

- A grid network of local bus service has been implemented by SCRTD in the San Fernando Valley, south Central Los Angeles, and East Los Angeles. Local bus service improvements have been made in San Gabriel Valley, South Bay and Mid-Cities areas. Local circulation improvements to routes and schedules will also be made in the West Los Angeles, Eagle Rock/Glendale and Central City areas under this element.

- Provisions have been made for better circulation services within the high density activity centers. Currently 33 minibuses serve the Los Angeles CBD on two routes. Minibus service is also provided in the Westwood entertainment area and at the Los Angeles airport, and plans are underway to apply this type of service to other activity centers.

High-Level Bus Element

The High-Level Bus-on-Freeway element of the RTDP proposes to provide high-quality express transit services in all parts of the region by use of the freeway system. A further expansion of TSM applications, it will be largely dependent upon the success of experiments with TSM strategies. It features an expansion of exclusive bus/carpool lanes and ramps, park-and-ride lots and necessary maintenance facilities.

Considering potential future scenarios of increased congestion combined with ever growing gas prices, the bus-on-freeway elements (TSM and High-Level Bus) are a pragmatic approach toward maintaining the mobility necessary for suburban communities to remain economically viable and environmentally attractive.

About 370 miles of the freeway system would be used for the regional High-Level Bus, or "Freeway Transit" element. Of this total, about 300 miles would have mixed flow of buses, carpools, and other vehicles. Ramp metering would be used where needed to provide free-flow conditions, and preferential treatment for access to the freeways by buses and carpools would be provided where feasible. Exclusive ways for buses and carpools in the form of reserved lanes or separate facilities would be required in the most congested areas and would comprise the balance of the system. The operation of the line haul buses

would approximate rail transit for service to low and medium density communities. Equipment could ultimately be higher passenger capacity buses (double decked or articulated) in order to achieve operational savings.

Downtown Circulation/Distribution Element

The third element of the RTDP, downtown circulation/distribution system, is intended to relieve current and projected congestion in the Los Angeles Central Business District, therefore, creating a more attractive setting and supporting current efforts at revitalizing a deteriorating area. It conforms to adopted regional goals calling for auxiliary transit systems in selected high activity centers. It is envisioned as being a supportive catalyst for connecting the financial district, the civic center governmental complex, downtown hotels and the presently under-utilized convention center.

Recent analysis on the Los Angeles CBD has produced these major findings:

- Anticipated growth in downtown will not occur unless transportation transit improvements in downtown are assumed in the Bunker Hill Development Plan and the Central City Development Plan and are a necessary element of achieving the goals of these adopted plans.

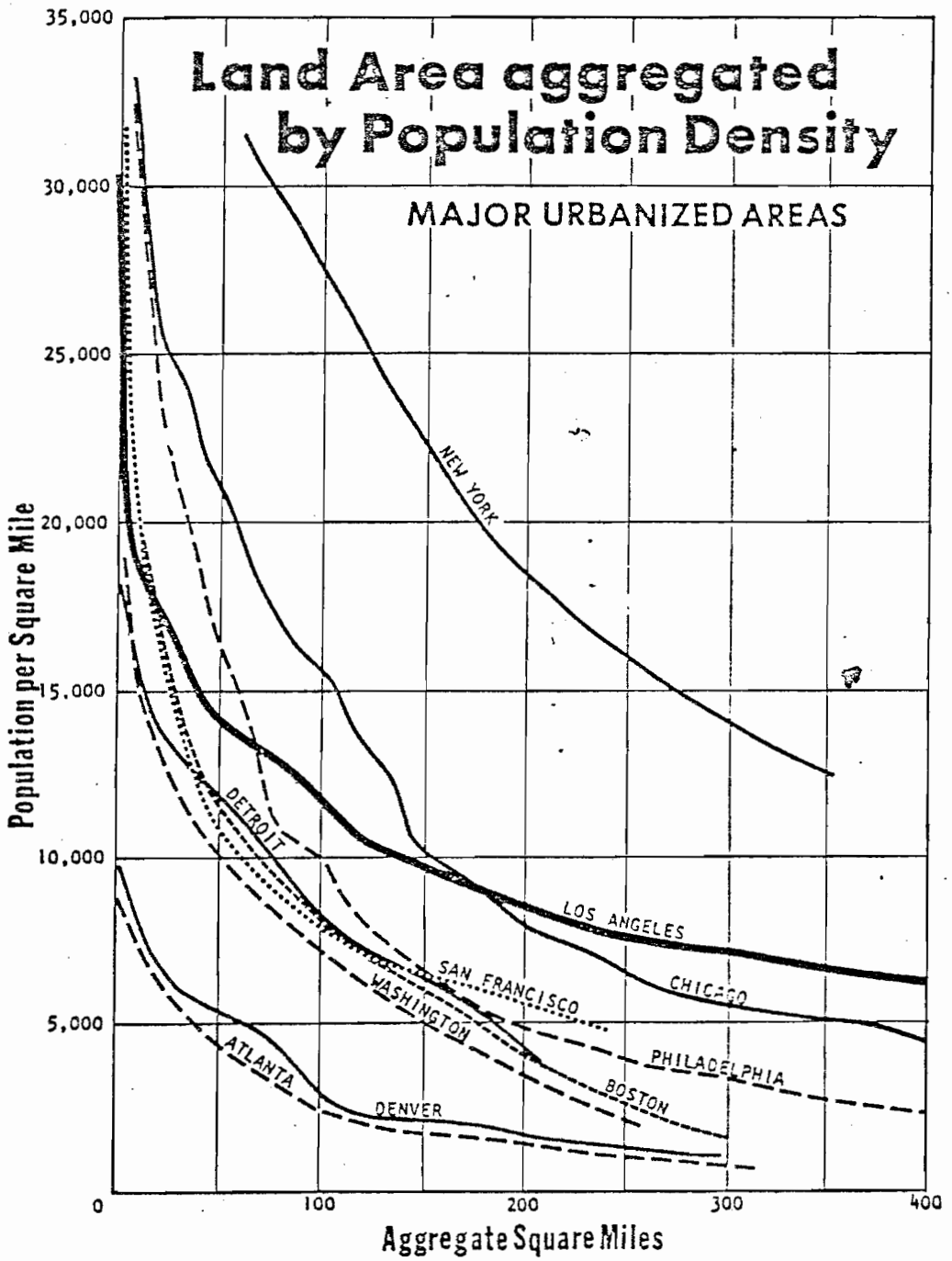
- It should be pointed out, however, that transit alone will not stem deterioration throughout downtown. It can be used selectively as a means to reinforce areas where growth is on the increase.

Therefore, the downtown automated people mover system as advocated by the City of Los Angeles is an attempt at planning transportation and redevelopment projects as one process, thereby gaining economic benefits complementary to both urban functions.

Regional Core Rapid Transit Element

The regional core fixed guideway rapid transit element, the fourth element of the RTDP, is planned as an integral part of region's stated objective of providing a balanced transportation network. There is at least one portion of the region where the freeway system cannot directly connect to significant activity centers. Rapid transit is intended to serve this area, the region's most established high density corridor (see Figure 2), as well as to link together the San Fernando Valley and the Regional Core area (Downtown Los Angeles, Wilshire, Hollywood), important subregions in

Figure 2



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Los Angeles Council of Engineers & Scientists

the metropolitan area. The Wilshire Corridor, has long suffered from substandard regional access. Initially, two freeways were planned to help fill this need. These have been soundly rejected by all segments of the community as totally counterproductive to meeting the community's overall needs and goals.

A rapid transit element that is totally grade-separated and totally contained within its own environment would serve four major regional centers in the regional core. The system has the potential for becoming the strongest single instrument for revitalizing older, established communities such as North Hollywood (in the San Fernando Valley) and Hollywood (in the Los Angeles basin). It, in turn, would reinforce continued economic stability and growth in the City of Los Angeles and in the entire metropolitan area, and can be the basic building block for any future rapid transit extensions.

Wilshire Boulevard, because of its strategic location and continuously increasing intensity of development, was proposed as the "backbone" rapid transit route in the region as long ago as 1961. The City of Los Angeles has stated that the "ultimate economic potential of the Wilshire District as a regional office center will depend to a substantial degree on the establishment of rapid transit." In addition, results of the recently completed Alternatives Analysis indicate that, due to projected patronage of a Wilshire grade-separated system, significant overall regional operating and energy savings can be achieved by serving this highest-density area with rapid transit and buses rather than buses alone.

The alternative is to rely solely upon surface street access strategies (hopefully supplemented by TSM measures in any event). This would seem to be inevitably destructive to the established, employee-intensive economic activity in the Wilshire Corridor. It would also leave unresolved one of the region's major bottlenecks, the link between the San Fernando Valley and the Regional Core area.

INTEGRATION OF RTDP & LAND USE DECISION

The transportation policies and plans of the City and County of Los Angeles very closely agree with one another (see Appendix C & D). This agreement is no accident. The general plans of both stem from the Los Angeles Goals program carried out by the Goals Council which was initiated in 1967 by joint action of the Mayor and City Council of Los Angeles, The County Board of Supervisors, and the League of California Cities.

Significantly, the transportation policies the Goals Council recommended evolved from a comprehensive concept for the region's future and its broad, basic needs -- not from a singular concern with transportation needs per se. The Goals Council felt that if blight is not to engulf large portions of Los Angeles' closer-in neighborhoods and suburbs in the

foreseeable future, then these areas must be recycled. Deteriorating structures must be rehabilitated or removed and new structures must be built to take their place if the integrity of Los Angeles' neighborhoods are to be preserved.

The strategy that the Goals Council decided met the challenge of these goals best was a concept now known as the "centers concept."

This regional concept has three major features:

- A system of multipurpose centers
- A corridor element
- A regional core area

The centers system outlines a possible pattern for clustering trade, offices, public facilities and high density residential uses into a series of 57 centers, in three levels of size and function. Higher level centers are larger and encompass a wider range of functions than lower level centers. Centers are shown in Figure 3.

Centers will offer a wide range of employment opportunities, concentrate shopping, accelerate development of a rapid transit system, permit efficient use of land, stimulate renovation of blighted areas and permit more widespread preservation of open space by concentrating development.

The second feature is the Wilshire Corridor, comprised of four first level centers (Wilshire, Miracle Mile, Beverly Hills, and Westwood) and their connecting developments. The corridor is approximately eight miles in length and reflects an existing pattern of intensive high-rise development and heavy travel. The corridor concept reflects the location and proximity of intense urban developments and their possible future connection with a rapid transit line.

The third element of the regional concept is the regional core, comprised of Downtown Los Angeles, the Wilshire Corridor, Hollywood, and surrounding areas. Together these elements constitute a major employment and residential concentration in the metropolitan area. In addition, the core serves the Southwestern United States as a center for finance, business, communications and cultural activities. Identification of a regional core points out an opportunity to further develop and define a center which can serve a large fraction of the national territory and population.

The regional core fixed guideway rapid transit element potentially traverses five City of Los Angeles planning sub areas (Central City, Westlake, Wilshire, Hollywood and North Hollywood) and the unincorporated area of West Hollywood within the County of Los Angeles. Figure 4 relates those elements of the community plans (outside Central City) that are most significant to rapid transit development.

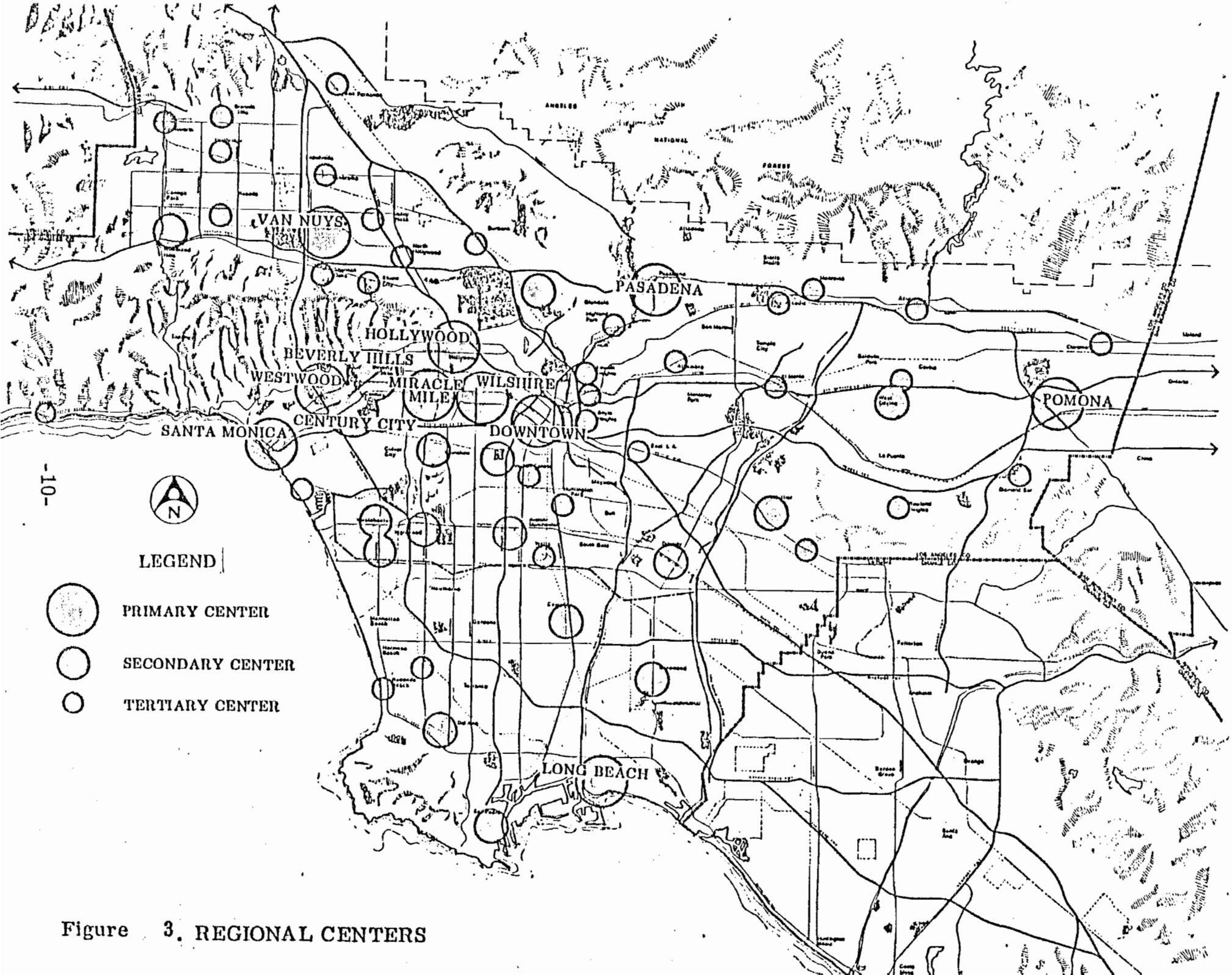

Figure 3. REGIONAL CENTERS

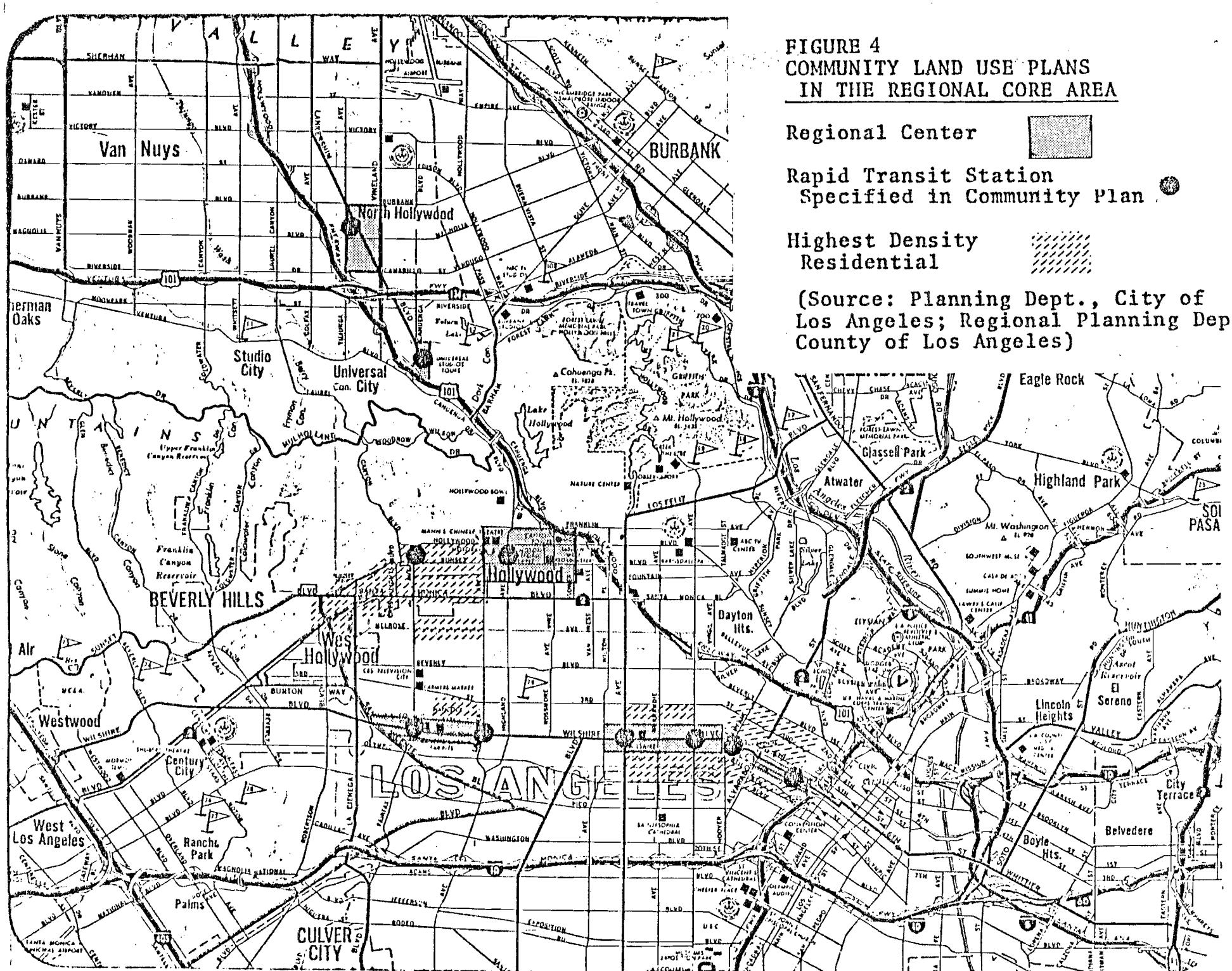

FIGURE 4
COMMUNITY LAND USE PLANS
IN THE REGIONAL CORE AREA

Regional Center

Rapid Transit Station
Specified in Community Plan

Highest Density
Residential

(Source: Planning Dept., City of Los Angeles; Regional Planning Dept., County of Los Angeles)

A large share of the RTDP regional core transit guideway work will revolve around identification of those sites for location of stations and facilities related to implementation of rail service in the corridor. These tasks, when analyzed along with the environmental impact report to be completed, should serve as a useful planning guide directed toward establishing and identifying those transit/land use objectives that can be coordinated to maximize the investment in transit facilities, while supporting the redevelopment goals of the City and County of Los Angeles.

RELATION OF THE RTDP TO THE REGIONAL DEVELOPMENT GUIDE ADOPTED BY SCAG

To understand the relation of the RTDP to SCAG's Regional Development Guide, it is important to understand the intent and policy implications of each.

The Regional Development Guide's most recent population, housing, and employment forecast (SCAG-76) includes the following policies which especially influenced the forecast:

1. Encourage growth in and adjacent to existing urban areas.

   This policy applies particularly to those areas where the existing infrastructure -- that is, transportation systems, utilities, schools, private investment, etc. -- is not used to capacity. This would also encourage recycling of the housing stock, preserve open space and agricultural lands in outlying areas, and reduce long-distance home-to-work travel -- thereby reducing energy use and alleviating air pollution.

2. Preserve, wherever possible, the region's natural resources and desirable land uses, particularly prime agricultural lands.

3. Balance population with jobs within each major subregion.

   This policy is intended to reduce home-to-work commute trip distances, and to cause a more equitable distribution of the employment tax base. (A subregional area is smaller than a county, but may include several communities.)

4. Support the policies of SCAG's adopted plans, in particular, the Regional Transportation Plan (adopted in March, 1975).

By favoring guideway service for the CBD-Wilshire-North Hollywood corridor, the region is recognizing that serving this link, which has the highest corridor transit demand in the region (see Appendix A), with high capacity rapid transit can lead to lowering of system-wide operating costs. Further, investment in guideway service here would help to attract and stabilize development in the regional core.

The RTDP's impact on development patterns, home-to-work trip distances, and other spatial factors can be controlled to the advantage of regional goals by careful attention to project phasing and, more importantly, station spacing as well as the amount and location of long-distance service added.

With the added service fitting the adopted policy of providing service for necessary and anticipated travel between metropolitan areas the RTDP conforms with the Regional Development Guide. Since most of the investment associated with the RTDP outside of the regional core would be low capital cost and since that service would be by bus-on-freeway, land use impacts such as encouraging development of prime agricultural lands or other areas not adjacent to existing urbanized land would be minimized. If the region is to have an alternative to the auto, such an extensive transit network will be needed.

By supporting circulation and distribution service in the Los Angeles central business district, the RTDP would aid in stabilizing downtown. Station locations will be chosen to emphasize the importance of the other regional activity centers and contribute to their stabilization.

In addition to the Los Angeles CBD, the rapid transit segment would support the following centers: Wilshire, Miracle Mile, Hollywood and North Hollywood/Universal City. Connecting these centers is a critical requirement of the "centers concept" which is the basis for the General Plan of the City of Los Angeles. The bus-on-freeway service and associated stations would support several centers including Long Beach, Van Nuys, Pasadena, Pomona, Santa Ana, Buena Park and Santa Monica. For those centers not located on a freeway, the support would depend on the adequacy of local transit service linkages.

The RTDP is primarily intended to provide accessibility by transit throughout the urbanized portion of the region. Its overall impact will be to reinforce the general viability of the existing urban area. Its impacts on the structure and function of activity centers will be positive for those centers directly served by the system, and may be positive for those centers adjacent to the system (success being dependent upon the quality of the local transit system connecting the regional system and the activity center).

The Regional Development Guide supports development of activity centers having a variety of functions. In particular, the Los Angeles CBD is forecast to have more jobs and residences than it does today. However, there are intended to be many activity centers throughout the urbanized area supporting a variety of functions. It is not intended that there be a sole focus on downtown Los Angeles.

The General Plan of the City of Los Angeles recognizes that while Wilshire Boulevard is densely developed in a linear fashion, there is potential for "in-fill" development in several stretches within a quarter-mile either side of Wilshire. La Brea or Fairfax Avenues, which the fixed guideway might use between Wilshire and North Hollywood, also has potential for greater development. The fixed guideway could be used to focus more intense development in this regional core corridor.

Furthermore, just within the past five years, over $700 million has been invested by the private sector in new development in Downtown Los Angeles and over $300 million has been invested in Wilshire and Miracle Mile Centers in the same period. Making these areas highly accessible by public transportation can serve to reinforce and preserve this investment.

Within the CBD itself, the retail, financial, hotel/restaurant supply and garment industry districts of the east side are grossly deteriorated. If placed into this area, a fixed guideway could make attractive redevelopment or restoration of the entire eastern portion of the Downtown area by bringing it within a rapid transit ride of the financial and employment centers westerly along the regional core corridor. Retail activity could only be enhanced by this dramatic improvement in mobility within the region's core.

Figure 5

Comparison of SCRTD's Proposed Fixed Guideway Segment With Other Existing & Proposed Rapid Transit Lines

	# PATCO Lindenwold (existing)	* Baltimore Metro (proposed)	Chicago State St. Subway (existing)	* Atlanta Metro (proposed)	SCRTD Alt. "E" (proposed)	Toronto Yonge St. (existing)
Length of Line (mi.)	14.2	8	11.6	13.7	15.5	12.5
No. of Stations	12	9	24	17	15	20
Avg. Sta. Spacing (mi.)	1.29	1.00	0.45	0.86	1.1	0.69
O & M $/Car Mi. ('76)	1.74	2.17	2.01	(not avail.)	1.67**	1.053('76
Peak Hr. 1-Way Pass'grs.	8,000	9,000('82)	12,500	6,000('81)	18,500('90)	34,000
Total Daily Passengers	42,000	83,000('82)	160,000	110,000('81)	350,000('90) ***	730,000
Density Condition (mi.)						
Major Commc'l Areas	1.5	4	3.7	4	8.5##	4
Minor Commc'l Areas	11	4	7.9	9.7	4.5	8.5
Bridge or Tunnel (no stations appropriate)	1.5	---	---	---	2.5	---

*Already Funded by UMTA with local funding support guaranteed (and in Atlanta an additional 8 miles has been funded for Preliminary Engineering)

**Lower, due to improvements in propulsion and braking systems.

***220,000 long trips and 130,000 short trips.

#The Lindenwold Line is recognized as being highly successful -- its revenues paid its O & M costs thru '75.

##Note "E" passes through twice as much Major Commercial Area as any of the others (over 5 times more than Lindenwold) so there's every reason to believe it will be successful.

RG
11/29/76

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> "Transportation can be planned in conjunction with land use, or it can be planned separately. If these systems are planned jointly, then land use patterns, housing types, employment mixes, and transportation services may be developed in such a way that the effectiveness of each investment is assured. Joint planning will also help metros become self-sufficient, which, in turn, will decrease commuting saving energy and expenditure of public funds."*

Goals and Objectives

- Growth throughout much of the region should be of low density character, with specified urban areas of Los Angeles and Orange Counties experiencing higher density development in accordance with local and regional plans.

- Urban development should follow existing patterns, with emphasis placed on planned development and encouraging a "centers concept" of growth.

- The preservation of existing urbanized areas, rather than the urbanization of new land, should be encouraged.

- Urban development should occur only where proper facilities, utilities and services can be provided economically, and where such development can conform to the total set of policies identified as part of the comprehensive plan of the region.

- To assure that the timing, financing and location of public facilities, utility systems and transportation systems are used to implement the region's growth policies and to achieve the desired regional form.

- To assure a variety of economic opportunities within each of the major subunits of the region consistent with its natural and existing resources and potential resources.

*Regional Development Guide.

LOS ANGELES COUNTY

"The major transportation goal is to satisfy the travel needs and desires of all residents, and to stimulate the desired urban development pattern for Los Angeles County by providing a balanced, well-integrated, multi-modal transportation network responsive to the economic, environmental and social needs of the region and the nation."*

Goals and Objectives

- Provide an effective mass transit system to serve major centers of activity in the county.
- Provide effective support of transit systems to supplement the mass transit system and increase mobility.
- Reduce current and future congestion.
- Coordinate transportation planning with region-wide and community goals and objectives.
- Stimulate the development of the regional centers concept by providing convenient means of transportation to and from centers.
- Channel the mass transit system into the regional core and other major centers.
- Build the mass transit system so that it is grade separated and has exclusive rights-of-way.
- Locate the major transit stations to serve the multi-purpose centers and other major activity areas such as educational institutions and hospitals, with additional steps provided in the suburban areas.

*Environmental Development Guide.

CITY OF LOS ANGELES

"The transportation network will significantly shape the development of the City and the region."*

Goals and Objectives

- Provide an intergrated transportation system coordinated with land use which adequately accommodate the local travel needs of the community.
- To achieve a grade-separated rapid transit as an effective alternative to the private automobile for trips between Centers and also between the Regional Core and outlying suburban areas.
- To utilize the transportation system as a tool in developing planned land use patterns so as to minimize detrimental effects upon urban life.
- The phasing of the rapid transit system shall be based upon priorities derived from transportation needs and Center development.
- Rapid transit stations within Centers should be developed as multi-function structures at the locations most suitable to serve intensive development.

* Los Angeles Citywide Plan.

CENTRAL CITY

"The plan for Los Angeles Central City is a key part of the Los Angeles General Plan, which proposes a series of major Centers having high density residential and commercial uses at locations throughout the City connected by a rapid transit system and separated by low density residential development and open spaces"*

Goals and Objectives

- A vastly improved public transportation system, including rapid transit between Central City and other Centers must be provided to reduce the environmental impact of the present transportation system which is based chiefly on the private automobile.

- Central City rapid transit facilities can only be implemented as a part of the metropolitan-wide transit system. Although transit construction and operation are the responsibility of the Southern California Rapid Transit District, development of the system will require the full participation and cooperation of Los Angeles City as well as Los Angeles County and various other cities in the County.

* Central City Community Plan

WESTLAKE

"Westlake's proximity to Downtown Los Angeles and the Wilshire Center offers major opportunities for its future development"*

Goals and Objectives

- To coordinate and harmonize the development of the Westlake Community with other parts of the City of Los Angeles, within the framework of the General Plan.

- Coordinate the planning and development of an effective public transportation system, including rapid transit.

- To provide a guide to an orderly and balanced development of the community, designating and locating land uses and public facilities in the quantities and at densities required to accommodate future population and activities.

*Westlake Community Plan

"It may be concluded that the ultimate economic potential of the Wilshire Corridor as a regional office center will depend to a substantial degree on the establishment of a rapid transit system."*

Goals and Objectives

- The Centers within the Wilshire Corridor should be connected to each other and to other Centers outside the corridor by means of a rapid transit system.
- Coordinate the development of the Wilshire Corridor with that of other parts of the City and metropolitan area.
- Promote an arrangement of land use, circulation, and services which will encourage and contribute to the economic, social and physical health, safety and welfare of the District.

*Wilshire District Plan Study.

HOLLYWOOD

"Traffic circulation is a critical feature of the Hollywood Plan ... because of the community's location on a major transportation corridor between Central Los Angeles and the San Fernando Valley"*

Goals and Objectives

- Provide stations for the anticipated rapid transit system at appropriate high density locations, including a feeder bus system and a secondary local rapid transit system to serve the community.
- Proceedings for the redesignation of zones should under no circumstances be initiated unless adequate access and public services are available.
- No expansion of commercial zoning should occur until a rapid transit system has been assured.
- Coordinate the development of Hollywood with that of other parts of the City of Los Angeles as proposed by the General Plan, and with adjacent portions of the metropolitan area.

*Hollywood Community Plan

NORTH HOLLYWOOD

"The historic role of North Hollywood has been that of a port or gateway function between the San Fernando Valley and the Regional Core area through the Cahuenga Pass. If this inherent access characteristic can be cultivated or enhanced it can continue to improve the future socio-economic health of the community"*

Goals and Objectives

- Reserve a central site for a future rapid transit station in the heart of the North Hollywood Business District.
- Offer a freeway-intercept parking structure for motorists who would prefer to switch to SCRTD buses instead of personally bucking the congestion on the Hollywood Freeway and downtown streets.

*Implementation Plan for Revitalization of North Hollywood Business District

64-1221

PROJECT DESCRIPTION

The "Project" for which funding is requested has been developed from the area's Alternatives Analysis and is defined as: Proceeding simultaneously with the necessary Preliminary Engineering work, the development of Draft Environmental Impact Reports and the completion of the entire EIR process, and the development of detailed financing programs on a Combined Regional Transportation Program consisting of the following four elements:

1. Alternative II, the Regional Transportation System Management Program maintaining the existing regional bus system and adding the necessary local buses and freeway flyers and fringe parking lots to provide regionwide bus improvements.

2. Alternative IX, Regional High Level Bus on Freeway Service, including segments of new busways and achieving free-flow by ramp metering as appropriate.

3. The Los Angeles Central Business District Circulation-Distribution System including a fixed guideway Downtown People Mover, as proposed by the City of Los Angeles.

4. Initial Increment Alternative E, a segment of grade-separated, fixed guideway rapid transit in the high density regional core area which is not directly served by freeways.

Capital Grant Applications for final design and construction will then follow for each element as the results of the preliminary engineering and EIR process are found to be acceptable to the metropolitan community.

Described below is the Project -- preliminary engineering and EIR preparation:

Preliminary Engineering and Environmental Impact Report

The preliminary engineering and environmental assessment will include:

For Alternative II -- Regional Transportation System Management Program:

- coordinate institutional requirements to carry out the transit elements of the TSM program
- develop operating and maintenance plan
  - -routes
  - -schedules
  - -facilities
  - -equipment
- operating and maintenance costs detailed
- capital costs detailed
- funding sources (fares, subsidies) defined
- EIR preparation
- detailed financial and implementation plan
- define organization for implementation

Agency to have primary responsibility for doing the work involved in the above element: Southern California Rapid Transit District.

For Alternative IX-Modified -- Regional High-Level Bus-on-Freeway Service:

- selection of those freeways where freeflow is practical

- establish feasibility and costs where freeflow is not practical and an exclusive bus/carpool lane must be added

- establish need and location for bus stations (on and/or off freeways)

- establish the interface of the freeway bus routes to the CBD - relationship to the DPM and/or Incremental Alternative E

- EIR preparation

- develop operating plan

  -routes
  -schedules
  -facilities
  -equipment (single, double deck, articulated)

- operating and maintenance costs detailed

- capital costs detailed

- funding sources defined

- detailed financial and implementational plan

- define organization for implementation

Agency to have primary responsibility for doing the work involved in the above element: California Department of Transportation.

For Los Angeles CBD Circulation-Distribution System:

Evaluate:

- most feasible alignments

- profiles

- station locations

- technologies
- EIR preparation
- consideration of an All-Bus CBD solution (i. e., preferential treatment for buses) in case environmental and/or cost factors reduce the attractiveness of the DPM
- develop operating and maintenance plan

  -schedules
  -facilities
  -equipment

- operating and maintenance costs detailed
- capital costs detailed
- funding sources defined
- detailed financial and implementation plan
- define organization for implementation

Agency to have primary responsibility for doing the work involved in the above element: City of Los Angeles.

For Regional Core Initial Increment Alternative E -- Fixed Guideway Rapid Transit Segment:

Evaluate:

- most feasible alignments
- profiles
- station locations
- technologies
- EIR preparation

- consideration of an All-Bus solution (i.e., preferential treatment) in case environmental and cost factors reduce attractiveness of Alternative E

- develop operating and maintenance plan
  - -schedules
  - -facilities
  - -equipment

- operating and maintenance costs detailed

- capital costs detailed

- funding sources defined

- detailed financial and implementation plan

- define organization for implementation

Agency to have primary responsibility for doing the work involved in the above element: Southern California Rapid Transit District.

Project Administration and Coordination

The Southern California Rapid Transit District will be responsible for the administration of the UMTA contract for the preliminary engineering and environmental work, the coordination thereof through a Technical Committee having representation from each directly involved agency and from SCAG.

Also, working with the other directly involved agencies, the Southern California Rapid Transit District will be responsible for coordinating the development of an integrated system plan for these elements of the regional transportation program as the preliminary engineering-environmental process is completed on each.

Exhibit A gives the funding requirements for the preliminary engineering and environmental impact report preparation as derived from the estimated capital cost of implementing the four-element program.

Exhibit B gives the proposed sources of funding for the preliminary engineering and environmental impact report preparation.

The following sections describe each of the four elements of the Program:

Alternative II: The Regional Transportation System Management (TSM) Program

This alternative consists of three elements: (1) the Null alternative as the 1976 "committed" system, (2) further improvements to the existing system (including improved routing, scheduling, maintenance, and areawide carpooling, (3) programmed transit improvements through 1980 (includes additional buses, preferential freeway lanes, ramp metering and other highway related programs. In general, all elements will exhibit relatively low capital costs. The hallmark of this alternative is Transportation System Management (TSM).

Transportation Systems Management (TSM) actions are those actions which provide for short-range transportation needs through efficient use of existing facilities. These types of actions must be included in urban transportation planning programs being assisted by the Urban Mass Transportation Administration (UMTA) or Federal Highway Administration (FHWA)*.

In the Los Angeles metropolitan area, many Transportation Systems Management actions have been implemented, are being implemented, or are planned for implementation in the near future. SCRTD, the California Department of Transportation (Caltrans), Los Angeles County, and the various cities within the area have all been involved in implementing these actions.

The Transportation Systems Management actions implemented to date generally have proven effective and provide significant improvements in the transportation system. However, despite the extent of these actions, auto traffic congestion remains throughout the area. A significant reduction in auto traffic as required to meet the EPA air pollution standards, has little chance of being achieved unless transit services are available that provide attractive alternatives to the auto.

A discussion of the major Transportation Systems Management actions currently being used in the SCRTD area has been presented in the working paper, "Status of Current Transportation Management Actions". Only those actions which have been implemented or are in the process of being implemented are included in the paper. The discussion is intended only to document past and current efforts of Transportation Systems Management actions and is not intended to evaluate these actions or propose new actions. A list of references pertaining to these actions is included in the appendix to the working paper. These references contain additional information including some evaluations of the actions discussed.

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*U. S. Department of Transportation, "Transportation Improvement Program", Federal Register, Wed., September 17, 1975, pp. 42976 - 42984.

The status of Transportation Systems Management Actions for the SCRTD area is summarized in Exhibit PD-1 according to the categories of actions identified in UMTA/FHWA regulations*. The highlights of these actions include:

- A demonstration program for preferential treatment for buses and carpools, including the 11-mile busway on the San Bernardino Freeway which already has exceeded its volume estimates and is an unqualified success. A total of 100 miles of freeway preferential treatment is scheduled for implementation by July, 1977 and 200 miles programmed for implementation by 1978.

- A freeway ramp metering program that had 178 ramps metered by July, 1976 and has a total of 522 ramps planned for metering by 1979. Approximately 25% of these ramps will provide preferential treatment for buses and carpools.

- Coordinated local bikeway programs which have resulted in several hundred miles of bike paths and lanes, with many more planned. Bike facilities are funded from the area's share of the California State sales tax on gasoline.

- The use of park-and-ride lots to facilitate and encourage transit use. About 55 lots are planned for the region, of which 13 are already in operation.

- A carpool program consisting of a computer rider matching system in addition to public information and incentives for carpools. Data files on over 60,000 people have been established by the Commuter Computer organization.

- A grid network of local bus service has been implemented by SCRTD in the San Fernando Valley, south central Los Angeles, and East Los Angeles. Local bus service improvements have been made in San Gabriel Valley, South Bay and Mid-Cities areas. Local circulation improvements to routes and schedules will also be made in the West Los Angeles, EagleRock/Glendale and Central City areas under this element.

- Provisions have been made for better circulation services within the high density activity centers. Currently 33 minibuses serve the Los Angeles CBD on two routes. Minibus service is also provided in the Westwood entertainment area and at the Los Angeles Airport, and plans are underway to apply this type of service to other activity centers.

A schedule and potential location of new services is as follows:

1977 - West Los Angeles (+50 buses), Eagle Rock/Glendale (+30 buses), South Central extension southerly (+10 buses), Commuter Rail, Central City services (+10 buses).

1978 - San Diego Freeway limited stop service (+40 buses), expedited service in Wilshire/Hollywood (+20 buses), new park-and-ride (+15 buses).

1979 - Expansion of commuter service, park-and-ride (+35 buses), El Monte Busway service extension (+25 buses).

1980 - Possible Artesia/Long Beach Freeway expedited services (+25 buses), Hollywood preferential service (+25 buses) Possible Foothill Freeway and Pomona Freeway services (+40 buses).

As a part of the State Highway Program, the California Department of Transportation has separately funded and programmed freeway treatments for transit that will become a necessary element of the Regional Transportation System Management Program. These are:

- Golden State Freeway (preferential ramp by-pass treatment only) - 1976

- Ventura/Hollywood Freeway (undefined-Median shoulder being prepared - for study, assumes preferential ramp by-pass treatment) - 1978

- San Diego Freeway - south to San Gabriel River Freeway (concurrent flow on improved median shoulder with preferential ramp by-pass) - 1977; south of San Gabriel River Freeway - no preferential treatment.

- Harbor Freeway - CBD to San Diego Freeway (preferential ramp by-pass treatment only) - 1978; San Diego Freeway to Pacific Coast Highway no preferential treatment.

- Long Beach Freeway (concurrent flow on improved median shoulder with preferential ramp by-pass - 1977

- Artesia Freeway (91) - Long Beach Freeway to Santa Ana Freeway (concurrent flow on improved median shoulder with preferential ramp by-pass - 1978

- Riverside Freeway (91) - Santa Ana Freeway to Newport Freeway (undefined-median shoulder being prepared for passable use - for study, assume no special treatment).

- San Bernardino Freeway - El Monte to Ontario (undefined - median shoulder being prepared for possible use - For study assume ramp control only) - 1979

- Pomona Freeway (undefined - median shoulder being prepared for possible use - For study, assume preferential ramp by-pass treatment) - 1978

In summary, the TSM system would result in these freeway bus facilities. (See Exhibit PD-2.)

Preferential Bus Facility:	187.0 Miles
Exclusive Bus Facility:	28.0 miles

This TSM system constitutes a basic and integral element of each of the alternatives considered in the Alternatives Analysis.

Alternatives IX (A & B) -- Regional All-Bus High Level

The Regional All-Bus System was examined as a high-level-of-investment option for regional bus improvements.

This alternative considered "free-flow" as well as exclusive lanes fed from the existing on-off-ramps with metering. These subalternatives are designated Alternative IX-A and Alternative IX-B, respectively.

Alternative IX-A was evaluated using sufficient freeway ramp metering and ramp bypass to provide free bus access to a "free-flow" freeway condition which will allow buses and traffic to utilize uncongested freeway lanes. Stations would be located at-grade adjacent to the freeway right-hand lanes with special acceleration and deceleration lanes to allow buses to merge with freeway traffic.

Alternative IX-B was evaluated as providing an exclusive lane (usually added to existing traffic lanes) along the freeway system for bus-on-freeway service to the same areas as Alternative IX-A. The exclusive lane for each of these segments will have direct access/egress to above-grade stations adjacent to the exclusive lane with passenger access/egress to the stations from crossing arterial streets.

Implementation of such major bus priority measures as evaluated in either subalternative would depend upon institutional, legislative, and local public policy changes concerning the manner in which the region's freeways and supporting streets are operated. In order to evaluate the impact of a high investment all-bus system, all freeways were assumed to be adaptable to the high-level bus concept. The Alternative IX system would result in 350 route miles of bus-on-freeway facility as follows (see Exhibit PD-3):

	A	B
Preferential Bus Facility:	322	42 miles
Exclusive Bus Facility:	28	308 miles

Of 130 capital intensive stations to be a part of the system, 104 might have park-and-ride facilities. A background local and feeder bus network, which is essentially the same as that shown in Alternative II -- Improved Bus (TSM), is included with this alternative.

On consideration of the Two sub-alternatives, CalTrans has suggested that a mixture of the two would prove to be the most effective. While the basic assumption of IX-A, namely free-flow freeway conditions, will be valid for the majority of the system when the freeway metering and control program is fully implemented, there will still be some sections of the freeway system where free-flow cannot be assured. It is CalTrans' recommendation that exclusive bus/carpool lanes be provided in those areas to ensure a truly free-flow system. Their preliminary evaluation of the freeway system indicates that approximately forty-seven miles of exclusive lanes should be provided, including the eleven-mile San Bernardino Busway. In addition, twenty-three miles of exclusive lanes could be included on Routes 7 and 105 if those routes are constructed, for a total of seventy miles of exclusive bus/carpool lanes. Both Routes 7 and 105 are currently in the environmental process and final decisions have not yet been made.

This combination of Alternatives would comprise a regional system of: (1) buses and carpools operating over 320 miles of free-flow freeway on which ramp-metering and by-pass lanes are provided, and (2) buses and carpools operating over an additional 47-70 miles of exclusive lanes.

Los Angeles Central Business District Circulation-Distribution System:

The circulation/distribution system for the Los Angeles Bunker Hill and Central Business District is designed to address the particular needs of downtown as the region's major activity center. It was recognized that additional public transportation service to downtown Los Angeles, as proposed in the regional alternatives analysis, could have adverse affect on the function of downtown as a pedestrian oriented center. Street geometry and capacity constraints, coupled with automobile traffic, could degrade the quality of transit service downtown. The Downtown People Mover, as one element of the total circulation/distribution system, is designed to enable travel to and within downtown that is more efficient and environmentally compatible than possible with a bus only alternative.

The People Mover alignment is shown in Exhibit PD-4. This alignment was selected subsequent to a thorough alternatives analysis which included a null alternative, an all-bus alternative and three guideway alternatives. The alignment shown includes 11 stations and connects

with regional transit service at bus/auto intercepts at Union Station and Convention Center which are located at the end stations of the initial increment.

On August 6, 1976, the City of Los Angeles submitted a Proposal to UMTA for the Downtown People Mover Project. In addition, the City submitted a pre-application for the project to UMTA on August 13, 1976. A capital grant application is now being prepared. It will be submitted shortly by the City of Los Angeles to UMTA following review by the City Council. The DPM project is included in this regional application for the sake of completeness and to indicate that it will be done in coordination with the other elements of the Program.

Initial Increment Alternative E: Regional Core Area Rapid Transit

This alternative extends grade-separated fixed guideway rapid transit generally from North Hollywood to Union Station in Los Angeles via La Brea and Wilshire Boulevards, Flower, First and Alameda Streets (see Exhibit PD-5).

The service characteristics of this alternative, as evaluated, are those of a (totally grade-separated) conventional rail transit system with vehicles operating at speeds up to 75 mph. Guideway and stations have been evaluated as shown below:

	Guideway (Miles)	Stations
At-grade	0.0	0
Aerial	1.9	2
Subway	13.3	12
Total	15.2	14

A background local and feeder bus network, which is essentially the same as shown in Alternative II-Improved Bus (TSM), is included with this alternative.

EXHIBIT A

FUNDING REQUIREMENTS

	Estimated Millions of 1976 Dollars	
	P. E. / EIR in 1976	Design & Construction (excluding vehicles)
TSM-Improved Bus (II)	$1. 7*	107* in 1977
High-Level Bus (Portions of IX-A and IX-B)	6. 0	600 to follow II
CDS including DPM	1. 6	126 if accepted to follow II
Regional Core (Altv. E)	4. 5	644 if accepted to follow II
TOTALS	13. 8**	1,477***

*$180 Million in additional highway-related construction and PE/EIR work necessary to II will be accomplished as part of CalTrans's highway program.

**To be expended during 1977 and 1978

***To be expended in 1978 and beyond as per follow-on capital grant application(s).

EXHIBIT B

FUNDING SOURCES
for
Preliminary Engineering/EIR Preparation
(millions of dollars)

Potential Action	Estimated Cost of PE/EIR	Local Share			Federal (UMTA) Share
		CalTrans	SCRTD	City of L. A.	
TSM-Improved Bus (II)	1.7*	-	0.34	-	1.36
High-Level Bus (Portions of IX-A & IX-B)	6.0	1.2	-	-	4.8
CDS including DPM	1.6	-	-	0.32	1.28**
Regional Core (Altv. E)	4.5	0.45	0.45	-	3.6
Total for PE/EIR	13.8	1.65	0.79	0.32	11.04

* Engineering of $180 million in additional highway-related construction necessaay to II will be accomplished as part of CalTrans' highway program.

**Requested by City of Los Angeles through DPM Demonstration Program

TRANSPORTATION SYSTEMS MANAGEMENT ACTIONS FOR THE LOS ANGELES-LONG BEACH URBANIZED AREA

ACTIONS	STATUS					
	Planned			Implemented		
	Considered	Proposed	Adopted	Pilot	Specific Areas	General
Actions to ensure the efficient use of existing road space through:						
• Traffic operations improvements to manage and control the flow of motor vehicles, such as:						
Channelization of traffic						*
One-way streets						*
Better signalization and progressive timing of traffic signals						*
Computerized traffic control		*			9 Mi. Sq.	
Metering access to freeways			522 ramps		178 ramps	
Reversible traffic lanes						
• Preferential treatment for transit and other high-occupancy vehicles, such as:						
Reserved or preferential treatment on freeways and city streets			200 Mi.		23 Mi.	
Exclusive lanes to bypass congested points						
Exclusive lanes at toll plazas with provision for no-stop toll collection	N/A					
Conversion of selected downtown streets to exclusive bus use	*					
Exclusive access ramps to freeways			151 ramps		20 ramps	
Bus preemption of traffic signals				*		
Strict enforcement of reserved transit rights-of-way						*
Special turning lanes or exemption of buses from turning restrictions						*
• Appropriate provision for pedestrians and bicycles, such as:						
Bicycle paths and exclusive lanes					*	
Pedestrian malls and other means of separating pedestrian and vehicular traffic					*	
Secure and convenient storage areas for bicycles					*	
Other bicycle facilitation measures					*	
• Management and control of parking through:						
Elimination of on-street parking, especially during peak periods						*
Regulation of the number and price of public and private parking spaces	*					
Favoring parking by short-term users over all-day commuters						*
Provision of fringe and transportation corridor parking to facilitate transfer to transit and other high-occupancy vehicles	*		55 lots		13 lots	
Strict enforcement of parking restrictions						*

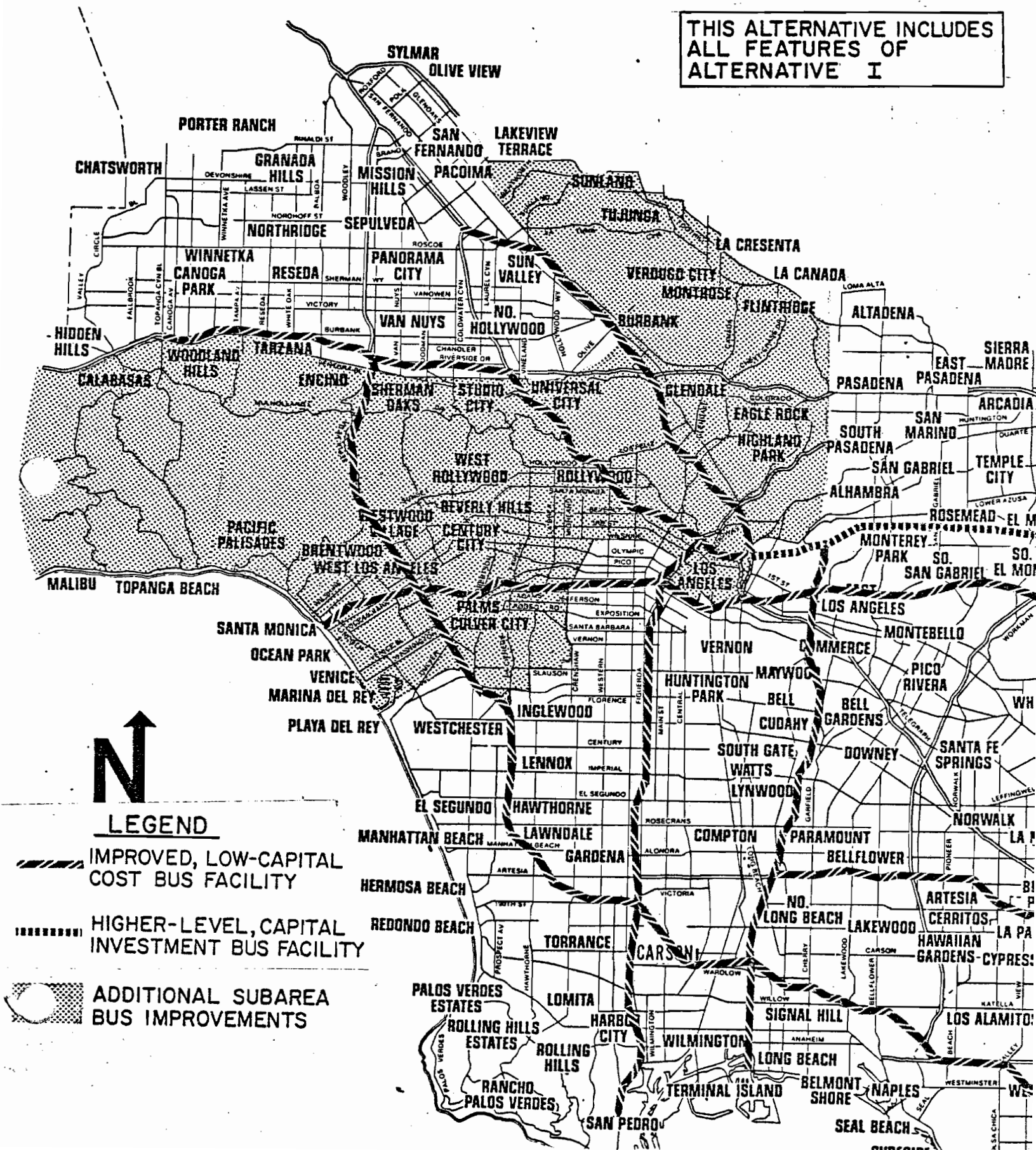
TRANSPORTATION SYSTEMS MANAGEMENT ACTIONS FOR THE LOS ANGELES-LONG BEACH URBANIZED AREA

ACTIONS	STATUS					
	Planned			Implemented		
	Considered	Proposed	Adopted	Pilot	Specific Areas	General
• Changes in work schedules, fare structure and automobile tolls to reduce peak period travel and to encourage off-peak use of transportation facilities and transit services, such as:						
Staggered work hours					*	
Flexible work hours					*	
Reduced transit fares for off-peak transit						
Increased peak hour commuter tolls on bridges and access routes to city						
Actions to reduce vehicle use in congested areas through:						
• Encouragement of carpooling and other forms of ride sharing						*
• Diversion, exclusion and metering of automobile access to specific areas	*					
• Area licenses, parking surcharges and other forms of congestion pricing	*					
• Establishment of car-free zones and closure of selected streets to vehicular traffic or to through traffic	*					
• Restrictions on downtown truck delivery during peak hours						*
Actions to improve transit service through:						
• Provision of better collection, distribution and internal circulation services					*	
• Greater flexibility and responsiveness in routing, scheduling and dispatching of transit vehicles					*	
• Provision of express bus services in coordination with local collection and distribution services					*	
• Provision of extensive park-and-ride services from fringe and transportation corridor parking areas					*	
• Provision of shuttle transit services from CBD fringe parking areas to downtown activity centers					*	
• Encouragement of jitneys and other flexible paratransit services and their integration in the metropolitan public transportation system			*			
• Simplified fare collection systems and policies						*
• Provision of shelters and other passenger amenities			*			
• Better passenger information systems and services						*
Actions to increase internal transit management efficiency, such as:						
• Improve marketing						*
• Developing cost accounting and other management tools to improve decion-making					*	
• Establishing maintenance policies that assure greater equipment reliability						*
• Using surveillance and communications technology to develop real time monitoring and control capability			*			
• Using improved Security Techniques to minimize vandalism and improve passenger safety and security						*

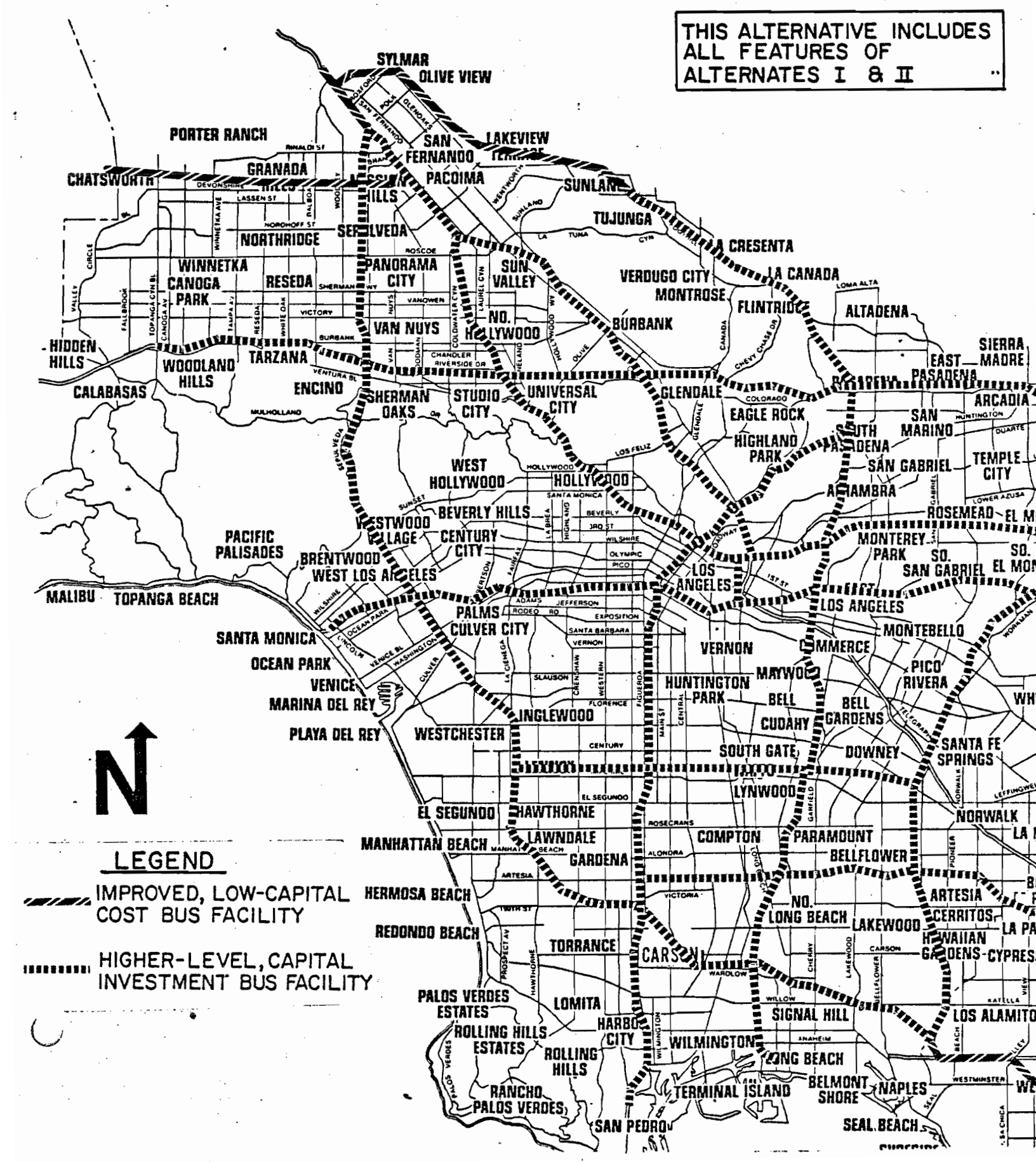
Exhibit PD-2

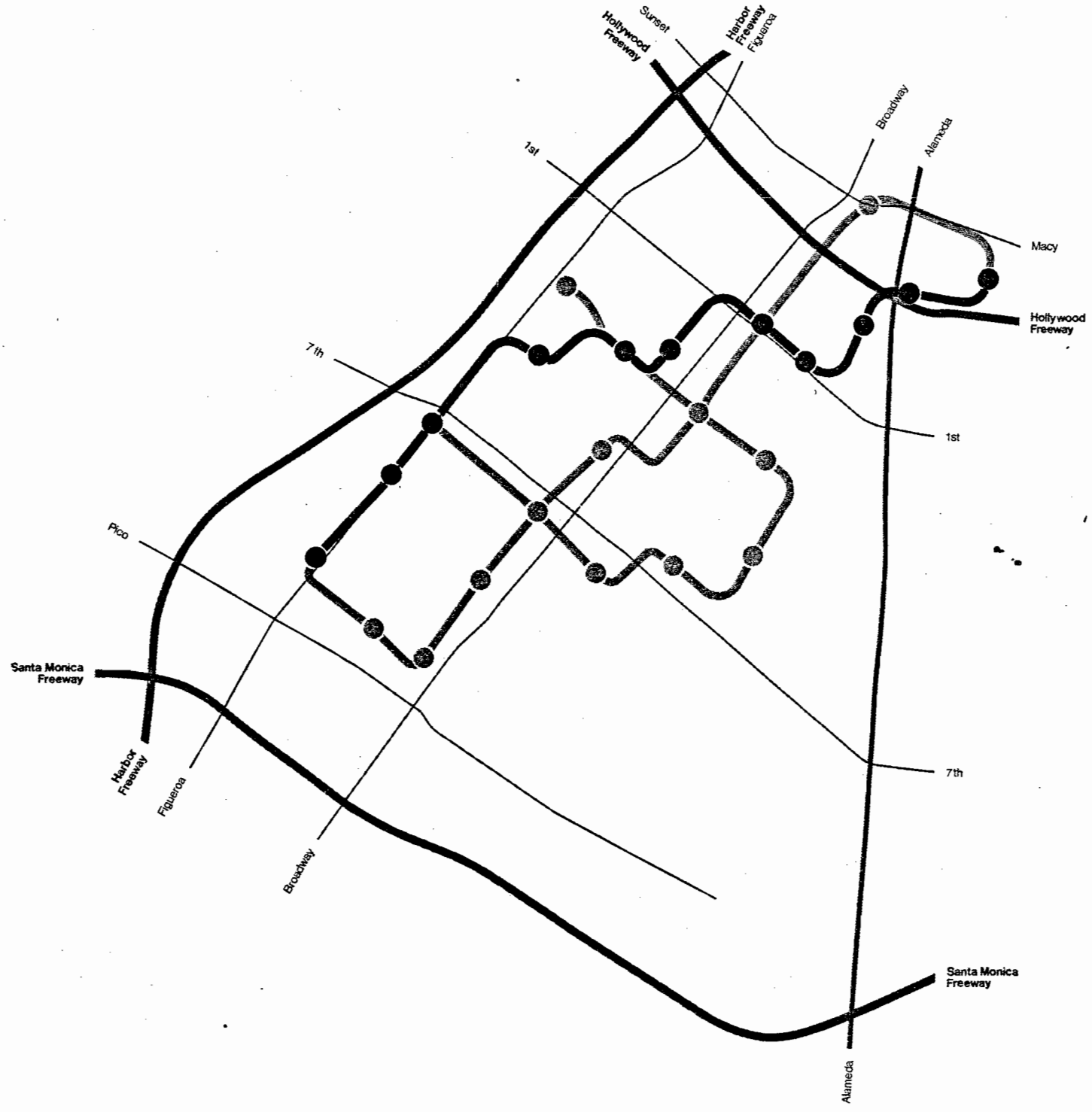
REGIONAL IMPROVED BUS (TSM)

ALTERNATIVE II



REGIONAL ALL BUS
ALTERNATIVE IX





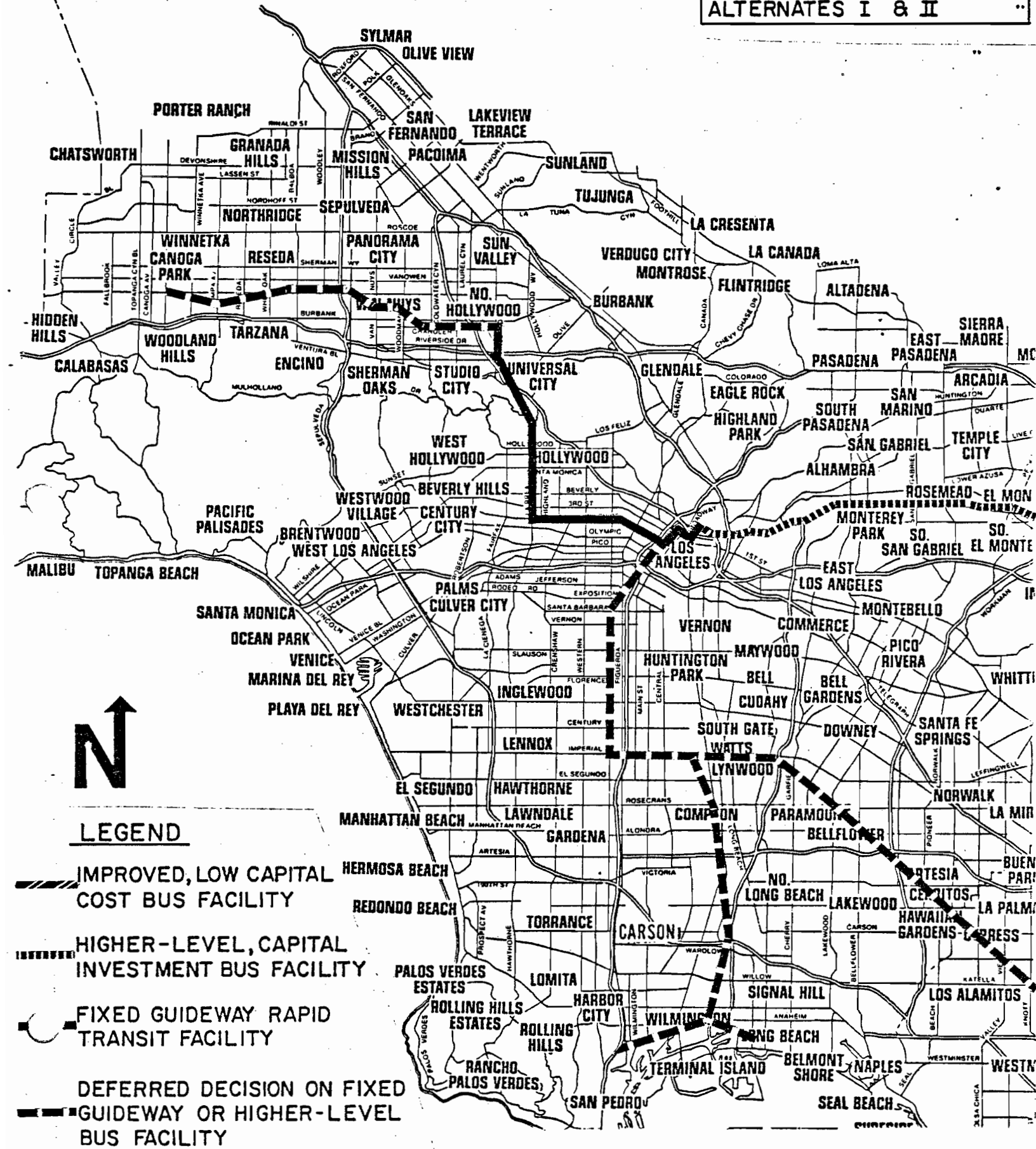
DPM
INITIAL INCREMENT
Alignment A

Exhibit PD-5

NORTH HOLLYWOOD TO UNION STATION

ALTERNATIVE "E"

THIS ALTERNATIVE INCLUDES ALL FEATURES OF ALTERNATES I & II



LEGEND

- IMPROVED, LOW CAPITAL COST BUS FACILITY
- HIGHER-LEVEL, CAPITAL INVESTMENT BUS FACILITY
- FIXED GUIDEWAY RAPID TRANSIT FACILITY
- DEFERRED DECISION ON FIXED GUIDEWAY OR HIGHER-LEVEL BUS FACILITY