TRANSPORTATION

SECTION 4: TRANSPORTATION ELEMENT

INTRODUCTION

The Transportation Element is one of seven mandated elements of the General Plan and is intended to guide the development of the City's transportation system in a manner that is compatible with the development envisioned under the Land Use Element. A well-planned transportation system is important to the City's economic and social well-being, and the State of California has mandated the adoption of a citywide Transportation Element, since 1955. To help meet future transportation demands and achieve balanced growth, the Transportation Element includes specific goals and policies which serve as the basis for the City's Master Plan for Streets and Highways and its implementation measures.

The purpose of the Transportation Element is to provide a safe, effective, and efficient transportation system for the City. The current State mandate for a Transportation Element states that the General Plan shall include:

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

The "General Plan Guidelines" *(Section 65302 of the California Government Code)*, published by the State of California, Office of Planning and Research, suggests that the policies and plan proposals of the Transportation Element should:

- Coordinate the transportation and circulation system with planned land uses;
- Promote the efficient transport of goods and the safe and effective movement of all segments of the population;
- Make efficient use of existing transportation facilities; and,
- Protect environmental quality and promote the wise and equitable use of economic and natural resources.

A requirement of this General Plan is that all of the elements must be internally consistent. For instance, the Transportation Element must portray the roadway system needed to serve traffic generated by the land uses permitted in the Land Use Element. The Transportation Element is also associated with the Noise and Air Quality Elements since traffic forecasts are used, in conjunction with other data, to determine noise contours and air quality impacts of the General Plan land uses.

The Transportation Element is also related to the Public Safety Element and the Environmental Resource Management Element. The Safety Element addresses evacuation routes and minimum road widths to accommodate City residents in the event of a catastrophe, and the Environmental

Resource Management Element indicates the location and extent of bikeways, scenic highways and multi-use recreation trails.

To meet the City's transportation objectives, the Transportation Element addresses the improvements needed to provide adequate capacity for future land uses and development. The Element also addresses potential demand management strategies and mass transit services. Corresponding goals and policies have been adopted to ensure that all components of the circulation system will meet the needs of the City of Whittier. The Transportation Plan establishes a hierarchy of transportation routes with specific development standards described for each category of roadway.

This Transportation Element is comprised of several sections which address the major components of the circulation system. Each section contains summary information on the existing and future conditions of the system, relevant plans and programs which influence circulation in Whittier, and the goal and policy statements corresponding to each component. The *City of Whittier, General Plan Traffic Analysis*, and the Transportation Element Background Report provide background information and act as supporting documents for the Element.

While many of the transportation issues in Whittier are similar to those in other Southern California urbanized areas, the City also has specific issues and opportunities which are unique. The following summarizes the key issues and opportunities that were used as the basis for formulating Transportation Element goals and policies.

- **Transportation System** - The need for adequate capacity to serve future demands.
- **Internal Circulation** - The need for a safe, efficient roadway system, with minimum impact on residential neighborhoods.
- **Public Transportation** - The need for maximum use of alternative modes of transportation, with a special emphasis placed on public transportation.
- **Multi-Use Paths** - The need for multi-use trails as a recreational amenity and as an alternate mode of transportation.
- **Pedestrian Safety** - The need for pedestrian amenities in the form of sidewalks and walkways.
- **Street Extensions** - The need for a balance between impacts and benefits in roadway improvement projects.

Many roadways are constrained by the fact that they pass through residential areas that would be impacted by widening and increases in traffic. At the same time, there are opportunities for improving circulation on key roadways such as Whittier Boulevard. A number of these roadways

could be improved to provide additional capacity and to become an effective component of the circulation system.

In formulating the proposed roadway component of the Transportation Element, the type of land uses adjacent to individual roadways have been considered. For example, high traffic volumes along streets in residential areas can be considered detrimental, but high volumes on commercial streets are often an asset, since such activity promotes the commercial viability of the adjacent businesses. These opportunities, which exist on roadways such as Whittier Boulevard, have been a major consideration in proposing changes or improvements to the City's roadway system.

TRANSPORTATION GOALS & POLICIES

The following goals and policies have been developed to correspond to major transportation issues in Whittier. These issues include the transportation system, internal circulation, public transportation, multi-use paths, and pedestrian safety. The goals and policies are intended to address the City's concerns regarding these issues. Programs to implement these policies are outlined later in the Element.

Issue: Transportation System

The City of Whittier has a developed transportation system consisting of roadways, public transportation, bikeways, and nearby freeways. Future growth and development in the area is expected to increase traffic congestion at major intersections and during peak travel periods. Improvements to the transportation system will help facilitate the efficient movement of persons and goods in the City.

Goal 1 Provide a comprehensive transportation system for the movement of persons and goods with maximum efficiency and convenience, and with a minimum of danger, delay, and cost.

- Policy 1.1 Eliminate or reduce congestion at critical locations within the City.
- Policy 1.2 Emphasize traffic solutions that are both innovative and creative, without involving road widening projects if possible.

Issue: Internal Circulation

Circulation patterns in Whittier are defined by vehicle trips made to and from residences, businesses, and other land uses in the City, along with through traffic. By regulating circulation patterns, traffic impacts can be minimized.

Goal 2 Provide a public road system which will move private automobiles within the City safely, efficiently, and with minimum impact on residential neighborhoods.

Policy 2.1 Encourage the routing of through traffic to designated arterial streets and discourage through traffic in residential neighborhoods by employment of traffic engineering practices that are sensitive to adjacent land uses.

Policy 2.2 Designate through truck routes for the use of commercial and industrial traffic.

Policy 2.3 Provide adequate, clean, safe, and accessible off-street parking areas throughout the City.

Policy 2.4 Review current on-street parking requirements to ensure they are sensitive to safety, air quality planning, and other issues.

Policy 2.5 Establish right-of-way easements for future street widening, only where absolutely required, to improve traffic flow and to support existing and future land uses, keeping in mind other policies that focus on non-engineering solutions.

Policy 2.6 Develop alternatives to the widening of roads, and the construction of new roads that would bring more traffic through residential neighborhoods or open space areas.

Policy 2.7 Investigate methods to reduce traffic speed and volume on residential streets.

Policy 2.8 The Uptown Specific Plan will continue to be implemented, as it relates to circulation and parking in the Uptown area.

Issue: Alternative Modes of Transit

Providing alternative modes of transit and better jobs/housing balance in the area will discourage automobile use and the associated traffic congestion, air pollution, and fuel consumption. The City of Whittier supports the use and continued development of public transportation systems as an alternative to automobile use.

Goal 3 Encourage the development of a comprehensive public transportation system and alternative modes of transit.

Policy 3.1 Encourage the utilization of Dial-a-Ride, light rail transit, carpools, Whittier Transit, RTD buses, park-and-ride, and other mass transit systems through publicity programs and cost subsidies.

Policy 3.2 Promote the use of alternative forms of transportation (other than single passenger cars) to reduce congestion, traffic, noise, and air quality impacts.

Policy 3.3 Promote the use of carpools, whenever possible.

Policy 3.4 Provide pollution-free and congestion-reducing bicycle, jogging, walking, handicapped-accessible pathways, and lanes which link major destination centers within the City. (Link homes, stores, parks, schools in a network).

Policy 3.5 Promote bicycle use by establishing secure and adequate areas for the parking and storage of bicycles, showers, lockers, and other facilities.

Policy 3.6 Encourage and support the development of a rail transit system through the City which may utilize existing railroad rights-of-way and the Whittier Depot as a transportation center.

Policy 3.7 Continue the local bus system to provide rapid, convenient transportation within the City and connections with the regional bus system.

Policy 3.8 Work towards the conversion of the City's vehicle fleet to flexible-fuel vehicles or lower-emission transit alternatives.

Issue: Multi-Use Paths

In order to promote alternatives to vehicle use, the City of Whittier is encouraging the development of multi-use paths with this Transportation Element. These will provide residents with convenient opportunities for walking, biking, hiking, and other forms of personal travel.

Goal 4 Encourage the creation of a multi-use trails network in the City.

Policy 4.1 Pursue the acquisition of linear park space along existing railroad rights-of-way for use as bicycle paths, walking paths, and equestrian trails.

Policy 4.2 Designate bicycle lanes along major traffic arteries or nearby streets parallel to them, and establish bike paths on residential streets connecting major activity centers such as parks, colleges, Uptown Village, the Quad, Whittwood Mall, the new YMCA, etc.

Policy 4.3 Encourage the development of multi-use trails to connect existing and future parks and open space and utilize parks and other open spaces for bicycle paths and trails, whenever possible.

Policy 4.4 Encourage businesses to install facilities such as bicycle lockers, bicycle racks, showers, and changing areas for people using other forms of transportation to make home-to-work commutes.

Policy 4.5 Prioritize bike lane construction on a few north-south and east-west routes to serve as major bikeway corridors.

Policy 4.6 Provide adequate facilities for use by pedestrians, the handicapped, bicycles, horses, and other forms of personal transportation.

Policy 4.7 Establish guidelines for the use of skateboards, roller skates, and other personal transportation to avoid danger or conflict with other forms of transportation.

Policy 4.8 Work towards the creative recycling of railroad easements.

Issue: Pedestrian Safety

While vehicle use is the dominant form of transportation, the City recognizes that pedestrian safety should be given major consideration in planning the City's circulation system.

Goal 5 Establish a comprehensive system of sidewalks and pedestrian walkways.

Policy 5.1 Provide pedestrian safety via sidewalks and crosswalks on a priority basis throughout the City. Top priority should be given to highly-travelled streets near schools, parks, and shopping centers.

Policy 5.2 Complete gaps in the sidewalk system, with priority to those leading to parks and schools.

Policy 5.3 Plant street trees and develop rest areas to serve pedestrians.

Policy 5.4 Expand the existing system of sidewalks in the City, particularly near schools.

Issue: Street Extensions

New roadways, street extensions, and widening projects may lead to unintended effects on the natural or urban environment. In order to prevent adverse impacts, the benefits of roadway projects should be balanced with the consequences of new or expanded roadways.

Goal 6 Consider environmental and socio-economic impacts, along with the circulation benefits, of street extensions and widening projects.

Policy 6.1 Any future extension of roadways should be sensitive to existing wildlife and their habitats.

Policy 6.2 Road widening and extension projects shall be evaluated for the disturbance to existing developments, the potential loss of affordable housing and the displacement of residents, and the economic impacts on abutting businesses and land uses.

Policy 6.3 The City will evaluate potential traffic impacts (congestion, level of service, etc.) which will occur in the absence of roadway improvements (roadway extensions, widening, etc.).

IMPLEMENTATION PROGRAMS

The Transportation Land Use Goals and Policies will be implemented through a variety of programs and measures. The implementation measures for each policy are listed in Table 4-1 and are discussed in Section 10.

TABLE 4-1
TRANSPORTATION IMPLEMENTATION

Goal	Policy	Implementation Measure
1. Provide a comprehensive transportation system.	1.1 Eliminate or remove congestion at critical locations.	Levels of Service Traffic Improvements Street maintenance. Signal controls analysis Parking regulations
	1.2 Emphasize creative traffic solutions.	Road widening alternative Vehicle trip reductions
2. Provide a safe and efficient road system.	2.1 Encourage through traffic to use non-residential streets.	Traffic Improvements
	2.2 Designate through-truck routes.	Through-Truck Routes
	2.3 Provide off-street parking.	Proposed parking designs Uptown parking Parking Standards Review

TABLE 4-1
TRANSPORTATION IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
2. Provide a safe and efficient road system. (continued)	2.4 Review current on-street parking requirements.	On-street parking regulations
	2.5 Establish right-of-way easements where required.	Master Plan of Streets & Highways
	2.6 Encourage alternatives to road widening.	Road widening alternatives
	2.7 Investigate reducing traffic speed and volume on residential streets.	Traffic Safety Programs Signal controls analysis
	2.8 Implement Uptown Specific Plan.	Specific Plan Consistency Program
3. Encourage a comprehensive public transportation system and alternative modes of transit.	3.1 Encourage usage of existing programs.	Public Transit Programs
	3.2 Promote alternate forms of transportation.	Transportation Demand Management
	3.3 Promote carpools.	Carpool programs
	3.4 Provide pedestrian and bicycle paths and lanes that link major city centers.	Pedestrian and bicycle routes
	3.5 Promote bicycle use.	Identify areas lacking bicycle racks
	3.6 Encourage and support the development of rail transit system through the City.	Coordinate with LACTC & SCRTD Transportation Center Southern Pacific Railroad Depot Conversion of Railroad Right-of-Way
	3.7 Continue a local bus system.	Public Transit Program
	3.8 Use flexible fuel vehicles.	City Vehicles and Equipment

TABLE 4-1
TRANSPORTATION IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
4. Encourage multi-use trails.	4.1 Pursue acquiring linear park space.	Conversion of railroad right-of-way.
	4.2 Designate bicycle lanes and paths.	Bikeway Plan.
	4.3 Encourage multi-use trails utilizing and linking parks and open spaces.	Bikeway Plan
	4.4 Encourage businesses to install facilities for those using alternate transportation.	Incentives for developers
	4.5. Prioritize bike lane construction.	Bikeway Plan
	4.6 Provide facilities for alternate modes of transportation.	Incentives for developers Identify areas lacking bicycle racks Facilities for alternate transportation
	4.7 Establish guidelines for the use of skateboards and other personal transportation.	Handicap Access Requirements Personal Transportation
	4.8 Work toward creative recycling of railroad easements.	Conversion of railroad right-of-way Southern Pacific Railroad Depot.

TABLE 4-1 TRANSPORTATION IMPLEMENTATION (continued)		
Goal	**Policy**	**Implementation Measure**
5. Establish a comprehensive system of sidewalks and pedestrian walkways.	5.1 Provide pedestrian safety via sidewalks and crosswalks.	Sidewalk and Parkway Development and Maintenance Crosswalks Traffic Safety Programs
	5.2 Complete gaps in sidewalk system.	Sidewalk and Parkway Development and Maintenance
	5.3 Plant street trees and develop pedestrian rest areas.	Sidewalk and Parkway Development and Maintenance Facilities for Alternate Transportation
	5.4 Expand the existing sidewalk system, particularly near schools	Sidewalk and Parkway Development and Maintenance
6. Consider environmental and socio-economic impacts, along with the circulation benefits, of street extensions and widening projects.	6.1 Future extension of roadways should be sensitive to existing wildlife and their habitats.	Environmental Review Puente Hills Cooperative Planning
	6.2 Road widening and extension projects shall be evaluated for the disturbance to existing developments, loss of affordable housing and the economic impacts on abutting uses.	Environmental Review
	6.3 Evaluate traffic impacts.	Environmental Review

TRANSPORTATION PLAN

This section of the Transportation Element describes the location and extent of circulation facilities and services, and identifies general standards that apply to each. Relationships of the Plan to land use policy is then discussed, followed by implementation programs for the Element.

Roadway Designations and Standards

The roadway system in Whittier is defined using a hierarchy of roadway types which differentiate the size, function, and capacity of each roadway link. Referred to as facility- type categories, they

include five classifications ranging from *Major Arterial* with the highest capacity to *Minor* arterial, to *Secondary* arterial, to *Collector*, and *Local* street with the lowest capacity. A brief description of the optimum standards for each facility-type is provided below. Some streets may serve as a specific facility but are developed with lesser standards. This does not necessarily mean that road widening is needed, as long as the level of service is acceptable and other alternatives are available. Exhibit 4-1 includes typical cross-sections of the various categories of roadways.

Major Arterial Roadways

Major arterials are streets and highways designed to move large volumes of traffic between freeway systems, and between the freeway and the local circulation system. Intersections along major arterials are at-grade and usually signalized. Access from private property and collector streets is limited, as is on-street parking. When the major arterial is divided, median strips wide enough for left-turn pockets are provided along with extensive landscaping of the median to reduce headlight glare and to increase the overall aesthetic appearance of the street. The only major arterial in the City is Whittier Boulevard. The typical roadway right-of-way width ranges from 100 to 150 feet with a curb-to-curb width of 84 feet. Major arterials typically have up to six travel lanes and two lanes for on-street parking.

Minor Arterial Roadways

Minor arterials are designed to move traffic from major arterials to secondary streets. Intersections are usually at-grade and signalized. Median strips provide left turn pockets at major intersections. Minor arterial roadways have right-of-way widths ranging from 100 to 110 feet and curb-to-curb widths of 84 feet. This classification of roadway typically provides between four to six travel lanes and may permit on-street parking on both sides.

Secondary Streets

Secondary streets and highways are located and designed to collect and distribute traffic from major highways and other arterials to traffic destinations, such as schools, shopping centers, and employment centers. They have at-grade intersections, use traffic signals, and restrict parking where necessary. Secondary streets generally have a right-of-way width of 80 to 88 feet and a curb-to-curb width of 64 feet. They typically provide four travel lanes and may permit on-street parking.

Collector Streets

Collector streets distribute traffic from higher classified arterial streets to local access streets and to adjacent properties. Collector streets generally have right-of-way widths of between 60 to 66 feet, curb-to-curb widths of 40 feet, and provide two travel lanes.

Local Streets

Local streets are intended to be low-speed, low-volume streets that provide access to individual properties in the City. They are generally 40 feet wide from curbface to curbface with a 60-foot right-of-way. Since these streets are not intended to handle through traffic, they are often designed as loop or cul-de-sac streets to discourage traffic other than that accessing residential lots.

Circulation Plan

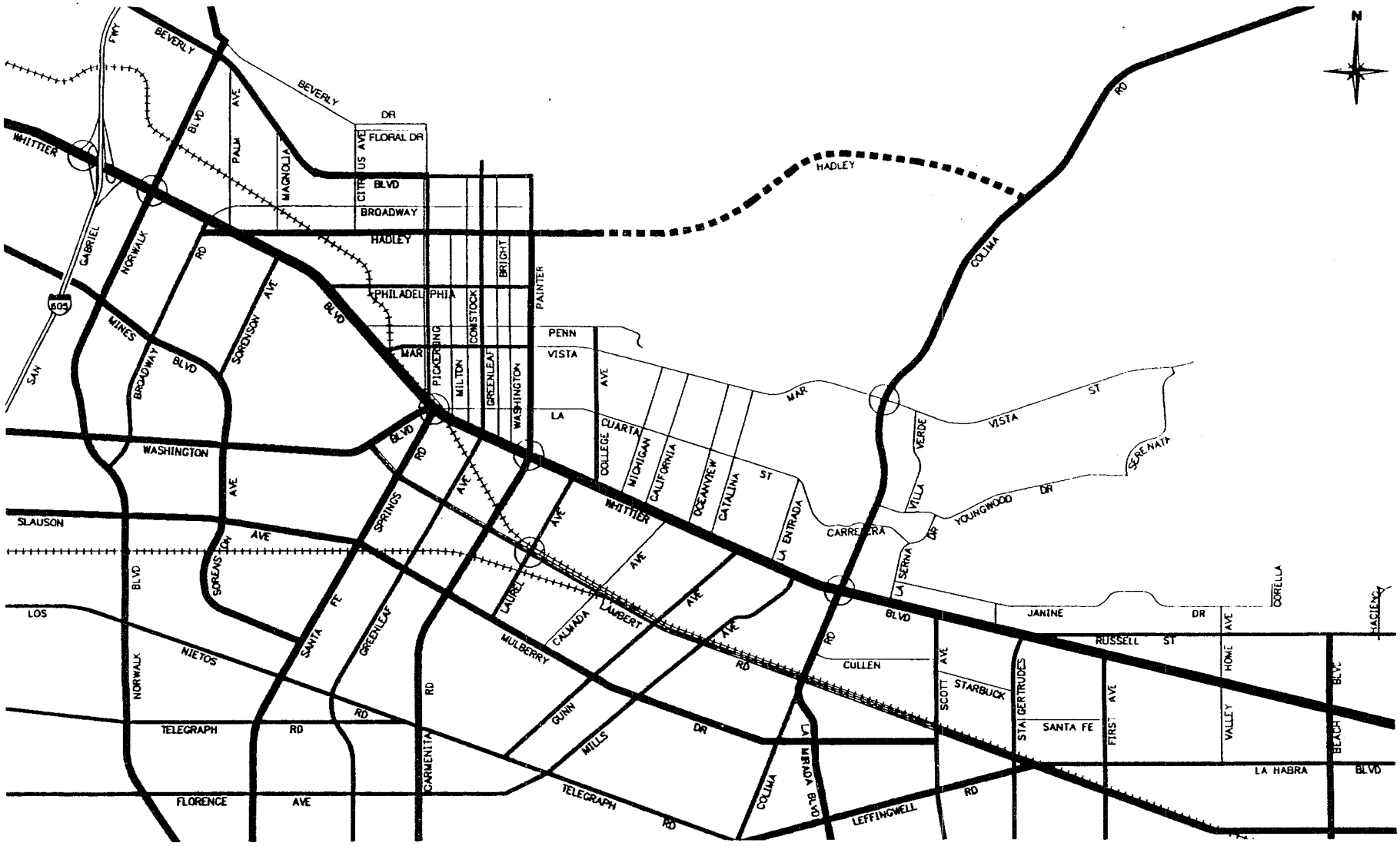
The desirable goal for every roadway in the Transportation Element is that it carry the existing and future volume of traffic at the desired level of service. To achieve this requirement, variation in design is expected, depending on factors such as the capacity needs and the adjacent land uses. Such variations will involve on-street parking, sidewalks versus pathways, bicycle lanes or paths, extra parkway or median landscape treatment, etc. For that reason, the facility-type descriptions offer general guidelines rather than detailed design specifications.

One of the requirements of the Transportation Element Circulation Plan is that it provide adequate capacity for the future traffic volumes generated by the land use plan. The traditional approach to providing additional capacity on an arterial system is to upgrade individual arterials to a higher facility-type by adding lanes. Typical examples would be upgrading a four-lane primary to a six-lane major, or a two-lane collector to a four-lane secondary. The implication is that additional capacity should be provided by additional through lanes along the length of the arterial.

An alternative approach to increasing the capacity of certain roadways is to designate them as candidates for *augmented capacity*. The augmented capacity concept addresses the fact that intersection capacity is generally more important than midblock lane capacity in determining how well the transportation *system* performs. It focuses on sections of an arterial where the link capacity is deficient and provides additional capacity without major changes to the roadway as a whole. It may not require additional right-of-way, although some widening may be necessary, particularly if additional through lanes are required. In most cases, augmented capacity involves intersection enhancement, which allows more efficient use of the existing midblock capacity.

Arterial streets, included in the Circulation Plan, are shown in Exhibit 4-1. They are classified and sized to provide sufficient capacity for projected traffic volumes. The map indicates all of the designated major arterials, secondary streets, and collector streets. Representative cross-sections for the four facility-type designations are given in Exhibit 4-2. Table 4-2 identifies major roadways in the City according to the classification system.

Intersections which are projected to require more lanes than the typical arterial cross-section are indicated as *supplemental capacity intersections*. Provision of additional lanes may require additional right-of-way beyond the standard provided within the typical arterial cross-sections.



City of Whittier

GENERAL PLAN

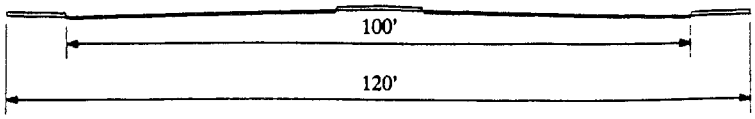
Major Arterial (6-lanes)
Minor Arterial (4-lanes)
Secondary Street – Augmented
Secondary Street
Collector Street

SUPPLEMENTAL-CAPACITY INTERSECTION

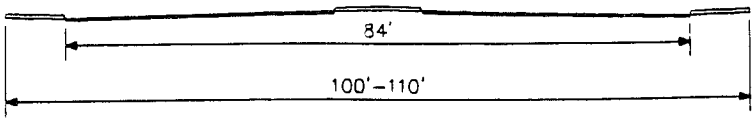
SOURCE: Austin-Foust Associates, Inc.

DAVID EVANS AND ASSOCIATES, INC.

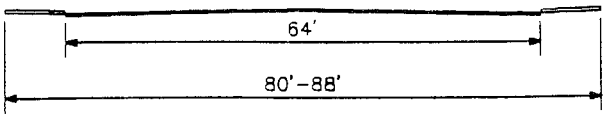
EXHIBIT 4-1
PROPOSED ARTERIAL HIGHWAY PLAN



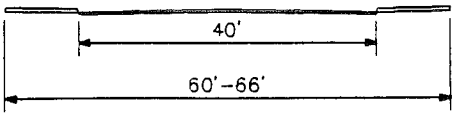
MAJOR ARTERIAL



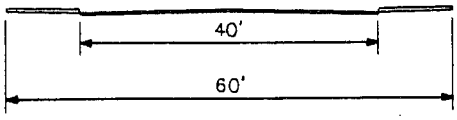
MINOR ARTERIAL



SECONDARY STREET



COLLECTOR STREET



LOCAL STREET

NOTE: Numbers represent maximum roadway widths. SOURCE: Austin-Foust Associates, Inc.

EXHIBIT 4-2
CIRCULATION SYSTEM TYPICAL CROSS SECTION

Alternatively, these additional lanes could be accommodated by removing on-street bike lanes or by reducing parkway width. These intersections will typically require 10-15 feet of right-of-way in addition to that shown for the typical arterial cross-sections. They will be the subject of detailed engineering studies to identify the most effective type of improvements.

TABLE 4-2
ROADWAY CLASSIFICATION

Roadway/Segment	Classification
Beverly Blvd:	
West of Pioneer	5 Lane Major
Pioneer to Citrus	4 Lane Minor
Citrus to Pickering	4 Lane Secondary
Pickering to Greenleaf	2 Lane Secondary
East of Greenleaf	2 Lane Local
Broadway:	
South of Whittier	4 Lane Secondary
West of Whittier	2 lane Collector
Hadley:	4 Lane Major
Philadelphia:	
Whittier to Greenleaf	4 Lane Secondary
Greenleaf to Painter	2 Lane Secondary
East of Painter	2 Lane Local
Penn:	2 Lane Collector
Mar Vista:	
West of Painter	4 Lane Secondary
East of Painter	2 Lane Collector
Washington:	
West of Whittier Blvd.	4 Lane Major
La Cuarta:	
East of Whittier	2 Lane Collector
Whittier Blvd.:	4 Lane Major
Lambert:	
Washington to Scott	4 Lane Secondary
East of Scott	4 Lane Minor
Norwalk:	
Gold Palm	2 Lane Collector
Magnolia:	2 Lane Collector
Santa Fe Springs:	4 Lane Minor

TABLE 4-2 ROADWAY CLASSIFICATION (continued)	
Roadway/Segment	**Classification**
Pickering:	
Whittier to Beverly	2 Lane Secondary
North of Beverly	2 Lane Collector
Greenleaf:	
South of Mar Vista	4 Lane Minor
North of Mar Vista	2 Lane Secondary
Painter:	
South of Hadley	4 Lane Minor
North of Hadley	2 Lane Secondary
Laurel:	2 Lane Secondary
College:	2 Lane Secondary
Gunn:	2 Lane Secondary
Mills:	4 Lane Secondary
Colima:	4 Lane Minor
Scott:	
South of Mulberry	2 Lane Secondary
Santa Gertrudes:	
South of Whittier	2 Lane Secondary
Whittier to Janine	2 Lane Collector
North of Janine	2 Lane Local
First:	4 Lane Secondary
Source: Austin-Foust Associates, 1992.	

Circulation System Improvements

The goals and policies included in this Element emphasize the importance of developing a circulation system that is capable of serving both existing and future residents while preserving community values and character. As noted in the discussion on issues and opportunities, this has been a major consideration in defining a suitable highway plan.

The detailed traffic analysis carried out for the General Plan land uses indicated that serving future traffic demands will require both physical improvements and transportation demand measures.

Whittier Boulevard

This highway is the *backbone* of Whittier's transportation system. This roadway is a through-traffic route. It serves adjacent commercial and industrial development, provides a major access route to the freeway, and serves as the primary distributor to the other segments of the circulation system. The results of the traffic analysis show clearly that if this multiple role is to continue in the future, significant improvements are needed.

The recommendations in the Transportation Element include upgrading Whittier Boulevard to a six-lane major arterial with special enhancement features, *augmenting* the capacity of selected arterials, improving critical intersections, and pursuing Transportation Demand Management (TDM) programs. Each of these are discussed below.

This Element proposes that a number of improvements be carried out as part of a comprehensive Whittier Boulevard enhancement program. Rather than just spot improvements such as parking removal, restriping, and minor widening, the more comprehensive program will upgrade Whittier Boulevard visually and operationally, providing for its many and diverse functions in a manner that combines a positive visual image with efficient and effective operational characteristics. Some of the key features to be included in this enhancement program are as follows:

- Minimum of six travel lanes, with additional continuous acceleration/ deceleration lanes (auxiliary lanes), where needed, such as near the freeway or a major intersection.

- Provision of on-street parking in selected areas by means of suitable turn-outs and parking lanes that minimize conflicts between parking vehicles and moving traffic.

- Streetscape features that will provide a common community identity theme, and will enhance the visual aspects of the roadway (landscaping, street furniture and signage, etc.)

Examples of cross-sections for Whittier Boulevard are shown in Exhibit 4-3. Along many sections, right-of-way acquisition will be required. However, by acquiring adequate property in key areas, it should be possible to more than compensate for the loss by the enhanced commercial attractiveness of the street resulting from on-street parking and the other enhancement features.

Augmented Capacity

The Transportation Element also recommends that the augmented capacity designation be added to the General Plan as a qualifier which is attached to major or secondary arterial classifications. It will thereby enable the City to determine suitable improvement plans to augment the basic capacity at individual locations, recognizing that individual locations have different traffic characteristics and, therefore, need to be addressed individually. By using the augmented capacity

designation, the General Plan has a means of showing where such improvements might be needed in the future, yet it retains the necessary flexibility for determining the most effective improvements on a location-by-location basis.

Intersection Improvements

Several locations have been designated as critical intersections, and will require improvements as future development occurs in the City. The intersection improvements described in Table 4-3 would assist in alleviating future intersection deficiencies. The improvements listed are examples of the type of upgrading needed at each location, and should be considered along with other possible capacity enhancements when actual design studies are carried out.

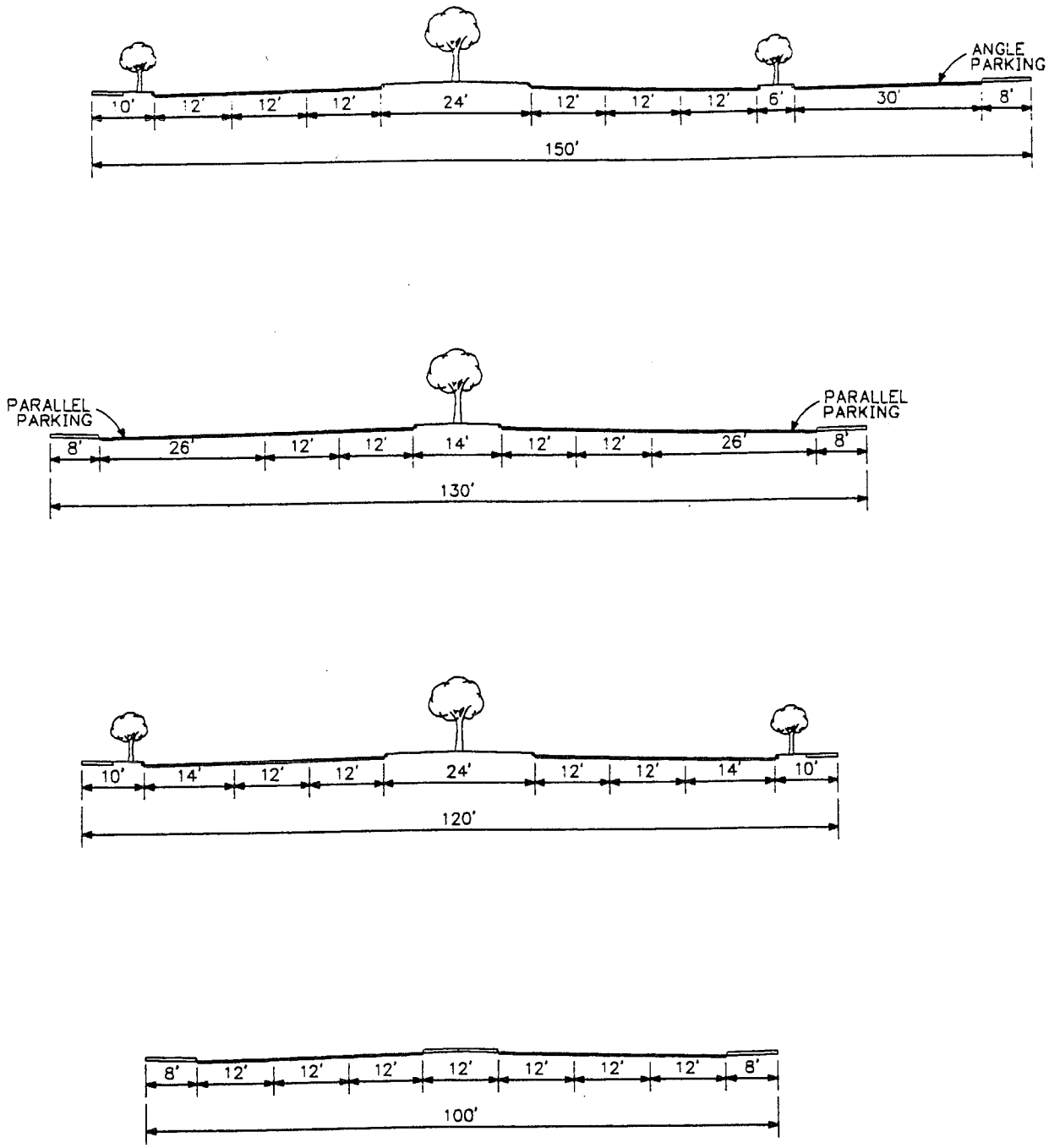
TABLE 4-3
INTERSECTION IMPROVEMENTS

Intersection	Improvement
2. I-605 SB Ramps and Whittier Blvd.	Add a third eastbound through lane.
4. Norwalk Blvd and Whittier Blvd.	Add a second southbound through and a third eastbound and westbound through.
5. Whittier, Pickering, Washington and Santa Fe Springs.	Add a second lane from Pickering to Santa Fe Springs and Whittier Blvd.
7. Painter Ave and Whittier Blvd.	Add third eastbound and westbound through lane
8. Laurel Ave and Lambert Rd.	Add northbound and southbound left-turn lanes.
9. Colima Rd and Mar Vista St.	Add a southbound right-turn lane.
10. Colima Rd and Whittier Blvd.	Add a southbound right-turn lane and second eastbound and westbound left-turn lanes.

Source: Austin-Foust Associates, 1992.

Relationship to Land Use

Future traffic volumes and highway capacity needs are directly related to future land use. The following table compares existing and buildout land use and the corresponding trip generation.



SOURCE: Austin-Foust Associates, Inc.

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 4-3
WHITTIER BLVD TYPICAL CROSS SECTIONS
MAJOR ARTERIAL

TABLE 4-4
LAND USE AND TRIP GENERATION COMPARISON

Land Use Category	Unit	Existing		Buildout		Difference	
		Amount	ADT	Amount	ADT	Amount	ADT
Residential	DU	36,437	329,239	40,936	363,095	4,499	33,856
Commercial	TSF	3,292	150,770	4,453	192,487	1,161	41,717
Office/Industrial	TSF	7,704	73,164	12,325	104,045	4,621	30,881
Other	---	2,894	38,483	3,061	52,986	167	14,503
Total			591,656		712,613		120,957

ADT = Average Daily Traffic
Source: Austin-Foust Associates, Inc. 1992.

Existing daily trip generation for the entire City is around 592,000 vehicle trips per day. Approximately 56 percent of this (329,200 ADT) is attributed to residential uses, with the remaining 44 percent generated primarily by non-residential uses. For the buildout of the proposed General Plan land uses, the comparative total ADT trip generation is 713,000 average daily trips, an increase of 20 percent. This reflects an increase of 12 percent in residential trip generation, and a 33 percent increase in non-residential trip generation.

Table 4-5 lists the future traffic volumes and volume-to-capacity (V/C) ratios of the streets within the Circulation Plan, and Exhibit 4-4 shows traffic volumes at buildout. Table 4-6 summarizes the buildout peak hour Intersection Capacity Utilization (ICU) values for future conditions when the improvements discussed above are included. Exhibit 4-4 shows traffic volumes at buildout. With the exception of Mar Vista Street, the ADT volumes are generally at level of service "D" or better (maximum V/C = .90). The critical intersection improvements listed above reduce the ICU of each location, but not always to Level of Service (LOS) "D". Either additional improvements or an effective citywide TDM program will be needed to achieve the performance criteria goals at those remaining locations.

TABLE 4-5
BUILDOUT ADT VOLUME/CAPACITY RATIOS

Location	Lanes/ Type	Capacity	Post-2010 ADT	V/C
1. Beverly Blvd w/o Pioneer	5M	50000	43000	.86
2. Beverly Blvd w/o Norwalk	4M	40000	32000	.80
3. Beverly Blvd w/o Magnolia	4M	40000	33000	.83
4. Beverly Blvd w/o Citrus	4M	40000	28000	.70
5. Beverly Blvd w/o Pickering	4S	40000	28000	.70
6. Beverly Blvd w/o Greenleaf	2S	20000	17000	.85
7. Beverly Blvd w/o Painter	2S	20000	12000	.60
8. Beverly Blvd e/o Painter	2L	10000	1000	.10

TABLE 4-5
BUILDOUT ADT VOLUME/CAPACITY RATIOS (continued)

Location	Lanes/ Type	Capacity	Post-2010 ADT	V/C
10. Broadway s/o Whittier	4S	30000	8000	.27
11. Broadway w/o Magnolia	2C	15000	8000	.53
12. Broadway w/o Citrus	2C	15000	6000	.40
13. Broadway w/o Greenleaf	2C	15000	2000	.13
14. Broadway w/o Painter	2C	15000	1000	.07
16. Hadley w/o Whittier	4M	30000	8000	.27
17. Hadley w/o Magnolia	4M	30000	13000	.43
18. Hadley w/o Citrus	4M	30000	14000	.47
19. Hadley w/o Pickering	4M	30000	16000	.53
20. Hadley w/o Greenleaf	4M	30000	14000	.47
21. Hadley w/o Painter	4M	30000	12000	.40
22. Hadley e/o Painter	4M	30000	7000	.23
23. Philadelphia e/o Whittier	4S	30000	10000	.33
24. Philadelphia e/o Pickering	2S	15000	8000	.53
25. Philadelphia e/o Greenleaf	2S	15000	6000	.40
26. Philadelphia e/o Painter	2L	10000	3000	.30
27. Penn e/o Whittier	2C	15000	4000	.27
28. Penn w/o Painter	2C	15000	5000	.33
29. Mar Vista e/o Whittier	4S	30000	7000	.23
30. Mar Vista e/o Pickering	4S	30000	14000	.47
31. Mar Vista e/o Greenleaf	4S	30000	16000	.53
32. Mar Vista e/o Painter	2C	15000	21000	1.40
33. Mar Vista e/o College	2C	15000	20000	1.33
126. Mar Vista e/o California	2C	15000	18000	1.20
34. Mar Vista e/o Catalina	2C	15000	20000	1.33
35. Mar Vista e/o Colima	2C	15000	6000	.40
36. Mar Vista e/o Villa Verde	2C	15000	2000	.13
38. Washington w/o Whittier	4M	40000	26000	.65
39. La Cuarta e/o Whittier	2C	15000	2000	.13
128. La Cuarta w/o Painter	2C	15000	6000	.40
127. La Cuarta e/o Painter	2C	15000	7000	.47
40. La Cuarta e/o College	2C	15000	7000	.47
41. La Cuarta e/o Catalina	2C	15000	6000	.40
42. La Cuarta e/o La Entrada	2C	15000	3000	.20
43. Whittier w/o 605 Fwy	4MM	40000	41000	1.03
44. Whittier e/o 605 Fwy	4MM	40000	49000	1.23
45. Whittier e/o Norwalk	4MM	40000	45000	1.13
46. Whittier e/o Five Points	4MM	40000	48000	1.20
47. Whittier e/o Painter	4MM	40000	51000	1.28
129. Whittier e/o Mills	4MM	40000	53000	1.33
123. Whittier e/o Colima	4MM	40000	55000	1.38
130. Whittier e/o Santa Gertrude	4MM	40000	38000	.95
48. Whittier w/o Valley Home	4MM	40000	35000	.88
49. Whittier e/o Valley Home	4MM	40000	35000	.88

TABLE 4-5
BUILDOUT ADT VOLUME/CAPACITY RATIOS (continued)

Location	Lanes/ Type	Capacity	Post-2010 ADT	V/C
50. Lambert e/o Washington	4S	30000	23000	.77
51. Lambert e/o Santa Fe	4S	30000	28000	.93
52. Lambert e/o Greenleaf	4S	30000	29000	.97
53. Lambert e/o Painter	4S	30000	32000	1.07
54. Lambert e/o Laurel	4S	30000	32000	1.07
55. Lambert e/o Calmada	4S	30000	32000	1.07
56. Lambert e/o Gunn	4S	30000	29000	.97
57. Lambert e/o Mills	4S	30000	33000	1.10
58. Lambert e/o Colima	4S	30000	23000	.77
59. Lambert e/o Scott	4M	40000	31000	.78
124. Lambert e/o Santa Gert	4M	40000	28000	.70
125. Lambert e/o First	4M	40000	26000	.65
60. Norwalk s/o Whittier	4M	40000	19000	.48
61. Norwalk n/o Whittier	4M	40000	16000	.40
62. Norwalk s/o Beverly Blvd	4M	40000	19000	.48
63. Palm n/o Whittier	2C	15000	1000	.07
64. Palm s/o Beverly Blvd	2C	15000	2000	.13
66. Magnolia n/o Hadley	2C	15000	10000	.67
67. Magnolia n/o Broadway	2C	15000	9000	.60
68. Magnolia n/o Beverly Blvd	2C	10000	2000	.20
69. Santa Fe n/o Mulberry	4M	40000	16000	.40
70. Santa Fe n/o Lambert	4M	40000	17000	.43
71. Pickering n/o Whittier	2S	15000	13000	.87
72. Pickering n/o Mar Vista	2S	15000	14000	.93
73. Pickering n/o Penn	2S	15000	16000	1.07
74. Pickering n/o Philadelphia	2S	15000	14000	.93
75. Pickering n/o Hadley	2S	15000	16000	1.07
76. Pickering n/o Broadway	2S	15000	15000	1.00
77. Pickering n/o Beverly Blvd	2C	15000	1000	.07
78. Greenleaf s/o Mulberry	4S	30000	13000	.43
79. Greenleaf n/o Mulberry	4S	30000	12000	.40
80. Greenleaf n/o Lambert	4S	30000	12000	.40
81. Greenleaf n/o Whittier	4S	30000	18000	.60
82. Greenleaf n/o La Cuarta	4S	30000	23000	.77
83. Greenleaf n/o Mar Vista	2S	15000	13000	.87
84. Greenleaf n/o Penn	2S	15000	8000	.53
85. Greenleaf n/o Philadelphia	2S	15000	10000	.67
86. Greenleaf n/o Hadley	2S	15000	8000	.53
87. Greenleaf n/o Broadway	2S	15000	7000	.47
88. Greenleaf n/o Beverly Blvd	2S	15000	2000	.13
90. Painter s/o Mulberry	4M	40000	32000	.80
91. Painter n/o Mulberry	4M	40000	26000	.65
92. Painter n/o Lambert	4M	40000	25000	.63
93. Painter n/o Whittier	4M	40000	31000	.78
94. Painter n/o La Cuarta	4M	40000	25000	.63
95. Painter n/o Mar Vista	4M	40000	28000	.70
96. Painter n/o Penn	4M	40000	35000	.88
97. Painter n/o Philadelphia	4M	40000	21000	.53
98. Painter n/o Hadley	2S	20000	13000	.65
99. Painter n/o Broadway	2S	20000	12000	.60

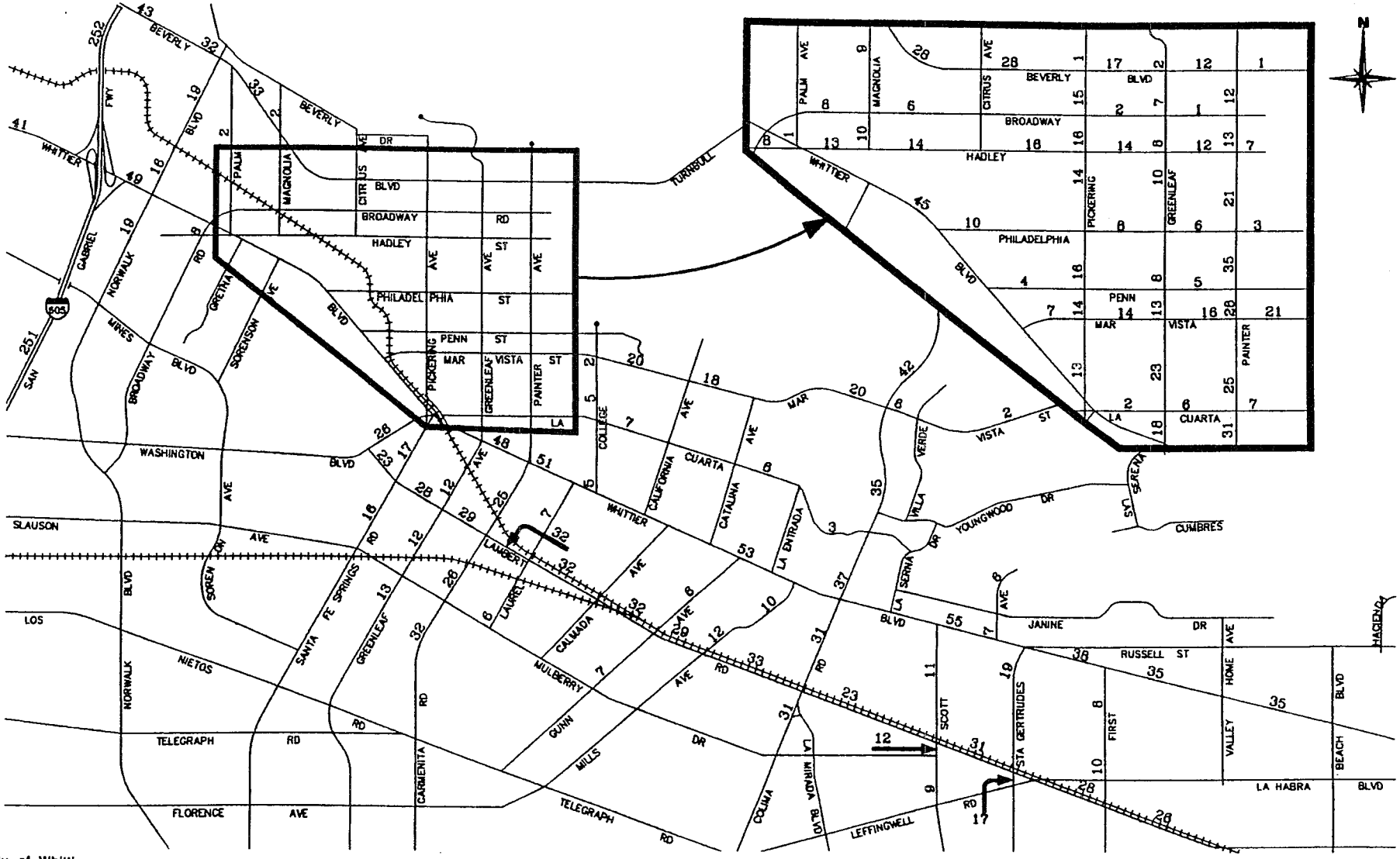
TABLE 4-5 continued
BUILDOUT ADT VOLUME/CAPACITY RATIOS

Location	Lanes/ Type	Capacity	Post-2010 ADT	V/C
100. Laurel s/o Lambert	2S	15000	6000	.40
101. Laurel s/o Whittier	2S	15000	7000	.47
102. College n/o Whittier	2S	15000	5000	.33
103. College n/o La Cuarta	2S	15000	5000	.33
104. College n/o Mar Vista	2S	15000	2000	.13
105. Gunn s/o Lambert	2S	15000	7000	.47
106. Gunn s/o Whittier	2S	15000	6000	.40
107. Mills n/o Lambert	4S	30000	12000	.40
108. Mills s/o Whittier	4S	30000	10000	.33
109. Colima s/o Lambert	4M	40000	31000	.78
110. Colima s/o Whittier	4M	40000	31000	.78
111. Colima n/o Whittier	4M	40000	37000	.93
112. Colima s/o Mar Vista	4M	40000	35000	.88
113. Colima n/o Mar Vista	4M	40000	42000	1.05
114. Scott s/o Mulberry	2S	15000	9000	.60
115. Scott s/o Lambert	2S	15000	12000	.80
116. Scott s/o Whittier	2S	15000	11000	.73
117. Santa Gert n/o Leffingwell	4S	30000	17000	.57
118. Santa Gert s/o Whittier	4S	30000	19000	.63
119. Santa Gert n/o Whittier	2C	15000	7000	.47
120. Santa Gert n/o Janine	2L	10000	6000	.60
121. First n/o Leffingwell	4S	30000	10000	.33
122. First s/o Whittier	4S	30000	8000	.27

NOTE:
- MM = Major
- 4M = 4 Lane Minor
- 2M = 2 Lane Minor
- 4S = 4 Lane Secondary
- 2S = 2 Lane Secondary
- 2C = 2 Lane Collector
- 2L = 2 Lane Local

Buildout volumes do not reflect an extension of Hadley Street to Colima Road. See text for discussion.

Source: Austin-Foust Associates, 1992.



City of Whittier

GENERAL PLAN

SOURCE: Austin-Foust Associates, Inc.

Note: Volumes do not reflect an extension of Hadley street to Colima road.

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EXHIBIT 4-4
FUTURE TRAFFIC LEVELS

TABLE 4-6
ICU SUMMARY
Buildout Volumes with Intersection Improvements

Intersection		Buildout with Existing Lanes		Buildout with Improvements	
		AM	PM	AM	PM
1.	Norwalk Blvd & Beverly Blvd	1.00	.92	--	--
2.	I-605 SB Ramps & Whittier Blvd	.90	.99	.90	.72
3.	I-605 NB Ramps & Whittier Blvd	.85	.69	--	--
4.	Norwalk Blvd & Whittier Blvd	1.24	.99	.80	.76
5.	Whittier, Pickering, Washington, and Santa Fe Springs	1.00	1.17	.87	1.06
6.	Painter Ave & Mar Vista St	.82	.97	--	--
7.	Painter Ave & Whittier Blvd	1.00	1.13	.78	.91
8.	Laurel Ave & Lambert Rd	1.18	.84	1.06	.77
9.	Colima Rd & Mar Vista Rd	1.35	.94	1.01	.94
10.	Colima Rd & Whittier Blvd	1.15	1.20	.92	.93
11.	Colima Rd & Lambert Rd	.92	1.39	--	--

Notes: 1) Level of Service ranges:
.00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F

Source: Austin-Foust Associates, Inc. 1992.

The proposed arterial highway plan presented earlier (Exhibit 4-2) is designed to carry the added trips that will occur with buildout of the General Plan land uses.

Public Transportation Plan

The plan for public transportation services is discussed in the Transportation Element Background Report. As indicated in the public transportation policies, the City will continue to coordinate with the Whittier Transit operations to identify transit needs and to improve service to meet these needs. Bus routes will be expanded as such service improvements are implemented. Potential transit routes are reviewed each year for ridership demand and operational feasibility, if implemented.

Bikeway Plan

Bikeways, equestrian trails, and parks are discussed in the Environmental Resource Management Element. The bikeway routes in Whittier are shown in Exhibit 4-5. These routes connect to other trails and paths throughout adjacent communities and Orange County. Several new bike trails have been proposed to achieve the objective of continuity with adjacent communities. The Environmental Resource Management Element (ERME) includes a bikeway plan which designates both existing and proposed bikeways.