

CIRCULATION ELEMENT

II. COMMUNITY DEVELOPMENT
3. Circulation Element

Introduction

Overview

The City of Lawndale is an urban community of 27,331 residents and occupies approximately 1.9 square miles in southwest Los Angeles County. Figure A presents the location of Lawndale on a regional level. The City is part of the locationally desirable South Bay area, affording good access to major employment centers, a number of regional shopping centers as well as the ocean/beaches recreational area.

The circulation system of a community is vital to its prosperity. Its function is to provide for the movement of goods and people which could include pedestrian, bicycle, transit, train, and automobile traffic flows within and through the community. Since good traffic circulation is important to economic viability and the creation and preservation of a quality living environment, it is important that it occurs in a most efficient manner. The Circulation Element of the General Plan provides the community with a general guide to improve and maximize the effectiveness of its circulation system.

Authority

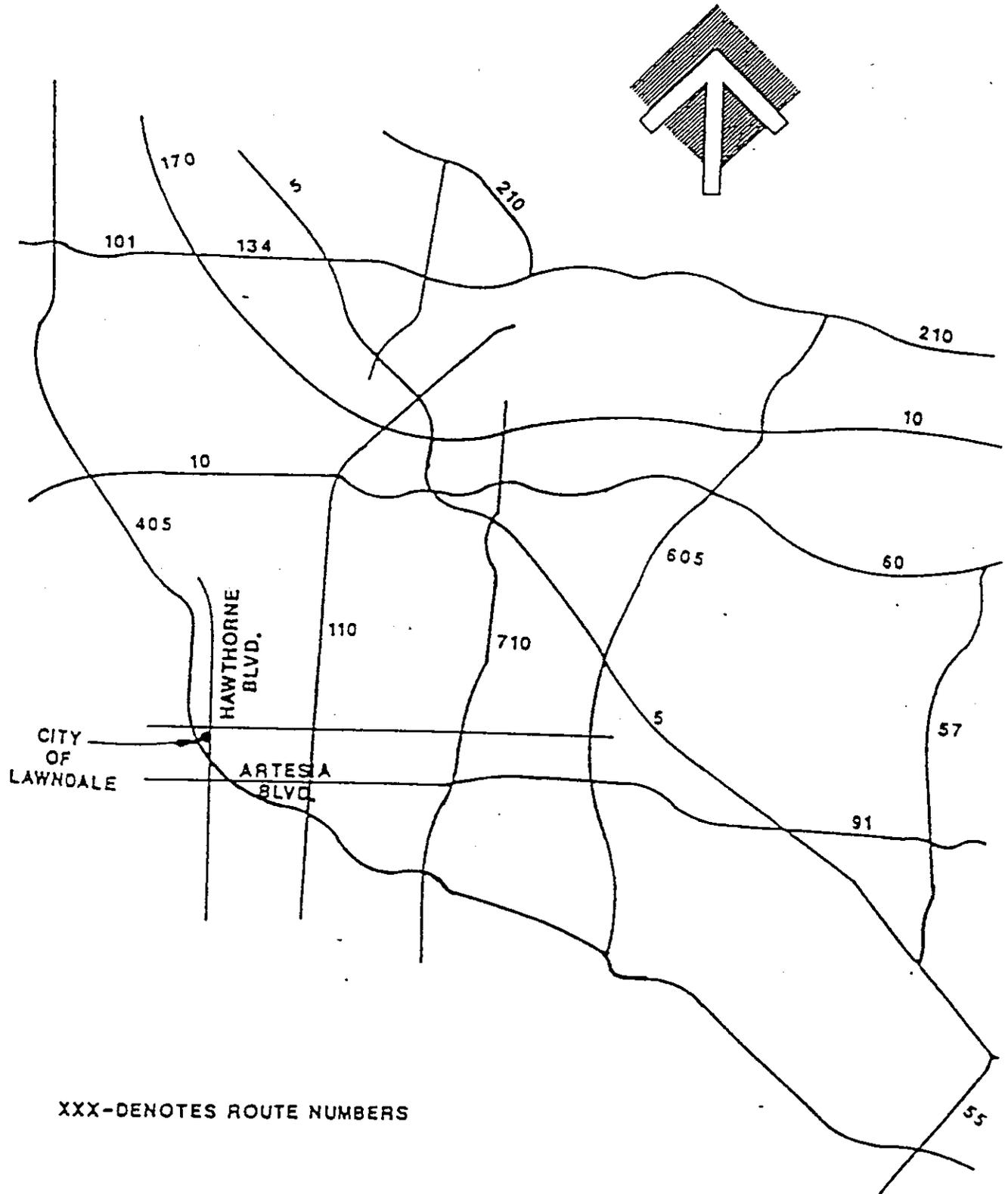
Pursuant to Government Code Section 65302(b) a Circulation Element in all City and County General Plans is required as follows:

"A Circulation Element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and facilities, all correlated with the Land Use Element of the plan."

Organization

The Circulation Plan, upon adoption, serves as the Circulation Element's main policy tool, designating future road improvements, extensions, and special intersection design treatments. The Circulation Element shall also:

- Identify the transportation needs and issues within the City and those regional relationships that affect the City's transportation system.



Regional Arterial System

Figure A

- Establish goals for the Element with objectives and policies to attain those goals.
- Describe the proposed circulation system in terms of geometric design elements, operating characteristics, and limits of operation including current standards, guidelines, and accepted criteria for the location, design, and operation of the transportation system.
- Consider alternatives other than the single-occupant vehicle as essential in providing services and access to facilities.
- Establish policies that coordinate the circulation system with planned land uses and provide direction for future decision making in the realization of the Circulation Element goals.

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Relationship to Other
General Plan Elements

The Circulation Element, in conjunction with other General Plan Elements, designates the location and scale of existing and proposed transportation systems. The Circulation Element must support and be consistent with all elements of the General Plan. It is most closely coordinated with the Land Use, Noise, and Housing Elements.

The Noise Element quantifies and sets standards for the overall community noise environment and provides noise exposure information from transportation-related resources. The information and data is used as a guideline in the Land Use Element to achieve noise-compatible land uses. The planning of circulation systems and transportation alternatives is coordinated closely with the findings of both elements.

The Housing Element, in setting forth a plan for the provision of adequate sites for housing, is consistent with the Land Use Element, which defines the balance of land use for the entire community.

The Circulation Element, in designating transportation routes, ensures that access will be available for all land uses including business, industry, open space/recreation, and housing. Additional transportation improvements may be required to comply with the Air Quality Management Plan. Also, the Hawthorne Boulevard Corridor specific plan provides greater details on the design features and roadway improvements proposed for Hawthorne Boulevard.

The sections of the General Plan closely associated with the natural environment, such as the Conservation and Open Space Elements, may identify those areas that should be preserved for environmental reasons. The designation of scenic routes for enjoyment of the natural environment is coordinated with the Circulation Element.

For the reasons stated above, roadway improvements shown on the Master Transportation Plan are generalized and are not intended to show specific alignments. Where required for efficient circulation, specific alignments will be determined through further environmental, noise, and engineering studies.

Regional Relationships

Adjacent local agency's plans should be reviewed and commented upon whenever the opportunity arises to ensure compatibility of circulation systems which cross political boundaries.

Regional Circulation System

The circulation system serving the regional Los Angeles area has become well developed over the years and experiences considerable congestion, especially during the commuter peak periods. In order to accommodate increased traffic demands, the traditional "peak hour" has spread into a "peak period" which commonly occurs for three to five hours. The South Bay area, which includes the City of Lawndale, is currently served by a grid pattern of major and secondary highways, in addition to the freeways. The arterials, or major highways, generally run north-south and east-west and carry significant daily volumes in excess of 40,000 average daily trips (ADT). These include segments along Artesia Boulevard, Rosecrans Avenue and Inglewood Avenue. Hawthorne Boulevard carries daily traffic volumes in excess of 60,000 ADT. The regional network of major and secondary highways consists of the following significant streets in the area:

Hawthorne Boulevard
Inglewood Avenue
Prairie Avenue
Sepulveda Boulevard
Crenshaw Boulevard
Western Avenue
Vermont Avenue
Rosecrans Avenue

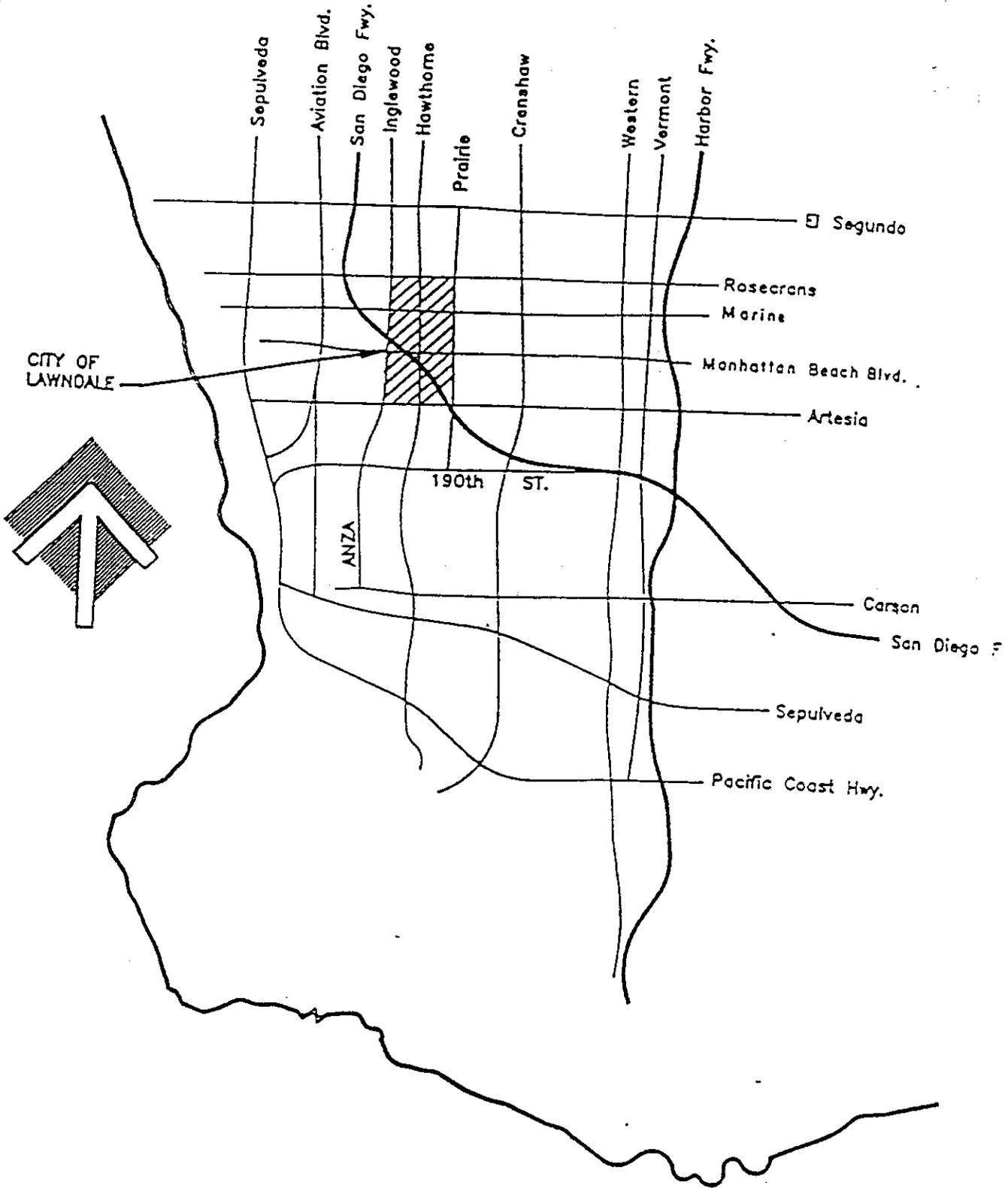
Marine Avenue
Manhattan Beach Boulevard
Artesia Boulevard
Pacific Coast Highway
190th Street/Victoria
El Segundo Boulevard
Carson Street

In addition, there are two freeways in the area, the San Diego Freeway (Interstate 405) and the Harbor Freeway (Interstate 110). According to the latest traffic count data available from Caltrans, the San Diego Freeway carries daily traffic volumes ranging between 257,000 and 263,000 ADT (1989). The Harbor Freeway carries daily traffic volumes that range between 195,000 and 218,000 ADT. The relationship between Lawndale and the regional circulation network is depicted in Figure B.

Freeway access to the South Bay area is constrained mainly due to the few freeways now serving the area and surrounding development. A review of the Caltrans long range plan indicates the Century Freeway north of Lawndale will help relieve east/west congestion in the South Bay area. However, this would cause an increase in North/South traffic in order to access the proposed freeway. Also, extension of the Artesia Freeway (SR91) west could provide regional relief.

Local Circulation

Since transportation within the City of Lawndale is primarily oriented toward the automobile, the Lawndale Circulation Element will place its focus on the roadway network serving the City. The local circulation



Regional Location Map

Figure B

system in the city consists basically of four levels: Traffic utilizing local streets, collector streets, major highways, and freeways. Figure C illustrates how these four levels should function and relate to one another.

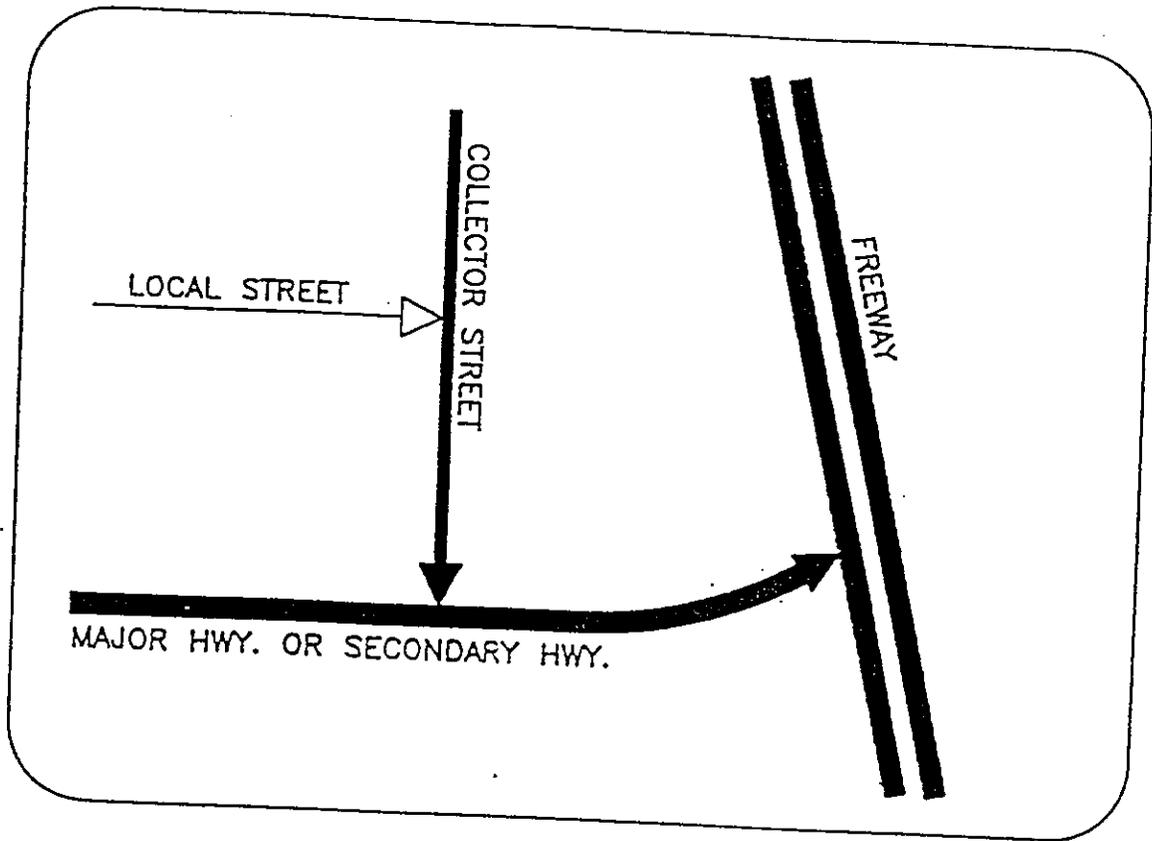
Major Highways

The backbone of the circulation system in Lawndale is the major and secondary highways transecting the City. Major highways are long distance, high volume thoroughfares which furnish connections between traffic generators such as employment centers and commercial areas and commonly provide access to freeway interchanges. Secondary highways carry somewhat lesser traffic volumes over shorter distances. Lawndale is transected by eight major or secondary highways spaced approximately one-half mile apart. In addition, the San Diego Freeway bisects the city in a diagonal manner, northwest to southeast with on-off ramps (partial cloverleaf) at Inglewood Avenue, Hawthorne Boulevard and Redondo Beach Boulevard. Table 1 contains a summary of major highways, existing configuration, current daily traffic volumes, theoretical level of service (LOS) and daily capacities and associated volume to capacity (V/C) ratios. Figure D presents in graphic format the most recent daily traffic volumes on the major and secondary highways within the city.

As indicated on Table 1, there are a number of major highways currently operating at near or over capacity conditions. Hawthorne Boulevard between 166th Street and the South City limits currently carries daily traffic volumes that exceed the capacity of a six lane divided roadway. Inglewood Avenue between Marine Avenue and 162nd Street carry daily traffic volumes which exceed the capacity of a four lane divided roadway. Prairie Avenue between Rosecrans Avenue and Marine Avenue carries daily traffic volumes that slightly exceed the capacity of a four lane divided roadway. Marine Avenue west of Inglewood Avenue carries daily traffic volumes that exceed the capacity of a four lane undivided roadway. Artesia Boulevard between Inglewood Avenue and Redondo Beach Boulevard currently carry daily traffic volumes that significantly exceed the capacity of a four lane divided roadway. All other major highway segments within the City of Lawndale currently carry daily traffic volumes within capacity for their respective function classifications.

Collector and Local Streets

Feeding into the major street network of Lawndale's circulation system is an extensive network of local and collector streets which serve less intense land uses in the city. The system is basically a grid pattern consistent with that of the major streets. Figure E illustrates the local circulation system and the existing circulation plan. Traffic counts on some of the streets have been taken since 1985 and are shown in Figure D.



Hierarchy of Roadway Functions

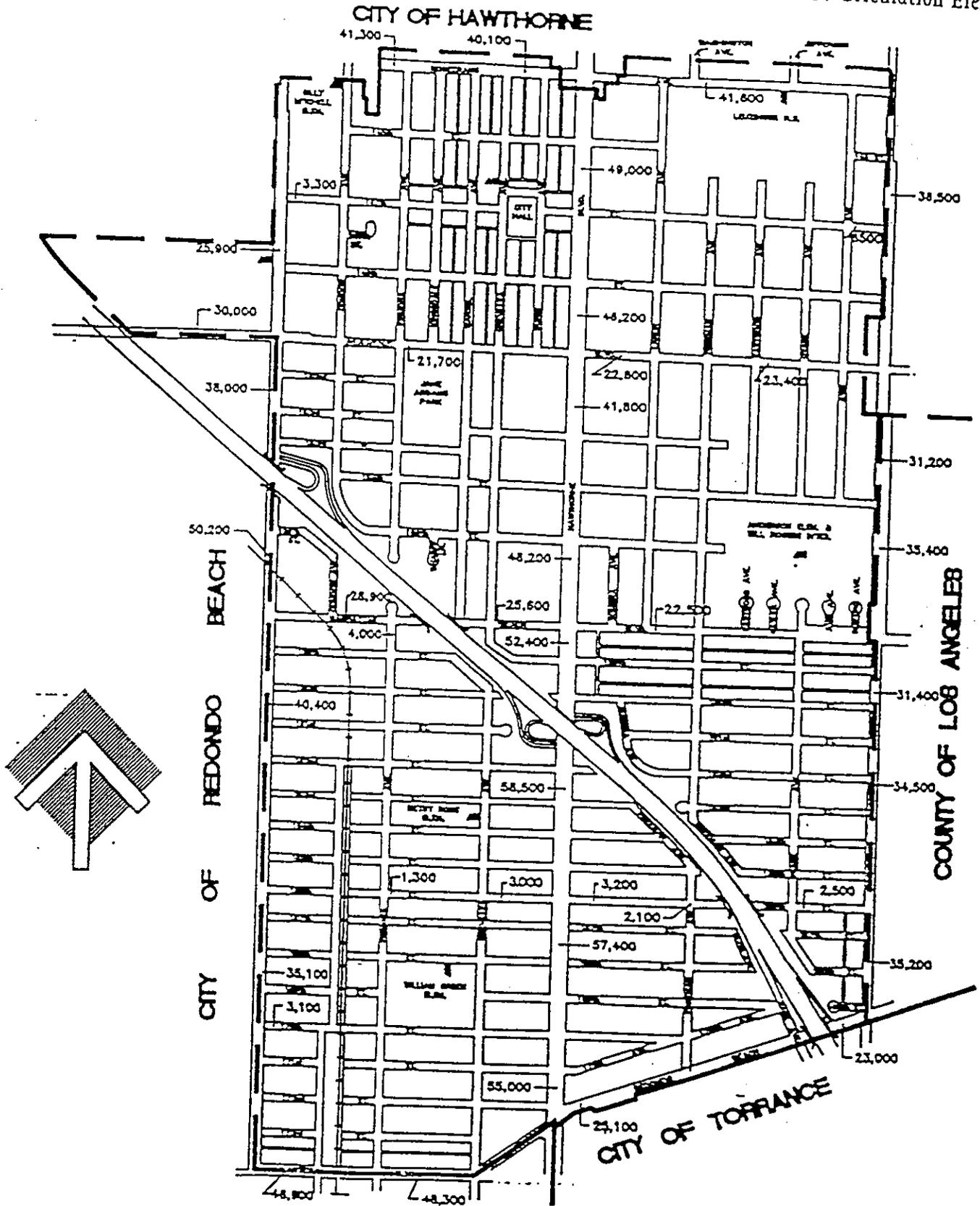
Figure C

Existing Major and Secondary Highway Operations				
Street Segment	Existing Class ¹	LOS E Daily Cap. ²	Existing Daily Traffic Volume ³	V/C ⁴
Hawthorne Boulevard				
Rosecrans Ave./147th Street	6M	54,000	49,000	0.91
147th Street/Marine Avenue	6M	54,000	46,200	0.86
Marine Avenue/154th Street	6M	54,000	41,800	0.77
154th Street/Manhattan Beach Blvd.	6M	54,000	48,200	0.89
Manhattan Beach Blvd./I-405	6M	54,000	52,400	0.97
I-405/166th Street	8M	72,000	58,500	0.81
166th Street/170th Street	6M	54,000	57,400	1.06
170th Street/Redondo Beach Blvd.	6M	54,000	55,000	1.02
Inglewood Avenue				
Rosecrans Ave./Marine Avenue	4S	24,000	25,900	1.08
Marine Avenue/154th Street	4S	24,000	38,000	1.58
I-405/Manhattan Beach Blvd.	4S	24,000	50,200	2.1
Manhattan Beach Blvd./162nd Street	4M	36,000	40,400	1.12
162nd Street/Artesia Blvd.	4M	36,000	35,100	0.98
Prairie Avenue				
Rosecrans Ave./Marine Avenue	4M	36,000	36,500	1.01
Marine Avenue/154th Street	4M	36,000	31,200	0.87
154th Street/Manhattan Beach Blvd.	4M	36,000	35,400	0.98
Manhattan Beach Blvd./161st Street	4M	36,000	31,400	0.87
161st Street/166th Street	4M	36,000	34,500	0.96
166th Street/Redondo Beach Blvd.	4M	36,000	35,200	0.98
Rosecrans Avenue				
Inglewood Avenue/Firmons Avenue	4-6 ⁵ M	45,000	41,300	0.92
Firmons Avenue/Hawthorne Blvd.	4-6 ⁵ M	45,000	40,100	0.89
Hawthorne Blvd./Prairie Avenue	4-6 ⁵ M	45,000	41,600	0.92
Marine Avenue				
I-405/Inglewood Avenue	4S	24,000	30,000	1.25
Inglewood Avenue/Hawthorne Blvd.	4S	24,000	21,700	0.90
Hawthorne Blvd./Freeman Avenue	4S	24,000	22,600	0.94
Freeman Avenue/Prairie Avenue	4S	24,000	23,400	0.98
Manhattan Beach Boulevard				
Inglewood Avenue/I-405	4M	36,000	28,900	0.80
I-405/Hawthorne Blvd.	4M	36,000	28,600	0.79
Hawthorne Blvd./Prairie Avenue	4M	36,000	22,500	0.63
166th Street				
West of Hawthorne Blvd.	2LC	7,500 ⁶	3,000	0.40
Hawthorne Blvd./Freeman Avenue	2C	15,000 ⁶	3,200	0.21
Freeman Avenue/Prairie Avenue	2C	15,000 ⁶	2,500	0.17
Redondo Beach Boulevard				
Hawthorne Blvd./I-405	4M	36,000	25,100	0.70
I-405/Prairie Avenue	4M	36,000	23,000	0.64
Artesia Boulevard				
Inglewood Avenue/Firmons Avenue	4M	36,000	46,600	1.29
Firmons Avenue/Redondo Beach Blvd.	4M	36,000	48,300	1.34
170th Street	2LC	7,500	3,100	0.41
162nd Street	2LC	7,500	2,000	0.27
147th Street	2LC	7,500	9,700	0.36

- 1 Denotes number of lanes: M = Major; S = Secondary; C = Collector; LC = Local Collector
- 2 Theoretical LOS E Capacity from Table 5-2, *City of Lawndale Comprehensive Traffic Engineering Study*, BSI -- June 1986
- 3 1989-1990 Daily traffic Counts -- See Appendix for actual count summaries
- 4 V/C = Volume to Capacity -- based on LOS E daily capacity
- 5 Striped for six lanes with no stopping restrictions during peak hours.
- 6 LOS E capacity is estimated

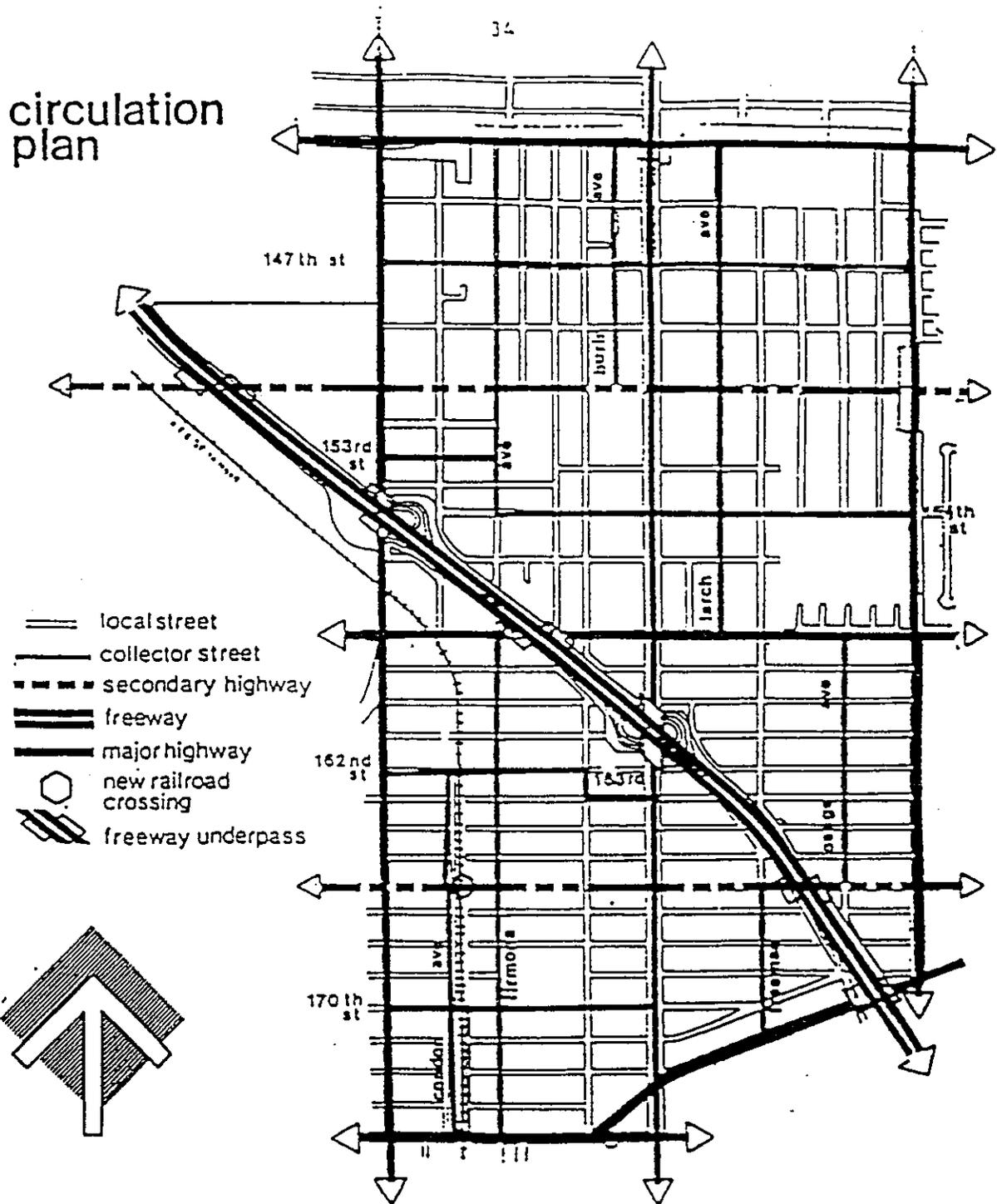
Existing Major and Secondary Highway Operations

Table 1



Existing Daily Traffic Volumes
(October 1990 Counts)

Figure D



Existing Circulation Plan
(Source: 1976 General Plan)

Figure E

One of the most significant shortcomings of the local circulation system in Lawndale is the narrow streets. Prior to incorporation of the City, subdivisions occurred at minimum standards. Narrow lots were created, as well as narrow streets. Today approximately 15 percent of the total street mileage in Lawndale has only 26 feet of pavement within a 40 foot right-of-way. This is too narrow if parking is allowed on both sides of the street. Parking on one side is, therefore, prohibited on 40 foot right-of-way streets, as well as on designated collector streets with less than 40 feet in pavement width.

The narrow streets occur in the most crucial locations, including industrial areas. To compound the problem, loading and unloading typically occur in the streets.

Although the City has a policy of 40 foot wide collector streets, this policy has not been implemented. If the designated collector streets have to function as such and thereby carry higher traffic volumes than the local streets, they must be widened in order to increase efficiency.

The existing AT&SF Rail Line has created a barrier to east/west traffic circulation in the southwest quadrant of the City. The residential area east of Inglewood and west of the tracks has inadequate circulation because the number of railroad crossings is limited. The only north/south street within the area is Condon Avenue. Currently Condon Avenue is 40' wide south of 170th Street. Moreover, effective circulation is further hampered by the one-way function of that street. In order to create an effective loop system to enhance circulation in that area Condon Avenue, must be widened to collector street standards.

Since the construction of the San Diego Freeway in 1963, east-west movement in the southern part of the City has been significantly restricted. The only street between Hawthorne Boulevard and Redondo Beach Boulevard provided with a freeway underpass is 166th Street although it terminates at the Santa Fe Railroad. While the construction of a railroad crossing at 166th Street will improve east-west travel, this may not be feasible at this time due to physical constraints which increases the construction cost of this improvement.

Peak Hour Considerations

Examining daily traffic volumes on arterial streets is one method of determining if a roadway segment is operating in an efficient manner. However, a more accurate method of determining the functional capacity is by defining the operational characteristics at signalized intersections during peak hour periods. Analyzing the peak hour periods is important because this is when the street network generally has the highest demand placed on it. Peak hour level of service at signalized intersections along Hawthorne Boulevard were obtained from a traffic study conducted by BSI and dated June 1986. The following table presents these peak hour level of service summaries. ...

Hawthorne Boulevard Intersection Capacity Summary			
Intersection Level of Services			
Intersection	AM Peak Hour	Mid Day Peak Hour	PM Peak Hour
Hawthorne Boulevard at:			
Redondo Beach Blvd.	E	D	D
169th Street	D	B	C
166th Street	C	B	C
S.D. Freeway S/B off ramp	D	C	E
S.D. Freeway N/B off ramp	C	B	E
Manhattan Beach Blvd.	E	D	E
154th Street	B	A	C
Marine Avenue	C	C	E
147th Street	D	A	C

Source: City of Lawndale Comprehensive Traffic Engineering Study (BSI, June 1986) Table S-3

As shown, it is evident that most major intersections along Hawthorne Boulevard operated at LOS E during the AM and PM peak hours in 1986. Since traffic volumes have increased in this corridor over the last four years, it is reasonable to assume current levels of service are at or below 1986 levels. The City of Lawndale should conduct a comprehensive peak hour evaluation at all signalized intersections within the City to determine where deficiencies exist and to identify opportunities to enhance capacity. New development or redevelopment should be required to perform traffic impact studies to determine the level of improvement appropriate to the street network associated with impacts by that development.

Parking

Lawndale has parking deficiencies stemming from substandard street widths, narrow residential lots, existing high residential densities and, therefore, high vehicular activity, in addition to inadequate off-street parking requirements.

In the residential areas the streets are overcrowded with parked cars in the evening hours. This is mainly due to the inadequate off-street parking requirements. Duplexes are only required to provide one and a half spaces per dwelling and sometimes boats or recreational vehicles are also present. Zoning has also, in the past, two single family units on one lot, frequently without adequate off-street parking. To compound this situation, some of the City streets are extremely narrow, necessitating parking restrictions. The many driveways, which are inherent to small lot subdivisions not served by alleys, further reduce the available parking on City streets in that the short distances between driveways significantly limit parking opportunities.

Insufficient commercial parking areas can be directly traced to the high density of small businesses present, especially on Hawthorne Boulevard. Many such establishments do a higher volume of business than their physical sizes would indicate, and since parking requirements are based on square footages, the parking needs are often not met. On Hawthorne Boulevard this is in part mitigated by the municipal parking available in

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the center median, although businesses cannot consider this facility as part of the parking they must provide. The parking facilities in the median are not fully mitigated due to:

- Users must cross at least three heavily travelled lanes of Hawthorne Boulevard in order to gain access to business establishments.
- Crosswalks are provided only at the intersections.
- Because of the wide street, pedestrians are exposed to oncoming traffic for a longer time period when crossing.

In view of the above, the parking facility is under utilized. Many users park only near the intersections, leaving mid-block parking virtually vacant. Moreover, employees utilize the median more often than do customers.

It seems apparent that parking facilities adjacent to businesses would be better utilized and would increase pedestrian safety. Redesign of Hawthorne Boulevard as currently recommended in the General Plan (Hawthorne Boulevard Corridor Specific Plan) will provide significant improvements in the parking and traffic operations.

Public Transportation

Public transportation within the City of Lawndale is provided by the Southern California Rapid Transit District (SCRTD). SCRTD lines 40, 125, 126, 130, 210, 211, 215, 442, and 443 provide regional service throughout the Los Angeles metropolitan area. In addition, Lawndale is served by Gardena Municipal Bus Lines 1, 3, and 4 and also by Torrance Transit Lines 2, 5, and 8.

In the spring of 1990, a 19 mile trolley commenced operation between Long Beach and downtown Los Angeles. The blueline is the first leg of a proposed light-rail system covering more than 150 miles. This new light rail system will help partially mitigate heavy traffic congestion experienced on the regional freeway and arterial system in and around the City of Lawndale.

The City of Lawndale operates two public transportation services within the City limits. The first is referred to as the Lawndale Trolley. This is a fixed route bus that operates between 7:00 AM and 7:00 PM Monday through Friday (and weekends with shorter hours) and provides service to the east and west sides of Lawndale between Rosecrans Avenue and the Galleria Shopping Center in Redondo Beach. This service is free of charge to all Lawndale residents.

Also, the City provides a senior van (by appointment only) which provides senior citizens with door-to-door service on an as-needed basis. Reservations must be made with at least 24 hour advance notice. This service is also provided at no charge to Lawndale residents.

The City should work closely with SCRTD in encouraging public transportation patronage. This could include, but not be limited to:

- bus stop shelters
- concrete bus pads
- wide and well lighted sidewalks
- preferred parking areas for carpool and vanpools
- encourage employer subsidized mass-transit pass programs
- provision of centrally located information racks for distribution of van/carpool and bus information

II. Community Development Goals, and Policies

3. Circulation Element

The overall goals of the circulation element are described as follows:

- Provide an integrated transportation system for the safe and efficient movement of people and goods with minimal disruption to the environment within and through the City of Lawndale.
- Consider all modes of transportation, including motor vehicle (Master Transportation Plan), mass transit (public and private bus, rail, and taxi systems), air transportation, and non-motorized transportation (pedestrian, and bicycle).
- Develop alternative transportation strategies designed to reduce traffic volumes and improve traffic flow in accordance with the Air Quality Management Plan Element.
- Participate in and assist with coordinating regional efforts which integrate the City's transportation system with the regional transportation system.

Goal 1: Integrated Transportation System

Provide for the transportation needs of the community and subregion by implementing a circulation system, which provides a high level of mobility, efficiency, access, safety, and environmental consideration for all modes and purposes of trips. These modes may include, but not be limited to automobiles, trucks, buses, bicycles, pedestrians, and rail. The intent of this section is to ensure that the improvement to existing facilities is coordinated with future population and employment growth and provides a balanced mix of transportation resources serving the community.

Policies

The City's circulation system does not stand on its own, but is an integral part of the overall land use planning for the City. It also must function as a component of the regional transportation system. The following policies are intended to direct City efforts to promote this integration of the circulation system with City-wide land use policies and the regional transportation system:

Policy 1a

The City's circulation plan shall be designed to provide the facilities and level of access necessary to serve the specific existing and proposed land uses proposed in the land use plan and regional travel needs.

Policy 1b

The City shall provide necessary facilities to obtain a balanced use of all travel modes to address the transportation needs of all ages and to provide mobility for a variety of trip purposes. The City shall generally recognize the following priorities for new transportation facilities, in descending order: vehicular, transit, pedestrian, bicycle where street ROW allows, and freight movement.

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Goal 2: Master
Transportation Plan

3. Circulation Element

Provide a network of roadways throughout the City, which is the backbone of the transportation system. The street system is used for vehicular, bicycle, transit, pedestrian, and freight movement throughout the City. Thus, it is essential to define a hierarchical system in which each roadway functions in a manner consistent with its intended use.

Policies

The policies contained in this section are intended to encourage design standards which promote efficiency and safety of the circulation system.

Policy 2a

The City shall plan, design, and implement a street system that recognizes the importance of the use and function of each hierarchical street classification. These street classifications include major highway, secondary highway, collector street, and local street. The function of each is described below:

Major Highway — The main function of this classification is to provide regional, subregional, and intra-city travel services. Features include high design standards with six (or more) travel lanes, raised and landscape medians.

Secondary Highway — The secondary highway street system is designed for intra-city travel as opposed to providing direct access to abutting properties. Typical design features include provisions for four travel lanes without a raised median. Parking is generally permitted, except in areas where turn pockets or continuous center lanes are provided.

Collector Street — The collector street is designed to connect local streets with the adjacent arterial street system. Design standards include provision for two travel lanes and parking, except in specific locations where parking is removed to provide turn lanes at intersections.

Local Street — The local street is designed to provide access from neighborhoods to the collector street system. This classification should be discontinuous in alignment so through traffic is discouraged. Typical design standards include provisions for one travel lane in each direction, parking on both sides, and direct driveway access.

Policy 2b

The Circulation Plan (see Figure F) schematically shows the locations where different street classifications interface. Normally, the transition from one classification to another will occur in mid-block areas to preclude noncontinuing lanes at intersections. The design criteria (design speed, curve radii, etc.) for the higher classification shall generally take precedence through the transition area. The City Engineer shall review these transition areas and provide guidance in achieving this policy.

Policy 2c

The City shall set a goal for an acceptable traffic service standard during AM and PM peak periods at a LOS C for all arterial and street links

with corresponding standard of LOS D for all intersections. These service values are defined by the 1985 edition of the *Highway Capacity Manual* or any subsequent edition thereof. This policy shall acknowledge that the aforementioned LOS standards may not be attainable on some existing facilities where abutting development precludes acquisition of additional right-of-way needed for changes in facility classification.

Policy 2d

The City shall adopt design standards for all streets in accordance with their functional classifications and recognized design guidelines. In developing these guidelines, the City should consider Los Angeles County, Caltrans and American Association of State & Highway Transportation Officials (AASHTO) design standards.

Policy 2e

The City shall institute street access guidelines consistent with the street classifications. These shall be applied, where feasible, to all new development or redevelopment projects. The following guidelines shall be used to define appropriate access:

- The City shall prohibit driveway access to major highways.
- Access to secondary highways shall not be permitted unless there is no other reasonable means of access to the public street system. Where access to major or secondary highways must be allowed, it shall be limited through the use of medians and/or access controls to maintain street capacity.
- Access along secondary highways should be located with a desirable minimum of 100 feet from the ends of the curb returns.

Goal 3: Roadway Improvements

This section incorporates policies which will encourage the orderly development and funding of improvements to the street system. It is expected that the construction will be funded through a combination of developer exactions, fees, and City, State and Federal funds (gas tax, Proposition A sales tax, FAU, Fetsim, etc.).

Policies

Policy 3a

The City shall require or provide adequate traffic safety measures on all existing roadways. These measures may include, but not be limited to, appropriate levels of maintenance, proper street design, traffic control devices (signs, signals, and striping), street lighting, and coordination with the school districts to provide school crossing signs and protection.

Policy 3b

The City should consider giving priority to funding and implementing projects which relieve existing deficiencies.

Policy 3c

The City shall, where feasible, interconnect traffic signals to form area networks or corridor systems. These systems shall be timed to facilitate the flow of through traffic on the arterial system, thus enhancing the movement of vehicles and goods through the City, while reducing fuel consumption and air pollution.

Policy 3d

The City shall approve and build streets as per adopted City standards.

Policy 3e

A capital improvement program (CIP) shall establish priorities for major public expenditures. This program should identify areas of greatest public need, be coordinated with all short and long range planning, demand the most efficient utilization of the tax dollar and always be in balance with the City's financial resources.

Policy 3f

Place identifying emblems, gateways or monuments at critical boundary locations and in particular upon existing Hawthorne Boulevard (further detailed in the Hawthorne Boulevard Corridor Specific Plan).

Policy 3g

Encourage utility companies and agencies to improve and beautify their facilities and placing utilities underground as quickly as possible.

Policy 3h

Replant/replace or introduce new landscaping along all new roadways or those which have been redesigned/reconstructed, to preserve the visual aesthetics of the roadway.

Policy 3i

Analyze, upgrade and enforce parking standards relating to residential developments with the approval of the Planning Commission, City Council and City staff including:

- Parking space size and access
- Convenience of parking to the units
- Number of spaces per unit
- Parking for commercial vehicles
- Parking for recreational vehicles

Goal 4: Transportation Demand Management

The transportation system envisioned for the City is a balanced system incorporating the needs of all age groups, as well as provisions for many different modes of transportation. To accomplish this, it is necessary to implement policies encouraging a range of transportation opportunities while reducing the dependence upon automobiles.

Policies

Policy 4a

The City shall encourage the reduction of the total number of daily and peak hour vehicle trips and provide better utilization of the circulation system through development and implementation of overall Transportation Demand Management (TDM) and Transportation System Management (TSM) programs. These may include implementation of mandatory peak hour trip reduction requirements, requirements for staggered work hours, increases in development of employment centers where transit usage is highly viable, encouragement of ride sharing in the public and private sector, provision for park-and-ride facilities adjacent to the regional transportation system, and provisions for transit subsidies.

The City shall assist employers to work with Caltrans rideshare branch (Commuter Computer) where there are existing or planned employment centers.

Policy 4b

The City shall consider the use of bicycle lanes where feasible during the design and improvement of the street system.

Policy 4c

The City shall update and maintain a bikeway plan with recommended routes for bicyclist to use. These routes shall connect residential areas with schools, parks, recreation areas, major employment centers, and neighborhood commercial areas.

Policy 4d

The City shall generally require pedestrian facilities along all streets.

Policy 4e

The City shall require that adequate off-street parking be provided for all properties.

Policy 4f

The City shall maintain curb use priorities that consider, in descending order, the needs of through traffic, transit stops, bus turnouts, passenger loading needs, and short and long term parking.

Policy 4g

The City shall discourage the use of public streets for freight loading and unloading.

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Goal 5: Public Transit and Railway Transit

Promote public transit and railway transit development and usage. An integral part of the multi-modal system is the provision for public transit and rail service. For transit and rail service to be successful, they should be properly planned so that they are accessible to users and operate in a timely fashion. The following policies are intended to provide guidance in establishing a transit system and encouraging usage of railroad facilities to serve the needs of the City and region.

Policies

Policy 5a

The City shall cooperate with Caltrans and the Los Angeles County Transportation Commission (LACTC) to attain a balance of transportation opportunities. This shall include the establishment of criteria to implement transit improvements, short/long range transit service plans, corridor improvements, transit centers, park and ride lots with amenities for bicyclist, and the preservation of rights-of-way for commuter rail stations.

Policy 5b

The City shall require developers to construct, when appropriate, transit facilities, including bus turn-outs where feasible on arterials and bus stop amenities, including lighted shelters/benches, telephones, and route information sign holders.

Policy 5c

The City should work with the Southern California Rapid Transit District (SCRTD) to establish transit stops adjacent to senior housing programs, areas with high concentrations of medical facilities, and major employment centers, as well as retail and commercial areas.

Policy 5d

The City should continue to work with the SCRTD, Caltrans, and LACTC to plan and implement a commuter rail system. This shall include the appropriate location routes of stops, service schedules, feeder bus routes, parking needs, a transit terminal/park and ride lot, and funding.

Policy 5e

The City shall work with the SCRTD to assure that transit centers and major stops have adequate bicycle and pedestrian access, including secure bicycle storage, where appropriate. The City shall encourage more bus services which accommodate bicycles, where appropriate.

Policy 5f

The City, in coordination with the SCRTD, shall encourage the implementation and utilization of a multi-modal transit center by coordinating bus routes and requiring, when applicable, shuttle services to major employment centers.

II. Community Development

3. Circulation Element

Policy 5g

The City shall encourage additional passenger usage of railroad service by providing safe and adequate parking facilities with shuttle service appropriate, enhanced landscaping, and adjacent recreational areas. Ancillary services, such as cafes, postal services, and small shops, should be considered for development around the station.

Goal 6: Nonmotorized Transportation

Enhance environmental and social benefits for the citizens of Lawndale by providing an integrated system of bicycle and pedestrian networks with associated facilities for the safe and efficient movement of people in and through the City of Lawndale.

Policies

Policy 6a

The City shall provide bikeways (as defined by Caltrans) throughout the City to encourage bicycle usage in place of the automobile.

Policy 6b

The City shall provide properly designed pedestrian facilities for the handicapped and elderly population to assure their safety and enhance mobility.

Goal 7: Bicycle Facilities

Provide an integrated circulation system and bicycle facilities to promote the environmental and social benefits of commuter and recreational bicycling. The bicycle circulation system and bicycle facilities shall provide mobility and safety to all persons and areas within the City of Lawndale.

Policies

Policy 7a

Class II Bikeways (on-street bike lanes) shall be planned into all major highways.

Policy 7b

Collector streets, which are identified to function as links for the bicycle circulation system, should be provided with Class II Bikeways (bike lanes). In such cases, the City shall accommodate cyclists on these identified streets by widening the street or eliminating on-street parking wherever possible.

Policy 7c

The use of land shall integrate the bicycle circulation system with auto, pedestrian, and transit systems.

- Development shall provide short-term bicycle parking and long term bicycle storage facilities, such as bicycle racks, pedestal posts, and rental bicycle lockers. Provision of bicycle storage facilities shall apply to median and high density residential developments as well.
- Development shall provide safe and convenient bicycle access to high activity land uses, such as schools; parks; and shopping, employment, and entertainment centers.

Policy 7d

The City shall continue seeking funds at the private, local, and federal levels for bicycle circulation system expansion.

Goal 8: Pedestrian Facilities Provide for safe pedestrian circulation throughout the City, including sidewalks, pedestrian malls, and trails.

Policies

Policy 8a

The construction of a minimum of 5-foot wide sidewalk shall be required in all new developments and street improvements.

Policy 8b

The City shall encourage the inclusion of common open space for pedestrian use within residential development areas.

Policy 8c

The City shall, in accordance with state law, provide access for the handicapped and elderly to all streets by providing handicapped ramps at the intersections.

II. Community Development Implementation Programs

3. Circulation Element

1. Integrated Transportation System

1.1 System Management

Adoption and implementation of comprehensive citywide TSM and TDM programs to reduce peak hour traffic volumes to a level which can be accommodated by the street system.

1.2 Transit Coordination

Work closely with Caltrans, LACTC in the planning and implementation of the proposed light rail line (Green Line) and the proposed train station along 166th Street.

2. Master Transportation Plan

2.1 Travel Forecast

In order to assess the long range impacts of General Plan land uses on the proposed Circulation Element, computerized traffic forecasts were performed to estimate future traffic volumes along city streets. The forecasted annual daily traffic for street segments were evaluated and compared with acceptable standards to determine buildout impacts.

For purposes of this analysis, a table has been prepared to compare daily traffic volumes to capacities. This is a general approach which can be used to identify potential capacity constraints. Where this potential exists, a more detailed peak hour analysis should be performed. The attached Table 2 depicts the trip generation for the proposed land use. Table 3 shows the General Plan buildout, Average Daily Trips (ADT), and street segment volume to capacity (V/C) ratio.

2.2 Traffic Analysis

The results of the analysis indicate that all circulation element streets within the City of Lawndale, with the exception of Manhattan Beach Boulevard, 166th Street, and Redondo Beach Boulevard, will operate under congested conditions with the demand volume exceeding the capacity of the roadways. This is due to the proposed increase in residential intensity (an additional 4,600 units), and commercial land use (an additional 70 acres). The additional traffic to be generated by the increased development potential, combined with the existing traffic within the City, would significantly impact the traffic operation along the circulation streets within the City of Lawndale.

2.3 Traffic Impacts

To mitigate the traffic impact on the circulation roadways, several facilities will require reclassification from the current Circulation Element as shown on Table 4 and Figure F to improve the traffic operation. The additional lanes could be provided through parking restrictions, restriping, widening via reduction in sidewalk width, or widening through the purchase of right-of-way.

A second type of improvement which could increase the roadway capacities would be to reduce the side friction caused by parking

maneuvers, entering and exiting traffic, and bus stops. This can be accomplished by eliminating or reducing on street parking, consolidation of driveways, addition of bus turnouts where feasible, and provision of raised medians to separate opposing flows of traffic. Capacity can also be maximized on a street network by proper signal timing and coordination of adjacent traffic signals. It should be noted that, in certain areas of the city, parking demand exceeds existing supply. A detailed investigation of the parking situation along these streets should be further investigated and consideration should be given to the provision of off-street parking lots.

A specific plan is being developed for Hawthorne Boulevard within the city limits. This plan calls for the relocation of the existing parking in the median to the outer edges. Three through lanes in each direction separated by a raised median are also proposed. A raised median will separate the parking areas from the travel lanes and one-way frontage roads serving these areas will be provided on both sides of Hawthorne Boulevard. Bus turnouts and enhanced intersection geometrics are also proposed. In addition, Caltrans is currently contemplating transferring jurisdiction of Hawthorne Boulevard from the 405 freeway south to the city limit. The City should coordinate closely with Caltrans to upgrade this roadway in order to minimize future maintenance and improvement obligations.

Additionally, in order to reduce the traffic demand on the City's circulation network, the City should coordinate closely with Southern California Rapid Transit District (SCRTD) and Los Angeles County Transportation Commission (LACTC) to increase and improve the transit service within the City. Additional routes should be planned throughout the City and the frequency of bus service should be increased. The City should also work closely with all agencies to plan and implement the light rail service and the transit station proposed to parallel the San Diego Freeway along the south side.

Another measure which would decrease the traffic demand would be the adoption and implementation of Transportation System Management (TSM) and Transportation Demand Management (TDM) programs.

In summary, significant adverse transportation impacts to the City of Lawndale's street network can be reduced with the implementation of the proposed Circulation Network as shown in Table 4 and Figure F.

Trip Generation Summary for Buildout Conditions¹

Land Use	Daily Trip Rate	Existing Intensity	Project Plan Intensity	Existing VPD	Project Plan VPD
RESIDENTIAL					
SF Low 3-8.9	10 VPD/DU	1,825 DU	62 DU	18,250	520
SF Med 8.9-17.6	10 VPD/DU	500 DU	810 DU	5,000	8,100
MF Low 8.9-17.6	8 VPD/DU	3,500 DU	7,163du	28,000	57,304
MF Med 17.6-33	8 VPD/DU	2,230 DU	3,828du	17,840	30,624
	Subtotal	8,055 DU	11,863du	69,090	96,648
COMMERCIAL					
General	400 VPD/AC	106.6 AC	150 AC	42,640	60,000
Specialty ²	490 VPD/AC	0 AC	0 AC	0	0
Office ³	520 VPD/AC	0 AC	35 AC	0	18,200
	Subtotal	106.6 AC	178.0 AC	42,640	78,200
INDUSTRIAL	51.8 VPD/AC	13.8 AC	16.4 AC	715	850
PUBLIC FACILITY: SCHOOL	50 VPD/AC	141.6 AC	112 AC	7,080	5,600
OPEN SPACE	0 VPD/AC	15.5 AC	19 AC	0	0
VACANT	0 VPD/AC	10.9 AC	0 AC	0	0
STREET/ALLEY	0 VPD/AC	327.7 AC	327.7 AC	0	0
			TOTAL	133,737	181,298

Source: ITE Trip Generation Manual, 4th Edition

² Based on land use density of 12,000 SF GLA per acre and trip rate of 40.675 VPD per 1,000 square feet GLA.

³ Based on land use density of 12,000 SF GLA per acre and trip rate of 43.0 VPD per 1,000 feet GLA.

VPD: Vehicle Per Day
 SF: Single Family
 MF: Multi-family
 DU: Dwelling Unit

Trip Generation Summary
for Buildout Conditions

Table 2

Buildout Major and Secondary Highway Operations				
Street Segment	Class ¹	LOS E Daily Capacity ²	Buildout	
			ADT ³	V/C ⁴
HAWTHORNE BOULEVARD				
Rosecrans Ave/147th St	6M	54,000	61,950	1.15
147th St/Marine Avenue	6M	54,000	58,410	1.08
Marine Avenue/154th St	6M	54,000	52,847	0.98
154th St/Manhattan Beach Blvd	6M	54,000	60,938	1.13
Manhattan Beach Blvd/I-405	6M	54,000	66,248	1.23
I-405/166th St	6M	72,000	73,960	1.03
166th St/170th St	6M	54,000	72,570	1.34
170th St/Redondo Beach Blvd	6M	54,000	69,535	1.29
INGLEWOOD AVENUE				
Rosecrans Ave/Marine Avenue	4M	36,000	32,343	0.90
Marine Avenue/154th St	4M	36,000	47,453	1.32
I-405/Manhattan Beach Blvd	4M	36,000	62,688	1.74
Manhattan Beach Blvd/162nd St	4M	36,000	50,450	1.40
162nd St/Artesia Blvd	4M	36,000	43,831	1.22
PRAIRIE AVENUE				
Rosecrans Ave/Marine Avenue	4M	36,000	46,041	1.28
Marine Avenue/154th St	4M	36,000	39,356	1.09
154th St/Manhattan Beach Blvd	4M	36,000	44,653	1.24
Manhattan Beach Blvd/161st St	4M	36,000	39,608	1.10
161st St/166th St	4M	36,000	43,518	1.21
166th St/Redondo Beach Blvd	4M	36,000	44,401	1.23
ROSECRANS AVENUE				
Inglewood Ave/Firmona Ave	4-6M	45,000	44,627	0.99
Firmona Ave/Hawthorne Blvd	4-6M	45,000	43,331	0.96
Hawthorne Blvd/Prairie Ave	4-6M	45,000	44,951	1.00
MARINE AVENUE				
I-405/Inglewood Ave	4S	24,000	31,771	1.32
Inglewood Ave/Hawthorne Blvd	4S	24,000	22,981	0.96
Hawthorne Blvd/Freeman Ave	4S	24,000	23,440	1.00
Freeman Ave/Prairie Ave	4S	24,000	24,270	1.03
MANHATTAN BEACH BOULEVARD				
Inglewood Ave/I-405	4M	36,000	32,302	0.90
I-405/Hawthorne Blvd	4M	36,000	31,967	0.89
Hawthorne Blvd/Prairie Ave	4M	36,000	25,149	0.70
166TH STREET				
West of Hawthorne Blvd	2LC	7,500	4,602	0.62
Hawthorne Blvd/Freeman Ave	2C	15,000	4,339	0.29
Freeman Ave/Prairie Ave	2C	15,000	3,390	0.23
REDONDO BEACH BOULEVARD				
Hawthorne Blvd/I-405	4M	36,000	26,863	0.75
I-405/Prairie Ave	4M	36,000	24,615	0.68
ARTESIA BOULEVARD				
Inglewood Ave/Firmona Ave	4M	36,000	49,873	1.39
Firmona Ave/Redondo Beach Blvd	4M	36,000	51,692	1.44

1 Denotes number of lanes: M = Major; S = Secondary; C = Collector; LC = Local Collector
 2 Theoretical LOS E Capacity from Table S-2, City of Lawndale Comprehensive Traffic Engineering Study, BSI -- June 1986
 3 1989-1990 Daily traffic Counts -- See Appendix for actual count summaries
 4 V/C = Volume to Capacity -- based on LOS E daily capacity

Buildout Major and Secondary
Highway Operations

Table 3

Buildout Highway Operations with Proposed Street Improvement				
Street Segment	Class ¹	LOS E Daily Capacity ²	Buildout (with proposed improvement)	
			ADT ³	V/C ⁴
HAWTHORNE BOULEVARD				
Rosecrans Ave/147th St	8M	72,000		
147th St/Marine Avenue	8M	72,000	61,950	0.86
Marine Avenue/154th St	8M	72,000	58,410	0.81
154th St/Manhattan Beach Blvd	8M	72,000	52,847	0.73
Manhattan Beach Blvd/I-405	8M	72,000	60,938	0.85
I-405/166th St	8M	72,000	66,248	0.92
166th St/170th St	8M	72,000	73,960	1.03
170th St/Redondo Beach Blvd	8M	72,000	72,570	1.01
			69,535	0.97
INGLEWOOD AVENUE				
Rosecrans Ave/Marine Avenue	6M	54,000		
Marine Avenue/154th St	6M	54,000	32,343	0.60
I-405/Manhattan Beach Blvd	8M	72,000	47,453	0.88
Manhattan Beach Blvd/162nd St	6M	54,000	62,688	0.87
162nd St/Artesia Blvd	6M	54,000	50,450	0.93
			43,831	0.81
PRAIRIE AVENUE				
Rosecrans Ave/Marine Avenue	6M	54,000		
Marine Avenue/154th St	6M	54,000	46,041	0.85
154th St/Manhattan Beach Blvd	6M	54,000	39,356	0.73
Manhattan Beach Blvd/161st St	6M	54,000	44,653	0.83
161st St/166th St	6M	54,000	39,608	0.73
166th St/Redondo Beach Blvd	6M	54,000	43,518	0.81
			44,401	0.82
ROSECRANS AVENUE				
Inglewood Ave/Firmona Ave	6M	45,000		
Firmona Ave/Hawthorne Blvd	6M	45,000	44,627	0.99
Hawthorne Blvd/Prairie Ave	6M	45,000	43,331	0.96
			44,951	1.00
MARINE AVENUE				
I-405/Inglewood Ave	4M	36,000		
Inglewood Ave/Hawthorne Blvd	4M	36,000	31,771	0.88
Hawthorne Blvd/Freeman Ave	4M	36,000	22,981	0.64
Freeman Ave/Prairie Ave	4M	36,000	23,934	0.66
			24,781	0.69
MANHATTAN BEACH BOULEVARD				
Inglewood Ave/I-405	4M	36,000		
I-405/Hawthorne Blvd	4M	36,000	32,302	0.81
Hawthorne Blvd/Prairie Ave	4M	36,000	31,967	0.89
			25,149	0.70
166TH STREET				
West of Hawthorne Blvd	2LC	7,500		
Hawthorne Blvd/Freeman Ave	2C	15,000	4,602	0.62
Freeman Ave/Prairie Ave	2C	15,000	4,339	0.29
			3,390	0.23
REDONDO BEACH BOULEVARD				
Hawthorne Blvd/I-405	4M	36,000		
I-405/Prairie Ave	4M	36,000	26,863	0.75
			24,615	0.68
ARTESIA BOULEVARD				
Inglewood Ave/Firmona Ave	6M	54,000		
Firmona Ave/Redondo Beach Blvd	6M	54,000	49,873	0.92
			51,692	0.96

1 Denotes number of lanes: M = Major; S = Secondary; C = Collector; LC = Local Collector
 2 Theoretical LOS E Capacity from Table S-2, City of Lawndale Comprehensive Traffic Engineering Study, BSI -- June 1986
 3 1989-1990 Daily traffic Counts -- See Appendix for actual count summaries
 4 V/C = Volume to Capacity -- based on LOS E daily capacity

Buildout Highway Operations
with Proposed Street Improvements

Table 4

II. Community Development

3. Circulation Element

3. Roadway Improvements

3.1 Circulation Network

Implementation of the proposed circulation network and street classification standards as shown in Table 4.

3.2 Specific Plans

As more precise intersection data becomes available, special design treatments such as the Hawthorne Boulevard specific plan should be considered for mitigating potentially unacceptable levels of service.

3.3 Roadway Segment Improvement

Construct road segment improvements and road expansions at such time as traffic flow warrants improvement or expansion.

3.4 Intersection Improvement

Conduct a citywide traffic study by December 1992, to determine specific intersection improvements. Widen approaches and make any other necessary intersection improvements for those intersections operating at level of service E or F.

3.5 Congestion Management

Initiate efforts to develop a congestion management program, which will limit development unless an acceptable level of service is achieved, soon to be mandated by LACTC.

3.6 Development Mitigation

Require new developments to conduct traffic impact studies and construct, as a condition of approval, all feasible roadway and intersection improvements warranted by the new development. These studies shall be reviewed by the City Engineer or his designated representative. For development that will increase the traffic demand along SR 107 (Hawthorne Boulevard), SR 91 (Artesia Boulevard), and I-405 (San Diego Freeway), traffic studies shall be submitted to Caltrans District 7 for approval.

3.7 Noise Abatement

The City should incorporate the following mitigation measures, where appropriate, into the design of improved roadways and streets, to ensure that new roadways will not result in future noise levels exceeding City land use compatibility criterion.

- Roadway barrier
- Lateral separation
- Retrofitting existing sensitive uses with added wall insulation, double pane windows, and air conditioning
- Relocation of severely impacted sensitive uses

3.8 Buffer Zones

Establish "buffer zones" with adequate setbacks to be incorporated into new development to avoid potentially unhealthful exposure to road noise and air quality levels. Such setbacks should be based on the maximum traffic volumes projected in this document.

3.9 Environmental

Every reasonable effort will be made to integrate and preserve significant natural features of the land, such as native vegetation, trees, etc.

3.10 Utilities

Utilities should be undergrounded or relocated whenever possible, in conjunction with roadway construction.

3.11 Landscaping

Landscaping is to be replanted/replaced or introduced along all roadways which have been redesigned or reconstructed.

3.12 Truck Routes

Designate specific routes for truck traffic and provide appropriate signage and enforcement.

4. Transportation Demand Management

4.1 Peak Hour Trip Reduction

Adopt and implement comprehensive citywide TSM and TDM management programs to reduce peak hour traffic volumes to a level that can be accommodated by the street system.

4.2 Information Signage

Install directional/information signage on main streets indicating the location of public parking lots and the transit terminal to avoid having motorists drive around in search of these facilities.

4.3 Bicycle Route Maps

Assist employers in an effort to pool resources and ultimately reduce employee trips. An immediate task would be to develop and distribute a commuter bicycle route map.

4.4 Employee Shuttle Service

Encourage employers and new developers to provide shuttle service in heavily congested areas where street widening may not be feasible.

4.5 Staggered Work Hours

Encourage employers to use staggered work hours.

4.6 Parking Management

Monitor the land use intensities and initiate a parking management plan as necessary.

4.7 Transportation System Management

Continue to employ transportation system management strategies such as elimination of on-street parking where warranted, traffic signal synchronization, left turn lane pockets, lane restriping, one-way couplets, and manual traffic signal operations during peak hours.

4.8 Truck Traffic

Restrict truck pick-up and delivery to off-peak hours to improve traffic flow during peak hours.

5. Public & Railway Transit

5.1 Light Rail

Continue to work closely with LACTC in planning and implementation of the proposed light rail project (Green Line). Ensure that all stations possible will have bicycle storage facilities, park-and-ride lots, and other transit and pedestrian amenities.

5.2 Bus Service

Work with SCRTD to monitor transit service improvements and identify additional bus lines which could carry bicycles; follow-up with implementation.

5.3 Development

All significant development generating over 500 daily trips should have transit facilities built in, such as bus turn outs, shelters, and bicycle storage facilities.

6. Non Motorized Transportation

6.1 Bicycle/Pedestrian/Transit Maps

Develop a map depicting bicycle and pedestrian trails for the general public. Distribute the trails map and the regional transit map to all existing and future residents.

7. Bicycle Facilities

7.1 Bikeways Master Plan

Conduct a citywide bikeway study by December 1992, to determine the location and feasibility of implementing a bikeway system. Develop a master plan for bikeways.

(See Section 5 & 6 previously)

8. Pedestrian Facilities

(See Section 5 & 6 previously)