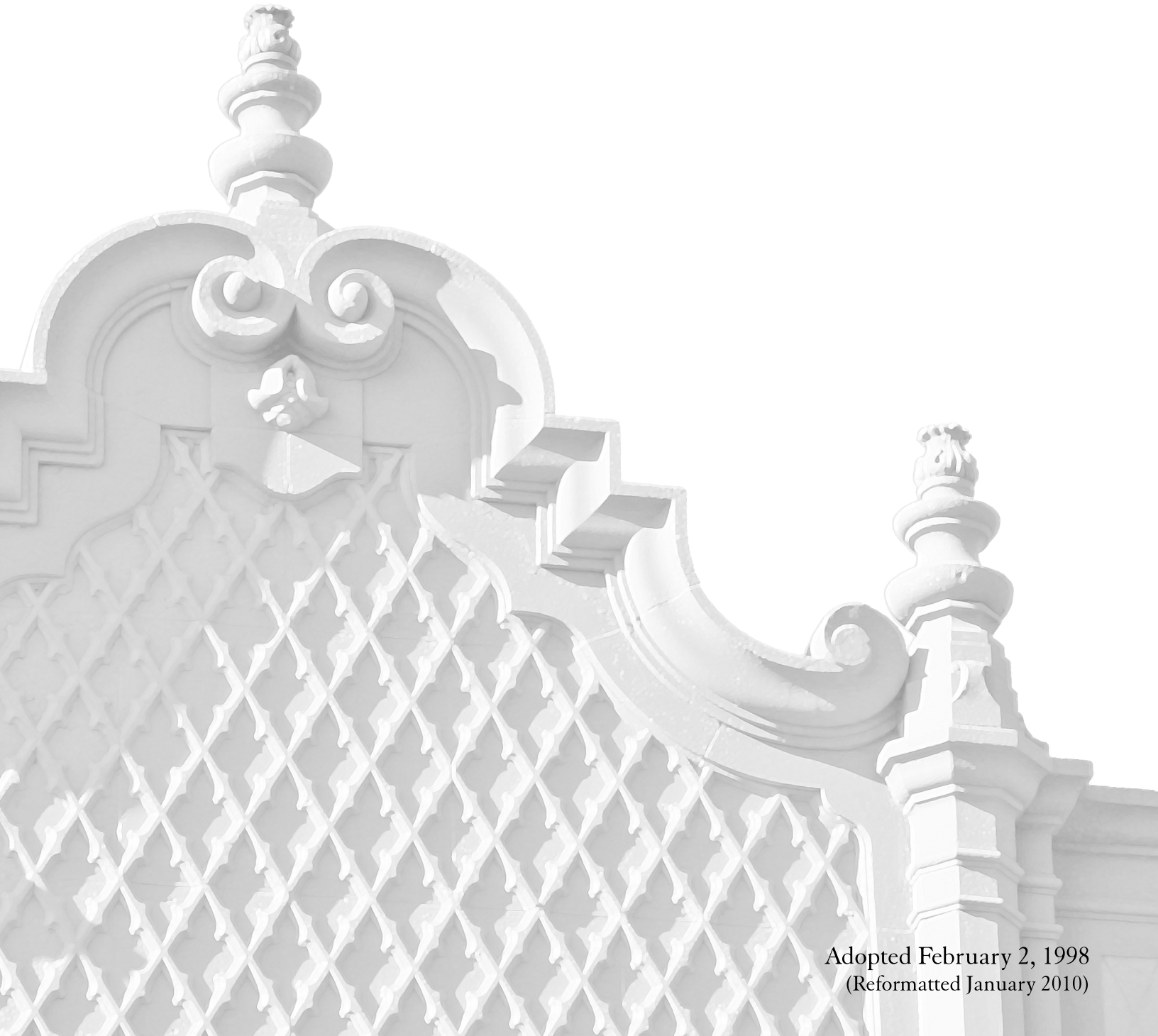
City of Santa Ana General Plan

Circulation Element



Adopted February 2, 1998
(Reformatted January 2010)

City of Santa Ana General Plan

Circulation Element

1998

City of Santa Ana
Planning Division

Adopted

February 2, 1998
(Reformatted January 2010)

This document includes revisions to the Circulation Element adopted by Santa Ana City Council March 21, 2011 (GPA 2011-01), July 6, 2004 (GPA 2004-06) and as passed by the voters of Santa Ana April 5, 2005 (GPA 2004-01).

GAS: 1/30/98

RESOLUTION NO. 98- 010

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTA ANA APPROVING GENERAL PLAN AMENDMENT NO. 97-06 APPROVING THE CIRCULATION ELEMENT OF THE GENERAL PLAN (GPA 97-06)

WHEREAS, California Government Code Section 65302(b) requires a General Plan to contain a circulation element which reflects current transportation issues and addresses the community's long-term goals for a comprehensive circulation system, all correlated with the land use element of the plan; and

WHEREAS, the proposed Circulation Element will replace the Circulation Element previously adopted in 1984; and

WHEREAS, the Planning Commission of the City of Santa Ana, after noticed public hearing, recommended that the City Council approve General Plan Amendment No. 97-06, approving the Circulation Element of the General Plan; and

WHEREAS, this Council, on February 2, 1998, held a duly noticed public hearing on said Circulation Element of the General Plan;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SANTA ANA AS FOLLOWS:

1. The Circulation Element of General Plan Amendment 97-06 is hereby amended, adopted and approved. Said General Plan shall be maintained by the Executive Director of the Planning and Building Agency, or his or her designee.

ADOPTED this 2nd day of February, 1998.

ATTEST:

Janice C. Guy
Clerk of the Council

Miguel A. Pulido
Mayor

COUNCILMEMBERS:

Pulido	Aye
Richardson	Aye
Espinoza	Absent
Lutz	Aye
McGuigan	Aye
Franklin	Aye
Moreno	Nay

APPROVED AS TO FORM:

Gary A. Sheatz
Assistant City Attorney

CERTIFICATE OF ORIGINALITY & PUBLICATION

State of California

County of Orange

I, JANICE C. GUY, Clerk of the Council, do hereby certify the attached Resolution No. 98-010 to be the original resolution adopted by the City Council of the City of Santa Ana on 2/2/98.

Date: 2/4/98

Janice C. Guy
Clerk of the Council
City of Santa Ana

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Circulation Element

PURPOSE AND SCOPE

The Circulation Element of the Santa Ana General Plan serves as the City's primary guide for transportation planning. The Element is concerned with accommodating the transportation needs of those living, working, and visiting the City. Its objective is to articulate the City's vision and plans for the ongoing development and maintenance of a comprehensive transportation network... a network which will efficiently move people and goods throughout Santa Ana and the surrounding region well into the next century.

The Circulation Element focuses on roadways and other transportation modes including public transit, railroads, pedestrian and bicycle paths, that provide a full range of travel options. Also included is an assessment of the City's current roadway system and recommendations for the improvements necessary to maintain acceptable levels of service on this system through the year 2010.

The Circulation Element is one of several elements of the general plan mandated by State planning law. It is intended to guide the development of the City's circulation system in a manner consistent with the Land Use Element and other elements which comprise the general plan.

State General Plan Guidelines indicate circulation elements should consider the following:

> "...the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the land use element of the plan."

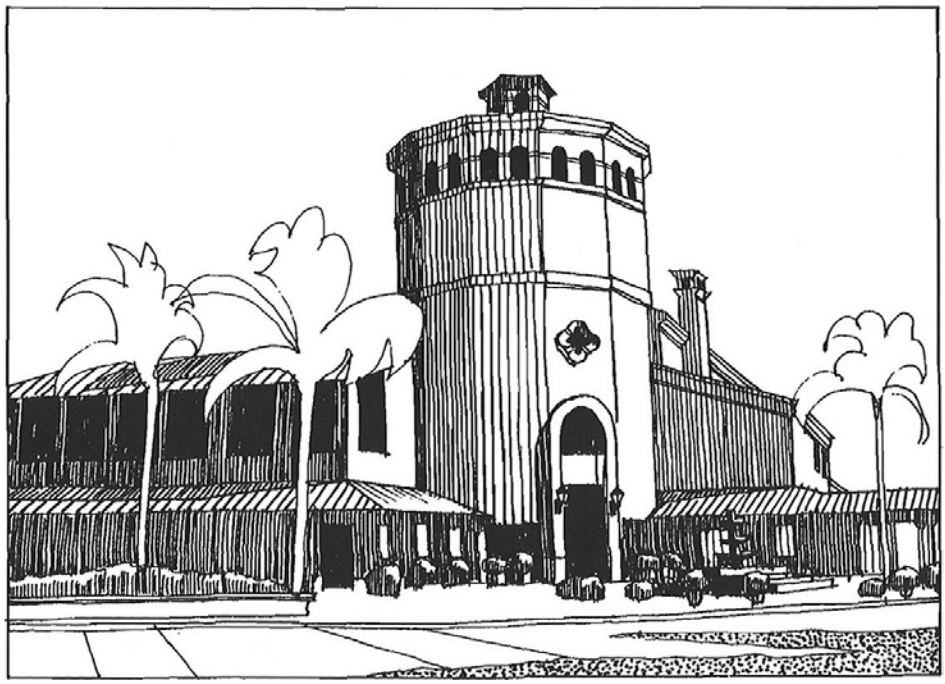
FORMAT OF THE CIRCULATION ELEMENT

In response to State requirements and local objectives, the Circulation Element consists of the following sections:

- The **Purpose and Scope** provide an overview of the objectives to be accomplished with implementation of the Element. It also

summarizes State regulations governing the Element's scope and content.

- The **Community Factors** provide an overview of the opportunities and constraints that are important considerations in the formulation of the goals and policies in the Policy Plan.
- The **Policy Plan** states the City's goals and policies regarding transportation planning, development, and implementation. This section also contains the *Master Plan of Streets and Highways* and the *Master Plan of Bikeways*.
- The **Implementation Plan** identifies the actions that will be used to the implement the Circulation Element's goals and policies.
- The **Appendix** contains background information and other data relevant to traffic and circulation issues considered in the Element. This section of the Element also contains traffic forecasts and evaluates future conditions, characterizes regional and local improvements to the circulation system, and discusses key implementation strategies.



COMMUNITY FACTORS

Santa Ana is a major destination in the region because it is a major employment center and serves as the county seat for regional offices of federal, State, and County governments. The City is located in the midst of an established network of freeways generally midway between the major urban areas of Los Angeles and San Diego. Santa Ana's location and its proximity to the regional freeway system provide an opportunity to capture the economic benefits associated with good access, a centralized location in the region, and an established street and rail system. In addition to Santa Ana's location, other factors considered in the formulation of the Element include land use characteristics, traffic conditions, planned system improvements, transportation system management, and alternative modes of travel.

In 1889, the County of Orange was formed with Santa Ana as the County Seat.

LAND USE CHARACTERISTICS

Santa Ana is a built-out city and any future intensification of development will require corresponding improvements to the circulation system if current levels of service are to be maintained. In major development areas, the addition or expansion of transportation facilities will have a corresponding impact on adjacent development over time. Land use factors considered as part of this Elements preparation are identified below.

- The City's street and highway system is largely established and fixed, with the exception of a few remaining major street improvement projects. The City's current development pattern necessitates the use of new approaches and technologies to increase traffic capacity on the existing roadway system without creating the potential for significant adverse land use impacts.
- As traffic volumes increase and peak hour congestion worsen, the historical approach to solving congestion problems has been to increase roadway capacity by widening streets, or building new roads. Due to the cost and negative impacts associated with widening roadways, this is now the least likely option to be considered by the City. With completion of the street widenings currently planned or programmed, no additional widenings are anticipated in the foreseeable future.
- Some areas of the City are developed in a manner that facilitates pedestrian access to commercial services. However, automobile-

- Many shopping centers are surrounded by large parking lots and separated from adjacent developments by walls or other barriers, making pedestrian access between developments inconvenient. Site plans are often designed around parking and automobile circulation, with little or no attention given to the convenience and comfort of pedestrians or users of public transportation.

TRAFFIC CHARACTERISTICS

Santa Ana's roadways are experiencing increased traffic congestion, as are most areas of Orange County, due to growth and development in the City and surrounding region. The increased traffic projected through the year 2010 will result in additional congestion on local streets in the absence of mitigation measures. Key traffic considerations addressed in the Element include the following:

- Since 1980, the City of Santa Ana has experienced significant growth and development, and is now almost completely built-out. This growth, coupled with the continued reliance on private automobiles for travel, has led to increased traffic throughout the City. This traffic is being added to a circulation system currently operating at or near capacity in many areas of the City.
- Traffic conditions at key intersections in the City were surveyed and the morning and evening peak hour level of service (LOS) determined. The analysis indicated that some of the intersections surveyed currently operate at an undesirable level of service (LOS E or F) during at least one of the peak traffic periods. Congestion is experienced throughout the City, especially during the evening peak hour periods.
- In the event congestion is not mitigated by planned roadway improvements, traffic will typically find alternate routes resulting in additional through traffic on residential streets. Neighborhood traffic management programs will be expanded, as appropriate, to minimize the intrusion of spillover traffic in residential areas.

PLANNED SYSTEM IMPROVEMENTS

As indicated, the built-out character of the City limits opportunities for the construction of major transportation improvements without considerable expense and land use impacts. Nevertheless, the public agencies responsible for overseeing the development, maintenance, and operation of the transportation facilities which serve the City and the

- A number of widening projects are planned in the City including McFadden Avenue, Bristol Street, Grand Avenue, and Edinger Avenue, as well as realignments of selected roadway segments including Fairview and Alton Avenue.
- A number of new freeway corridors are also planned in Orange County which will impact traffic conditions in Santa Ana. These include the Foothill/Eastern Transportation Corridors in the southern and eastern sections of the County; and the extension of the Orange Freeway (SR-57) that is also under consideration.
- An urban rail system is also being planned for the County, and segments of this system will serve Santa Ana. This north/south system will begin in Fullerton, with a terminus in Irvine, and serve several of Santa Ana's major activity areas.

TRANSPORTATION SYSTEMS MANAGEMENT

Some desirable improvements to the local street system may require substantial financial investments that may not be feasible or cost-effective relative to the system benefits. City plans for improving the roadway capacity recognize these limits, and as a result, strategies to enhance alternative travel modes and manage transportation demand are given priority consideration.

The strategy to alleviate traffic congestion in the City will include measures that do not involve roadway construction. Programs focusing on "travel behavior" can be equally effective in reducing traffic congestion. The following issues related to trip reduction are important considerations in the development of the City's long-range transportation policy.

- With the physical and financial constraints on improving system capacity, strategies to eliminate peak period travel, or shift trips to off-peak periods are becoming increasingly important. Santa Ana has adopted a *Transportation Demand Management* (TDM) ordinance for the City's large employers. This ordinance is designed to reduce peak travel demands associated with commuter trips. Employers who are subject to the TDM ordinance are required to implement programs which help reduce peak hour traffic demands.
- An adequate supply of parking will continue to be essential to the economic success of businesses in the City. However, to improve safety and optimize traffic operations, on-street parking is removed

parking management programs will be considered wherever feasible to maximize business opportunities.

- Requirements that every development project provide a sufficient off-street parking supply to accommodate maximum demands are evaluated as necessary to reduce the parking required for mixed-use projects. In addition, City efforts will continue to encourage ride sharing and the use of public transportation by supporting safe, convenient parking areas at park-and-ride lots, and at the Regional Transportation Center.
- The City has implemented an *Intelligent Transportation System* to relieve traffic congestion. This system includes close circuit television surveillance cameras, electronic message signs and highway traffic advisory radio broadcasts. An essential benefit of this system is its ability to provide "real time" information concerning congestion and major traffic-related incidents, thereby facilitating their choice of less congested travel routes.

ALTERNATIVE TRAVEL MODES

The City continues to promote a fully integrated multi-modal circulation system by fostering patterns of land use and urban design which improve convenience and safety for pedestrians, bicyclists, and users of public transportation. The following issues relative to alternative modes of travel are important considerations in this Element:

- Strategies to manage transportation demand and reduce reliance on single-occupant automobiles for travel rely on the City's ability to support the expanded use of bicycles, pedestrian travel, public transit, and commuter rail.
- The Orange County Transportation Authority (OCTA) operates a fixed route bus service in the county along with *Access*, a program to provide transportation for senior citizens and disabled persons. The OCTA, in coordination with the Southern California Regional Railroad Authority, also operates commuter rail service from San Diego to downtown Los Angeles via Metrolink.
- In 1995, the City adopted a *Bikeway Master Plan* that provides comprehensive linkages to the City's major activity centers and regional bikeway routes. There are two Class I bikeways located in the City and several Class II bikeways. Implementation of the Bikeway Master Plan will increase the number of Class II trails and provide bikeway support facilities and educational programs for bikers in the

During the 1890s, Santa Ana had 5,000 residents and 2,000 bicycles...more per capita than any city in the U.S.

- Pedestrian travel in the City primarily occurs on the existing system of sidewalks. Given the City's low rate of car ownership in relation to other Orange County cities, planning efforts, will continue to improve and maintain the existing system of pedestrian facilities (sidewalks, etc.) to accommodate pedestrian travel to major activity centers and community services.

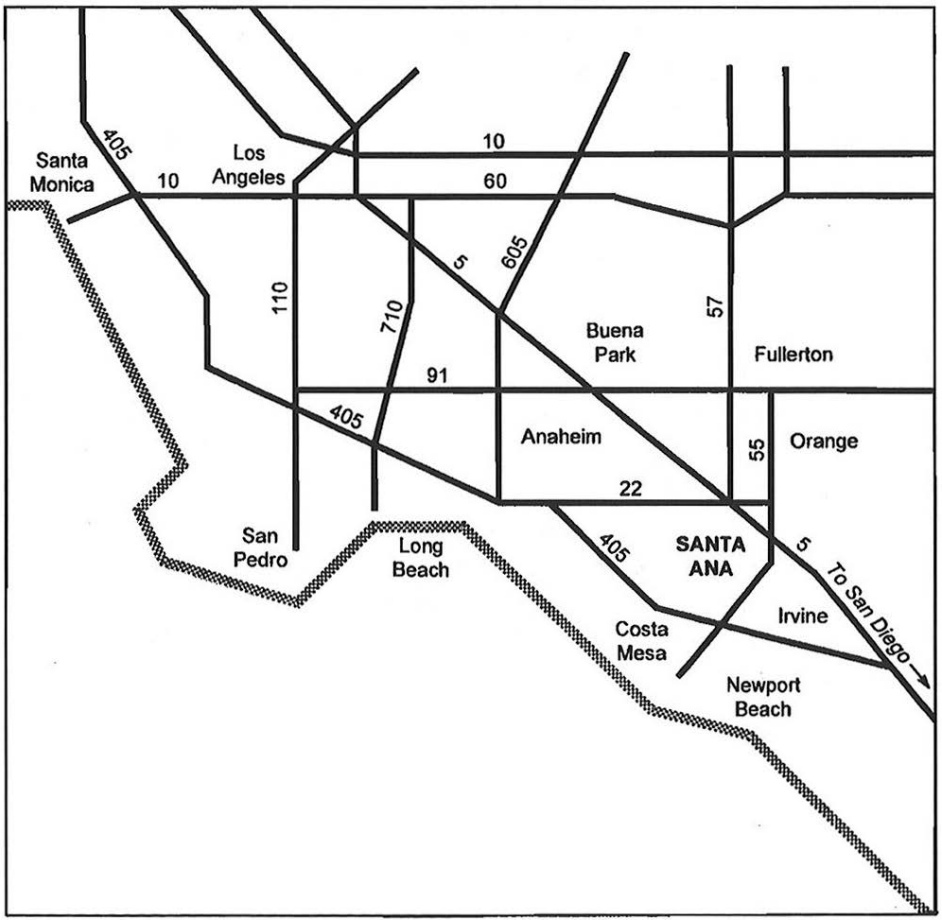
GROWTH MANAGEMENT POLICIES

In 1990, Orange County voters approved Measure M which provides funding for needed transportation improvements county wide. Measure M authorized the imposition of a one-half cent retail sales tax for a period of 20 years effective April 1, 1991. The revenue received from Measure M will be used for regional transportation improvements and returned to local jurisdictions for use on local and regional maintenance projects. Santa Ana complies with the Measure M program in order to qualify for these revenues. Participation in the Measure M program has fostered cooperative planning efforts between Santa Ana and the adjacent cities as it relates to roadway improvements with area-wide benefits.

INTERJURISDICTIONAL COORDINATION

Santa Ana's geographic location puts it at the hub of the Orange County transportation system. The City's transportation system and the problems associated with that system are, to a large extent, shared with those of its neighboring cities. Key factors related to Interjurisdictional coordination considered as part of this Element's formulation include the following:

- In cooperation with the cities of Tustin and Orange, Santa Ana has established two joint powers authorities (JPAs) designed to address land development and infrastructure issues which affect the adjacent jurisdiction. Developments and circulation improvements which occur within the designated JPA boundaries are coordinated through this authority.
- Santa Ana is a member of the Inter-City Liaison Committee along with the cities of Irvine, Tustin, Costa Mesa, and Newport Beach. The Committee facilitates the sharing of information about common issues, including traffic, affecting the South Coast Metro, Irvine Business Complex, and the John Wayne Airport areas.


Santa Monica
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Buena Park
Fullerton
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Anaheim
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Orange
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San Pedro
Long Beach
405
SANTA ANA
5
To San Diego
Irvine
Costa Mesa
Newport Beach

POLICY PLAN

The goals and policies presented below reflect the City's vision for a comprehensive circulation system that is safe, efficient, and attractive. Furthermore, the following goals represent a commitment to achieving greater mobility for the community through the year 2010.

CIRCULATION GOALS

Goal 1 Provide and maintain a comprehensive circulation system that facilitates the efficient movement of people and goods throughout the City, and enhances its economic viability.

Goal 2 Provide design and construction that facilitate safe utilization of the City's transportation systems.

Goal 3 Provide a full spectrum of travel alternatives for the community's residents, employees, and visitors.

Goal 4 Fully coordinate transportation and land use planning activities.

Goal 5 Create attractive circulation corridors to enhance the City's image.

Goal 6 Protect local streets from through traffic to preserve neighborhood character.

Goal 7 Utilize alternative parking strategies as a means of managing transportation demand.

Goal 8 Strengthen the coordination of transportation and land use planning activities with adjacent jurisdictions and regional agencies.

A listing of the policies to achieve each of the above goals is presented on the following pages. Policy maps then follow the listing of Circulation Element policies. The Master Plan of Streets and Highways, shown in Exhibit 1, reflects the street classifications and enhanced intersections for the ultimate build-out of the City's roadway system. Likewise, the Master Plan of Bikeways, shown in Exhibit 2, represents buildout of the City's system of bikeway facilities and routes. The Appendix provides additional information concerning these Plans.

CIRCULATION POLICIES

Goal 1

Provide and maintain a comprehensive circulation system that facilitates the efficient movement of people and goods throughout the City, and enhances its economic viability.

Policy 1.1 Coordinate transportation improvements in a manner which minimizes disruptions to the community.

Policy 1.2 Coordinate with the State to provide a freeway system that promotes efficient, and convenient access to City streets in a manner consistent with local land use policy.

Policy 1.3 Utilize advanced technology to improve traffic flow, and minimize the need for land acquisition.

Policy 1.4 Maintain at least a level of service "D" on arterial street intersections, except in major development areas.

Policy 1.5 Remove parking from major arterial streets to enhance traffic flow and limit vehicular conflict.

Policy 1.6 Improve intersection capacity on major arterials to accommodate increased traffic demands.

Policy 1.7 Coordinate traffic signal synchronization citywide, and with adjacent jurisdictions.

Policy 1.8 Support an extension of the Orange Freeway (SR-57) which provides economic benefit to the City through improved access to major commercial corridors.

Policy 1.9 Program future use of the Pacific Electric Railroad right-of-way as a transportation corridor.

Policy 1.10 Provide barrier-free accessibility throughout the circulation system.

Policy 1.11 Minimize travel impediments on bicycle and pedestrian paths.

Goal 2

Provide design and construction that facilitates safe utilization of the City's transportation systems.

Policy 2.1 Limit the number of driveways on arterial streets to reduce vehicular conflict, and facilitate traffic flow.

Policy 2.2 Provide for bus turnouts along heavily traveled arterial streets to minimize traffic conflicts.

Policy 2.3 Maintain a network of truck routes on arterial streets.

Policy 2.4 Support rail crossings to minimize conflicts with on-street traffic while enhancing passenger safety and comfort.

Policy 2.5 Provide upkeep of the City's streets and parkways based upon an established maintenance schedule.

Policy 2.6 Continue utilization of national standards and uniform practices in operating circulation systems.

Policy 2.7 Continue design practices which facilitate the safe use of circulation systems.

Goal 3

Provide a full spectrum of travel alternatives for the community's residents, employees, and visitors.

Policy 3.1 Support the efforts of regional, state, and federal agencies to enhance local and express bus services.

Policy 3.2 Support programs which complement bus and rail services for specialized transit needs.

Policy 3.3 Support the expansion of commuter rail services.

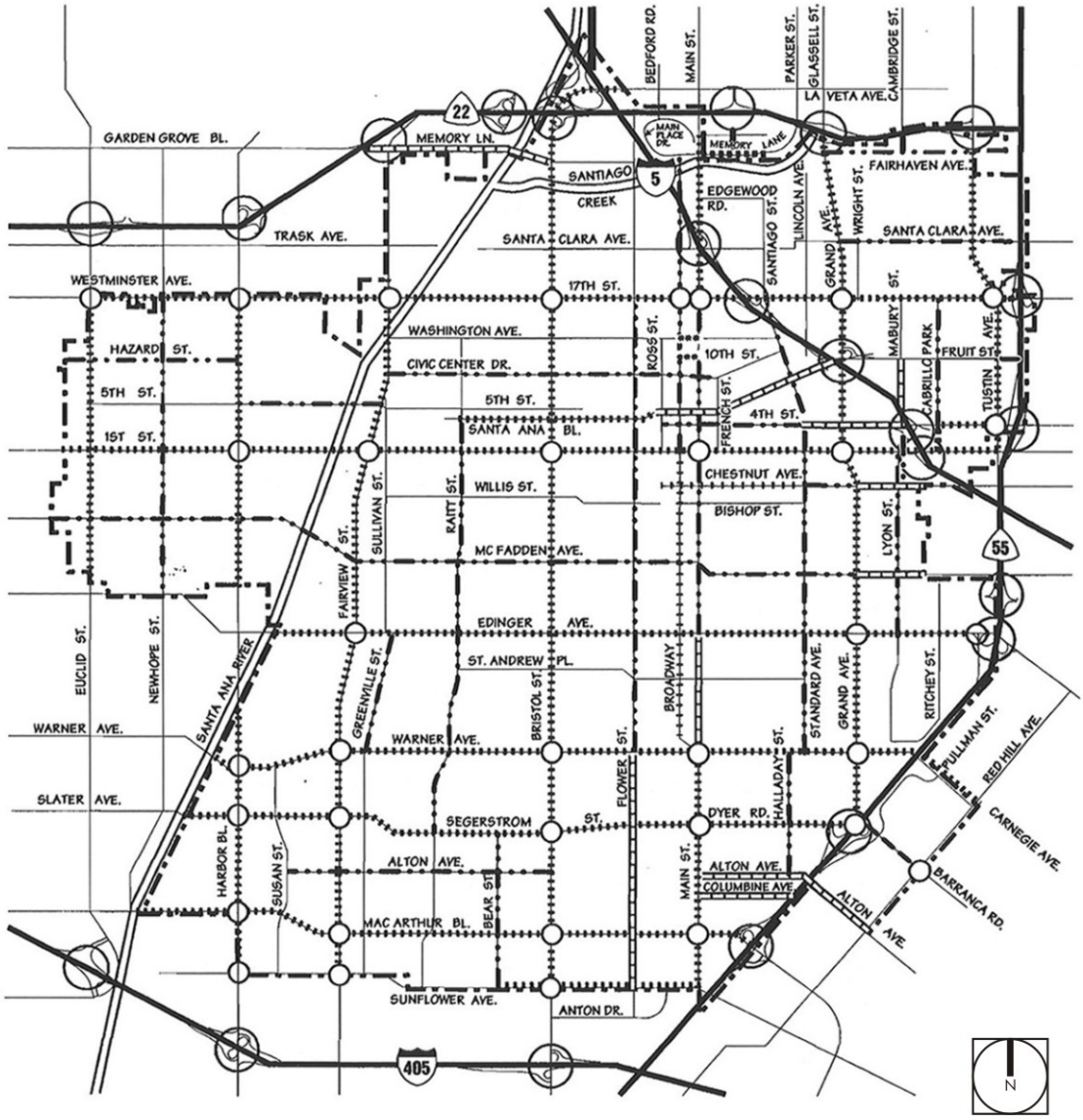
Policy 3.4 Encourage the development of multi-modal transit opportunities within major development areas.

Policy 3.5 Enhance sidewalks and pedestrian systems to promote their use as a means of travel.

Policy 3.6 Maximize the use of public rights-of-way for pedestrian and bicycle paths.

Policy 3.8 Develop bicycle paths that maximize access to major activity centers, neighboring jurisdictions, and regional bicycle paths.

Exhibit 1 Master Plan of Streets and Highways



Street Classifications

- Freeway
- Principal
- Major Arterial
- Primary Arterial
- Secondary Arterial
- Commuter
- Local Commercial

- Enhanced Intersections
- Interchange
- City Limits

0 0.6 1.2 Miles

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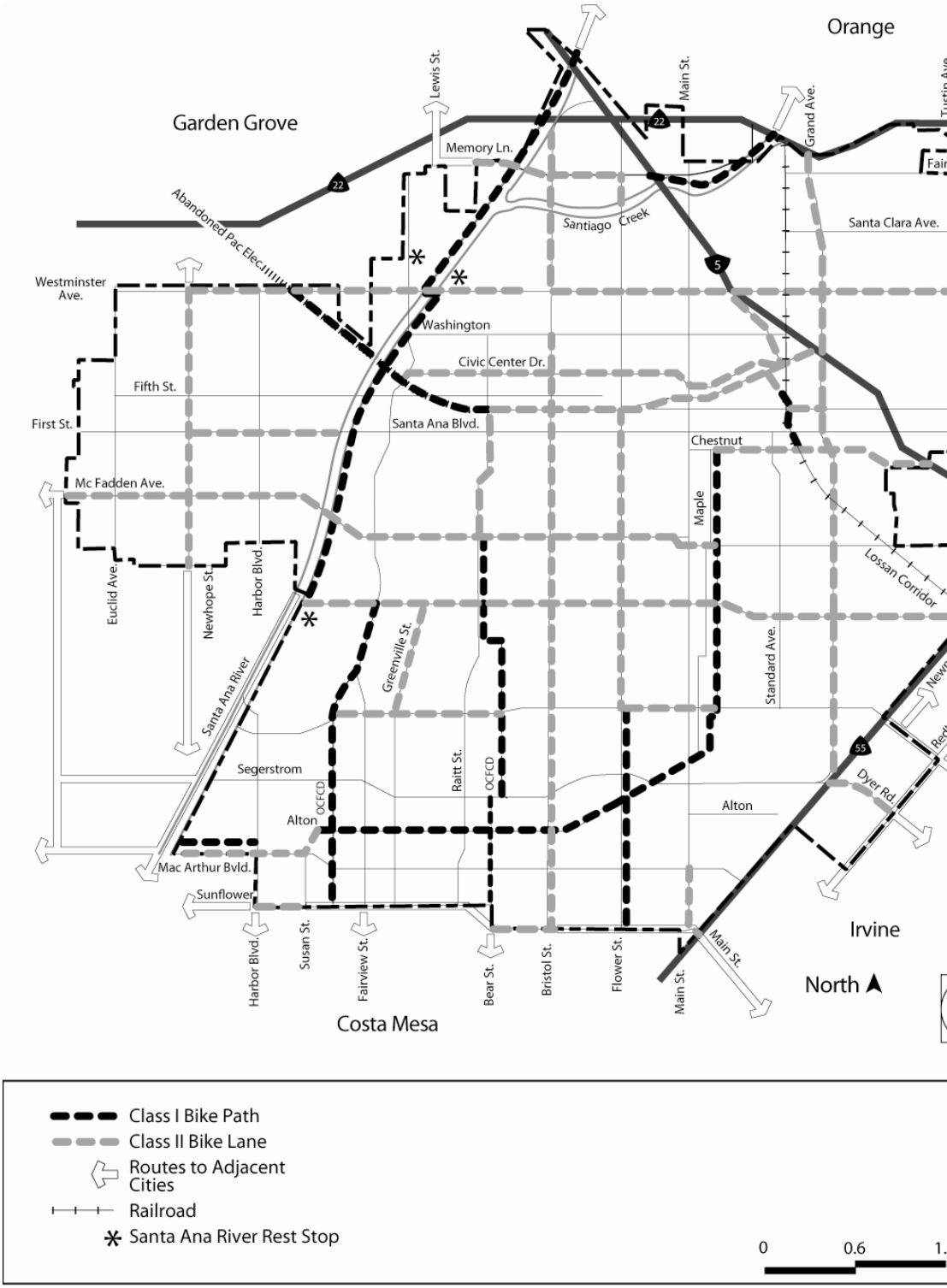
Exhibit 2 Bikeway Master Plan



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Goal 4

Fully coordinate transportation and land use planning activities.

Policy 4.1 Program and prioritize transportation improvements to stimulate growth in major development areas.

Policy 4.2 Assess land use and transportation project impacts through the development review process.

Policy 4.3 Assess all development projects in order to identify their traffic impacts and require that they pay their fair-share of the system improvements necessary to accommodate traffic generated by the project.

Goal 5

Create attractive circulation corridors to enhance the City's image.

Policy 5.1 Preserve rights-of-way along circulation corridors to provide landscaped parkways and set-back areas.

Policy 5.2 Enhance street design standards to promote attractive circulation corridors.

Policy 5.3 Provide landscaped medians on major arterials.

Policy 5.4 Coordinate with rail service providers to improve the aesthetics of rail corridors.

Policy 5.5 Promote the undergrounding of utilities along travel routes.

Policy 5.6 Support the protection and enhancement of view corridors.

Goal 6

Protect local streets from through traffic to preserve neighborhood character.

Policy 6.1 Implement street design features that discourage through traffic on residential streets.

Policy 6.2 Prevent the use of residential streets to service non-residential development.

Goal 7

Utilize alternative parking strategies as a means of managing transportation demand.

Policy 7.1 Encourage large employers to utilize parking control measures to reduce vehicle trips, and enhance the use of alternative travel modes.

Policy 7.2 Encourage the joint use of parking facilities.

Policy 7.3 Support satellite parking sites and shuttle services to minimize congestion and travel demand for special events and temporary activities.

Policy 7.4 Re-evaluate and update parking requirements on a regular basis.

Policy 7.5 Support reductions in parking requirements when viable alternatives are provided.

Policy 7.6 Support park and ride facilities to reduce vehicle trips and congestion.

Goal 8

Strengthen the coordination of transportation and land use planning activities with adjacent jurisdictions and regional agencies.

Policy 8.1 Participate in interjurisdictional planning forums and other inter-agency opportunities to coordinate transportation and land use projects.

Policy 8.2 Maintain compliance with regional, state, and federal programs which provide funding for transportation improvements.

IMPLEMENTATION PLAN

This section of the Circulation Element identifies the actions used to implement the circulation goals and policies. This information is presented in a matrix which identifies the implementation action, the responsible agency, and timeline for accomplishment. The corresponding policies which these actions relate to are noted in parenthesis. Programs describing the nature and processes of these actions are discussed in the Appendix.

Table 1
Implementation Matrix

	Action (Policy)	*Lead Agency/ Time Frame*
GOAL 1:	Provide and maintain a comprehensive circulation system that facilitates the movement of people and goods throughout the City and enhances its economic viability.	
1.1	Program completion of the Orange County Master Plan of Arterial Highways. (Policies 1.1, 1.8, 1.9)	PWA 1998–2010
1.2	Develop and implement an annual Capital Improvement Program for transportation system projects. (Policies 1.1, 1.6, 1.10)	PWA 1998–2010
1.3	Maintain a street classification system that reflects the roadway's ability to accommodate current and future traffic demand. (Policies 1.1, 1.2, 1.4, 1.7, 1.11)	PWA/PBA 1998–2010
1.4	Coordinate a signage program to direct motorists to City activity centers from freeways. (Policy 1.2)	PWA/CDA 1998–2010
1.5	Utilize advanced technologies and enhanced design features to facilitate mobility on City streets. (Policy 1.3)	PWA 1998–2010
1.6	Remove parking from arterial streets to minimize vehicular conflicts. (Policy 1.5)	PWA 1998–2010
1.7	Prepare and present to Planning Commission, Environmental and Transportation Advisory Committee and City Council an annual status report on the implementation of the Circulation Element. (Policy 1.1)	PBA 1998–2010
GOAL 2:	Provide design and construction that facilitate the City's transportation systems.	
2.1	Utilize National Highway Safety Standards and Practices in designing and maintaining the City's street system.(Policies 2.6, 2.7)	PWA 1998–2010
2.2	Limit driveway cuts on arterial streets to minimize the potential for vehicular conflicts. (Policy 2.1)	PWA 1998–2010
2.3	Construct bus turnouts on arterial streets to Orange County Transportation Authority design standards. (Policy 2.2)	PWA 1998–2010
2.4	Limit truck/trailer combinations to designated truck routes which are designed to safely accommodate their larger size. (Policy 2.3)	PWA/SAPD 1998–2010
2.5	Provide upkeep of the City's streets and parkways based upon an established maintenance schedule. (Policy 2.5)	PWA 1998–2010
2.6	Utilize City project review processes to address pedestrian and vehicular conflict. (Policy 2.7)	PWA 1998–2010
2.7	Provide local input to regional transportation agencies regarding safety concerns on new or revised service plans and projects. (Policy 2.4)	PWA 1998–2010

Table 1
Implementation Matrix

	Action (Policy)	*Lead Agency/ Time Frame*
2.8	Continue the Intelligent Transportation System Program to provide enhanced safety and efficiency features on major travel corridors. (Policy 2.7)	PWA 1998–2010
GOAL 3:	Provide a full spectrum of travel alternatives for the community's residents, employees and visitors.	
3.1	Participate in OCTA planning activities to develop a regional urban rail system. (Policy 3.3)	PWA 1998–2000
3.2	Work with regional transportation agencies to expand bus and rail transit services. (Policy 3.2)	PWA 1998–2100
3.3	Program the construction of routes identified in the Bikeway Master Plan. (Policy 3.3)	PWA 1998–2010
3.4	Develop a plan and pursue funding for bicycle support facilities and cycling education/information programs. (Policy 3.7)	PWA/RCSA 1998–2010
3.5	Evaluate the feasibility of requiring bicycle parking and support facilities in new development. (Policy 3.7)	PBA 1998–2000
3.6	Develop a comprehensive pedestrian circulation plan that facilitates pedestrian traffic in major activity areas. (Policy 3.5)	PBA/PWA 1998–2000
3.7	Evaluate alternative trip reduction programs for City employees and implement a program that is cost effective. (Policy 3.4)	PSA 1998–2010
3.8	Maintain a forum to promote coordination and information sharing among local employers in the development of trip reduction programs. (Policies 3.1, 3.4)	PBA/PSA 1998–2010
GOAL 4:	Fully coordinate transportation and land use planning activities.	
4.1	Review new development proposals and condition them as appropriate to mitigate traffic impacts. (Policy 4.3)	PBA 1998–2010
4.2	Provide interagency review of transportation improvement projects so that land use impacts can be assessed. (Policy 4.3)	PWA 1998–2010
4.3	Prepare the annual Capital Improvement Program in coordination with general plan goals and implementation actions. (Policy 4.1)	PWA 1998–2010
4.4	Secure development impact fees and dedications for project-related transportation improvements during City review and approval processes. (Policies 4.2, 4.3)	PWA 1998–2010
GOAL 5:	Create attractive circulation corridors to enhance the City's image.	
5.1	Complete construction of medians on major arterial streets. (Policy 5.3)	PWA 1998–2010
5.2	Coordinate on-site landscaping with parkway and median landscaping. (Policy 5.1)	PBA/PWA 1998–2010
5.3	Complete the program to underground utilities on arterial streets. (Policy 5.5)	PWA 1998–2010
5.4	Develop design standards for parkways to enhance the attractiveness of travel corridors. (Policy 5.2)	PWA 1998–2000
5.5	Maintain and preserve street trees through ongoing maintenance programs. (Policy 5.1)	PWA 1988–2010
5.6	Prioritize programmed improvement projects that enhance the attractiveness of the City's travel corridors. (Policy 5.1)	PWA 1998–2000

Table 1
Implementation Matrix

	Action (Policy)	*Lead Agency/ Time Frame*
5.8	Utilize the City's project review processes to identify and maintain landscaped setbacks along public rights of way. (Policy 5.1)	PWA/PBA 1998–2010
GOAL 6:	Protect local streets from through traffic to preserve neighborhood character.	
6.1	Create development project circulation standards that restrict project traffic access to local residential streets. (Policies 6.1, 6.2)	PBA 1998–1998
6.2	Develop and implement neighborhood traffic management plans to reduce traffic commuter on local streets. (Policy 6.1)	PWA 1998–2010
6.3	Implement traffic control features which discourage non-local traffic on residential streets. (Policy 6.1)	PWA 1998–2010
6.4	Utilize traffic control devices which are unobtrusive and aesthetically compatible with the neighborhood character. (Policy 6.1)	PWA 1998–2010
GOAL 7:	Utilize alternative parking strategies as a means of managing transportation demand.	
7.1	Determine activity areas that need parking management plans. (Policies 7.1, 7.6)	PBA 1998–2000
7.2	Revise parking standards to address the use of additional transit alternatives. (Policy 7.4)	PBA 2000–2005
7.3	Participate in regional parking assessment studies, programs and projects. (Policies 7.4, 7.5)	PBA 1998–2010
7.4	Evaluate parking management strategies such as parking assessment districts to facilitate parking in areas programmed for future development. (Policy 7.4)	CDA 1998–2005
7.5	Require parking studies to evaluate requests for parking reductions in multi-use projects. (Policies 7.2, 7.3)	PBA 1998–2010
Goal 8:	Strengthen transportation and land use coordination with adjacent jurisdictions and regional agencies.	
8.1	Participate in growth management area interjurisdictional planning forums to coordinate land use and transportation projects. (Policy 8.1)	PWA 1998–2010 I
8.2	Coordinate Smart Street Program with OCTA, the State, and adjacent jurisdictions. (Policy 8.2)	PWA 1998–2010
8.3	Maintain compliance with Congestion Management Program requirements. (Policy 8.1)	PWA 1998–2010
8.4	Maintain ongoing coordination of land use and transportation project impacts through Joint Powers Authority agreements with adjacent jurisdictions. (Policy 8.1)	PWA/PBA 1998–2010

CDA - Community Development Agency
PBA - Planning and Building Agency
PSA - Personnel Services Agency
PWA - Public Works Agency
RCSA - Recreation and Community Services Agency
SAPD - Santa Ana Police Department

GLOSSARY

Air Pollutant Emissions. Discharges into the atmosphere, usually specified in terms of weight per unit of time for a given pollutant from a given source. The South Coast Air Quality Management District has identified primary pollutants including carbon monoxide, nitrogen dioxide, particulates (PM_{10}), reactive organic gases, and sulfur dioxide.

Air Pollution Control District (APCD). A single- or multi-county agency with legislative authority to adopt and enforce all rules and regulations necessary to control non-vehicular sources of air pollutants in its area. The South Coast Air Quality Management District (SCAQMD) is the designated APCD for the South Coast Air Basin.

Air Quality Standard. A health-based standard for air pollution established by the federal government and the State. Santa Ana is located in the South Coast Air Basin which is considered a non-attainment area for ozone and a number of other pollutants

Arterial Street. A major street carrying the traffic of local and collector streets to and from freeways and other major streets, with controlled intersections and generally providing direct access to properties.

Collector Street. A street for traffic moving between arterial and local streets, generally providing direct access to properties.

Goal. The ultimate purpose of an effort stated in a way that is general in nature and immeasurable. For example: "To enhance the open-space amenities of the community" may be considered a goal.

Implementation Measure. An action, procedure, program or technique that carries out general plan policy. Example: "Develop a geologic hazard overlay zoning classification and apply it to all geologic hazard areas identified in the general plan."

Implementation Program (Action Program). A coordinated set of measures to carry out the policies of the general plan. Example: Open-space action program for implementing open-space policies.

Infrastructure. The physical systems and services which support development and people, such as streets and highways, transit services, airports, water and sewer systems, and the like.

Intensity. The level of land use (low to high) for buildings. The intensity

Local Commercial Street. A two-lane street with businesses located on both sides of the street.

Local Street. A street providing direct access to properties and designed to discourage through-traffic.

Policy. A collective term describing those parts of a general plan that guide action, including goals, objectives, policies, principles, plan proposals, and standards in both the text and diagrams.

Standard. A specific, often quantified guideline, defining the relationship between two or more variables. Standards can often directly translate into regulatory controls. Example: Three to six dwelling units per net acre (low-density residential).

Transportation System Management (TSM). A cooperative process involving all transportation agencies in an urban area attempting to increase the efficiency of a transportation system through low-cost and relatively short-term actions. TSM typically includes traffic controls, improved public transportation, regulatory and pricing measures, and improvements to the management of the existing transportation system.

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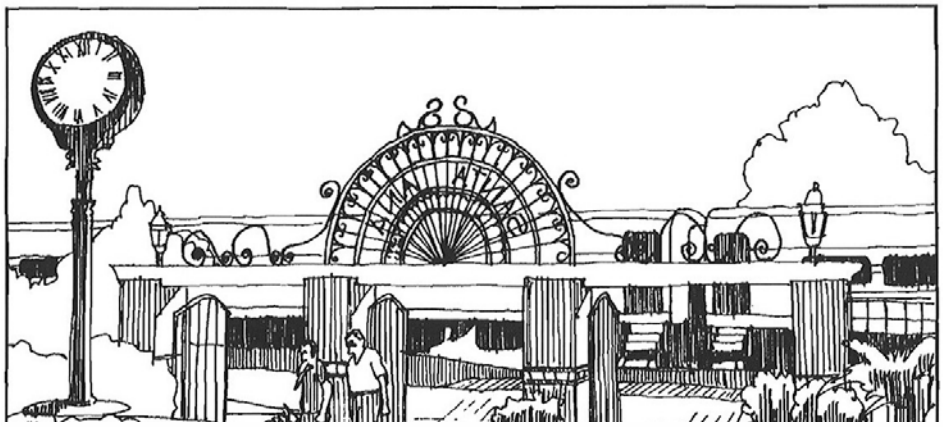
Appendix A

Appendix A

BACKGROUND

The circulation system has been a vital part of Santa Ana's history dating back to 1869 when the City was founded. At that time, the circulation system consisted primarily of dirt roads that provided access from the surrounding agricultural areas to the shops and post office located in the downtown area. The subsequent arrivals of the Southern Pacific Railroad in 1878 and the Santa Fe Railroad in 1886 brought a second transportation mode. Santa Ana now has a multi-modal circulation system which includes both private and public transportation and rail service. The roadway system serving the City includes several regional grade-separated freeways and a paved system of surface streets including regional Smart Streets.

Other transportation modes in the City include the public transit system which operates bus routes over numerous city streets, on-street bikeways and exclusive off-street bikeways, as well as an extensive sidewalk system to accommodate pedestrian travel. Despite the predominance of the roadway system for moving people and goods, the City's transportation system includes other important components such as truck routes,



REGIONAL CONTEXT

The City of Santa Ana is a major destination center in the region since it serves as the governmental center and a key employment center for Orange County. The City is located in the midst of an established network of freeways and is midpoint between the major urban areas of Los Angeles and San Diego. Santa Ana's location and its proximity to the regional system of freeways provides an important means of capturing the economic benefits associated with easy access, a central regional location, and an established street and rail system.

In 1989, the train fare between Santa Ana and Los Angeles was $1.35 one way and $2.25 round-trip.

Regional roadway access is provided by five freeways - the Santa Ana Freeway (I-5), the Orange Freeway (SR-57), the Garden Grove Freeway (SR-22), the Costa Mesa Freeway (SR-55), and the San Diego Freeway (I-405). The regional system of freeways serving the City and surrounding area are illustrated in Exhibit A-1.

REGIONAL SYSTEM IMPROVEMENTS

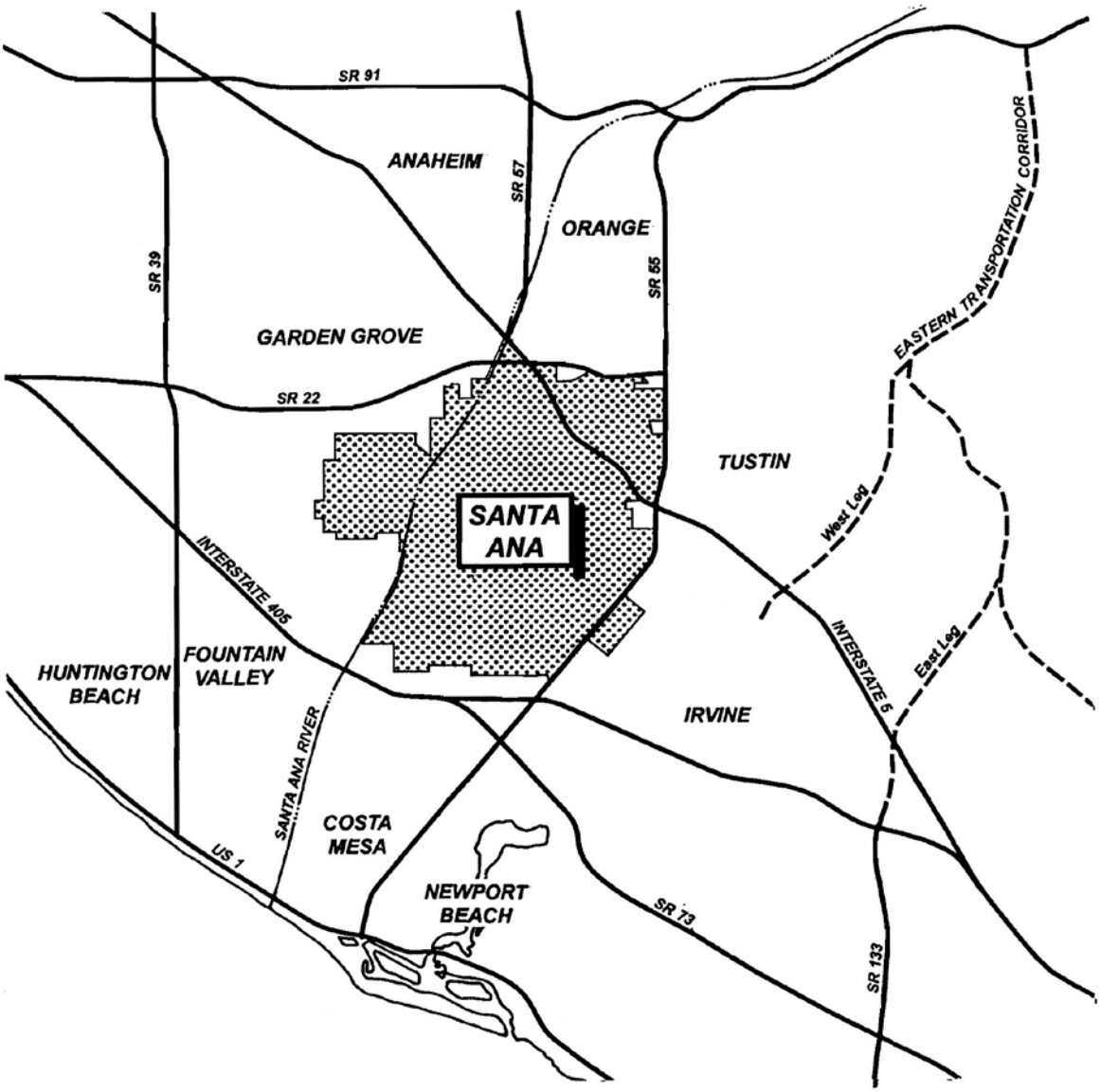
Improvements planned on several freeways will address some of the most critical regional congestion problems. The most significant project involves the widening of the Santa Ana Freeway. Construction is complete on the segment of this project that passes through Santa Ana. The widening included going from six lanes to as many as twelve lanes at some locations in the City. The completion of this project north of Santa Ana to the County line will further enhance traffic flow through the city on this regional travel corridor.

Current plans for improving the Costa Mesa Freeway call for the addition of two general purpose lanes between the Riverside Freeway (SR-91) and the Santa Ana Freeway (I-5) and improvements at both interchanges.

Several toll road projects are planned or are underway to expand the regional roadway system in Orange County. These improvements include construction of the Foothill/Eastern, and San Joaquin Hills Transportation Corridors, the latter of which is already in operation. These toll roads will primarily serve south Orange County but will help to alleviate traffic congestion on the Santa Ana (I-5), San Diego (I-405), and Costa Mesa (SR-55) Freeways which impact local traffic in Santa Ana. The Foothill/Eastern Corridor, in particular, will benefit Santa Ana by relieving congestion on the Costa Mesa (SR-55) Freeway.

the Orange Freeway (SR-57) is being considered for construction along the Santa Ana River between the Garden Grove and San Diego Freeways. A private consortium has been awarded a franchise by Caltrans to build and operate this freeway as a toll road for 30 years. If the project receives environmental clearance and obtains sufficient funding, this roadway could provide a major new north-south route on the west side of the City. Further, the Orange County Transportation Authority

Exhibit A-1 Regional Location



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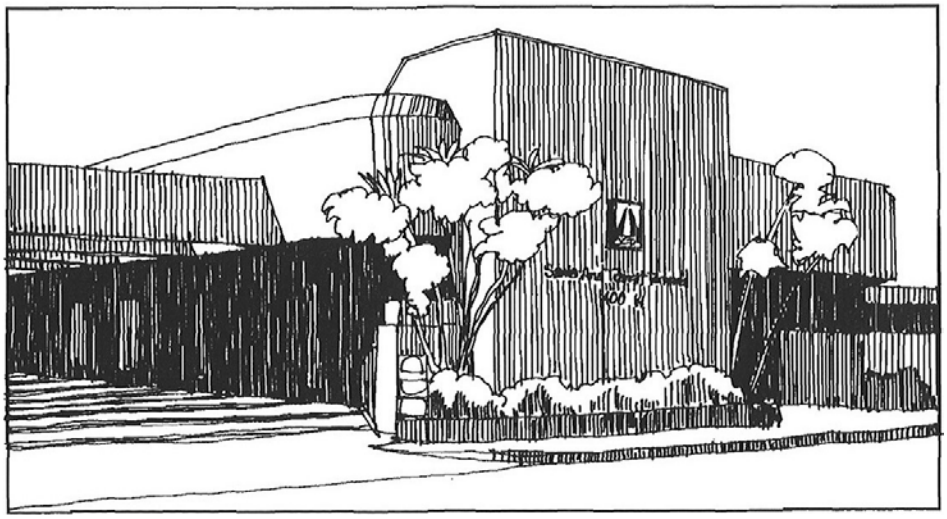
(OCTA) is studying the feasibility of developing the Pacific Electric Railroad right-of-way in the western portion of the City as a long-term transit corridor to serve downtown Santa Ana from the Garden Grove Freeway (SR-22).

The OCTA is working to develop an urban rail system for the County. As proposed, this north/south system would service several of the City's major development areas along its route through central Santa Ana. These new transportation corridors are further discussed and illustrated in the Roadway Improvements section of this Appendix.

RELATIONSHIP TO OTHER ELEMENTS AND PLANS

The Circulation Element is integrally related to federal, state, and regional transportation programs, as well as local plans and regulations. The City's role in transportation planning has become increasingly important, as recent legislation in the areas of growth management, congestion management, and air quality require more active local coordination to meet regional objectives. "The transportation related plan



and programs that impact the policies in this Element are discussed below.

SANTA ANA GENERAL PLAN

The Circulation Element, together with the Land Use Element, provides the framework for the planning of future development in the City. Conformity between the Land Use and Circulation Elements is critical

surrounding land uses and development. Other elements of the General Plan which interrelate with circulation issues include the Urban Design Element and the Economic Element.

AIR QUALITY MANAGEMENT PLAN

The South Coast Air Quality Management District is the agency responsible for enforcing regulations to achieve both national and state ambient air quality standards. Because of the importance of motor vehicles as a pollution source, substantial emphasis has been placed on reducing motor vehicle travel, and increasing vehicle ridership. This Element contains policies and implementation actions that address the need for coordination between the City and regional, state and federal agencies responsible for improving air quality in the region.

AMERICANS WITH DISABILITIES ACT

The Americans with Disabilities Act (ADA) was adopted by the U.S. Congress to provide clear and comprehensive national policy for eliminating discrimination against individuals with disabilities. The ADA directs the federal government to provide enforcement standards for ADA policies in a consistent manner on behalf of those individuals with disabilities. The legislation requires that barrier-free access be provided at public facilities. All new facilities including new roadways, parkways, and sidewalks must be constructed to meet ADA standards. Existing roadways must be modified to conform to these standards when improvement projects are undertaken.

SUPER TRUCKS

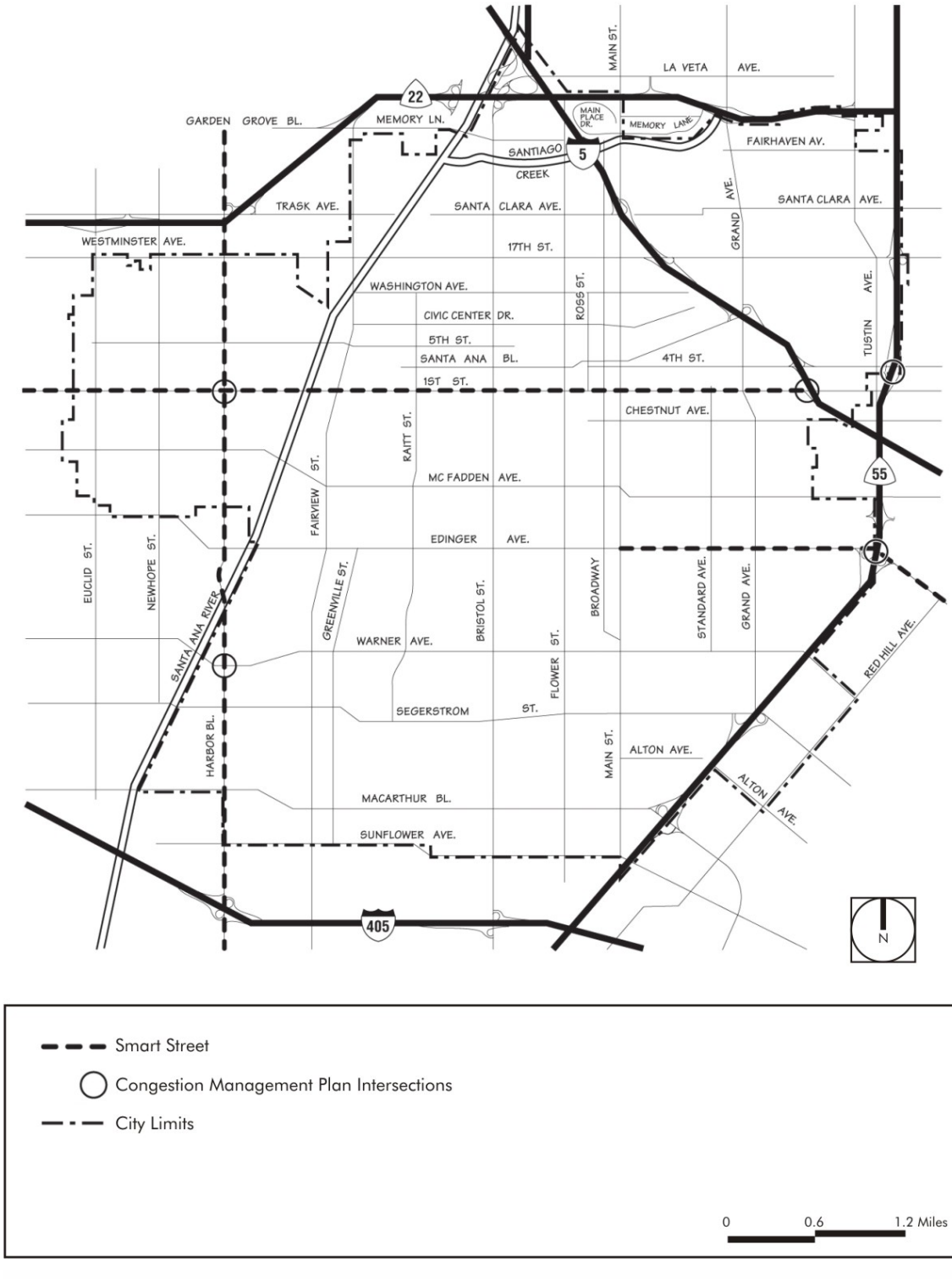
The federal 1982 Surface Transportation Assistance Act requires that terminal access route roadways be designated to carry "super" trucks between the national freeway system and local truck terminals. This Element includes provisions to address this federal requirement.

CONGESTION MANAGEMENT PROGRAM

California residents passed Proposition 111 in June, 1990. This legislation requires that larger urbanized areas like Santa Ana adopt a Congestion Management Program (CMP) to reduce traffic congestion, and provide a mechanism for coordinating land use and transportation decisions. The Orange County Transportation Authority is the lead agency for the Orange County CMP. In order to receive Proposition 111 funds, Santa Ana

roadway system. The designated CMP intersections are shown in Exhibit A-2.

Exhibit A-2 CMP Intersections/Smart Streets



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SMART STREETS PROGRAM

The Smart Streets Program is an important component of the county's Growth Management Plan. Potential "Smart Street" improvements include traffic signal synchronization, re-striping/widening of roadways to increase the number of travel lanes, intersection grade separations, bus turnouts, removal of on-street parking, and intersection improvements. The designated Smart Streets in Santa Ana include Harbor Boulevard (the entire portion within the City), First Street (from the western City limits to the Santa Ana Freeway), and Edinger Avenue (from Main Street east to the City limits). The Smart Streets are shown in Exhibit A-2.

MEASURE M

Measure M is a local transportation and growth management initiative approved by Orange County voters in November, 1990. The measure included a one-half cent sales tax increase for improving streets and freeways, stabilizing transit fares, and developing rail transit.

Approximately 21 percent of the revenue is targeted for local street and road projects. In order to receive its share of revenue, a city must adopt a Growth Management Program in its general plan that includes LOS standards, a monitoring program, development phasing with circulation improvements, and the assessment of development impact fees, while also maintaining prior levels of funding directed to transportation. The key components of the Growth Management Element have been incorporated into this Circulation Element.

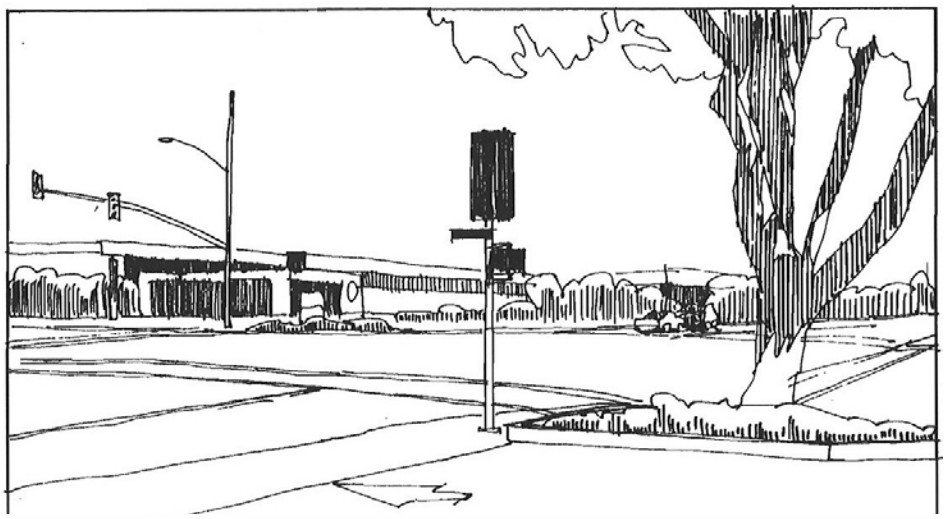
The level of service (LOS) standard for traffic circulation in the City has been established as a LOS D. In order to achieve this standard, the City has adopted a policy that within three years of the issuance of the first building permit for a development project, any necessary improvements of transportation facilities to which the project contributes measurable traffic, must be completed. All new development is required to pay its share of the street improvement costs associated with the development, including those improvements required for regional traffic mitigation.

New development in the City is also required to establish a development phasing program which phases the approvals of the development commensurate with required transportation-related improvements. The phasing plan must include an overall build-out plan which can demonstrate the ability of the infrastructure to support the planned development. The City is required to monitor the implementation of the development phasing program for each new development project on an annual basis. This monitoring effort must be documented in a report.

Future development is subject to a number of requirements designed to manage the traffic impacts it generates. A traffic impact analysis is generally required if a project generates at least 2,400 vehicle trips per day, or if a project generates 1,600 trips to the Congestion Management Program (CMP) network. In addition, the City of Santa Ana has adopted a Transportation Demand Management (TDM) Ordinance for employers with 100 employees or more. The TDM Ordinance calls for new development to incorporate measures to provide public transit information, facilities to encourage carpools/vanpools, bicycle use and to promote public transit use.

JOINT POWERS AUTHORITIES

In cooperation with the cities of Orange and Tustin, Santa Ana has established two Joint Powers Authorities (JPAs) designed to address land development and infrastructure issues which affect the adjacent jurisdiction. Developments and circulation improvements which occur within the designated boundaries are coordinated through the JPA.



IMPLEMENTATION OF MASTER PLAN OF STREETS AND HIGHWAYS

This section describes the City of Santa Ana Master Plan of Streets and Highways (MPSH), and the applicable design and service standards for the various roadway classifications that comprise the MPSH. The section concludes with an identification of those programs that are used in implementing the goals and policies of the Circulation Element.

LEVEL OF SERVICE STANDARDS

An important "standard" referred to throughout this Element relates to the ability of a roadway and/or intersection to accommodate traffic. This *level of service* standard may be used to describe both existing and future traffic conditions. Level of service (LOS) is a qualitative ranking that characterizes traffic congestion on a scale of A to F with LOS A being the optimal traffic condition and LOS F representing extreme congestion.

In addition to the LOS definition, a volume to capacity ratio or *V/C ratio* is used to provide a more quantified description of traffic conditions at intersections. The V/C ratio is the ratio of existing or projected traffic volumes to an intersection's design capacity. A V/C ratio of 0.90 for an intersection means that the traffic volumes at the intersection represent 90 percent of its design capacity. The V/C ratio can also be related to the above LOS definitions. For example, an intersection with a V/C ratio exceeding 0.95 is handling traffic volumes that are approaching design capacity. The V/C ratio of 0.95 corresponds to LOS E which indicates an unacceptable level of service at that particular intersection. The following six level of service definitions relate traffic conditions to traffic volumes and the design capacity of roadways and/or intersections.

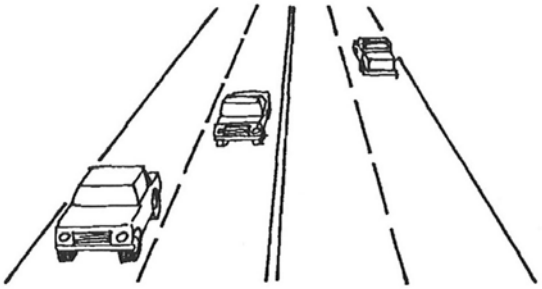
- **LOS A (V/C ratio 0.0 - 0.60) Free flow.** Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds, and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.
- **LOS B (V/C ratio 0.61 - 0.70) Stable flow.** The presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The general level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream

users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.

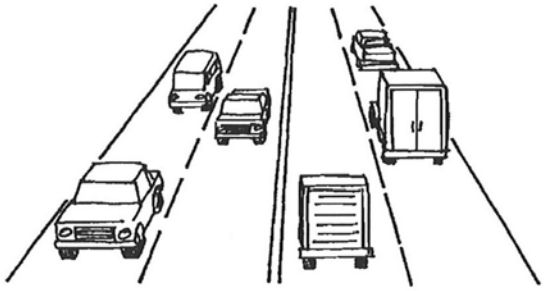
- **LOS D (V/C ra**tio 0.81 - 0.90) High density, but stable flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
- **LOS E (V/C ratio 0.91 - 1.00) Operating conditions at or near the capacity level.** All speeds are reduced to a low but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable because small increases in flow or minor variations within the stream will cause breakdown.
- **LOS F (V/C ratio >1.00) Forced or breakdown flow.** This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse that point. Queues form up behind such locations as arrival flow exceeds discharge flow.

Exhibit A-3 graphically represents the mid-block conditions for the LOS definitions described above. This Circulation Element establishes LOS D as the maximum acceptable LOS for major intersections in the City except in major development areas. The Congestion Management Plan establishes LOS E as the maximum level of operation for CMP roadways (freeways and Smart Streets).

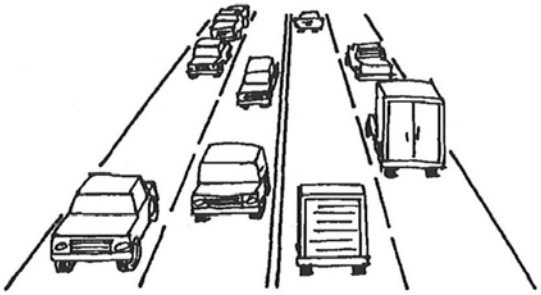
Exhibit A-3 Mid Block Level of Service Illustration



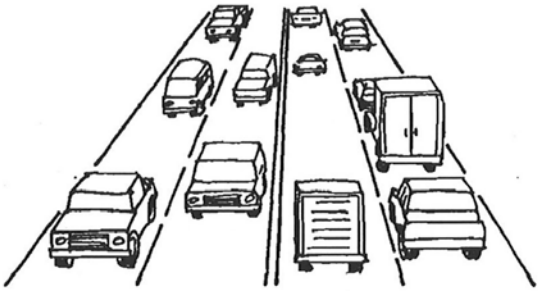
Level of Service A
Free flow in which there is little or no restriction on speed or maneuverability.



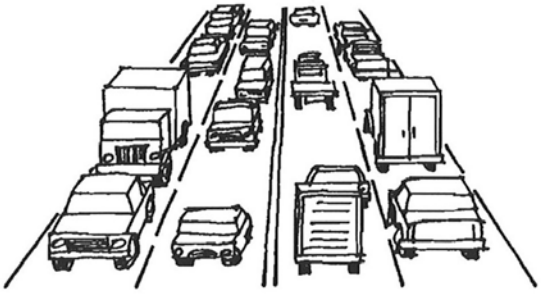
Level of Service B
Stable flow though operating speed is beginning to be restricted by other traffic.



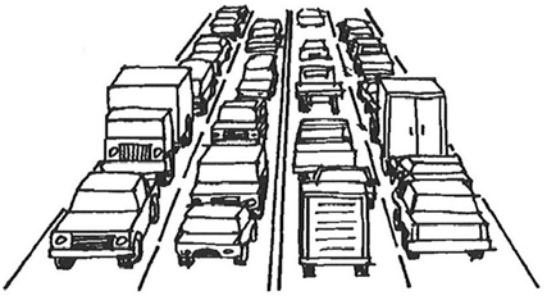
Level of Service C
Stable flow though drivers are becoming restricted in their freedom to select speed, change lanes or pass.



Level of Service D
Tolerable average operating speeds are maintained but are subject to considerable sudden variation.



Level of Service E
Speeds and flow rates fluctuate and there is little independence on speed selection or ability to maneuver.



Level of Service F
Speeds and flow rates are below those attained in Level E and may, for short periods, drop to zero.

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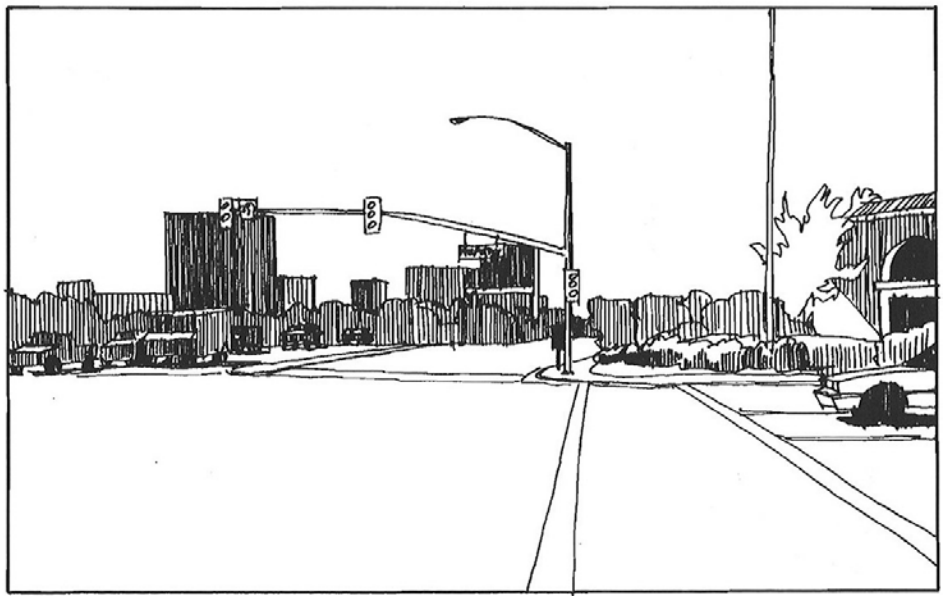
Table A-1 shows traffic volumes for various arterial roadway classifications, and the corresponding levels of service. For example, review of Table A-1 indicates an eight lane arterial roadway with average daily traffic volumes of 60,000 vehicles is operating at a LOS C.

Table A-1
Arterial Roadways
Average Daily Traffic Volumes and Corresponding Levels of Service

Type of Arterial	*LOS A*	*LOS B*	*LOS C*	*LOS D*	*LOS E*	*LOS F*
8 Lanes Divided	45,000	52,500	60,000	67,500	75,000	–
6 Lanes Divided	33,900	39,400	45,000	50,600	56,300	–
4 Lanes Divided	22,500	26,300	30,000	33,800	37,500	–
4 Lanes Undivided	15,000	17,500	20,000	22,500	25,000	–
2 Lanes Undivided	7,500	8,800	10,000	11,300	12,500	–

Source: City of Santa Ana, 1997



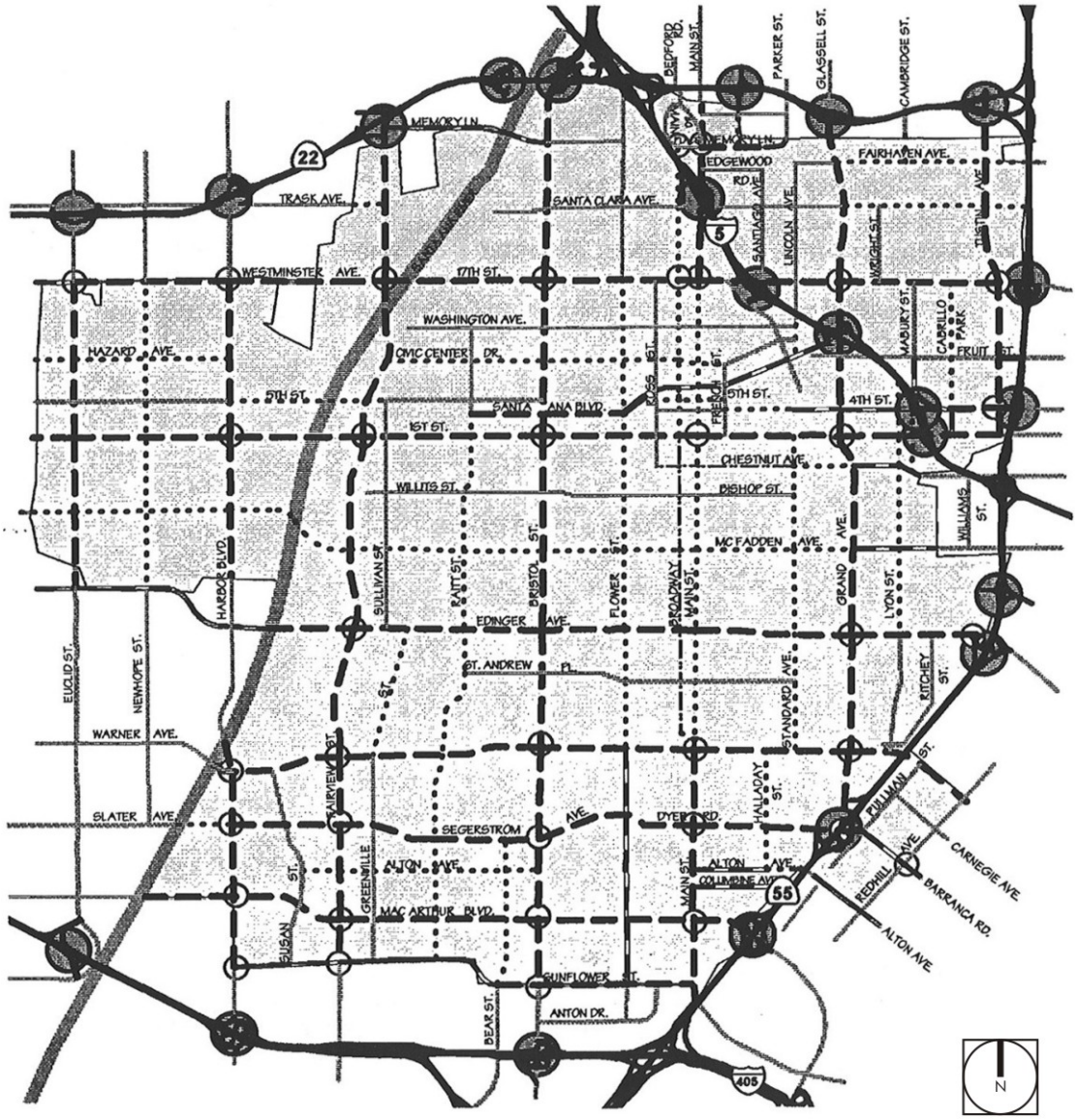
MASTER PLAN OF STREETS AND HIGHWAYS – STREET CLASSIFICATIONS

The City contains 413 miles of roadway—112 miles of arterial streets and 301 miles of local streets.

The Master Plan of Streets and Highways (MPSH) is illustrated in Exhibit A-4. Typical cross-sections for arterial streets are shown in Exhibit A-5. Most arterial roadways have been constructed to these standards. The functional classifications serve to categorize roadways based upon their use. The City does not intend to widen all roadways in the City to the cross-section standards merely to conform with the standard, but as travel demand and congestion warrant such widening.

Each arterial roadway is assigned to one of the following functional classifications:

- **Principal Arterial.** Typically, an eight-lane, divided roadway designed to accommodate between 45,000 to 67,500 vehicle trips daily. The typical right of way width is 144 feet.
- **Major Arterial.** Generally consists of six-travel lanes, and is also divided. Typically, the right-of-way width for this type of roadway is 120 feet. A major arterial is designed to accommodate between 33,900 and 50,600 vehicle trips daily.
- **Primary Arterial.** Generally consists of a four-lane, divided roadway. Typically, the right-of-way width is 100 feet. A primary arterial is designed to accommodate between 22,500 and 33,800 vehicle trips daily.
- **Secondary Arterial.** Generally a four-lane, undivided roadway. The typical right-of-way width for this category of roadway is 80 feet. A secondary arterial is typically designed to accommodate between 15,000 and 22,500 vehicle trips daily.
- **Commuter Street.** A two-lane, undivided roadway carrying less than 10,000 vehicle trips per day. The right-of way width for this roadway classification is 60 feet. Collectors are also two-lane undivided roadways with a right-of-way width of 56 feet.
- **Local Commercial Street.** A two-lane, undivided roadway carrying up to 6,000 vehicle trips per day. Parking may be allowed on both sides of the street, businesses are located on both sides of the street. The right-of-way width for this roadway classification is 60 feet.



Street Classifications

- Freeway
- Principal
- Major Arterial
- Primary Arterial
- Secondary Arterial
- Commuter

- Enhanced Intersections
- Interchange
- City Limits

0 0.6 1.2 Miles

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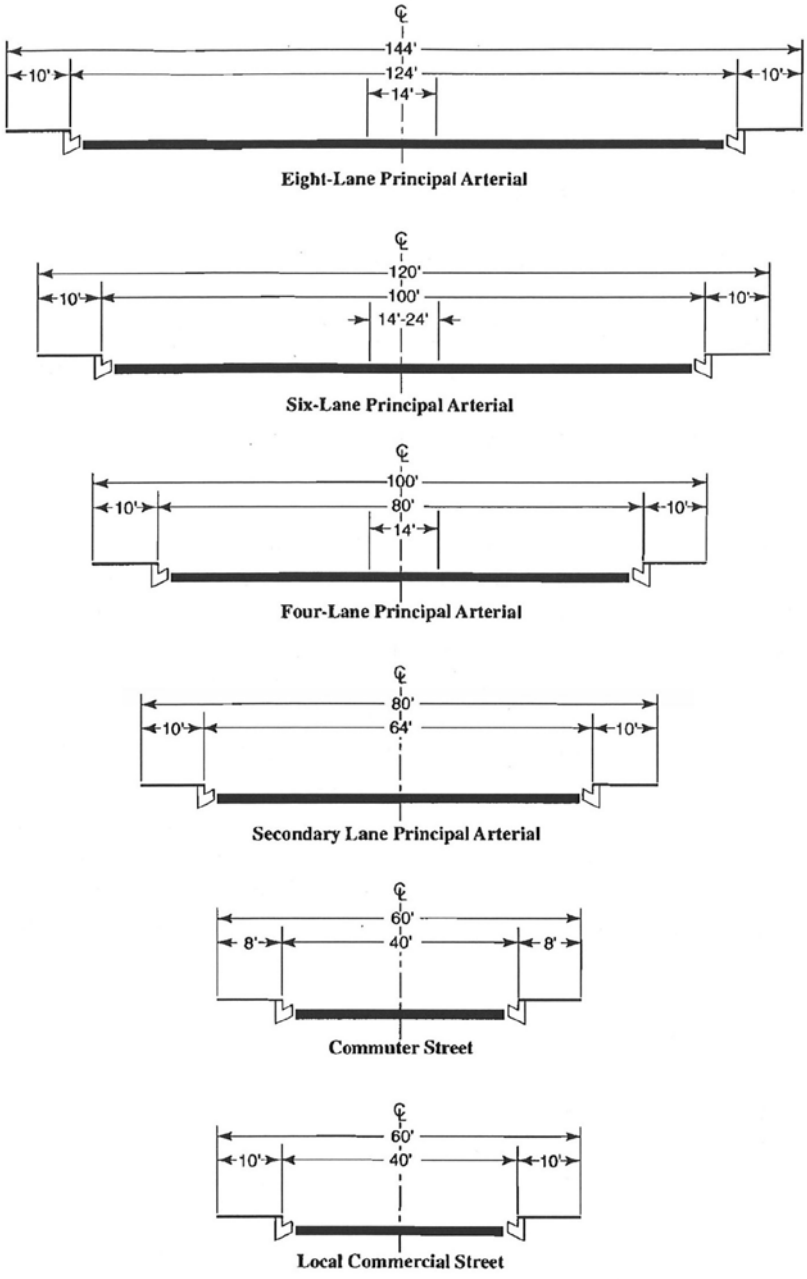
Exhibit A-5 Typical Roadway Cross-Sections



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Roadway Improvements

Potential capacity improvements for arterial streets in Santa Ana include completion of programmed widenings, removing on-street parking to add travel lanes, widening intersections to add turn lanes, or constructing grade separations at railroad crossings. The City traffic model forecasts are used to identify the intensity of congestion at each intersection and the types of improvements which could best help to alleviate the projected future congestion.

The initial list of potential improvements was narrowed to exclude projects which were judged to be impractical to implement, or would require extensive dislocation of adjacent buildings. The refined list includes enhanced intersections which are wider than existing street cross-section because they include additional turn lanes. Enhanced intersections are shown in Exhibit A-4. Street reclassifications and intersection improvements other than enhanced intersections are shown in Exhibit A-6. Street reclassifications include modification of Edinger Avenue from a primary arterial to a major arterial, and reclassification of Broadway from a secondary arterial to a residential collector from First Street south to its intersection with Main Street to reflect the residential character of the street. Exhibit A-7 shows new regional roadways and transit corridors proposed for construction in Santa Ana.

Bikeway Master Plan

Numerous improvements to the existing system of bikeways are identified in this Element in order to provide greater coverage and improved system continuity, thereby enhancing the status of bikeways as an integral component of the overall circulation system. On-street bicycle lanes are planned only for location on major arterials where they can be safely accommodated. These bicycle lanes vary in width from four feet to seven feet wide depending on the available right-of-way. The City of Santa Ana has established the following two classifications of bikeways which generally correspond with the Orange County Transportation Authority (OCTA) bikeway classifications:

- **Class I Bikeway.** Provides for bicycle travel on a right-of-way completely separated from the street.
- **Class II Bikeway.** Provides for a striped lane for one-way travel within the street right-of-way.

An existing Class I bikeway runs along the banks of the Santa Ana River,

bikeways are planned along Santiago Creek. A linkage to connect the Maple Street trail to the Alton Street trails is also planned.

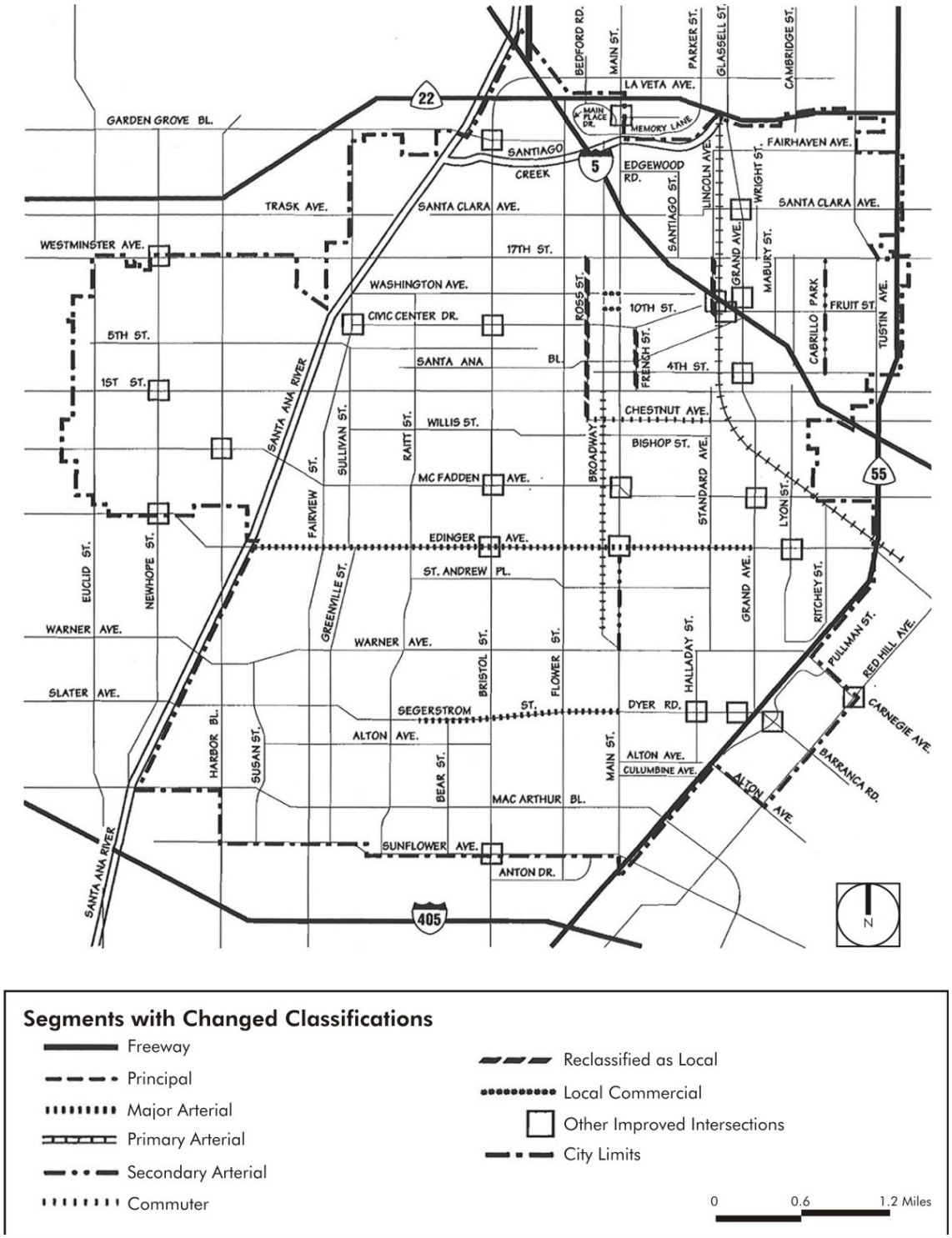
Class II bikeways are found along segments of Raitt Street, Greenville Street, Ross Street, Chestnut Avenue, Santa Ana Boulevard, Fairview Street, the O.C. Flood Control Channel, Flower Street, and Sunflower Avenue. The Bikeway Master Plan is illustrated in Exhibit 2 provided in the Policy Plan.

Implementation Programs

This section describes the implementation programs used to achieve the goals of the Circulation Element.

- **Intelligent Transportation System.** The City has implemented an Intelligent Transportation System (ITS) to ameliorate traffic congestion. This system includes the use of closed circuit television surveillance cameras, electronic message signs, and radio as traffic advisory tools. An essential goal of this system is to provide "real time" information concerning congestion and incidents to motorists, thereby facilitating the choice of less-congested travel routes. The components that comprise the ITS are illustrated in Exhibit A-8.
- **Air Quality Management Plan.** The Clean Air Act (CAA) was adopted by the U.S. Congress to establish national air quality standards. Regional and local transportation plans and programs must conform to the State Implementation Plan and Air Quality Management Plan (AQMP) for the South Coast Air Basin. These plans identify strategies and programs to achieve air quality standards. The South Coast Air Quality Management District (SCAQMD) is the agency responsible for developing an Air Quality Management Plan, and enforcing regulations for achieving National Ambient Air Quality Standards and California Air Quality Standards. Because of the importance of motor vehicles as a pollution source, substantial emphasis has been placed on reducing motor vehicle travel, and increasing vehicle ridership.

Exhibit A-6 Roadway Reclassifications and Other Intersections Improvements



Segments with Changed Classifications

- Freeway
- Principal
- Major Arterial
- Primary Arterial
- Secondary Arterial
- Commuter
- Reclassified as Local
- Local Commercial
- Other Improved Intersections
- City Limits

0 0.6 1.2 Miles

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Exhibit A-7 Regional Roadway Improvements

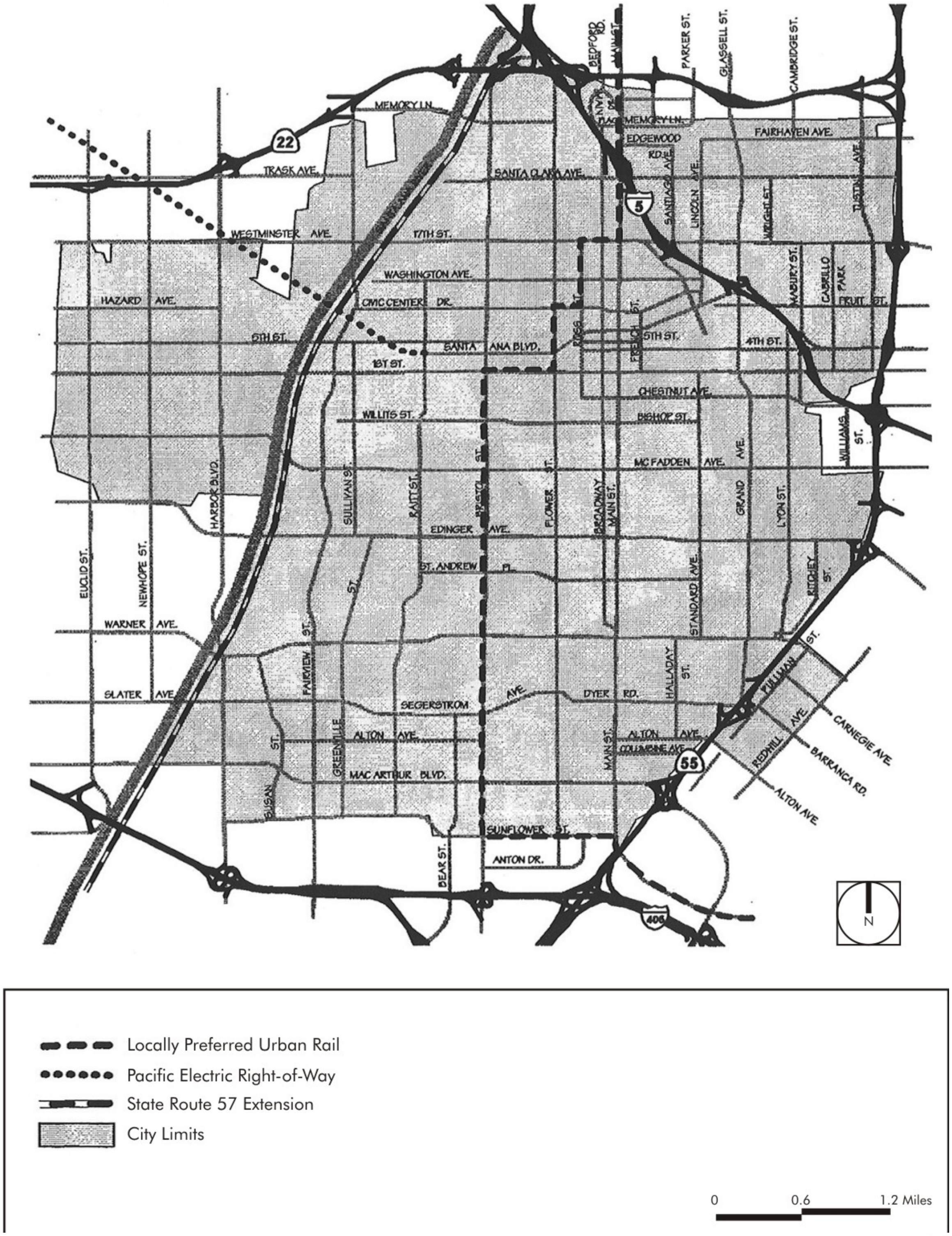

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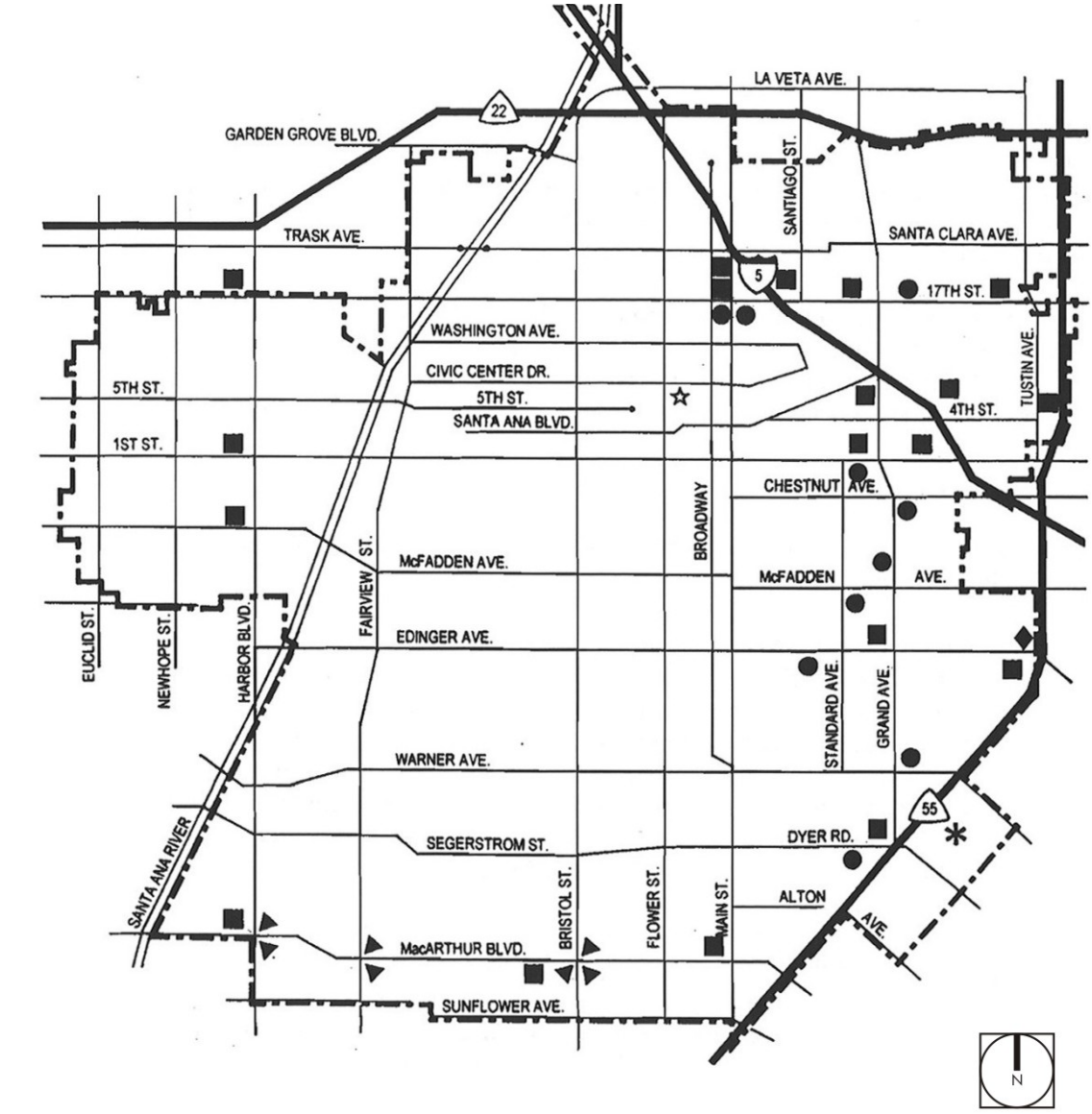
Exhibit A-8 Intelligent Transportation System



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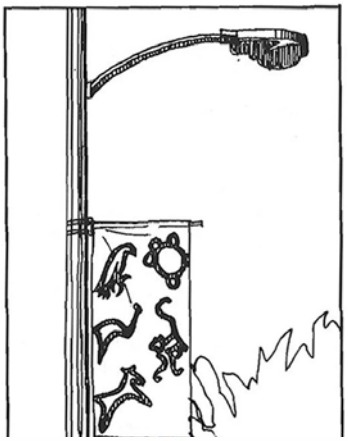
The City of Santa Ana will continue to participate in the regional planning efforts being undertaken by the SCAQMD and the Southern California Association of Governments (SCAG) to develop and implement strategies which improve regional air quality.

- **Bikeway Master Plan.** The City will continue to develop its bikeway system as outlined in this Circulation Element. The system of bikeways will include both the Class I and Class II facilities described herein. A proposed Class I bikeway is planned along Santiago Creek. Class II bikeways proposed in this Plan include extension of the existing bikeway along Santa Ana Boulevard from the Civic Center to the Santa Ana Transportation Center.
- **Interagency Coordination of Transportation/Transit Planning.** The City's location at the hub of the Orange County transportation system means that Santa Ana's transportation system, as well as its problems, are intertwined with those of surrounding cities. The Orange County Congestion Management Program (CMP), administered by OCTA, establishes service levels and standards for the regional transportation system, and requires that traffic impact analysis for new development identify impacts outside the local jurisdiction. Projects to upgrade the Santa Ana (I-5), San Diego (I-405), and Costa Mesa (SR-55) Freeways have involved extensive coordination between the cities and Caltrans. The City will coordinate efforts with Caltrans and OCTA in making improvements to the local freeway system and State highways which serve the planning area. The purpose of this undertaking is to ensure that the City is fully appraised of roadway and facility improvement efforts in the early stages of planning and design.
- **Capital Improvement Program.** The City's Capital Improvement Program (CIP) is a seven-year plan which prioritizes and schedules significant capital expenditures. Individual projects are reviewed and ranked on an annual basis, and may include street-scape upgrades, installation of traffic signals, slurry seal for streets, sidewalk repair, and sewer line upgrades. The City will continue to update, review, and implement its CIP on an annual basis.
- **Project Review.** The City's inter-agency project review process ensures that building design, architecture, and site layouts meet local regulations and are compatible with surrounding development, and that there are no unintended impacts upon the roadway system. This review process is also used to review and assess proposed

- **Environmental Review.** The City evaluates the environmental impacts of new development, and provides mitigation measures prior to development approval, as required by the California Environmental Quality Act (CEQA). Environmental review is provided for major projects and those with a potential to adversely impact the environment. Issue areas that are addressed in the environmental analysis process for all project reviews include potential impacts on traffic, public transit, and transportation-related infrastructure. In compliance with CEQA, the City requires appropriate mitigation and assigns responsibilities monitoring the implementation of mitigation measures.
- **Joint Power Authorities.** In cooperation with the City of Orange and the City of Tustin, Santa Ana has established two Joint Powers Authorities (JPA's) to address land development and infrastructure issues which jointly affect these jurisdictions. In addition, Santa Ana is a member of the Inter-City Liaison Committee with the cities of Irvine, Tustin, Costa Mesa, and Newport Beach in order to facilitate the sharing of information about common issues which affect the South Coast Metro, Irvine Business Complex, and John Wayne Airport areas. Each of these entities address common concerns such as major development plans, cost-sharing arrangements, and technical coordination of transportation improvement projects. Developments and circulation improvements that occur within the designated JPA boundaries are coordinated through the process outlined by the authority.
- **Mitigation Fees.** The City will implement local and regional requirements for project mitigation fees to ensure that the public does not bear undue financial burdens to facilitate new development. The City assesses new development the costs of providing any additional transportation-related infrastructure required to service the project.
- **Parking Studies.** An adequate supply of parking is essential to the economic success of businesses. However, parking is an integral component of the total circulation system rather than an independent element. Parking needs are evaluated, as necessary, to determine needed changes based upon changing circumstances in land use patterns and the public's mode of travel. To enhance safety and optimize traffic operations, on-street parking is removed from arterial streets wherever feasible.
- **Neighborhood Permit Parking Program.** In residential areas, parking permit programs are used as a means of ensuring that

- **Parkway and Street Maintenance.** The City has a comprehensive program for maintaining major traffic corridors in the City. The program identifies guidelines for landscaping median and parkway areas, street furniture, lighting, and other street-scape improvements. The City has also prioritized the relocation of above-ground utilities underground.
- **Roadway Improvement Program.** This Circulation Element identifies significant roadway improvements that are considered as part of its implementation. Recommendations include the changes to the MPSH identified in Exhibit A-6.
- **Transportation Demand Management.** Santa Ana has adopted a Transportation Demand Management (TDM) Ordinance which is designed to reduce peak travel demands associated with commuter trips. Employers of 100 or more persons in any new development are subject to the TDM ordinance and are required to implement programs to aid in reducing peak hour traffic demands based upon the traffic volumes generated by their project. Collectively, these efforts can be expected to result in lower peak traffic volumes on City streets. The City continues to support strategies included in the TDM program which can lessen the need for peak period travel.
- **Neighborhood Traffic Management Program.** In residential areas that experience significant commuter or "cut-through" traffic on local streets, the City conducts a traffic impact assessment and a traffic plan is developed in accordance with California Vehicle Code Section 21101(f) and the rules and regulations contained in Resolution 2004-53, as they may be amended from time to time. The traffic plan may include traffic diverters or other roadway design features to reduce "cut-through" traffic.
- **Signage Program.** The City is working with Caltrans and the County of Orange to develop a signage program that assists in guiding visitors and residents to major activity centers in the City. The program promotes the installation of signs at key intersections, and selected locations along arterial roadways indicating key shopping areas, cultural attractions, and points of interest for visitors to the City. The program is designed to direct visitors to the City's activity centers from the adjacent freeway system.



EXISTING CONDITIONS

LOCAL ROADWAY SYSTEM

The local roadway system is a significant component of the City's circulation network because of the multiple travel modes that it accommodates. In addition to providing travel corridors for automobiles, buses, and bicycles, the roadways provide right-of-way for pedestrian travel via the parkway sidewalk system. The components of the Circulation System discussed below, in conjunction with the local roadways, function to provide a range of travel alternatives for the City's residents, employees, and visitors.

PUBLIC TRANSIT

The City of Santa Ana is well served by public transit services offered by the Orange County Transportation Authority (OCTA). Key elements of this transit service include the following:

- **Fixed Route Bus Service.** An extensive network of fixed-route transit service is provided in Santa Ana due to its central location in Orange County. The Santa Ana Transit Terminal is the hub of public transit service for the County, and is a central transfer point for many of the bus lines. In addition to the bus routes that traverse the City, many routes also serve the periphery of the City. Exhibit A-9 illustrates the streets served by local and express bus routes. All of the routes that enter the Downtown/Civic Center area stop at the Santa Ana Transit Terminal located at Ross Street and Santa Ana Boulevard.
- **Access Service.** In addition to fixed-route transit service, OCTA also provides demand-responsive service through OCTA *Access*. OCTA Access provides disabled individuals with door-to-door service anywhere in Orange County.
- **Transit Alternative**s. The Santa Ana Regional Transportation Center is located at Santa Ana Boulevard and Santiago Avenue. It serves as a transfer point for OCTA buses, Metrolink, and Amtrak. The Santa Ana Transit Terminal is located near 5th Street and Ross Street, and serves as a transfer point for OCTA buses.

TRUCK ROUTES

Streets designated as truck routes in Santa Ana are illustrated in Exhibit A-10. These routes include local routes, and the terminal access routes for

PARKING FACILITIES AND PROGRAMS

Parking facilities are an essential component of the vehicular circulation system. Historically, parking has been provided along the streetside and in off-street parking lots. In recent years, however, parking along arterial streets has increasingly been removed for safety reasons and to provide more traffic capacity. Key factors related to parking that are considered in this Circulation Element include the following:

- **On-street Parking.** In Santa Ana today, on-street parking is prohibited on principal, major, primary, and secondary arterials wherever possible. Parking is permitted on local streets unless specifically prohibited.
- **Permit Parking Program.** The City has established a permit parking program in response to parking intrusion into single-family neighborhoods from adjacent developments. The City has numerous neighborhood permit parking districts included in this program. Within these districts, on-street parking is regulated to ensure that spillover parking demands do not prevent local residents from parking on the street.
- **Off-street Parking.** Off-street parking standards are established during the Development Review Process. The number of required off-street parking spaces for new or modified developments are identified, as are the minimum dimensions for parking spaces.
- **Park and Ride.** The City has two park-and-ride facilities for those who choose to car-pool or use public transportation to reach their destinations: the parking structure adjacent to the Santa Ana Transit Terminal, and the parking lots at the Regional Transportation Center which are primarily for the use of rail patrons. Several public parking structures are also provided by the City in the Downtown area. These public structures are illustrated in Exhibit A-11 along with park-and-ride facilities.

Streets Served by Public Transit

Regional Transportation Center

Santa Ana Transit Terminal

0 0.6 1.2 Miles

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Exhibit A-10 Truck Routes

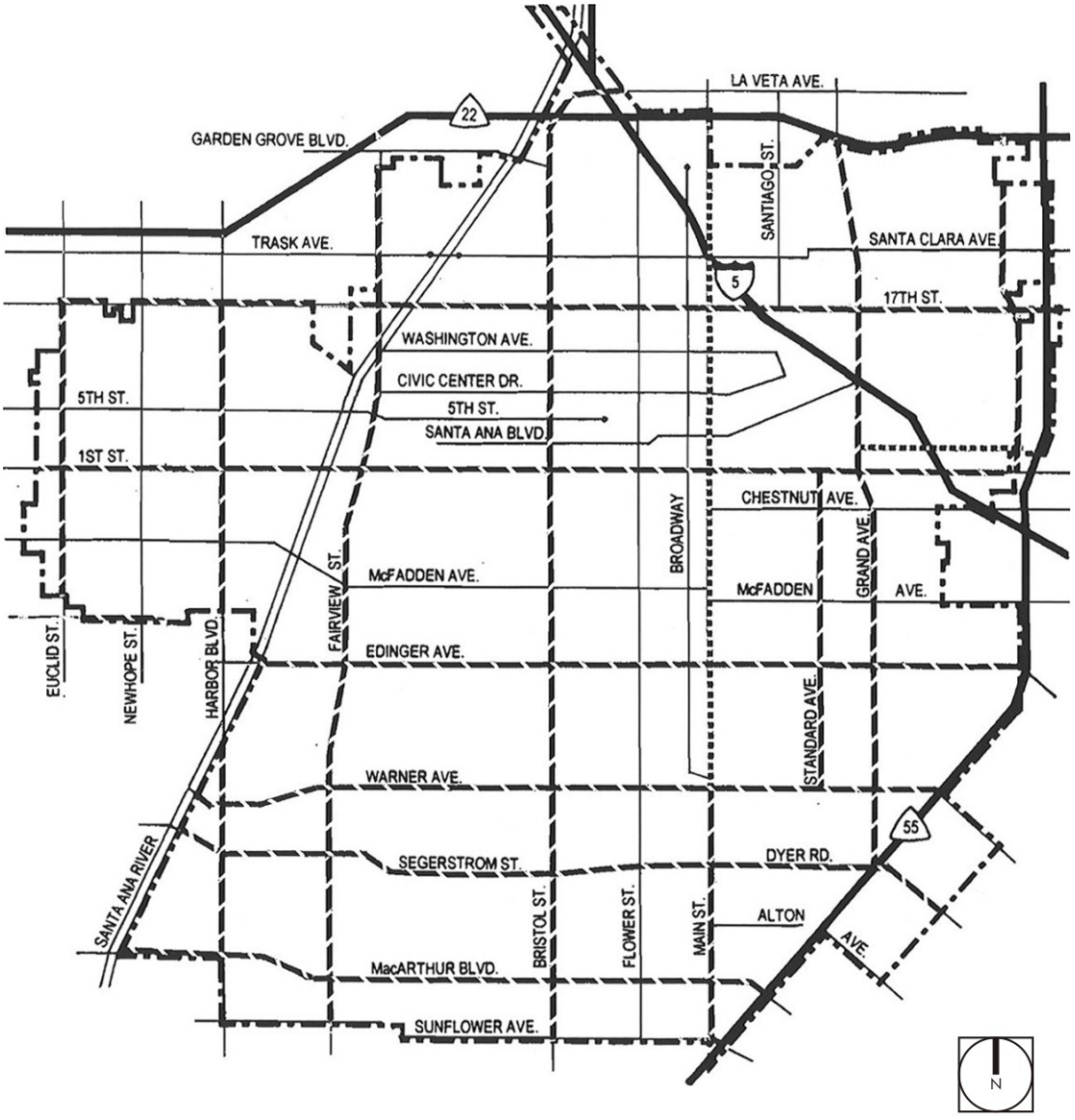

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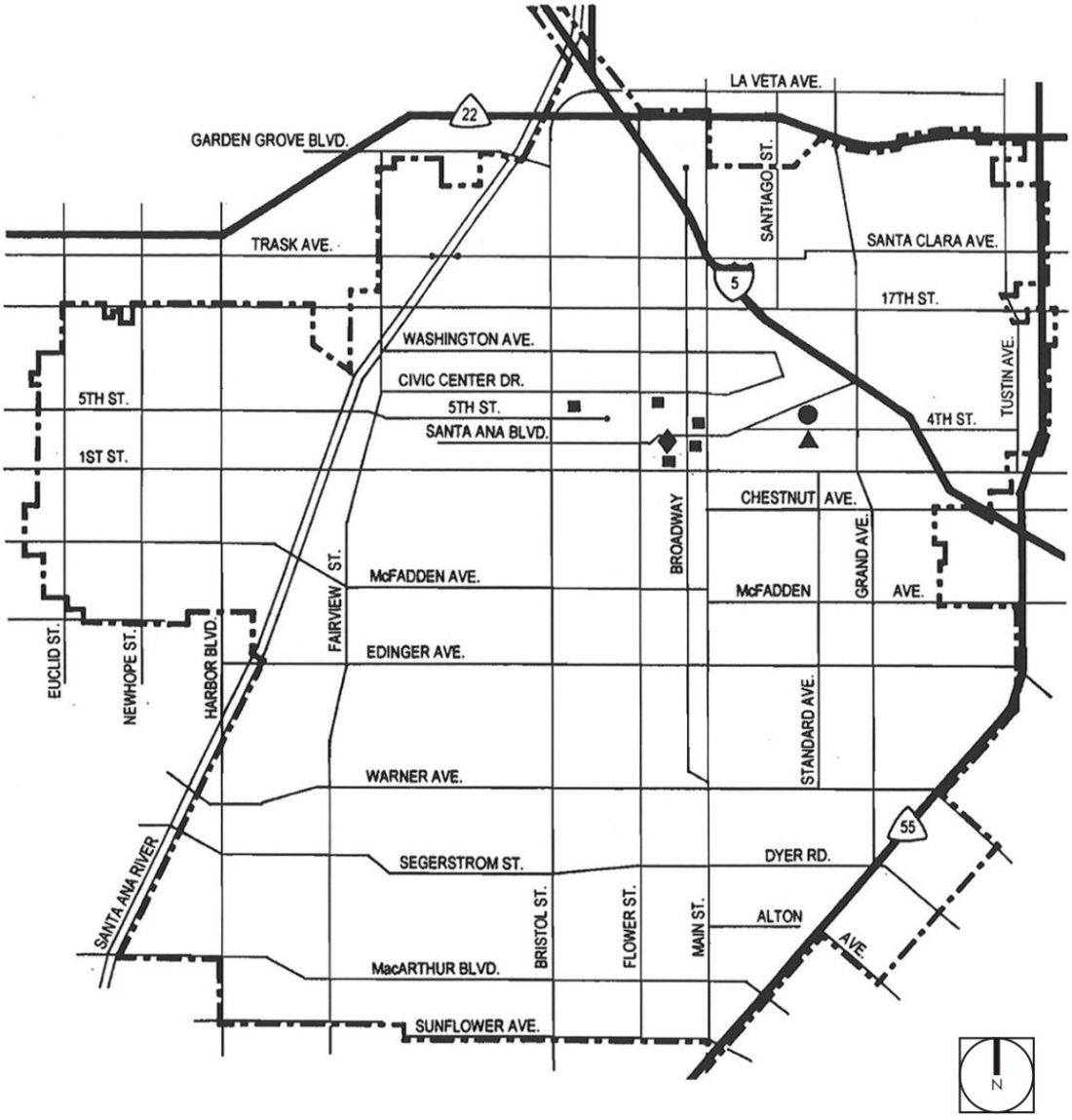
Exhibit A-11 Parking Facilities



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REGIONAL TRANSPORTATION SYSTEM

The City of Santa Ana is served by four freeways: the Santa Ana (I-5), the Garden Grove (SR-22), the Costa Mesa (SR-55), and the Orange (SR-57) Freeways. These freeways are located near the northern, eastern and southern boundaries of the City and carry commuters into the City, as well as to the surrounding region. Local roadways in the City generally form a grid pattern in north-south and east-west directions. Major streets are within one-half-mile or one-mile intervals, and interrupted mainly by the freeways and the Santa Ana River. Major freeways serving the City of Santa Ana include the following:

- The **Santa Ana Freeway (I-5)** traverses the northeastern section of the City and has up to 12 lanes between the Garden Grove Freeway (SR-22) and the Costa Mesa Freeway (SR-55). Construction of the segment north of the Orange Crush (I-5, SR-57, SR-22) interchange is expected to be completed within 5 years. The recently completed widening project on the Santa Ana Freeway provides car pool lanes and improved interchanges.
- The **Orange Freeway (SR-57)** is a north south freeway that ends at the northern boundary of Santa Ana. This freeway has 10 lanes, including 2 car pool lanes, and runs through the eastern section of Los Angeles County. This freeway is being considered to be extended along the Santa Ana River from the Garden Grove Freeway (SR-22) to the San Diego Freeway (I-405).
- The **Garden Grove Freeway (SR-22)** is an east-west freeway running near the northern City limits. This freeway has 6 lanes, widening to 8 lanes at its interchange with the Santa Ana (I-5) Freeway.
- The **Costa Mesa Freeway (SR-55)** runs north-south along the eastern edge of the City. This freeway has 8 lanes widening to 10 and 12 lanes between the Santa Ana (I-5) and San Diego (I-405) Freeways. The widening to 10 lanes of the segment between Riverside Freeway (SR-91) and the Santa Ana Freeway (I-5) is underway.
- The **San Diego Freeway (I-405)** runs east-west, just south of the City and merges with the Santa Ana Freeway (I-5) approximately 15 miles southeast of the City. This freeway has 6 lanes and runs in an east southeast direction from Los Angeles County ultimately connecting with the I-5 Freeway.
- The **San Joaquin Hills Transportation Corridor** is a toll road from the Corona del Mar Freeway (SR-73) near the City's southern

- The **Foothill/Eastern Transportation Corridor** is planned for the southern and eastern sections of the County.

RAIL SERVICE

Santa Ana was connected to Los Angeles by rail service in 1878.

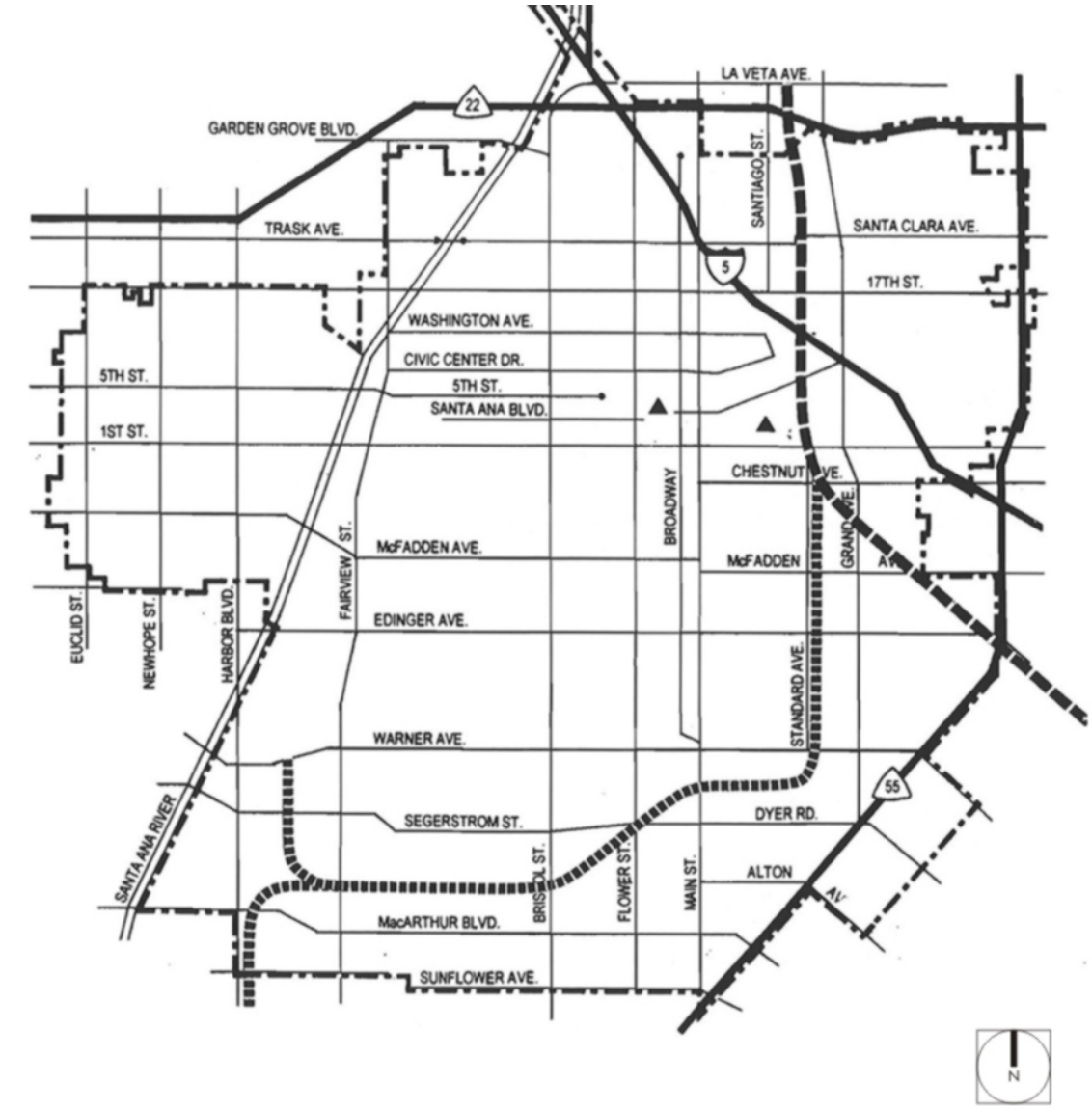
Santa Ana is crossed by several rail lines which are used-for three types of operations: commuter rail (Metrolink), passenger rail (Amtrak), and freight rail. Exhibit A-12 illustrates the rail routes through the City. Key components of the rail system serving the City and issues related to this Circulation Element includes the following:

- **Metrolink.** Metrolink trains run during the morning and evening rush hours on weekdays only. Three trains travel northbound to Union Station in downtown Los Angeles in the morning and three trains travel southbound to Oceanside in the evening. Metrolink trains use the same station as Amtrak trains in Santa Ana. OCTA bus routes connect with Metrolink trains at the Santa Ana Regional Transportation Center.
- **Future Urban Rail Systems.** OCTA has currently completed a Major Investment Study to evaluate the feasibility and cost effectiveness of urban rail, and other potential improvements in the north-south corridor through central Orange County. When an urban rail system is developed, it will likely serve major activity centers in the southern portion of the City, the Civic Center, the Downtown, and the northern portion of the City. Local bus routes will be routed to provide riders with convenient access to urban rail stations.
- **Amtrak.** Amtrak provides passenger service in the Los Angeles-to-San Diego corridor, operating nine trains daily in each direction, with a stop at the Regional Transportation Center.
- **Freight Rail.** Freight rail service is provided by the Union Pacific. Amtrak trains use the BN&SF railroad tracks, and operate eight trains to Los Angeles and 8 trains to San Diego daily. The Union Pacific lines are used by approximately 3 to 4 trains per day. Train activity is largely dependent upon customer demand.

AIRPORTS

The John Wayne/Orange County Airport is located just southeast of the City of Santa Ana. It is a commercial aviation airport served by several commercial air carriers and commuter airlines. The airport is also a base for some 1,000 personal and business aircraft, and 30 helicopters. It is estimated that 7.3 million passengers and 19,822 tons of cargo passed through the airport during 1996. Also, 452,955 aircraft flights were made during 1996 or 1,241 planes per day. By the year 2000, it is estimated that

Exhibit A-12 Rail Corridors and Park and Ride Locations



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EXISTING TRAFFIC CONDITIONS

A citywide computerized travel demand forecasting model has been developed to aid in planning appropriate street improvements. This model is a tool which estimates traffic volumes on the City's arterial street system, based on land development patterns and intensities in the City and surrounding region. The baseline existing conditions scenario in the model reflects the 1992 land use and transportation system in the City.

- **Existing Traffic Volumes.** Traffic counts used to evaluate existing conditions were collected in 1991 prior to initiation of construction activities along the Santa Ana Freeway (I-5) which have substantially altered normal traffic patterns in the City.
- **Santa Ana Freeway.** The I-5 carries the highest freeway traffic volume within the City, with 238,000 daily vehicles north of Grand Avenue. The most heavily traveled arterial within the City is MacArthur Boulevard which carries volumes of 44,800 west of the Costa Mesa Freeway (SR-55). Several arterial roadways within the City currently have daily traffic volumes in excess of 40,000 vehicles. These roadways include Seventeenth Street, Fairview Street, Harbor Boulevard, and Bristol Street.
- **Level of Service.** To evaluate congestion, morning and afternoon peak hour Levels of Service (LOS) were calculated for 99 key intersections throughout the City. The analysis determined that congestion is experienced throughout the City, especially during the PM peak hour. Additional information concerning levels of service on local roadways is provided in the Circulation Element EIR.
- **CMP Intersections.** There are five Congestion Management Plan (CMP) designated intersections located in Santa Ana. They consist of First Street at Harbor Boulevard, First Street at the northbound Santa Ana Freeway (I-5), First Street at the I-5 Freeway (southbound), Edinger Avenue at the southbound Costa Mesa Freeway (SR-55), and Warner Avenue at Harbor Boulevard.
- **Increased Traffic.** The City has experienced significant population growth in the past several decades. At the same time, a number of commercial and employment centers have been developed in the City, and additional development is envisioned in the near term. This population growth and new development occurred years after the City's roadway network was constructed. Because of the nature and extent of existing development, there are limited opportunities to

efficiency or expand the capacity of selected major arterial roadways. A number of widening projects are planned in the City for Fairview Street, McFadden Avenue, Bristol Street, Grand Avenue, and Edinger Avenue, as well as realignments of selected roadway segments.

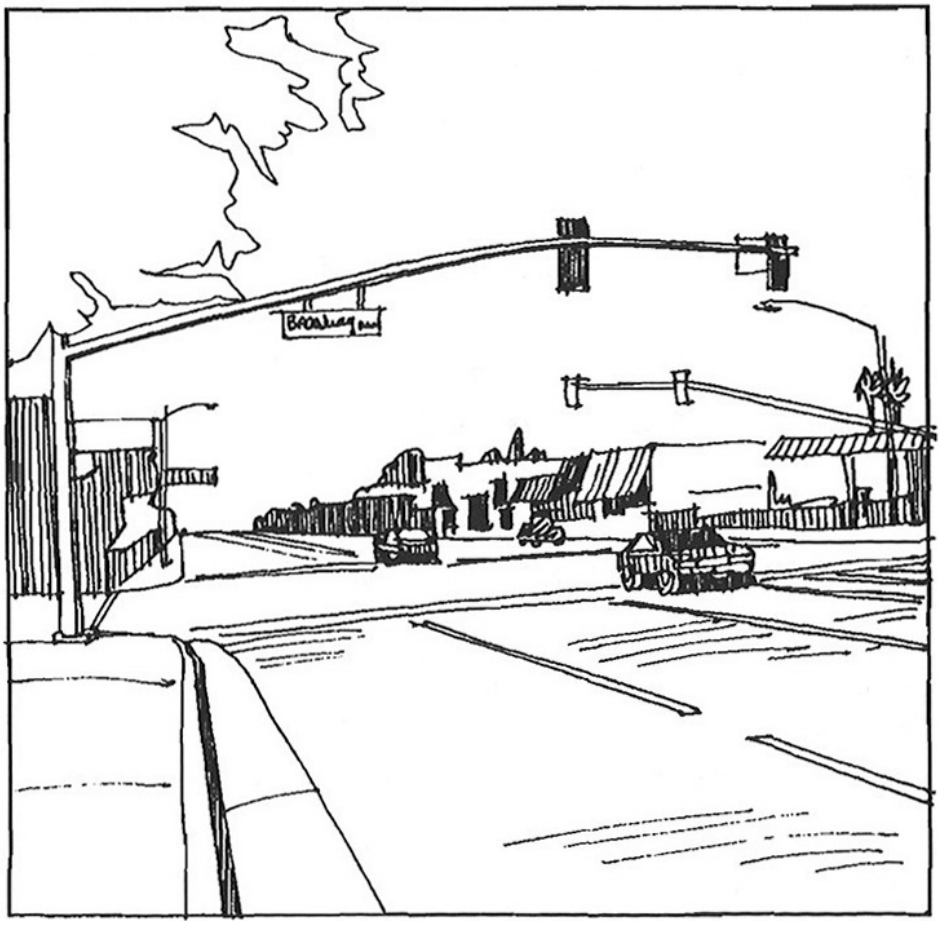
FUTURE TRAFFIC CONDITIONS

The Master Plan of Arterial Highways (MPAH) is the official map for transportation planning purposes for the Orange County Transportation Authority. The classification of arterial streets within each city in the County is required to be consistent with the MPAH. The type, location, and intensity of land development determines the demand for circulation and influences travel mode choices. The Circulation Element therefore plans for a transportation system which will serve the needs of the development envisioned in the Land Use Element.

Future traffic volumes on the arterial street system were forecast using a traffic model developed for the City assuming the development of planned land uses and programmed transportation improvements. The results of the modeling efforts to assure consistency between 2010 land use and circulation systems are discussed below.

- Even though the City of Santa Ana is almost completely built-out, the Land Use Element envisions redevelopment and new development within selected areas of the City. The increased intensity of land use over time can be expected to generate additional traffic. Under these conditions, congestion can be expected to increase in some areas unless steps are taken to provide additional system capacity or to reduce travel demands.
- The future land use scenario represents development expected by the Year 2010, reflecting the types and intensities of uses reflected in the Land Use Element of Santa Ana's General Plan. The forecast assumes completion of transportation network improvements detailed in Santa Ana's seven-year Capital Improvement Program (CIP), as well as other improvement projects in Orange County currently under construction or programmed for construction by 2010.
- The magnitude of future traffic demands at each of the intersections evaluated in the City was estimated with the citywide traffic forecasting model. This baseline analysis of future conditions measured peak levels of service at the study intersections assuming that travel demand characteristics and intersection lane configurations would be the same as they were in the base year. This

- If the circulation system is expected to adequately serve the future travel demands which the Land Use Plan would generate, the City will need to significantly upgrade system capacity or reduce peak travel demands. A second traffic forecast was prepared to evaluate the effects of enhancing roadway capacity by widening congested intersections and fully implementing the City's current TDM ordinance. Volumes on the Santa Ana Freeway are projected to be 419,000 north of Seventeenth Street. The most heavily traveled arterial is Bristol Street which is projected to carry volumes of 63,000 south of SR-22. Several other arterials are projected to carry volumes of over 50,000 vehicles, including MacArthur Boulevard, Fourth Street, Harbor Boulevard, and Seventeenth Street.
- With the recommended improvements, 31 of the study intersections are projected to operate at an unacceptable level of service (LOS E or F) during at least one of the peak hours. Almost all of the congestion is experienced during the PM peak hour. None of the five designated Congestion Management Plan (CMP) intersections is projected to experience capacity problems.



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