RESOLUTION NO. 6424

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WHITTIER APPROVING AN UPDATED GENERAL PLAN (APPLICANT: CITY INITIATIVE; FILE NO. 014.GPU)

WHEREAS, In 1990, the City Council initiated a General Plan Update to bring all the elements of the General Plan into conformity with new State general plan requirements and with the changing goals and policies of the City;

WHEREAS, The Planning Commission conducted duly noticed public hearings on said General Plan Update during July of 1992 and, following the conclusion of said public hearings, and after extensive deliberation, on January 4, 1993, adopted Resolution P.C. 93-02, recommending to the City Council approval of the General Plan Update;

WHEREAS, The City Council on March 16, 1993, conducted a duly noticed de novo public hearing on the General Plan Update and Planning Commission recommendation; and

WHEREAS, The City Council has fully reviewed and carefully considered the record on the General Plan Update including the environmental impact report, staff reports, minutes of the Planning Commission, and public testimony.

THE CITY COUNCIL OF THE CITY OF WHITTIER DOES RESOLVE AS FOLLOWS:

SECTION 1. Based on substantial evidence presented to the City Council during the public hearings during 1992 and 1993 in the form of the environmental impact report, public testimony, and staff analysis; the City Council specifically finds that adoption of the Updated General Plan is necessary begin implementation of the goals and policies of the City Council.

SECTION 2. Based on the findings and conclusions set forth in Section 1 above, the City Council hereby approves the Whittier General Plan as set forth in Exhibit A, incorporated herein by this reference.

SECTION 3. That the California Environmental Quality Act has been complied with, in the form of a Environmental Impact Report for the General Plan Update, certified as to completion in accordance with the provisions of CEQA and applicable state and local guidelines, as set forth in Resolution 6423, approved and adopted August 3, 1993.

SECTION 4. The City Clerk is hereby authorized and directed to file a Notice of Determination as required by CEQA.

SECTION 5. The City Clerk shall certify to the passage and adoption hereof.

APPROVED AND ADOPTED this 3rd day of August, 1993.

BOB HENDERSON, Mayor

ATTEST:

GERTRUDE L. HILL, City Clerk

CITY OF WHITTIER)
) SS
STATE OF CALIFORNIA)

I, Gertrude L. Hill, City Clerk in and for the City of Whittier, California, hereby certify that the above and foregoing is a true and correct copy of Resolution No. 6424, adopted by the City Council of the City of Whittier in adjourned regular session, Tuesday, the 3rd day of August, 1993 and same was passed by the following vote:

AYES	J. R. Henke, M. E. Sullens, H. M. Rahder, A. P. Zolnekoff, R. L. Henderson
NOES	None
ABSENT	None

WITNESS my hand and the official seal of the City of Whittier this 4th day of August, 1993.

Gertrude L. Hill
GERTRUDE L. HILL, City Clerk

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Resolution 6424

The below-listed exhibits, which are part of the Resolution 6423, are on file in Records Storage Box 0072 in the City's Records Center:

Exhibit A

A-

WHITTIER GENERAL PLAN

EXHIBIT A
CITY COUNCIL RESOLUTION #6424

DAVID EVANS AND ASSOCIATES, INC.

WHITTIER GENERAL PLAN

DEA DAVID EVANS AND ASSOCIATES, INC.

MISSION STATEMENT

Since its founding in 1887 by a Friends Organization and the Pickering Land and Water Company, and since its incorporation on February 1898, the City of Whittier has constantly striven to enhance and improve the quality of the living environment for its citizenship.

To this end, the City Council shall seek to:

- Provide for a comprehensive policy direction for the future planning of its City and;
- Promote growth management which entails the preservation and maintenance of important ecological, historical, financial and social resources, as well as provide for opportunities necessary to entice quality and orderly development with in and about its City boundaries and;
- Continuously endeavor to improve the living environment through the acknowledgement of issues at hand and the wisdom to involve its citizenship in the definition and solution process.

People, Pride, and Progress

City of Whittier

GENERAL PLAN

City of Whittier
GENERAL PLAN

CITY COUNCIL

Present Council
Bob Henderson, Mayor
Helen McKenna Rahder, Mayor Pro-Tem
Allan Zolnekoff
Michael Sullens
Janet Henke

Past Council
Thomas K. Sawyer, Past Mayor
Robert F. Wochrmann, Past Mayor Pro-Tem
Myron Claxton

PLANNING COMMISSION

Wesley A. Murray
Charles R. Huxtable
John H. Smith, IV

Sandra Alarcón-Lopez
Rodney E. Moss

Larry Haendeges, Past Commissioner

GENERAL PLAN ADVISORY COMMITTEE

Larry Ball
Jane Gothold
Joe Holliday
Henry Pellisier
Lee Strong

Melanie Bickley
Pat Hart
John Rios
John Smith, IV
Allan Zolnekoff

City Staff

Thomas G. Mauk, City Manager
Henry C. Cunningham, Community Development, Asst. City Manager
Manny Ocampo, Asst. City Manager
Elvin H. Porter, Planning Director
Mike Burnham, Assistant Planning Director
Christopher E. Jackson, Sr., Senior Planner (Project Manager)

Consultants

David Evans and Associates, Inc.
JHA Environmental Consultants

Austin Foust Associates
SNR Company

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SECTION 1: INTRODUCTION

The *City of Whittier General Plan* is a comprehensive plan designed to direct growth and maintain the quality of the environment in the City. This Plan contains goals, policies, and standards to guide future development and change. The General Plan provides planning direction for City operations and programs and serves as a guide for public and private decision-making through goals and policies that embody the intent of all City actions. The goals and policies of the General Plan serve as the constitutional framework for the City.

Section 65302 et seq. of the California Government Code requires that a general plan contain seven elements: 1) Land Use, 2) Circulation, 3) Housing, 4) Conservation, 5) Open Space, 6) Noise, and 7) Safety. The requirements for the open space and conservation elements have been combined into the Environmental Resource Management Element in this General Plan. Aside from these elements, a Historic Resources Element and an Air Quality Element has been adopted as part of the General Plan. The following elements will comprise the Whittier General Plan in accordance with the State General Plan Guidelines:

- **Land Use Element** - The Land Use Element designates the general location, distribution, and extent of existing and proposed land uses for the City and indicates standards for population density and development intensity.

- **Housing Element** - The Housing Element evaluates the existing and projected housing needs of the City and establishes goals, policies, objectives, and programs for the preservation, improvement, and development of housing to meet local and regional housing needs.

- **Transportation Element** - The Transportation Element identifies the general location and the extent of existing and proposed roadways, highways, railroads and transit routes, terminals, and public utilities and facilities. This Element has been expanded in scope to also consider alternative means of transportation.

- **Environmental Resource Management Element** - The Environmental Resource Management Element (ERME) meets the State mandated requirements for the conservation and open space elements. The Element provides for the conservation, development, and use of natural resources including water, wildlife, minerals, and other natural resources. In addition, the element details plans and measures for the preservation of open space designed to promote the management of natural resources, outdoor recreation, and public health and safety.

- **Public Safety Element** - The Public Safety Element establishes standards and plans for the protection of the community from a variety of hazards including earthquake, flood, fire, and geologic hazards.

- **Noise Element** - The Noise Element examines the existing and future noise environment and major noise sources in the City. The Element contains an analysis

of noise problems and corresponding standards to encourage noise-compatible land uses.

- **Air Quality Element** - The Air Quality Element is not a State mandated element. Adoption of the Air Quality Management Plan for the South Coast Air Basin required cities within the basin to develop Air Quality Elements as a measure to abate air pollution. The Air Quality Element contains a discussion of local and regional air quality, stationary and mobile emission sources, and programs to reduce pollutant emissions generated within the City.

- **Historic Resources Element** - The Historic Resources Element is not a mandatory element, although its inclusion in the General Plan gives it the same force of law as the mandatory elements. This element establishes goals and programs related to cultural resources, archaeological resources, paleontological resources, and historical resources.

Together, the eight elements provide an integrated and internally consistent set of goals, policies, and implementation measures that focus on issues that are of the greatest concern to the community.

Format of General Plan

To facilitate use of the General Plan and future updates, the individual elements have a consistent format. A brief introduction to each element is provided, along with a summary of major issues and opportunities in the City. This is followed by goals and policies which embody the City's response to those issues and opportunities. The implementation matrix contains the standards, guiding principles, and implementation measures to achieve the goals and policies in the previous section. A detailed description of the implementation programs are included in the final chapter of each element. Finally, Background Reports for the Whittier General Plan are included as an appendix to the General Plan. The Background Reports contain a discussion of existing conditions in the City, as they relate to individual elements.

The General Plan has been an important component in local planning for many years, though the specific requirements have changed over time. Many of these changes involve detailed definitions or interpretations of the General Plan process. Based on the interpretations of the courts, the General Plan must conform to the following requirements:

- Each part of the General Plan must be internally consistent;

- The Zoning Map, revision to the Map, subdivision approvals, and the Zoning Ordinance must be consistent with the General Plan for all general law cities;

- All capital improvements and public works projects must be consistent with the General Plan;

- The adoption of ordinances and plans which address the individual mandatory items required in the elements is not the same as adopting an element; and

- Moratoriums may be declared on those development approvals which require findings of consistency with the General Plan.

Planning Process

The Whittier General Plan reflects the needs and objectives of residents and businesses in the City. To encourage public input for a representative plan, the City Council elected to establish a General Plan Advisory Committee (GPAC) to aid in the development of the General Plan Update. The ten members of the GPAC came from different sectors of the community and represented a wide range of issues and concerns in Whittier. They identified issues and opportunities in the City, drafted goals and policies for each General Plan Element, and refined the land use plan to respond to the goals and policies.

The Planning Commission and the City Council held joint study sessions, and community workshops were subsequently held during the formal public review period. This led to additional public participation and involvement in the development of the General Plan. A pre-public hearing community workshop also resulted in early public input which guided the development of goals and policies, and brought out issues not previously considered. Public hearings held prior to adoption of the General Plan also reflected the direction and future environment that the City wants to achieve by the year 2010. Subsequent revisions and amendments to the Whittier General Plan shall follow the procedures outlined in Government Code Section 65350 et. seq.

Issues and Opportunities

Major issues and opportunities that face the City which were considered in this General Plan update are discussed briefly below.

- Development and building activity in the City, limited by existing development, is largely dependent on land recycling and infill developments. The policy direction of the City is presently for quality and responsible growth. Future development pressures are focused on the unincorporated portions of the Puente Hills.

- There is an increasing elderly population made up of residents who have been in the City for more than ten years. At the same time, young families with children are moving into the area. This diverse population continues to challenge the City in meeting their needs and providing for their interests over the life of the plan.

- The City is primarily developed with a variety of housing types and styles and this trend is continued under the General Plan. The City is a well-balanced community in terms of supporting retail, office, and industrial development. The length of Whittier Boulevard is developed with a variety of commercial uses. Uptown Whittier is a commercial district that was once the central business district and is experiencing a rebirth following the 1987 earthquake. The Uptown shopping district presents an old village atmosphere that attracts shoppers and visitors from neighboring communities. The City hopes to preserve, maintain, and enhance its residential neighborhoods and to provide the commercial and industrial uses needed to support its neighborhoods.

- The City's long history has left many important cultural and historical structures in the area. Residents have recognized this resource and have established programs for historical preservation. Whittier also offers a variety of parks and recreational facilities. The retention and maintenance of these facilities will provide residents with continued opportunities for leisure and recreation.

- Open space and natural resources in the planning area are concentrated in the hillsides. Although only a small portion of the Puente Hills is within the City's boundaries, a major portion lies within the City's sphere of influence. The General Plan recognizes the value of the hills and encourages the City to actively participate in planning for the future of the Hills. The Environmental Resource Management Element calls for the preservation of open space and natural resources in the planning area.

- The Land Use Plan addresses the balance of residential and non-residential land uses and the prevention of land use conflicts. As a predominantly residential community, Whittier seeks to preserve the integrity of its neighborhoods while providing the necessary commercial, industrial and institutional uses to serve its residents.

- The provision of affordable housing is a local and regional concern. The City of Whittier is continuously looking for ways to promote residential development which will provide housing for low and moderate income households. Housing for special needs households is also a challenge that the City is constantly trying to meet. The Housing Plan, included in the Housing Element, outlines strategies that will be effective in meeting the housing needs of area residents.

- With growth and development, traffic becomes an increasing concern. Through traffic from neighboring communities has added to congestion along City streets. Residential streets have been experiencing more traffic as drivers look for short cuts and less crowded roadways. As new development occurs, the adequacy of existing roadways and increased traffic will continue to be a concern.

- A major factor related to public safety in the City is the Whittier fault, which runs along the northeastern section of the City, and other nearby faults. The earthquake on the Elysian Park fault in 1987 also underscored the City's vulnerability in the face of a natural disaster. As a result of this earthquake, the City is a leader in terms of readiness for future emergencies. Programs for greater public safety are being developed to address earthquake hazards, landslides, liquefaction, wildfire and urban fire, crime, and hazardous material accidents. The City also faces increased criminal and gang activity. Special programs have been developed to address and target these issues.

- Noise problems in the City range from constant roadway traffic noise to occasional loud activities and infrequent rail activity. Without specific standards and noise control measures, noise reduction is confined to individual responses to resident complaints. The Noise Element responds to existing problems through developing appropriate policies and programs to mitigate noise.

- Regional air quality continues to exceed state and federal standards and the South Coast Air Quality Management District has required cities to be more involved in air pollution control. The City of Whittier is finding ways to help improve regional and local air quality through City programs and regulations.

The following matrix (Table 1-1) lists the major issues and goals and the corresponding policies under each element. The eight General Plan elements are noted in the table heading while policies that respond to the issue/goal are noted by the policy numbers. As the matrix indicates, some policies address issues contained in several of the elements of the General Plan. The matrix helps identify interrelationships between the elements' goals, policies, and programs.

TABLE 1-1
POLICIES MATRIX

Land Use Policy #	Housing Policy #	Transportation Policy #	ERME Policy #	Air Quality Policy #	Noise Policy #	Public Safety Policy #	Historic Resource Policy #
LAND USE ELEMENT							
Land Use Compatibility: Establish an orderly, functional, and compatible pattern of land uses to guide the future growth and development of Whittier and its sphere of influence, in order to provide a high quality of life for the people.							
1.1 1.2 1.3 1.4 1.5 1.6 2.1 3.7 7.2	2.8			5.1 5.2 5.3 5.4 8.3	1.1 2.1 2.5		2.3
Residential Neighborhoods: Encourage the maintenance and development of cohesive, clean, safe, and stable residential neighborhoods in Whittier.							
1.1 1.2 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 7.1	1.1 1.2 1.3			5.3 5.4	2.3		2.1 2.2 2.3

TABLE 1-1
POLICIES MATRIX (continued)

Land Use Policy #	Housing Policy #	Transportation Policy #	ERME Policy #	Air Quality Policy #	Noise Policy #	Public Safety Policy #	Historic Resource Policy #
Commercial Development: Promote the maintenance and development of commercial and retail facilities which are convenient to residents of Whittier, provide the widest possible selection of goods and services, and supplement the City's tax base.							
1.2 3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9 7.2				5.3 5.4 9.2			
Industrial Land Uses: Encourage the maintenance and continued improvement of industrial areas which support and enhance the physical and economic well-being of Whittier.							
1.2 4.1 4.2 4.3 4.4 4.5 4.6				9.2			
Parks and Recreation: Provide a wide range of safe, attractive, and accessible recreational opportunities to meet the needs of individuals of all ages, families, community groups, and the physically challenged who live in the City.							
5.1 5.2 5.3 5.4 5.5			5.1 5.2 5.3 5.7 5.9 5.11 5.16				

TABLE 1-1
POLICIES MATRIX (continued)

Land Use Policy #	Housing Policy #	Transportation Policy #	ERME Policy #	Air Quality Policy #	Noise Policy #	Public Safety Policy #	Historic Resource Policy #
Scenic Areas and Open Space: Encourage the retention and development of parkways, median strips, green belts, bike trails, and other open landscape areas, which provide scenic variety and aesthetic improvement.							
6.1 6.2 6.3 6.4 6.5 8.1 8.2			5.16 6.1 6.2 6.3 6.4				
Mixed-Use Development: Promote mixed-use development in those areas of the City, so designated, to provide additional housing and to assist in the revitalization of commercial districts.							
7.1 7.2			5.3 5.4				
Institutional Land Uses: Preserve existing institutional land uses in the City.							
1.1 1.2 1.5 1.6 8.1 8.2							
HOUSING ELEMENT							
Maintenance of Existing Housing Stock: Maintain a supply of housing within the City of Whittier which is free from the adverse problems of structural neglect and deterioration and promote neighborhood environments which provide an excellent quality of life for all residents.							
2.2	1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 1.10 1.11						

TABLE 1-1
POLICIES MATRIX (continued)

Land Use Policy #	Housing Policy #	Transportation Policy #	ERME Policy #	Air Quality Policy #	Noise Policy #	Public Safety Policy #	Historic Resource Policy #
Housing Production: The City will work to provide opportunities to build new housing units to meet the housing needs of all economic segments of the City of Whittier.							
2.5 2.6 7.1	2.1 2.2 2.3 2.4						
Housing Assistance: Work to maintain a balanced housing stock with a range of housing available to all economic segments of Whittier and make an effort to meet the housing assistance needs of Whittier residents to the maximum extent possible.							
	3.1 3.2						
Special Needs Housing: Promote housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, color, or handicap.							
	4.1 4.2 4.3						
TRANSPORTATION ELEMENT							
Transportation System: 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.							
3.1		1.1 1.2		2.1 2.2 2.3			
Internal Circulation: Provide a public road system which will move private automobiles within the City safely, efficiently and with minimum impact on residential neighborhoods.							
	1.10	2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8		2.1 2.2 2.3 3.1 4.1		4.3	

TABLE 1-1
POLICIES MATRIX (continued)

Land Use Policy #	Housing Policy #	Transportation Policy #	ERME Policy #	Air Quality Policy #	Noise Policy #	Public Safety Policy #	Historic Resource Policy #
Alternative Modes of Transit: Encourage the development of a comprehensive public transportation system and alternative modes of transit.							
		3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8		1.1 1.2 1.3 4.2 8.5 9.4	2.1 2.2 2.3 2.4 2.5 10.3 11.1 11.3		
Multi-use Paths: Encourage the creation of a multi-use trails network in the City.							
		4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8	5.1 5.5 5.13	1.6 1.7			
Pedestrian Safety: Establish a comprehensive system of sidewalks and pedestrian walkways.							
		5.1 5.2 5.3 5.4					
Street Extensions: Consider environmental and socio-economic impacts along with the benefits of street extension and widening projects.							
		2.6 6.1 6.2 6.3					

TABLE 1-1
POLICIES MATRIX (continued)

Land Use Policy #	Housing Policy #	Transportation Policy #	ERME Policy #	Air Quality Policy #	Noise Policy #	Public Safety Policy #	Historic Resource Policy #
ENVIRONMENTAL RESOURCE MANAGEMENT ELEMENT							
Resource Conservation: Preserve or conserve natural and cultural resources that have scientific, educational, economic, aesthetic, social, and cultural value.							
1.3 4.4 6.4			1.1 1.2 1.3 1.4 1.5 3.1 3.3 4.4	6.5			2.1 2.2 2.3 2.4
Energy Conservation: The City of Whittier recognizes that current sources of energy are limited and should not be wasted. Whenever possible, especially in new development, special energy conservation measures should be included in the design of the project.							
1.3 3.8			2.1 2.2	6.1 6.2 6.3			
Open Space: Secure a safe, healthful, and wholesome environment through careful planning and preservation of open space resources.							
6.3 6.4	2.7		1.3 1.5 3.1 3.2 3.3 3.4 3.5 5.3 5.5 5.6 7.4				

TABLE 1-1
POLICIES MATRIX (continued)

Land Use Policy #	Housing Policy #	Transportation Policy #	ERME Policy #	Air Quality Policy #	Noise Policy #	Public Safety Policy #	Historic Resource Policy #
Acquisition of Open Space: Preservation of open space land will be a priority in future planning.							
5.2 6.5			3.5 4.1 4.2 4.3 5.15 7.4				
Recreation: Provide a sufficient range of recreation opportunities to meet the needs of residents of all ages and interests in the community.							
5.1 5.3 5.4 5.5	1.8		5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9 5.10 5.11 5.12 5.13 5.14 5.15 5.16				
Scenic Roadways and Corridors: Maintain amenities along major roadways which provide beauty, identity, and form to the community and to neighborhoods within the community.							
			6.1 6.2 6.3 6.4 7.3				

TABLE 1-1
POLICIES MATRIX (continued)

Land Use Policy #	Housing Policy #	Transportation Policy #	ERME Policy #	Air Quality Policy #	Noise Policy #	Public Safety Policy #	Historic Resource Policy #
Hillside Areas: Protect and preserve the hillside areas. Continue to work with property owners and governmental agencies in the preparation of land use and development plans for the Puente Hills.							
1.3	2.5		3.2 5.16 7.1 7.2 7.3 7.4	7.3			
Recycling: Promote source reduction, recycling, and waste management.							
			8.1 8.2	6.4			
AIR QUALITY ELEMENT							
Automobile Travel: Reduce emissions associated with single-occupancy automobile use.							
		3.1 3.2 3.3 3.4 3.5 3.7 4.2 4.3 4.4 4.5 4.6 4.7 5.3 5.4		1.1 1.2 1.3 1.4 1.5 1.6 1.7 5.5			
Truck Traffic: Reduce truck emissions, as much as possible.							
		2.2		2.1 2.2 2.3			
Vehicle Emissions: Reduce directly emitted vehicle emissions.							
1.3		3.8		3.1 3.2			

TABLE 1-1
POLICIES MATRIX (continued)

Land Use Policy #	Housing Policy #	Transportation Policy #	ERME Policy #	Air Quality Policy #	Noise Policy #	Public Safety Policy #	Historic Resource Policy #
Parking Management: Reduce vehicle emissions through improved parking design and management.							
		2.3 2.4		4.1 4.2 4.3 4.4 4.5			
Growth Management: Reduce emissions associated with vehicle miles traveled by providing a balance of jobs and housing.							
				5.1 5.2 5.3 5.4			
Energy Consumption: Reduce emissions associated with energy consumption.							
			2.1 2.2	6.1 6.2 6.3 6.4 6.5			
Particulate Emissions: Reduce fugitive dust emissions.							
				4.5 7.1 7.2 7.3			
Building and Operational Emissions: Reduce air pollution emissions and impacts through siting and building design.							
				8.1 8.2 8.3 8.4 8.5			

TABLE 1-1
POLICIES MATRIX (continued)

Land Use Policy #	Housing Policy #	Transportation Policy #	ERME Policy #	Air Quality Policy #	Noise Policy #	Public Safety Policy #	Historic Resource Policy #
Intergovernmental Cooperation: Maximize the effectiveness of air quality control programs through coordination with other governmental units.							
				9.1 9.2 9.3 9.4			
SAFETY ELEMENT							
Protection from Hazards: Promote an environment that is reasonably safe from hazards so that Whittier residents may conduct their daily lives free from fear and apprehension.							
1.3 2.3 4.5						1.1 1.2 1.3 1.4 1.5 2.1 2.2	
Seismic Hazards: Minimize loss of life, injuries, damage to property, and social and economic dislocation resulting from future regional or local seismic activity.							
						1.4 2.1 2.2 2.3 3.2	

TABLE 1-1
POLICIES MATRIX (continued)

Land Use Policy #	Housing Policy #	Transportation Policy #	ERME Policy #	Air Quality Policy #	Noise Policy #	Public Safety Policy #	Historic Resource Policy #
Safety Services: Maintain and enhance safety and emergency services in the City.							
						1.1 3.1 3.2 3.3 3.4 3.5 3.6 5.1 5.2 5.3 5.4 5.5	
Hazardous Materials: Develop programs to protect residents and businesses from hazardous materials contamination.							
						4.1 4.2 4.3	
Crime and Violence: Reduce crime and violence in the City.							
						3.3 3.5 5.1 5.2 5.3 5.4 5.5	
NOISE ELEMENT							
Noise Sensitive Uses: Minimize noise levels throughout the community.							
1.4	1.9 1.10				1.1 1.2		
Noise Sources: Discourage noises which are detrimental to the public health and welfare and contrary to the public interest.							
1.4					2.1 2.2 2.3		

TABLE 1-1
POLICIES MATRIX (continued)

Land Use Policy #	Housing Policy #	Transportation Policy #	ERME Policy #	Air Quality Policy #	Noise Policy #	Public Safety Policy #	Historic Resource Policy #
HISTORIC RESOURCES ELEMENT							
Historic Resource Identification: Determine the nature and extent of Whittier's physical and cultural heritage.							
							1.1 1.2
Historic Preservation: Develop an historic resources preservation program, recognizing that effective utilization of the City's historic resources supports community identity and appeal, social and economic vitality, and neighborhood stability.							
1.6 2.2			6.2				2.1 2.2 2.3 2.4
Public Awareness: Promote public awareness of Whittier's history and heritage.							
							3.1 3.2

SECTION 2: LAND USE ELEMENT

INTRODUCTION

The Land Use Element consists of goals and policies which promote orderly, quality, and responsible growth, yet at the same time, minimize the potential for land use conflicts. The Land Use Element is the single most important element of the *Whittier General Plan*, since it regulates land uses and development throughout the City. The Element's scope is far greater than that of the other elements, although it is directly related to all of them. For example, some of the issues that the Land Use Element must consider include the capacity of the existing roadway network (Transportation Element), open space and recreation areas (Environmental Resources Management Element), areas with earthquake and geologic hazards (Public Safety Element), and areas affected by major noise sources (Noise Element).

The goals and policies in the Land Use Element also serve as a guide for public and private decision-making regarding land use issues and future development. The goals acknowledge the need to respond to opportunities for growth and development in the area while being sensitive to existing land uses and the natural environment. The goals of the Land Use Element also address environmental and economic constraints related to topography, geology, flooding potential, availability of services and infrastructure, and other factors which may impact future development.

The Land Use Plan is an important part of the Land Use Element. The Plan establishes a classification of land uses, designates the general locations and distribution of these uses, and sets standards of population density and development intensity of each type of use. The plan is designed to accommodate the economic and social activities of a community through the provision of areas for these activities.

A discussion of land use trends, existing land uses, constraints to development and existing plans for development in the City is contained in the Land Use Element Background Report. A summary of the major land use issues is provided below.

- The City of Whittier is a mature urban community. Only a small portion of the City remains vacant and undeveloped. Residential land uses account for the majority of land uses with over three-fourths of the residential development devoted to single-family homes.

- Commercial areas are found along Whittier Boulevard and in the original City center - Uptown Whittier. Industrial uses are found on the western section of the City along Whittier Boulevard. Public and institutional uses include schools, parks, libraries, hospitals, the Civic Center, and the landfill. The pattern of development in the City reflects a time predating the automobile.

- The population of the City of Whittier has shown modest growth during the past few decades and, in fact, much of the growth has resulted from the expansion of the City boundaries (i.e. annexation).

- Future development in Whittier must be sensitive to the presence of the Whittier fault on the northeastern section of the City. Also, very little land remains undeveloped, except for the hillside areas. Other concerns on future development include the age and capacity of existing infrastructure (water lines, sewer lines, storm drainage, etc.) to handle additional loads. The City is continuously upgrading infrastructure facilities to meet current demands.

- The City seeks to maintain the character of existing residential neighborhoods and to revitalize underutilized commercial and industrial uses. A healthy balance of land uses can promote land use compatibility, economic development and community identity. There is a continuing concern for property maintenance and the need for quality development.

- The Puente Hills is a major concern for residents. Most of the hills are outside the City's corporate boundaries, but within the City's sphere of influence. The Hills provide aesthetic, safety, ecological and open space values to the City. The City desires to actively participate in future planning efforts for the Hills and to explore ways to preserve them.

- The City's sphere of influence includes areas which represent opportunities for joint planning. These opportunities include the Puente Hills, the Los Nietos community and adjacent unincorporated county areas. The City will continue to explore its options in annexing the areas within its designated sphere of influence.

LAND USE GOALS AND POLICIES

The following goals and policies have been developed to correspond to major land use issues in Whittier. These issues of concern include land use compatibility, residential, commercial and industrial uses, parks, and open space areas. A brief discussion of each issue is provided below and it is followed by the supporting goals and policies which will resolve the City's concerns. Programs to implement these policies are outlined at the end of the element and are described in detail in Section 10.

Issue: Land Use Compatibility

Certain developments and land uses may create negative impacts on adjacent uses for a variety of reasons. These uses may have a density or land use type different from nearby development. They may have environmental impacts that cannot be fully mitigated or they may discourage the

maintenance and rehabilitation of the area. The City of Whittier seeks to eliminate existing problem uses and to prevent the creation of incompatible land uses in the City.

Goal 1 Establish an orderly, functional, and compatible pattern of land uses to guide the future growth and development of Whittier and its sphere of influence, in order to provide a high quality of life for the people.

Policy 1.1 Encourage land uses in the planning area that contribute to making Whittier a desirable community in which to live.

Policy 1.2 Encourage development in the City that is compatible with surrounding uses, provides for civic improvements, increases the potential for future investment, and fulfills the need for high quality residential areas and shopping and employment centers.

Policy 1.3 Conduct and carry out appropriate environmental review for new development and substantial renovation of existing developments.

Policy 1.4 Establish guidelines for land use compatibility in all city ordinances and regulations.

Policy 1.5 Infill development must be sensitive to adjacent land uses to promote compatibility between the new development and existing uses.

Policy 1.6 Promote adaptive re-use of historic structures, where appropriate.

Issue: Residential Neighborhoods

The City of Whittier is developed primarily with residential uses. It is important that residents enjoy an environment with services and amenities that enhance community life and promote public health and safety.

Goal 2 Develop and maintain cohesive, clean, safe, and stable residential neighborhoods in Whittier.

Policy 2.1 Provide city programs to encourage neighborhood or community beautification, safety, and improvement, and continue to encourage Whittier residents to participate and take pride in their neighborhoods and their community.

Policy 2.2 Continue to develop and implement, where appropriate, programs to promote the preservation and rehabilitation of existing housing units.

Policy 2.3 Promote a high degree of personal safety in all residential neighborhoods through design that is sensitive to public safety.

Policy 2.4 Preserve the character of existing neighborhoods and ensure that future residential development is compatible with the surrounding area and the City as a whole.

Policy 2.5 Promote the development of quality housing at a variety of densities, with consideration for the environment, aesthetics, and the need for maintaining and expanding the infrastructure's capacity.

Policy 2.6 Encourage the assemblage of lots to promote the efficient use of land in areas where multiple family housing is permitted, to facilitate the development of high quality housing.

Policy 2.7 Consider the capacity of existing infrastructure and the potential demand for public services in future planning and review of new development.

Policy 2.8 Continue to implement ongoing planning efforts and continue to work with private groups and organizations in the implementation of development plans.

Issue: Commercial Development

Commercial uses in the City provide goods and services to residential neighborhoods in the area. They also serve as an economic base for the City providing revenue and employment. The maintenance and development of commercial areas in Whittier is necessary to support other uses.

Goal 3 Promote the development and maintenance of retail and service facilities which are convenient to residents of Whittier, provide the widest possible selection of goods and services, and supplement the City's tax base.

Policy 3.1 Promote convenient access and adequate parking areas in all commercial and retail developments and districts.

Policy 3.2 Encourage the grouping of commercial activities to facilitate access and provide beneficial concentrations of businesses.

Policy 3.3 Improve, protect, and maintain the visual and aesthetic qualities of commercial areas through the control of design, signs, parking, landscaping, and other factors.

Policy 3.4 Discourage large temporary signs and signs that are not directly related to existing commercial buildings (billboards and off-site signs).

Policy 3.5 Encourage the establishment and retention of businesses which provide customers with a variety of high quality goods, reasonable prices and outstanding service.

Policy 3.6 Encourage the development and retention of attractive, safe, and comfortable business buildings and commercial districts.

Policy 3.7 Require high quality design in new commercial development including the use of buffer zones (such as parks, landscaped areas, walls, and high density residential development) between commercial and single family developments. Encourage the landscaping of blank walls to improve their appearance and to discourage vandalism.

Policy 3.8 Encourage building design that promotes energy conservation and efficiency.

Policy 3.9 Consider the capacity of existing infrastructure and the potential demand for public services in future planning and review of new development.

Issue: Industrial Land Uses

While industrial areas in Whittier are limited, they serve as major employment centers and tax generators. The increasing regulation of industrial processes has led to the reduction in environmental hazards that accompany older industrial uses. The City seeks to maintain its industrial base, with consideration for its potential risks.

Goal 4 Encourage the maintenance and continued improvement of industrial areas which support and enhance the physical and economic well-being of Whittier.

Policy 4.1 Encourage new industrial development to be sensitive to adjacent or nearby properties and to be compatible with the environment.

Policy 4.2 Improve the City's industrial and employment base to meet the needs of Whittier.

Policy 4.3 Require high quality design in new industrial developments and promote the use of buffer zones between industrial areas and sensitive uses such as schools, parks, or residential areas.

Policy 4.4 The City will cooperate with county, state, and federal agencies in protecting local groundwater resources, air quality, and other environmental resources from the adverse effects of industrial development.

Policy 4.5 Encourage industrial development to exceed development standards.

Policy 4.6 Consider the capacity of existing infrastructure and the potential demand for public services in future planning and review of new development.

Issue: Parks and Recreation

Parks and recreational facilities provide Whittier residents with a variety of opportunities for leisure, recreation, and physical well-being. They enhance the quality of residential neighborhoods and create a sense of community.

Goal 5 Provide a wide range of safe, attractive and accessible recreational opportunities to meet the needs of individuals of all ages, families, community groups, and the physically challenged who live in the City.

Policy 5.1 Develop and retain parks and recreation areas throughout the City to serve the greatest number of residents.

Policy 5.2 Acquire appropriate sites for recreational activities and land for urban or wilderness parks when possible.

Policy 5.3 Develop parks and recreational facilities to complement and support other community facilities.

Policy 5.4 Develop park facilities in areas where there are identified deficiencies.

Policy 5.5 Avoid the destruction of an existing park, unless another park of larger size is created in the immediate vicinity.

Issue: Scenic Areas and Open Space

The City of Whittier is an attractive place to live and work due to the amenities in the area. The preservation of these resources is necessary for recreation, safety, and environmental quality.

Goal 6 Encourage the retention and development of parkways, median strips, green belts, bike trails, and other open landscape areas, which provide scenic variety and aesthetic improvement.

Policy 6.1 Promote the retention and development of landscaped buffer zones along major thoroughfares, streets, and railroad lines.

Policy 6.2 Promote the maintenance and development of sidewalks and planted parkways along Whittier's streets and promote the planting and maintenance of parkway trees.

Policy 6.3 Promote the conversion of both active and abandoned railroad right-of-way to multi-use trails, greenbelts, and other recreation open space uses, where appropriate.

Policy 6.4 Promote the preservation of important ecological resources within the planning area through a variety of means, including setting aside areas for open space, trails, and recreational uses.

Policy 6.5 Work with property owners and government agencies to promote the preservation of as much of the Puente Hills as possible, for both passive and active recreation.

Issue: Mixed-Use Development

Goal 7 Promote mixed-use development in those areas of the City, so designated, to provide additional housing and to assist in the revitalization of commercial districts.

Policy 7.1 Encourage housing development with commercial uses in the designated Urban Design Districts where lots are underutilized or contain deteriorating commercial and industrial developments.

Policy 7.2 Encourage the development of "mixed-use" projects that include commercial and residential uses in areas with excess retail space, including areas along South Greenleaf, Penn Street, Philadelphia Street, Hadley Street, and Whittier Boulevard and ensure that the design and signage is sensitive to surrounding uses.

Issue: Institutional Land Uses

Goal 8 Preserve existing institutional land uses in the City.

Policy 8.1 Continue to preserve and maintain institutional uses to serve the current and future residents in the City.

Policy 8.2 Work with institutions (churches, schools, etc.) to support the services they provide and ensure that institutional developments are compatible with the community.

IMPLEMENTATION PROGRAMS

The Land Use Goals and Policies and Land Use Plan will be implemented through a variety of programs and measures. Table 2-1 identifies the implementation measures that correspond to each land use policy. Implementation programs are discussed in Section 10.

TABLE 2-1
LAND USE IMPLEMENTATION

Goal	Policy	Implementation Measure
1. Establishment of Compatible Land Uses	1.1 Encourage desirable land uses.	General Plan & Zoning Ordinance Consistency Urban Design District Non-conforming Uses Abatement
	1.2 Encourage development that is compatible with surrounding uses.	Design Review Pre-application Meetings Redevelopment Programs Annexation Program
	1.3 Conduct appropriate environmental review for new development.	Environmental Review Program Mitigation Monitoring Program
	1.4 Establish guidelines for land use compatibility	General Plan & Zoning Ordinance Consistency Program
	1.5 Promote compatibility between infill development and existing land uses.	Infill Development Design Review
	1.6 Promote adaptive reuse of historic structures.	Standards for Adaptive Reuse
2. Maintenance and Development of Residential Neighborhoods	2.1 Provide neighborhood programs.	Community Participation Beautification Program
	2.2 Promote housing preservation and rehabilitation.	Housing Rehabilitation Program Redevelopment Programs
	2.3 Promote personal safety.	Police and Fire Department Review
	2.4 Preserve the existing neighborhood character.	General Plan & Zoning Ordinance Consistency Design Review

TABLE 2-1
LAND USE IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
2. Maintenance and Development of Residential Neighborhoods (continued)	2.5 Encourage development of quality housing.	General Plan & Zoning Ordinance Consistency Environmental Review Program
	2.6 Encourage lot assembly.	Incentives to Create Larger Lots Support Organizations
	2.7 Require new development to consider infrastructure capacity and demand on public services.	Environmental Review Service Commitment Service Capacity Monitoring
	2.8 Implement ongoing planning efforts.	Specific Plan Consistency Program
3. Maintenance and development of commercial and retail uses.	3.1 Promote convenient access and parking areas.	Commercial Development Standards Parking Standards Review
	3.2 Encourage the grouping of commercial uses.	General Plan & Zoning Ordinance Consistency
	3.3 Protect the aesthetic qualities of commercial areas.	Redevelopment Programs Design Review
	3.4 Discourage large temporary and offsite signs.	Sign Ordinance Review
	3.5 Encourage a variety of commercial uses.	Support Organizations
	3.6 Encourage attractive, safe, comfortable commercial developments.	Redevelopment Programs
	3.7 Encourage the use of buffers and landscaping.	Design Review Landscaping and Land Use Buffers
	3.8 Promote energy conservation.	Energy Conservation
	3.9 Require new development to consider infrastructure capacity and demand on public services.	Environmental Review Service Commitment Service Capacity Monitoring

TABLE 2-1
LAND USE IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
4. Continued improvement of industrial areas.	4.1 Encourage industrial developments to be compatible with adjacent uses.	Environmental Review Design Review Industrial Rehabilitation
	4.2 Encourage industrial diversification in Whittier.	Support Organizations Promotion of Local Industries
	4.3 Require high quality building design and promote the use of buffers.	Landscaping and Land Use Buffers Environmental Review
	4.4 Cooperate with other agencies in limiting adverse impacts of industrial development	Environmental Review Inter-agency Coordination
	4.5 Require industrial development to meet or exceed safety standards.	Environmental Review Design Review Inter-agency Coordination
	4.6 Require new development to consider infrastructure capacity and demand on public services.	Environmental Review Service Commitment Service Capacity Monitoring
5. Provision of Parks and Recreational Opportunities	5.1 Encourage development and retention of parks and recreation areas.	General Plan & Zoning Ordinance Consistency Parks Needs Study Update
	5.2 Purchase new park sites whenever possible.	Parks Needs Study Update Park Fees
	5.3 Development parks and recreation facilities to complement other community facilities.	Parks Needs Study Update
	5.4 Encourage park development to address deficiencies.	Parks Needs Study Update Handicap Access Requirements
	5.5 Discourage the destruction of existing parks.	Parks Needs Study Update Deed Restriction

TABLE 2-1
LAND USE IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
6. Retention and development of scenic areas and open space.	6.1 Encourage landscaped buffer zones.	Landscaping & Land Use Buffers
	6.2 Maintain and develop sidewalks and parkways.	Sidewalk and Parkway Development and Maintenance Program
	6.3 Promote conversion of railroad rights-of-way to multi-use trails.	Parks Needs Study Update Conversion of Railroad Rights-of-Way
	6.4 Preserve ecological resources in planning area.	Puente Hills Cooperative Planning Program Open Space Acquisition
	6.5 Work with involved individuals and agencies to promote preservation of Puente Hills.	Puente Hills Cooperative Planning Program Open Space Acquisition
7. Promote mixed-use development.	7.1 Encourage new housing in mixed-use districts.	Underutilized Lots General Plan & Zoning Ordinance Consistency
	7.2 Encourage the development of mixed-use districts.	Redevelopment Programs General Plan & Zoning Ordinance Consistency
8. Preserve Institutional Uses.	8.1 Preserve and maintain institutional uses.	General Plan & Zoning Ordinance Consistency
	8.2 Work with Whittier College to preserve its campus.	Specific Plan Consistency Program General Plan & Zoning Ordinance Consistency

LAND USE PLAN

The Land Use Plan is the primary tool for implementing the goals and policies of the Land Use Element. The Plan indicates the location and extent of permitted development in the City to promote compatible development and the maintenance of environmental amenities. The Land Use Plan also reflects the goals and policies in the Land Use Element. Because the City is largely urbanized, the Plan corresponds closely to existing land uses and development throughout the City.

The Whittier Land Use Plan will be the primary tool for implementing the land use goals and policies. The Land Use Plan consists of a map showing land use designations over the planning area and general standards for development permitted in specific areas of the City. State law

requires that these categories also describe standards for *development intensity* and *population density*. This ensures that citizens, staff, and policy makers clearly understand the implications of the Land Use Plan on both existing and future development.

Development intensity refers to the size or degree of development possible within a land use designation. Development intensity standards may use a ratio of a building's floor area to the total lot area (referred to as a floor area ratio), the number of dwelling units per acre, traffic generation, or a number of other factors. In the Whittier General Plan, development intensity is measured using floor area ratios for nonresidential development and units per acre densities for residential development.

Population density applies generally to residential land use designations and is expressed as the number of persons per acre. The population density standard is often derived by multiplying the number of housing units per acre permitted within a particular land use designation by the average household size in the City.

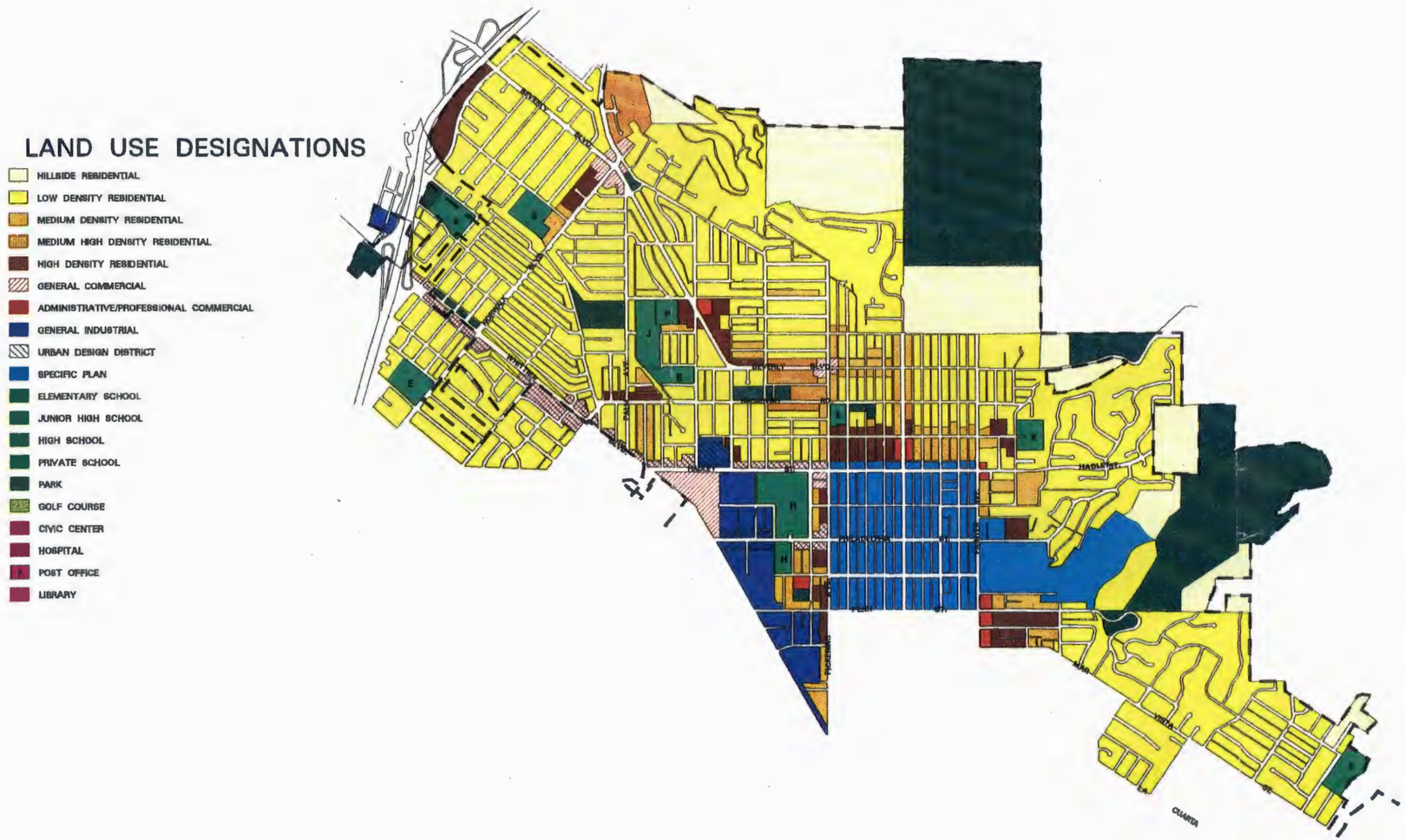
The land use designations are described in greater detail in the following sections. The General Plan land use map is shown in Exhibits 2-1 and 2-2.

Residential Land Use Designations and Standards

Residential land use designations apply to the various densities of residential developments in the City. Generally, higher density areas are located near the city center and low density areas are located on the hillsides. The residential land use designations are summarized in Table 2-2.

- **Hillside Residential** - The Hillside Residential designation applies to large lot development. Approximately 314.27 acres (3.9 percent) of the City is designated as Hillside Residential. This designation will allow development of up to three dwelling units per acre. The population density within these areas would be 9 persons per acre, assuming an average household size of 2.7 persons per household. (The average household size reflects 1990 Census estimates.) This designation corresponds to the Hillside Residential (H-R) Zone of the City Zoning Ordinance.

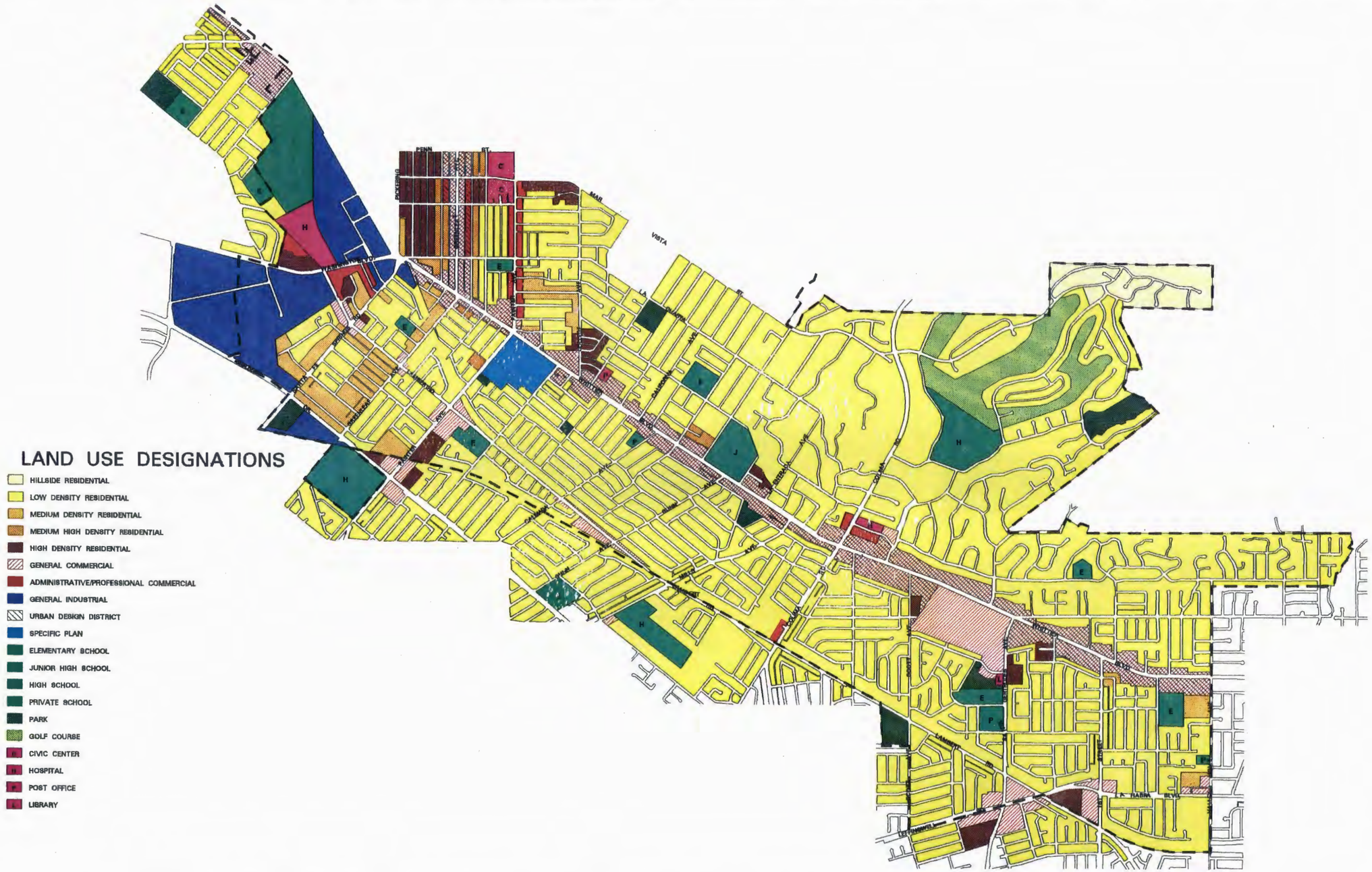
- **Low Density Residential** - The Low Density Residential designation refers to single-family development which is found throughout Whittier. Generally, this designation characterizes existing residential neighborhoods in the City. This designation will allow developments with maximum densities of 6 or 7 units per acre, depending on the underlying zoning, lot configuration, and development standards. The Low Density Residential designation covers the majority of residential neighborhoods in Whittier or approximately 3,785.87 acres (47.3 percent). The population density within these neighborhoods may average up to 19 persons per acre, with an average household size of 2.7 persons per household. The Low Density Residential designation directly



DEA DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

EXHIBIT 2-1
LAND USE PLAN
(NORTHWEST AREA)



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

EXHIBIT 2-2
LAND USE PLAN
(SOUTHEAST AREA)

corresponds to the Low-Density Residential (R-1) Zone and includes the Residential (R-E) Zone.

- **Medium Density Residential** - The Medium Density Residential designation applies to areas of the City with densities between 8 dwelling units per acre to 15 dwelling units per acre. Housing within this density range includes a mix of single-family detached and attached units, duplex, triplex, and garden apartments. The Medium Density Residential designation applies to approximately 225.27 acres (2.8 percent) of the City. The maximum population density in these areas is 41 persons per acre, assuming an average of 2.7 persons per household. This designation corresponds to the Medium Density Residential (R-2) Zone.

- **Medium-High Density Residential** - The Medium-High Density Residential designation reflects areas with housing densities of 16 dwelling units per acre to 25 dwelling units per acre. Developments within this designation include multi-family projects, apartment, condominiums, and planned unit developments. The Medium-High Density Residential designation covers approximately 65.90 acres (0.8 percent) of the City. The maximum population density within these areas is 68 persons per acre. The Medium-High Density Residential designation corresponds to the Medium-High Density Residential (R-3) Zone.

- **High Density Residential** - The High Density Residential designation applies to those areas with multi-family developments and special housing projects with densities of 26 dwelling units per acre to 35 dwelling units per acre. Approximately 184.34 acres, or 2.3 percent of the City, is designated as High Density Residential. The population density in these areas may reach 95 persons per acre (at 2.7 persons per household). This land use designation corresponds to the High Density Residential (R-4) Zone.

TABLE 2-2
SUMMARY OF GENERAL PLAN RESIDENTIAL DESIGNATIONS

Land Use Designation	Maximum Density	Permitted Developments	Corresponding Zone District
Hillside Residential	2 units/acre	Planned residential clusters of single-family units and/or multi-family units	H-R
Low Density Residential	6 to 7 units/acre	Single-family detached units	R-E R-1
Medium Density Residential	15 units/acre	Townhouses, duplex, triplex, garden apartments, and multi-family detached units	R-2

TABLE 2-2 SUMMARY OF GENERAL PLAN RESIDENTIAL DESIGNATIONS (continued)			
Land Use Designation	**Maximum Density**	**Permitted Developments**	**Corresponding Zone District**
Medium-High Density Residential	25 units/acre	Multi-family units, condominiums, Planned Unit Developments	R-3
High Density Residential	35 units/acre	Multi-family units, special housing projects	R-4

Commercial Designations and Standards

Commercial designations in the Plan reflect the different types of commercial land uses: General Commercial, and Administrative and Professional Commercial. Commercial designations are described below and are summarized in Table 2-3.

- **General Commercial** - The General Commercial designation refers to retail, trade and service uses, including highway-related commercial uses, shopping centers, business districts and commercial nodes. Approximately 411.51 acres of the City are designated as General Commercial. The average floor area ratio of developments in these areas is 0.25 to 0.50. This designation corresponds to the C-1, C-2, and C-3 Zones of the Zoning Ordinance.

- **Administrative and Professional Commercial** - The Administrative and Professional Commercial designation applies to areas developed with offices serving business, medical, professional, and administrative uses. This designation permits an average floor area ratio (FAR) of 0.50 to 2.0. Approximately 58.41 acres of the City (0.7 percent) are designated Administrative and Professional Commercial. This designation corresponds directly to the Commercial Office (C-O) and Light Commercial (C-1) Zones.

TABLE 2-3 SUMMARY OF GENERAL PLAN COMMERCIAL DESIGNATIONS			
Land Use Designation	**Maximum Density Average FAR**	**Permitted Developments**	**Corresponding Zone District**
General Commercial	FAR 0.25 to 2.0	Retail, trade and service uses, business district, commercial corridor, sub-regional shopping centers, convenience centers, highway-related commercial uses, high density residential uses	C-1 C-2 C-3

TABLE 2-3
SUMMARY OF GENERAL PLAN COMMERCIAL DESIGNATIONS (continued)

Land Use Designation	Maximum Density Average FAR	Permitted Developments	Corresponding Zone District
Administrative and Professional Commercial	FAR 0.5 to 2.0	Business, medical, professional and administrative offices, special housing projects, high density residential uses	C-1 C-O

Urban Design District Overlay

This land use designation promotes the revitalization and improvement in four key corridors within the City. The designation goes beyond the Scenic Corridor designations discussed in the Environmental Resource Management Element which focuses on landscaping and the preservation and maintenance of amenities. The Urban Design District applies to portions of Whittier Boulevard, Greenleaf Avenue, Philadelphia Street, and Hadley Street. It promotes specific urban design measures and guidelines and calls for specific types of land uses and accompanying development standards tailored for each use. This designation does not change the maximum density allowed by the underlying zoning designations though the overlay expands the development that is currently permitted under the base zone designations. Table 2-4 summarizes this land use designation and the actions associated with the implementation of the overlay designation for each of the districts.

The Urban Design District designation applies to the following:

- **Whittier Boulevard Urban Design District** - This district generally extends along the entire length of Whittier Boulevard and applies to a majority of parcels where infill or design guidelines are desirable. The Plan calls for design guidelines or a specific plan to be prepared and adopted to provide direction related to architectural design, site planning, signage, and streetscape treatments along Whittier Boulevard. The Whittier Boulevard Urban Design District designation will also permit mixed-use developments (which may include a mix of residential and commercial land uses on a single parcel) once design standards have been prepared. In other areas, the intent is to provide for the establishment of commercial nodes and centers to more efficiently utilize the available land. Existing residential and public land uses located along the corridor will not be affected by this designation.

- **Hadley Street Urban Design District** - This designation promotes the upgrading of Hadley Street between Whittier Boulevard and the Uptown area. The Plan calls for the preparation of design guidelines or a specific plan to establish direction concerning the nature and extent of development desirable in the future. The General Plan envisions

the need to establish design guidelines for this key roadway while promoting mixed-use (residential/commercial) and residential development in those areas where underutilized properties are found.

- **South Greenleaf Urban Design District** - This designation applies to that portion of Greenleaf Avenue between Uptown and Whittier Boulevard. This area is included within the South Greenleaf Redevelopment Project Area and has been the focus of planning efforts related to improved urban design. The Overlay designation, as it applies to this corridor, also permits mixed-use development (residential/commercial) and residential development. Commercial development is also permitted under the base zoning.

- **Philadelphia Street Urban Design District** - This street is a highly visible link between Whittier Boulevard and the Uptown Area. The overlay designation, as it applies to this corridor, focuses on improving the corridor's appearance through design guidelines. The average permitted density in these areas shall be regulated by the density allowed by the underlying designation.

TABLE 2-4
SUMMARY OF URBAN DESIGN DISTRICT DESIGNATION

District Name	Maximum Average Density	Applicable Standards
Whittier Boulevard	FAR 0.25 to 2.0 (with the floor area for the residential use calculated as part of the FAR)	Specific Plan or Design Guidelines will be prepared. Base zoning will remain unchanged along corridor. Commercially zoned parcels may be redeveloped in mixed-use residential/commercial on same parcel.
Hadley Street	FAR 0.25 to 2.0 (with the floor area for the residential use calculated as part of the FAR)	Specific Plan or Design Guidelines will be prepared. Base zoning will remain unchanged along corridor. Commercially zoned parcels may be redeveloped in mixed-use residential/commercial on same parcel.

TABLE 2-4 SUMMARY OF URBAN DESIGN DISTRICT DESIGNATION (continued)		
District Name	**Maximum Average Density**	**Applicable Standards**
South Greenleaf Avenue	FAR 0.25 to 2.0 (with the floor area for the residential use calculated as part of the FAR)	Specific Plan or Design Guidelines will be prepared. Base zoning will remain unchanged along corridor. Commercially zoned parcels may be redeveloped in mixed-use residential/commercial on same parcel.
Philadelphia Street	Base zoning applies	Design guidelines only.

Industrial Designation

The General Industrial designation refers to all industrial and manufacturing land uses, including warehouses. In Whittier, approximately 262.28 acres (3.3 percent of the City's total land area) are designated as General Industrial. The average floor area ratio of these areas is 0.6 to 1.0. The General Industrial designation corresponds to the Manufacturing (M) Zone in the Zoning Ordinance. The standards are summarized in Table 2-5.

TABLE 2-5 SUMMARY OF GENERAL PLAN INDUSTRIAL DESIGNATION			
Land Use Designation	**Average FAR**	**Permitted Developments**	**Corresponding Zone District**
General Industrial	FAR 0.6 to 1.0	Warehouses, light and heavy industrial uses	M

Public and Quasi-Public Designations

Public and Quasi-Public designations, (summarized in Table 2-6) apply to land uses operated and maintained for public administration, and welfare. These land uses include public elementary, junior high and high schools, private schools, parks, the Civic Center, hospitals, post offices, libraries, and the golf course. The Land Use Plan identifies the different institutional and public uses in the City. Approximately 1,232.26 acres of the City (15.4 percent) is designated for the different Public and Quasi-Public uses. This designation is consistent with all zoning categories in which these uses are permitted.

TABLE 2-6 SUMMARY OF GENERAL PLAN PUBLIC/QUASI-PUBLIC DESIGNATION			
Land Use Designation	**Average FAR**	**Permitted Developments**	**Corresponding Zone District**
Public and Quasi-Public	FAR 0.5 to 2.0	Schools, institutional uses, private clubs and organizations, parks and recreation facilities, cultural and civic centers, utility facilities	All

Specific Plan Designation

Specific Plans are designed to provide specific guidance concerning land use and development standards, infrastructure requirements (including streets), and design standards for areas included within a specific plan's boundaries. Once adopted, a specific plan can only be changed by amending the plan. The areas designated as Specific Plan correspond to areas of adopted and future specific plans. Specific plans may be developed for other areas of the City where there is a need to exercise more control over the development of the area. The following Specific Plans are provided for under this General Plan:

- The Uptown Whittier Village is located in a specific plan area which contains the City's original commercial district. It covers 33 city blocks developed with retail stores, specialty shops, restaurants, residences, and offices. The specific plan for Uptown Whittier was developed specifically to preserve the historic character of the area. The plan calls for rebuilding of the retail commercial base, development of mixed-uses, restoration of historic buildings, development of buildings which complement the existing architectural style, promotion of the area's retail uses, creation of entertainment opportunities, and development of support residential and offices uses.

- The Quad at Whittier Specific Plan covers the area developed with the Quad shopping center on Whittier Boulevard between Painter and Laurel Avenues. The site covers 32.4 acres.

- Whittier College has also been designated a Specific Plan area. This will allow development within the college to proceed according to a proposed Master Plan. Whittier College is developed with school buildings, dormitories and game fields.

Land Use Plan

The Land Use Plan, as shown in Exhibits 2-1 and 2-2, indicates the location and extent of development permitted under the Land Use Plan. As indicated previously, most development in the City is going to be preserved under this Plan. The focus of future revitalization and redevelopment will be along the commercial arterial roadways and in scattered infill.

The development capacity of a city may depend on a number of factors such as availability of infrastructure, vacant land, topography, and the maximum development permitted under the General Plan. The maximum development possible under a plan is referred to as a *build-out*. Build-out is generally expressed in number of housing units for residential development and square-footage of structural gross floor area for nonresidential.

Theoretical build-out refers to the development possible if all land uses were developed to the maximum intensity permitted under the General Plan. The major limitation of theoretical build-out is the assumption that existing development will be replaced by newer development over the life of the Plan. Effective build-out is a more realistic measure in that the measure recognizes that new development will be limited to certain parcels. Many parcel's configurations will not allow further development. In communities that are urbanized, effective build-out is generally around 80% of theoretical build-out.

The Whittier Land Use Plan, under effective build-out, will result in approximately 28,451 to 35,564 housing units, 4.6 to 5.8 million square feet of commercial uses and 5.5 to 6.8 million square feet of industrial uses. Table 2-6 indicates the effective and theoretical build-out for the General Plan. The effective buildout is 80 percent of the theoretical capacity. It accounts for lot size, irregular parcels and other areas that cannot accommodate development at maximum density. Assuming an average household size of 2.7 persons per household, the resident population at build-out and full occupancy is 96,023 persons. Table 2-7 estimates the Plan's carrying capacity.

TABLE 2-7
LAND USE PLAN BUILD-OUT

Land Use Designation	Acres	Density/FAR	Total Build-out	Effective Build-out
Hillside Residential	314.27	2 du/acre	628	502
Low Density Residential	3,785.87	6 du/acre	22,715	18,172
Medium Density Residential	225.27	15 du/acre	3,379	2,703
Medium-High Density Residential	65.90	25 du/acre	1,648	1,318
High Density Residential	184.34	35 du/acre	6,452	5,162

TABLE 2-7
LAND USE PLAN BUILD-OUT (continued)

Land Use Designation	Acres	Density/FAR	Total Build-out	Effective Build-out
General Commercial	411.51	FAR 0.25 to 0.50	4,481,344 sf	3,585,075 sf
Administrative and Professional Commercial	58.41	FAR 0.5 to 2.0	1,272,170 sf	1,017,736 sf
General Industrial	262.28	FAR 0.60 to 1.0	6,854,950 sf	5,483,960 sf
Urban Design District	296.74	25 du/ac	742 du*	594 du
Public and Quasi-Public				
Elementary School	166.22	FAR 0.5	7,317,427 sf	5,853,941 sf
Junior High School	38.65	FAR 0.5		
High School	114.74	FAR 0.5		
Private School	16.36	FAR 0.5		
Park	492.18	FAR 0.01	214,394 sf	171,515 sf
Civic Center	17.27	FAR 0.70	526,597 sf	421,277 sf
Hospital	27.41	FAR 1.0 to 2.0	1,193,980 sf	955,184 sf
Post Office	1.80	FAR 0.5	39,204 sf	31,363 sf
Golf Course	121.25	FAR 0.01	52,817 sf	42,253 sf
Library	1.19	FAR 0.5	25,918 sf	20,735 sf
Specific Plan	235.19	FAR 0.5 to 2.0	5,122,438 sf	4,097,950 sf
Streets	1,465.79	---	---	---
TOTAL	8,005.90		35,564 units + 27 million sq.ft.	28,451 units + 22 million sq.ft.

* Assumes 10% is developed with residential uses at 25 du/ac and with commercial or industrial use calculated under the base designation.

SECTION 3: HOUSING ELEMENT

INTRODUCTION

The Housing Element of the *Whittier General Plan* is concerned with housing in the City. The primary focus of the Housing Element is to encourage the provision of suitable housing and to protect the vitality of existing residential neighborhoods. Through its housing programs, the City will encourage the production of new housing to meet future needs and will conserve the existing housing stock.

The Housing Element of the City of Whittier has been reviewed and approved by the State Department of Housing and Community Development in 1993. The Comprehensive Housing Affordability Strategy (CHAS) for Whittier, which was adopted in 1992, is consistent with this Element. The CHAS was prepared to identify priorities in housing, as required by the Federal Department of Housing and Urban Development.

The Housing Element fulfills the requirements of the State Planning and Zoning Law and the regulations of *Section 65580-65589.5 of the California Government Code.* State law is very specific on the content of the Housing Element and makes it clear that the provision of affordable housing is the responsibility of all local governments. The requirements of State law are outlined in Table 3-1. *Section 65583* of the Government Code of the State of California contains the legislative definition of a housing element:

> "The housing element shall consist of an identification and analysis of existing and projected housing needs and a statement of goals, policies, quantified objectives, and scheduled programs for the preservation, improvements, and development of housing. The housing element shall identify adequate sites for housing and mobile-homes, and shall make adequate provision for the existing and projected needs of all economic segments of the community."

The specific information and analysis that must be included in housing elements have been regularly changed by state legislation. There have also been changes in the City and regional housing market which require reevaluation in the element. The focus of the Housing Element is to analyze and evaluate the City's housing resources and programs to ensure that they are effective in meeting the needs of the residents of the community.

TABLE 3-1 HOUSING ELEMENT REQUIREMENTS
California Government Code, Section 65583
(a) Needs Assessment and Inventory of Constraints and Resources (1) Population and employment trends (2) Household and housing stock characteristics (3) Land inventory and analysis of infrastructure (4) Governmental constraints (5) Nongovernmental constraints
(6) Special housing needs ▪ Female-headed households ▪ Overcrowding ▪ Farm workers ▪ Elderly ▪ Handicapped ▪ Homeless (7) Energy Conservation (8) Publicly Assisted Housing Developments
(b) Statement of Goals, Quantified Objectives, and Policies
(c) Five-Year Housing Program (1) Adequate sites (2) Assist development of affordable housing (3) Remove governmental constraints (4) Conserve existing housing stock (5) Promote equal access to housing (6) Preserve low-income housing
(d) Description of Public Participation Program in the formulation of Housing Element goals, policies, and programs.
California Government Code, Section 65584
(1) A description of the Regional Housing Needs Assessment (RHNA) prepared by the Southern California Association of Governments.
California Government Code, Section 65588
(a) Review of Past Element
Source: State of California Office of Planning Research

The housing needs of the City may be identified through the characteristics of its population and households, employment growth trends, and the analysis of groups which may have special housing needs. Housing resources include the City's housing stock characteristics, land available for residential development, and facilities that support existing residential communities. By matching its resources with its housing needs, the City will be able to: 1) identify households or groups

which do not have adequate housing, 2) determine the affordability of the housing stock in relation to household income, 3) evaluate the capacity of the City to accommodate future residents, and 4) address other housing concerns which require attention in the City's housing program. The discussion of governmental, economic, and physical constraints to the development of housing, and opportunities for energy conservation further expand on the factors that affect housing costs and production.

The Housing Element Background Report details the population, household and housing characteristics of the City. The primary housing issues in Whittier involve the preservation of existing residential neighborhoods and the accommodation of special housing needs.

- The 1990 census estimates a population of 77,671 persons in Whittier. The majority of residents are Caucasian, although there is a growing Hispanic population. Approximately 29 percent of all residents are aged 19 or younger; 49 percent are between 20 and 54 years old; and 22 percent are 55 years or older. With a stable population, household growth increased by less than one percent from 1980 to 1990. Household size increased slightly to an average of 2.72 persons per household in 1990. Approximately 58 percent of the households are home owners and 42 percent are renters.

- The 1990 housing stock consists of 28,758 units. While the majority of the units are in good condition, a number of units are in need of rehabilitation and others are dilapidated and need to be removed. Housing affordability is measured by overpayment (paying more than 30 percent of gross income for housing). Approximately 4,861 households overpaid in 1988 and are considered to be in need of some form of assistance. They represent the City's existing housing need. The Southern California Association of Governments (SCAG) has also estimated a future housing need of 1,589 units to accommodate future growth.

- With the high real estate values in Southern California, more and more households are squeezed out of the housing ownership market. The need for affordable owner-occupied and rental housing has been expressed by many residents. Affordable housing may include mobile home parks, senior citizen housing, and subsidized low and moderate income housing projects.

- Other housing concerns include the maintenance of rental properties, illegal garage conversions, incompatible housing densities, parking on residential streets, energy conservation, and inappropriate infill development.

- Households and residents with special housing needs include the elderly, disabled, homeless, large households (5 or more persons per household), and female-headed households. Programs to provide equal housing opportunity to these groups should be developed.

- Constraints to housing development include City ordinances and fees, land availability, construction costs, loan interest rates and infrastructure capacity. Reducing these constraints to the extent possible could lessen housing costs and encourage new residential development.

Citizen Participation

The City of Whittier continues to encourage citizen input on all housing policy decisions. The Community Development Block Grant (CDBG, the major source of funding for the City's housing programs) is subject to annual review and a public hearing. The GPAC also served to review the City's adopted CHAS. This draft element has been widely distributed to the community and was subject to public hearings before the Planning Commission and City Council, prior to adoption.

Organization of this Element

The Housing Element Background Report contains an assessment of housing needs, and an inventory of resources and constraints. The Element presents the statement of goals, policies, and objectives designed to meet the housing needs identified in the Background Report. A 5-year implementation program for the identified policies is also included. The housing programs included in the City's revised Housing Element are intended to accomplish all of the following goals expressed in State law:

- Identify adequate sites with public services and facilities through appropriate zoning development standards to facilitate and encourage the development of a variety of housing types for all income levels, including rental housing, factory-built housing, and mobile-homes, in order to meet the community's housing goals.

- Assist in the development of adequate housing to meet the needs of low and moderate income households.

- Address and, where appropriate and legally possible, remove governmental constraints to the maintenance, improvement and development of housing.

- Conserve and improve the conditions of the existing affordable housing stock.

- Promote housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, or color.

Relationship to Other Elements

Two other elements of the General Plan will particularly affect the implementation of the Housing Element--the Land Use Element which designates land for residential development and establishes permitted densities of development, and the Transportation Element which establishes policies for providing essential infrastructure to all housing that is developed. Each of these elements has been consulted and relevant policies are reflected in the Housing Element.

HOUSING GOALS AND POLICIES

This section discusses the City's goals and policies to meet the housing needs of the community. The goals and policies which have been developed, and are described herein, are intended to provide a practical and workable framework in which the Planning Commission and City Council may take action affecting housing and neighborhoods within the community. The need for change within the established policies, goals, and objectives has been anticipated. Neighborhoods change and the conditions upon which policy is established may change, requiring the flexibility to establish new housing priorities and direction.

If it is deemed necessary to revise the statement of goals, policies, and objectives of the Housing Element, such revisions will be made in conformance with the provisions of Section 65588 of Article 10.6 of the Government code. Pursuant to the legislation, the City of Whittier will review the Housing Element as frequently as is appropriate, but not less than 5 years, to determine the continued applicability of the policies and programs contained within the Housing Element. Specifically, the annual review shall focus on the following:

- The appropriateness of the housing goals, objectives, and policies in contributing to the attainment of the State housing goals.
- The effectiveness of the Housing Element in attainment of the community's housing goals and objectives.
- The progress of the City in the implementation of its Housing Element.

Issue: Maintenance of Existing Housing Stock

Many of the neighborhoods which collectively make up the City of Whittier have aged with dignity and charm. Others, however, have not fared so well. The City of Whittier seeks to improve the desirability of the housing stock within those neighborhoods which have not withstood time and to preserve those which have. The City, therefore, adopts through the Housing Element goals, policies, and objectives for improvement of existing housing stock. The adoption of these policies is a statement of the City's approach to be followed over the life of the Housing Element.

Conditions within the City and its neighborhoods are not static. As changes come about within neighborhoods, or circumstances dictate a different approach, the City will be sufficiently flexible in its approach to meet the challenges of such change and to incorporate into its housing policies innovative methods by which to meet new conditions. The primary goal is to maintain the integrity of the residential community with sensitivity, while adopting policies which are in the best interest of each neighborhood and the City at large.

The goal and policies for housing maintenance and improvement have been developed recognizing the community needs, resources available and the constraints to housing improvement efforts. Where appropriate, these key housing protection guidelines have been developed consistently with other elements of the General Plan, as well as other planning and policy documents for the City.

Goal 1 Maintain a supply of housing, within the City of Whittier, which is free from the adverse problems of structural neglect and deterioration, and promote neighborhood environments which provide an excellent quality of life for all residents.

Policy 1.1 Actively engage in identifying substandard and deteriorating housing in Whittier and take appropriate actions to ensure correction of these deficiencies, such as initiating rehabilitation, maintenance, or replacement programs.

Policy 1.2 Protect viable housing and the continued maintenance and stabilization of healthy neighborhoods.

Policy 1.3 Encourage and/or stimulate conservation of existing residential areas and, where possible, minimize or prevent the intrusion of incompatible uses into the neighborhoods.

Policy 1.4 Work to rehabilitate and, if required, replace substandard dwelling units.

Policy 1.5 Promote rehabilitation which maximizes the utility of the existing housing stock.

Policy 1.6 Encourage a full range of public improvements and services to provide for the needs of all residential neighborhoods.

Policy 1.7 Maintain amenities (landscaping, trees, urban design, parks, etc.) which provide beauty, identity, and form to the City and the residential neighborhoods within the community.

Policy 1.8 Work to provide local parks, including special facilities for community recreation, with an average ratio of 4.5 acres for every 1,000 people.

Policy 1.9 Discourage increases in the acceptable ambient sound levels within residential areas of the community.

Policy 1.10 Discourage and, where possible, eliminate the use of streets within residential neighborhoods as traffic thoroughfares.

Policy 1.11 Work with state and local agencies for the preservation of existing low-income housing developments.

Issue: Housing Production

The City of Whittier's goals, policies, and objectives relating to housing production are contained within this section. In adopting these statements, the City Council is communicating to the community at large, as well as the home building industry, the quantified goals for housing production and the guidelines to be followed in developing new housing. The goals and policies for housing production have been refined and modified in light of current resources and constraints. The adopted goals and policies for housing production reflect the community's desires for the City of Whittier relative to the production of housing in numbers, type, density, and other qualities of importance to the residents of this community.

Goal 2 The City will work to provide opportunities for new housing units to meet the housing needs of all economic segments of the City of Whittier.

Policy 2.1 Encourage the development of housing to meet the City of Whittier's responsibilities for the regional housing needs.

Policy 2.2 Encourage and increase the variety and supply of housing available at costs affordable to the various income levels of the population.

Policy 2.3 Encourage a variety of housing arrangements and densities, each appropriately located with reference to topography, traffic circulation, community facilities, and aesthetic considerations.

Policy 2.4 Encourage a balance of housing in a variety of types which provides a range of housing affordable to households at all economic levels. The balance of housing promoted would include townhouses, cluster developments, condominiums, apartments, single-family dwellings, manufactured homes and second units.

Policy 2.5 Promote development density in the City and planning area that is consistent with environmentally sound development and does not disrupt the fragile natural topography.

Policy 2.6 Encourage continued and new investment in the established communities of Whittier.

Policy 2.7 Encourage and promote, where the land use plan permits higher density, the assemblage and consolidation of small parcels to promote a more efficient use of space, while allowing for aesthetic amenities and greater use of open space.

Policy 2.8 Encourage the consolidation of multiple land ownership by private or public means into single ownership. This will facilitate the use of contemporary planning techniques in providing multiple-family residences with greater amenities and will enhance the quality of life for the citizens of Whittier.

Policy 2.9 Examine the feasibility of under-utilized commercial and industrial sites which may be suitable for rezoning to residential uses.

Policy 2.10 Promote first time buyer assistance programs to enable young families to acquire housing.

Policy 2.11 Use density and open space bonuses to encourage the assemblage of large parcels for higher density developments.

Issue: Housing Assistance

The City of Whittier recognizes that there are unmet housing assistance needs within the community and continues to focus efforts toward alleviation of these needs. The City will look to current and potential land uses, the existing housing stock, community redevelopment, and community development activities to establish the goals, policies, and objectives for meeting housing assistance needs. This section of the Housing Element synthesizes the guidelines and direction that the City Council has set forth with respect to housing assistance needs. The goals, policies, and objectives, set forth herein, are the culmination of past City actions vis-a-vis housing needs and the relevant requirements of the housing element as prescribed by California State law.

Goal 3 Work to maintain a balanced housing stock with a range of housing available to all economic segments of Whittier and make an effort to meet the housing assistance needs of Whittier residents to the maximum extent possible.

Policy 3.1 Work toward the provision of the City of Whittier's fair share of regional housing needs, as identified in the Regional Housing Needs Assessment

(RHNA), prepared by the Southern California Association of Governments (SCAG).

Policy 3.2 Encourage housing which is affordable to the various income levels of the population.

Issue: Special Needs Housing

There are households in the City which may have special housing needs that cannot be met by standard housing developments. In order to promote equal access to all households and to help special needs households find appropriate housing, the City of Whittier has developed a goal for equal opportunity. By actively supporting projects and programs that accommodate special needs households and minorities, more Whittier residents will be provided with adequate housing.

Goal 4 Promote housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, color, or handicap.

Policy 4.1 Promote and encourage equal access to housing in a variety of locations, types, and prices for all residents of the community.

Policy 4.2 Encourage the development of accessible housing which is adaptable to the daily needs of the disabled persons within the community.

Policy 4.3 Work to provide and encourage others to provide the support services necessary to permit residents with special needs to successfully function as full members of the community.

IMPLEMENTATION PROGRAMS

The housing program for the City of Whittier includes actions and programs to be undertaken in maintaining, improving, and developing housing for all residents of the community. The program descriptions are intended to serve as a guide to the implementation and evaluation of the City's accomplishments toward meeting identified housing needs. The program information also reflects the City of Whittier's efforts to provide housing pursuant to the requirements of the State of California Housing Element legislation.

Table 3-2 provides the corresponding implementation measures for the City's housing goals and policies. A discussion of each implementation measure is provided in Section 10.

TABLE 3-2
HOUSING ELEMENT IMPLEMENTATION

Goal	Policy	Implementation Measure
1. Maintain housing supply	1.1 Identify substandard housing and correct these deficiencies.	Housing Rehabilitation Program Neighborhood Housing Services Project Non-conforming Use Abatement Substandard Dwelling Units and structures
	1.2 Maintain residential neighborhoods.	Code Enforcement Housing Rehabilitation Program Redevelopment Programs
	1.3 Conserve existing residential areas.	Housing Rehabilitation Program Design Review
	1.4 Rehabilitate substandard dwelling units.	Code Enforcement
	1.5 Promote housing rehabilitation.	Housing Rehabilitation Program Redevelopment Programs
	1.6 Encourage the provision of public improvements and services to serve residential neighborhoods.	Library Improvements Sewer System Improvements School Services Drainage Master Plan Water System Improvements Police Services Savage Canyon Landfill Facility Fees Capital Improvement Program Underground Utility Lines
	1.7 Maintain amenities which provide beauty, identity & form to the City.	Design Review Sidewalk & Parkway Development & Maintenance
	1.8 Provide parks & recreational facilities.	Park Needs Study Update Private Recreation Facilities
	1.9 Discourage increases in noise levels.	Acoustical Analysis Reports Noise Ordinance
	1.10 Discourage through traffic in residential areas.	Traffic Improvements
	1.11 Preserve existing low-income housing projects.	Senior Citizen and Low-Income Housing Projects Housing Preservation

TABLE 3-2
HOUSING ELEMENT IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
2. Opportunities for new housing to meet area needs.	2.1 Encourage housing development to meet regional housing needs.	Streamline Permit Process Support Organizations General Plan & Zoning Ordinance Consistency
	2.2 Encourage a variety of housing to accommodate households with various income levels.	General Plan & Zoning Ordinance Consistency Residential Design Guidelines Incentives to Create Larger Lots Second Units
	2.3 Encourage variety of housing arrangements.	General Plan & Zoning Ordinance Consistency Manufactured Homes Federal Housing Programs Housing for Elderly & Handicapped Land Cost Write-down Affordable Housing Fund
	2.4 Encourage a balance of housing types.	Support Organizations General Plan & Zoning Ordinance Consistency Second Units Manufactured Homes
	2.5 Promote development density that is consistent with the environment and natural topography.	Hillside Standards
	2.6 Encourage continued and new investment in Whittier.	Support Organizations
	2.7 Encourage lot assembly on high density areas.	Incentives to Create Larger Lots
	2.8 Encourage the consolidation of land to improve development quality.	Incentives to Create Larger Lots Land Consolidation
	2.9 Examine use of underutilized sites for residential uses.	Underutilized Lots
	2.10 Promote first time home buyer assistance programs.	Homebuyer Assistance
	2.11 Use incentives to encourage lot assembly.	Incentives to Create Larger Lots

TABLE 3-2
HOUSING ELEMENT IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
3. Maintenance of balanced housing stock and housing assistance	3.1 Work towards meeting the City's regional housing needs.	Support Organizations
	3.2 Encourage housing supply which is affordable to various income levels.	Underutilized lots General Plan & Zoning Ordinance Consistency Section 8 Programs Federal Housing Programs Housing for Elderly & Handicapped Land Cost Write-down Social Service Agencies Affordable Housing Fund Second Units
4. Equal housing opportunities	4.1 Promote equal access to housing.	Density Bonus Fair Housing Council Senior Citizen & Low Income Housing Projects
	4.2 Encourage accessible housing for the disabled.	Accessible Housing Housing for Elderly & Handicapped
	4.3 Encourage support services for residents with special needs.	Social Service Agencies Fair Housing Council

HOUSING PLAN

The City of Whittier has adopted a three-pronged approach to meeting the housing needs of the community.

- **Housing Maintenance and Improvement** - Improvement of the existing housing supply so that this housing remains in sound condition, since existing housing is generally less expensive than new construction.

- **Housing Production** - Development of new housing on sites suitable for residential use to expand the supply and choice of units available.

- **Housing Assistance** - Assistance to lower income households and households with special needs so that the community continues to provide housing for all economic groups.

Housing Maintenance and Improvement

Quantified objectives have been established related to housing maintenance and improvement for each of the major approaches. For the 1989-1994 planning period, the City of Whittier hopes to accomplish the following:

- Rehabilitate approximately 300 housing units over the 5-year effective period of this housing element (1989 to 1994). The projected rehabilitation is dependent upon and will be consistent with the resources available through the Community Development Block Grant Program.

- Replace 75 to 100 housing units which have been determined to be unsuitable for rehabilitation, during the 5-year period covered by this housing element (1990 to 1995). Such replacement of housing units will be provided through and will be consistent with the Land Use Element, redevelopment project areas, and other appropriate resources.

- Ensure that substandard housing, which is occupied by low and moderate income households and is removed by public or private action, is replaced in compliance with the legal requirements of the State of California.

- Preserve all subsidized low income housing projects from conversion to market rate units.

Housing Production

The following objectives have been established for the production of new housing in the City:

- Allocate sufficient residential land, at appropriate densities, to continue efforts to meet the housing needs of all Whittier residents.

- Achieve the development of 800 to 1,200 housing units over the ensuing 5-year period (1990 to 1995), with at least 200 of these units affordable to households earning less than 80 percent of the regional median.

- Achieve the development of new housing at various densities, including medium, medium-high, and high densities to assist in developing affordable housing.

- Discourage condominium conversions which remove affordable housing (limit to less than 2 percent of existing stock).

- Minimize the loss of existing affordable housing by encouraging replacement as recycling to higher densities occurs.

Housing Assistance

The City has established the following objectives related to housing assistance:

- Achieve housing assistance for at least 10 percent of those resident households identified as requiring housing assistance. This would result in the City of Whittier providing housing assistance for 200 lower income existing households.

- Achieve the production of 400 to 600 affordable housing units during the coming 5-year period covered by this housing element in order to meet a realistic portion of the housing assistance needs requiring new construction, including resident and regional share needs. The specific objective of 200 new affordable housing units is 20 percent of the total housing production target.

Equal Opportunity

The following objectives related to equal opportunity and fair housing have been established:

- Provide handicap access in all new developments.

- Promote use of the San Gabriel Valley Fair Housing Council to assist at least 100 requests for information, advice, arbitration or legal counsel on an annual basis.

Quantified Objectives:

Quantified objectives for individual housing programs are summarized in Table 3-3. The quantified objectives are broken down according to household income categories: very low, low, moderate, and high. Very low income households have annual incomes that are 50 percent of the County median income. Low income households refer to households with incomes ranging from 50 percent to 80 percent of the County median income. Moderate income households refer to those households with annual incomes between 80 percent and 120 percent of the County median income. Finally, upper income households refer to those households with annual incomes of 120 percent or greater of the County median income.

TABLE 3-3
QUANTIFIED OBJECTIVES (1989-1994)

City Housing Program	Number of Households Assisted by Income Category				
	Very Low	Low	Moderate	High	Total
Housing Improvement					
Code Enforcement					n.q.
Housing Rehabilitation*	50	50	50		150
Rental Rehabilitation*	25	25			50
Redevelopment/NHS of La Habra*	40	40	20		100
Land Use Plans					n.q.
Public Services (library, school, parks, drainage, water, police, etc.)					n.q.
Non-conforming uses					n.q.
Substandard Units	n.q.	n.q.			n.q.
Design Review					n.q.
Hillside standards				n.q	n.q.
Housing Production					
Adequate Sites in Land Use Plan (land consolidation, larger lots, underutilized lots)	394		362	444	1,200
Variety of Housing Types					
Second Units	15				n.q.
Manufactured Housing Standards	5				15
Streamline Permit Process					5
Local Groups					n.q.
Redevelopment Set-aside	10				n.q.
Energy Conservation					10
					n.c.
Housing Assistance					
Section 8*	103	103			206
Affordable Housing Units					
Heritage Park	169				169
Whittier Lutheran Tower	155				155
Whittier Springs	13				13
Stephens Whittier		8	6		14
Section 202 (William Penn)	74				74
CDBG land cost write-down					n.q.
Support Services (special needs)					n.q.
First-time Homebuyer Program			2		2

TABLE 3-3
QUANTIFIED OBJECTIVES (1989-1994) (continued)

City Housing Program	Number of Households Assisted by Income Category				
	Very Low	Low	Moderate	High	Total
Fair Housing Council*	200	200	100		500
Handicap Access Requirements					n.c.
Social Service Agencies	800**				800
Homeless Services (Rio Hondo Home)	100				100
Expedite Special Housing					
Density Bonus	n.c.	n.c.			n.c.
	n.q.	n.q.			n.q.
Total	2,579		540	444	3,563

* - breakdown by income category estimated only.
** - minimum number plus ability to serve for other agencies
n.q. - not quantifiable
n.c. - for new construction

Relationship to Land Use Policy

The Housing Program is largely dependent on the amount of land designated for residential development and other areas where residential uses are permitted. The Land Use Plan included in the Land Use Element includes five residential land use designations covering a total of 4,575.65 acres (refer to Table 3-4). The Urban Design District Overlay and Specific Plan designations also allow residential development. Table 3-4 estimates the development and population possible under the Land Use Plan. The *theoretical* development potential is determined by multiplying the maximum number of units permitted under a particular land use designation (which is expressed in units per acre) by the total land area included in each land use designation.

TABLE 3-4
LAND USE PLAN POPULATION CAPACITY

Land Use Designation	Acres	Density	Theoretical Buildout Capacity	
			No. of Units	Population [a]
Hillside Residential	314.27	2 du/ac	628	1,696
Low Density Residential	3,785.87	7 du/ac	22,715	61,331
Medium Density Residential	225.27	15 du/ac	3,379	9,123
Medium High Density Residential	65.90	25 du/ac	1,648	4,450
High Density Residential	184.34	35 du/ac	6,452	17,420
Urban Design District	(296.74) [b]	25 du/ac	742	2,003
TOTAL	4,575.65		35,564	96,023

[a] Assumes 2.7 persons per household
[b] Assumes 10 percent of Urban Design District is developed as residential at 25 du/ac

Source: David Evans and Associates, Inc. 1991.

Housing Improvement Program

The programs included in the City of Whittier's Housing Element concentrate on housing maintenance and improvement, as well as new development. The programs address issues related to housing affordability, condition, quantity, and accessibility. The City of Whittier will pursue State and Federal funding to encourage housing development, use its regulatory powers to encourage the continued maintenance of housing, and continue programs designed to improve existing units.

The 5-year housing improvement program is outlined in Table 3-5. This program will be implemented during the period 1989 to 1994. The housing improvement program focuses efforts in the following five categories:

- Code enforcement.
- Rehabilitation of the existing housing stock.
- Preservation of older, single-family homes (particularly those with historic merit).
- Provision of neighborhood public services and facilities.

TABLE 3-5
FIVE-YEAR HOUSING IMPROVEMENT PROGRAM

Action/Description	Status	Agencies/ Officials Responsible	1984-1989 Accomplishments	Schedule
Code Enforcement				
Code enforcement in response to public complaints Improving/maintaining the aesthetic value and character of Whittier's older areas. Resolution of complaints/violations regarding zoning regulations, public parkway, and street encroachments and public nuisances.	Ongoing through code enforcement officer	Community Development Department; Building Rehabilitation	Responded to and observed 14,401 cases.	Continue program 1989-94
Existing Housing				
Home rehabilitation loan program: 1. Below market interest rate loans to homeowners & renters. 2. Deferred payment loans to elderly and/or low income property owners. 3. Exterior improvement grants (up to $300).	Ongoing, financed through CDBG	Community Development Department; Housing Rehabilitation Department	175 loans and grants $1.8 million = total loan value. $0.6 million = total subsidy value $.03 million = total grants.	Ongoing program in 10th year of implementation
Rental Rehabilitation				
Grants, low interest and deferred interest $5,000/1 unit; $6,500/2 units; $7,500/3 units. Provide Section 8 vouchers for eligible tenants.	Funding from HUD allocation	Home Rehabilitation Department; administration of vouchers by L.A. County Housing Authority	10 units/year at average $6,000/ unit	Ongoing program is in second year of implementation

TABLE 3-5
FIVE-YEAR HOUSING IMPROVEMENT PROGRAM (continued)

Action/Description	Status	Agencies/ Officials Responsible	1984-1989 Accomplishments	Schedule
Redevelopment of Existing Neighborhoods				
1. Whittier Boulevard redevelopment project area. The number of dwelling units in project area not to exceed approximately 1,000. "Agency is authorized to conduct program of assistance to encourage owners of property within area to upgrade and maintain property consistent with plan and such standards as may be developed for area". "Wherever dwelling units housing persons of low or moderate income are removed an equal number of replacement dwelling units at affordable rents will be rehabilitated, developed or constructed within the project area and/or the City".	Plan Adopted August 1978	Redevelopment Agency		Ongoing project area plan in 3rd year of implementation.
2. Whittier Park Neighborhood, 9-unit townhome development. 3. Greenleaf Avenue/Uptown Whittier redevelopment project area. Project area plans provide for R-3 medium density multiple-family housing. Agency is authorized to rehabilitate or cause to be rehabilitated any building or structure in project area.	Preparing development agreements.	NHS of La Habra/Redevelopment Agency	N/A	Break ground for project by 12/92.
Preservation of Older Single-Family Neighborhoods				
Land Use Element/Zoning Consistency study to resolve inconsistencies between land use element and zoning ordinance. Study provides basis to determine if older single-family areas now zoned for high density should be reclassified to reflect current land use patterns.	In process, completion in early 1989.	City of Whittier Planning Department	N/A	1989-1990

TABLE 3-5
FIVE-YEAR HOUSING IMPROVEMENT PROGRAM (continued)

Action/Description	Status	Agencies/ Officials Responsible	1984-1989 Accomplishments	Schedule
Provision of Neighborhood Public Services and Facilities				
Public improvements CDBG program. Public improvement needs (e.g., street widening, removal of architectural barriers and curb, gutters, sidewalk repairs) have been and will continue to be addressed through the CDBG program. Priorities are public improvements that improve the safety of elderly and handicapped persons.	Implemented	Department of Public Services; Engineering Department; Community Development Department		Ongoing, implementation as needed

The specific activities and/or resources which will be used to meet the housing improvement needs are listed below:

- Code Enforcement and Environmental Quality Control Community Development Program.
- Rehabilitation Loan Program, including loans and grants.
- Implementation of the Earthquake Recovery Redevelopment Project, as well as the Whittier Boulevard Redevelopment Project and the Greenleaf-Uptown Whittier Project.
- Completion and implementation of the Land Use Element and zoning ordinance revision.
- Financing of neighborhood public services and facilities through the General Fund and Redevelopment Program.

Housing Production Program

Current data indicates a need to assist low and very low income households with housing programs. It is unlikely that the private sector can build affordable housing for all households in need. The City alone cannot provide the subsidies required to provide housing for the households within these income categories. However, the City of Whittier can assist, to the extent possible, in providing incentives which encourage the production of housing to meet the needs of this element of the community.

The City of Whittier will conduct several programs to encourage and promote housing production during the course of the 5-year period of the Housing Element. Housing production is more difficult than housing improvement because there is little available land for development and the market constraints of financing and interest compound the difficulties. However, the City will make a good faith effort to produce new housing using a program which consists of the following three broad categories:

- Identification of adequate housing sites.
- Provision of a variety of housing types.
- Enactment of land use controls.

The specific programs by which these three major categories will be addressed are as follows:

- Implementation of the revised Land Use Element of the General Plan.
- Review and revision of single-family/manufactured housing design standards.
- Density bonuses.
- Enactment of land use measures to encourage energy conservation.

Table 3-6 shows the details of implementation.

TABLE 3-6
FIVE-YEAR HOUSING PRODUCTION PROGRAM

Action/Description	Status/Funding/Agencies/ Officials Responsible	1984-1989 Accomplishments	Projected Schedule
Identification of Adequate Housing Sites			
Implementation of the land use element of the general plan Land use/zoning consistency study will ensure development consistent with the ability of infrastructure to accommodate it.	Revision of Land Use Element underway/Planning Department	N/A	Implementation 1989-90
Provision for Variety of Housing Types			
Implementation of the land use element of the general plan. Hillside: planned residential clusters of single-family.	Land use element revision in process/Planning Department	N/A	1989-91

TABLE 3-6 FIVE-YEAR HOUSING PRODUCTION PROGRAM (continued)			
Action/Description	**Status/Funding/Agencies/ Officials Responsible**	**1984-1989 Accomplishments**	**Projected Schedule**
Enactment of Land Use Controls			
Large lot standards-Ordinance allows second unit on large lot.	Ordinance adopted 2/10/84/ Planning Department	Thus far 10 units have been constructed.	Ongoing
Single-family/manufactured housing design standards.	Ordinance adopted 1/24/81/ Planning Department	No applicants to date.	Ongoing
Ordinance adopted which creates basic design standards for single-family detached housing.			
Density Bonuses			
Compliance with state law (AB 1151) will be done on case-by-case basis, as developers bring projects to City.	Ongoing/Planning Department	One request, no units approved.	Continuing

Housing Assistance Program

The City of Whittier recognizes the need to provide assistance to lower income households. The Federal standard is that a household is overpaying for housing if it is paying more than 30 percent of its income. However, the high cost of housing, which continues to escalate, make it impossible for many households to find safe, sanitary, and decent housing at levels that are within their income ranges. If affordable housing cannot be readily produced, then various subsidies are needed to allow residents to occupy the housing which is available.

The 5-year housing assistance program is outlined in Table 3-7. The program was designed considering such parameters as the mandates of Federal and State housing legislation; the goals, policies, and objectives of the City of Whittier; and the programs and activities currently underway to assist with housing costs. The two primary categories of the housing assistance program include: (1) housing assistance in existing units; and (2) housing assistance in new construction. The specific program activities include the following:

- Provision of housing assistance in existing standard housing through the Section 8 housing assistance payments program and the housing voucher program.

- Development of new housing under the provisions of available Federal subsidy programs, (i.e., Section 202; Section 8, New Construction; tax credits, etc.).

- Provision of new housing for the elderly and handicapped through the Section 202 program.

- Establishment of a land cost write-down fund using the Community Development Block Grant program as a funding source ($66,000 for use in a revolving loan account) be adopted.

- Assistance to public and non-profit agencies which provide support services to special needs populations (the homeless, the elderly, single-parent households, etc.).

- Establishment of an "affordable housing fund" through the redevelopment planning process (currently approximately $30,000 in the fund, however, increases are expected from the 20 percent low/mod set-aside funds).

The programs outlined above may require redirection as changes occur in the community, or in market conditions, or new legislation is passed. It may also be necessary to revise or delete activities because they are no longer appropriate nor effective or additional resources might become available which dictate a changed approach. In adopting the housing programs, it is not the intent of either the City Council nor the Planning Commission to foreclose any future opportunities advantageous to the community.

There are a number of private non-profit programs and agencies that could assist in the development of affordable housing in the City. For example, the City is working with private organizations to provide subsidized rental units, senior housing, housing rehabilitation, and assistance to the homeless.

TABLE 3-7
FIVE-YEAR HOUSING ASSISTANCE PROGRAM

Actions/Description	Status	Agencies/ Officials Responsible	1984-1989 Accomplishments/Schedule
Housing Assistance in Existing Housing			
Provision of housing assistance in existing standard housing through Section 8 housing assistance program or housing vouchers.	Ongoing, but federal funding reduced.	Housing Authority of the County of Los Angeles; City of Whittier	206 households receiving assistance/continuing

TABLE 3-7
FIVE-YEAR HOUSING ASSISTANCE PROGRAM (continued)

Actions/Description	Status	Agencies/ Officials Responsible	1984-1989 Accomplishments/Schedule
Housing Assistance in New Housing			
Development of new seniors housing under the provisions of the Section 202 program.	Federal funding reduced.	Lutheran Towers of the West;	Completion of 155 senior units/continuing
Establishment of a "seniors housing fund" through Redevelopment Agency tax increment.	$500,000 in redevelopment funds have been set aside.	Community Development Department	First project, William Penn Manor-completed/continuing
Development of new senior housing through Section 235 increment.	Program to be included in City's CDBG/HAP if funds are available.	Community Development Department	No funding currently available/ongoing-as funds are available
Development of new senior housing through bond financing.	Program in place under construction.	Corporate fund for housing/Calmark Development Corp.	169 units of senior housing/ongoing
Establishment of an affordable housing fund through the redevelopment process	Estimated $30,000± available to promote development of housing for low and moderate income families.	City of Whittier Redevelopment Agency	N/A/ongoing
First-time homebuyers subsidy fund.	Requested $150,000 for rehabilitation of substandard units and resale to low/mod households.	Community Development Department	N/A - new program/1989-90 start 2-5 units over 5 years

Equal Opportunity

Households with special needs can be provided with appropriate housing through programs which encourage a diversity in housing types and provide support to projects that incorporate design features for special needs households. The City of Whittier advocates equal access to housing for all individuals. Programs which will help address this need are:

- Use of Fair Housing Council
- Enforcement of handicap access requirements
- Support for social service agencies
- Coordination of homeless services
- Support for Rio Hondo Temporary Home

- Expedition of permit process for special housing projects

Table 3-8 summarizes these programs:

TABLE 3-8
FIVE-YEAR EQUAL OPPORTUNITY PROGRAM

Actions/Description	Status/Funding	Agencies/Officials Responsible	1984-89 Accomplishment	Schedule
Fair Housing Council				
City Contracts with San Gabriel Valley Fair Housing Council for Services	Ongoing Program	Community Services Department Community Development Department		Continuing
Handicap Access				
Enforce State laws for handicap accessibility to existing and new structures	New laws need to be incorporated in City's review process	Planning Department Building & Safety Department		Continuing
Social Service Agencies				
Assist public & non-profit agencies serving homeless, elderly, single-parent households, etc.	Ongoing with CDBG & Redevelopment funds	Community Services Department		Continuing
Homeless Services				
Study on homeless services identified need for greater coordination between agencies	Community Services is keeping track of available services in City and surrounding area	Community Development Agency		Ongoing
Rio Hondo Temporary Home				
City provided redevelopment money to support Rio Hondo Home for the homeless	Rio Hondo Home requires annual subsidy to continue operations	Redevelopment Agency		Ongoing
Permit Process				
Expedite permits for low income & senior citizen housing projects	During Review Process	Planning Department		1992
Density Bonus				
Provide density bonus for low income & elderly housing projects	Through review process	Planning Department		1992

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

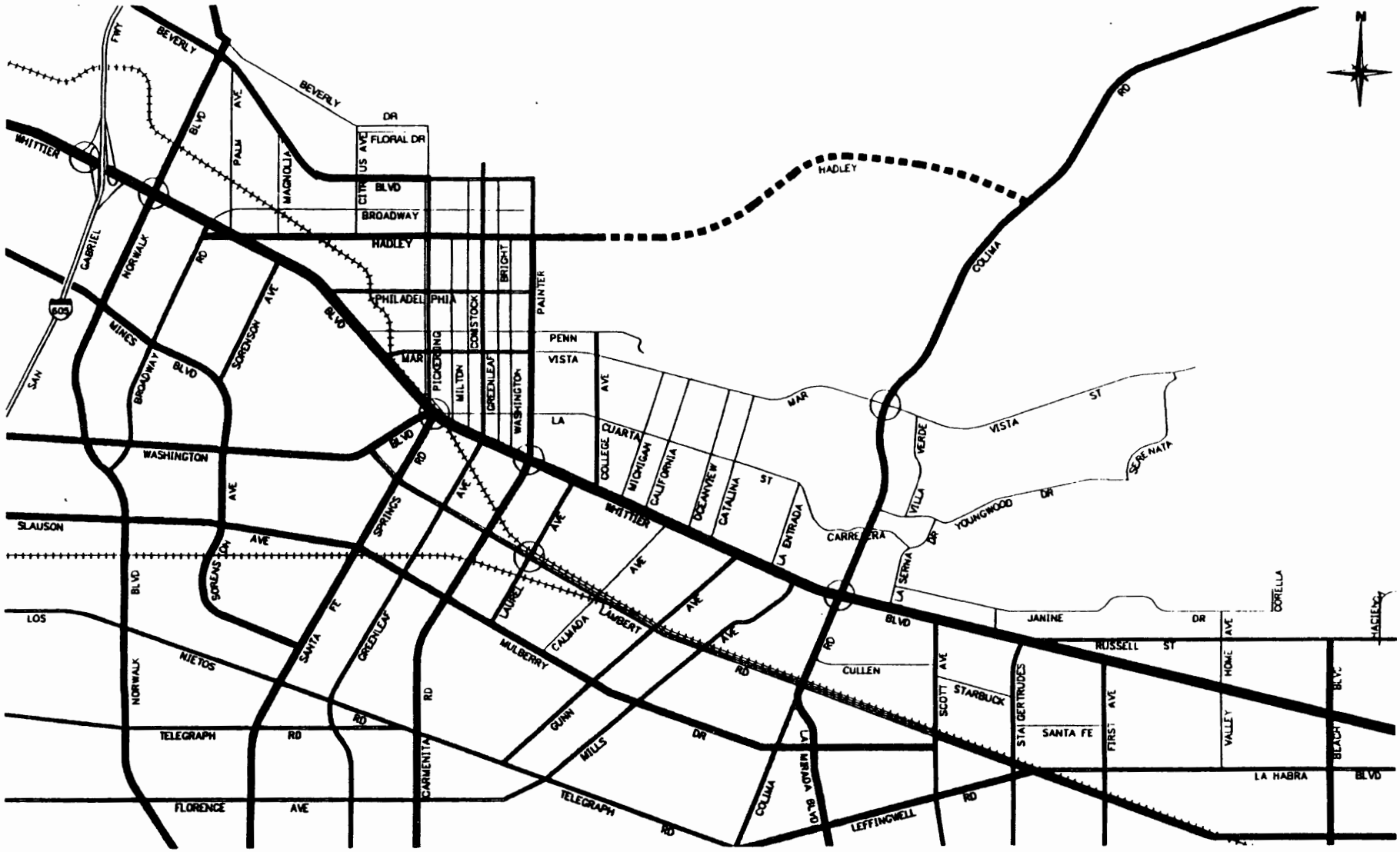
The desirable goal for every roadway in the Transportation Element is that it carry the existing and future volume of traffic at the desired level of service. To achieve this requirement, variation in design is expected, depending on factors such as the capacity needs and the adjacent land uses. Such 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

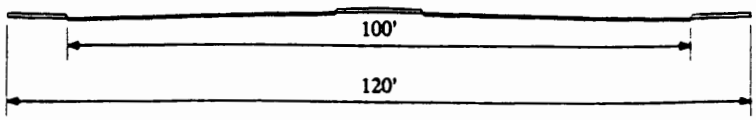
- Major Arterial (6-lanes)
- Minor Arterial (4-lanes)
- Secondary Street – Augmented
- Secondary Street
- Collector Street

SUPPLEMENTAL-CAPACITY INTERSECTION

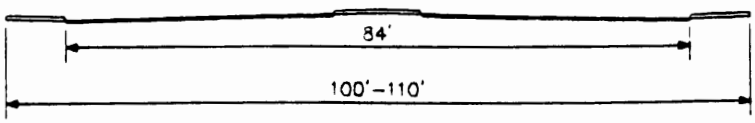
SOURCE: Austin-Foust Associates, Inc.

DAVID EVANS AND ASSOCIATES, INC.

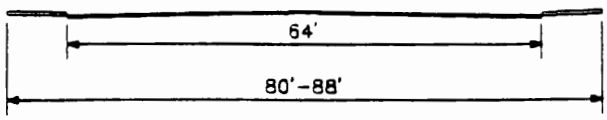
EXHIBIT 4-1
PROPOSED ARTERIAL HIGHWAY PLAN



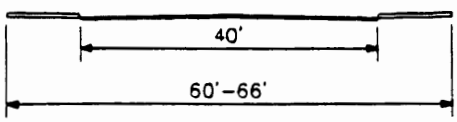
MAJOR ARTERIAL



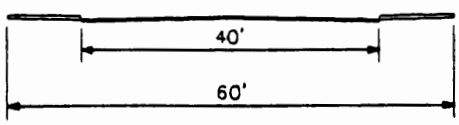
MINOR ARTERIAL



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.

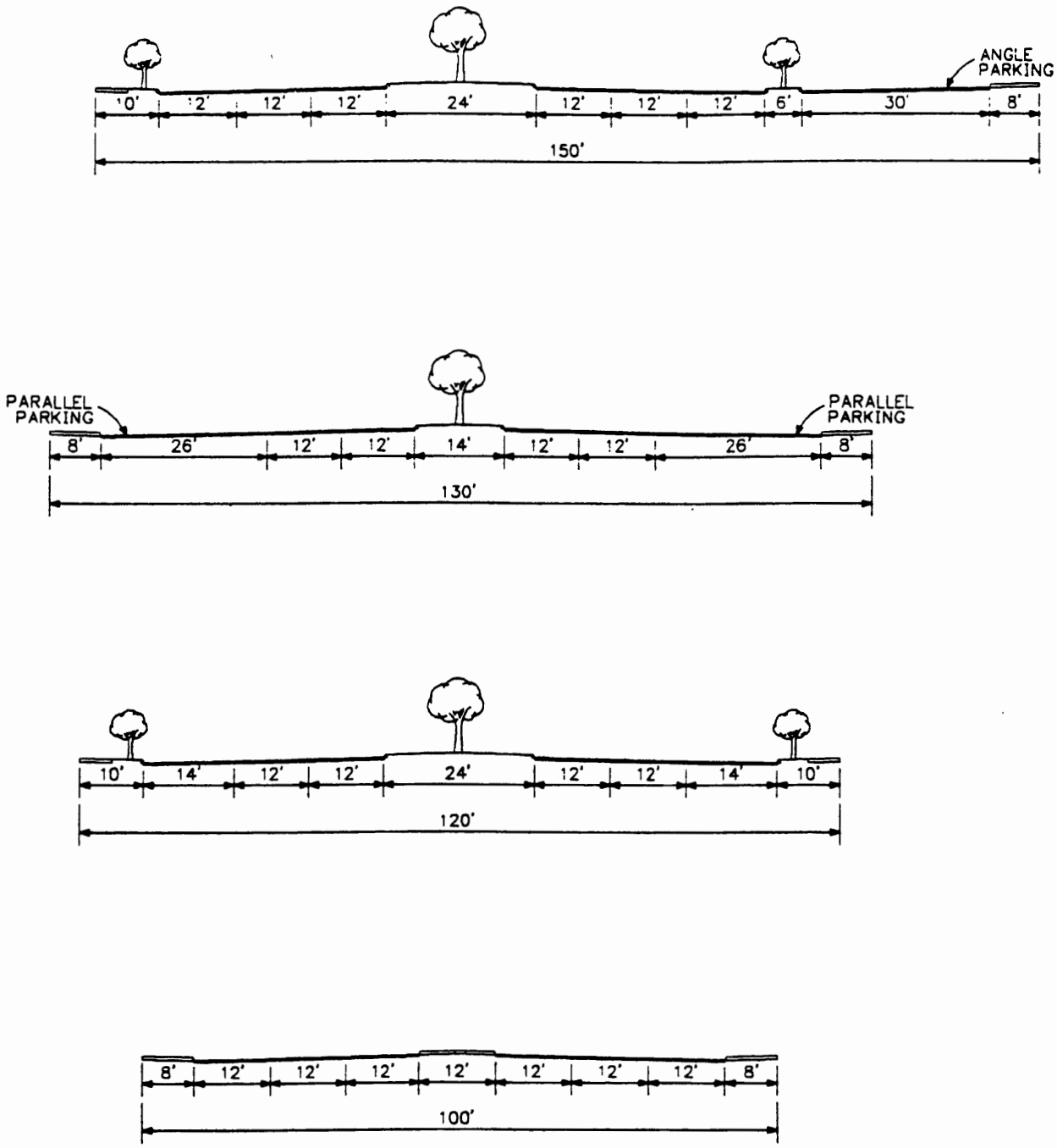
TABLE 4-3
INTERSECTION IMPROVEMENTS

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

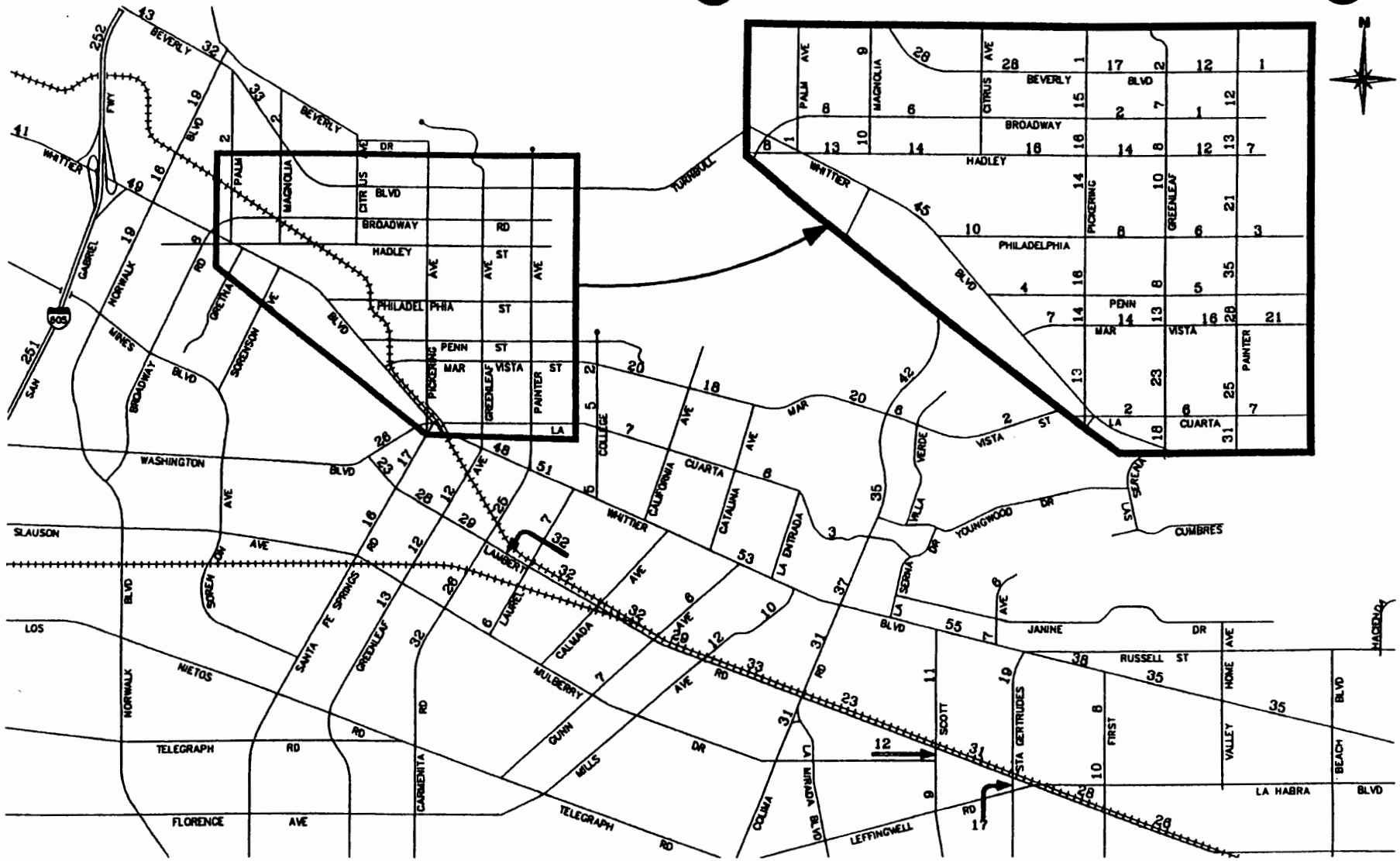
TABLE 4-5 continued
BUILDOUT ADT VOLUME/CAPACITY RATIOS

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.

DAVID EVANS AND ASSOCIATES, INC.

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.

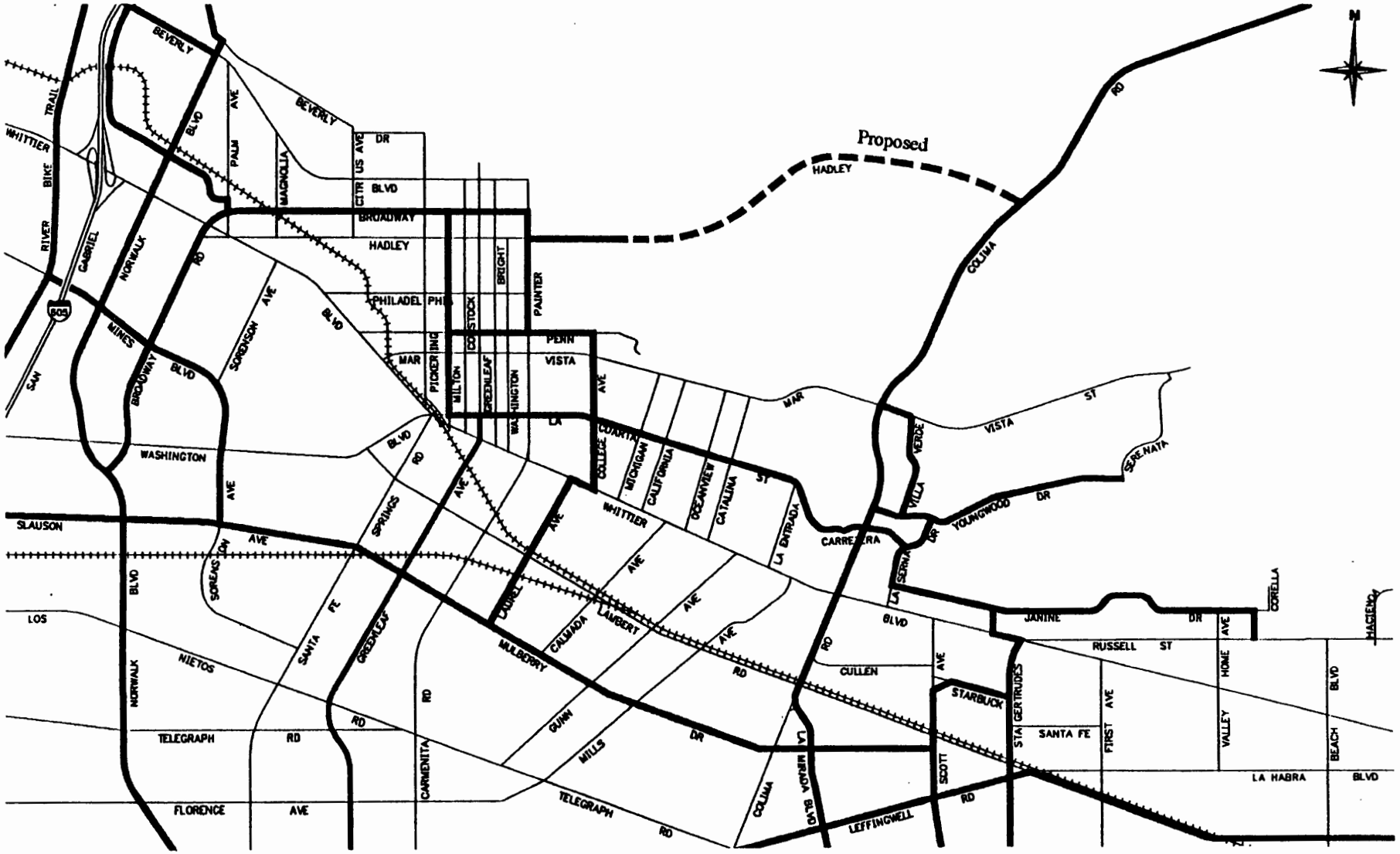
The proposed arterial highway plan presented earlier (Exhibit 4-2) is designed to carry the added trips that will occur with buildout of the General Plan land uses.

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.



City of Whittier

GENERAL PLAN

Bike Route

SOURCE: Austin-Foust Associates, Inc.

DAVID EVANS AND ASSOCIATES, INC.

EXHIBIT 4-5
BIKE ROUTES

SECTION 5: ENVIRONMENTAL RESOURCE MANAGEMENT ELEMENT

INTRODUCTION

The Environmental Resource Management Element (ERME) of the *Whittier General Plan* identifies environmental resources within the City and establishes a plan for their conservation, management, or preservation. The ERME promotes the management of natural resources to prevent the neglect, destruction, or disturbance of sensitive resources. The Element establishes a long-range program for the preservation of open space areas in the City and for the provision of recreation areas and facilities to serve the needs of residents. The Element includes an inventory of both public and private open space and a plan for continued protection of these areas and enhancement of opportunities for recreation.

The ERME combines the mandated Conservation and Open Space Elements and complies with regulations in *Section 65302(d) and (e) of the California Government Code* and the *State Mining and Reclamation Act*. The Element addresses conservation issues to increase awareness of the presence and condition of natural and cultural resources and to promote the advantages of conservation and management through its goals and policies. Conservation includes the regulation of resource utilization, preservation techniques, and activities which affect or preclude the use of resources. The City's conservation plan consists of independent programs for the managed use of oil and mineral resources, the conservation of groundwater, preservation of hillsides, protection of scenic corridors, and the protection of native plant and animal life. The plan will help maintain ecological balance and improve the quality of life in Whittier.

Open space refers to unimproved land or water devoted to the preservation of natural resources for outdoor recreation or for public health and safety concerns. This includes wildlife habitats, rivers, groundwater recharge areas, and areas with mineral deposits. Trails, parks, outdoor recreation areas, utility easements, scenic highway corridors, and areas requiring the regulation of hazardous conditions such as earthquake fault zones, unstable soils, flood plains, and watersheds are also considered open space.

The ERME also fulfills the requirements of *Section 65560 to 65570 of the California Government Code* regarding the preparation of an open space element for the City. Open space and recreation are considered together because of the interdependence between the two issues. Areas preserved as open space may also serve as a valuable resource for outdoor recreation.

Major conservation and open space issues affecting the City of Whittier, which are considered in this Element, are summarized below. More detailed information on these topics can be found in the Environmental Resource Management Element Background Report.

- The groundwater resources of the planning area are part of a complex system of aquifers and soil formations in the Los Angeles Basin. The City derives much of its water from wells near the Whittier Narrows area. Oil resources continue to be tapped in the Puente Hills area and a number of groundwater basins in the region have experienced contamination in recent years.

- Native vegetation has been replaced by non-native species in the urbanized areas of the City. Native plant and animal species are limited to the Puente Hills and include grassland, inland sage scrub, mixed chaparral, and riparian woodland. These plant communities serve as habitats for amphibians, reptiles, birds, rodents and mammals. Sensitive (rare, threatened or endangered) animals are found near the northwest corner of the City and in the Whittier Narrows area.

- Open space in the planning area includes the Puente Hills, City parks, the Friendly Hills golf course, the Savage Canyon Landfill and scattered vacant lots. The Puente Hills provide a variety of opportunities for the conservation of open space and natural resources. The City, through this General Plan, has expressed strong interest in becoming involved in the planning and preservation of the hillside areas. There are 24 City parks with a total area of approximately 338 acres. These parks provide a variety of opportunities for recreational and leisure activities. Facilities at these parks include recreation buildings, picnic grounds, pools, game fields, game courts, playground equipment, and hiking trails. Local schools also have open fields that are available for public use.

- There are a number of equestrian trails in the area, including the San Gabriel River Trail along the river banks and the Skyline Trail along the Puente Hills on the north. Bikeways are provided on street rights-of-way throughout the City. The expansion of the existing system of equestrian and bicycle trails will allow greater use of these facilities.

- Sections of the City on the northwest, southeast, and east are not within easy access to a neighborhood park. Park maintenance, improvements, and acquisition continue to be City concerns. Opportunities for new parks are presented by vacant lots, the Puente Hills, railroad rights-of-way which are abandoned or will be abandoned, and the landfill.

- Scenic resources in Whittier are provided by the Puente Hills and scenic roadway corridors such as Colima Road, Turnbull Canyon Road, Beverly Boulevard, and Skyline Drive. Other environmental resource issues include recycling, energy conservation, landscaped areas, and recreation programs.

ENVIRONMENTAL RESOURCE MANAGEMENT ELEMENT GOALS AND POLICIES

The goals and policies below address the different conservation and open space concerns in Whittier, as identified in the ERME Background Report. These issues include resource conservation, energy conservation, open space, and its acquisition, recreation, scenic corridors, hillside areas, and recycling. The ERME goals and policies addressing these issues will provide a firm direction, for the preservation, use, protection, management, and improvement of existing resources in the City.

Issue: Resource Conservation

The City's natural environment contains many amenities that deserve protection for future generations. Resource conservation will protect and preserve existing resources in the City for future availability and use. The goals and policies below reflect Whittier's concern for natural resources in the planning area.

Goal 1 Preserve or conserve natural and cultural resources that have scientific, educational, economic, aesthetic, social, and cultural value.

Policy 1.1 Cooperate with state, federal and regional agencies to monitor water quality and to provide an adequate supply of high quality water for local and regional needs.

Policy 1.2 Encourage practices that stress soil conservation as a means to retain native vegetation, maximize water infiltration, provide slope stabilization, allow scenic enjoyment, and reduce flood hazards.

Policy 1.3 Preserve adequate open space areas for major habitat types, so as to maintain ecosystems in a natural balance for recreation, scientific, economic, educational, and scenic purposes.

Policy 1.4 Work with appropriate agencies to rehabilitate the oil fields or encourage the rehabilitation of these lands within the planning area for open space, recreation, or other beneficial resource conservation uses after site reclamation.

Policy 1.5 Encourage property owners to preserve areas with native vegetation, wildlife habitat, and visual beauty.

Issue: Energy Conservation

Urban development creates a demand for energy in the construction, maintenance, and operation of various structures and equipment. Energy is also consumed by human activities and vehicle use. Dwindling regional resources and increased demand have led to cost increases and the threat of resource depletion. Energy conservation will help reduce costs and assure resource availability in the future.

Goal 2 The City of Whittier recognizes that current sources of energy are limited and should not be wasted. Whenever possible, especially in new development, special energy conservation measures should be included in the design of the project.

Policy 2.1 Encourage energy conservation measures in existing and new developments, whether public or private, within the Whittier planning area.

Policy 2.2 Encourage developments to take advantage of energy conservation programs offered by utility companies and other agencies.

Issue: Open Space

Open space areas refer to any parcel or area of land or water that is essentially unimproved and is devoted to an open space use for the purposes of (1) the preservation of natural resources, (2) the managed production of resources, (3) outdoor recreation, or (4) public health and safety. The preservation of existing open space will promote conservation of these resources and help maintain the quality of the environment. The policies below emphasize the City's concern for the availability of open space areas in the community.

Goal 3 Secure a safe, healthful, and wholesome environment through careful planning and preservation of open space resources.

Policy 3.1 Protect existing wildlife habitats through the preservation of open space.

Policy 3.2 Future hillside development will be permitted or approved only if it involves minimal adverse impacts on the environment and natural topography.

Policy 3.3 Participate with the County of Los Angeles, the Southern California Association of Governments, and other responsible agencies on all open space planning matters to the extent necessary to implement the City's General Plan policies regarding open space, housing production goals, and wildlife preservation within its sphere of influence.

Policy 3.4 Continue to enforce mitigation measures for projects which have the potential for significant and irreversible adverse environmental effects.

Policy 3.5 Work with other agencies and service organizations to identify potential strategies and funding sources for the acquisition of open space within the Puente Hills and other areas of the City and encourage flexibility in the planning of any development in the Puente Hills, to allow innovative planning designs that preserve open space and reduce potential environmental impacts.

Issue: Acquisition of Open Space

Open space areas in private ownership cannot be designated as open space in a General Plan. Development pressure will likely lead to urban development on vacant lands in the City and areas

that are developed are not expected to revert back to open space. Open space areas, designated as such in a General Plan, need to be acquired by the City or dedicated by private property owners as a condition of approval before development takes place.

Goal 4 Preservation of open space land for resource retention and recreational use will be a priority in future planning.

Policy 4.1 The City should encourage the dedication of open space land for public use whenever possible.

Policy 4.2 Retain existing open space in public ownership, wherever possible, including surplus land within the City limits offered for sale by other public agencies.

Policy 4.3 Encourage the retention of privately-owned outdoor recreation uses and consider the public acquisition of such land when the open space uses located, thereon, may be discontinued by the owners.

Policy 4.4 Actively pursue acquisition of open space areas not only to provide areas for traditional recreation activities, but also to preserve ecological features which are valuable for their scientific, educational, scenic, and cultural values.

Policy 4.5 Pursue the use of open space land used for public and semipublic rights-of-way for possible multiple use which would complement the continuity of other designated open space areas, with the consent of the owners and other appropriate agencies.

Policy 4.6 Make every effort to locate possible sources of funds for the acquisition of open space, including, but not limited to, Federal funds, State funds, County funds, Proposition A (Safe Neighborhoods & Parks Act of 1992), and funds from private sources.

Policy 4.7 Work toward the acquisition and dedication of open space land in the unincorporated county areas for purposes of expanding the Hellman Wilderness Park.

Issue: Recreation

Recreation improves individual well-being and is a source of enjoyment, diversion, and entertainment. Recreation opportunities in the City of Whittier are provided by public parks, private recreational facilities, open space areas, and bicycle and equestrian trails. These facilities make the City a more attractive residential location and support the recreational interests of residents.

Goal 5 Provide a sufficient range of recreation opportunities to meet the needs of residents of all ages and interests in the community.

Policy 5.1 Identify the needs and possible locations for special use facilities such as trails, swimming pools, multi-use sports fields, walking trails, bicycle and equestrian trails in the City.

Policy 5.2 Encourage cooperation between all user groups and agencies involved with parks and recreation, with special emphasis on the coordination of parks and school programs and facilities.

Policy 5.3 Integrate recreation planning efforts to consider conservation, open space, and scenic highway areas and programs designed to conserve these resources.

Policy 5.4 Identify all land under public and private ownership used for recreation within the Whittier planning area in order to determine the availability of such lands for park and recreation purposes.

Policy 5.5 Develop a system of continuous cross town bicycle, equestrian, and hiking trails which will encourage the use and enjoyment of public open space in the City and the surrounding area.

Policy 5.6 Cooperate with the County of Los Angeles in the establishment and acquisition of open space and park land, including but not limited to, greenbelts, trails, and wilderness-type reservations.

Policy 5.7 Update the survey of parks and recreational facilities in the City to assess the current effectiveness of parks and recreation programs, as well as the needs and interests of Whittier residents, and update the City's Master Plan for Parks and Recreational Facilities.

Policy 5.8 Translate recreational needs into space requirements in order to determine optimum standards for park development.

Policy 5.9 Promote access to the physically challenged within existing and future parks.

Policy 5.10 Coordinate the use of parkland with other community concerns, such as air quality, traffic circulation, and safety.

Policy 5.11 Encourage the use of parks by promoting a wide range of uses and activities for equestrians, hikers, children, joggers, cyclists, etc.

Policy 5.12 Encourage joint use/maintenance agreements with school districts to provide athletic fields and gymnasiums for the use of all persons in the community.

Policy 5.13 Encourage the landscaping of railroad rights-of-way and major arterials to serve as buffers from adjacent uses.

Policy 5.14 Wherever feasible, provide recreational improvements in conjunction with existing facilities that have other primary purposes, such as flood control or abandoned railroad rights-of-way.

Policy 5.15 Encourage the preservation of privately-owned residential open space (e.g. common areas within residential projects).

Policy 5.16 Support the implementation of the Whittier Hills Park Plan.

Issue: Scenic Roadways and Corridors

Whittier has many scenic amenities which include the Puente Hills, tree-lined streets, and attractive historic neighborhoods. These amenities enhance the environment and create a sense of identity for the City. By recognizing the factors that contribute to the area's aesthetic qualities, the City can better preserve and enhance the beauty of its physical environment.

Goal 6 Maintain amenities along major roadways which provide beauty, identity, and form to the community and to neighborhoods within the community.

Policy 6.1 Upgrade entryways and areas along major thoroughfares through the City.

Policy 6.2 Protect scenic corridors that have aesthetic, recreational, cultural, or historic values.

Policy 6.3 Identify the portions of the street system which, together with the adjacent scenic corridors, require special scenic treatments.

Policy 6.4 Work closely with the County of Los Angeles or appropriate State agencies on the preparation of plans for scenic corridors identified by the ERME and adopted by either the City or County.

Issue: Hillside Areas

The Puente Hills are an important ecological and scenic resource for the City and represent the only remaining large undeveloped area. Without adequate controls on future hillside developments, the Puente Hills and its resources could be lost, destroyed, or neglected.

Goal 7 Protect and preserve the hillside areas.

Policy 7.1 Work with land owners and government agencies in promoting land use plans that are sensitive to the environment and give maximum consideration to the preservation of natural habitats.

Policy 7.2 Work with land owners and government agencies in identifying areas that should be preserved as open space for recreation, resource management, or public safety.

Policy 7.3 Continue to work with Los Angeles County and other government agencies in the preparation and review of development plans in the Puente Hills and in identifying ways to preserve the environment.

Policy 7.4 Promote the preservation of the Puente Hills within the planning area between Workman Mill Road and the La Habra Heights boundary as permanent open space, to the greatest extent possible, for the enjoyment of not only the citizens of Whittier, but for the surrounding communities and Southern California as a whole.

Policy 7.5 Continue to enforce the City's hillside development standards.

Issue: Source Reduction and Recycling

The lack of available land for landfills and the environmental consequences of past waste disposal activities have led to the increasing need for recycling and reuse of materials, products, and solid waste. While the City of Whittier has its own municipal landfill, decreases in its capacity and area for expansion call for more aggressive recycling practices. Reductions in the amount of solid waste will lead to the preservation of land for urban or open space use and the protection of soil, groundwater, and air resources.

Goal 8 Promote recycling, source reduction, and waste management practices to reduce the volume of solid waste.

Policy 8.1 Support and complement existing recycling programs by public and private agencies (Lion's Club, Boy Scouts, area grocers, etc.) and encourage waste stream reduction and recycling of solid waste to extend the life of the Savage Canyon Landfill.

Policy 8.2 The City will implement the Source Reduction and Recycling Element pursuant to AB 939.

IMPLEMENTATION PROGRAMS

Environmental resource management is an important program. In order to achieve the goals and policies of this Element, specific implementation measures have been identified. These measures include existing and new programs that would be undertaken by City staff. Table 5-1 identifies the implementation measures for each ERME goal and policy. A description of each measure, along with the responsible agency, time frame for implementation, and funding source is provided in Section 10.

TABLE 5-1
ERME IMPLEMENTATION

Goal	Policy	Implementation Measure
1. Preservation of valuable natural & cultural resources.	1.1 Cooperate with other agencies in preserving water resources.	Inter-agency Coordination Water Quality Monitoring Wells Water Conservation Program
	1.2 Encourage soil conservation.	Tree Preservation Program Sidewalk & Parkway Development & Maintenance Hillside Standards
	1.3 Preserve open space areas for wildlife & plant habitats.	Puente Hills Cooperative Planning Program
	1.4 Work with other agencies in rehabilitation of oil fields.	Oil Field Rehabilitation & Site Reclamation Puente Hills Cooperative Planning Program Open Space Acquisition Environmental Review
	1.5 Encourage preservation of areas with native vegetation wildlife habitats and visual beauty.	Environmental Review Hillside Standards Tree Preservation Program
2. Promotion of Energy Conservation.	2.1 Encourage energy conservation measures.	Energy Conservation
	2.2 Encourage the use of energy conservation programs offered by utility companies.	Energy Conservation

TABLE 5-1
ERME IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
3. Preservation of Open Space Resources	3.1 Protect unique examples of wildlife habitat.	Environmental Review Hillside Standards Park Needs Study Update
	3.2 Minimize development impacts on hills & natural vegetation.	Environmental Review Hillside Standards Open Space Acquisition
	3.3 Participate with other agencies in open space planning within the City's sphere of influence.	Puente Hills Cooperative Planning Program
	3.4 Enforce mitigation measures for development.	Environmental Review Inter-agency Coordination Environmental Regulations Mitigation Monitoring
	3.5 Identify potential strategies and funding sources for open space acquisition.	Open Space Acquisition Park Needs Study Update
4. Preservation of Open Spaces.	4.1 Encourage dedication of open space land.	Park Needs Study Update
	4.2 Retain existing open space in public ownership.	Park Needs Study Update
	4.3 Preserve private open space areas and consider public acquisition.	Deed Restriction Private Recreation Facilities

TABLE 5-1
ERME IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
Preservation of Open Spaces (continued)	4.4 Pursue acquisition of open space areas.	Open Space Acquisition Puente Hills Cooperative Planning Program
	4.5 Pursue the use of open space for multi-use trails.	Conversion of Railroad Rights-of-Way Park Needs Study Update
	4.6 Explore funding sources for acquisition of open space.	Open Space Acquisition Park Needs Study Update
	4.7 Pursue future expansion of Hellman Wilderness Park.	Park Needs Study Update Wilderness Park Expansion
5. Provision of Recreation Opportunities	5.1 Identify possible locations for special recreational facilities.	Park Fees Parks Needs Study Update Private Recreation Facilities
	5.2 Encourage cooperation in park planning.	Recreational Facilities Planning Park Maintenance & Recreation Programs
	5.3 Integrate recreation planning with conservation, open space, & scenic highway programs.	Park Needs Study Update
	5.4 Identify land that may be suitable for future park development.	Open Space Acquisition Park Needs Study Update Wilderness Park Expansion
	5.5 Develop a system for bicycle, equestrian and hiking trails.	Park Needs Study Update Bikeway and Equestrian Trails Open Space Acquisition National Historic Trail
	5.6 Cooperate with Los Angeles County in open space & park planning.	Bikeways and Equestrian Trails Puente Hills Cooperative Planning Program

TABLE 5-1
ERME IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
Provision of Recreation Opportunities (continued)	5.7 Update Parks Needs Study to evaluate effective use of current parks and recreation programs.	Park Needs Study Update
	5.8 Translate recreational needs into park space requirements.	Park Needs Study Update
	5.9 Promote handicap access at City parks.	Handicap Access Requirements
	5.10 Coordinate use of parkland of other community concerns.	Park Needs Study Update
	5.11 Encourage full use of parks & recreational facilities.	Park Needs Study Update Park Maintenance & Recreation Program
	5.12 Encourage joint use/maintenance agreements with school districts.	Recreational Facilities Planning
	5.13 Encourage landscaping of railroad rights-of-way & major arterials.	Landscaping and Land Use Buffers
	5.14 Provide recreation facilities in conjunction with existing facilities.	Conversion of Railroad Rights-of-way
	5.15 Preserve privately-owned residential open space land.	Deed Restriction
	5.16 Whittier Hills Park Plan.	Parks Needs Study Update Wilderness Park Expansion

TABLE 5-1
ERME IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
6. Maintenance of some roadways & corridors.	6.1 Upgrade entryways & areas along major thoroughfares.	Entryway Signage Sign Ordinance Review Sidewalk & Parkway Development & Maintenance Street Maintenance Tree Preservation Program
	6.2 Protect scenic corridors.	Scenic Corridor Preservation Tree Preservation Program
	6.3 Identify portions of street system which would benefit from scenic treatments.	Scenic Corridor Preservation
	6.4 Cooperating with county and state agencies for scenic corridor plans.	Scenic Corridor Preservation National Historic Trail
7. Work with property owners & governmental agencies in planning of Puente Hills.	7.1 Promote land use plans that are sensitive to environment & infrastructure capacity.	Puente Hills Cooperative Planning Program
	7.2 Promote land use plans that consider typography, compatibility with existing development and viewsheds.	Puente Hills Cooperative Planning Program Hillside Standards
	7.3 Work with other agencies in the review of development in the Puente Hills.	Puente Hills Cooperative Planning Program
	7.4 Promote the preservation of the Puente Hills within the planning area.	Puente Hills Cooperative Planning Program
	7.5 Continue to enforce hillside development ordinance.	Hillside Standards

TABLE 5-1 ERME IMPLEMENTATION (continued)		
Goal	**Policy**	**Implementation Measure**
8. Promotion of source reduction, recycling, & waste management.	8.1 Support existing recycling programs.	Source Reduction & Recycling Element
	8.2 Implement source reduction & waste recycling element.	Source Reduction & Recycling Element

ENVIRONMENTAL RESOURCE MANAGEMENT PLAN

The earth's resources are limited and many of our resources are non-renewable. Conservation and managed use allow maximum utilization and ensure continued availability of these resources for future generations. Water, soil, and mineral resources are finite resources. Their continued availability will only be possible with conservation. Plant and animal communities need to be protected to maintain ecological balance. Open space areas, once developed, cannot be returned to their natural condition. Thus, they have to be preserved. Parks and recreational facilities provide opportunities for leisure, enjoyment, and relaxation. The scenic qualities of the community are often provided by natural landforms and open spaces. Environmental resource management is concerned with the protection of the area's resources from neglect, destruction, or depletion.

The Whittier Environmental Resource Management Plan calls for maximum protection of the natural environment and available resources. The Plan contains three major components: the Conservation Plan, the Open Space and Recreation Plan, and the Scenic Corridor Plan, corresponding to the major issues addressed by the Element. The Conservation Plan deals with water resources, mineral resources, plant and animal communities, and the natural topography. The Plan provides a citywide approach to the utilization, conservation, and management of these resources. It includes a program for preservation of significant resources and standards for development in areas with identified resources. The Recreation Plan address parks and recreation facilities, bikeways and equestrian trails, and open spaces. Guidelines for overall development of recreation opportunities in the City and standards for park development are outlined in the Plan. The Scenic Corridor Plan provides for the identification and improvement of Whittier's scenic corridors.

CONSERVATION PLAN

The Background Report for the ERME has identified the presence of natural resources in the planning area. The location of these resources represent the remaining areas where development has not disturbed or obstructed access to the resources. For purposes of future planning, a sensitivity ranking has been established according to the following:

- **Low Sensitivity** - In Whittier, areas with no significant resources or where past development has destroyed or significantly altered the presence or availability of resources are considered to have *low sensitivity*. These include the urbanized areas of the City consisting of almost 80 percent of the total land area.

- **Moderate Sensitivity** - Areas with low density developments where natural resources may still be present or may be utilized and areas adjacent to identified ecological resources are considered to have *moderate sensitivity*. Increases in human activities or development intensity in these areas can disturb or destroy existing natural resources or prevent future access and use of these resources. Areas with moderate sensitivity include those areas near the hillsides and other undeveloped land serving as parks, flood control channels, etc.

- **High Sensitivity** - Areas with ecologically sensitive resources are those areas where studies or activities have uncovered a significant or important natural resource areas currently used for the extraction of resources, or undisturbed areas that have a very high potential for the presence of natural resources. These areas have *high sensitivity* and are the priority targets for conservation and preservation. They include the canyons which serve as water recharge areas; the hillside with sensitive plant and animal habitats, oil resource areas where drilling is ongoing; and other areas where resources will be uncovered in the future.

The City of Whittier is working towards the conservation of natural resources and the preservation of areas with significant resources. Conservation efforts will be made according to the sensitivity of identified resources. Conservation efforts will be focused on areas with high sensitivity and where City programs will have the greatest impact on the conservation of natural resources. The programs include aggressive measures to promote the preservation, conservation, or managed use of natural resources.

The Conservation Plan calls for the protection of water resources. The area's water resources are part of the complex groundwater system throughout the Los Angeles Basin. The resources in the City of Whittier are confined to the presence of canyons which serve as recharge areas. While the City of Whittier derives its water supply from wells in the Whittier Narrows area, it is responsible for ensuring that groundwater resources are not overdrafted or depleted. The canyons in the Puente Hills provide natural recharge areas which need to be preserved to allow the natural recharge of local aquifers and the continued availability of water.

Also, the City of Whittier is concerned with protecting the groundwater resources from contamination and other forms of destruction which will prevent their availability for domestic uses. This applies to the Savage Canyon Landfill, industrial areas, and activities involving hazardous materials. Programs to protect groundwater contamination have to be in place. Water conservation programs should also be developed to reduce the amount of groundwater pumping at the Whittier Narrows area.

The Savage Canyon Landfill serves the waste disposal needs of the City. Waste reduction programs will lengthen the life of the landfill and will allow the landfill to serve future residents of the City.

The Conservation Plan also includes regulations on the drilling of oil resources. The City of Whittier owns the mineral rights on City-owned property and Chevron Company controls the majority of oil fields in the surrounding county area. There will be controls on drilling operations, disposal of oil on the ground, and reclamation of the site after oil drilling operations cease. The standards may include:

- Drilling activities to be at least 300 feet from residential areas;
- Safety measures for operations and employees;
- Operations fenced from public view with landscaping, walls or berm;
- Approval of a conditional use permit for day-to-day operation, closure, or abandonment of oil wells;
- Clean-up of oil products and by-products on the drilling sites; and
- Development of reclamation plans for review and approval by the City and responsible agencies.

The Puente Hills contain the oil resources in the area. At the same time, they are the only remaining areas with native vegetation and wildlife habitats. The balance between oil drilling activities and the protection of plant and animal communities in the hillsides must be established. The City will actively support ecologically sound practices related to oil well closure and abandonment in the Puente Hills.

The protection of plant and animal communities in the Puente Hills means the preservation of these areas as open space. Open space refers to areas left vacant and undeveloped to allow biological resources to exist and thrive. With much of the Puente Hills owned by private individuals and groups, and located outside the City limits, the City of Whittier has limited control of development in the area. In order to preserve the hills, the City of Whittier will explore funding sources and other ways to acquire the most ecologically sensitive areas of the Puente Hills.

Development plans are currently being proposed for some areas of the Puente Hills. In recognition of property rights and County authority over the area, the City of Whittier wants to be actively involved in the planning and conservation of the hills. The City will actively pursue the preservation of the open space resources in the area. This will lead to the protection of ecological resources in the habitats and hills.

Plant and animal communities may be re-established by encouraging residents to use native plant materials and drought tolerant vegetation. This will conserve water and increase plant and animal habitats in the City. The landscaping of exposed slopes and graded areas will also protect the natural topography of the hillsides.

Development Standards

Conservation does not necessarily mean the prevention of development and keeping the areas vacant and underutilized. There are several ways to protect natural resources. By providing appropriate development standards for areas with high sensitivity, the City of Whittier can protect natural resources while still allowing development to take place. Urban developments in highly sensitive areas must be reviewed for their impact on the presence and availability of natural resources. Exhibit 5-1 shows designated conservation areas in the planning area that correspond to those areas identified as having a high sensitivity. The following standards should apply to development within areas with high sensitivity for ecological resources:

- Field surveys and investigations must be made to identify potential natural resources prior to development approval.
- Brush control programs for fire prevention should be sensitive to natural vegetation and animal habitats.
- Trustee agencies and local environmental groups should be consulted to insure the environmental review is thorough.
- Development should be sensitive to significant natural resources located onsite or in nearby areas.
- Limit off-road vehicle use in the hillsides which may destroy existing resources.
- Prevent development in areas with geologic and seismic hazards where risk cannot be eliminated by construction methods.

OPEN SPACE AND RECREATION PLAN

Recreational opportunities in the City of Whittier are provided by City parks, private recreation facilities, open space areas for hiking or biking, bicycle and equestrian trails, and scenic corridors. The City's Recreation Plan includes the development of recreation facilities, trails, and scenic corridors, and the preservation of open space areas and amenities that create the scenic qualities in the planning area.

Open space is preserved for a variety of reasons. It provides watershed areas, prevents erosion, provides recreational opportunities, preserves wildlife habitats, controls pollution, and provides

visual and aesthetic amenities. The majority of the natural environment has been replaced by urban development. In Whittier, very little land remains undeveloped. Vacant lots within urbanized areas cannot serve open space purposes because they are surrounded by structures and are often small scattered parcels that will be developed in the future.

The Puente Hills provide the major open space resource in the City. The hills provide watershed, erosion control, recreation, wildlife habitats, pollution abatement, and visual values. Future development within the Puente Hills will need to be sensitive to the seismic risk that is present from the Whittier fault as well as other potential hazards (wildfire, landslides, liquefaction, etc.). The hills also provide the City with its scenic qualities.

The City of Whittier is largely developed and new park areas and open space will only be available with dedication from private ownership or from direct purchase of suitable land. The City of Whittier establishes the following guidelines for the acquisition of open space:

The highest priority for acquisition should be given to those open space and natural resource sites to which at least one of the following applies:

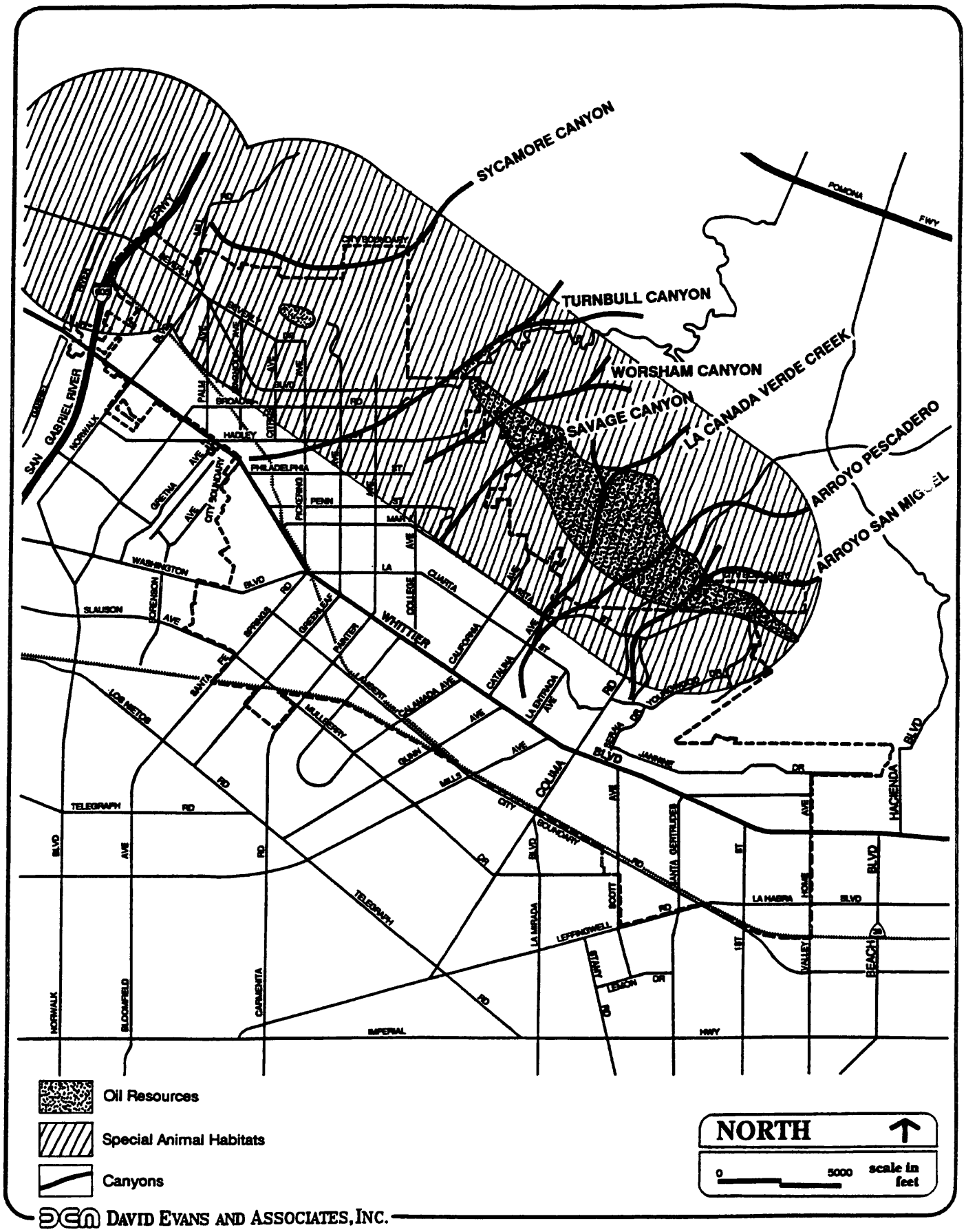
- The land is subject to development in the near future which will irreversible destroy its open space value; or
- The area is recognized as having significance, in terms of containing unique ecological or cultural resources, by the scientific community.

The next level of priority should be accorded to those areas which:

- Are located adjacent to larger open space areas; or
- Land that, through its preservation, would complement the efforts of other agencies or individuals in preserving open space.

Exhibit 5-2 shows existing recreation opportunities in the area. Park development should be pursued to meet the recreational needs of the City. As population growth and new development occurs, the need for parks and recreational facilities increases. The City of Whittier sets standards for park development to ensure that adequate facilities are available and all interests are served. These standards include:

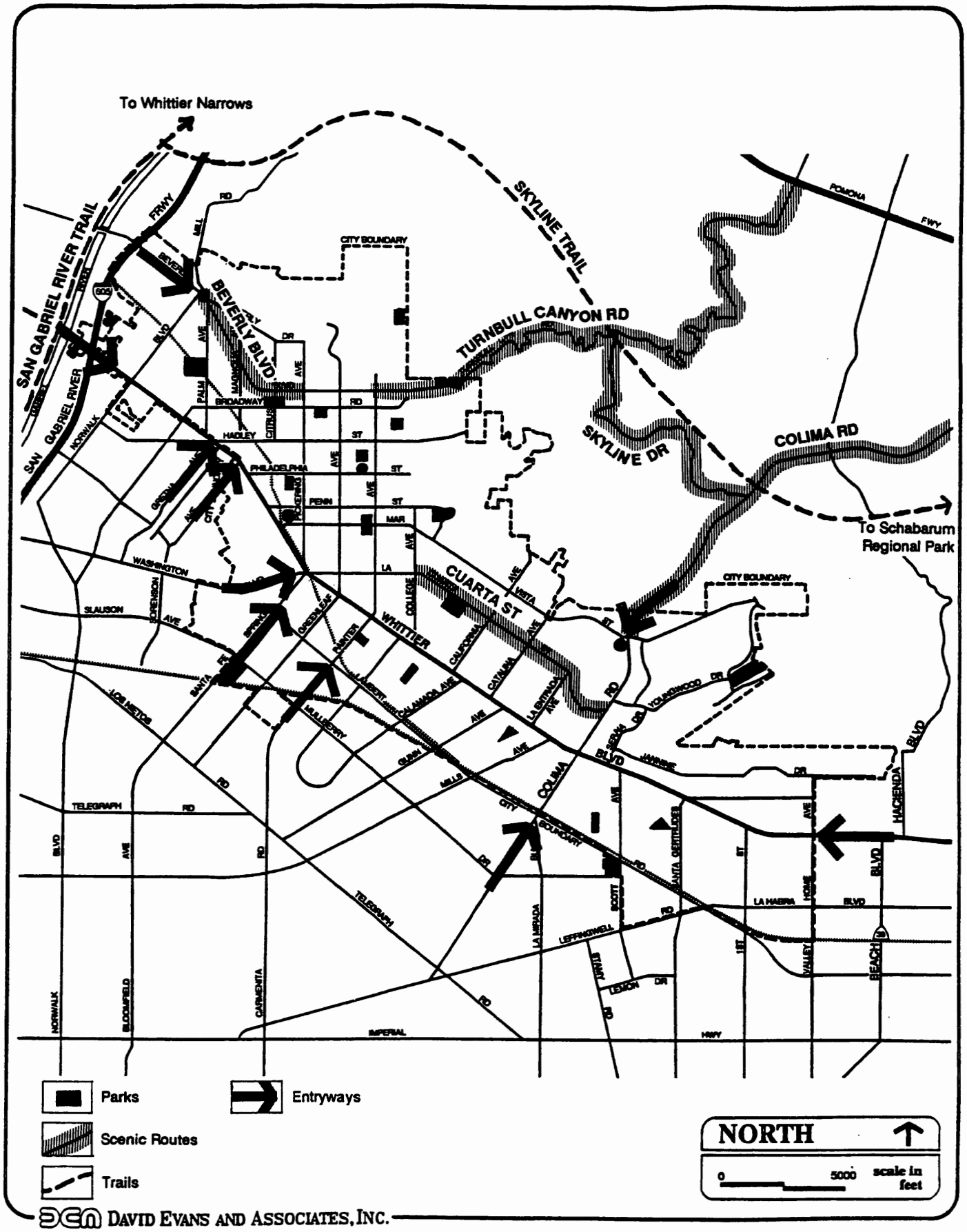
- The City will strive to provide at least 4.5 acres of parkland (improved park area for passive and/or active recreation use) per 1,000 residents.
- Provide adequate park facilities for new residential development.
- Provide a variety of recreation opportunities and park facilities including:



City of Whittier

GENERAL PLAN

EXHIBIT 5-1
CONSERVATION AREAS



City of Whittier

GENERAL PLAN

EXHIBIT 5-2
RECREATION OPPORTUNITIES

Mini Park - A mini park is approximately 1/4 to 1 acre in size with a 1/4 mile service radius. This category of park often utilizes available vacant land and is best located in high density housing and commercial areas. Mini-parks are considered only where the development of larger parks is not possible.

Neighborhood Park - Neighborhood parks are 1 to 7 acres in size with a 1/2 mile service radius. They may be smaller (1 to 4 acres) if located near schools. The service area of neighborhood parks is defined by arterial streets, railroads, and other physical barriers. Neighborhood parks often serve an established residential area and are used by bike-to or walk-to users.

Community Park - Community parks serve several neighborhoods and are 7 to 30 acres with a 1 mile service radius. They serve drive-to users and have facilities such as tennis courts, swimming pools, multi-purpose courts, community centers, senior citizen centers, and other varied facilities.

Specialty Park - A specialty park often has only one facility, such as a tennis court or baseball field, and would be used city-wide. Wilderness parks are included in this category and are often developed by counties for regional use. Wilderness parks should have a minimum area of 50 acres or more to accommodate users from the region and may have lakes and equestrian, hiking, and bicycle trails. They often have unique vegetation and topography and are not fully developed.

- Park facilities should have direct street access, available parking areas and utility connections.
- Provide retention and maintenance of existing park facilities.
- The City will promote shared use of school recreational facilities through joint use agreements.

Aside from parks and recreational facilities, bikeways and hiking trails connect major parks and activity centers. The City should pursue the development of a bicycle trail system throughout the City. Exhibit 5-3 shows the proposed bikeway plan. Designation routes should be developed as multi-use trails which will serve hikers, cyclists and/or equestrians. The trails connect parks, schools, commercial centers, regional trails, and parks and other facilities that would benefit from linkages. Aside from trails to various parks and activity centers, the trails should be developed along the scenic corridors of the area.

Specific steps to take in the provision of parks and in the development of a trail system in the City shall be the focus of the Park Needs Study that will be periodically updated. This Park Needs Study will be the primary program for implementing the Recreation Plan of Whittier.

SCENIC CORRIDOR PLAN

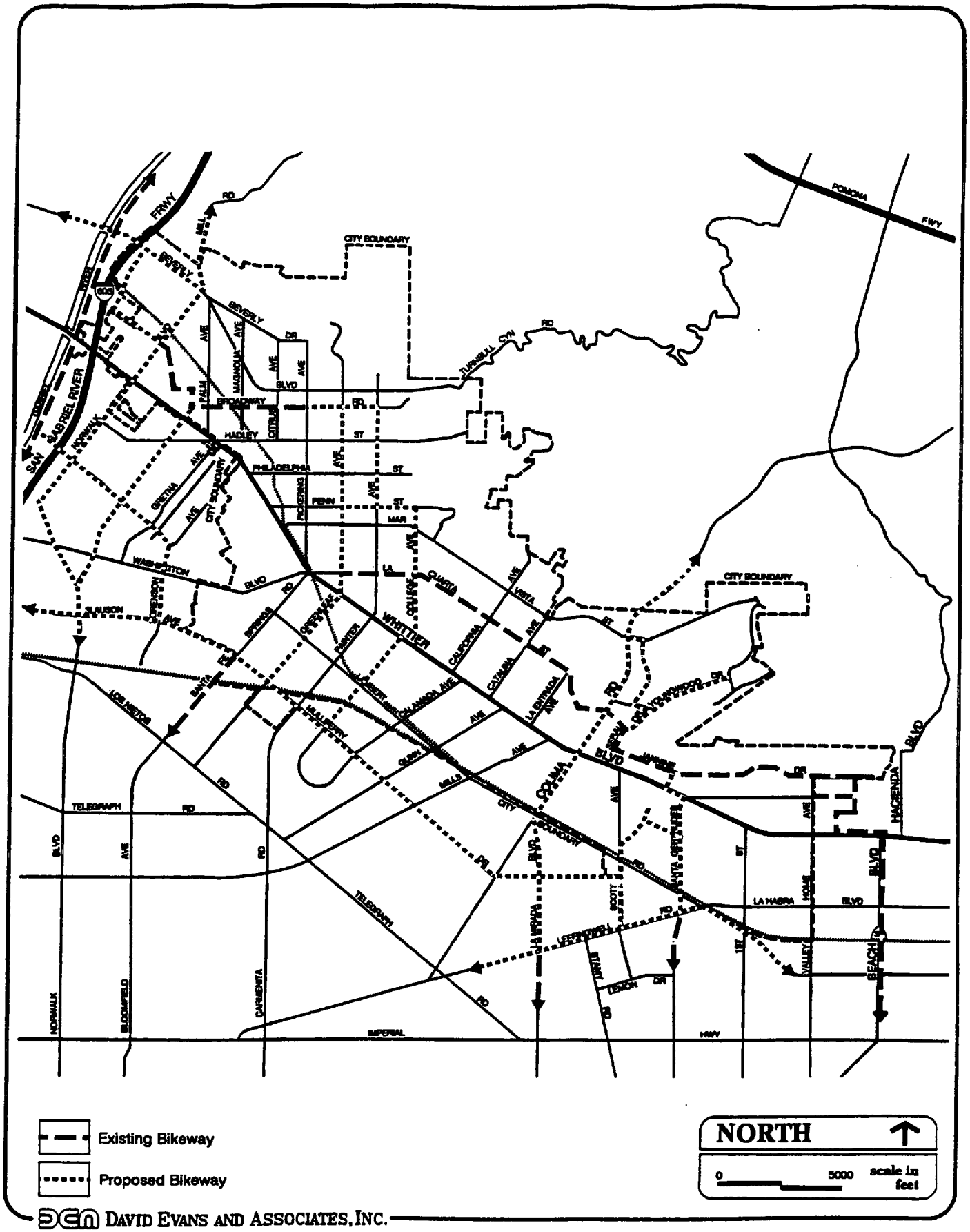
The scenic qualities of the City may be enhanced by the adoption of a program for positive identification of these resources. Scenic corridor development means the improvement of corridors to bring out their scenic qualities; control of structures, signs, and infrastructures along scenic corridors; and identification of the presence of aesthetic resources. The City of Whittier has scenic qualities in the form of tree-lined streets, roadways into the hills, views of the Puente Hills from the City, and aerial views of the City from the hills. The following standards apply to designated scenic and design corridors:

- Development of a landscaping plan for scenic corridors;
- Undergrounding of utility lines where appropriate;
- Limit and control of signs along corridors;
- Coordination of trail systems development along these corridors;
- Design standards for development along the corridors;
- Control of development which may detract from existing scenic qualities (block views and ridgelines); and
- Entryway treatments will be provided and maintained.

In order to preserve the qualities of scenic and design corridors, new development will be subject to the following standards:

- Design review for development along designated scenic and design corridors;
- Minimum grading or alteration of natural topography on parcels adjacent to the scenic corridors;
- Compatibility with existing character in terms of scale, height, design, building materials, and landscaping; and
- Promote landscaping, median treatments, etc., where appropriate.

Exhibit 5-4 indicates the designated scenic and design corridors and entryways in the City.

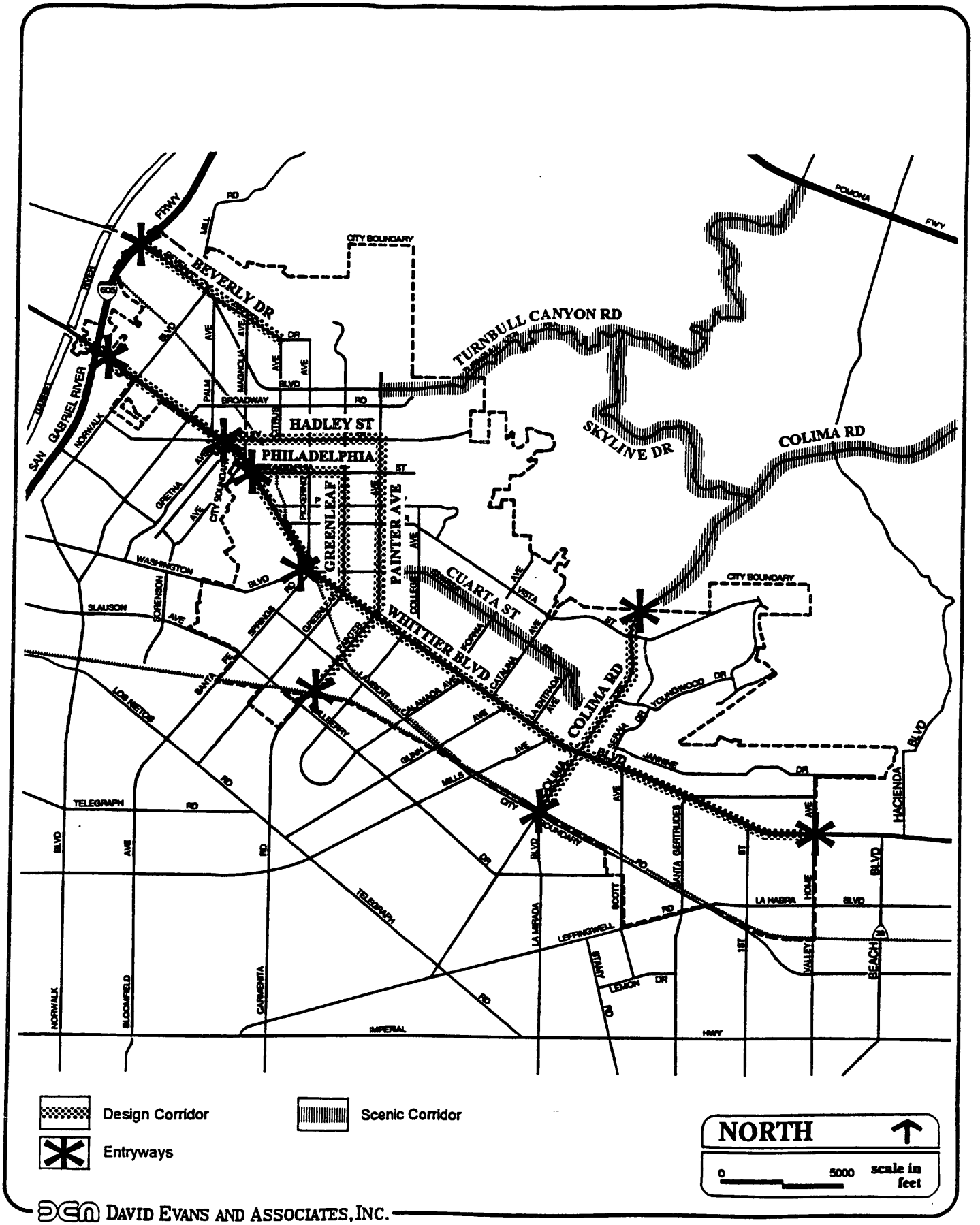


DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 5-3
BIKEWAY PLAN



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 5-4

DESIGN AND SCENIC CORRIDORS AND ENTRYWAYS

SECTION 6: AIR QUALITY ELEMENT

INTRODUCTION

The Air Quality Element addresses local issues and focuses on programs related to the improvement of air quality. The goals and policies of the element meet the underlying goals and requirements of the 1991 regional Air Quality Management Plan (AQMP) prepared by the South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG) which apply to local governments. The Element emphasizes actions that the City shall take programs that will facilitate participation by local industries and residents in improving local and regional air quality. While the City does not regulate air quality in the area or the region, local actions are required in order to demonstrate conformity to the adopted regional Air Quality Management Plan.

The Air Quality Element is not a state-mandated element but is recommended under the *1991 Air Quality Management Plan for the South Coast Air Basin*. The Air Quality Element contains programs that will allow the City of Whittier to contribute to the attainment of state and federal clean air standards. The Element includes standards for stationary source emissions and measures to reduce air pollution directly and indirectly.

A discussion of local and regional air quality and existing uses and programs affecting air quality in Whittier can be found in the Air Quality Element Background Report. A summary of the main issues is provided below.

- The climate of the Los Angeles basin is characterized by warm summers, mild winters, infrequent rainfall, moderate daytime onshore breezes, and moderate humidity. In Whittier, winters are seldom cold, frost is rare, and temperatures do not generally drop below 28°F. Rainfall averages 14.85 inches per year and occurs from late October to early April.

- The South Coast Air Basin, which includes most of the Southern California region, has been experiencing air pollution levels beyond the recommended state and federal standards. The Whittier air monitoring station shows exceedances of ozone and suspended particulates as recent as the late 1980's. Slight improvements in maximum concentrations for carbon monoxide, nitrogen dioxide, and ozone can be observed in recent years.

- Air pollution comes from vehicle exhaust, power generation, natural gas generation, and certain activities and equipment in construction and industry. In Whittier, vehicle emissions, households activities and commercial uses, and industrial and manufacturing uses each contribute about a third of local emissions from the area.

- Ways to reduce these emissions include increased use of public transportation and alternative means of travel; the reduction of truck and vehicle emissions, energy

consumption, and construction emissions; the decrease and shortening of vehicle trips; and public education concerning ways to effectively improve air quality.

AIR QUALITY GOALS AND POLICIES

The following goals and policies have been developed to correspond to ways that the City of Whittier can help improve air quality. These include measures relating to automobile travel, truck traffic, vehicle emissions, parking, growth management, energy consumption, particulate emissions, building and design standards, and regional cooperation. A brief discussion of each issue is provided below, followed by the goals and policies of the City of Whittier regarding the issue. The goals and policies are expected to make the City more aware of air quality impacts and to work towards the reduction of locally generated air pollution.

Issue: Automobile Travel

Automobiles are a major source of ozone and carbon monoxide pollution. The reduction of trips and trip lengths will reduce pollutant emissions associated with automobile use. This reduction in the dependence on private automobiles may be achieved through the use of public transit and alternative forms of transit.

Goal 1 Reduce emissions associated with single-occupancy automobile use.

- Policy 1.1 Enhance transit service and make the system user-friendly.
- Policy 1.2 Promote transit service and availability.
- Policy 1.3 Support development of a transit center linking local and regional bus service that provides a safe, attractive place to wait.
- Policy 1.4 Support trip-reduction programs, such as longer day, shorter week work schedules.
- Policy 1.5 Encourage participation in Transportation Management Associations/ Organizations.
- Policy 1.6 Encourage walking and bicycling.
- Policy 1.7 Encourage local merchants to offer incentives to customers who use transit or walk or bicycle to shop.

Issue: Truck Traffic

Trucks increase congestion on City streets and add to vehicle idling and slow travel. By diverting truck traffic, hydrocarbon and carbon monoxide emissions could be reduced and travel time can be shortened.

Goal 2 Reduce truck emissions.

Policy 2.1 Encourage diversion of peak hour truck traffic, whenever feasible, to off-peak periods to reduce roadway congestion and associated emissions.

Policy 2.2 Work to improve roadway safety by designing roadways to accommodate trucks and reduce potential for accidents that create congestion and associated emissions.

Policy 2.3 Encourage trucks operating within the City to maintain safety equipment and to operate at safe speeds so as to reduce the potential for accidents.

Issue: Vehicle Emissions

Emissions controls on passenger vehicles are beyond the City's ability to regulate, although the City may help reduce vehicle emissions in its own way. Vehicle emissions can be reduced by using cleaner fuels in City vehicles. Reducing idling time due to traffic congestion on City streets through signal congestion synchronization is another way the City can improve air quality.

Goal 3 Reduce directly emitted vehicle emissions.

Policy 3.1 Reduce idling emissions by improving traffic flow and the level of service through the use of synchronized traffic signals.

Policy 3.2 Encourage the use of alternative fuels and alternative energy sources in City-owned vehicles.

Issue: Parking Management

The 1991 AQMP recommends reductions in parking availability and restrictions on private automobile use designed to discourage single-occupancy automobile trips. Parking lot design that discourages queuing is also promoted.

Goal 4 Reduce vehicle emissions through improved parking design and transportation demand management.

Policy 4.1 Promote parking facility designs which discourage queuing.

Policy 4.2 Support easing of parking requirements on a case-by-case basis where a development is in close proximity to public transit and there are safeguards against spillover parking in adjacent areas.

Policy 4.3 Support community activities where parking is temporarily restricted and walking or public transit is facilitated.

Policy 4.4 Encourage centrally located parking in Uptown and other shopping areas where shoppers can walk or take the trolley to a number of destinations.

Policy 4.5 Encourage landscaping in parking areas to reduce fugitive dust and improve local air quality.

Issue: Growth Management

When residents have to drive longer distances to places of employment or services, greater pollutant emissions are generated by vehicle trips. Providing opportunities for employment for City residents or housing for Whittier's labor force will help reduce emissions associated with home-to-work trips.

Goal 5 Reduce emissions associated with vehicle miles traveled by providing a balance of jobs and housing.

Policy 5.1 Maintain the City of Whittier's existing favorable balance of job and housing opportunities.

Policy 5.2 Work cooperatively with adjacent job-rich communities to improve overall job/housing balance in the subarea.

Policy 5.3 Encourage mixed-use developments which combine housing and related commercial uses.

Policy 5.4 Encourage residential growth to occur in and around commercial activity centers and transportation node corridors.

Policy 5.5 Promote telecommuting and teleconferencing activities.

Issue: Energy Consumption

The generation of electricity and natural gas produces emissions at offsite power plants. Thus, energy conservation will indirectly reduce the pollution created by power generation and use within the South Coast Air Basin.

Goal 6 Reduce emissions associated with energy consumption.

Policy 6.1 Support the use of energy-efficient equipment and design in City facilities and infrastructure.

Policy 6.2 Encourage incorporation of energy conservation features in new developments and in the renovation of existing development.

Policy 6.3 Support passive solar design in new construction.

Policy 6.4 Support public participation in recycling programs to reduce emissions associated with manufacture and waste disposal.

Policy 6.5 Support use of drought-resistant vegetation in City landscaping areas and new development to reduce energy needed to pump water.

Issue: Particulate Emissions

Particulate emissions come from tires, diesel engine exhaust, windblown dust and ash, exposed soils, certain chemical processes and excavation, demolition, and construction activities. The City of Whittier can help control particulate emissions by regulating activities that create these pollutants.

Goal 7 Reduce fugitive dust emissions.

Policy 7.1 Encourage feasible fugitive dust reduction techniques to be utilized during construction activities.

Policy 7.2 Support the use of efficient equipment procedures in cleaning streets and parking areas.

Policy 7.3 Support subdivision design which minimizes grading and maintains the natural topography to the maximum extent feasible.

Issue: Building and Design Standards to Reduce Operational Emissions

Paints and wall finishes used in building construction also generate particulate matter and toxic emissions. Building and siting standards can reduce these hazards as well as prevent exposure to sensitive receptors.

Goal 8: Reduce potential air pollution emissions and impacts through siting and building design standards.

Policy 8.1 Support the use of low polluting construction materials and coatings.

Policy 8.2 Assess the air pollution impacts of all projects uniformly.

Policy 8.3 Actively encourage the separation of sensitive receptors, such as schools and hospitals, from sources of toxic emissions.

Policy 8.4 Actively encourage the separation of sensitive receptors from potential carbon monoxide hotspots.

Policy 8.5 Encourage the provision of bus shelters, turn-out lanes, etc. in new developments to promote the use of public transit.

Issue: Intergovernmental Cooperation

Air quality is a regional issue that the City of Whittier cannot address alone. Regional and interagency cooperation is needed if programs are to be successful and beneficial to the South Coast Air Basin.

Goal 9: Maximize the effectiveness of air quality control programs through coordination with other government agencies.

Policy 9.1 Participate in the SCAQMD rule development process on regulations which impact the City of Whittier to ensure that City concerns are resolved early in the process.

Policy 9.2 Verify that new local commercial and industrial establishments obtain all necessary SCAQMD permits prior to development.

Policy 9.3 Support state and federal legislation that results in improved air quality in the South Coast Air Basin.

Policy 9.4 Participate with neighboring cities in efforts to improve regional and subregional transit.

IMPLEMENTATION PROGRAMS

The Air Quality goals and policies will be implemented through a variety of programs and measures. Table 6-1 identifies the specific programs that address each policy. A discussion of each program can be found in Section 10.

TABLE 6-1
AIR QUALITY IMPLEMENTATION

Goal	Policy	Implementation Measure
1. Reduce emissions associated with automobile use.	1.1 Enhance transit service.	Public Transit
	1.2 Promote transit service & availability.	Public Transit SCAQMD Funds
	1.3. Support development of a transit center.	Southern Pacific Railroad Depot
	1.4 Support trip-reduction programs.	Flextime Work Schedules
	1.5 Encourage participation in Transportation Management Associations/Organizations (TMA/TMO).	Transportation Management Associations
	1.6 Encourage walking and bicycling.	Bikeways & Equestrian Trails Pedestrian & Bicycle Routes
	1.7 Encourage local merchants to offer incentives to customers who use transit or walk or bicycle to shop.	Bicycle Facilities
2. Reduce truck emissions.	2.1 Encourage diversion of peak hour truck traffic.	Through Truck Routes
	2.2 Work to improve roadway safety by designing roadways to accommodate trucks.	Traffic Safety Programs
	2.3 Encourage trucks operating within the City to maintain safety equipment and operate at safe speeds.	Traffic Safety Programs
3. Reduce directly emitted vehicle emissions.	3.1 Reduce idling emissions by improving traffic flow.	Synchronized Signals Signal Controls Analysis Traffic Improvements
	3.2 Encourage the use of alternative fuels in City vehicles.	City Vehicles & Equipment

TABLE 6-1
AIR QUALITY IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
4. Reduce vehicle emissions through parking design.	4.1 Promote parking facility designs.	Parking Standards Review
	4.2 Support easing of parking requirements on a case-by-case basis.	Parking Standards Review
	4.3 Support community activities where parking is temporarily restricted.	Temporary Parking
	4.4 Encourage centrally located parking in Uptown and other shopping areas.	Uptown Parking
	4.5 Encourage landscaping in parking areas.	Construction-related air quality impacts
5. Reduce emissions associated with vehicle miles traveled.	5.1 Maintain the City of Whittier's existing favorable balance of job and housing opportunities.	Jobs/Housing Balance
	5.2 Work cooperatively with adjacent job-rich communities.	Jobs/Housing Balance
	5.3 Encourage mixed-use developments.	General Plan & Zoning Ordinance Consistency
	5.4 Encourage residential growth to occur in and around commercial activity centers and transportation node corridors.	General Plan & Zoning Ordinance Consistency
	5.5 Promote telecommuting and teleconferencing activities.	Telecommuting & Teleconferencing

TABLE 6-1
AIR QUALITY IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
6. Reduce emissions associated with energy consumption.	6.1 Support the use of energy-efficient equipment and design.	Energy Conservation
	6.2 Encourage energy conservation features in new developments.	Energy Conservation
	6.3 Support passive solar design in new construction.	Energy Conservation
	6.4 Support public participation in recycling programs.	Source Reduction & Recycling Element
	6.5 Support use of drought-resistant vegetation.	Water Conservation
7. Reduce fugitive dust emissions.	7.1 Encourage feasible fugitive dust reduction techniques.	Construction-related air quality impacts City Vehicles & Equipment
	7.2 Support the use of efficient equipment and practices.	Hillside Standards
	7.3 Support subdivision design which minimizes grading and maintains the natural topography.	
8. Reduce emissions through siting and building design standards.	8.1 Support the use of low polluting construction materials and coatings.	Low-Polluting Materials
	8.2 Assess the air pollution impacts of all projects uniformly.	Environmental Review
	8.3 Actively encourage the separation of sensitive receptors, from sources of toxic emissions.	Toxic Emissions Landfill Monitoring System
	8.4 Actively encourage the separation of sensitive receptors from potential carbon monoxide hotspots.	Carbon Monoxide Hotspots
	8.5 Encourage the provision of bus shelters, turn-out lanes, etc. in new developments.	Public Transit Facilities

TABLE 6-1 AIR QUALITY IMPLEMENTATION (continued)		
Goal	**Policy**	**Implementation Measure**
9. Maximize the effectiveness of air quality control programs.	9.1 Participate in the SCAQMD rule development process.	Air Quality Coordinator Inter-Agency Coordination
	9.2 Verify that new establishments obtain all necessary SCAQMD permits.	SCAQMD Permits
	9.3 Support state and federal legislation on air quality.	Air Quality Coordinator Environmental Regulations
	9.4 Participate with neighboring cities.	Public Transit Program

AIR QUALITY MANAGEMENT PROGRAM

There are a variety of state and federal regulations relating to air quality and the reduction in air pollution for the improvement of the environment. The City of Whittier is committed to an active role in the improvement of air quality in the region through this Air Quality Element. It shall coordinate with various regulatory agencies in implementing air quality management programs for the City and surrounding area. Current air quality regulations are summarized below.

Federal Clean Air Act

The federal Clean Air Act (1977 Amendments) stated that designated agencies in any area of the nation, not meeting national clean air standards, must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards by December 31, 1987. The South Coast Air Basin could not meet the deadline for ozone, nitrogen dioxide, carbon monoxide, or PM_{10}. Congress enacted amendments to the Clean Air Act in October 1990 that extend this deadline to 2010 for all areas, including Southern California, that have severely degraded air quality.

In the South Coast Air Basin, the agencies designated by the governor to develop regional air quality plans are the South Coast Air Quality Management District and the Southern California Association of Governments (SCAG). The two agencies adopted a revised Air Quality Management Plan (AQMP) in July, 1991.

California Clean Air Act

In 1988, the California Legislature enacted the California Clean Air Act (CCAA). The CCAA amended the enabling authority for air pollution control districts in California. The legislature gave these districts, including the SCAQMD, broad new authority through the CCAA to regulate

motor vehicle use with indirect source controls in areas that have not met national or state ambient air quality standards.

The CCAA requires that regional emissions be reduced by 5 percent per year, averaged over 3 year periods, until attainment can be demonstrated. Each area that does not currently meet a national or state ambient air quality standard is to prepare a plan which demonstrates how the 5 percent reductions will be achieved. A plan was to be locally adopted and submitted to the California Air Resources Board (ARB) by June 30, 1991. Areas, including the South Coast Air Basin, with the most heavily degraded air quality are required by the CCAA to reduce emissions 50 percent from 1987 levels by December 31, 2000. Plans must be updated in 1998 if attainment cannot be demonstrated by the year 2000.

1991 Air Quality Management Plan

In July 1991, the South Coast Air Quality Management District adopted the 1991 Air Quality Management Plan, which was prepared to address the requirements of the California Clean Air Act. Local governments are required by the 1991 AQMP to implement specified AQMP measures, but the 1991 AQMP differs from the earlier 1989 AQMP in how local governments must comply. Truck restriction and parking management, including policies to revise parking codes, are the only measures required by the 1991 AQMP for inclusion in an air quality element for a city without a large special event center. Bicycle routes which facilitate home/work commuting are required in a general plan, although not necessarily in an air quality element. Other measures can be implemented through adoption of ordinances at least as stringent as model ordinances to be developed by the SCAQMD.

The 1991 AQMP requires local governments to adopt ordinances for the following strategies:

- Person work trip reduction;
- Non-motorized transportation;
- Employer rideshare and transit incentives;
- Auto use restrictions;
- Parking management;
- Merchant transportation incentives;
- Auto use restrictions; and
- Truck dispatching, rescheduling. and rerouting.

The SCAQMD declared its intent to adopt backstop rules that would be imposed in any city where implementation ordinances are determined by the SCAQMD to be inadequate. Additional local government measures, including control of emissions associated with new construction and reducing emissions from energy use, are also suggested in the AQMP. Measures for which the SCAQMD intends to adopt model ordinances are described below and are summarized in Table 6-2.

TABLE 6-2
LOCAL ACTIONS REQUIRED OR RECOMMENDED BY 1991 AQMP

AQMP STRATEGY	ORDINANCE		GENERAL PLAN	OTHER
	Required	Optional		
Alternative work weeks, telecommuting by government employees	X			
Alternative work weeks, telecommuting, trip reduction by local employers	X			
Telecommuting centers for new developments	X			
Set-aside local resident space for employers with multiple facilities	X			
Zoning and licensing to allow telecommuting and home employment	X			
Non-work trip reduction programs for special event centers	X			
Bicycle routes that support job and non-work trips			X	
Parking for bicycles, showers and locker facilities for new commercial and industrial facilities	X			
Trip reduction plans for employers of 100 and buildings housing 100	X			
Support for Transportation Management Association formation		X		
Parking management practices			X	
Revised parking codes			X	
Clean Streets Program	X			
Auto-free zones for special event centers (where applicable)			X	
Customer mode-shift incentives for large retail establishments	X			
Improved truck routing, delivery scheduling and shipping and receiving plans	X		X	
Supplemental development standards	X			
Actions to facilitate transit for regional shopping centers	X			
Local implementation of Regulation XV		X		
Data collection for SCAQMD				X

Source: South Coast Air Quality Management District. 1991 AQMP Appendices IV-C and IV-E.

Indirect Source Program

The 1991 AQMP set forth the following local government measures as constituting its indirect source program, as required by the California Clean Air Act. The AQMP gives local governments the option of also adopting these measures and implementing them at the local level, or letting the SCAQMD adopt and implement them.

- Environmental review program;
- Trip reduction for schools;
- Supplemental development standards;
- Special activity centers;
- Enhanced Regulation XV;
- Truck programs;
- Registration program; and
- Sensitive receptor review for risks from toxic air contaminants.

AQMP Conformity

The U.S. Environmental Protection Agency requires that local and regional components of state implementation plans (SIPs) that are developed to meet federal standards include conformity procedures for evaluating federally funded projects. Conformity demonstration procedures for the 1989 AQMP extended these demonstration requirements to non-federally funded capacity-enhancing wastewater treatment projects and to regionally significant transportation and general development projects. Guidelines for demonstrating this conformity were developed by SCAG and approved by the SCAQMD and ARB. These conformity requirements were also extended to the 1991 AQMP. Criteria for determining whether a project is required to demonstrate conformity are shown in Table 6-3.

TABLE 6-3
SIZE CRITERIA FOR PROJECTS
REQUIRING AQMP CONFORMITY REVIEW

1.	Airports with at least 50 based aircraft, 25,000 annual itinerant operations or 35,000 local operations
2.	Airports served by a CAB or PUC certified carrier
3.	Public use airports more than 20 miles away from the nearest airport meeting the above criteria
4.	Sports, entertainment or recreation facilities that accommodate at least 4,000 people per performance, or that contain 1,500 fixed seats or more
5.	Office building or office parks that employ more than 1,000 people or contain over 250,000 square feet.
6.	Hotels or motels with 500 rooms or more
7.	New electrical generating facilities or expansion of existing generating facilities
8.	Transmission lines with capacity of 22 kw or more
9.	Flood control project, dams, reservoirs or debris basins on or affecting a major water body that has a tributary area greater than 20,000 acres at the county line, or facilities on a drainage course having a tributary basin greater than 50,000 acres and draining directly into the ocean
10.	Projects in an area that is designated to be of regional significance and concern in the SCAG-adopted Conservation and Open Space Plan

TABLE 6-3 SIZE CRITERIA FOR PROJECTS REQUIRING AQMP CONFORMITY REVIEW (continued)	
11.	Industrial plants and industrial parks that employ more than 1,000 people, occupy more than 40 acres of land or contain more than 650,000 square feet of floor space
12.	Mining operations with more than 40 acres or producing 600,000 short tons annually
13.	Petroleum or gas refineries, recovery operations, storage facilities or expansion of existing facilities (not gas station storage facilities)
14.	Designation of a drilling district
15.	Petroleum and gas pipelines that are part of a national distribution system
16.	Water ports, or the expansion of an existing port, so that capacity is increased by at least one million short tons of cargo per year
17.	Small craft harbors with 300 or more boat slips or open water moorage, or expansions of an existing harbor to accommodate at least 300 additional boat slips or open water moorage
18.	Residential development including mobile home parks with 500 dwelling units or more
19.	State highways and arterial roads (construction or major modification) or roads that provide primary access to a regionally significant area (designated in the SCAG-adopted Conservation and Open Space Plan)
20.	Construction of a post-secondary school, public or private, for 3,000 students or more, or expansion of an existing facility having a capacity of 3,000 students or more by an addition of at least 20 percent more students
21.	Sewage treatment facilities with a capacity of at least 750,000 gallons per day, or the expansion of an existing facility by at least that much, and any proposed interceptor
22.	Shopping centers or trade centers that employ 1,000 persons or more, or contain 500,000 square feet of floor space
23.	Class I solid waste disposal sites or the expansion of an existing Class I site, or other sites of more than 40 acres, or expansions of sites by at least 40 acres
24.	Transit projects
25.	Water treatment facilities with a capacity of 225,000 gallons a day or more, or the expansion of an existing facility by that much, and proposed major arterial water mains
26.	Construction of a hospital of 500 beds or more, or expansion of a hospital of this size by 20% or more

General development projects subject to conformity review must demonstrate that they conform to the subregional job/housing balance goals established in the SCAG Growth Management Plan and incorporated in the AQMP. Such projects that do not conform to these goals must implement trip reduction measures, user fees, or other appropriate mitigation measures which will achieve reductions in vehicle miles traveled (VMT) equivalent to the amount that SCAG estimates would be achieved through meeting the job/housing balance target. The 1991 AQMP simply calls for transportation demand measures equivalent to the job/housing performance goal. These measures must be in addition to all those otherwise required in the AQMP. Job/housing balance is one option for achieving these reductions.

Initially, SCAG performs the conformity review for all applicable projects. Once a city or county has adopted an air quality element consistent with the AQMP, the local jurisdiction takes over the conformity monitoring and SCAG review is no longer required. Each city or county is responsible for monitoring the cumulative impact of small projects within its jurisdiction to determine whether progress is being made towards achieving job/housing balance. Semiannual reports on local actions to implement the Plan, as well as progress towards achieving job/housing balance or equivalent reductions in VMT are required by the Southern California Association of Governments (SCAG) and the South Coast Air Quality Management District (AQMD) in order to compile reports required by the California Air Resources Board as part of its 1989 AQMP approval action.

Conformity Procedures for the 1991 AQMP were issued by SCAG in May, 1991. They require that environmental documentation for all regionally significant general development projects be forwarded to SCAG for review through the Inter-Governmental Review process. Staff will complete its review within the California Environmental Quality Act (CEQA) review period, providing the document is received by SCAG at the beginning of the review period. SCAG will charge a fee to cover staff review time and expenses.

Conformity procedures for general development projects are similar to those for the 1989 AQMP. Two areas of difference are (1) that mitigation measures which achieve reductions in vehicle miles traveled equivalent to that which would be achieved through jobs/housing balance can be substituted for a jobs/housing balance demonstration, and (2) the analysis must show the alternative with the least air quality impact rather than showing that the project will result in no significant long term adverse impacts on air quality.

Comments are advisory to the lead agency. Failure to respond to SCAG's comments could establish a basis for legal challenge. Staff comments are subject to appeal to the Executive Committee. Once a local jurisdiction finds its general plan to be consistent with the AQMP, it may assume responsibility for making is own conformity findings.

Conformity results when a project is contributing to attainment of the appropriate regional VMT target for its subregion. The VMT reduction target for the Long Beach/Downey subregion is 1,250,000 miles. Transportation control measures used to make this finding must be in excess of current requirements, including Regulation XV, and other AQMP transportation measures. Alternatively, the project may show conformity by contributing to the jobs/housing performance ratio for the subregion.

Local Facilities

Whittier's economy is diversified, ranging from educational, medical, and waste disposal facilities, to professional and government offices, to subregional retail centers, to truck distribution centers, to small to medium manufacturing companies. This latter category includes machine shops, printers, metal casters, food processors, building supplies, etc. The largest manufacturer in terms of employees is Calcor Space Facility, Inc. with 330 employees; the largest single source of emissions is CMC Printed Bag.

Many local facilities are covered by SCAQMD regulations. Examples of the types of industries which would be regulated include those which conduct metal plating, manufacture fiberglass and plastic products, use or store organic solvents, utilize degreasing equipment, and use materials which emit hazardous air pollutants. Landfills are subject to regulation. The SCAQMD controls solvent emissions from dry cleaners, print shops, metal platers, etc. Internal combustion engines used in many operations are controlled. Commercial restaurants are subject to SCAQMD regulations covering charbroilers.

Any new, or modified existing, source of emissions that emits more than one pound a day of a regulated air pollutant is subject to the requirements of the recently revised SCAQMD Regulation XIII, which requires that all increases in emissions be offset by achieving at least an equal amount of reductions from existing sources. Small sources, (i.e. sources emitting less than two tons/year of any regulated contaminant) are eligible to receive these offsets from the Community Bank, which is funded through shutdowns of facilities throughout the Basin. In addition, new or modified equipment is required to install Best Available Control Technology (BACT), as specified by the SCAQMD.

Facilities which do not directly emit pollutants but which attract concentrations of motor vehicles are called indirect sources. Within this category, facilities with 100 or more employees are regulated by the SCAQMD's Regulation XV.

Regulation XV

The South Coast Air Quality Management District's Regulation XV applies to all facilities which employ 100 or more persons at a single site. Employers subject to the regulation are required to develop plans which include sufficient incentives to bring the average vehicle ridership in employee vehicles to 1.5 persons. In 1991, there were 35 facilities in the City of Whittier which had 100 or more employees at one site. Some employers, such as the Whittier Unified School District, have several facilities which are subject to the regulation.

Regional Clean Air Incentives Market

In March, 1992, the South Coast Air Quality Management District Board authorized staff to begin development of a regulatory system that would be a major departure from the traditional command and control system. The new program is titled RECLAIM, for Regional Clean Air Incentives Market. Companies subject to the new regulations will be able to achieve required emission reductions of reactive organic gasses, nitrogen oxides, and, potentially, sulfur oxides through their choice of add-on controls, use of reformulated products, and/or purchasing excess emission reductions from other sources. Equipment permits will be replaced with facility permits. Emission rates are to be replaced with mass emission limits. Retrofit control rules will be replaced with annual emission reductions.

The District is recommending that source categories with annual emissions equal to or greater than four tons of these pollutants be included in the program. They estimate that the program will apply to approximately 2,000 sources of reactive organic gases (ROG), 700 sources of NO_x emissions, and possibly 100 sources of SO_x emissions. Certain essential public services, restaurants, dry cleaners, and gasoline dispensing facilities will be regulated through command and control rules. Additional small source exemptions may also be considered where it appears more cost effective to regulate through source specific rules. Sources that emit less than four tons a year may be included in the program at a later date.

SECTION 7: PUBLIC SAFETY ELEMENT

INTRODUCTION

The Public Safety Element of the *Whittier General Plan* presents a citywide approach for preventing the creation of hazards in the planning area and for minimizing the potential for injury, damage, and disruption by catastrophes and emergencies. The Element establishes safety standards and programs that protect life and property. Public safety standards include guidelines for activities involving risk to the public, as well as measures to follow when development occurs in areas exposed to natural or manmade hazards. Public safety programs include procedures to follow to eliminate and avoid hazards, emergency response procedures to follow during disasters, and a reconstruction plan for the City after a disaster.

The Public Safety Element addresses both natural and manmade hazards such as earthquakes, flooding, landslides, fire, crime, and hazardous materials/wastes contamination. In dealing with these issues, it is prudent to consider prevention as the first step in hazard mitigation. This may be accomplished by the elimination of the hazard, isolation/avoidance of the hazard, or the regulation of land uses and structures in known hazard areas. When prevention is not possible, the hazard must be planned for. Emergency planning means the formulation of strategies to minimize human injury, property damage, and economic and social disruption. It also addresses measures necessary to return the functions of the City to normal conditions soon after a disaster.

As a state-mandated element, the Public Safety Element fulfills the requirements of *Section 65302(g) of the California Government Code* and the *State Planning and Zoning Law*. The Element establishes goals and policies which address public safety issues in the City. The Element also serves as a public safety plan, identifying standards and programs to protect public safety and outlining facilities and services that will serve the emergency needs of the City. The Public Safety Element indicates the location of known hazard areas and available evacuation routes. It indicates peak water supply requirements, minimum road widths, clearances around structures, and other factors affecting safety procedures. Finally, the Element contains a comprehensive risk management program for dealing with different hazards and disasters which may occur in the planning area.

The Public Safety Element Background Report provides the analysis of the public safety issues that need to be considered in future planning in the City. The major issues are summarized below.

- The geology of the region largely determines the presence of natural hazards in Whittier. Seismic hazards are created by the Whittier fault and the more than 95 potentially active faults in the Los Angeles region. Other earthquake faults that would affect the City of Whittier include the Elsinore/Chino fault, the Elysian Park Fold and Thrust Belt, Newport-Inglewood, Sierra Madre, Palos Verdes, San Jacinto, San Andreas, and Norwalk faults. Hazards associated with earthquakes include surface rupture, ground failure, slope failure, liquefaction, seismic waves, structural collapse, dam failure

and inundation, and infrastructure damage. The 1987 earthquake in the Whittier Narrows area has given the City recent experience with an earthquake disaster.

- The hillside areas pose landslide, erosion, debris flow, and wildfire hazards. Programs that will be effective in reducing the level of risk must be continued. Flooding and dam inundation are presented by the Whittier Narrows Dam on the northwest and water reservoirs on the hillsides. Affected developments need to be informed of evacuation plans and procedures. The City has had recent experience with slippage of hillside areas.

- Fire, crime, and hazardous material accidents are man-made hazards in the area. The large number of hazardous material users and generators in the City pose risks with accidental release and contamination. Substandard electrical systems, industrial uses, power lines, and gas lines have a potential for fire. Crime incidence and gang violence undermine the safety and security of the community. In Whittier, the majority of crime consists of petty theft, residential burglary, auto theft, and vehicle burglary.

- Emergency services in the City are provided by the Whittier Police Department, the County Fire Department, and local hospitals. Emergency shelters have also been designated. The City has adopted an Emergency Response Plan which needs to be updated regularly to determine the adequacy of emergency services and to improve coordination and response programs. Public awareness programs can aid in reducing injury and property damage during disaster and emergencies by informing and educating citizens of potential hazards before they happen.

These issues and opportunities provide the basis for the goals, policies, and programs in the Public Safety Element.

PUBLIC SAFETY GOALS AND POLICIES

The goals and policies of the Public Safety Element respond to the different safety concerns that are present in the City. The policies established by the City are grouped together under five specific goals. These goals address overall protection from hazards, the provision of adequate safety services, protection from seismic hazards and the regulation of hazardous materials use and disposal. They are intended to prevent hazardous conditions, to protect residents from harm, and to prepare the City for unavoidable disasters.

Issue: Protection from Hazards

The protection of life and property from hazards is the major objective of the following goal and supporting policies. Future planning that takes into account the natural and manmade hazards in the City, will improve the level of safety for all residents.

Goal 1 Promote an environment that is reasonably safe from hazards so that Whittier residents may conduct their daily lives free from fear and apprehension.

Policy 1.1 Continue to work for the highest quality of fire, police, and health protection possible for all Whittier residents.

Policy 1.2 Continue to cooperate with public agencies and support service providers to develop emergency preparedness programs to reduce injury, loss of life, and property damage.

Policy 1.3 Continue to provide fast, efficient, and reliable assistance to disaster victims and to areas where conditions warrant evacuation of people and property.

Policy 1.4 Promote emergency preparedness through public education and awareness programs on safety, earthquake preparedness, crime prevention, and fire and hazard prevention.

Policy 1.5 Promote the study, adoption, and review of regulations designed to assure appropriate and safe development in hazardous areas.

Issue: Seismic Risk and Other Hazards

The presence of the Whittier fault and geologic hazards (landslides, liquefaction, etc.) in the City expose individuals in the area to injury and property damage that may occur with these risks. The City seeks to prevent these hazards, as well as minimize the harm and damage that may result from disaster through sensible land use planning.

Goal 2 Minimize loss of life, injuries, damage to property, and social and economic dislocation resulting from future regional or local seismic activity.

Policy 2.1 Develop land use regulations that will mandate the review, evaluation, and restriction of development in areas where there are recognized hazards.

Policy 2.2 Provide for the orderly abatement of structural hazards within the community, consistent with the degree of earthquake risk the community is willing to accept.

Policy 2.3 Maintain contingency plans which will help Whittier citizens respond to and recover from an earthquake as quickly and effectively as possible.

Issue: Safety Services

The City of Whittier provides a number of safety services to promote public health and safety in the City. These services determine the level of safety and the sense of security that residents feel.

Goal 3 Maintain and enhance safety and emergency services in the City.

Policy 3.1 Coordinate fire protection services with the County Fire Department.

Policy 3.2 Maintain an adequate emergency response system.

Policy 3.3 Assist the police and fire departments in monitoring the safety of all developments in the City.

Policy 3.4 Continue to maintain fire safety through building inspections, weed abatement, and other programs.

Policy 3.5 Provide adequate fire and police services for new developments in the planning area.

Policy 3.6 Periodically review the City's emergency equipment and shelters to ensure that they are adequate to meet the needs of changing land uses and development types.

Issue: Hazardous Materials

Hazardous materials present health risks due to contamination, prolonged exposure, or potential explosion. While there are safety precautions for hazardous materials use and disposal, the mishandling or accidental release of these materials can compromise the health and safety of Whittier residents.

Goal 4 Develop programs to protect residents and businesses from hazardous materials contamination.

Policy 4.1 Support the enforcement of state and federal environmental and pollution control laws. The City should work with the Fire Department to require hazardous materials users and generators to prepare procedures for responding to accidental spills and emergencies.

Policy 4.2 Promote the proper disposal of hazardous materials and prohibit the disposal of hazardous materials at the Savage Canyon Landfill. Random checks of incoming trucks to the landfill shall be continued. At the same time, develop programs to dispose of small quantities of households hazardous wastes.

Policy 4.3 Designate routes for trucks carrying hazardous materials and preventing trucks from using residential and local streets.

Policy 4.4 Work with the County Fire Department and adjacent cities on emergency response plans for hazardous material accidents.

Issue: Crime and Violence

Crime and violence represent the greatest threat to personal safety for many City residents. The City of Whittier seeks to reduce the incidence of crime and violence in the City through the provision of adequate police services and programs that deter criminal activity.

Goal 5: Reduce crime and violence in the City.

Policy 5.1 Regularly review police services to determine the adequacy and quality of service.

Policy 5.2 Continue to provide programs that deter crime and violence in Whittier and the surrounding area.

Policy 5.3 Encourage neighborhood groups to assist the police in crime prevention and law enforcement.

Policy 5.4 Develop programs for discouraging crime and gang violence in the city.

Policy 5.5 Work with other agencies and jurisdictions to promote safe driving to minimize traffic accidents.

IMPLEMENTATION PROGRAMS

In order to improve public safety in Whittier, specific measures have been developed to implement the goals and policies in the previous section. Table 7-1 provides a list of implementation measures for each goal and policy. A discussion of each measure is provided in Section 10.

TABLE 7-1
PUBLIC SAFETY IMPLEMENTATION

Goal	Policy	Implementation Measure
1. Provision of a safe environment.	1.1 Continue to provide fire, police, and health protection.	Police & Fire Department Review Police Services Fire Protection Services

TABLE 7-1
PUBLIC SAFETY IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
Provision of a safe environment (continued)	1.2 Cooperate with state and local agencies on emergency preparedness programs.	Plan Check Hillside Standards Disaster Planning Safety Information Programs City Emergency Plan
	1.3 Continue to provide assistance to disaster victims.	Safety and Emergency Practices on Television Police Services City Emergency Plan
	1.4 Encourage public education and awareness programs on safety.	Safety and Emergency Practices on Television Newsletter Safety Guidelines Emergency Preparedness Brochures Safety Information Programs
	1.5 Promote regulations for development in hazardous areas.	Uniform Building Code New Technology Geologic Investigations
2. Minimize seismic hazards.	2.1 Develop land use regulations for development on hazardous areas.	Plan Check Hillside Standards Seismic Safety Standards
	2.2 Provide abatement of structural hazards.	Substandard Dwelling Units and Structures Plan Check Storm Drain Facilities
	2.3 Maintain contingency plans for earthquake disasters.	Disaster Recovery Program Volunteer Groups Emergency Preparedness Brochures State & Federal Reconstruction Programs

TABLE 7-1
PUBLIC SAFETY IMPLEMENTATION (continued)

Goal	Policy	Implementation Measure
3. Maintenance of safety and emergency services.	3.1 Coordinate with the L.A. County Fire Department.	Fire Protection Services Fire Protection Status Report
	3.2 Maintain an adequate emergency response system.	Police Services Fire Protection Services Disaster Planning
	3.3 Assist the police and fire departments in monitoring public safety.	City Emergency Plan Disaster Planning Hydrant Capacity
	3.4 Maintain fire safety.	Substandard Dwelling Units & Structures Plan Check
	3.5 Provide adequate fire and police services for new developments.	Police & Fire Department Review Police Services Fire Protection Services
	3.6 Review emergency equipment and shelters for adequacy.	Communication Systems City Emergency Plan
4. Protection from hazardous materials contamination.	4.1 Support state and federal environmental and pollution control laws.	Environmental Regulations Inter-agency Coordination
	4.2 Promote the proper disposal of hazardous materials.	Inventory of Hazardous Material Users Hazardous Waste Segregation Landfill Monitoring Systems Hazardous Waste Management Plan Landfill Reclamation Plan
	4.3 Designate routes for trucks carrying hazardous materials.	Truck Routes Hazardous Material Transport
	4.4 Work with the County Fire Department and adjacent cities on emergency response plans for hazardous material accidents.	Environmental Regulations Inter-Agency Coordination Inventory of Hazardous Materials Users

TABLE 7-1 PUBLIC SAFETY IMPLEMENTATION (continued)		
Goal	**Policy**	**Implementation Measure**
5. Works towards the reduction of crime and violence in the City.	5.1 Regularly review police services to determine adequacy and quality of service.	Police & Fire Department Review Police Services Accident & Crime Statistics
	5.2 Continue to provide programs that deter crime and violence in Whittier and the surrounding area.	Police and Fire Department Review Safety Information Programs Neighborhood Watch Groups
	5.3 Encourage neighborhood groups to assist the police in crime prevention and law enforcement.	Neighborhood Watch Groups
	5.4 Develop programs for discouraging crime and gang violence in the city.	Neighborhood Watch Groups Disaster Planning
	5.5 Work with other agencies and jurisdictions to promote safe driving to minimize traffic accidents.	Traffic Safety Programs

PUBLIC SAFETY PLAN

The above goals and policies and supporting implementation programs serve as the foundation for a Public Safety Plan. The Plan provides for maximum protection in the face of any hazard. The priority for public safety, health, and security is the protection of human life. Public safety also involves the protection of property. Property damage is dependent on structural design and the building's capability to withstand natural or manmade disaster. Thus, structural integrity is also a major factor in the prevention of injury, as most people are within one structure or another throughout the day. Another safety issue is the avoidance of social and economic disruption, caused by the destruction of property and human injury or death. The protection of life and property and the prevention of social and economic disruption are the primary objectives of the Safety Plan for the City of Whittier.

Safety Standards

In order to promote public safety throughout the City, Whittier has developed standards to prevent the creation of hazards in the planning area, to eliminate existing hazards, to protect residents from existing hazards, and to prepare the City for a potential disaster.

- **Land Use Standards** - The City regulates land uses to avoid the creation of hazards or prevent exposure to hazards. This would include the regulation of uses with hazardous materials use and disposal, uses with high fire risks, and uses attracting crime and accidents. Low density development in hazard areas also reduce risk exposure.

- **Site Planning Standards** - The City regulates development in hazardous areas to minimize the exposure of residents to risks. These hazard areas include earthquake faults, landslide areas, steep slopes, and other geologic hazards, dry brush areas, industrial areas, power transmission lines, high pressure gas lines, and flood areas.

- **Regulation of Activities** - The City also provides standards for the conduct of activities which unnecessarily expose residents to hazards. This includes the prevention of congregations or large populations in known hazardous areas, the requirement for spark arresters for off-road vehicles, the preparation of survey and investigation prior to hillside development, and other regulations.

- **Changes in Conditions** - The City alters some conditions to help eliminate existing hazards. The provision of fire breaks, controlled burning, or removal of dry brush reduces wildland fire hazards. The construction of storm drain facilities eliminates flood hazards. The landscaping and creation of manufactured slopes stabilizes the hillsides.

- **Building Standards** - Building standards provide minimum standards for construction. They ensure that all buildings and structures are safe for occupancy and use. The City has adopted building codes, fire safety codes, fire-retardant construction, unreinforced masonry requirements, hillside standards, and earthquake design standards to reduce hazards in the City. The City should develop standards for addressing geologic hazards such as landslides, erosion, liquefaction, debris flow, and surface rupture. Standards for development within one-half mile of the Whittier Fault, inundation areas, wildfire areas, and industrial areas will reduce the potential for injury and damage to development.

Seismic Safety and Inundation Zone

The Safety Plan recognizes the presence of seismic hazards in the City as identified in the Public Safety Background Report. These hazards include the Whittier fault, potential landslide areas, graded areas, flood hazards, wildfire and urban fire hazards, inundation areas of the Whittier Narrows Dam and major water reservoirs, and hazardous material users (see Exhibit 7-1).

Many of these hazards are located in the Puente Hills. The Land Use Plan in the Land Use Element acknowledges the presence of these hazards and has designated low density uses for the hillside areas north and northeast of the City. In order to provide increased protection for development in hazard zones, the following standards should be followed:

- Geologic investigations should be performed for projects within one-half mile of the Whittier fault trace. Buildings should be located away from the fault, as much as possible. Investigations should also be performed for development on potential landslide areas.

- Areas with slopes greater than 20 percent should be subject to engineering design methods to achieve adequate foundation support.

- Exposed slopes should be landscaped immediately after grading, to prevent erosion and mudflow.

- Projects within or near identified flood hazard areas should be constructed to withstand floodwaters at a capacity of the 100-year flood or should include storm drain improvements to eliminate potential flooding.

- Projects planned in areas with dry brush, steep slopes, or limited access should use fire-resistive building materials and landscaping and other fire safety measures.

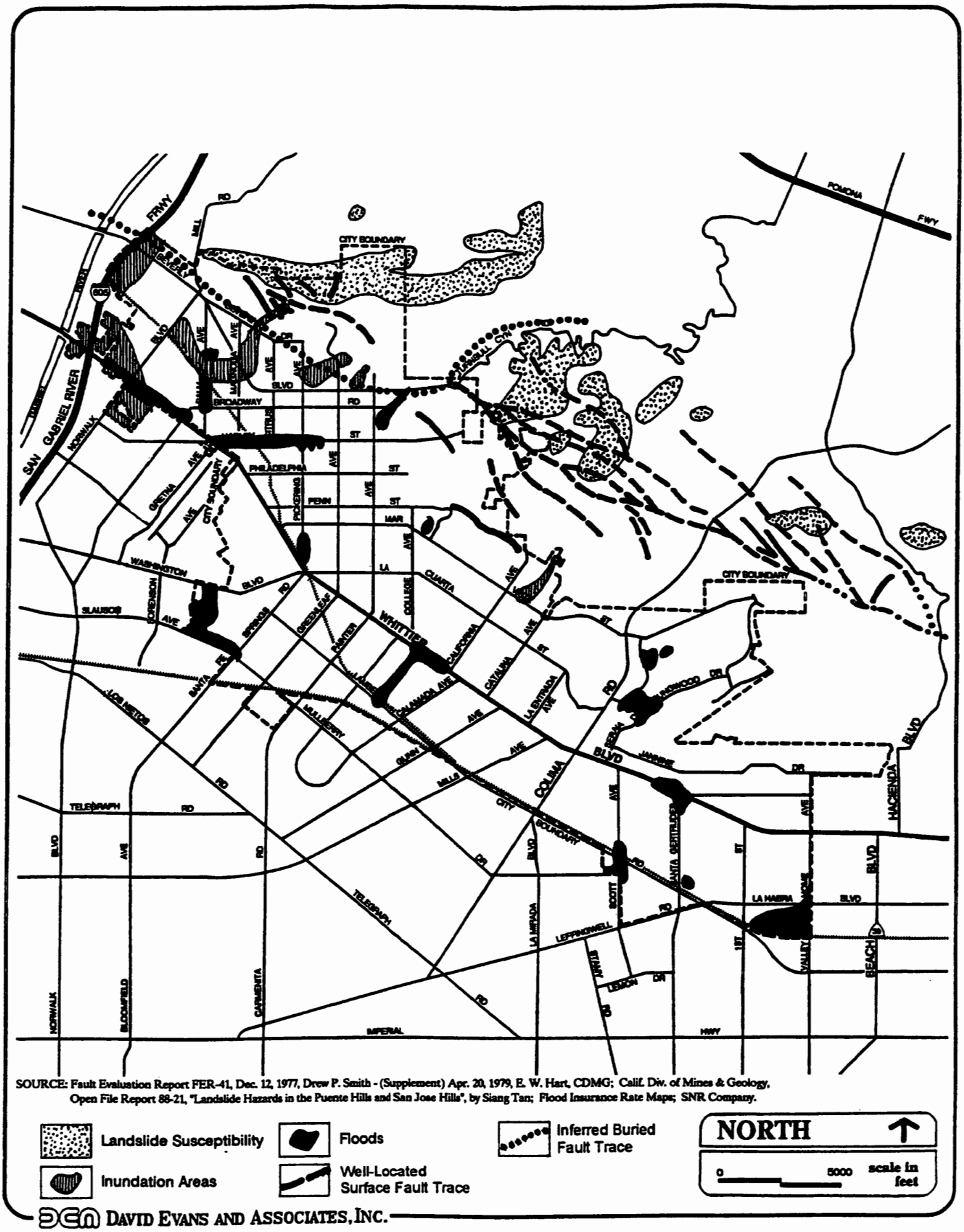
- Residential uses near hazardous material users, high pressure gas lines, high voltage power transmission lines and power distribution plants should be buffered by landscaping, setbacks, or walls.

- Developments within dam and reservoir inundation areas should be notified of evacuation procedures and warning systems.

- Water lines and utilities infrastructure in hazard zones should be designed with a higher safety factor.

- Buildings not built to current code standards and located within hazard zones or existing structures which are susceptible to damage from onsite hazards should be rehabilitated at the earliest time possible.

- The inundation hazards of the Whittier Narrows Dam cannot be controlled within the City. Flooding from City reservoirs can be prevented by the construction of earthquake-resistant dams and reservoirs. Reservoirs should also be located away from the Whittier fault zone.



SOURCE: Fault Evaluation Report FER-41, Dec. 12, 1977, Drew P. Smith - (Supplement) Apr. 20, 1979, E. W. Hart, CDMG; Calif. Div. of Mines & Geology, Open File Report 88-21, "Landslide Hazards in the Puente Hills and San Jose Hills", by Siang Tan; Flood Insurance Rate Maps; SNR Company.

Landslide Susceptibility

Inundation Areas

Floods

Well-Located Surface Fault Trace

Inferred Buried Fault Trace

NORTH

0 5000 scale in feet

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City of Whittier

GENERAL PLAN

EXHIBIT 7-1
HAZARD ZONES

Fire Hazards

Extreme risk for wildfire is provided by areas with chaparral vegetation on steep slopes (40 to 50 percent slopes) and where there is limited access for fire control equipment. High risks are posed by grasslands and woodlands with somewhat limited access and by slopes of 20 to 40 percent. Low risks are urban areas where fire access is available and the terrain is relatively flat or up to 20 percent slope. Urban fire hazards are presented by industrial areas, hazardous material users, structures with substandard electrical wiring, high voltage power lines, and high pressure gas lines. Fire can also occur in any part of the City due to carelessness and accidents. In order to facilitate firefighting response, the City should have the following standards for areas with extreme to high risk for fire:

- There should be sufficient access for emergency vehicles and for the evacuation of residents in all areas of the City.
- Two or more access routes should be provided for all developments.
- All roadways to wildfire areas should be marked and addresses should be posted in plain view.
- Roadways should also allow two-way traffic with room for on-street parking.
- Water supply should be adequate and have sufficient pressure for fire suppression in the event of fire.

Critical Facilities

A critical facility is one that provides emergency services (fire and police, utilities, communication systems) or serves people who are injured or displaced during a disaster (hospitals, emergency shelters, schools). In order to allow these services to be functional during a disaster, building standards for critical facilities should exceed those required for other structures. Also, these facilities should be located away from identified hazards areas such as the Whittier fault, steep slopes, flood areas, and landslide areas. The following standards should be followed for critical facilities:

- Critical facilities should not be located within one mile of the Whittier Fault.
- Facilities should be designed for earthquake resistance and to remain fully operational in the event of an earthquake on the Whittier fault.
- Critical facilities should not be located on areas with high potential for landslide, erosion, liquefaction, flooding, or wildfire.

- Facilities should be equipped to function independent of other critical facilities. Emergency back-up facilities should be provided.

- The City should review the stability of existing critical facilities to ensure that they would be able to function during a disaster. As with the rehabilitation of hazardous buildings, critical facilities should be given greater attention and stricter standards.

Access Roadways

The provision of adequate roadway widths will facilitate emergency response during a disaster. The City supports fire access standards that have been established by the County Fire Department to ensure access for firefighting equipment to all areas of the City. These standards are provided in the Background Report and will continue to be adhered to through the implementation of the General Plan.

Fireflow Standards

The water system must be capable of supplying adequate quantities of water for firefighting purposes. This is in addition to the daily supply for domestic demand in the area. Adequate reservoir capacity is determined by the availability of water for peak day supply plus fireflow requirements. Generally, peak day supply is twice the average day demand and total fireflow requirements are estimated by the population of the area. For Whittier, required fireflow is approximately 8,200 gallons per minute for at least 10 hours, or emergency reservoir capacity of five million gallons. The City's water department will continue to regularly review the system's adequacy and reliability to meet daily and emergency demands.

To ensure emergency water supply throughout the City, new construction is required to meet specific fireflow standards. Fireflows for individual structures are calculated according to size of the structure (floor area), type of construction (wood, non-combustible, fire-resistive), building height, availability of sprinkler systems, distance between buildings, and type of occupancy. Guidelines for estimating the required fireflow are available at the County Fire Department. The Department's Fire Prevention Bureau determines the minimum flows for new construction based on building plans. Developers are responsible for providing adequate fireflows. This process ensures that hydrant capacity is available to meet fire emergency needs of all developments.

Response Times

To minimize the injury and damage that may be caused by accidents and disasters, the City of Whittier has established the following standards for response times:

- Emergency calls should have a response time of three minutes or less in urban areas.

- Non-emergency calls should have a response time of 5 to 30 minutes.

The three-minute standard is used for life and death situations where injury has caused heart failure or stoppage of breathing. It takes three minutes to cause permanent brain damage for persons who have stopped breathing or whose hearts have stopped pumping. With first aid or emergency assistance within this time frame, more lives can be saved. Shorter response times also prevent continued human injury and property destruction that may occur during a natural or manmade disaster.

Prevention - Safety Programs

The first approach to reducing or eliminating risks to public health and safety is to avoid the creation of hazards and conditions that present a risk. The creation of hazards may be avoided by controls in land uses, development locations, activities, alteration of conditions, and building standards. Prevention programs involve the implementation of the Safety Standards discussed earlier.

Hazards may also be reduced through abatement programs. Abatement may involve the rehabilitation of existing hazardous buildings to correct construction deficiencies. Hazardous buildings include buildings which may collapse during an earthquake or are highly susceptible to fire, flooding or geologic hazards. They include buildings constructed before the adoption and enforcement of current codes requiring earthquake resistant construction design, electrical system regulations, and fire prevention standards. Buildings constructed of unreinforced masonry, and those which have exterior parapets with ornamentation, or walls not anchored to floors, roofs or foundations are also susceptible to groundshaking hazards. Other hazardous buildings have sheeting on roof or floors which are not designed to handle lateral loads or have large wall openings that cannot withstands torsional forces. Structures that are not properly designed to resist lateral forces and those of non-ductile concrete frame construction are also hazardous. Buildings improperly designed to mitigate the geologic hazards on site and older buildings with deteriorating structural components can also pose hazards. These buildings present risks to their occupants and users and should be rehabilitated or removed.

Aside from fire resistant construction, fire hazard abatement in the City includes the creation of fire breaks, special fire resistant construction, brush removal, off-road vehicle inspection, prohibition of off-road vehicles in high hazard zones, and water reuse programs.

Existing flood zones in the City may be eliminated through the construction of adequate storm drain lines and catch basins. The principal avenue of hazard reduction lies in the enforcement of design and construction of dams to accommodate any probable seismic force and secondary hazards that may occur at a project site. The second method would be the strengthening of the existing community emergency preparedness program to efficiently evacuate areas within inundation boundaries.

Crime prevention is also an important concern in the City. The Whittier Police Department is continuously implementing ways to deter crime and violence in the City including public

awareness programs, security systems, patrol beats, problem-oriented policing, and a host of other activities. By reducing the occurrence of crime, the City can be made a safer place.

Safety Programs - Protection

When hazards cannot be avoided, the second approach to public safety is the protection of residents from the harm presented by existing hazards. This may be effectively done by public awareness programs which encourage individuals to be responsible for protecting themselves and their property from hazardous conditions or situations. Knowledge and individual volition are often major factors in decreasing human injury, property damage and disruption.

Print media, television, and radio are effective tools to inform the general public of safety guidelines and measures. Schools also serve as an avenue to teach children at an early age of the various safety practices and procedures. An aggressive public awareness program may include open house displays and fire fighting demonstrations. These have proven particularly effective in impressing younger children and the general public with the force and dynamics of fire.

Earthquake preparedness in Whittier is promoted through public information programs dealing with safety procedures, the availability of emergency facilities, first aid seminars, earthquake kits and guidelines, and emergency drills. Other public information campaigns could include fire safety, evacuation procedures, flood protection, hazardous material use and disposal, and wildfire and erosion control.

Hazard protection is not limited to individual actions. It is a continuous effort in the City. There are hazards that cannot be predicted, prevented, or abated. Firefighters and police officers are always available to provide protection for all individuals. This includes services for emergency situations, 24-hour patrol for security, traffic safety and crime prevention, and monitoring of existing hazards in the area. Timely and proper response to critical situations protects residents and promotes public safety in the City. Developments are also inspected annually for fire safety and stability. By monitoring developments in all areas of the City, hazardous conditions are corrected before they cause harm and injury.

Safety Programs - Preparedness

The third approach for promoting public safety is emergency preparedness. By preparing the City for response to a disaster, injury and property damage may be minimized during such events. This calls for the development of an emergency preparedness program that ensures adequate facilities and manpower to handle any disaster in the City. While injury and property damage cannot be prevented once a disaster occurs, the City can minimize these by providing adequate emergency resources to respond at the earliest time possible. Mutual aid agreements with adjacent cities and service providers supplement the City's emergency facilities and capabilities.

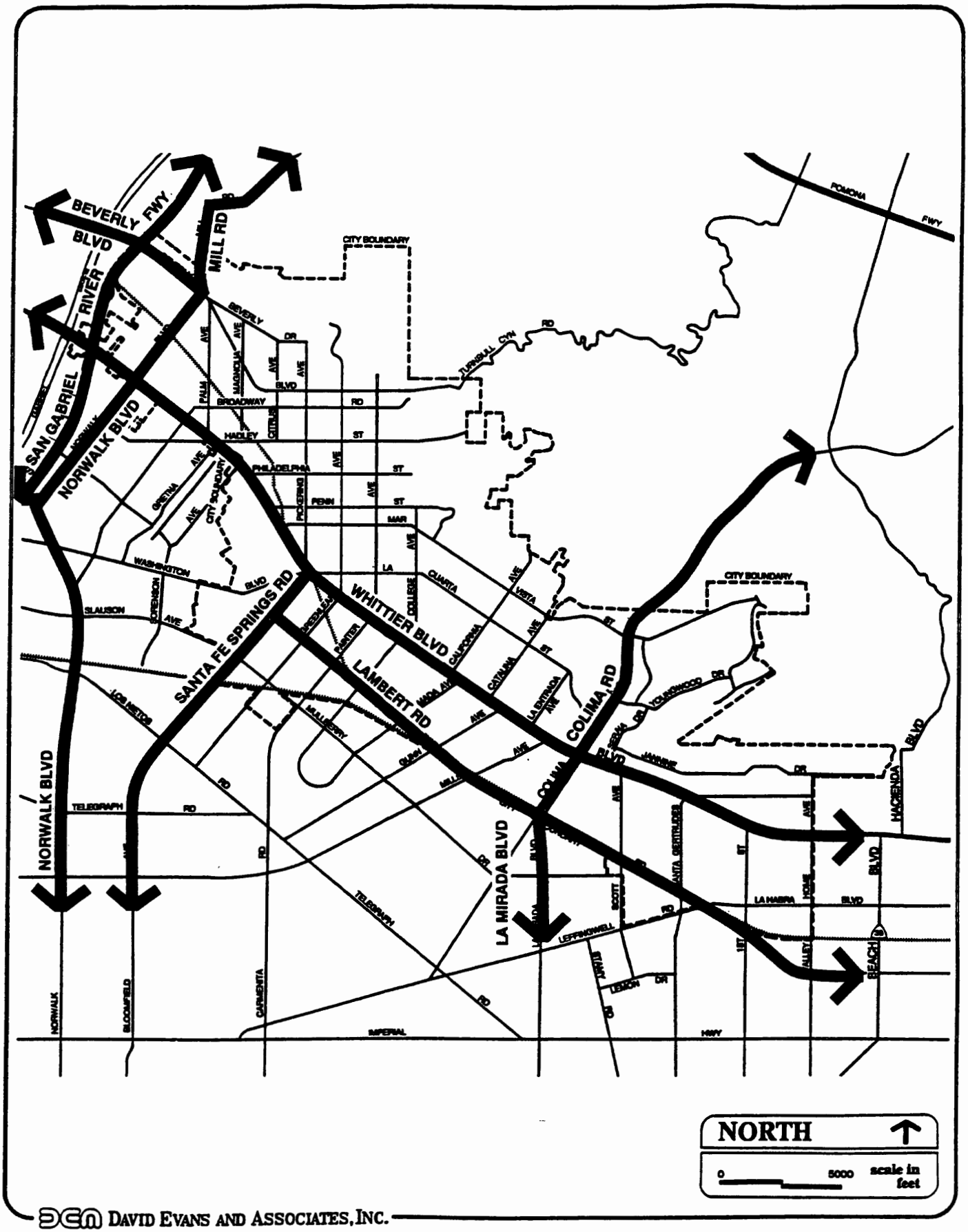
The adequacy of emergency services for the City will be evaluated and planned for in the City's Emergency Plan. The City's Emergency Plan includes the provision of emergency medical facilities, temporary shelter, communications equipment, and emergency water and food supplies. Water supply should be adequate to meet domestic needs and fire fighting needs during peak demand. Fire and police services should be available to prevent extensive injury and property damage. This includes increased staffing and equipment, greater coordination, and alternatives or contingency plans. Also, emergency shelters in the City have to be reviewed for adequacy and accessibility to all residents of the City. These shelters provide temporary care and reception areas during a disaster, and may provide first aid, public information, board and lodging, and general coordination activities.

During disasters, evacuation may be necessary for all residents. Residents will be informed of evacuation procedures for fire, floods, earthquake, hazardous material spills, or other disaster. Designated evacuation routes in the City include Whittier Boulevard, Colima Road, Norwalk Boulevard, Beverly Boulevard, Lambert Road, and Santa Fe Springs Road. These roads are arterial roadways that lead out of Whittier and into adjacent communities. Exhibit 7-2 shows the excavation routes in the City.

Evacuation procedures will largely depend on the type, location, and degree of disaster. Particular attention should be given to immobile and dependent populations (elderly, sick, handicapped, and children) during evacuation.

Hazardous material incidents, crime, and accidents are handled as disasters. Emergency services respond to these situations in much the same way as they respond to earthquake events, fire, or floods. Special contamination prevention or spill containment measures are provided by County Fire Department's Hazardous Materials Team. The Police Department provides crowd control and evacuation coordination.

The City of Whittier will develop a reconstruction program to return the community to normal operations after a disaster. The City should establish programs for the reconstruction of infrastructure, City facilities and services, and the shortening of social and economic disruption to residents. This will include short-term debris clean up, traffic control, temporary housing, and other similar activities, as well as assistance to injured residents, rebuilding and repair work on damaged structures, and social, economic, and physical recovery efforts.



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 7-2
EVACUATION ROUTES

SECTION 8: NOISE ELEMENT

INTRODUCTION

Excessive noise levels disturb and disrupt human activities and affect the health of individuals. The Noise Element of the *Whittier General Plan* establishes guidelines for controlling and minimizing the impacts of noise in the City. The Noise Element contains a discussion of the characteristics and effects of noise, state and federal guidelines related to noise control, an evaluation of the existing noise environment in the City, and projections of the future noise environment likely to occur in the future. The Element also identifies noise-sensitive land uses and major noise sources in the City.

Government Code Section 65302 (F) requires the adoption of a Noise Element to identify existing and projected noise problems of the City and to outline possible solutions to address these problems. Noise contours illustrating existing and future traffic noise levels will serve as a guide for future development in the City.

The goals, policies, and programs contained within the Noise Element are designed to minimize noise problems in the City and to protect public health. With the majority of the planning area devoted to residential uses, it is important that noise sources are controlled at the source, located away from the residential communities, or that buffers are provided between the main sources of noise and residences. The noise mitigation program in the Element explores these options along with noise insulation standards and land use compatibility along major roadways.

Noise sources and the existing noise environment within Whittier are described in the Noise Element Background Report. Concerns that were identified in the report are summarized below.

- Noise affects the physical and psychological well-being of humans and levels of regulations that will be effective in controlling noise sources and protecting people from its harmful effects should be established.

- In Whittier, traffic is a primary source of noise. Traffic noise is directly related to the traffic volume, vehicle speed, roadway grade, motor idling, and acceleration. Land uses along major roadways are exposed to the highest vehicle noise levels and often require insulation and noise reduction measures. Other noise sources in the City include aircraft, occasional trains, commercial and industrial uses, crowds and events attracting large groups of people, trucks and sweepers, residential noise, recreational events, and garden equipment.

- Uses that are particularly sensitive to noise include schools, libraries, hospitals, residences, nursing homes, and churches. These activities are exposed to increasing levels of noise.

- Noise control in Whittier in the past has been prompted by individual complaints, rather than through a regular enforcement program. The development of a noise

ordinance is expected to better address ways to reduce noise levels throughout the community.

NOISE GOALS AND POLICIES

The goals and polices of the Noise Element focus on land use compatibility as it relates to the noise environment. For example, the Noise Element acknowledges the need to provide buffering between noise sensitive land uses and busy roadways. Other policies focus on ways to control those activities that increase excessive noise levels.

Issue: Noise Sensitive Uses

The following goal and supporting policies focus on the impacts of traffic noise on noise sensitive land uses.

Goal 1 Minimize noise levels throughout the community.

Policy 1.1 Work toward the separation or buffering of freeways and highways from noise-sensitive land uses such as residences, schools, and hospitals.

Policy 1.2 Consider steps to correct existing noise problems and avoid future problems through design measures such as buffers and barriers or through abatement procedures.

Issue: Noise Sources

Certain land uses typically generate high levels of noise. For example, manufacturing activities often generate excessive levels of noise which could create a problem for any noise sensitive land use located nearby. The following goal and supporting programs promote the consideration of noise impacts and exposure in land use compatibility.

Goal 2 Discourage noises which are detrimental to the public health and welfare and contrary to the public interest.

Policy 2.1 Control, at their sources, any sounds which exceed accepted community noise levels.

Policy 2.2 Evaluate and control the noise impacts of major developments and construction through the environmental review process.

Policy 2.3 Encourage attenuation devices and limited hours of operation for new private recreational developments so that neighborhood noise, especially during evening and nighttime hours, can be reduced.

Policy 2.4 Support the enforcement of existing laws pertaining to the noise of off-road vehicles, trucks, and equipment.

Policy 2.5 Recognize and follow acceptable noise level standards from schools, parks, and other land uses in future planning.

IMPLEMENTATION PROGRAMS

Individual actions to achieve noise reduction in the City of Whittier have been developed. The noise goals and policies and their corresponding implementation are provided in Table 8-1. A discussion of these measures is provided in Section 10.

TABLE 8-1
NOISE IMPLEMENTATION

Goal	Policy	Implementation Measure
1. Minimize Noise Levels	1.1 Work for separation of freeways and highways from noise-sensitive land uses.	Landscaping and Land Use Buffers Acoustical Analysis Reports
	1.2 Correct existing noise problems and avoid future noise problems.	Noise Ordinance
2. Discourage Noise	2.1 Control noise at their sources.	Noise Ordinance OSHA Requirements Noise Complaints
	2.2 Evaluate and control noise impacts during review process.	Environmental Review Acoustical Analysis Reports Noise Ordinance
	2.3 Encourage noise attenuation devices and limited hours of operation.	Noise Ordinance Acoustical Analysis Reports
	2.4 Support the enforcement of noise control regulations.	Noise Control Coordination Noise Ordinance OSHA Requirements
	2.5 Establish acceptable noise standards.	Noise Ordinance

NOISE COMPATIBILITY GUIDELINES

Developments in certain areas of the City of Whittier are currently exposed to high noise levels created by roadway traffic and industrial and commercial activities. Federal, state and county

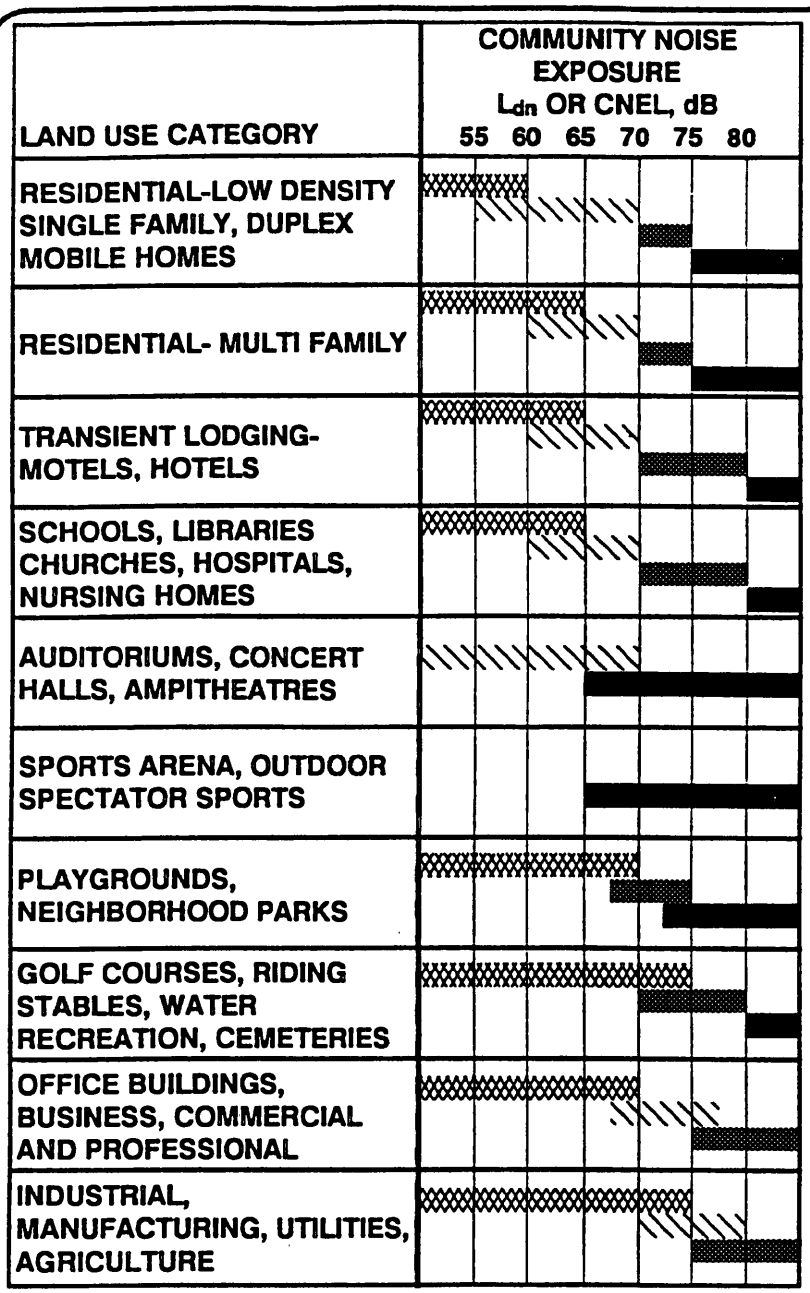
agencies are involved in noise control. The City will acknowledge these regulations and will work with responsible agencies in addressing the noise problems of Whittier. In order to minimize noise impacts on future development, the City has developed a Noise Mitigation Program. The program addresses ways for correcting existing noise problems, as well as ways to control future increases in ambient noise levels in the City.

The implementation of the Noise Mitigation Program is dependent on the level of noise that residents are willing to live with and the health effects of noise on people and the importance of a quiet environment to the City.

Noise compatibility guidelines for the City are illustrated in Exhibit 8-1. These guidelines indicate the acceptability of noise exposure levels for different land uses. Future projects should incorporate noise mitigation measures if they will exceed normally acceptable levels as defined by the Guidelines. Noise reduction measures may include any of the following:

- The control of noise at the source, including muffling devices on noise generating equipment;
- The provision of buffers, berms, or setbacks between the noise source and adjacent developments;
- The mitigation of noise impacts, thus reducing the level of exposure, for development adjacent to a noise source (freeways, railroads, etc.);
- Noise reduction at the receiver through the use of sound insulation, blank walls, double paned windows, and other design techniques to reduce interior noise;
- Restriction of noise sensitive land uses adjacent to known noise sources or prohibiting the placement of noise generators near noise sensitive areas;
- Limiting the development of noise sensitive land uses in areas where noise levels exceed acceptable standards pursuant to the noise compatibility guidelines; and
- Use of masking effects, where more pleasant sounds (water, leaves, music, etc.) disguise less desirable noises.

Noise control efforts should be focused on areas where the most number of people are exposed and the highest noise levels are experienced. Noise from transportation sources are regulated by state laws. The State of California Department of Health Services and the Department of Motor Vehicles have noise standards which are enforced by the California Highway Patrol. The City may choose to be involved in this control process through coordination with the highway patrol.



LEGEND

NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features inclued in the design.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

CONSIDERATIONS IN DETERMINATION OF NOISE-COMPATIBLE LAND USE

A. NORMALIZED NOISE EXPOSURE DESIRED

Where sufficient data exists, evaluate land use suitability with respect to a "normalized" value of CNEL or Ldn. Normalized values are obtained by adding or subtracting the constants described in Table 1 to the measured or calculated value of CNEL or Ldn.

B. NOISE SOURCE CHARACTERISTICS

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65dB CNEL as the criterion which airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. In order to facilitate the purposes of the Act, one of which is to encourage land uses compatible with the 65dB CNEL criterion wherever possible and in order to facilitate the ability of airports to comply with the Act, residential uses located in Community Noise Exposure Areas greater than 65dB should be discouraged and considered located within normally unacceptable areas.

C. SUITABLE INTERIOR ENVIRONMENTS

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater then 45 dB CNEL of Ldn. This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum acceptable distance to a noise source.

D. ACCEPTABLE OUTDOOR ENVIRONMENTS

Another consideration, which in some communites is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered "normally acceptable" for that land use category, may be appropriate.

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City of Whittier

GENERAL PLAN

EXHIBIT 8-1
NOISE COMPATIBILITY

State law requires multi-family development to be located within areas with noise levels of 65 dB or less unless mitigation measures are provided that would reduce the interior noise levels to 45 dB or less. Sound transmission control standards (Title 24 of the California Administrative Code) outline noise insulation performance standards for habitable structures. Future noise regulations contained in a noise ordinance (as provided for in this General Plan) may include standards for land use compatibility, restriction on the hours of operation for noise sources, periodic investigation of noise sources, noise reduction measures for new and existing developments, time limits for car alarms, and acoustical design in new construction.

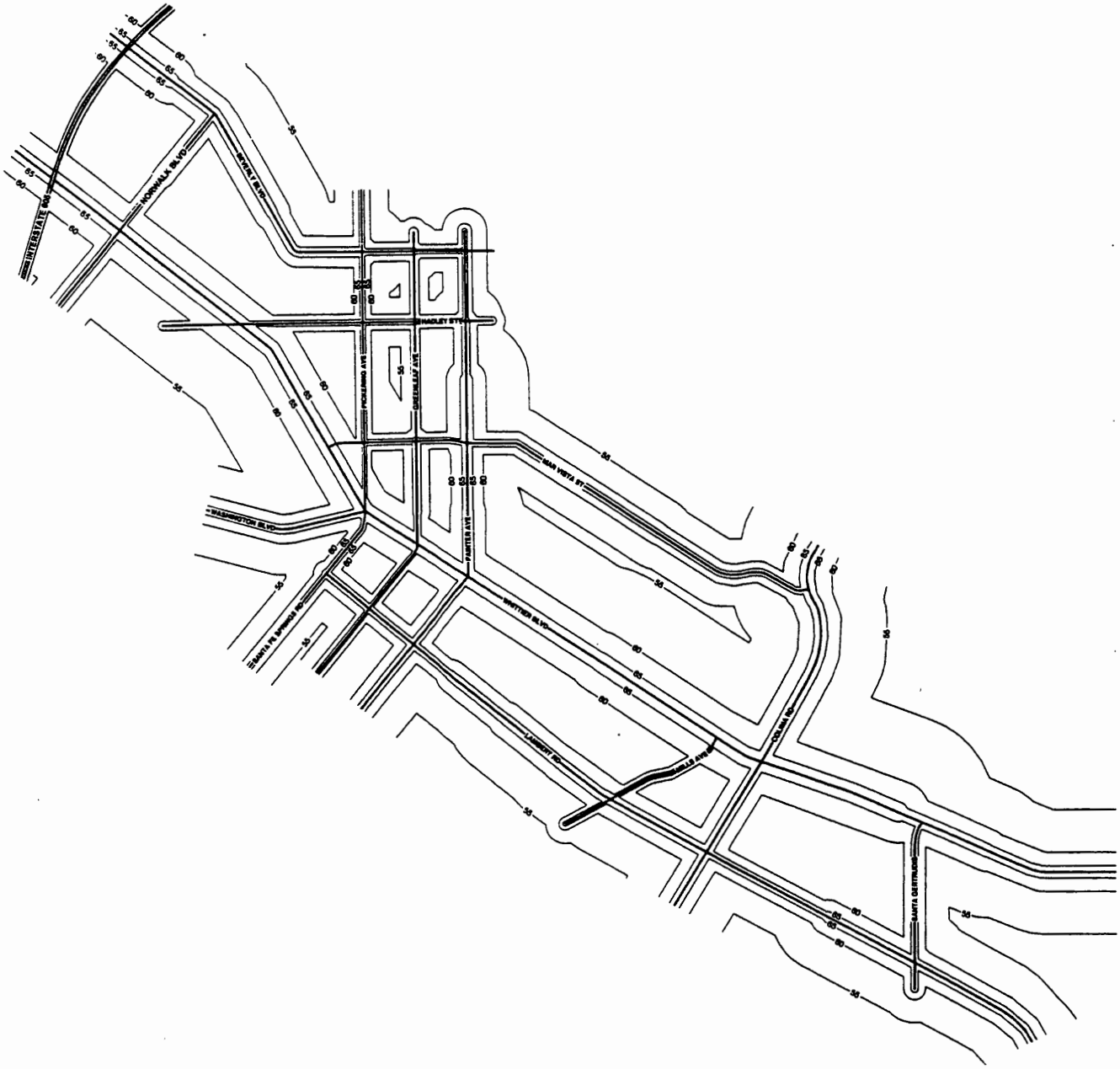
At buildout of the Land Use Plan, noise levels are expected to be higher than today. Using the Federal Highway Administration Noise Prediction Model, the future noise environment is estimated from projected traffic volumes. Table 8-2 shows noise levels along major streets at buildout of the plan and Exhibit 8-2 shows the areas that will be impacted by traffic noise.

TABLE 8-2
FUTURE ROADWAY NOISE LEVELS

Road Segment	Distance from Roadway Centerline to CNEL (feet)				
	70 CNEL	65 CNEL	60 CNEL	55 CNEL	CNEL at 50' from CL
Beverly Blvd.					
SR-605/Carley	70.0	212.0	667.0	2108.0	70.0
Carley/Palm	0.0	158.0	497.0	1570.0	69.0
Palm/Magnolia	55.0	163.0	512.0	1618.0	69.0
Magnolia/Pickering	0.0	139.0	435.0	1373.0	68.0
Pickering/Greenleaf	0.0	86.0	265.0	834.0	66.0
Greenleaf/Painter	0.0	60.0	187.0	590.0	65.0
Painter/Turnbull Canyon	0.0	0.0	0.0	0.0	54.0
Whittier Blvd.					
West of SR-605	67.0	202.0	636.0	2011.0	70.0
SR-605/Painter	79.0	241.0	760.0	2403.0	71.0
Painter/Calmada	82.0	251.0	791.0	2501.0	71.0
Calmada/Santa Gertrudes	88.0	271.0	853.0	2697.0	71.0
Santa Gertrudes/First	63.0	188.0	590.0	1864.0	69.0
East of First Street	58.0	173.0	543.0	1717.0	69.0
Hadley Avenue					
Glengarry/Whittier Blvd.	0.0	0.0	126.0	393.0	63.0
Whittier Blvd./Hoover	0.0	67.0	203.0	638.0	65.0
Hoover/Pickering	0.0	76.0	234.0	736.0	65.0
Pickering/Greenleaf	0.0	72.0	218.0	687.0	65.0
Greenleaf/Painter	0.0	62.0	187.0	589.0	64.0
East of Painter Avenue	0.0	0.0	111.0	344.0	62.0

TABLE 8-2
FUTURE ROADWAY NOISE LEVELS (continued)

Road Segment	Distance from Roadway Centerline to CNEL (feet)				
	70 CNEL	65 CNEL	60 CNEL	55 CNEL	CNEL at 50' from CL
Washington					
West of Whittier Blvd.	0.0	129.0	404.0	1275.0	68.0
Lambert Avenue					
Santa Fe Springs/Laurel	0.0	115.0	357.0	1128.0	67.0
Laurel/Calmada	0.0	144.0	450.0	1422.0	68.0
Calmada/Gunn	0.0	158.0	497.0	1570.0	69.0
Gunn/Colima	55.0	163.0	512.0	1618.0	69.0
Colima/Scott	0.0	115.0	357.0	1128.0	67.0
Scott/Santa Gertrudes	0.0	153.0	481.0	1521.0	69.0
Santa Gertrudes/Beach Blvd.	0.0	139.0	435.0	1373.0	68.0
Colima					
South of Whittier Blvd.	0.0	153.0	482.0	1523.0	69.0
Whittier Blvd./Mar Vista	61.0	183.0	574.0	1815.0	69.0
North of Mar Vista	63.0	207.0	652.0	2060.0	70.0
Santa Fe					
South of Lambert Rd.	0.0	81.0	249.0	785.0	66.0
Lambert/Whittier Blvd.	0.0	86.0	265.0	843.0	66.0
Norwalk					
South of Whittier Blvd.	0.0	95.0	295.0	932.0	66.0
Whittier Blvd/El Rancho	0.0	81.0	249.0	785.0	66.0
El Rancho/Beverly Blvd.	0.0	95.0	295.0	932.0	66.0
Pickering					
Whittier Blvd/Penn	0.0	65.0	202.0	639.0	65.0
Penn/Hadley	0.0	74.0	233.0	737.0	66.0
Hadley/Beverly Blvd	0.0	77.0	241.0	762.0	66.0
Greenleaf					
South of Whittier Blvd.	0.0	62.0	187.0	589.0	64.0
Whittier Blvd/La Cuarta	0.0	91.0	280.0	883.0	66.0
La Cuarta/Franklin	0.0	115.0	357.0	1128.0	67.0
Franklin/Beverly Blvd.	0.0	0.0	126.0	393.0	63.0



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City of Whittier

GENERAL PLAN

EXHIBIT 8-2
FUTURE NOISE CONTOURS

TABLE 8-2
FUTURE ROADWAY NOISE LEVELS (continued)

Road Segment	Distance from Roadway Centerline to CNEL (feet)				
	70 CNEL	65 CNEL	60 CNEL	55 CNEL	CNEL at 50' from CL
Mills Avenue	0.0	58.0	172.0	540.0	64.0
Santa Gertrudes Avenue	0.0	95.0	295.0	932.0	66.0

Source: FHWA Traffic Noise Prediction Model, David Evans & Associates, Inc., 1992.

The City of Whittier should focus it noise reduction programs in areas within the future 70 dB noise contour and on noise sensitive future uses within the future 65 dB noise contour. The area along Whittier Boulevard and the northern segment of Colima Road are within 70 dB CNEL. At buildout, noise levels will impact commercial, industrial, and high density residential uses along Whittier Boulevard and residential uses along Colima Road, absent any noise control measures. The 65 dB CNEL is found along most major streets in the City. Noise sensitive uses along these corridors include schools, hospitals, libraries, nursing homes, and residential developments. Specific programs to help reduce the adverse impacts of traffic noise are identified in Table 8-1 discussed in Section 10.

SECTION 9: HISTORIC RESOURCES ELEMENT

INTRODUCTION

The Whittier General Plan Historic Resources Element provides guidelines for the designation and preservation of historic structures in the City. The Element contains a listing of structures identified by different agencies as suitable candidates for preservation, criteria for evaluating historical significance, and programs to minimize the alteration and prevent the destruction of significant structures or sites.

The Historic Resources Element is an optional element that specifically meets the historic preservation needs of the City. As an element of the *Whittier General Plan*, it takes on the same force of law as the mandatory elements, once adopted. The Element promotes public awareness of the City's past by providing a discussion on the different historic sites and landmarks, known archaeological sites, and paleontological resources in the City.

Goals and policies in the Historic Resources Element provide needed direction in balancing development pressures with preservation efforts. In order to preserve the historic character of certain neighborhoods, it is necessary that historic structures are preserved, new structures are designed to be compatible with existing architecture and the surrounding elements, and historic structures are maintained in their original form. The historic preservation programs in support of the Element will be effective in preserving the City's historic character.

The known historic resources of the City of Whittier have been identified in the Historic Resource Element Background Report. The main findings of the report are summarized below.

- The City of Whittier is one of the oldest cities in Los Angeles County. Cultural resources in the area include numerous historical structures and sites and the Puente Hills are rich in archaeological and paleontological resources.

- Whittier has a large number of structures built more than 50 years ago. Many of these are historically significant in terms of past residents, use, architecture, religious association, or artistic value. A number of surveys have identified the historic resources of the City. While the list is not comprehensive, it serves as a strong starting point for future studies. Historic districts have been designated within the City, providing an avenue to prevent demolition of older structures until their historical significance has been determined. By identifying and providing standards for future development and potential demolition in areas where the most historically significant structures and landscaping are found, Whittier can preserve more of its cultural resources.

- The archaeological resources in the area are associated with Gabrieliño Indians and their settlements. The banks of the San Gabriel River near the Pio Pico mansion is believed to have been a site of an indian village. Site surveys, prior to

construction in areas having a high cultural sensitivity, will allow preservation of archaeological resources throughout the planning area.

- Fossils of early animals may be found within the soil layers of the region. These paleontological resources provide educational, cultural, and scientific values to the community. In Whittier, the hillsides have yielded paleontological resources and more are like to be discovered in the future.

- Historic resource programs in Whittier have slowly developed over time. In the future, the City intends to develop standards for historic districts and structures in a more rapid fashion, to initiate programs to encourage preservation and adaptive reuse, and to develop procedures to promote rehabilitation instead of demolition.

HISTORIC RESOURCES GOALS AND POLICIES

The three major components of historic and cultural resources preservation include resource identification, historic preservation, and public awareness. The goals and policies below are structured around these issues. They were developed to coordinate preservation efforts in the City and to provide a focused direction for public and private actions.

Issue: Historic Resource Identification

The first step to preservation is the identification of sites and structures to preserve. A number of sites, objects (such as trees), and structures in Whittier have gained recognition through State and City programs. However, there are many other structures that have been demolished, destroyed, or neglected because their historical or cultural significance was not recognized early. Also, unknown sites and structures may be uncovered during excavation and grading activities associated with new construction. In order to successfully preserve cultural resources in the City, priority should be given to resource identification.

Goal 1 Determine the nature and extent of Whittier's physical and cultural heritage.

Policy 1.1 Identify buildings, sites, objects, neighborhoods, landscaped areas, and gardens which have special significance to the history and/or character of Whittier.

Policy 1.2 Require investigations for new development during the environmental review to evaluate the potential for archaeological and paleontological resources.

Issue: Historic Preservation

Historic preservation deals with the various ways to prevent destruction, disturbance, and neglect of cultural resources, and at the same time promote the study, enjoyment, and understanding of Whittier's past.

Goal 2 Develop an historic resources preservation program, recognizing that effective utilization of the City's historic resources supports community identity and appeal, social and economic vitality, and neighborhood stability.

Policy 2.1 Update the City's historic resources ordinance as needed to protect identified historic buildings, sites, trees, gardens, and neighborhoods.

Policy 2.2 Establish Historic Districts, as appropriate, to protect Whittier's historic neighborhoods, and to preserve and enhance the distinctive visual and functional image of Whittier.

Policy 2.3 Encourage new development near historic structures, sites or districts to be compatible with the existing significant structures in scale, material, and character.

Policy 2.4 Encourage the preservation of open areas around historic buildings.

Issue: Public Awareness

The City of Whittier is particularly proud of its cultural heritage and the following goal and supporting policies seek to promote public awareness of the resources that represent its history. Public awareness will increase cooperation and support for preservation efforts and programs.

Goal 3 Promote public awareness of Whittier's history and heritage.

Policy 3.1 Promote, encourage, and assist, as appropriate, efforts to educate the public about the history, heritage, and resources of Whittier.

Policy 3.2 Provide information to the public on tax incentives and financing available for historic preservation activities.

IMPLEMENTATION PROGRAMS

Historic resource preservation may be achieved through a number of interdependent programs and actions. Table 9-1 provides the specific measures that will implement the Historic Resources goals and policies. A discussion of each measure is provided in Section 10.

TABLE 9-1
HISTORIC RESOURCES IMPLEMENTATION

Goals	Policy	Implementation Measure
1. Nature of Whittier Cultural Heritage.	1.1 Identify buildings, sites, objects, and neighborhoods with historic significance.	Comprehensive Survey
	1.2 Investigate the presence of archaeological and paleontological resources prior to development.	Environmental Review Site Investigations & Surveys Cultural Resource Preservation Methods
2. Historic Resources Preservation	2.1 Historic Resources Ordinance.	Site Investigations & Surveys Cultural Resource Preservation Methods Demolition Notice Incentives for Historic Preservation Standards for Adaptive Reuse State & Federal Preservation Laws Environmental Review
	2.2 Review feasibility of establishing Historic Districts.	State & Federal Preservation Programs Historic District Designation
	2.3 Encourage new development to be compatible with existing historic structures.	Design Standards within Historic Districts Environmental Review
	2.4 Encourage preservation of open areas around historic buildings.	Design Standards within Historic Districts Environmental Review
3. Promote public awareness.	3.1 Promote efforts to educate the public of Whittier's history.	Public Awareness of Significant Cultural Resources Whittier Historical Collection
	3.2 Provide information on tax incentives & financing for historic preservation.	Incentives for Historic Preservation Historic Resource Promotion

HISTORIC RESOURCE MANAGEMENT PLAN

The cultural resources of the City of Whittier consist of archaeological, paleontological, and historic resources found throughout the planning area. By identifying and preserving these resources, there will be greater understanding and appreciation of the area's past. The City hopes

to achieve the goals of the Historic Resources Element through a number of programs that will maximize the City's benefit from the presence of cultural resources. The Cultural Resource Management Plan developed for these resources involves cultural resource identification, preservation, and public information components.

Historic Resource Identification

There have been a number of studies and surveys that have been completed which identify archaeological, paleontological, or historical resources in the City. The Background Report documents resources that have been identified. This has led to a growing interest and curiosity about the extent of these resources. Some development has also led to the destruction and neglect of many historical and archaeological resources. The concern for the preservation of cultural resources can be seen in various public and private efforts to determine the historical significance of structures and objects before they are destroyed.

Historic resource identification efforts will be accomplished through a comprehensive survey of historical resources in the City. While comprehensive surveys of archaeological and paleontological resources may not be practical, starting a database of all surveyed areas and the results of these surveys will provide a better sense of the sensitivity of certain areas. Once historical significance and sensitivity have been determined, preservation programs can be established to preserve these resources.

Historical resources may be found in areas with older developments and where the town center was historically located. Areas located along the San Gabriel River have the potential for archaeological resources, as associated with the Gabrielino Indians. Paleontological resources have been found in the Puente Hills. Surveys and studies prior to development will determine with greater accuracy the presence or absence of these resources.

The criteria for establishing historic resource significance in the City will be as follows:

- The site or structure is associated with an event or person of recognized significance in City, California, or American history, or recognized scientific importance in prehistory.
- The site or structure has the potential to provide information which is of public interest, value to scientific research, or historical or archaeological insight.
- The site or structure has physical qualities as determined by its age, size, example, style, or uniqueness.
- The site or structure has stratigraphic integrity of at least 100 years old.

- The site or structure has potential for answering important research questions relating to history, archaeology, or paleontology.

The following criteria are designed to guide the state and federal agencies, and the Secretary of the Interior in evaluating potential entries (other than areas in the National Park System and National Historic Landmarks) for the National Register. These criteria should be used for determining if state or national designation should be pursued for significant historic resources in the City.

The major criteria for determining historic significance is related to quality of significance in American history, architecture, archeology, and culture; and the integrity of location, design, setting, materials, workmanship, feeling, and association. Other criteria are listed below:

- Association with events that have made a significant contribution to the broad patterns of our history; or

- Association with the lives of persons significant in our past; or

- The distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that posses high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

- The presence of or likelihood of potential information important in prehistory or history; or

- Association with significant architects or architectural styles.

Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years *shall not be considered eligible* for the National Register. However, such properties *will qualify* if they are integral parts of districts that do meet the criteria of if they fall within the following categories:

- A religious property deriving primary significance from architectural or artistic distinction or historical importance; or

- A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

- A birthplace or grave of a historical figure of outstanding importance if there is no other appropriate site or building directly associated with his productive life; or

- A cemetery which derives its primary significance from age, distinctive design features, graves of persons of transcendent importance or from association with historic events; or

- A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

- A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own historical significance; or

- A property achieving significance within the past 50 years if it is of exceptional importance.

Cultural Resource Preservation

The City of Whittier has established historic resource standards and guidelines for the establishment of historic districts. These standards should be expanded to include the preservation of archaeological and paleontological resources, as well. Preservation methods available to the City include:

- Keeping the area undeveloped, as park or open space;

- Covering the site with fill;

- Developing the site as a cultural center or museum;

- Moving the resource to another site;

- Adaptive reuse of the structures with minimal modification;

- Rehabilitation of structures for continued use, emphasizing the preservation of those elements contributing to the historic significance; and

- Requiring moving, demolition, or excavation monitoring programs.

Because different resources require different preservation methods, the City of Whittier shall establish individual preservation measures according to the significance, need, and available support.

Cultural Awareness

Cultural resources provide opportunities for recreation, education, and scientific inquiry. The City of Whittier can promote pride in its residents through the knowledge of its history and cultural resources. Public awareness and acknowledgement of the City's cultural resources will also lead to increased preservation of existing resources. The public information program for cultural resources includes the promotion of existing resources in the City, the encouragement of private preservation efforts, and the development of community identity.

The Historic Resource Management Plan will help decrease the destruction of cultural resources in the planning area. While the Plan cannot prevent the destruction of yet unknown resources, it protects all identified cultural resources from neglect. By using all avenues and creating opportunities for preservation, the City of Whittier will keep its historic resources available for future generations to enjoy, learn from, and be proud of.

SECTION 10: IMPLEMENTATION PROGRAMS

The individual General Plan Elements (Sections 2 through 9) indicate the specific programs that will implement the goals and policies contained within each Element. The specific implementation measures and programs are described in this section. The identification of a funding source for individual programs does not exclude the use of other available funds. The programs have been arranged in alphabetical order to facilitate reference and updating.

1. Accessible Housing in Zoning Ordinance

The availability of handicap access often prevent handicapped households from obtaining adequate housing. The State has established standards for handicap access in new developments and existing residential units. The City will incorporate handicap access requirements into the Zoning Ordinance, as required by State Law.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

2. Accident and Crime Statistics Review Program

Accident and crime statistics provide information on the specific needs of Whittier and on the effectiveness of its police services. These statistics are primarily used in planning police staffing, programs and priorities. The City will continue to gather accident and crime statistics for the area for use in the review of police service needs. An annual summary will be provided to the City Council.

Timing: Ongoing
Agency: Police Department
Funding: General Fund

3. Acoustical Analysis Reports

By identifying the potential for noise impacts, noise-sensitive uses such as residences, schools, hospitals, library and nursing homes will not be located beside industrial and heavy commercial areas. The City will require the preparation of acoustical analysis reports for uses that would create noise impacts that will be located near noise-sensitive uses, or that will be adversely impacted by outside noises. The City will require acoustical design measures to mitigate potential noise impacts.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

4. Affordable Housing Fund

The Redevelopment Agency is required to spend 20 percent of the tax increment funds on housing for low and moderate income households. These funds may be used for rehabilitation loans, improvement grants or new housing development within the redevelopment project area. The City will establish an "affordable housing fund" through the redevelopment planning process.

Timing: Ongoing
Agency: Redevelopment Agency
Funding: Redevelopment Funds

5. Air Quality Coordinator

The City will assign specific persons in the City to track the SCAQMD rule development process, inform affected departments and the City Council, and convey the concerns of Whittier residents and comment on issues affecting the City. The coordinator will work with SCAQMD in monitoring the implementation of SCAQMD Regulations, the AQMP, and other air quality programs in the City of Whittier. The Coordinator will also assist SCAQMD by providing available data on city building activities, on request. The air quality coordinator would be the City's representative for expressing the City's position for state and federal air quality regulation.

Timing: 1993
Agency: City Manager
Funding: General Fund, Special Revenue Fund

6. Annexation Program

There are unincorporated areas adjacent to Whittier which are served by City services and bear a physical, social or economic relationship to the City. Because these areas are outside the City limits, Whittier does not have authority over these areas. The City's will continue to evaluate the feasibility of annexing these areas in order to have greater control on development in the area. The City will determine the extent of local support related to possible annexation into the City of Whittier. It will inform the property owners of the City's support for annexation and encourage such efforts through cooperation with annexation studies.

Timing: 1993-1995
Agency: Community Development Department, Planning Department
Funding: General Fund

7. Beautification Program

Beautification programs allow residents to volunteer their efforts toward the enhancement of their neighborhoods. These programs may include graffiti removal, tree planting, fence painting,

parkway cleaning, trash removal, and other improvements to public places. These efforts improve the quality of the environment, promote property maintenance, and could increase public safety. With a common cause to work for, residents develop cooperation, friendship, and pride in their community. The City will develop a Beautification Program for the City's residential neighborhoods.

Timing: 1995-1996
Agency: Planning Department, Community Development Department, Parks Department
Funding: Special Revenue Fund

8. Bicycle Facilities

The City will develop regulations for secure parking areas for bicycles and showers and locker facilities at new commercial and industrial facilities with 50 or more employees.

Timing: 1995
Agency: Planning Department
Funding: General Fund

9. Bikeway and Equestrian Trails

Currently, bikeways and bicycle lanes in the City do not provide a system for travel to major activity centers and other bikeways in the area. Safety concerns and convenience have discouraged bicycle users from using these facilities. The City will develop a bikeway plan to serve and connect major activity centers in the City and surrounding areas, as discussed in the Environmental Resource Management Element. This plan will be compatible with the City's street network, as discussed in the Transportation Element. Regional trails run along the San Gabriel River and on the Puente Hills to the north. Trails running into the City of Whittier could encourage greater use of the existing regional bicycle and hiking trails. The City will work with the Los Angeles County Department of Parks and Recreation for developing a regional trail system through the City.

Timing: 1994 - 1995
Agency: Parks Department
Funding: Special Revenue Fund

10. Bikeway Plan

The City will implement its bikeway plan to serve and connect major activity centers in the City and surrounding area. The City will prioritize bikeway/bike lane construction and include them in the Capital Improvement Program.

Timing: 1994
Agency: Parks Department, Community Services
Funding: Special Revenue Fund

11. Capital Improvement Program

The City of Whittier has a developed infrastructure and public service system to serve its residents. The City's Capital Improvement Program outlines projects for the improvement, construction or maintenance needed of public facilities and infrastructure. It includes City structures, libraries, parks and recreational facilities, drainage facilities, roadway and traffic systems, water and sewer lines, and other infrastructure. The program provides a schedule of projects and their funding for a 5-year time period. It is reviewed annually and extended for an additional year. The City will prioritize infrastructure and public service projects through the City's capital improvement program.

Timing: Periodic
Agency: Department of Public Works
Funding: General Fund

12. Carbon Monoxide Hotspots

The City will identify existing and potential carbon monoxide hotspots (such as busy intersections) in the vicinity of new projects through the CEQA review process and identify any sensitive receptors that would be impacted by project-related carbon monoxide increases or by exposure to carbon monoxide hotspots through occupancy of new developments.

Timing: 1994 - 1995
Agency: Planning Department
Funding: General Fund

13. Carpool Programs

The City will continue to coordinate carpooling among City employees and refer interested residents and small businesses to appropriate agencies.

The City will advertise and disseminate the availability of carpool programs for existing and future City employees.

Timing: 1993
Agency: Transit Department
Funding: Enterprise Fund, Special Revenue Fund

14. City Emergency Plan

The City's Emergency Plan includes a City Disaster Preparedness Program, emergency drills and training, update of the disaster manual, earthquake safety information program, resource directories, assessment of equipment and supplies, and preparation of Community Resource Director and Employee Skill Inventory. It provides procedures to follow in case of any disaster, including evacuation routes and individual responsibilities. The City will update and implement the City's Emergency Plan. The timing and location of drills will be varied to promote emergency preparedness.

Timing: Periodic
Agency: Personnel Department
Funding: General Fund

15. City Vehicles and Equipment

The City will purchase public vehicles and other equipment that use *methanol* or other low-emissions fuels on city vehicles that are cost effective to purchase, use and maintain. It will require that vehicles purchased for the City's vehicle fleet comply with SCAQMD's existing and proposed regulations, as required by the California Clean Air Act. The City will review new street cleaning vehicles which achieve improved particulate removal efficiency and replace existing street sweepers, as feasible, when new purchases are needed. In the meantime, it will keep city equipment properly tuned and in good condition to minimize pollutant emissions.

Timing: 1996
Agency: Department of Public Works, Fleet Maintenance
Funding: Internal Service Fund

16. Code Enforcement

Without property maintenance, housing units look unsafe and could deteriorate faster. The City has established minimum standards for maintenance to protect public safety and enhance neighborhood quality. The standards help conserve the housing stock and maintain property values. The City will enforce the property maintenance standards. The City will continue the code enforcement of nuisances (inoperable vehicles, alleys, property maintenance) and illegal housing units and garage conversions.

Timing: Ongoing
Agency: Code Enforcement Division, Community Development Department, Building & Safety, City Attorney, Planning Department
Funding: General Fund, Special Revenue Fund

17. Commercial Development Standards

The City has adopted commercial development guidelines to provide design standards for yards, off-street parking, and signs. These will improve the quality of commercial projects in the City. The City will continue to implement and inform citizens and developers of commercial development standards and design guidelines.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

18. Communication Systems

Communication systems and power lines may be damaged by disasters, causing emergency response to be delayed or disorganized. There are other means of communications which may be utilized during these situations. The City will review available communications systems for use in case of emergencies.

Timing: 1993 - 1994
Agency: Human Resources Department
Funding: General Fund

19. Community Participation Program

The City of Whittier encourages community participation and input into City programs and ordinances. This leads to programs that reflect citizen interests and meet their needs. It also develops pride and commitment from its residents. By involving residents in the decision-making process, equal opportunity is promoted and the sense of community is strengthened. The City will disseminate information by cable television and other media to encourage community participation in all City programs.

Timing: Ongoing
Agency: Planning Department, Transit Department, Library
Funding: General Fund

20. Comprehensive Historic Survey

A number of studies and field surveys have been made on Whittier's historic structures but a comprehensive survey is yet to be done. While the City may not have the resources to complete the survey, there are community groups and interested individuals who could assist the City in this program. The City will combine past surveys and studies and work with community groups on preparing a comprehensive survey of cultural resources in the City.

Timing: 1993 - 1994
Agency: Department of Community Development, Historic Resource Commission
Funding: General Fund

21. Construction-related Air Quality Impacts Evaluation

The City will develop a program, in cooperation with existing SCAQMD regulations which will be effective in controlling short-term construction related emissions. The Existing SCAQMD regulations concerning fugitive dust control, diesel emissions, and structural demolition will serve as the framework for the City's program.

Timing: 1993
Agency: Planning Department, Department of Public Works
Funding: General Fund

22. Conversion of Railroad Rights-of-Way

The railroad tracks in the City of Whittier are underutilized, with only a few trains passing every day. As truck deliveries increase, it is expected that these rights-of-way will be abandoned in the future. There are several uses for these railroad rights-of-way and the City will explore ways of getting greater amenity from these. The potential uses of the rights-of-way include a mass transit system, a multi-use trail, a linear park, or other appropriate uses. The City will contact appropriate agencies or organizations (Rails to Trails) to study the feasibility of the conversion of abandoned railroad rights-of-way in Whittier to multi-use trails, including its suitability, other potential uses, financing, and maintenance.

Timing: 1995-1996
Agency: Parks Department, Planning Department, Community Development Department
Funding: Special Revenue Fund

23. Coordinate with Los Angeles County Transportation Commission and Southern California Rapid Transit District

The City will continue discussions with the Los Angeles County Transportation Commission and the Southern California Rapid Transit District on the potential alignment of future light rail systems through the City.

Timing: 1994
Agency: Planning Department, Transit Department
Funding: Special Revenue Fund

24. Crosswalks

The City will clearly delineate crosswalks in the street system that serve schools, parks, traffic, shopping centers, and other areas of high pedestrian traffic.

Timing: 1994
Agency: Department of Public Works
Funding: General Fund

25. Cultural Resources Preservation Methods

When archaeological and paleontological resources are found, it is important that the appropriate measures are followed for proper preservation. The City will determine preservation methods according to the significance of identified resources. This may include, but is not limited to, keeping the area undeveloped (park or open space), covering with fill, developing the site as a cultural center, removing the resource to another site, or preserving and reuse of structures.

Many archaeological and paleontological resources are overlooked or damaged during excavation activities. Thus, grading and excavation present the greatest opportunity for the identification and preservation of the area's cultural resources. The City will monitor excavation activities for sites identified to a high potential for archaeological and paleontological resources.

Timing: 1993
Agency: Planning Department
Funding: General Fund

26. Deed Restriction

Private parks cannot be designated as parks in the Land Use Plan and Zoning Map unless it is with the owner's consent. Methods of ensuring that private open space is preserved include the use of development agreements or deed restriction. When open space is required in new development, efforts must be taken to ensure this open space is not converted to other uses in the future.

Timing: 1993-1994
Agency: Planning Department
Funding: General Fund

27. Demolition Notice

The demolition of historic structures may sometimes go unnoticed. With greater notification efforts and longer periods, more historic structures may be preserved. The City will continue to

require adequate notice prior to the demolition of historic structures to solicit interest in moving the structure to another site for possible rehabilitation or alternate methods of preservation.

Timing: 1994
Agency: Planning Department
Funding: General Fund

28. Density Bonus

Incentives for the development of low income housing and housing for the elderly can encourage developers to enter these ventures. Increases in allowable density reduces per unit costs and makes housing development more affordable. The City will continue to provide density bonuses for low income and senior citizen housing projects.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

29. Design Standards within Historic Districts

To promote the integrity of historic districts, new structures will be compatible in terms of scale and character. Design guidelines can assist developers in planning a project that would complement existing buildings, instead of clashing with them. The City will develop design standards for new development near historic buildings or districts. With design guidelines for historic districts in place, the City can review development projects for compatibility with adjacent structures and the neighborhood identity. This review does not require structures to reflect historical architectural styles, but only to promote the character of the place. The City will evaluate new development for compatibility with adjacent historic structures or districts.

Timing: 1995 - 1996
Agency: Planning Department, Historic Resource Commission
Funding: General Fund

30. Design Review

Design review of proposed developments assures the architectural compatibility of new structures to the existing environment and adjacent structures. As part of the development review process, design review is undertaken by the Planning Department to evaluate a proposal's compliance with established design standards. Design review allows the City to suggest changes to the structural features of development, in order to develop community character and identity. The City will continue to require design review for development proposals and to implement design standards for commercial, industrial, and residential developments. Construction projects valued at 50

percent or more of the original structure's appraised value and all new developments will be required to go through an administrative design review, at the minimum.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

31. Disaster Planning

Safety concerns on earthquakes, steep slopes, fire, crime and other hazards that affect Whittier are not confined to the City limits. These concerns are shared by adjacent cities and, sometimes, the region. The City of Whittier can decrease the work and increase efficiency by working with adjacent cities in addressing area-wide hazards and disaster planning. Disaster planning will include provision of adequate fireflow, the designation of evacuation routes, and the development of fire lanes within developments. The City will coordinate disaster planning with adjacent cities and communities. It will maintain mutual aid agreements with the Sheriff's Department, adjacent police departments and other law enforcement agencies.

Timing: Ongoing
Agency: Department of Human Services, Human Resources Department
Funding: General Fund

32. Disaster Recovery Program

A disaster recovery program provides established resources to help return the City to normal operations. It shortens the social, economic and physical disruptions after a disaster and eliminates the pressure on the City to initiate reconstruction programs. The City will develop a disaster recovery program to help in the reconstruction efforts of residents and businesses in the City. This program will be made part of the City's Emergency Plan.

Timing: 1995 - 1996
Agency: Disaster Council
Funding: General Fund

33. Drainage Master Plan

The storm drainage system provides runoff disposal and prevents area flooding. It protects neighborhoods by eliminating flood hazards. Drainage line upgrades are needed in areas to prevent flooding. Also, new development is likely to increase runoff and may require drainage line upgrades. The City will ensure that studies and provisions are incorporated into new development to provide adequate storm drainage and avoid flooding. The City will implement the City's Drainage Master Plan by including storm drain projects in the Capital Improvement

Program. It will cooperate the County Department of Public Works in maintaining storm drains serving the City.

Timing: Ongoing
Agency: Department of Public Works
Funding: Enterprise Fund

34. Emergency Preparedness Brochures

The damage and disruption caused by emergencies and disasters may be aggravated by panic, ignorance, and misinformation. An emergency preparedness brochure that contains the basic procedures and resources during such cases can be a useful guide for everyone to keep around at all times. The City will prepare emergency preparedness brochures which outline ways to prevent injury and property damage, evacuation routes, emergency shelters, resource persons, and other tips for individual safety.

Timing: 1995 - 1996
Agency: Department of Human Resources, Community Services
Funding: General Fund

35. Energy Conservation

Title 24 of the California Administrative Code outlines insulation and energy conservation standards for new development. A number of other energy conservation practices and design features are recommended by state, local and utility agencies. Natural gas and power companies have developed energy conservation designs and measures and offer free consultation services to developers/builders and users. The City of Whittier can take advantage of these services by initiating contact between local utilities companies and developers during the review process. It will encourage developers/builders to consult with local utility companies on possible energy conservation measures to incorporate into new developments. There are rebate programs, experimental homes, museums, free audits and a host of other services to help conserve energy. There are available brochures and informational material from utility companies that explain the need for energy conservation and the different ways this may be achieved. The City of Whittier will get copies of all different materials to make them available at City Hall for residents and developers. The City will provide energy conservation brochures at City Hall. The City will explore with public utilities the feasibility of retrofitting city facilities for energy-efficient appliances. It will require the use of the most cost-effective energy-saving equipment, heating and lighting in all new City buildings, considering installation, operating and maintenance costs. The City will also encourage the use of passive solar design systems.

Timing: Ongoing
Agency: Planning Department, Department of Building and Safety
Funding: General Fund

36. Entryway Signage

Whittier's irregular City boundaries make it difficult to know if one is inside the City. Coordinated entryway signage can provide better recognition of the City and a sense of identity. The City will develop entryway and other signage to be placed at major streets leading into Whittier.

Timing: 1994 - 1995
Agency: Department of Public Works, Planning Department
Funding: General Fund

37. Environmental Regulations

Environmental quality is a world-wide concern and there are numerous laws by state, federal and local agencies that serve to protect the environment. The City will coordinate with other agencies on the enforcement of local, state and federal laws on environmental protection and pollution control within its jurisdiction.

Timing: Ongoing
Agency: City Manager
Funding: General Fund

38. Environmental Review Program

The California Environmental Quality Act (CEQA) is a state law that was adopted to protect the quality of the environment. CEQA requires all new development projects to be subject to environmental review and an environmental impact report (EIR) be prepared for projects that may have a potential for environmental impacts. The EIR identifies the environmental setting, potential impacts, and mitigation measures that will prevent or reduce impacts on a wide range of issue areas:

Any environmental review must also consider cumulative and growth-inducing impacts and alternatives to the project. The City will comply with the requirements of CEQA on the conduct of environmental review prior to development approval. In compliance with CEQA, the City will allow the Planning Department to review roadway projects for potential environmental impacts. An environmental review prior to street construction will determine potential impacts on existing wildlife and vegetation, population, housing and the economical impacts of street improvement projects. The review must provide adequate mitigation.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

39. Facilities For Alternate Transportation

The City will prepare an inventory of bus shelters, public seating areas, drinking fountains and other facilities serving cyclists, pedestrians and public transit users. The City will identify existing deficiencies and include these projects into the Capital Improvement Program.

Timing: 1994
Agency: Transit Department
Funding: Special Revenue Fund

40. Facility Fees

Facility fees are costs charged to individuals or groups to finance the provision of required facilities, services, and infrastructure. Costs associated with a development will be borne by its users. Individuals will pay for the use of certain facilities and to avail of specific services. Facility fees provide the City with the money to finance these facilities; provide adequate public services; cover user fees; and make an equitable distribution of costs. The City will regularly review facility fees and charges to ensure they reflect associated costs.

Timing: 1994-1995
Agency: City Clerk
Funding: General Fund

41. Fair Housing Council

The City of Whittier promotes equal opportunity to housing through the San Gabriel Valley Fair Housing Council. This council provides free advise and arbitration on housing discrimination issues, landlord-tenant conflicts, rent or lease agreement questions, and tenant rights. The City will promote the use of the Fair Housing Council by informing all City employees of the council services for easy referral.

Timing: 1993-1994
Agency: Department of Community Services, Community Development Department
Funding: Special Revenue Fund

42. Federal Housing Programs

There are a variety of federal housing programs which were established to assist in the provision of affordable housing projects. Though funding is limited, the City of Whittier may avail of these programs to augment its resources for affordable housing development in the City. The City will seek to develop new housing projects under the provisions of available Federal subsidy programs.

Timing: Ongoing
Agency: Community Development Department
Funding: Federal Grants

43. Fire Protection Status Report

Population growth, structural deterioration and changes in land use can alter the fire protection levels in a community. Services may need to be expanded or improved to maintain fire protection at acceptable levels. The City will work with County Fire Department to examine protection levels and correct deficiencies. The Department of Public Services will work with the Fire Department in preparing an annual report to the City Council which outlines the staffing, equipment, services, and demand at fire stations serving the City.

Timing: Periodic
Agency: Department of Public Works
Funding: General Fund

44. Fire Protection Services

The need for fire protection is dependent on development types and intensity, type of construction, population density, area terrain, hydrant capacity, brush areas and other factors. As population growth and development changes occur, fire protection services need to be tailored to the area's needs. The City will review fire protection levels for adequacy to meet the needs of Whittier residents and businesses.

Timing: Ongoing
Agency: Department of Public Services
Funding: General Fund

45. Flextime Work Schedules

The City of Whittier will continue to accommodate 9/80 or 4/10 work weeks for city employees. At the same time, it will publicize the advantages that city employees experience with these trip reduction programs to encourage private businesses to do the same.

Timing: Ongoing
Agency: City Manager, Planning Department
Funding: General Fund

46. General Plan and Zoning Ordinance Consistency Program

A major component of the Land Use Element is the Land Use Plan which regulates the location and intensity of development in the City. The designations contained in the Plan reflect the Land Use policy of the City. The Zoning Ordinance is the primary implementation measure for the Land Use Plan. The Zoning Ordinance regulates the type and intensity of development and contains development standards for lot coverage, building height, signs, landscaping, floor area, etc. As the major tools for land use control, the General Plan Land Use Policy and Zoning Ordinance implement a number of policies relating to the distribution and type of land uses in the City. After adoption of the revised General Plan and future General Plan amendments, the City will review the zoning ordinance for consistency with the General Plan land use policy.

Timing: 1993-1995
Agency: Planning Department
Funding: General Fund

47. Geologic Investigations

Geologic investigations prior to development can identify site hazards such as erosion, landslides, earthquakes, liquefaction, and debris flow. These investigations can recommend measures for the site planning or structural design of proposed buildings. The City will require geologic investigations for development on hillside areas and near the Whittier fault.

Timing: Ongoing
Agency: Planning Department, Department of Public Works
Funding: General Fund

48. Handicap Access Requirements to Park and Recreation Facilities

The availability of handicap access and facilities often prevent handicapped persons and other persons with special needs from obtaining adequate housing and needed services. The State has established standards for handicap parking and access in new developments and existing residential units. Federal regulations require the provision of accessibility to persons with disabilities to buildings and services receiving Federal funds. The City will continue to enforce handicap access requirements to persons with disabilities as required by state and federal law. City parks, offices, and recreational facilities will be accessible to the handicapped and other persons with special needs. An independent study has been prepared by the Whittier Accessibility Committee to assess the accessibility of City facilities and services. This study will be used to improve handicap access in Whittier. The City will identify public facility improvements (to parks,

sidewalks, public structures, etc.) that are needed to improve accessibility in Whittier and include their construction in the Capital Improvement Program.

Timing: 1993 - 1996
Agency: Parks Department, Community Services Department, Transit Department
Funding: Special Revenue Fund

49. Hazardous Waste Segregation

Hazardous waste may inadvertently end up at the Savage Canyon Landfill and contaminate soil and groundwater resources. The City will let residents and garbage haulers know which materials may be included in their trash. This public information service may be accomplished through television, print, radio, bill stuffers, and other means. Household hazardous waste may be disposed with hazardous wastes from public buildings and facilities. This will provide residents with a convenient method for disposal and will encourage the separation of hazardous waste from domestic trash. The City will encourage residents and businesses to participate in the household collection program. The City will continue to provide hazardous materials disposal for City facilities and residential households. The City will evaluate the feasibility of placing "No Hazardous Materials" signs at public trash cans. It will implement the City's Household Hazardous Waste (Element) Plan.

Timing: 1993 - 1994
Agency: Department of Public Works
Funding: General Fund

50. Hazardous Waste Management Plan

The Hazardous Waste Management Plan of Los Angeles County provides standards for disposal, handling, processing, storage and treatment of local hazardous wastes. It also includes a criteria for the siting of hazardous waste facilities. The City will implement a Hazardous Waste Management Plan prepared for the City.

Timing: 1993 - 1998
Agency: Department of Public Works
Funding: General Fund

51. Hazardous Material Transport

Accidental spills during the transport of hazardous materials can affect the City of Whittier. Areas that may be affected include those adjacent to the San Gabriel River Freeway, Whittier Boulevard, Washington Boulevard, and Colima Road. The City will continue to enforce laws on the transport of hazardous materials.

Timing: Ongoing
Agency: Police Department
Funding: General Fund

52. Hillside Standards

Development on hillside areas is regulated by the City's Zoning Ordinance, Hillside Standards and other land use and building regulations. These standards limit the grading and density of development and ensures that geologic hazard areas, natural resources and fire protection are considered in site planning. The City will continue to implement hillside standards for new development on designated Hillside Residential areas.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

53. Historic District Designation

Historic Districts are overlay zones in the Zoning Ordinance which designated areas where historic preservation efforts will be focused. The Hadley/Greenleaf Historic District was established to preserve and enhance the architectural and historical character of the Hadley/Greenleaf residential neighborhood. The District sets standards for the preservation of significant structures and ensures that new development is compatible with the existing community character. With the number of historic structures in the City, it is expected that new historic districts will be established. If the Citywide survey shows that a number of historic structures are located within a neighborhood or near one another, a historic district designation may help preservation efforts. Historic districts protect structures from demolition or remodeling that erases their historical significance. The City will identify potential areas for historic districts. In order to make property owners understand the benefits of historic designation, the City needs to be sensitive to their needs and will prevent undue hardships. The City will work with property owners to designate Historic Districts, as appropriate.

Timing: 1996 - 1997
Agency: Historic Resource Commission, Department of Community Development
Funding: General Fund

54. Historic Resource Promotion

The colorful history of the Whittier area and the variety of historical structures and sites that presently exist can be used to market the City as a desirable place to live or to invest. Preservation programs can be tied with efforts to attract homebuyers, developers and investors into the City. It will continue to support cultural activities (such as Founders Day, field trips, presentations, street fairs, etc.) and educational and promotional materials (videos, articles,

brochures, etc.) to expand public awareness in the City. The City will work with the Board of Realtors and other local groups for promoting the historic resources of the City, to market it to potential investors, residents, and visitors.

Timing: 1994 - 1995
Agency: City Manager, Community Development Department
Funding: General Fund

55. Homebuyer Assistance

Increases in the homeowner population make neighborhoods more stable and create a greater sense of community. To encourage home ownership in Whittier, the City may be able to provide some form of assistance to first time home buyers. The City will develop a program to establish a subsidy fund to assist first time homebuyers in Whittier.

Timing: 1993-1996
Agency: Community Development Department
Funding: General Fund

56. Housing Rehabilitation Program

Through the Community Development Block Grant Program (CDBG), the City of Whittier has developed programs for the rehabilitation of the existing housing stock. These programs include low-interest homeowner and renter loans, deferred payment loans, home improvement grants, and technical assistance. Housing rehabilitation improves the City's residential neighborhoods, conserves affordable housing units and prevents the deterioration of living conditions. The City will continue to implement the City's Housing Rehabilitation Program.

Timing: Ongoing
Agency: Community Development Department, Housing Rehabilitation Division
Funding: CDBG Funds, Special Revenue Fund

57. Housing for Elderly and Handicapped

The U.S. Department of Housing and Urban Development manages Direct Loans for Elderly and Handicapped Housing (Section 202). This program provides financing for the construction of dwelling units for elderly and handicapped households. Aside from construction funds, tenants may also receive rental assistance from Section 8 funds. The City will study the need and provide new housing for the elderly and handicapped through the Section 202 program.

Timing: 1993 - 1995
Agency: Community Development Department
Funding: Federal Grant

58. Housing Preservation Program

The City of Whittier will participate in negotiations or actions which may involve the conversion of subsidized multi-family rental units to market-rate housing. Since it will receive notices of application for conversion from HUD and the State regarding projects which are considering buy-out or prepayment, at least one year before conversion, the City will include in its yearly housing program, an effort to determine the following: Potential incentives that may be offered to a property owner considering conversion, available resources in the City to buy-out the project, all parties interested in taking over the property, ways of developing a similar project in the City to relocate the project's tenants, and other measures to prevent hardship for existing tenants. The City will assign a person to coordinate and negotiate with the owner and other agencies during the notice period of affordable housing projects. It will utilize all available means and resources to preserve existing affordable housing units or replace them with an equivalent project.

Timing: 1993
Agency: Community Development Department
Funding: General Fund

59. Hydrant Capacity

Fireflow capacity is provided by the availability of emergency water and adequate hydrant pressure. Taller and higher intensity uses require greater fire flow capacity for firefighting purposes. As development occurs, the City will consider the fire flow needs of new development and its impact on existing hydrant capacity. The City will regularly monitor hydrant capacity to ensure adequate fire flow needs and to evaluate the impacts of new development on existing hydrant capacity.

Timing: Periodic
Agency: Department of Public Works
Funding: Enterprise Fund

60. Identify Areas Lacking Bicycle Racks

The City will identify public areas where bicycle racks are deficient and include the provision of racks into the Capital Improvement Program.

Timing: 1994
Agency: Department of Public Works
Funding: Special Revenue Fund

61. Incentives For Developers

The City will require future commercial and industrial developments to comply with Title 24 and SCAQMD measures regarding handicap access, bicycle racks, showers (where appropriate), and changing areas, vanpool and carpool programs, and other measures to promote the use of alternative modes of transportation.

Timing: 1994
Agency: Planning Department, Department of Public Works, Transit Department
Funding: General Fund

62. Incentives for Historic Preservation

The preservation of historic structures when appropriate, will be accomplished by the rehabilitation of existing structures for adaptive reuse. This may include structural restoration to its original architectural design and form. Volunteers and financial loans can facilitate historic rehabilitation in Whittier. The City will use volunteer labor, loans, and grants to encourage the rehabilitation of historic structures. The cost of historic preservation can be reduced by tax incentives and financing options available through State, local, and private agencies. The City will promote preservation by disseminating information of available incentives, loans, and financing programs for historic structures. The City will feature available tax incentives and financing options for historic structures in a brochure or handout at City Hall. The City will provide economic incentives for historic site preservation efforts. This may include reduced taxes, transfer development rights, direct compensation, reduced parking requirements, etc. The City will prioritize sites for funding based on the findings of the historic resource surveys undertaken as part of the Comprehensive City survey. The City will work with appropriate public and private organizations to obtain funds for the preservation of significant structures, sites, and landscaped areas in the City.

Timing: 1994 - 1996
Agency: Department of Community Development, Historic Resource Commission
Funding: General Fund

63. Incentives to Create Larger Lots

Small parcels with high density zoning designations are often developed at maximum density. The limited area leads to increased lot coverage and limited open space for private recreation areas. One way to encourage the redevelopment of these lots and the construction of high quality housing is by providing incentives for lot assembly. Larger lots allow greater flexibility in site

planning and building design, with less impact on adjacent lots. The City will develop standards which provide incentives, density bonuses, and lower requirements for the assembly of multi-family residential lots. It will revise the zoning ordinance to reflect these standards. It will also talk to property owners of landlocked sites to facilitate lot assembly.

Timing: 1993 - 1994
Agency: Planning Department
Funding: General Fund

64. Industrial Rehabilitation

The City of Whittier has limited authority with private developments outside of requiring compliance with City ordinances. Property owners often have no cause for improving their properties. The City can promote rehabilitation by providing incentives and other assistance. In this way, property owners have tangible benefits to derive from their rehabilitation efforts. The City will encourage property owners to rehabilitate older industrial developments by providing technical support, incentives, and code enforcement.

Timing: Ongoing
Agency: Redevelopment Agency
Funding: Redevelopment Funds

65. Infill Development

A number of vacant lots in the City are found in scattered areas. These include irregular and remnant railroad property. They are parcels that have remained undeveloped every since; had their structures demolished; or have been cleared for future development. Vacant lots are often not maintained and could become dumping sites or places for vandalism. They represent underutilized areas that could be developed with projects for the benefit of the community, or just to improve the neighborhood. The City will promote quality development of infill lots through coordination with property owners and interested developers.

Timing: Ongoing
Agency: Planning Department, Redevelopment Agency
Funding: General Fund, Redevelopment Funds

66. Inter-Agency Coordination

The City will cooperate with the State Department of Water Resources, the County Department of Public Works, South Coast Air Quality Management District, Environmental Protection Agency and other responsible agencies in the enforcement of laws regarding water quality, air quality and other environmental concerns.

Timing: Ongoing
Agency: Planning Department, Department of Public Works, Department of Building and Safety
Funding: Enterprise Fund, Special Revenue Fund

67. Inventory of Hazardous Material Users

Hazardous materials use is regulated by federal, state, county and local agencies. The City of Whittier will identify hazardous material users in the City and develop a program for emergency response during the accidental release of hazardous materials. The City will also request copies of agency permits before granting business licenses to these users. The City will maintain a current inventory of hazardous material users and generators and develop an emergency response to hazardous material accidents. This will include hazardous material users and generators in neighboring cities which may affect the City of Whittier. It will incorporate the program into the City's Emergency Response Plan.

Timing: 1994 - 1995
Agency: Department of Public Works, Planning Department
Funding: General Fund

68. Land Consolidation

Residential development on larger lots have greater flexibility in providing open space, landscaping, recreational facilities and other amenities. Projects initiated by the City could benefit from land consolidation by increasing unit capacity and providing space for site amenities. The City will evaluate the feasibility of buying abutting parcels for the development of affordable multi-family development.

Timing: 1994
Agency: Redevelopment Agency
Funding: Redevelopment Funds

69. Land Cost Write-down

The City of Whittier can assist in the development of affordable housing through a land cost write-down. By selling land at a cost lower than its purchase price, the City subsidizes the land and lowers the cost associated with new residential development. The City will establish a land cost write-down fund using the Community Development Bock Grant program as a funding source.

Timing: 1993-1994
Agency: Community Development Department
Funding: CDBG Funds

70. Landfill Monitoring Systems

The Savage Canyon Landfill is a potential source for ground and water contamination from the decomposition of wastes on site. Environmental regulations require monitoring systems for the early detection and prevention of contamination. The City will continue to monitor water wells, gas wells, and probes at the landfill for potential ground and water contamination. It will maintain gas collection system to burn off methane before it migrates off site.

Timing: Ongoing
Agency: Department of Public Works
Funding: Enterprise Fund

71. Landfill Reclamation Plan

Upon closure of the landfill and proper remediation, it may be converted to urban uses. The City anticipates that the site will be developed as a park in the future. The City of Whittier will prepare a study for site closure and reclamation which would identify procedures and alternative uses for the site. The City will develop a reclamation plan for the Savage Canyon Landfill which will allow future use of the site without public health and safety risks.

Timing: As required
Agency: Department of Public Works
Funding: Enterprise Fund

72. Landscaping and Land Use Buffers

Land use buffers, setbacks, and landscaping serve to minimize impacts between adjacent users and to improve the overall appearance of structures. Standards for the provision of buffers, setbacks, and landscaping in development projects are contained in the City's Zoning Ordinance. The City will review standards on land use buffers, setbacks, and landscaping for consistency with General Plan policies (LU 3.7). It will require landscaping and land use buffers for proposed developments, where appropriate.

Buffer zones provide beauty and identity to streetscapes and neighborhoods. They create a sense of spaciousness and cleanliness and separate incompatible uses. The City will maintain existing buffer zones along major roadways and railroad tracks. There are areas in the City which could benefit from the provision of buffer zones. They include existing gaps of buffer zones along major roadways and between residential uses and railroad tracks. The City will identify areas along major roadways and railroad tracks which may be used as buffer zones. It will encourage property

owners to landscape these areas or, if City property, include these areas for landscape maintenance. The City will identify opportunities for buffer zones or small open space areas within residential neighborhoods and explore ways to preserve them as open space. Otherwise, it will encourage the maintenance of landscaped areas and vacant lots through weed abatement and regular landscape maintenance.

Timing: Ongoing
Agency: Department of Public Works, Planning Department, Parks Department
Funding: General Fund

73. Levels of Service

The City will monitor levels of service along roadways and develop capital improvement projects as needed.

Timing: Periodic
Agency: Department of Public Works - Streets Division
Funding: Special Revenue Fund, General Fund

74. Library Improvements

Library services provided by the City need to be expanded to accommodate population growth and new technology. This will ensure that there are adequate opportunities for learning, leisure and research for all Whittier residents. The City will develop a plan for the renovation and expansion of existing library facilities and resources to better serve all citizens of Whittier. It will include library improvement projects into the capital improvement program.

Timing: Ongoing
Agency: Library
Funding: Special Revenue Fund

75. Low-Polluting Materials

The City will explore available literature on low polluting construction materials and coatings which an be made available for developers and interested persons. It will consider the air pollution impacts of coatings in the environmental review of proposed projects and credit the use of low polluting materials as mitigation measures. The City will also encourage best available control technology (BACT) in commercial and industrial operations to reduce pollutant emissions.

Timing: 1994
Agency: Department of Public Works, Building and Safety
Funding: General Fund

76. Manufactured Homes

State law requires cities to allow manufactured homes on single-family lots. The City of Whittier has complied with this regulation and encourages manufactured homes as an affordable housing option. The City will inform the public of the zoning regulation allowing manufactured homes on single-family lots subject to certain conditions to encourage the use of manufactures homes as affordable housing alternatives.

Timing: 1993-1994
Agency: Planning Department
Funding: General Fund

77. Master Plan of Streets and Highways

The City will regularly review and implement the City's Master Plan of Streets and Highways.

Timing: Periodic
Agency: Department of Public Works
Funding: General Fund

78. Mitigation Monitoring

Amendments to CEQA have required a monitoring and reporting program for ensuring compliance with the mitigation measures. While the EIR serves primarily as an informational document, mitigation monitoring provides it with the mechanism to reduce or eliminate potential environmental impacts. Specific mitigation measures, the individuals responsible for implementing the measures, the time frame for implementation and the agency responsible for monitoring compliance will be made as conditions of approval. In this way, there is greater accountability for compliance. The City will ensure that after environmental review the identified mitigation measures are made conditions of approval for the project and the responsibilities of monitoring are assigned.

Timing: Ongoing
Agency: Planning Department
Funding: Private Funds and General Fund

79. National Historic Trail

The Mountains Conservancy Foundation and the Santa Monica Mountain Trails Council are working on the establishment of the Juan Bautista de Anza National Historic Trail throughout the region. The City of Whittier will cooperate and support the preservation and development of this trail and other historic trails, as a means of expanding the recreational opportunities in the area.

Timing: 1994
Agency: Parks Department
Funding: Special Revenue Fund

80. Neighborhood Watch Groups

The demand for police protection may be reduced by the formation of neighborhood watch groups. These groups establish a cooperative arrangement to protect their neighborhood from criminal elements. Problem-oriented policing (POP), can also focus police services to areas with the greatest need. The City will encourage the continuation and formation of neighborhood watch groups, including programs such as problem-oriented policing (POP), to serve as deterrents to crime. The captains of these groups will assign a person with a cellular telephone to act as communications coordinator during a disaster.

Timing: 1993 - 1994
Agency: Police Department
Funding: General Fund

81. Neighborhood Housing Services Project

The Neighborhood Housing Services Project focuses on the revitalization of neighborhoods through rehabilitation loan programs and the development of new townhomes for first time homebuyers. Existing residents are offered the right of first refusal for units proposed for construction onsite. The City will continue to support the Neighborhood Housing Services (NHS) Project for the revitalization of neighborhoods. The project provides rehabilitation loans for existing residential structures and initiates the construction of townhouses.

Timing: Ongoing
Agency: Redevelopment Agency
Funding: Redevelopment Funds

82. New Technology

There is continuous research and experimentation for ways to improve public safety. In the City's goal to provide the highest quality of fire, police and health protection, it will be open to potential improvements in service provisions and available technology. The City will encourage new technology in fire protection, hazard prevention and crime deterrence through experimental programs in the City.

Timing: 1994 - 1995
Agency: City Manager
Funding: General Fund

83. Newsletter Safety Guidelines

Public awareness can also be increased through a City newsletter. Articles, resource listing, safety tips and other information can provide residents with regular reminders on various public safety issues. The City will use a City newsletter to increase public awareness on safety, crime prevention, fire prevention, earthquake preparedness and other potential disasters.

Timing: Ongoing
Agency: Department of Public Services
Funding: General Fund

84. Noise Complaints

There are individual occurrences of noise which can only be monitored by noise complaints. If persons complain, it often indicates noise disturbance beyond acceptable levels. The City will respond to noise complaints in the City.

Timing: Ongoing
Agency: Code Enforcement, Police Department
Funding: General Fund

85. Noise Control Coordination

Agencies responsible for noise control and noise sources include public or private, state, federal or local entities. The City of Whittier will be able to coordinate noise control measures and develop noise mitigation programs by establishing cooperative arrangements with all these agencies. The City will coordinate with Caltrans, L.A. County Health, SPRR, UPRR, and the Sheriff's Department for addressing noise concerns in the City.

Timing: 1992 - 1993
Agency: Community Development
Funding: General Fund

86. Noise Ordinance

A noise ordinance will regulate the sources of noise in the City. The City will develop a noise ordinance which contains measures to correct existing noise problems through buffers, barriers, abatement and other improvements. Refuse trucks represent an existing noise problem in the City. Garbage trucks and sweepers are scheduled in the early morning hours when traffic is light.

Greater sensitivity to noise during this time makes truck and sweeper noise especially annoying. The City will determine ways to limit the noise of garbage trucks and sweepers during the early morning hours. The City will also establish standards for regulating the length of time for false alarms for both cars and business.

Timing: 1994-1995
Agency: Planning Department, Department of Public Works, Code Enforcement Division
Funding: General Fund

87. Non-Conforming Use Abatement Program

Non-conforming uses in the City include lots, structures or land uses which do not meet the established regulations and standards in the Zoning Ordinance for the zone in which it is located. These uses were rendered non-conforming through changes in the Zoning Ordinance that were adopted after the uses were in place. In order to protect individual property rights, non-conforming uses cannot be required to comply with new standards or be condemned by the City. Rather, amortization periods allow the non-conforming uses to get a profitable return on investment before they need to be modified or abandoned. The City will update its list of non-conforming uses and establish amortization periods for each one.

Timing: 1993-1996
Agency: Planning Department, Code Enforcement Division
Funding: General Fund

88. Oil Field Rehabilitation & Site Reclamation

Oil and gas drilling operations are regulated by the State Department of Conservation, Division of Oil and Gas. All oil drilling operations in Whittier will comply with department regulations regarding access, maintenance, safety, abandonment, and other activities associated with oil and gas recovery. Abandonment and reabandonment of oil wells will be made in compliance with the Department of Conservation, Division of Oil and Gas specifications. This may include remedial plugging, early abandonment of idle wells, periodic maintenance, and other regulations. Proposed structures will not be located over or near abandoned oil wells. Otherwise, setbacks will be provided to allow future access to wells. This will allow future hydrocarbon exploration and potential oil and gas development. Open space areas within developments will allow future drilling operations. Adequate gas venting systems will be placed if structures are located on abandoned wells. Consultation with the Department of Conservation will be made regarding activities and developments within the Whittier oil fields. The City will be actively involved in the review of closure plans for oil wells. It will support the efforts of other regulatory agencies to ensure that proper closure and abandonment procedures are followed. The City will provide appropriate environmental review for oil field rehabilitation and site reclamation projects.

Timing: 1993
Agency: Department of Public Works, Planning Department
Funding: General Fund

89. Open Space Acquisition Program

The undeveloped portions of the City and lands within Puente Hills provide vast opportunities for open space, trails and park development. It is unlikely that these uses will remain undeveloped without active programs for open space acquisition. Public and private measures will be evaluated to preserve the hills before they are developed. The City will seek funding sources to acquire open space areas, trails and parkland in the Puente Hills.

Timing: 1993-1996
Agency: Parks Department, Community Services Department
Funding: Special Revenue Fund

90. OSHA Requirements

The Occupational Safety and Health Act (OSHA) sets noise exposure standards in the workplace. These standards limit the time period of employee exposure to different noise levels to prevent the adverse effects of excessive noise. The City will require potential noise sources to comply with OSHA requirements for noise exposure of employees.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

91. Park Fees

In accordance with the Quimby Act, the City of Whittier collects park fees for the development of parks to serve new developments. These fees may be used for the acquisition and maintenance of parks. It allows the City to provide park facilities as housing development occurs. The City will continue to collect park fees from new development for the development of park facilities to serve development in which land dedication is infeasible.

Timing: Ongoing
Agency: Parks Department
Funding: Special Revenue Fund

92. Park Maintenance and Recreation Programs

Park facilities and recreation programs serve the recreational needs of the City. City parks need to be maintained for continued use by Whittier residents. This includes the different recreational

programs that are offered by the City to interested individuals. The City will continue to maintain public parks in the City and offer a variety of recreational programs to serve the recreational needs of residents.

Timing: Ongoing
Agency: Parks Department
Funding: Special Revenue Fund

93. Parking Regulations

The City will continue to enforce on-street parking regulations to maintain good traffic flow, especially during peak travel hours.

Timing: Ongoing
Agency: Police Department
Funding: General Fund

94. Parking Standards Review

The provision of onsite parking may be designed to accommodate anticipated demand or it may be limited to encourage public transit or alternative travel arrangements. The first objective will limit street congestion; the second, reduce vehicle trips and air pollution. The City will review the City's parking standards for "balance" between adequacy to meet the demand for parking and the promotion of alternative forms of travel. It will compare existing City standards with those accepted by national and state traffic groups, adjacent cities and other agencies. Any changes that may improve parking provisions and promote public transportation will be explored. The City will revise City parking codes, where appropriate, to permit new commercial and industrial developments that provide bicycle racks and changing areas for employees to reduce required parking areas. Reduced parking provision will also be allowed when shared parking arrangements are made.

The City will review on-street parking regulations and determine where on-street parking may be limited to improve street safety, reduce vehicle trips, provide bike lanes, and promote the use of garages for automobile parking only.

Timing: 1993 - 1996
Agency: Planning Department, Department of Public Works
Funding: General Fund

95. Park Needs Study Update

The City has set an ideal parkland ratio of 4.5 acres of parks per thousand residents. This means that additional parks and recreational facilities are needed to serve the existing and future

population of Whittier. The City's Park Needs Study evaluates the availability and utilization of parks and recreational facilities in the City. It also provides guidelines for future park improvements by identifying existing deficiencies, potential sites and future needs. The Study was prepared in 1977 and does not reflect current facilities and needs. In order to make it applicable and useful, the City needs to update the Study and develop a master plan for parks and recreational facilities in Whittier. The City will update the Parks Needs Study and develop parks and recreational facilities in accordance with the plan. It will identify potential sites for parks and recreational facilities and explore funding sources for their acquisition. Also, it will encourage land dedication to the City in lieu of park fees to increase the City's parkland. The City will coordinate with public and private agencies in the expansion of park land in the area, as contained in the Whittier Hills Park Plan.

Timing: Period Review
Agency: Parks Department, Community Services Department
Funding: Special Revenue Fund

96. Pedestrian and Bicycle Routes

The City will establish and develop a system of bicycle lanes and pedestrian walkways around the City to discourage vehicle use. The City will cooperate in the scheduling of walkathons, bicycle races and other recreation programs which show the benefits of walking or biking. The City will cooperate, through the City Newsletter and working with the Chamber of Commerce, in the use of delivery services and other shopping promotions to customers who use Whittier Transit or who arrive by walking or cycling. The City will seek funding from SCAQMD Mobile Source Discretionary Fund for these special promotions.

Timing: 1995
Agency: Parks Department, Department of Public Works, Transit Department, Community Services
Funding: Special Revenue Fund, Enterprise Fund, Mobile Source Discretionary Fund

97. Personal Transportation

The City will establish guidelines for the use of bikes, skateboards, and other forms of personal travel, in order to promote safety, convenience, and reduced traffic. The City will enforce safety rules concerning the use of skateboards, roller skates and other forms of personal transportation and regularly publish these rules to increase public awareness.

Timing: 1995
Agency: Parks Department, Department of Public Works
Funding: Special Revenue Fund, General Fund

98. Plan Check

Structures must comply with established standards for construction and building design. The plan check process allows the City to review proposed buildings for compliance with building and design codes. It also provides building plans for use during site inspections, in order to monitor if construction is proceeding according to approved plans. All new development will be subject to the plan check process to ensure compliance with the Uniform Building Code and other codes and standards.

Timing: Ongoing
Agency: Department of Public Works, Building & Safety Department
Funding: General Fund

99. Police and Fire Department Review

Proposed developments are subject to the reviews of the Police and Fire Departments. This allows the departments to provide input on ways to increase the safety of projects and decrease their demand for protection services. It also informs the Fire and Police Departments of new projects to aid in the planning of their service provision. The City will continue to allow the Police and Fire Departments to review proposed development plans and other discretionary approvals. In this way, they can recommend measures that will decrease fire potential, crime, and facilitate emergency response.

Timing: Ongoing
Agency: Planning Department, Police Department
Funding: General Fund.

100. Police Services

Population, events and activities, criminal elements, land use type, and other factors affect the need for police protection and law enforcement services. There is a need to maintain safety and security levels in the community through the provision of adequate police services. Adjustments in staffing and equipment will be necessary to continuously provide adequate services and maintain safety and security in the City. The City will regularly review the adequacy of police services in the City and modify staffing and equipment as necessary.

Timing: Ongoing
Agency: Police Department
Funding: General Fund

101. Pre-application Meetings

All new development are subject to development review to evaluate their compliance with City standards and ordinances. Pre-application meetings provide the City and developer a chance to informally talk about a project before any commitment for a structure or land use is made. It saves time and money for the developer by understanding what the City expects and the process that must be followed. Also, it informs the City of proposed developments early in the process. Pre-application meetings provide an opportunity to develop cooperation and to bring about higher quality development. The City will continue to encourage pre-application "development review" meetings with developers. This will allow the City to learn about proposed projects and the developer to determine the requirements for the City.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

102. Private Recreational Facilities

The City requires the provision of private open space areas in high density residential developments. These areas may include landscaped areas with barbecue pits, playground equipment, picnic facilities, swimming pool, or recreation room. The City will require new developments to provide private recreational facilities within residential projects. This will help meet the City's standard for park provision. The City wants to preserve private recreation areas and prevent their conversion to other uses. Sometimes, public support is necessary to do this. By informing residents of propose conversions, the City could determine if these recreation facilities are still in use or are better off developed for other uses. The City will gather support for the preservation of private recreation areas and facilities which are proposed for development to other uses.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

103. Promotion of Local Industries

Industrial developments provide an economic tax base for the City. Whittier encourages such developments but does not want the environmental problems associated with heavy industries and similar uses. Light industries such as warehouses, research and development uses, distributors, wholesalers, and packers present a suitable choice.

The City will encourage light industrial development in Whittier through promotional campaigns to major developers and investors.

Timing: 1993-1994
Agency: City Manager, Community Development Department, Planning Department
Funding: General Fund

104. Proposed Parking Designs

The City will review proposed parking lot designs to comply with City standards. It will enforce off-street parking standards in the zoning ordinance.

Timing: Ongoing
Agency: Department of Public Works, Redevelopment Agency, Planning Department
Funding: General Fund

105. Public Awareness of Significant Cultural Resources

Public awareness can help in the City's historic preservation efforts. Education and information programs can rally support for preservation issues in the City. The City will expand its cultural awareness programs and work with public and private organizations interested in cultural resource management and education. The City will work with other agencies to prepare a brochure of Whittier's cultural resources. The promotion of Whittier's cultural resources through public information can be expanded by prominent identification of historic sites and structures. This will generate greater interest and knowledge on the area's history and heritage. The City will work with public and private organizations in providing historic buildings with signs and monuments for identification.

Timing: 1995 - 1996
Agency: Department of Community Development
Funding: General Fund

106. Public Transit Facilities

The City will review current building codes to promote the development of bus shelters, turn out lanes, bicycle racks, and other facilities in new developments where it can be demonstrated that the facilities are appropriate for the intended use.

Timing: 1993
Agency: Planning Department, Transit Department
Funding: Props A and C, General Fund

107. Public Transit Program

The City of Whittier will continue to provide public transit within the City through the Whittier Transit. It will continue to coordinate with SCRTD on the frequency and routing of bus lines in the City to facilitate easy transfer to and from the Whittier Transit. In order to encourage transit use, it will provide Whittier Transit and RTD bus routes and schedules at the information counter at City Hall, Community Center, Senior Center and other similar locations. The City will use the Whittier newsletter to promote the use of the Whittier Transit and the RTD buses. It will also encourage existing and new commercial developments to provide information stands at lobbies to hold transit routes and schedules, as appropriate. Also, the City will monitor the usage of the Whittier Transit and provide additional lines as necessary. It will investigate the feasibility of extending bus routes to the Pio Pico State Park. It will work with the SCRTD to provide route information and schedule signs at bus stops and shelters for both RTD buses and the Whittier Transit and other transit agencies that serve the City. The City will coordinate public transit service planning with the Los Angeles County Transportation Commission, (LACTC), Southern California Rapid Transit District (SCRTD), and adjacent cities.

Timing: Ongoing
Agency: Transit Department
Funding: Prop A (Local transit tax), Enterprise Fund, Special Revenue Fund

108. Puente Hills Cooperative Planning Program

The Puente Hills is outside the City's jurisdictional boundaries. Yet, future development there will affect Whittier in a number of ways. The City will participate in the planning of this area. It will inform property owners, the Los Angeles County Department of Planning, and other responsible agencies that the City of Whittier would like to be notified and involved in any planning of the hills and areas within the City's sphere of influence. The City will actively participate in the environmental review of any proposed uses on the Puente Hills to encourage the preservation of important ecological resources and to prevent adverse traffic impacts. The City will meet with property owners and coordinate planning efforts in the area.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

109. Recreational Facilities Planning

Schools in Whittier provide recreational opportunities with their open fields, game courts, swimming pools and auditoriums. These facilities are available outside school hours and during school vacation days. Joint use and maintenance agreements allow the City to develop and maintain new parks and recreational facilities at a lower cost. The City will establish joint use/maintenance agreements with school districts for future recreational facilities, in appropriate.

Aside from City parks and area schools, there are other private and public recreation facilities in the City which may be made available for public use. These include City Parks, County parks, YMCA, Boys and Girls Club, day care centers, and other recreational facilities by private individuals or groups. The City will coordinate the provision of recreation facilities by the City Parks and Recreation Department, Los Angeles County Department of Parks and Recreation, the YMCA, day care centers, and other private and public groups for maximum utilization of available facilities. The City will continue to work with the different school districts in making school facilities available for public use outside of school hours.

Timing: 1995 - 1996
Agency: Parks Department, Community Services Department
Funding: Special Revenue Fund

110. Redevelopment Programs

The Whittier Redevelopment Agency serves to implement the redevelopment plans in the City. Redevelopment is a tool for improving the environment and removing blight when private action along cannot stop the deterioration of an area. The City of Whittier has adopted three redevelopment plans: the Uptown Whittier/Greenleaf Avenue Redevelopment Plan; the Whittier Boulevard Redevelopment Plan; and the Whittier Earthquake Recovery Redevelopment Plan. Redevelopment projects include residential, commercial or industrial rehabilitation or new construction, roadway and infrastructure improvements, land assembly and writedown, home repair loans and affordable housing development, public facilities, and a host of other projects. All these are intended to revitalize the project areas and promote new investment.

The City will continue to implement redevelopment plans in the City to improve and revitalize existing developments.

Timing: Ongoing
Agency: Redevelopment Agency
Funding: Redevelopment Funds

111. Relationship of Jobs to Housing

The City will evaluate the impacts of new development on jobs/housing balance and cumulatively address these impacts by encouraging future development to balance out past developments. It will initiate talks with adjacent cities on potential area-wide strategies to promote jobs/housing balance in the subarea.

Timing: 1995
Agency: Department of Community Development
Funding: General Fund

112. Residential Design Guidelines

The Residential Design Guidelines in the City of Whittier regulate the development of multi-family residential projects. They include standards for architectural design, yards, open space, landscaping, fencing and parking. These standards promote the improvement of the living environment. The City will require proposed residential developments to comply with the multi-family residential development standards and design guidelines.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

113. Road Widening Alternative

The City will evaluate the benefits of transportation demand management programs and other methods to reduce traffic volumes and enhance intersection operations, without the need for road widening. Where necessary, the City will require the dedication of land for the development of roadways or roadway widening projects.

Timing: Periodic
Agency: Department of Public Works
Funding: General Fund

114. Safety and Emergency Practices on Television

Television provides a medium for reaching a large segment of the population. The City's public information programs can be extended to cable television for increasing safety awareness and emergency coordination. The City will provide the capability of utilizing public access cable television to inform Whittier residents on ways to prevent a disaster, to prepare for one, or to act during an emergency or disaster.

Timing: 1994 - 1995
Agency: Disaster Council
Funding: General Fund

115. Safety Information Programs

There are safety information programs by the City, school districts, the county and other agencies. By identifying ongoing programs and identifying areas where new information programs are needed, the City can improve its safety information campaign. The City will coordinate public information programs on fire prevention, crime prevention, disaster preparedness and other safety issues.

Timing: Ongoing
Agency: Department of Human Services, Human Resources Department
Funding: General Fund

116. Savage Canyon Landfill

The Savage Canyon Landfill accepts solid wastes generated in the City. With increasing demands for landfill capacity in the region, the Savage Canyon Landfill assures the City of a disposal facility. The City will continue to operate the Savage Canyon Landfill to serve the waste disposal needs of the City.

Timing: Ongoing
Agency: Department of Public Works
Funding: Enterprise Fund

117. SCAQMD Funds

The SCAQMD has established a fund for education programs on public transit and innovative demonstration programs that reduce individual passenger vehicle use. The SCAQMD also has funds for innovative projects which encourage alternate modes of travel and reduce the need for parking. The City of Whittier will seek funding from the SCAQMD Mobile Source Discretionary Fund and Vehicle License Fund for local programs.

Timing: 1993
Agency: Transit Department
Funding: Special Revenue Fund, SCAQMD Funds

118. SCAQMD Permits

The City will provide a summary of SCAQMD regulations for local citizen use or obtain information brochures from the SCAQMD, and provide technical assistance for compliance with SCAQMD rules. An individual in the Department of Public Works will be made responsible for maintaining information on current and proposed SCAQMD regulations, to be available to assist local residents and industries, and to work with the SCAQMD's offices to assist Whittier residents and industries comply with SCAQMD regulations. Prior to issuing occupancy permits, The City will require written proof that the applicant has obtained all required SCAQMD permits and is in compliance with SCAQMD rules.

Timing: 1993
Agency: Planning Department
Funding: General Fund

119. Scenic Corridor Preservation

Scenic corridors in the City of Whittier include Turnbull Canyon Road, Colima Road, Beverly Boulevard and Skyline Drive. The scenic qualities of these roadways can be diminished by insensitive developments. The City will establish a program for preserving scenic corridors in the City. Coordinate this program with the Los Angeles County for roadways extending into unincorporated county areas.

Timing: 1994 - 1995
Agency: Parks Department, Department of Public Works
Funding: General Fund

120. School Services

Population growth will include an increase in the number of students and the demand for school services. The educational needs of residents is a major concern in Whittier. While school districts are independent of City services, cooperation between the City and the different school districts will allow improved services and joint programs. The City will coordinate with school districts in the provision of adequate school services to ensure there is adequate capacity to provide education to Whittier residents. It will inform the appropriate school district of proposed developments to determine the impact on school services.

Timing: Ongoing
Agency: Department of Public Services, Planning Department
Funding: Special Revenue Fund

121. Second Units

State law allows the development of second units in single-family lots subject to certain standards. This provision encourages the development of housing on large residential lots and helps in the increase of the affordable housing stock. The City will not discourage the development of "Granny Flats" or second units in residential zones, as allowed by State laws.

Timing: 1993 - 1994
Agency: Community Development Department
Funding: General Fund

122. Section 8 Program

The U.S. Department of Housing and Urban Development offers Low Income Rental Assistance (Section 8) for lower income groups. The Section 8 Existing Program subsidizes a portion of the monthly rents of low income households. The rent amount above 30 percent of the household income and up to the fair market rent of the unit is paid by local housing agencies. The Section

8 Housing Voucher Demonstration Program expands the program by using fair market rents to determine subsidy levels but renters may pay more if they choose units with higher rents. The City will continue to provide housing assistance in existing standard housing through the Section 8 housing assistance payments program and the housing voucher program.

Timing: Ongoing
Agency: Community Development Department
Funding: Section 8 Funds

123. Seismic Safety Standards

Nearby earthquake faults expose the City to the potential for extreme seismic hazards. Critical facilities (fire stations, police stations, schools, hospitals, and other structures that will be needed during disasters) will be designed to withstand earthquake events in the area. All critical facilities and new development will comply with seismic safety standards of the Uniform Building Code.

Timing: Ongoing
Agency: Building and Safety Department
Funding: General Fund

124. Senior Citizen and Low Income Housing Projects

The length of time it takes to obtain permit approval for projects often increase the costs of development. In order to encourage residential projects for senior citizens and low income households, the City may decrease the time associated with development approval for these projects. The City will expedite the permit process for low income and senior citizen housing projects. It will work with State and local agencies and residents of low-income or senior citizen housing projects for the preservation of units that are likely to revert to market rate housing.

Timing: 1993-1994
Agency: Planning Department
Funding: General Fund

125. Service Capacity Monitoring

New development must be adequately served by existing infrastructure and public services. This lessens the impacts on current users and allows improvements of the system when they are needed. Service capacity monitoring is a method for having current information on available capacity, in order to estimate accurately if proposed projects can be served. By knowing what system or service upgrades are needed before development takes place, the City can more reliably ensure the adequacy of its services. The City will develop a system for service capacity monitoring. This will ensure that adequate utility capacity exists to accommodate new development.

Timing: 1993-1994
Agency: Planning Department, Department of Public Works
Funding: Enterprise Fund, General Fund

126. Service Commitment

The availability and adequacy of public services to serve new development must be assured before development takes place. The City will be able to review water line, sewer line, landfill and police service availability during development review. But services that are provided by utility companies and other agencies need to be evaluated, too. The City will require service commitment letters from utility companies prior to development approval, in order to address the potential impacts on required services.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

127. Sewer System Improvements

The City maintains sewer lines in Whittier and ensures that they are clear and clean. Also, it regularly monitors the capacity of the sewer system to meet needs of existing and proposed developments. In recent years, it has been found that the majority of sewer lines are being utilized at maximum capacity and will not be able to handle additional loads. A number of these lines have been identified for replacement and relief lines are proposed. Future development will also lead to increased sewage generation and the need for upgrades to sewer trunks and mains, provision of new lines and expansion of treatment plant capacity. The City will continue the City's sewer replacement project and coordinate with Los Angeles County Sanitation District in providing sewer services.

Timing: Ongoing
Agency: Department of Public Works
Funding: Enterprise Fund

128. Sign Ordinance Review

The City's Sign Ordinance regulates the type, size, and number of signs in Whittier. It protects the aesthetic qualities of neighborhoods and promotes driver safety and convenience. The City of Whittier will identify signage problems in the City and determine if they are allowed under current sign standards. Changes will be made to the ordinance to prevent the proliferation of unwanted signs.

Timing: 1993-1994
Agency: Planning Department, Code Enforcement Division

Funding: General Fund

129. Sidewalk and Parkway Development and Maintenance

Sidewalks and parkways in the City serve residents and pedestrians. They also represent landscapes in residential neighborhoods. Tree-lined streets in Whittier are uniquely attractive and help create a sense of place. The City will continue to maintain existing sidewalks and parkways and encourage property owners abutting these areas to maintain parkway trees. This may include public information programs such as flyers, newsletter articles, and the like. There are existing gaps in the sidewalk system which present safety concerns for pedestrians, students and residents. They make the streets unfriendly and discourage walking instead of using a vehicle. By developing a complete system of sidewalks, the City of Whittier will be able to improve pedestrian safety and enhance the visual quality of streets. The City will identify areas and lots where sidewalks and parkways need to be developed and encourage property owners to build the sidewalks, where possible. Otherwise, the City will explore other funding mechanisms, such as including the needed improvements into the City's Capital Improvement Program. Priority will be given to sidewalks that serve parks, schools, and other routes with high pedestrian traffic.

Timing: 1994
Agency: Department of Public Works, Parks Department
Funding: General Fund, Special Revenue Fund

130. Signal Controls Analysis

The City will regularly perform signal warrant analysis to determine the need for traffic signals and signs, and install and remove them as required. The City will identify those intersections where traffic controls may be added to enhance the level of service.

Timing: Periodic
Agency: Department of Public Works, Traffic Signal Division
Funding: General Fund, Special Revenue Fund

131. Site Investigations and Surveys

The presence of historic and archaeological resources in the planning area can be verified by previous site investigations and surveys. Sites that are found to have a high probability for historic resources are those adjacent to sites where resources have been found in the past. Established procedures for future surveys will ensure that many of the area's resources are preserved. The City will require historic, archaeological, or paleontological surveys and site investigations before development approval, as appropriate. It will require a written report of the survey and investigation to describe the findings and recommendations for preservation. Also, it will encourage the collection of all materials during investigation for transfer to local museums, college and other depositories where they can be preserved. Appendix K of the CEQA guidelines

will be used to help mitigate adverse impacts on cultural resources. With the findings of past surveys and future investigations, the City will establish sensitivity maps for the area's cultural resources. It needs to pull together all available information and update the data as new sites are discovered or new areas are surveyed. The City will maintain current information on sensitive sites to use for reference in future review. In this way, development review of new projects can easily identify resource sensitivity.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

132. Social Service Agencies

There a number of private, public and non-profit agencies in the City and surrounding area which provide services to individuals with special needs. The City recognizes that they offer valuable assistance to Whittier residents and encourages such services. The City will assist public and non-profit agencies which provide support services to special needs populations (the homeless, the elderly, single-parent household, etc.). The homeless population has been increasing and the availability of services for the homeless has lagged behind. In the City of Whittier, a number of service organizations provide homeless services. These agencies operate independently and could benefit from the sharing of resources and the coordination of efforts. The City will coordinate homeless services through the Social Service Commission. There are a number of existing and future programs and facilities that provide meals, child care, job development, and housing assistance. The City will continue to support those programs that serve the homeless.

Timing: Ongoing
Agency: Community Services Department, Redevelopment Agency
Funding: Special Revenue Fund, CDBG Funds, Redevelopment Funds

133. Source Reduction and Recycling Element

The California Integrated Waste Management Act of 1989 (AB 939) addresses the need for the reduction of solid wastes. It requires counties and cities to achieve a 25 percent waste reduction by 1995 and a 50 percent reduction by the year 2000. These cuts may be implement by recycling programs, composting, source reduction or other means. The City's Source Reduction and Recycling Element outlines various ways to reduce solid waste disposal, in accordance with AB 939.

Proposed and existing programs in the Element include the promotion of source reduction practices, expansion of recycling programs, special waste diversion, composting projects and public information campaigns. The City will implement its Source Reduction and Recycling Element. The City also coordinates a periodic household hazardous waste collection and disposal program. This allows businesses and households to properly dispose of small quantities of hazardous wastes

and materials. Random checks of refuse trucks at the Savage Canyon Landfill also discourage the disposal of hazardous wastes at the landfill.

Timing: 1993 - 2000
Agency: Department of Public Works
Funding: Enterprise Fund

134. Southern Pacific Railroad and Depot

The use of alternative modes of transit will reduce traffic on City streets. The City of Whittier could benefit from the development of a mass transit system or connection to the regional light rail system. The railroad tracks in the City are underutilized and present an opportunity for potential transit use. The City will study the possible use of the Southern Pacific Railroad Depot and railroad tracks for a public transit system or the regional light rail system.

Timing: 1994 - 1995
Agency: Planning Department
Funding: Special Revenue Fund

135. Specific Plan Consistency Program

Two areas in the City have adopted Specific Plans: Uptown Whittier and The Whittier Quad. A third is being designated for future development of a specific plan: Whittier College. Future development within the adopted Specific Plan areas must conform with established plans. Specific plans contain development standards and design guidelines for all projects within a designated area. The City will continue to implement the two existing Specific Plans (Uptown Whittier and the Quad at Whittier) and undertake the preparation of the Specific Plan for the Whittier College. Specific plans provide for the regulation of the type and design of developments within a designated area. A specific plan contains development standards and design guidelines for all projects within a designated area. It controls the use and development of all lots through standards for yards, parking, building height, setbacks, lighting, landscaping and other site features. It also identifies public improvements that are needed in the plan area. While it may seem like a zoning ordinance, a specific plan is tailored to a particular area and is more restrictive in terms of buildings and their facades, public area improvements and the overall relationship of developments.

Timing: 1993-1994
Agency: Planning Department, Public Works Department, Community Development Department
Funding: General Fund

136. Standards for Adaptive Reuse

The adaptive reuse of historic structures will lead to greater historic preservation efforts in the City. It encourages property owners to preserve historic structures and at the same time provides options for changing the use of the structure. By establishing guidelines and standards for adaptive reuse, there will be greater awareness of opportunities for rehabilitation. The City will develop standards for the reuse of historic structures. The standards will include incentives to encourage adaptive reuse and discourage lot splits.

Timing: 1994 - 1995
Agency: Planning Department
Funding: General Fund

137. State and Federal Reconstruction Programs

There are state and federal assistance programs that could be utilized for the City's Disaster Recovery Program. The City has availed of some programs after the earthquake in 1987. They include the State Earthquake Rehabilitation Assistance (SERA) program, the federal Disaster Assistance Loan program by the Small Business Administration, and other similar programs. The City will utilize regional, state and federal programs for the reconstruction of the City after a disaster and incorporate them in the City's recovery plan.

Timing: 1994 - 1995
Agency: Department of Human Resources, Community Development, Community Services
Funding: General Fund, Special Revenue Fund

138. State and Federal Preservation Laws

The City will require compliance with State and Federal cultural resource preservation standards and regulations. There are various Federal and State laws that protect cultural resources. They include the following:

California Environmental Quality Act (CEQA) (1970, as amended). Private and public agency "projects" not otherwise exempt are required to evaluate the environmental consequences of their activities. CEQA requires a Lead Agency to identify project-related effects to "any object, building, structure, site, area or place which is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California".

Guidelines for the implementation of the California Environmental Quality Act. (State EIR Guidelines) Developed by the Governor's Office of Planning and research for the Secretary of Resources, The State EIR Guidelines detail the practical application of CEQA. The Guidelines

define procedures, types of activities, persons and agencies required to comply with CEQA, including recommended procedures for lessening or eliminating damage to cultural resources. Appendix K deals specifically with archaeological resources.

Health and Safety Code, Section 7050.5 and 7052. Establishes a felony penalty for anyone who mutilates, disturbs or disinters human remains, other than relatives.

Penal Code, Section 622.5. Provides a misdemeanor penalty for injuring or destroying objects of historical or archaeological interest located on public or private lands. Excludes the landowner.

Public Resources Code, Section 5097.5. Defines as a misdemeanor any unauthorized disturbance or removal of archaeological, historical or paleontological resources in public lands.

Senate Bill 297. Revises the Health and Safety Code Chapter 1492, and the Public Resources Code Section 5097.98, to include a requirement that the Native American Heritage Commission, be contacted whenever Native American graves are found. Makes it illegal to posses artifacts or remains from Native American graves.

Public Resources Code: Sections 5024 and 5024.5. Requires state agencies to inventory and protect state-owned historical objects and structures. It mandates consultation with the State Historic Preservation Officer before any listed property is altered or sold.

Federal Antiquities Act of 1906. Forbids disturbance of any archaeological resource "or any object of antiquity" on federal lands without a permit issued by the responsible agency. Establishes criminal sanctions for unauthorized desecration or appropriation of antiquities.

Historic Sites Act of 1935. Declares "it is a national policy to preserve for public use historic sites, buildings and objects of national significant". Gives the Secretary of the Interior broad powers to execute this policy including criminal sanctions.

Reservoir Salvage Act of 1960. Requires the Secretary of the Interior to institute a salvage program in connection with federally funded reservoir construction and requires the cooperation of responsible agencies with this program.

National Historic Preservation Act of 1966. Creates the National Register of Historic Places, authorizes the expenditure of funds for resource preservation and acquisition, establishes an Advisory Council on Historic Preservation and outlines its authority.

National Environmental Policy Act of 1969. Requires that cultural resources be considered in assessing the environmental consequences of a proposed undertaking.

Executive Order 11593, May 31, 1971, "Protection and Enhancement of the Cultural Environment". Mandates the federal government to "take the lead" in preserving, protecting and

enhancing the nation's cultural environment. Specifies that federal agencies will initiate inventories of properties under their jurisdiction and provide for their protection.

Archaeological Salvage Act of 1974. Amends the Reservoir Salvage Act of 1960 to include any federal action which may cause irreparable harm to any cultural resource, authorizes the expenditure of project funding for salvage, requires the Secretary of the Interior to report annually on the program's effectiveness.

Native American Religious Freedom Act of 1978. Required federal agencies to allow access to federal lands and objects used in the practice of traditional Native American religious ceremonies.

Timing: Ongoing
Agency: Community Development Department
Funding: General Fund

139. State and Federal Preservation Programs

State and Federal Programs provide a means for historic preservation and additional protection for structures and landscapes (street trees, gardens, etc.) with identified historical significance. The City of Whittier can avail of these benefits by applying for the designation of important structures. The City will nominate buildings and neighborhoods of historic significance to the National Register and State Historic Landmarks programs.

Timing: 1995 - 1996
Agency: Historic Resource Commission
Funding: General Fund

140. Storm Drain Facilities

Flood hazards in the City are fairly minor and are characterized by street flooding and sheet flows on short roadway segments. These hazards can be eliminated by improvements to existing storm drain facilities. The City will construct adequate storm drain facilities to eliminate flood hazards in the City. It will include these projects in the City's Capital Improvement Program.

Timing: Ongoing
Agency: Department of Public Works
Funding: Enterprise Fund, General Fund

141. Streamline Permit Process

Permit processing constitutes a large portion of the time and costs associated with development. By shortening the permit process, the City can lessen the cost of development. This can lead to a greater number of housing projects or the construction of more affordable housing units. The City will continue to streamline permit processing for more efficient use of time and lessen the costs associated with obtaining permits.

Timing: 1993 - 1994
Agency: Planning Department, Department of Public Works
Funding: General Fund

142. Street Maintenance

Street maintenance is necessary for efficient traffic flow and aesthetics. Roadways need regular maintenance with street sweeping, paving and lane marking. The City will continue street maintenance projects throughout the City and include priority projects in the Capital Improvement Program.

Timing: Periodic
Agency: Department of Public Works
Funding: General Fund

143. Substandard Dwelling Units and Structures

Substandard dwelling units and structures compromise the health and safety of its residents. They increase the potential for property damage and human injury during disasters. Substandard structures are often older buildings that do not meet current codes and building standards or that have deteriorated over time. They include dwelling units that are created without the required building inspections (illegal garage conversions). The rehabilitation of substandard units would eliminate existing hazards and improve the living environment of Whittier residents. The City will identify substandard dwelling units and encourage rehabilitation through the provision of technical support and other incentives. It will actively work towards the repair, rehabilitation or removal of substandard structures which do not meet safety standards, at the earliest time possible or before a change of occupancy or use.

Timing: Ongoing
Agency: Department of Building and Safety, Rehabilitation Division, Community Development Department
Funding: General Fund

144. Support Organizations

The City has limited resources to be involved in development projects. It is primarily in the hands of private developers to bring in new development to the City. The City of Whittier recognizes that by working with local organizations, it can promote development and new investment in the City. The City will coordinate with local organizations to promote the development of quality projects in the City.

Timing: Ongoing
Agency: Community Development Department, City Manager
Funding: General Fund

145. Synchronized Signals

The City will synchronize traffic signals along City streets to reduce vehicle idling and reduce roadway congestion.

Timing: Ongoing
Agency: Department of Public Works
Funding: General Fund, Special Revenue Fund

146. Telecommuting and Teleconferencing

The City of Whittier will promote the benefits of telecommuting and teleconferencing to businesses and residents. It will examine the feasibility of an ordinance requiring large new employment centers to establish telecommuting centers in new facilities and authorizing use of telecommuting and teleconferencing activities by City employees. It will also review the zoning ordinance and amend it, if necessary, to permit telecommuting and home employment, where such employment does not result in added traffic, noise or otherwise intrude on residential neighborhoods.

Timing: 1994 - 1996
Agency: City Manager, Transit Department, Community Development Department
Funding: General Fund

147. Temporary Parking

The City will allow temporary uses with limited available parking where it will encourage walking and the use of public transit. It will promote street fairs and other neighborhood events in Uptown or other areas of City which are surrounded by residential uses and where parking can be temporarily eliminated and users can walk or take public transit.

Timing: 1993
Agency: Planning Department
Funding: General Fund

148. Through Truck Routes

Truck traffic disrupts residential neighborhoods by causing congestion, noise, air pollution and street maintenance problems. They will be confined to the major roadways in the City. The City will designate truck routes and provide signs for truck routes and weight limits along City streets. It will encourage local businesses to schedule truck traffic during off peak hours through information programs with local businesses.

Timing: 1994 - 1995
Agency: Department of Public Works
Funding: General Fund

149. Toxic Emissions

The City will evaluate if new industrial development will use any toxic compounds and require that it comply with all equipment, risk assessment, and notification requirements of the SCAQMD prior to being issued a building permit. It will actively discourage sensitive receptors from locating near land uses with toxic emissions.

Timing: 1993
Agency: Planning Department
Funding: General Fund

150. Traffic Improvements

Traffic concerns in the City affects the quality of residential neighborhoods. Through-traffic in Whittier significantly contributes to traffic congestion along City streets. This traffic has also affected residential streets. The City will explore ways for discouraging through-traffic in residential areas of the City. Traffic control devices (stop signs, speed bumps, signals, etc.) regulate traffic flow and promote vehicular safety. While major intersections in the City have traffic control devices, other heavily used intersections do not. The City will investigate the need for traffic control devices.

Timing: 1994 - 1996
Agency: Department of Public Works
Funding: General Fund, Special Revenue Fund

151. Traffic Safety Programs

The City will develop and implement street safety programs (roadway maintenance, sidewalk and access ramp repair, etc.), assign traffic officers along heavily used residential streets and post speed limit signs. It will investigate the feasibility of using bicycle sensitive traffic signals. Traffic safety may be improved through cooperation and coordination with adjacent cities. Similar goals and programs can ensure that police services in different cities are efficient and complement each other. The City will coordinate traffic safety programs with adjacent cities and communities. It will maintain mutual aid agreements with the Sheriffs' Department and adjacent police departments. It will coordinate with Caltrans on the design and maintenance of freeways near the City, to minimize accidents and congestion.

Timing: Ongoing
Agency: Department of Human Resources, Community Services Department, Department of Public Works
Funding: General Fund, Special Revenue Fund

152. Transportation Center

The City will evaluate the benefits of a transportation center in the City and examine the feasibility of utilizing the Southern Pacific Depot as the transportation center.

Timing: 1994
Agency: Planning Department
Funding: Special Revenue Fund

153. Transportation Demand Management

The City will promote transportation demand management practices for large employers. These will include carpools, vanpools, telecommuting, and other trip reduction measures.

Timing: 1993
Agency: Transit Department, Planning Department
Funding: Enterprise Fund, Special Revenue Fund

154. Transportation Management Associations

The City will coordinate meetings between City transportation coordinators and Regulation XV coordinators in other employment sites within the City to facilitate programs, exchange ideas, and facilitate the formation of Transportation Management Associations.

Timing: 1994-1995
Agency: Community Services
Funding: General Fund, SCAQMD grants

155. Tree Preservation Program

There are many mature trees in Whittier which lend aesthetic and ecological values to the community. The City will develop a program which will preserve trees, promote tree planting, and regulate the removal of mature trees. It will include guidelines for replacement, replanting, tree trimming, irrigation, and other methods to preserve and cultivate existing trees. The City encourages tree planting for a variety of reasons. Trees improve an area's appearance, help in soil conservation and flood control reduction, neighborhood identification, and aid in improving air quality. The City will continue the tree planting program as part of the parkway and street maintenance, park landscaping or through regular volunteer programs.

Timing: 1994 - 1996
Agency: Parks Department, Department of Public Works, Environmental Task Force
Funding: Myen Tree Fund, General Fund, Special Revenue Fund

156. Underground Utility Lines

Telephone, power, and cable services in the City have led to the installation of overhead and underground lines. Overhead utility lines add to the visual clutter on streets. They also present safety concerns to neighborhoods. The City will continue to require new utility lines to be underground in new development. It will develop a program for the undergrounding of existing overhead utility lines, in accordance with Rule 20 of the Public Utilities Commission.

Timing: Ongoing
Agency: Department of Public Works
Funding: Special Revenue Fund

157. Underutilized Lots

There are a number of lots in the City which are developed with commercial and industrial uses which are not fully utilized or abandoned. This indicates an excess in these uses to serve the City. Underutilized lots may have better use if they are redeveloped for other uses. The City will identify underutilized commercial and industrial lots and work with the property owners or local developers in the redevelopment of these areas for mixed-use developments.

Timing: 1993-1994
Agency: Redevelopment Agency, Planning Department
Funding: Redevelopment Funds, General Fund

158. Uniform Building Code

The Uniform Building Code and other structural codes regulate construction design and practices. These codes are updated every few years to include new technology and improve the standards. Cities may adopt more stringent regulations or may tailor the requirements to the unique features of the area. The City will adopt the latest version of the Uniform Building Code and other codes that increase the safety factor for new structures.

Timing: Ongoing-within 18 months following issuance
Agency: Building and Safety Department
Funding: General Fund

159. Uptown Parking

The City will maintain Uptown parking districts.

Timing: Ongoing
Agency: Department of Public Works, Redevelopment Agency
Funding: Special Revenue Fund

160. Urban Design District Program

The City of Whittier has established an urban design district along Painter Street and Whittier Boulevard. The district serves as an overlay zone in the Zoning Ordinance. This program expands the district so that it also includes Greenleaf Avenue between Uptown and Whittier Boulevard, and along portions of Hadley Street, Philadelphia Street, and Whittier Boulevard. As such, the standards applicable to the underlying zone must be complied with. In addition, the design guidelines for urban design districts must be followed. The guidelines deal with site development, landscaping, building design, and signage for regulating the architectural design of new buildings or renovations within the district. The Urban Design District and its guidelines were established to enhance the quality of development to prevent the deterioration of property. The City will continue to implement design standards for Urban Design Districts and develop any additional standards that are appropriate for those areas that have been added to the Urban Design District.

Timing: Ongoing
Agency: Planning Department
Funding: General Fund

161. Vehicle Trip Reductions

During development review, the City will require developers to incorporate measures to reduce trip generation during construction for new projects and monitor compliance through regular inspections.

Timing: 1993
Agency: Planning Department, Public Works Department
Funding: General Fund

162. Volunteer Groups

Volunteers will expand the City's resources during emergency and reconstruction efforts. The City will utilize volunteers and support agencies that provide basic training for disaster situations. The City will utilize volunteers in disaster recovery programs and other emergency situations.

Timing: 1994 - 1995
Agency: Disaster Council
Funding: General Fund

163. Water Conservation Program

Water resources are limited and may be depleted by excessive use, drought or contamination. Water conservation and management programs will ensure future availability. Water conservation also benefits air quality by indirectly reducing the energy needed to pump water and its associated emissions. Public awareness is the first step in encouraging lower water consumption and reducing wasteful use. Many water conservation measures may be implemented by slight changes in water use practices. Information campaigns help individuals identify ways for better water conservation. The City will promote public awareness on water conservation by utilizing brochures and other public awareness materials offered by water agencies. The use of drought-tolerant vegetation decreases the need for watering yards and open fields. Reclaimed water use will also reduce the demand for groundwater resources. These water conservation measures may be adopted throughout the City. The City will promote the use of recycled water and drought-tolerant landscaping to complement existing landscaping requirements.

Water conservation can be increased by the use of water efficient appliances to plumbing fixtures. The City of Whittier can reduce its water consumption by retrofitting City facilities and by using drought-tolerant landscaping. Energy conservation can also be expanded by the use of energy efficient appliances. In its water and energy conservation programs, the City can include a retrofit component. The City will develop water conservation programs for City facilities (Civic Center, City parks, maintenance yards, etc.). The City will explore the feasibility of retrofitting City-owned facilities for water-efficient plumbing fixtures and energy-efficient appliances,. where possible. It will use drought-tolerant landscaping in City parks, without necessarily replanting

existing vegetation. It will also utilize drip irrigation methods or other technology to conserve water and save City trees.

Timing: 1994 - 1995
Agency: Department of Building and Safety, Parks Department, Department of Public Works
Funding: Enterprise Fund

164. Water System Improvements

The availability of an adequate water system is important to providing a decent living environment. The City's water system is constantly requiring changes to accommodate increased demand and system upgrades. Water lines, pumps and wells need to be replaced as they deteriorate over time. Future growth in the City also leads to increased demand for water services. The City will continue the rehabilitation and upgrade of deteriorated water lines throughout the City. Also, water system improvements will be undertaken according to need.

Timing: Ongoing
Agency: Department of Public Works
Funding: Enterprise Fund

165. Water Quality Monitoring Wells

There are water quality monitoring wells at the Savage Canyon Landfill. These wells are regularly checked to determine if groundwater resources are getting contaminated by the landfill. The wells provide a means for the early identification and correction of water contamination. The City will maintain water quality monitoring wells by the Savage Canyon Landfill and implement corrective measures promptly.

Timing: Ongoing
Agency: Department of Public Works
Funding: Enterprise Fund

166. Whittier Historical Collection

The Whittier Historical Collection at the Central Library contains documents and artifacts which provide insights into the City's past. These materials can develop interest in historic preservation. The City will promote use of historic research materials from the Whittier Historical Collection at the Central Library, the Whittier Museum, the Rio Hondo College, and Whittier College.

Timing: 1994 - 1995
Agency: Department of Community Development
Funding: General Fund

167. Wilderness Park Expansion

The area surrounding Hellman Park is undeveloped and could be preserved as open space. The City could explore expansion opportunities in this area before development takes place. The City will identify areas around Hellman Park which may be suitable for park expansion, examine funding sources, and negotiate with property owners for acquiring these areas. An initial area for the expansion of Hellman Park is the site currently used as a parking lot for the park. This lot is undeveloped and privately-owned by the Hellman Estate. The City will investigate the potential for expanding Hellman Park by adding the area currently used as a parking lot. The City will encourage other governmental entities to develop parks that complement Whittier's wilderness parks.

Timing: 1996 - 1997
Agency: Parks Department
Funding: Special Revenue Fund

BACKGROUND REPORT

WHITTIER GENERAL PLAN

DAVID EVANS AND ASSOCIATES, INC.

BACKGROUND REPORTS
FOR THE
WHITTIER GENERAL PLAN UPDATE

Prepared for:

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August 1993

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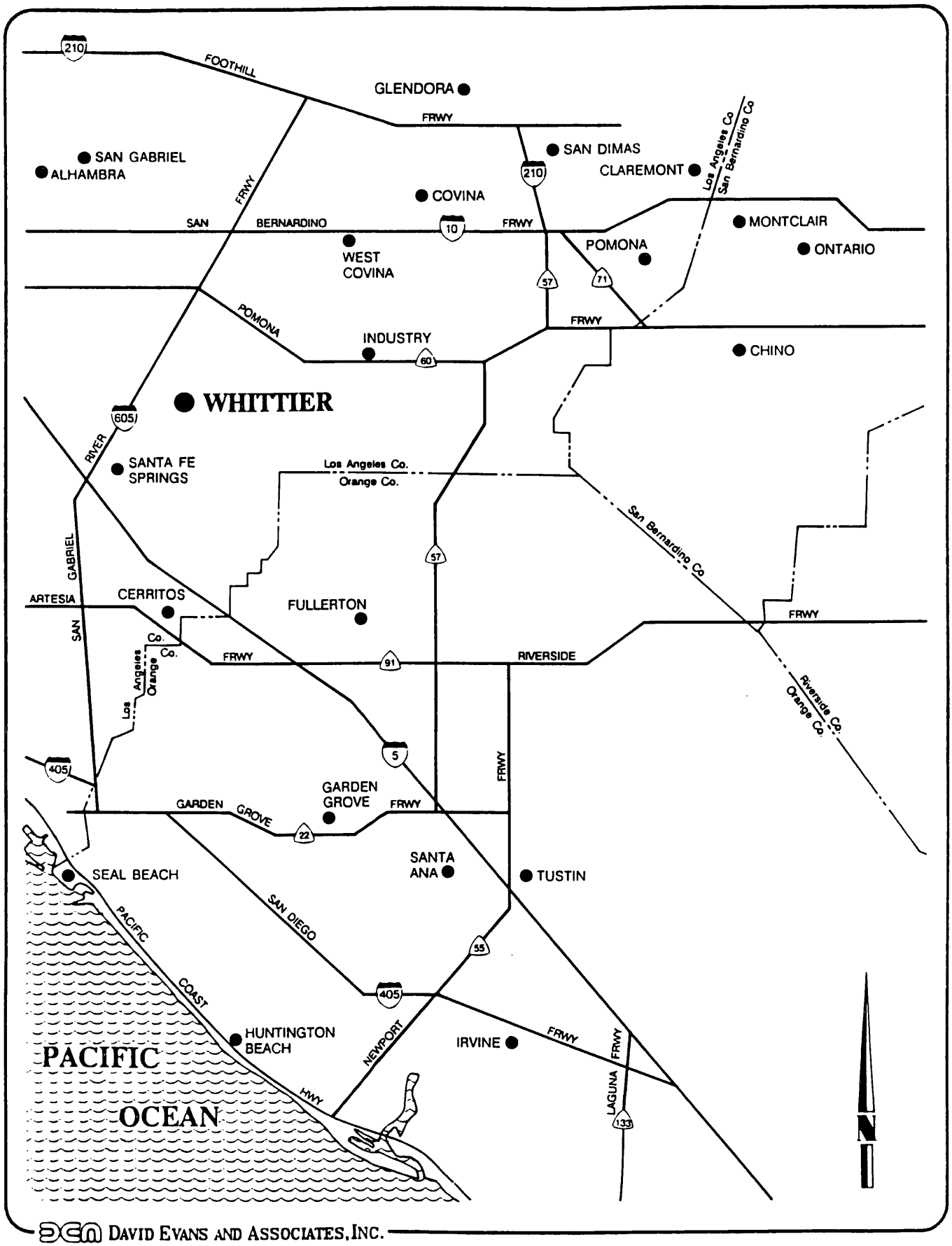
SECTION 1: INTRODUCTION

The City of Whittier is located in the eastern portion of Los Angeles County, 15 miles east of downtown Los Angeles. The City is on the southwestern slopes of the Puente Hills just east of the San Gabriel River and the San Gabriel River Freeway (State Route 605). The land features a sloping terrain on the north and east where the Puente Hills are located and becomes flat on the southern and western sections. Elevations range from 1,000 feet above sea level on the northeast to 140 feet above sea level on the south. The area slopes southwest and generally drains toward the San Gabriel River. Exhibit 1-1 shows the regional location of Whittier.

Neighboring cities and communities include Pico Rivera and Los Nietos on the west, Santa Fe Springs and La Mirada on the south, La Habra and La Habra Heights on the east, and the unincorporated communities of Hacienda Heights and Rowland Heights on the north. Exhibit 1-2 shows the vicinity map of the area.

Urban development in the area had started even before the turn of the century, providing the City with a mix of old and new structures. The City of Whittier is developed primarily with residential land uses with vacant land limited to scattered infill lots and hillside areas. The City's proximity to regional employment centers and recreational facilities has kept it an attractive residential location.

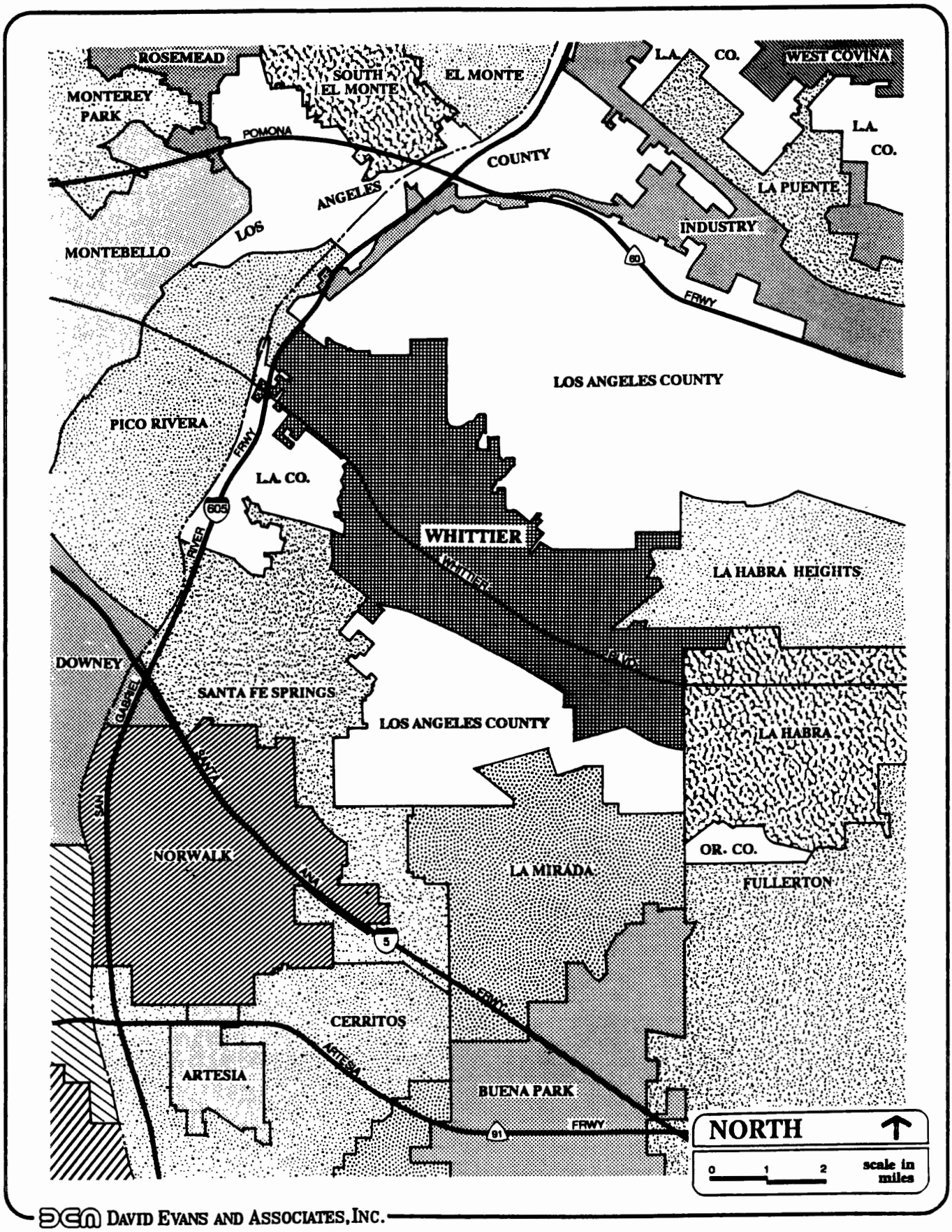
The sphere of influence of a City includes incorporated and unincorporated areas which are within the City's service area. It is the area which bears some relation to the City in terms of planning and service provision. The spheres are assigned by the Local Agency Formation Commission of Los Angeles County (LAFCO) as potential annexation areas to adjacent cities. This designation does not give any authority to the City in terms of development or permit processing. Rather, it serves as a preliminary basis for future annexation, subject to the consent of the property owners. Unincorporated areas surrounding Whittier which are included in its sphere of influence are shown in Exhibit 1-3. These areas are south and southeast of the City between Whittier and La Mirada and the Puente Hills area north and northeast of the City.



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

EXHIBIT 1-1
REGIONAL LOCATION



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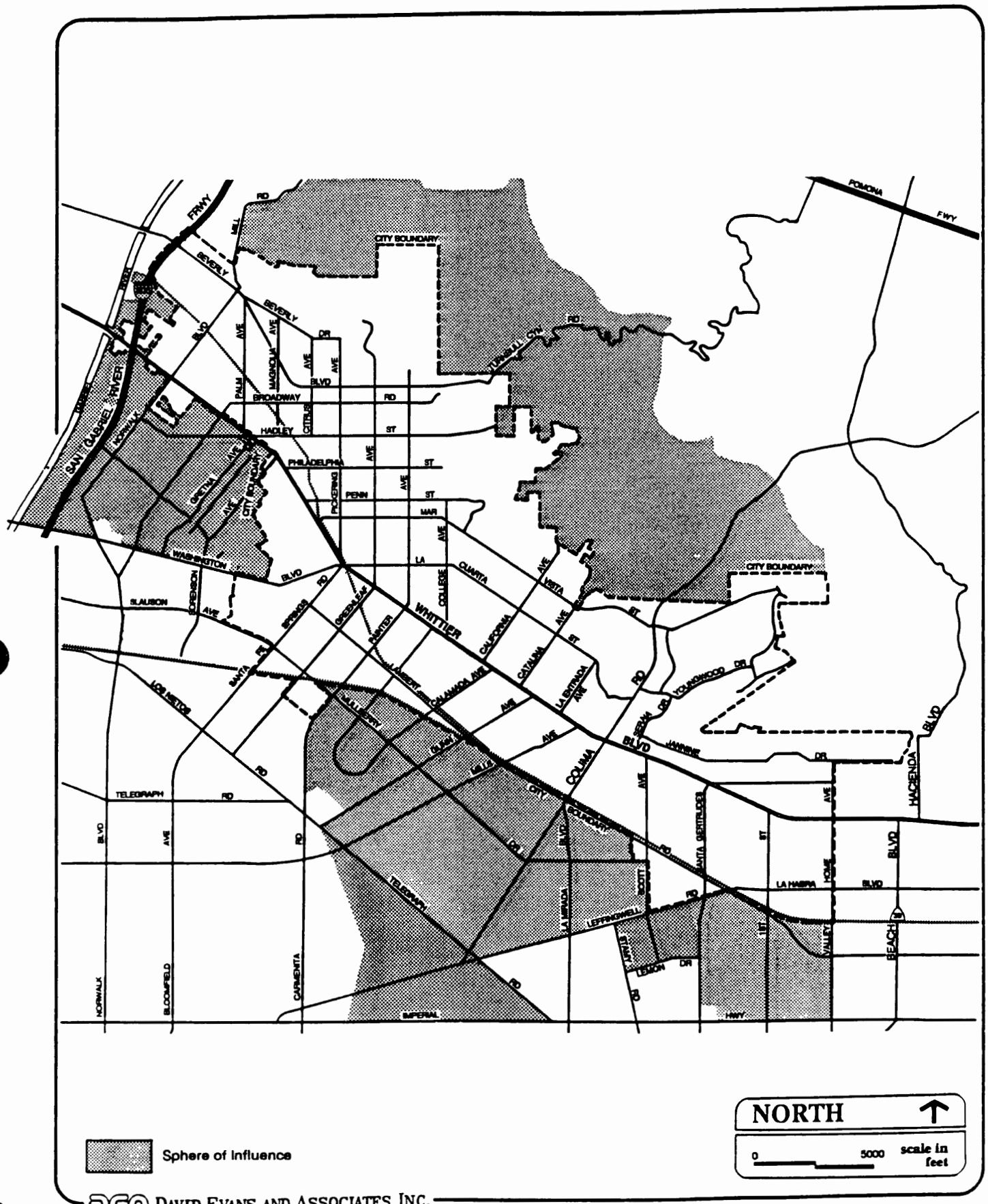
City of Whittier

GENERAL PLAN

EXHIBIT 1-2
VICINITY MAP



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City of Whittier

GENERAL PLAN

EXHIBIT 1-3
SPHERE OF INFLUENCE

SECTION 2: LAND USE ELEMENT BACKGROUND REPORT

INTRODUCTION

The Land Use Element Background Report provides a discussion of the issues and opportunities that affect land use planning in the City of Whittier. This section contains information on the location and distribution of existing land uses within the City and existing public services. In addition, land use trends and constraints that affect existing and future development are discussed.

LAND USE TRENDS

The City of Whittier covers an area of approximately 12.51 square miles. It was founded in 1887 by a Friends organization, the Pickering Land and Water Company. The City was subsequently incorporated on February 1898. Early development included the intersection of Hadley Street and Greenleaf Avenue, which was then known as the "Four Bricks". The original Pickering Land and Water Company land holding was subdivided into what is now the Uptown area.

In December 1961, the East Whittier area was annexed and Whittier's population more than doubled. Adjacent areas such as Los Nietos, South Whittier, and West Whittier have since been developed to complete the urbanization of the Whittier area. From 1970 to 1980, the City of Whittier experienced a decrease in population reflecting the aging of the City's population. Recent population growth can be attributed to the increase in Hispanic households who generally have larger families and the construction of multi-family structures in place of single-family structures.

The City of Whittier is a mature urban community. Nearly 90 percent of the residential land in the City is devoted to single family residences. Commercial areas are located along major highways and at the original city center - Uptown Whittier. Industrial uses are found on the western section of the City along Whittier Boulevard.

The 1990 U.S. Census reports a population of 77,671 persons in the City. This is an 11.4 percent growth over the last decade. Table 2-1 shows growth in the City from 1960. Compared to the County growth of 18.5 percent from 1980 to 1990, Whittier has been experiencing a more modest growth. This is due in large part to the existence of a developed community and the lack of vacant land. Future growth is expected to continue with its slow trend as land recycling and infill development represent the main precursors of development.

TABLE 2-1
HISTORIC POPULATION GROWTH

Year	Population	Growth Percentage
1960	33,663	-----
1970	72,862[a]	116 %
1980	69,717	- 4.2 %
1990	77,671	11.4 %

[a] Growth reflects annexation of East Whittier
Source: U.S. Census

Another aspect that has significantly contributed to the City's slow growth is the long term stability of its residents. Over two-thirds of the City's residents have resided in the community for over ten years. The maturity of the City and the lack of developable land has increased the pressure for redevelopment and recycling of development where permitted. The Uptown area, now recovering from the October 1987 earthquake, and the Whittier Boulevard corridor are the focus of current commercial revitalization efforts.

Much of the recycling that has occurred in Whittier involves many older single-family units on R-3 lots being replaced with multi-family structures as a result of damage to structures during the 1987 earthquake. The resulting higher densities has placed greater demands on the infrastructure and streets in the area north of Hadley Street. In response to these pressures, the City undertook a program to re-zone the area in 1989. Residential subdivisions on the hillsides have also been developed in recent years.

Today, new construction continues to involve the recycling of older structures to commercial uses along key arterial roadways and single-family units being replaced by multi-family development. A few residential subdivisions have extended into the hillside areas, although the Puente Hills remain largely undeveloped.

The overall density in the City is low, with higher intensity developments located in and around the Uptown area. The majority of the single family residential areas have densities ranging from 3 to 5 units per acre. This type of development creates the suburban atmosphere in Whittier which residents have sought to preserve over decades of growth.

EXISTING LAND USES

A land use survey was conducted by the Whittier Planning Department, with existing land uses classified according to the following categories:

- **Residential Uses.** This category of land use includes:

Single-family units (lots with only one dwelling unit),
Duplex units, (lots with two dwelling units),
Multi-family units (structures containing 3 or more units), and
Trailer Parks.

- **Commercial Uses.** Commercial uses include:
  Office Commercial - Administrative and professional office uses
  Retail Commercial - Individual shops and retail stores
  Mini-mall - Lots developed with structures accommodating 5 or more businesses under one structure
  Shopping Centers - Lots developed with 20 or more department stores and retail shops
  Hotel/Motel - Lots developed with hotels, motels and other temporary living quarters.

- **Industrial Uses.** Industrial uses include:
  Warehouse/Manufacturing - Lots with structures used for the storage or distribution of goods or for the production or fabrication of finished or unfinished goods.
  Automotive Uses - Lots used for any automotive-related uses such as auto repair, auto-wrecking, auto sales, etc.

- **Institutional and Public Uses** Institutional and Public uses include:
  Schools - Areas owned by public and private schools
  Parks - Designated park sites
  Church/Library - Lots used by libraries, churches, religious, fraternal and other activities.
  Hospitals - Sites developed with hospital uses.
  Police and Fire Stations - Police and Fire Stations
  City Hall/ Civic Center - The area occupied by the City Hall, post office, and other support offices
  Utility Yards - Construction and public utility yards
  Parking - Lots used solely for vehicle parking
  Landfill - The area covered by the Savage Canyon Landfill

- **Vacant** - All other lots left undeveloped

- **Streets** - The area occupied by street rights-of-way

An acreage breakdown of existing land uses in the City is provided in Table 2-2. The location and extent of existing development in the City is shown in Exhibits 2-1 and 2-2.

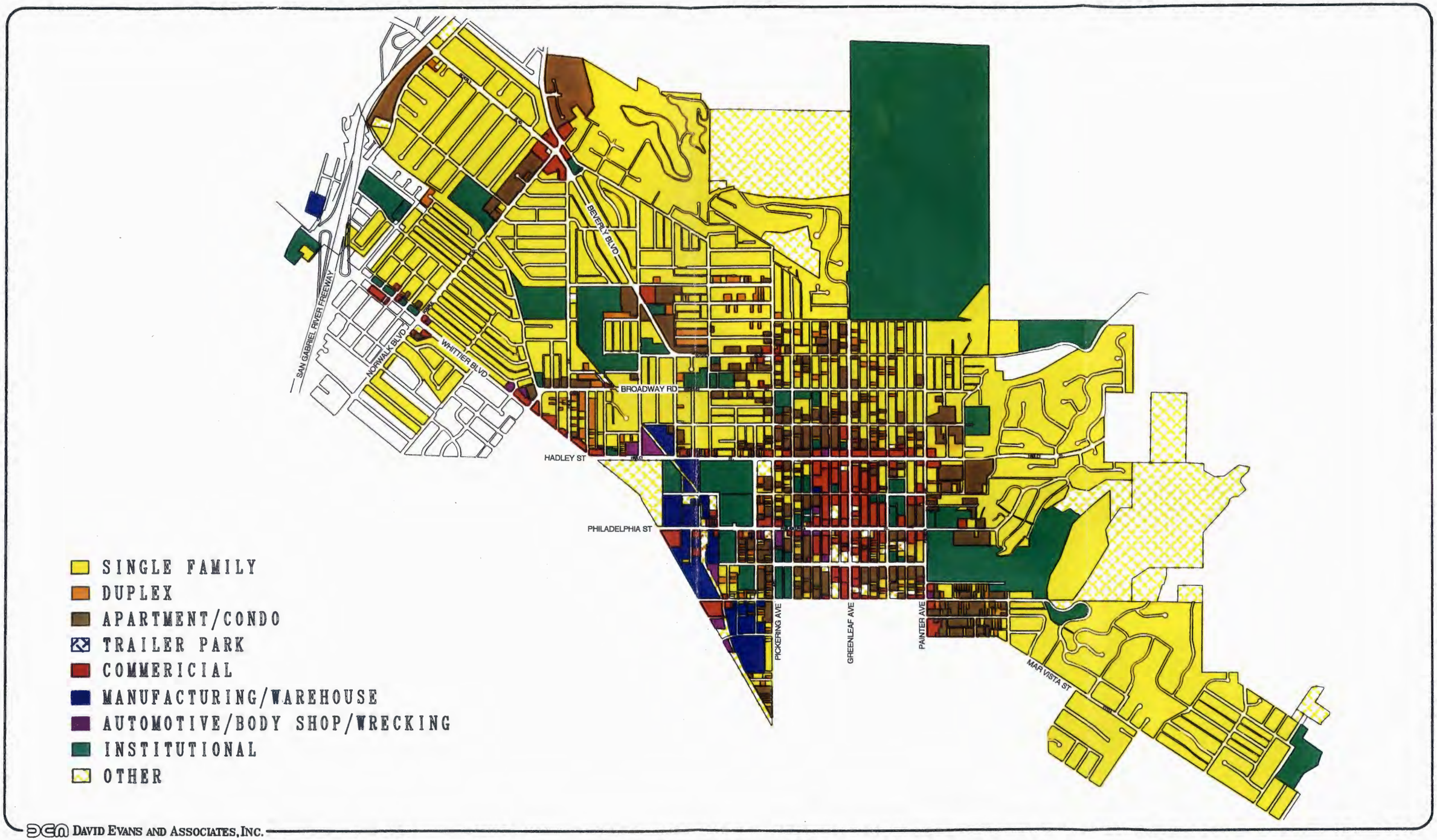
TABLE 2-2
EXISTING LAND USES

Land Use	Acreage	Percent
Residential		
Single Family Units	3,849.2	48.08
Duplex (two-family units)	102.5	1.28
Multi-family Units	327.0	4.08
Trailer Parks	8.8	0.11
Sub-total	4,287.5	53.55
Commercial		
Office Commercial	101.1	1.26
Retail Commercial	162.0	2.02
Mini-mall	55.7	0.70
Shopping Centers	96.9	1.21
Hotel/Motel	8.8	0.11
Sub-total	424.5	5.30
Industrial		
Warehouse Industrial	188.5	2.35
Automotive/Body Shop/Wrecking	69.7	0.87
Sub-total	258.2	3.22
Public and Institutional		
Schools	401.9	5.02
Parks	410.4	5.13
Churches/Libraries	77.1	0.96
Hospitals	31.7	0.40
Police/Fire Station	6.2	0.08
City Hall	27.5	0.34
Utility Yards	18.2	0.23
Parking	14.2	0.18
Friendly Hills Country Club	154.8	1.93
Landfill	99.8	1.25
Sub-total	1,241.8	15.52
Vacant	265.1	3.31
Streets	1,528.8	19.10
Total	8,005.9	100.0

Source: City of Whittier Planning Department, 1991; David Evans and Associates, 1991.

Residential Areas

Residential development is the most predominant type of land use in the City of Whittier. Residential development covers 4,287.5 acres of the City's total land area. Single-family detached units account for the largest type of residential use in the City (3,849.2 acres or 48.08 percent). Of the residential land uses, single-family development comprises nearly 90



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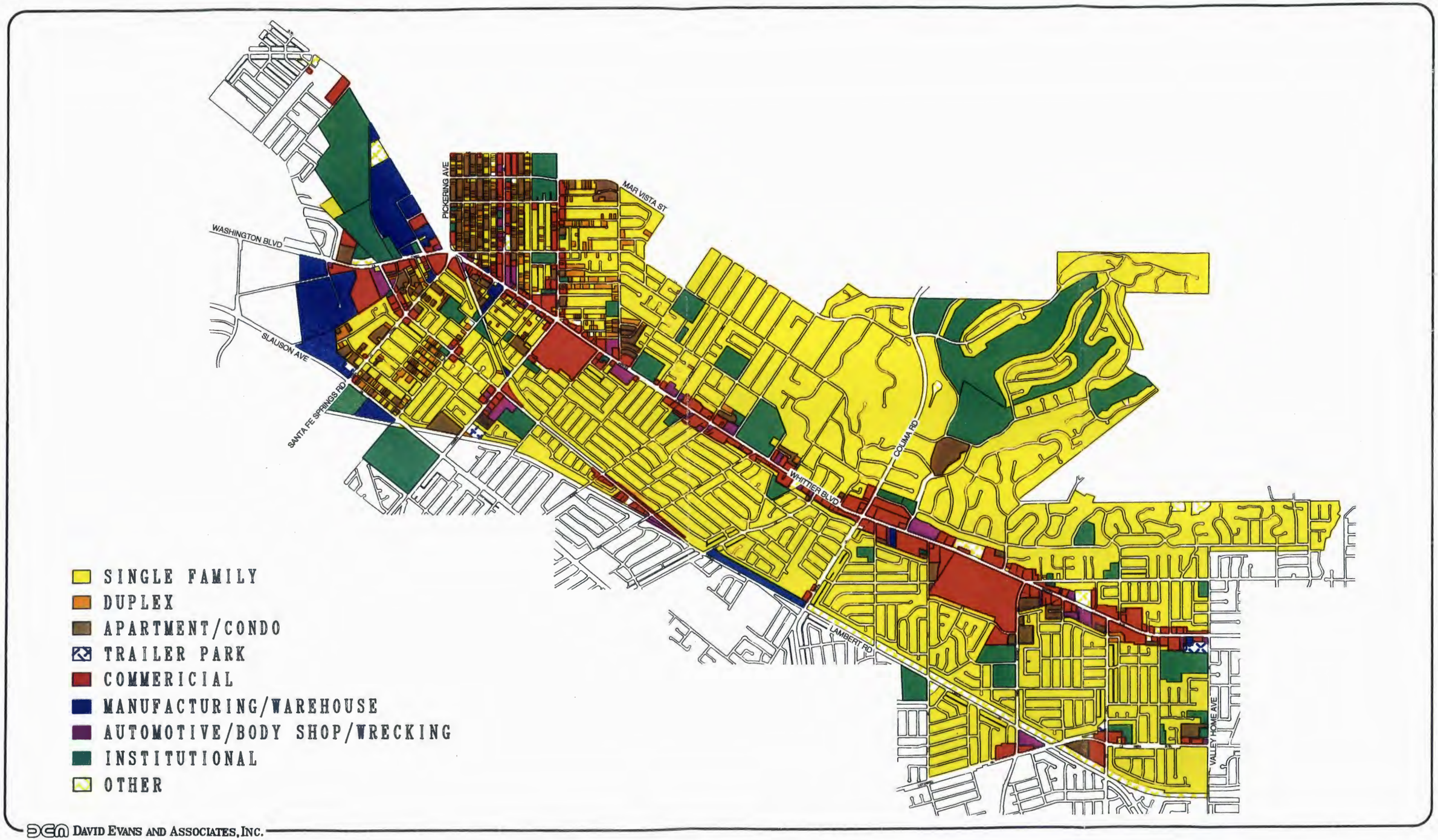
City of Whittier
GENERAL PLAN

EXHIBIT 2-1
EXISTING LAND USES
(NORTHWEST AREA)



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

EXHIBIT 2-2
EXISTING LAND USES
(SOUTHEAST AREA)

percent of the total residential areas in the City. Two-family residences (duplex) occupy a total of 102.5 acres, while multi-family residences (3 or more dwelling units per lot) cover 327.0 acres of land within the City. Trailer parks in the City cover a total of 8.8 acres.

Single-family neighborhoods are located in the northern, eastern and central sections of Whittier. Newer residential developments are found in the eastern areas of the City. The majority of the two-family and multi-family projects are found around the Uptown area and near commercial developments. Multi-family developments are also found on the northwest section of the City along Beverly Boulevard and the area north of Hadley Street which was originally zoned for high density residential uses.

For the most part, Whittier neighborhoods are well-maintained and attractive. There are numerous historic residential structures, particularly in areas which developed in the late 1800's and early 1900's. This includes the area north of Hadley Street, Uptown Whittier, and East Whittier.

Due to the costs associated with hillside development, larger more expensive homes are found in the hillside areas. For example, the Friendly Hills neighborhood is noted for its large homes, along with other developments in the Puente Hills.

Commercial Development

Commercial areas in Whittier are generally divided into two major concentrations: the Uptown Business District and the Whittier Boulevard corridor. Several smaller commercial areas are located along Washington Boulevard and at key intersections elsewhere in the City.

Uptown was the original city center and has remained a vital commercial area in the City. Redevelopment efforts have helped businesses open, especially after the 1987 earthquake damaged a lot of older structures. Uptown contains many small specialty shops and entertainment businesses catering to businesses and residents of the surrounding area. The area has a village atmosphere where retail commercial and support services are within walking distance of residential neighborhoods in the City. Uptown Whittier accounts for approximately 60 percent of the total land area devoted to commercial uses.

Whittier Boulevard has always served as a major arterial from Los Angeles to Orange County. It was the route of the Red Cars (railway cars) in the late 1800's and has attracted businesses and commercial ventures throughout the century. Highway-related commercial businesses such as auto sales, motels, gas stations, restaurants, convenience centers, and realty offices are concentrated along Whittier Boulevard southeast of Greenleaf Avenue.

There are two sub-regional shopping centers in Whittier: the Whittwood Mall and the Whittier Quad. Both centers are located along Whittier Boulevard with the Whittier Quad on Painter Avenue and Whittwood Mall on Santa Gertrudes Avenue. Commercial areas along Whittier Boulevard account for approximately 25 percent of the total area devoted to commercial activities in the City.

Administrative and professional uses are located in three areas of the City: the Uptown Business District near the Civic Center, the area near the Whittier Medical Center and the area around the Presbyterian Inter-community Hospital on Washington Boulevard.

Industrial Development

The City has a limited amount of land devoted to industrial development. Industrial areas account for 258.2 acres or 3.22 percent of the City area. Industrial uses are adjacent to Whittier Boulevard between Philadelphia Street and Washington Boulevard. Some industrial uses are also found between Washington Boulevard and Santa Fe Springs Road. These areas are adjacent to the Union Pacific Railroad, as they historically depended on rail transportation for the distribution of goods.

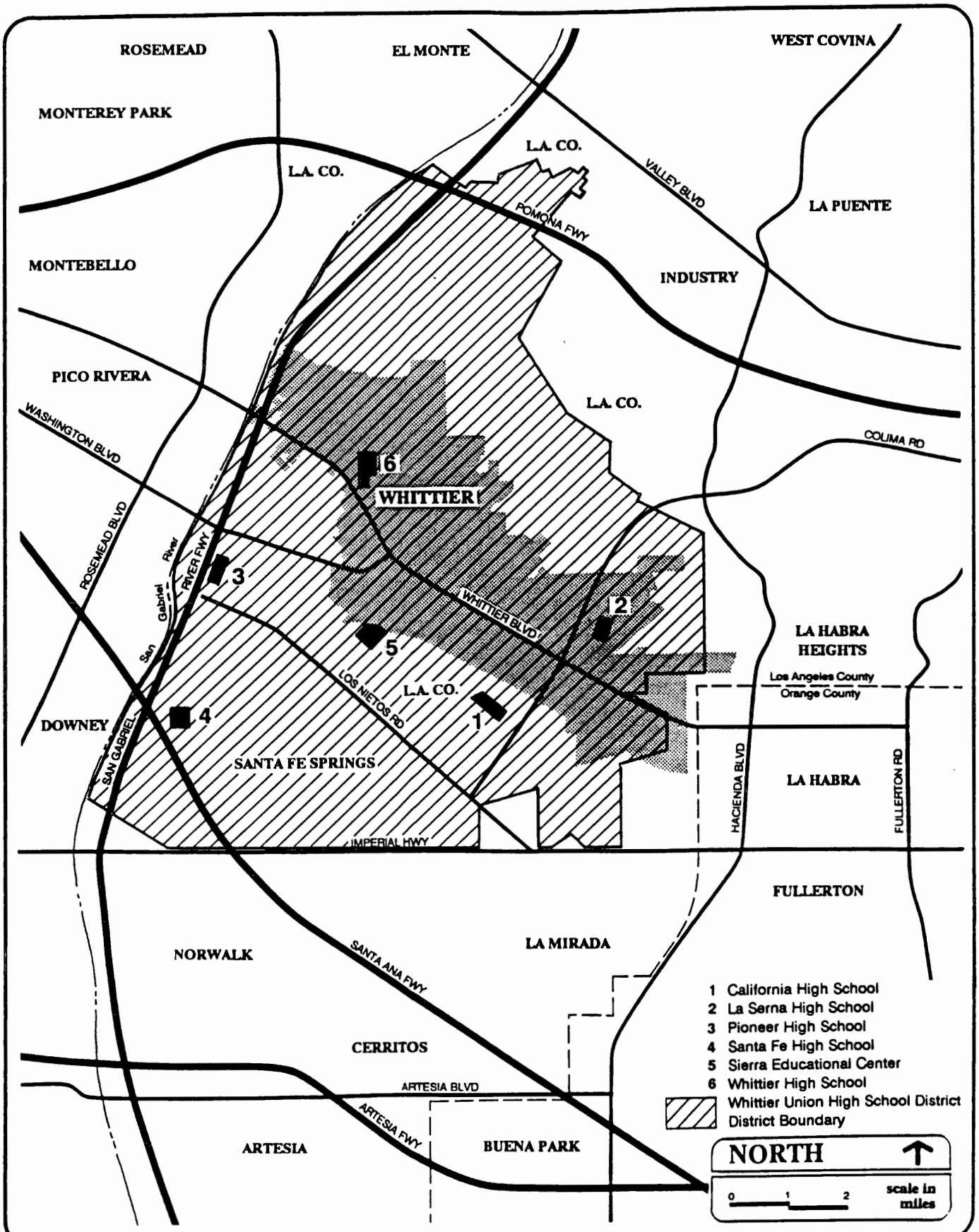
Schools

The City of Whittier and the surrounding communities have a diversity of schools. In addition to the public elementary, intermediate and high schools, the City also has parochial and other private institutions, including Whittier College. A total of 401.9 acres within the City of Whittier are occupied by these public and private schools and their support facilities. Another 210 acres are occupied by school facilities outside the current City boundaries but serving Whittier residents.

High Schools

The Whittier Union High School District serves the majority of the City. There are two public high schools (Whittier Union High School and La Serna High School) and one private high school (Whittier Christian High School) located in Whittier. The Pioneer, California and La Habra High Schools are located outside the City boundaries but serve city residents.

The Whittier Union High School District has 5 high schools and one continuing education school (Frontier) serving the Cities of Whittier, Santa Fe Springs, Norwalk, Pico Rivera, Downey and unincorporated Los Angeles County areas. Its district boundaries are shown in Exhibit 2-3. Table 2-3 lists the current capacity and enrollment at each school.



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

EXHIBIT 2-3
WHITTIER UNION HIGH SCHOOL DISTRICT

TABLE 2-3
HIGH SCHOOLS

High Schools	Address	Capacity	1991 Enrollment	Remaining Capacity
Whittier	12417 Philadelphia Street	2,160	1,662	498
California	9800 Mills Avenue	1,748	1,717	31
Pioneer	10800 E. Benavon Street	1,796	1,471	325
La Serna	15501 Youngwood Drive	1,680	1,591	89
Frontier	9401 S. Painter Avenue	---	460	---
Santa Fe*	10400 Orr and Day Road	1,912	1,471	441
Total		9,296	7,912**	1,384

* does not serve City of Whittier.
** excludes Frontier Continuation School enrollment.
Source: Whittier Union High School District, 1991.

Whittier High School serves the northwestern section of Whittier. La Serna High School is located east of Colima Road and serves the eastern section of Whittier. Pioneer High School is in unincorporated L. A. County area but serves the southwestern section of Whittier. California High School is just south of Whittier and serves the north-central and southern sections of the City. The District's continuing education school, Frontier High School is located with the school district office. Sierra Education Center, the district's adult school, and the Regional Occupational Program are at the site of the district office and Frontier High School. Santa Fe High School does not serve Whittier residents. The schools are not generally overcrowded. Thus, the District has no expansion plans under review.

The Fullerton Joint Union High School District serves the eastern tip of Whittier and the Cities of Fullerton, La Habra, Buena Park, and Yorba Linda. Whittier is served by the La Habra High School on 801 W. Highlander Avenue. La Habra High School has a capacity for 2,000 students and currently has 1,605 students enrolled. Approximately 386 or 24 percent of the students are residents of Whittier. Aside from its comprehensive high schools, the district has a continuation school and a facility for the trainable mentally-retarded.

Junior High Schools

There are 3 public intermediate schools in Whittier. They include the East Whittier Middle School on Whittier Boulevard and Catalina Avenue; the Edwards Junior High School on Norwalk Boulevard and Reichling Lane; and the Walter Dexter Junior High School on Floral and Palm Avenues. Edwards Junior High School is operated by the East Whittier Elementary School District and the two other schools are by the Whittier Elementary School District.

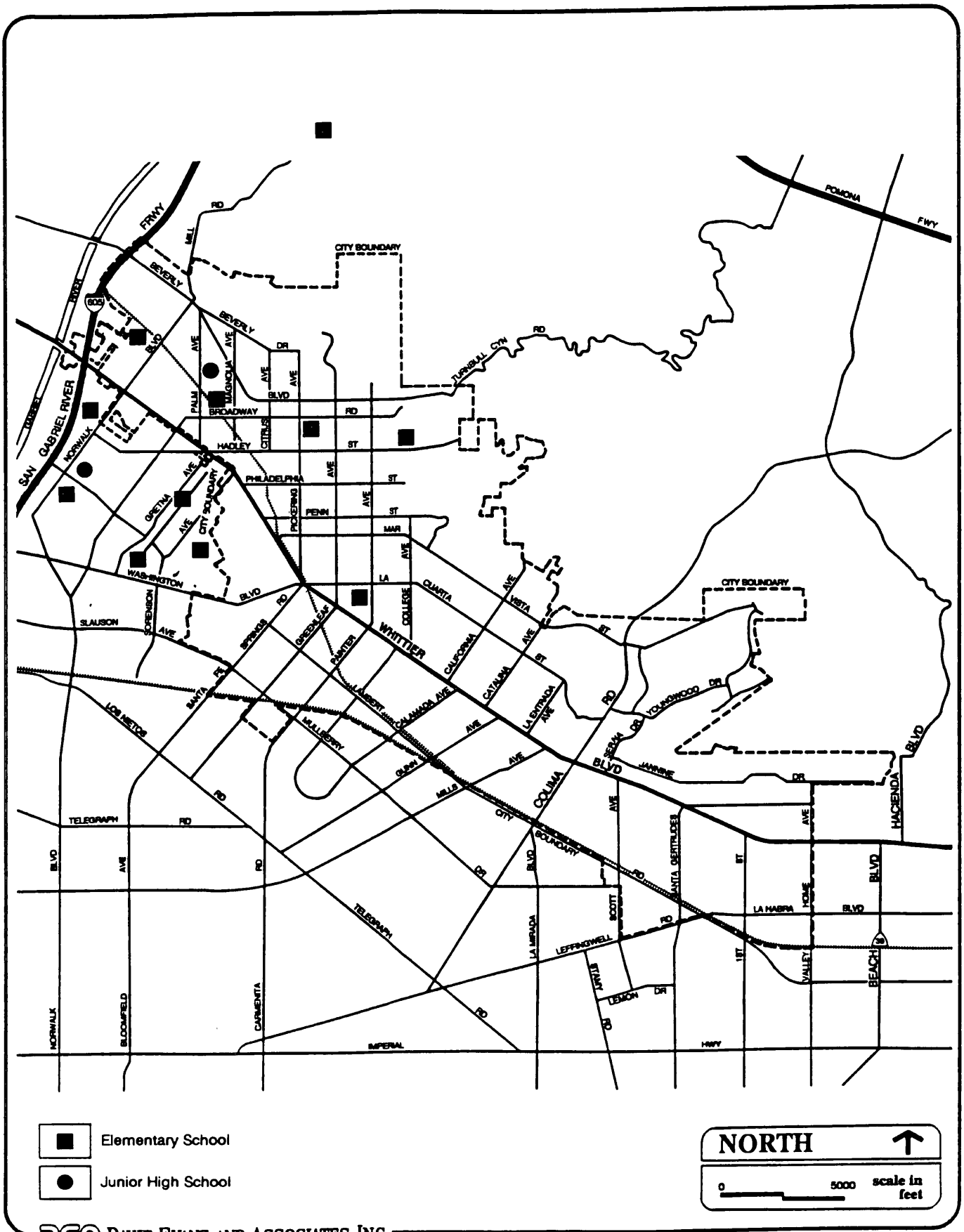
Elementary Schools

City residents are served by the Whittier City, East Whittier Elementary, Los Nietos and Lowell Joint School Districts. There are 14 elementary schools within City limits. The Whittier City School District has 11 elementary schools and 2 junior high schools in the City. Six elementary schools and 1 junior high school are within the City of Whittier. The rest are in unincorporated county area. Table 2-4 provides the address, capacity and enrollment of each school. Exhibit 2-4 shows their locations. There are approximately 29 students per classroom. Kindergarten classes are on double sessions and some schools are year-round. Busing of students has helped to address overcrowding in the schools.

TABLE 2-4
WHITTIER CITY SCHOOL DISTRICT

School	Address	Capacity	Enrollment	Remaining Capacity
Andrews School[a]	1010 Caraway Dr.	668	477	191
Hoover School	6302 S. Alta Dr.	374	406	-32
Jackson School	8015 S. Painter Ave	502	471	31
Lincoln	12620 E. Broadway	372	339	33
Longfellow School	6005 S. Magnolia Ave	557	566	-9
Mill School	4030 Workman Mill Rd	437	394	43
Orange Grove School	10626 E. Orange Grove	352	481	-128
Phelan School	7150 S. Cully Ave	504	422	82
Sorensen School	11493 E. Rosehedge Dr	447	445	2
Washington School	7804 S. Thorncake Ave	327	309	18
West Whittier School	6411 S. Norwalk Blvd	573	531	42
Wiggins School[b]	7348 S. Wexford Ave	-	-	-
Edwards Junior High School	6812 S. Norwalk Blvd	785	581	204
Walter Dexter Junior High School	11532 E. Floral Dr	785	755	30

[a] Does not serve Whittier [b] Will be used by Dexter Jr. High School for 1991-1992.
Source: Whittier City School District, 1991.



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 2-4
WHITTIER CITY SCHOOL DISTRICT

The East Whittier School District has 10 elementary schools and 3 junior high schools. Table 2-5 provides the enrollment and capacity for each school. Exhibit 2-5 shows the location of the district's schools. The schools are not generally overcrowded, and the Mar Vista School has been leased to private businesses.

TABLE 2-5
EAST WHITTIER SCHOOL DISTRICT

School	Address	Capacity	Enrollment	Remaining Capacity
Ceres School	10601 S. Ceres Ave	600	446	154
Evergreen School	12915 E. Helmer Dr	570	540	30
La Colima School	11225 S. Miller Rd	630	561	69
Laurel School	13350 E. Lambert Rd	720	712	8
Leffingwell School	10625 Santa Gertrudes Ave	450	357	93
Mulberry School	10429 E. Mulberry Dr	690	610	80
Murphy Ranch School	16021 E. Janine Dr	450	277	173
Ocean View School	14359 E. Second Street	540	572	-32
Orchard Dale School	10625 E. Cole Rd	840	604	236
Scott Avenue School	11701 S. Scott Ave	510	473	37
Mar Vista School (leased out)	8036 S. Ocean View Dr	---	---	---
East Whittier Junior High School	14421 E. Whittier Blvd	810	802	8
Granada Junior High School	15337 E. Lemon Drive	798	721	77
Hillview Junior High School	10931 S. Stamy Rd	818	788	30

Source: East Whittier School District, 1991.

Outlying areas of the City are served by other school districts (see Exhibit 2-6). A small area on the western section of the City is served by the Los Nietos Elementary School District. All schools in the district are outside Whittier City boundaries. The Wiggins School owned by the district but is currently leased by the Whittier City School District. The southeastern section of the City is served by the Lowell Joint School District. Only the Jordan School is within City limits. Table 2-6 provides school enrollment, addresses and capacities.

TABLE 2-6
OTHER SCHOOL DISTRICTS

School	Address	Capacity	Enrollment	Remaining Capacity
Los Nietos School District				65
Ada S. Nelson School	8140 S. Vicki Dr	600	535	85
Aeolian School	11600 Aeolian Ave	600	515	130
Rancho Santa Gertrudes	11233 Charlesworth Rd	470	340	100
Los Nietos Middle School	11425 Rivera Road	700	600	
Lowell Joint School District				
Jordan School	10654 Jordan Rd		515	
Macy School	2301 W. Russell Rd		636	
Meadow Green School	12025 Grovedale Rd		445	
Rancho Starbuck Middle School	16430 Woodbrier Dr		583	

Source: Los Nietos School District, 1991; Lowell Joint School District, 1991.

Colleges

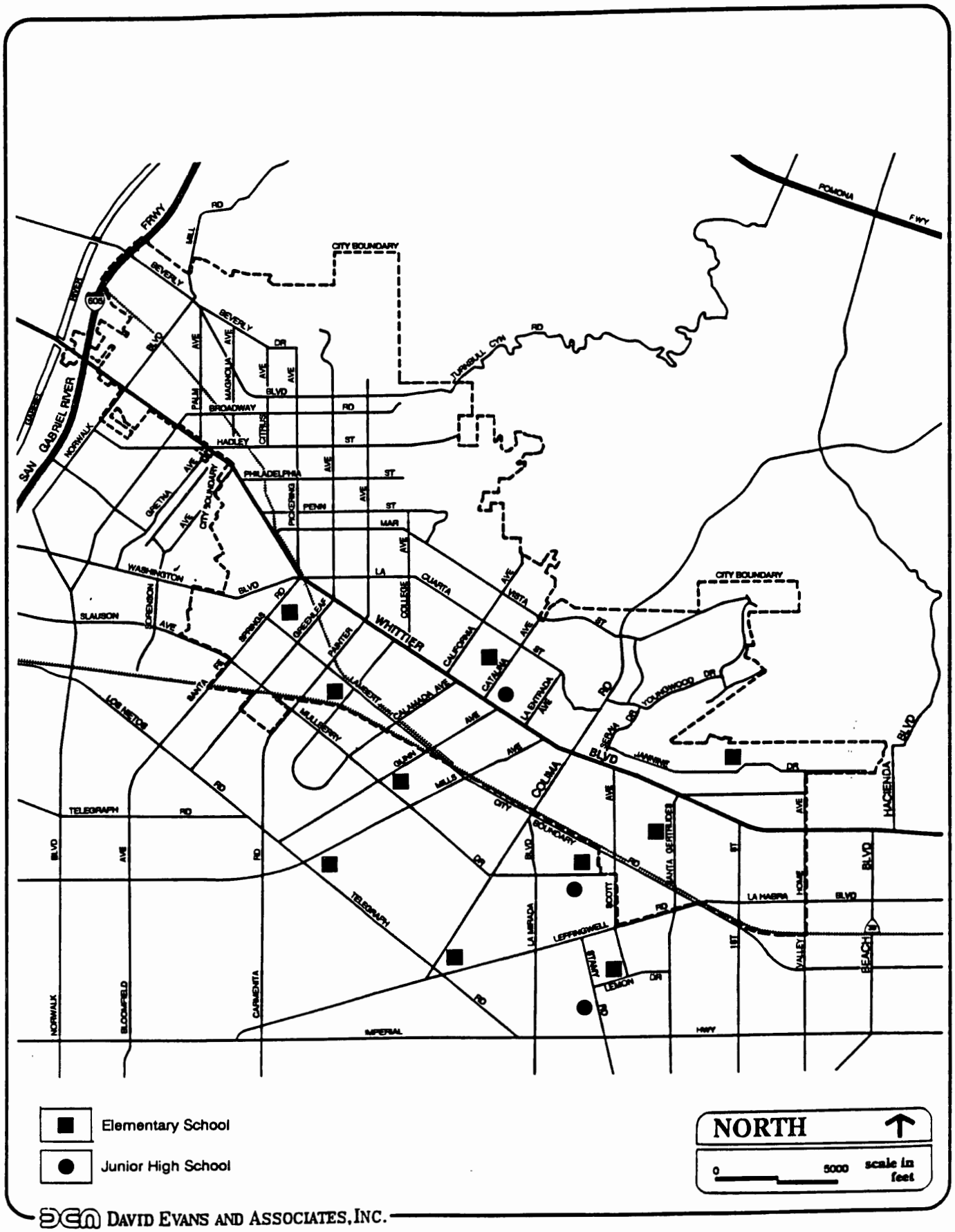
There are three colleges within and near Whittier. The Whittier College, founded in 1901, is a private liberal arts school located east of Painter Avenue near the Civic Center. Rio Hondo College is a Community College, located northwest of the City near the Rose Hills Cemetery. Los Angeles College of Chiropractic, a private health services school, is located southeast of the City on First Street and Amber Valley Drive. See Exhibit 2-7.

Parks and Recreational Facilities

The City of Whittier currently has 24 City-owned parks and recreational facilities (Friendly Hills Country Club) ranging in size from 1 to 200 acres and totaling 565.2 acres or 7.07 percent of the total land area. The largest park owned by the City is the Hellman Park which is 200 acres of primarily undeveloped land. The Pio Pico State Park is also within the City but managed by the State.

Private recreational facilities in the City include a golf course (Friendly Hills Country Club), bowling lanes, billiard parlors, Boy's Club and the YMCA/YWCA. Joint use agreements with the different schools allow the use of game fields and school grounds outside of school hours.

To supplement the City's parks, there are three regional parks in adjoining communities that are available for public use: Whittier Narrows Regional Park, La Mirada Regional Park and

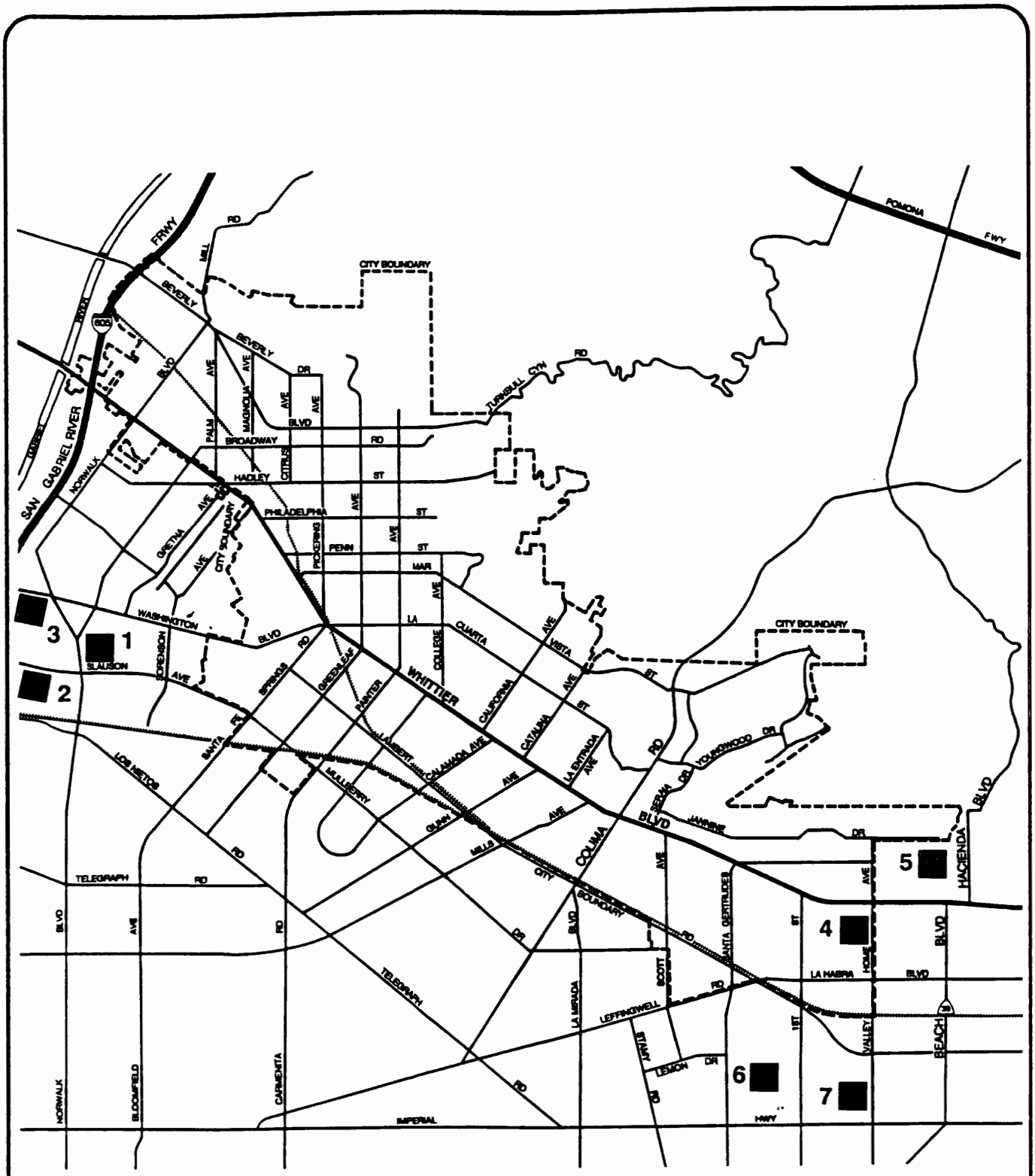


DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 2-5
EAST WHITTIER SCHOOL DISTRICT



Los Nietos School District
1 Aeolian School
2 Los Nietos Middle School
3 Ada Nelson School

Lowell Joint School District
4 Jordan School
5 Macy School
6 Meadow Green School
7 Rancho-Starbuck Middle School

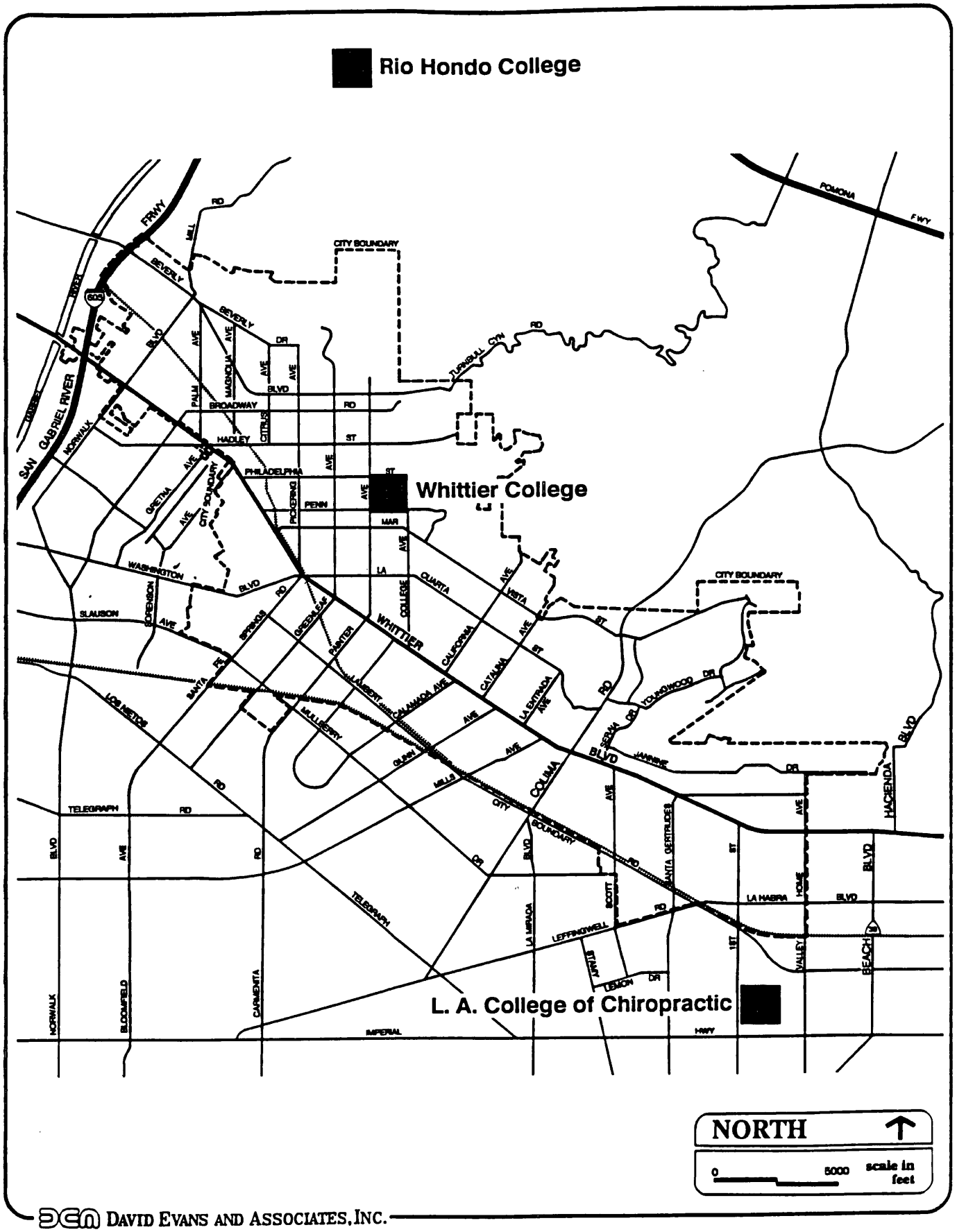
NORTH

0 5000 scale in feet

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

EXHIBIT 2-6
LOS NIETOS & LOWELL JOINT SCHOOL DISTRICTS



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 2-7
LOCAL COLLEGES

the Schabarum Regional Park. The Environmental Resource Management Element Background Report discusses the parks and recreational facilities/opportunities in more detail.

Institutional Uses

Institutional uses within the City include the Civic Center, the Court House, libraries, post office, hospitals, and churches. The Civic Center and County Court House are located on Painter Avenue and Penn Street, southeast of Uptown Whittier. Institutional land uses account for 136 acres or 1.70 percent of the City. See Exhibit 2-8.

Libraries

There are two City libraries - the Central Library on Mar Vista Street and the Whittwood Library (branch) on Santa Gertrudes Avenue. The Central Library has a 34,481-square-foot floor area with 106 adult seats. The building was constructed in 1959 and the mezzanine was added in 1974. It is a full-service library with a 190,000-book collection, 600 periodicals (plus backfiles), 12,000 microforms, and numerous record albums, cassettes, films, and video cassettes. An estimated 450,000 persons used the library from July 1990 to June 1991. Library cards have been issued to 11,500 residents.

The Whittwood Library has a floor area of 10,015 square feet within a structure built in 1968. This library has a 61,000-book collection plus documents, pamphlets, microforms and magazines. Approximately 200,000 persons used the library from July 1990 to June 1991. There are 22 full-time librarians, 69 part-time positions and 1.78 full-time equivalent volunteers serving both libraries. Both libraries are open Mondays to Saturdays.

Services offered at the libraries include research referral, reference and homework assistance, story-time for children, summer reading programs, and other activities that promote literacy. The library participates in the universal borrowing program that allows any citizen of California to borrow materials for free. Also, as a member of the Metropolitan Cooperative Library System, the City libraries may borrow at other member libraries and have interdependent resources for extended reference research, training and workshops, and purchasing discounts.

With the growing population and cultural diversity in Whittier, the City libraries need to expand their services. Additional space for quiet areas, parking and an expanded collection are needed to adequately serve all users. Outreach programs for limited-English speaking households and minorities have to be established. Advanced technologies will also improve the library system, such as an on-line catalogs and databases, CD ROMs, hypercards, fax, microforms, laser discs, video formats, etc.

Churches

There are numerous churches in the City. They include Anglican, Apostolic, Baptist, Catholic, Latter-Day Saints, Eastern Orthodox, Episcopal, Friends, Lutheran, Methodist, Nazarene, Pentecostal, Presbyterian, and Adventist churches, and other religious centers.

Hospitals

There are two hospitals in Whittier. The Whittier Medical Center is located near Colima Road and Whittier Boulevard and the Presbyterian Intercommunity Hospital is located on Washington Boulevard near Whittier Boulevard. The Public Safety Element Background Report discusses the services offered by these facilities.

Fred Nelles School

The Fred Nelles School for Boys was the first correctional facility for boys in the State. It is a state-funded facility and houses male minors within an 89-acre site on Sorensen Avenue. This facility does not directly provide educational services to the City.

Public and Quasi-Public Uses

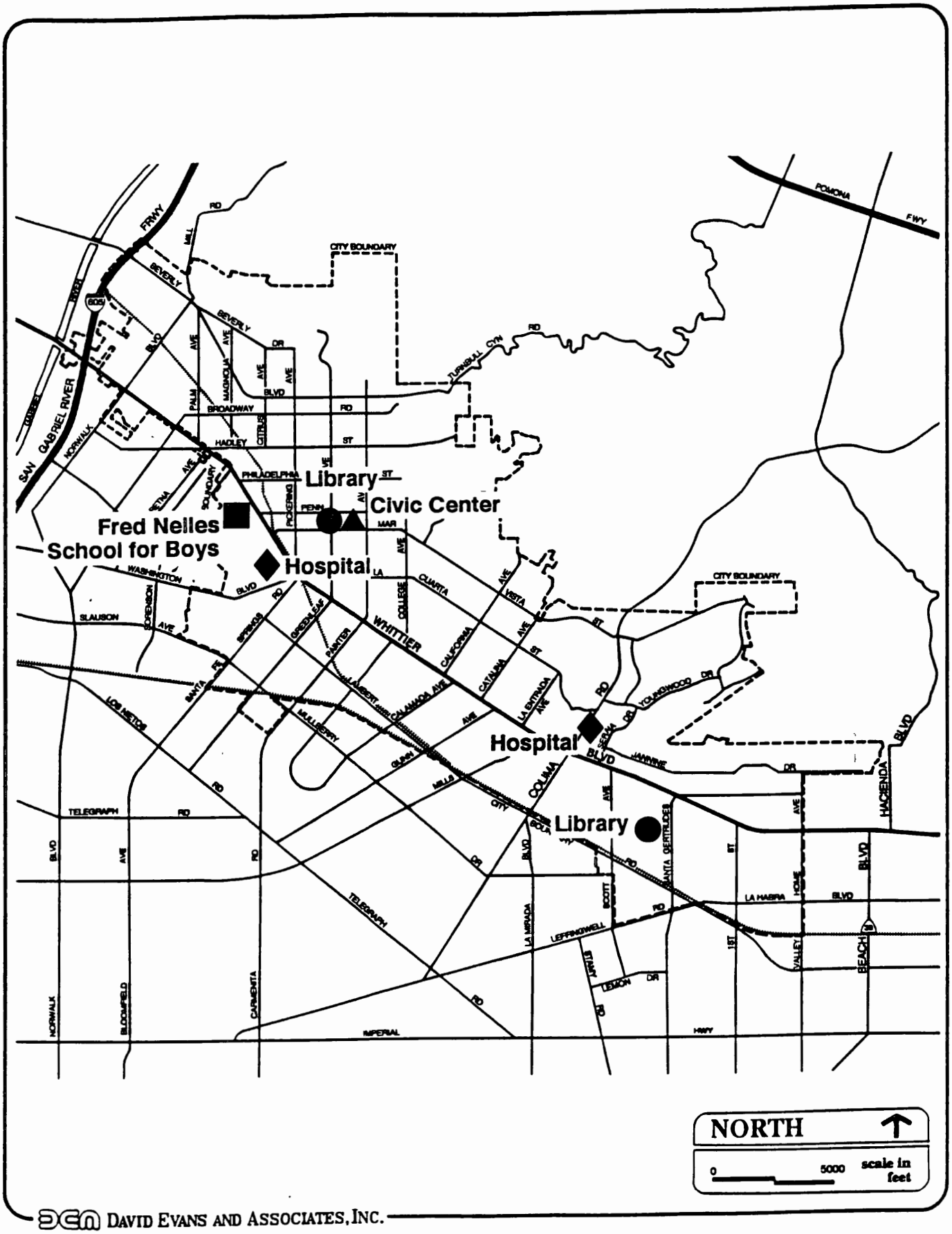
Public and quasi-public land uses in the City include 3 fire stations, police station, flood control utility facilities, Savage Canyon Landfill, reservoirs, pump stations, and utility service yards. They cover approximately 124.2 acres. The landfill alone covers 99.8 acres. The Public Safety Element Background Report discusses fire and police protection services in the City.

Fire Protection

Fire protection services for the City of Whittier are provided by the Los Angeles County Fire Department. There are 3 fire stations in the City and their locations are shown in Exhibit 2-8. The Public Safety Element Background Report discusses fire protection services in detail.

Police Protection

Police protection service are provided by the Whittier Police Department. The main station is located at 7315 S. Painter Avenue, near City Hall. The City Police Department serves the entire City with 91 sworn officers. The Department provides patrol services, law enforcement, traffic enforcement, investigative services, and special programs on gang suppression, drug abuse prevention and narcotics interdiction.



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 2-8
INSTITUTIONAL FACILITIES

Water Services

Water service in the City of Whittier is provided by four agencies: the City of Whittier, the Suburban Water System, California Domestic Water Company, and California American Water Company. Approximately 60 percent of Whittier is served by the City Department of Public Services. Water comes from 9 groundwater wells in the Whittier Narrows area and near the San Gabriel River. It is pumped from the Central and Upper (San Gabriel Valley) water basins in which the City has water pumping rights to a total of approximately 9,166 acre-feet per year.

Well water is chlorinated at pumping plants and main transmission lines carry the water to eleven reservoirs on the hillside areas north and east of the City. See Exhibit 2-9. Water system facilities are summarized in Table 2-7.

TABLE 2-7
WATER SYSTEM FACILITIES

Groundwater Wells	
Upper Basin Wells	
No. 9	avg production of 2,384 af/yr
No. 11	avg production of 2,991 af/yr
No. 12	avg production of 8 af/yr
No. 13	avg production of 843 af/yr
No. 15	avg production of 3,151 af/yr
Central Basin Wells	
No. 5	avg production of 0 af/yr
No. 7	avg production of 9 af/yr
No. 8	avg production of 0.45 af/yr
No. 14	avg production of 903 af/yr
Pumping Plants	
No. 2	Includes chlorinator, 2 clearwell basins with 270,000 gallon capacity, booster pump station with 6 pumps and well pump No. 7.
No. 3	Supplements pumping plant No. 2
Booster Pump Stations	Rideout, Greenleaf, College Hills, Murphy, Washington and Summit stations

TABLE 2-7
WATER SYSTEM FACILITIES

Reservoirs	
Painter (No. 1)	1.0 mg capacity; pre-stressed concrete tank
Greenleaf (No. 2)	6.0 mg capacity; concrete lined with redwood roof
College Hills (No. 3)	300,000 g capacity; cylindrical concrete tank with exposed roof
Hoover (No. 4)	9.75 mg capacity; trapezoidal concrete lining*
Rideout (No. 5)	150,000 g capacity; elevated cylindrical concrete tank
Hazzard (No. 6)	150,000 g capacity; cylindrical concrete tank
College Hills (No. 8)	475,000 g capacity; cylindrical concrete tank with exposed roof
Ocean View (No. 9)	4.0 mg capacity; rectangular concrete lined and covered tank
Murphy (No. 10)	500,000 g capacity; cylindrical concrete tank
Murphy (No. 11)	500,000 g capacity; cylindrical concrete tank
Starlight (No. 12)	300,000 g capacity; cylindrical concrete tank

avg - average
mg - million gallon
af/yr - acre-feet per year
g - gallon
* approved for replacement with 10.0 mg concrete tank

Source: 1987 Water Master Plan Update, Ott Water Engineers, Inc., 1987

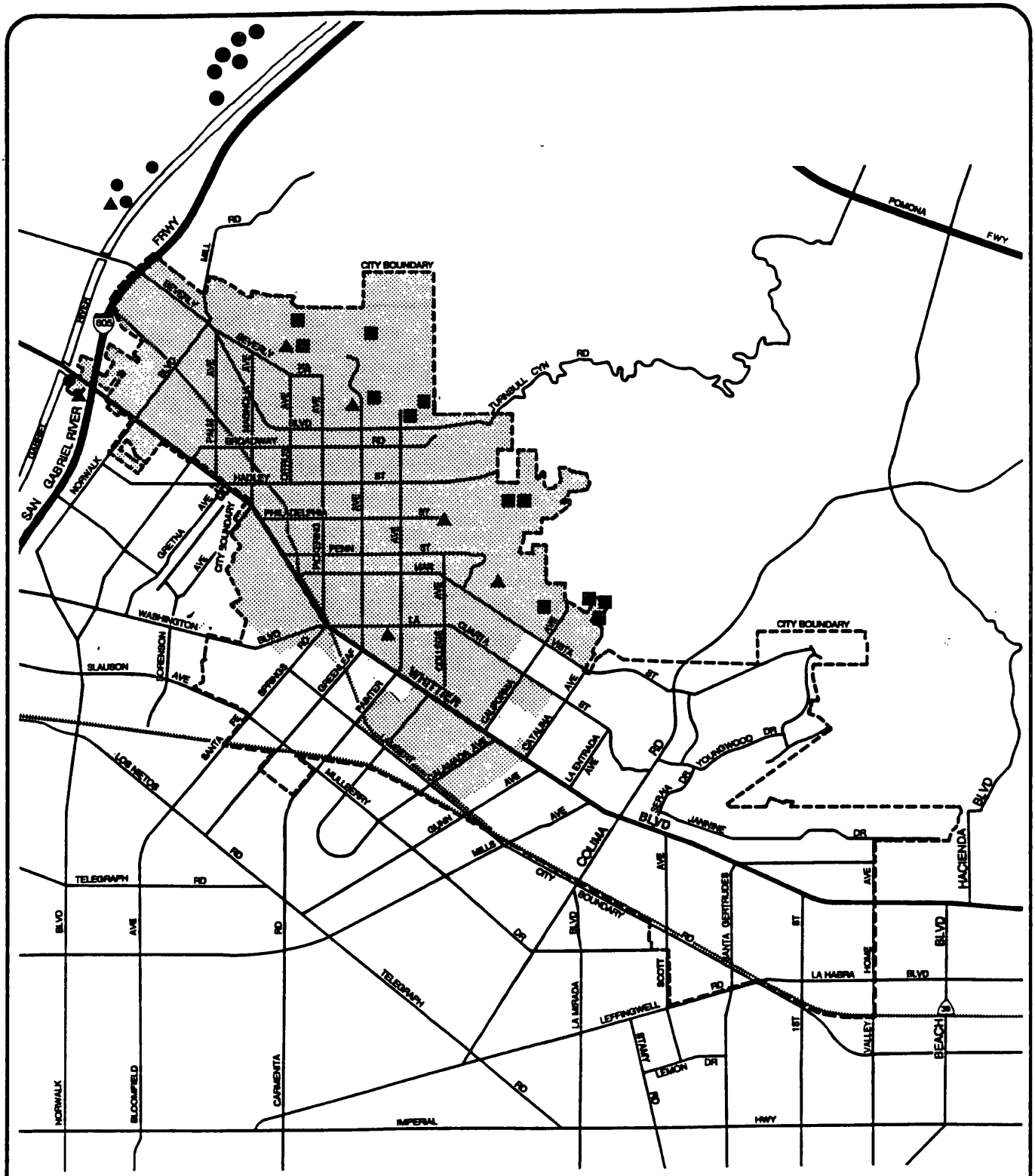
The water distribution system operates through gravity feed as water from the reservoirs flow to individual users at lower elevations. The Whittier Water Master Plan discusses system improvements, priorities and funding. In 1987, the Water Facilities Earthquake Repair Program was initiated to repair system damages caused by the 1987 earthquake. Reservoir, pump and pipe improvements are ongoing as part of the City's capital improvement program.

Traces of organic contaminants have been found in City wells, although they are below contaminant levels. Indications of contaminants travelling toward the groundwater source of Whittier have been inferred in groundwater studies for the San Gabriel Valley Water Basin.

Suburban Water Company serves the remainder (40%) of the City and California Domestic Water Company and California American Water Company only serve a total of approximately 200 users in the City.

Sewer Services

The City of Whittier is served by the Los Angeles County Sanitation District No 18. Wastewater from the City is transported by sewer lines to District sewer mains and to the Los Coyotes Treatment Plant at Piuma Avenue in Cerritos and/or to the Joint Water

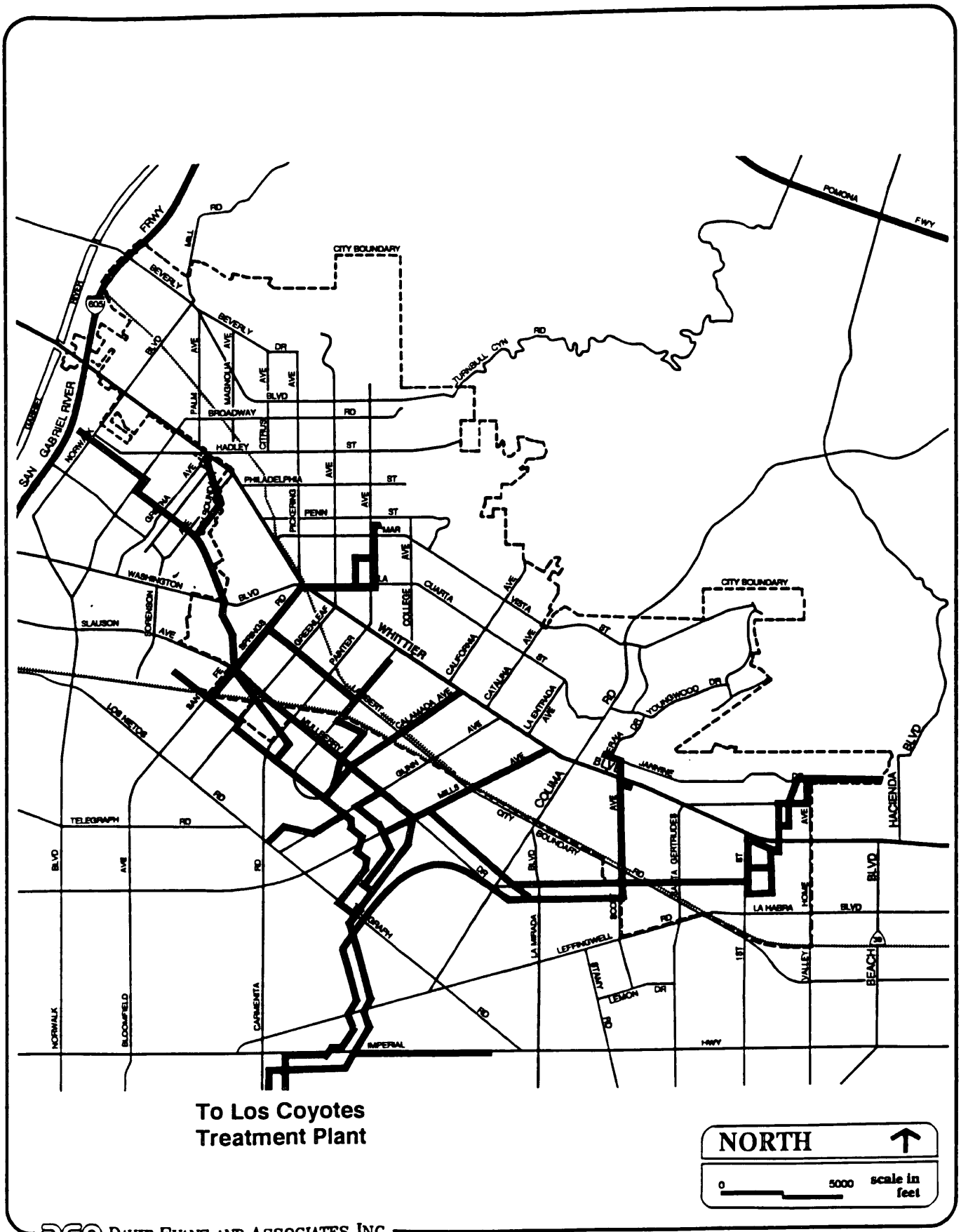


DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 2-9
WATER SYSTEM SERVICE AREA & FACILITIES



To Los Coyotes
Treatment Plant

NORTH

0 5000 scale in feet

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

EXHIBIT 2-10
SEWER TRUNK LINES

Pollution Control Plant in Carson. Main sewer lines are shown in Exhibit 2-10. All individual lots are served by laterals maintained by the City of Whittier.

The Los Coyotes Water Reclamation Plant has a design capacity of 37.5 million gallons per day (mgd) and currently provides tertiary treatment to 27.4 mgd. All sludge and excess wastewater are diverted to the Joint Water Pollution Control Plant (JWPCP) at Figueroa Street in Carson. The JWPCP has a design capacity of 385 mgd and currently treats 326 mgd. The effluent from the JWPCP is discharged into the Pacific Ocean through a 2-mile outfall 200 feet below sea level. An average of 344 dry tons of sludge is processed at the JWPCP and composted at an off site desert location. The Sanitation District has indicated that sewer trunk and treatment plant capacity is available to accommodate additional wastewater.

A sewer capacity study was done for the General Plan and Zoning update for the area north of Hadley in 1989. The study pointed out the full utilization of most sewer lines in the City and its inability of handle future development without system improvements. The upgrading of sewer lines is ongoing as part of the City's capital improvement program.

Storm Drainage

The City's storm drainage system is supported by the southwestern slope of the area and the proximity of the San Gabriel River. The San Gabriel River is the major drainage channel that carries stormwater runoff from the City and the Puente Hills into the ocean. Main storm drain lines are maintained by the County Department of Public Works (see Exhibit 2-11). City storm drain facilities supplement the system with local lines to provide a complete storm drainage system.

Solid Waste

Solid waste disposal is provided by the City of Whittier with collection services provided by the City and a number of private haulers. Solid waste is disposed at the city-owned landfill, Savage Canyon Landfill, on Penn Street across Penn Park. Savage Canyon Landfill is a Class III landfill and receives municipal wastes only. It accepts a maximum of 300 tons of garbage per day or 100,000 tons per year. No hazardous wastes are disposed at the landfill. Waste is covered with dirt at the end of each workday and watering trucks are constantly on site to control dust. Gas collection systems are used to control odors and gas from affecting adjacent uses. Groundwater monitoring has shown that no contamination from the landfill has occurred. Aside from present technologies, the expansion area for the landfill will have both clay and synthetic liners underneath to prevent groundwater contamination.

The landfill is approximately 120 acres (including the recent expansion area) and has a remaining life span of 55 more years. Thus, it will accommodate the solid waste disposal

needs of the City to the year 2046. Landfill permits are processed every five years to comply with state regulations.

Utilities

The Southern California Edison Company provides electric power service to the region including the City of Whittier. Whittier is served primarily by the Murphy Substation on Mulberry Drive, just southwest of the City; the Westgate substation on Whittier Boulevard, the Friendly Hills substation on Colima Road; and the Telegraph substation on Lambert and Leffingwell Roads in the eastern section of the City. High voltage transmission lines are not found within the City boundaries although 220-kilovolt transmission lines run approximately parallel to the San Gabriel River on the western boundary of the City and on the Puente Hills on the northeastern boundary of the City.

Natural gas service to the region is provided by the Southern California Gas Company. The Santa Fe Springs Regulating Station at Pike Street serves the City of Whittier and the surrounding area. A 30-inch lines extends from the station to the Southern Pacific Railroad right-of-way and runs along this right-of-way to the east with a maximum pressure of 465 pounds per square inch.

The East Whittier Storage Facility in La Habra Heights is a natural gas field and storage facility with 10 and 16-inch lines running south of the facility and along Leffingwell Road, La Habra Boulevard and Lambert Road. Pressure within these lines range from 300 to 465 pounds per square inch. Distribution lines extend from the main transmission lines and serve individual parcels throughout the City.

The Public Safety Element Background Report provides maps of power lines and substations and high pressure gas lines.

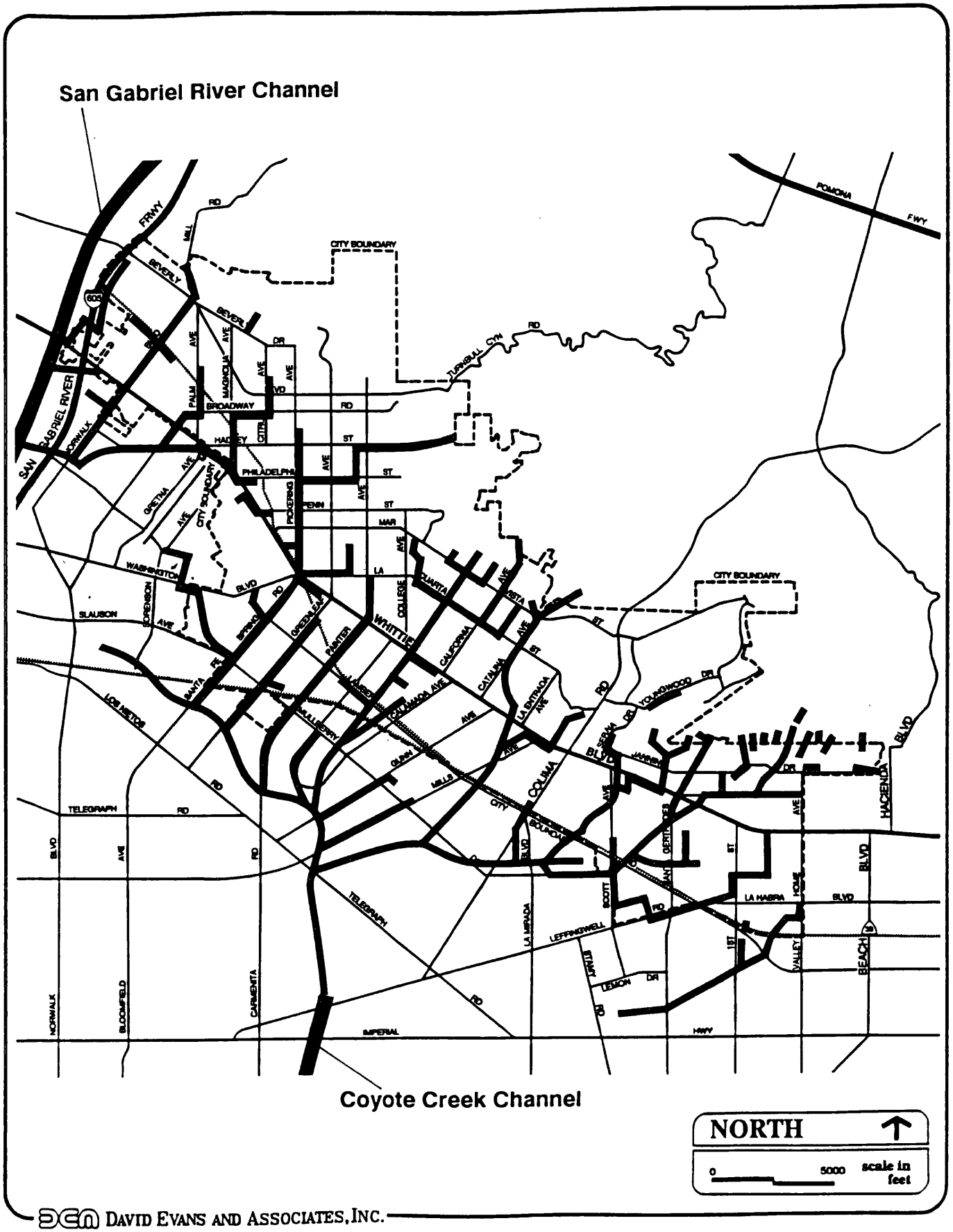
GTE provides telephone service to the City through both overhead and underground lines.

Vacant Areas

Vacant land in the City accounts for approximately 265.1 acres. This is 3.31 percent of the total land area. A number of vacant lots are small infill lots located in Uptown Whittier and along Whittier Boulevard. Larger vacant parcels are located along the hillsides of the Puente Hills, north and east of the City.

Streets, Highways, and Railroad Rights of Way

City streets, private roads and railroad rights-of-way cover 1,528.8 acres or 19.10 percent of the City land area. The Southern Pacific railroad tracks runs east-west across the City and the Union Pacific Railroad tracks run north-south on the western side of the City.



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

EXHIBIT 2-11
STORM DRAIN SYSTEM

ZONING ORDINANCE

The *Zoning Regulations of the City of Whittier* is the primary implementation mechanism for the general plan land use policy. The current Zoning Regulations control development in the City by designating areas where specific land uses are allowed in a fashion similar to that of the Land Use Plan. The Zoning Regulations consist of two primary components: Development Standards and the Zoning Map. The development standards are detailed in the ordinance text and include lists of permitted uses and various standards governing setbacks, minimum lot sizes, building height, etc. The Zoning Map is very specific in that every parcel of land in the City is assigned a zone district category.

The Whittier Zoning Map contains twelve land use categories or districts. Six of these categories apply to residential development, four categories apply to commercial development, one category applies to industrial uses, and one category for transitional uses. Zoning designations for specific plan areas and redevelopment areas are incorporated into the Zoning Map. The zone districts are summarized in Table 2-8.

TABLE 2-8
SUMMARY OF EXISTING ZONE DISTRICTS

Zoning Category	Symbol	Permitted Uses
Single Family Estate Residential	R-E	Single family dwelling units
Hillside Residential Zone	H-R	Single family dwelling units, recreational facilities for the exclusive use of the residential development
Low Density Residential Zone	R-L	Single family dwelling units, Foundational mobile homes
Medium Density Residential Zone	R-M	One dwelling unit per 3,000 square feet of lot area
Medium-High Density Residential Zone	R-MH	One dwelling unit per 2,050 square feet on lots 7,000 square feet or less; One dwelling unit per 1,750 square feet on lots greater than 7,000 square feet
High Density Residential Zone	R-H	One dwelling unit per 2,650 square feet of lots 7,000 square feet or less; one dwelling unit per 1,400 square feet on lots 7,000 - 20,000 square feet; one dwelling unit per 1,250 square feet on lots 20,000 square feet or more
Commercial Office	C-O	Professional services and offices, incidental restaurant uses, medical/dental offices, labs and clinics, professional and trade schools, studios, service shops and offices and similar uses; multi-family dwelling units
Light Commercial	C-1	Retail stores (limited), professional offices, clinics, labs, schools, service shops and similar uses

TABLE 2-8
SUMMARY OF EXISTING ZONE DISTRICTS

Zoning Category	Symbol	Permitted Uses
General Commercial	C-2	Retail stores, fortune telling, health spas and centers, hotels and motels, restaurants, churches and chapels, auto sales, repair and garages, restaurants, pet shops, trailer sales and similar uses
Commercial-Manufacturing	C-3	Assembly facilities, auto body painting and repair, veterinary hospital, medical and motion picture labs, cabinet and ceramic manufacturing, scientific instrument manufacturing and assembly, tire recapping, kennels, greenhouses and similar uses
Manufacturing	M	Auto assembly, bakeries, lumber yards, machine shops, bottling plants, engraving and fabrications, self-storage, recycling facility, truck storage, laundries, commodity manufacturing, utility yards, welding shops and similar uses
Transitional	T	For areas formerly zoned Parking (P) and Light Multi-Family Residential with a Parking Overlay Zone (R-2-P) subject to future reclassification.

Source: Zoning Regulations for the City of Whittier.

In addition, the zoning map includes four overlay zones. An overlay zone is a second zone over an underlying zone district which modifies or adds to the development standards of the underlying zone. This allows additional control on development in areas that may be affected by special conditions (such as steep slopes, historic architecture, special land uses, established neighborhoods, etc.) A lot with an overlay zone shall comply with the standards of both the underlying zone and the overlay zone. The following overlay zones are included in the Zoning Ordinance.

- The *Parking Overlay Zone* is used for designating off-street parking lots and structures. It provides additional standards for access, landscaping and maintenance of the site.

- The *Urban Design District* is an overlay zone which provides standards for the development, redevelopment and revitalization of designated areas. Specific design standards have been adopted to regulate development within the Urban Design District. These are mainly geared towards the development of architecturally compatible structures and the improvement of the living environment.

- The *Planned Development District* provides flexibility within residential hillside developments. It encourages creative developments that accommodate unique design features with a site plan that preserves the natural and environmental characteristics of the site. Planned developments are allowed within any residential zone and are used on commercial zones to permit senior housing projects.

- The *Hadley/Greenleaf Historic District* was established to preserve and enhance the architectural and historical character of the Hadley/Greenleaf residential neighborhood. A large number of historical structures exist in the area including Victorian cottages, Spanish or Mediterranean Revival houses and Craftsman bungalows. The district sets standards for the preservation of these structures and ensures that new development is compatible with the existing community character.

Redevelopment Project Areas

The City's redevelopment agency was formed in 1971. Since then, three redevelopment project areas have been established in the City (see Exhibit 2-12).

- The first redevelopment plan, *Uptown Whittier/Greenleaf Avenue Redevelopment Area*, was adopted in February 1974. It covers a 137-acre area in Uptown Whittier and along Greenleaf Avenue. The 24 city blocks within the Uptown Whittier/Greenleaf Avenue Redevelopment Area are developed with office buildings, retail stores, condominiums and institutional buildings.

- The *Whittier Boulevard Redevelopment Area* was adopted in October 1978 and encompasses commercial and industrial areas on the western section of Whittier. It covers approximately 238 acres northeast of Whittier Boulevard and south of Hadley Street. Landscaping and street trees, street widening, signals have been provided to create an inviting industrial and commercial section in the City. This areas provides for major commercial and industrial uses in the City.

- The *Whittier Earthquake Recovery Redevelopment Project Area* was established on November 1987 to revitalize the area damaged by the earthquake of October 1987. It covers 521 acres of residential and commercial developments. The redevelopment plan calls for the repair, restoration, demolition and replacement of property and facilities damaged by the earthquake. These projects include the rehabilitation of commercial structures to preserve the area's employment base; the replacement and improvement of the housing supply for low and moderate income households;

relocation assistance for displaced households, and the repair of infrastructure and their deficiencies.

Past redevelopment activities include construction of luxury condominiums, the Bank of America office buildings, First Interstate Bank Building, Whittier Financial Center II, renovation of Mission Court and Village Square. Numerous street improvements have been undertaken for Uptown Whittier Village along with storefront renovations. Commercial ventures include Urbatec, Eastman-Kodak, Bedline Manufacturing, 3M Corporation, and Northrop Corporation. Home repair loans are also being provided by the Redevelopment Agency.

The City offers fast-tracking, off-site and street improvements, land assembly, utility undergrounding and zone changes as incentives to developers in the redevelopment area.

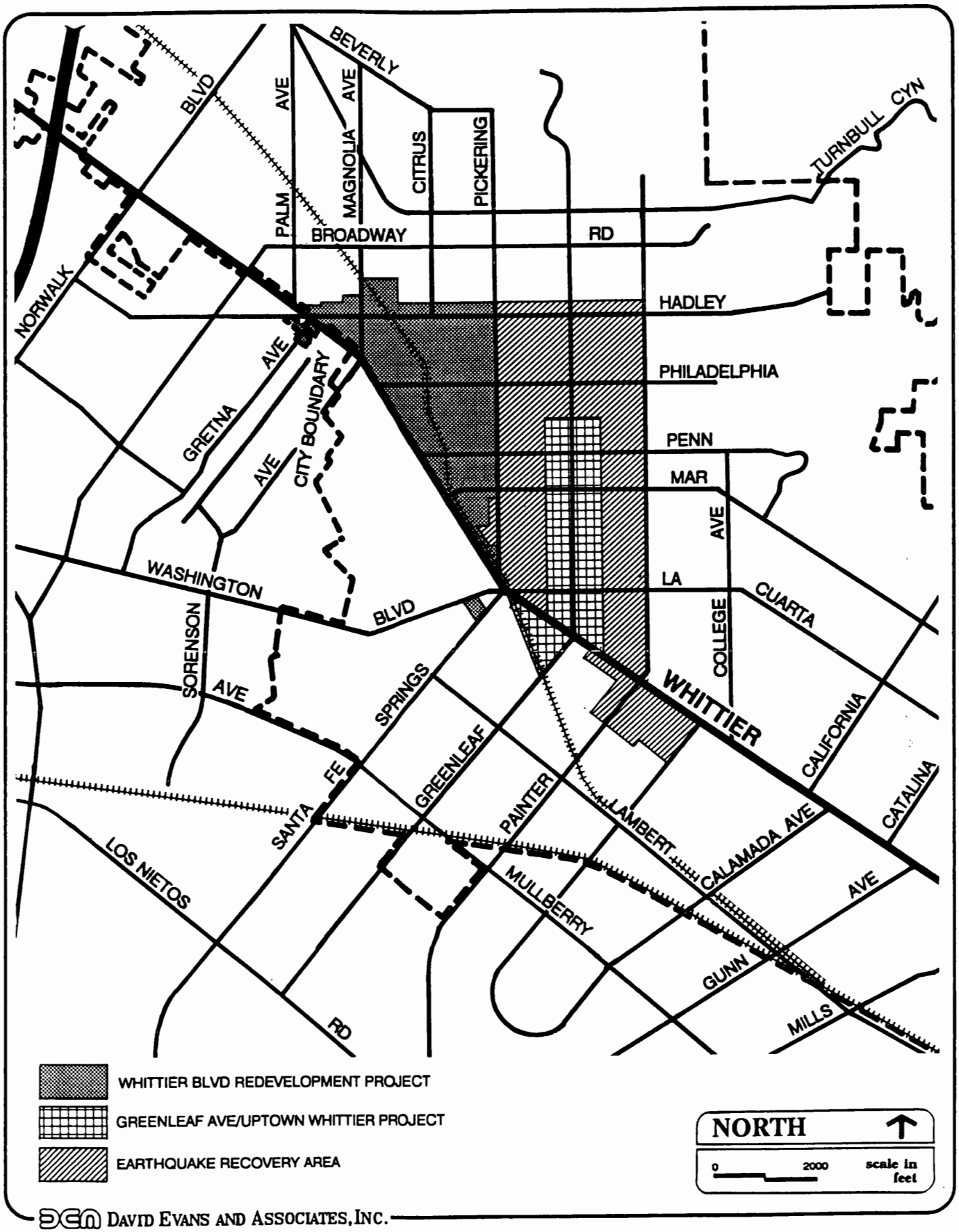
Specific Plans

Two areas in the City have been developed under the criteria of a Specific Plan: the Uptown Whittier Specific Plan and the Quad at Whittier Specific Plan (see Exhibit 2-13). The Uptown Whittier Specific Plan was adopted in 1989 and the Quad was adopted in 1988.

The Uptown Whittier Village is located in a specific plan area which contains the City's original commercial district. It covers 33 city blocks on over 200 acres developed with retail stores, specialty shops, restaurants, residences, and offices. The Whittier Historical Museum and a 2-acre Central Park are also found in the village. The specific plan for Uptown Whittier was developed specifically to preserve the historic character of the area. The plan calls for rebuilding of the retail commercial base, development of mixed uses, restoration of historic buildings, development of buildings which complement the existing architectural style, promotion of the area's retail uses, creation of entertainment opportunities, and development of support residential and office uses.

Projects for the area have included the improvement of automobile, pedestrian and transit circulation, improvement of existing infrastructure, development of parking lots and structures, landscaping, and walkway paving. The City has provided decorative street treatments (ornamental street lights, street furniture) and brick-lined pedestrian walks, and shade trees to the area. Development and design standards have been developed to assist new construction and rehabilitation efforts in Uptown Whittier.

The Quad at Whittier Specific Plan covers the area developed with the Quad shopping center on Whittier Boulevard between Painter and Laurel Avenues. The site covers 32.4 acres with approximately 540,000 square feet of gross leasable area. Major tenants include T.J. Maxx, Ross Dress for Less, Service Merchandise, Hinshaw's Department Store, Ralph's Market and Thrifty Drugstore.



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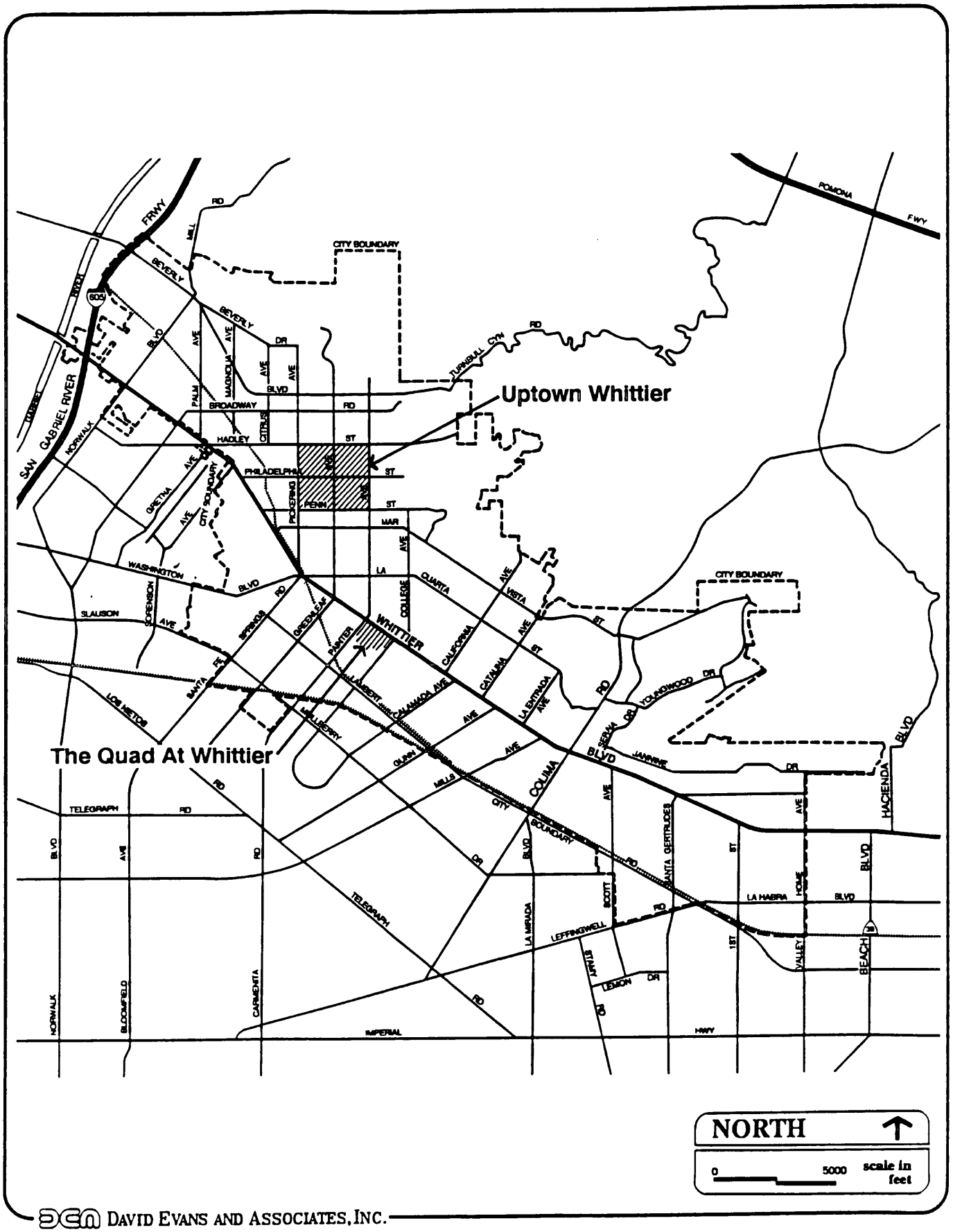
City of Whittier

GENERAL PLAN

EXHIBIT 2-12
REDEVELOPMENT AREAS



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GENERAL PLAN

EXHIBIT 2-13
SPECIFIC PLAN AREAS

The Urbatec site has been approved for the development of the Whittier Station Center. The 16-acre neighborhood shopping center is located on the southeast corner of Whittier Boulevard and Hadley Street, down to Philadelphia Street. Demolition activities are underway with construction planned from 1991-1993. The Whittier Station Center will have 175,000 square feet of gross leasable area that will be used for a market, drugstore, retail, and service shops.

DEVELOPMENT CONSTRAINTS

Physical suitability is a major consideration in the designation of land uses throughout the City. There are areas that cannot successfully accommodate certain types of development due to inherent physical characteristics. These include geotechnical, seismic and flood hazard areas, irregular parcel size and shape, adjacent sensitive land uses, former land uses, and other features which constrain development. These constraints should be considered in future land use plans.

Seismic Hazards

The Whittier area is crossed by the Whittier fault on its northern and eastern sections. Groundshaking and surface rupture hazards are associated with earthquakes along these faults. Development near this fault zone should be limited to low density uses which will exposed the minimum number of people and property to harm and damage. Other nearby faults which present seismic risks to the City include the Norwalk, Elysian Park, San Andreas, Chino and Sierra Madre faults.

The City of Whittier has first hand experience of the destructive potential of an earthquake. On October 1987, the City of Whittier and the surrounding neighborhoods experienced an earthquake of magnitude 5.9 with an epicenter at Montebello. The earthquake originated from the Elysian Park fault system which was unknown until then.

Following the initial tremor, a series of aftershocks occurred in the vicinity of the Whittier faultline. The earthquake primarily affected older structures and the urban centers of the community. The damage included the structural collapse of buildings associated with unreinforced brick and non-conforming construction technology. Estimates of damage exceeded 70 million dollars. On November 24, 1987, the City adopted an Emergency Ordinance to establish a redevelopment district in the area to aid the stricken areas in their recovery efforts.

Land Availability

Very little growth may be expected in the City because the area is relatively built out. Future growth is constrained by the lack of available vacant land suitable for development.

The City is over 90 percent developed with vacant parcels limited to 265.1 acres. The potential for future growth largely depends on the development of the Puente Hills area and the recycling or expansion of existing land uses.

Steep Terrain

The unincorporated area of the Puente Hills, above the City have areas of rugged and steep terrain. The hills, which today are predominately undeveloped, are scarred by deep and rugged canyons on the west side facing Whittier, while more gentle slopes existing on the east side. There are residential developments in the lower parts of the Hills on the Whittier side and near the crest on the eastern side. The engineering technology and cost of construction on steep terrain will limit development in this area.

The Hillside Residential (H-R) Zone in the Whittier Zoning Ordinance limits development in the hillside areas, to preserve the natural environment. It sets standards for density, grading, erosion control and fire protection in designated areas. This maintains the low density development in the hills.

Landslide and Flood Hazards

In addition to the steep slopes of the hills, there are landslide areas and unstable soils. Also, scattered areas are subject to flooding and dam inundation. Development on these areas will unnecessarily exposed residents and property to hazardous conditions. These issues are discussed in detail in the Public Safety Element Background Report.

Fire Hazards

Steep slopes, combustible plant materials, high temperatures, low humidity, strong winds, and an ignition source would provide a dangerous combination for a devastating fire. Dry brush in the hills, thick canopy trees and wood shingle roofs present wildfire hazards at Puente Hills. Industrial uses, high voltage power lines, high pressure gas lines, and substandard electrical systems are factors to consider in urban fire hazards. Fire prevention efforts must focus on the use of fire retardant construction materials, the provision of adequate fire fighting equipment, the buffer of structures from fuel areas, and the use of fire retardant landscaping.

Manmade Constraints

Manmade constraints to future development in the planning area include existing development, the presence of designated utility easements, and zoning restrictions to development. Other factors that control growth are the adequacy of the existing infrastructure (water, sewer, and storm drain lines and streets) to handle additional demands brought by new development.

SECTION 3: HOUSING ELEMENT BACKGROUND REPORT

INTRODUCTION

The Housing Element Background Report discusses the issues and opportunities related to housing in the City of Whittier. In order to adequately house all residents in the City, there must be a match between the type of housing needed and the available housing stock. The housing needs and resources of the City are analyzed in this Report. Housing programs can then be tailored to better meet the needs with the available resources.

The Housing Element Background Report also describes the population and housing characteristics of the City. This discussion includes an analysis of the age distribution, race, disability, income, household size of the City's population, and groups with special housing needs. Also, the existing housing stock, overcrowding, tenure, overpayment, and housing conditions are analyzed. Finally, an analysis of the constraints to the development of housing in the area is also provided.

POPULATION CHARACTERISTICS

Whittier's housing production needs stem from both local and regional conditions. These conditions include the following:

- New housing is needed as regional employment and population growth generate a demand for housing throughout Southern California.
- New housing is needed as Whittier's current population increases and ages.
- New replacement housing is needed to replace some of the housing which was lost when housing areas underwent a transition from residential to commercial uses.
- New housing is needed when vacancy rates are low to ensure reasonable levels of choice and mobility in the marketplace.

According to estimates of the California Department of Finance, the 1988 population of the City of Whittier was 73,601 persons. This represents a 5.6 percent increase over the 1980 population of 69,717 persons. The 1990 U.S. Census estimates the population at 77,671 persons. This represents an 11.4 percent growth over 10 years.

Consistent with the fully developed nature of the City, there has been a very slight increase in the number of households since 1980. From 1980 to 1990, the number of households

increased by less than 1 percent. According to the projections of the Southern California Association of Governments (SCAG), this rate of growth is expected to increase in the next 5 years. In 1988, SCAG estimated 27,118 households in the City. In 1994, they expect that number to increase by 1,014 to bring the total to 28,132 households.

The average size of households in Whittier has increased from 2.52 persons per household in 1980 to 2.72 persons in 1990. Nearly 60 percent (15,954 households) of Whittier's households own their own homes and 42.3 percent (11,683 households) are renters.

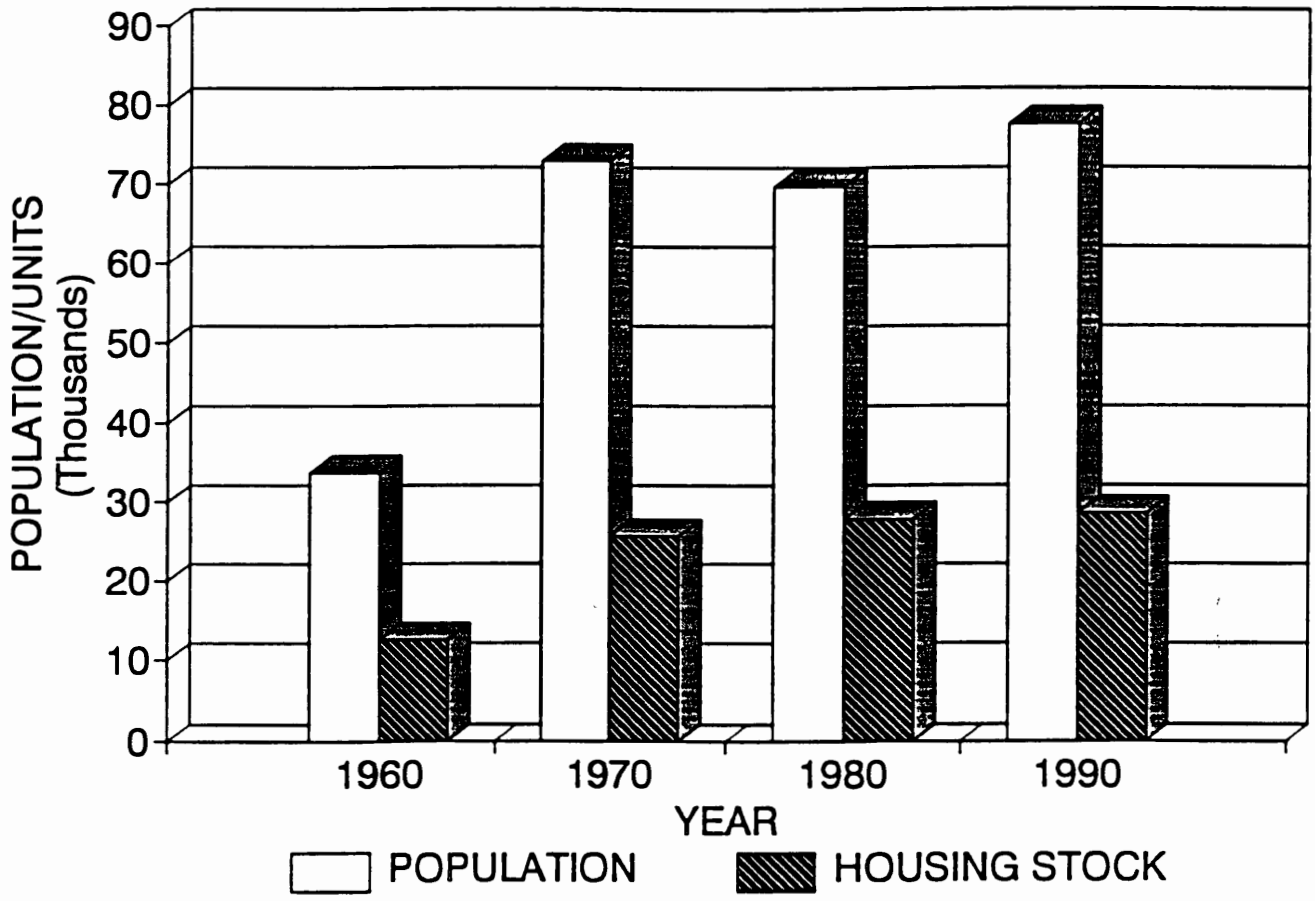
Table 3-1 and Exhibit 3-1 shows historic growth in Whittier from 1960-1990. The rapid increase in population and housing stock from 1960 and 1970 was primarily due to the annexation of the East Whittier area during this period.

TABLE 3-1
HISTORIC GROWTH (1960-1990)

Year	Population	Housing Stock	Household Size
1960	33,663	12,684	2.30
1970	72,863	25,817	3.40
1980	69,717	27,792	2.52
1990	77,671	28,758	2.72

Source: U.S. Census.

The breakdown of the City's population by age in 1980 showed a significant portion (26.1 percent) over the age of 55. This was higher than the countrywide average of 19.3 percent, showing that Whittier has a concentration of elderly residents. In 1990, the elderly population has dropped to 22.0 percent or 17,079 persons (see Table 3-2). Furthermore, 23.5 percent of Whittier's households are headed by people 65 years of age or over. Seventy-eight percent of these households are owners and 22.0 percent are renters. Approximately 27.2 percent of Whittier's residents are below the age of 19, and the remaining 50.1 percent of the population is between the ages of 20 and 54.



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

EXHIBIT 3-1
POPULATION AND HOUSING GROWTH

TABLE 3-2 POPULATION BY AGE GROUP		
Age Group	**Number**	**Percent**
14 years and under	16,798	21.6
15 to 19 years old	5,641	7.3
20 to 34 years old	20,548	26.4
35 to 54 years old	17,605	22.7
55 to 64 years old	6,290	8.1
65 years and older	10,789	13.9
TOTAL	77,671	100.0
Source: 1990 U.S. Census.		

Although the City of Whittier has an increasing Hispanic minority, the majority of residents are white. Table 3-3 provides a breakdown of Whittier residents by race and ethnicity in 1980 and 1990. Exhibit 3-2 shows the change in race breakdown.

TABLE 3-3 POPULATION BY RACE					
Racial Category	**1980**	**Percent**	**1990**	**Percent**	**Percent Increase/ Decrease**
White	61,570	88.31	57,048	73.45	-7.34
Black	394	0.57	992	1.28	+151.78
Asian	1,294	1.86	2,581	3.32	+99.46
American Indian	410	0.54	462	0.59	+12.63
Other	6,049	8.68	16,588	21.36	+174.23
TOTAL	69,717	100.0	77,671	100.0	
Hispanic	12,751	18.29	30,278	38.98	+137.46
Source: 1980 & 1990 U.S. Census					

EMPLOYMENT

In 1980, there were 35,236 Whittier residents in the work force. Based on the 5.6 percent increase in the City's population between 1980 and 1990, it is estimated the current work force is made up of 39,256 persons. Unemployment in Los Angeles County is estimated at 5.1 percent. At the time of the 1990 Census, the unemployment rate for Whittier residents was substantially lower than that of the county. Assuming the same pattern in 1990, the City's unemployment rate is estimated to be 3.9 percent.

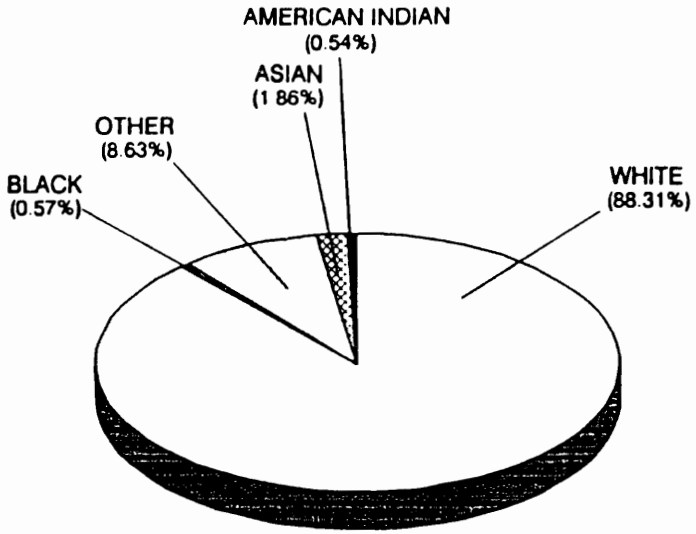
So-called "white-collar" jobs make up the largest category of employment for Whittier residents. Since Whittier College is located in the City, it is not surprising that managerial/professional and sales/technical jobs account for over 40 percent of the jobs held by the City's population. Another large percentage (27.3 percent) of residents are employed in manufacturing jobs with the remainder in clerical/support or service-related employment. The jobs held by Whittier residents in 1980 are broken down in Table 3-4.

TABLE 3-4
JOBS HELD BY WHITTIER RESIDENTS

Job Category	Number	Percent
Managerial/Professional	9,334	27.7
Sales/Technical	4,563	13.6
Clerical/Support	7,267	21.3
Service	3,173	9.4
Farming	248	.7
Manufacturing	9,178	27.3
Total	33,663	100.0

Source: 1980 U.S. Census

The economy of the City is dominated by retail trade and the service industry (which includes education) which together account for over half the jobs and two-thirds of the job sites located in the City of Whittier as shown in Table 3-5, However, there is also significant activity in the manufacturing, wholesale trade, and financial industries. The number of jobs in the City of Whittier was approximately 22,331 in 1984, the most recent year for which data was available. This means that there are approximately 13,000 fewer jobs in the City than there are employed residents living in the City. Thus, workers commute to jobs in other parts of the region.



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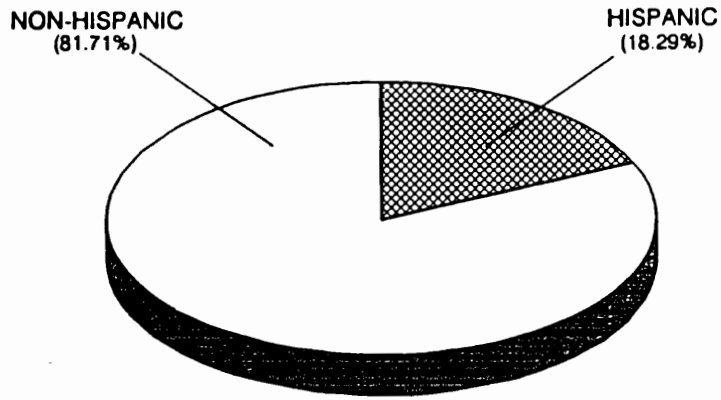

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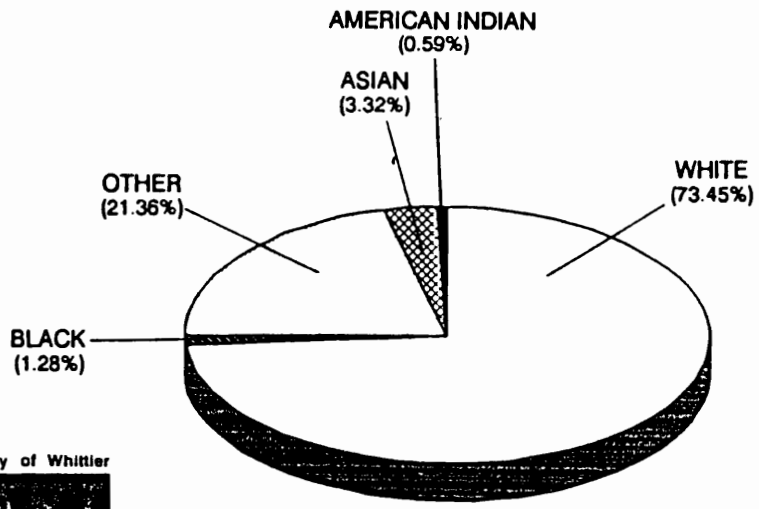

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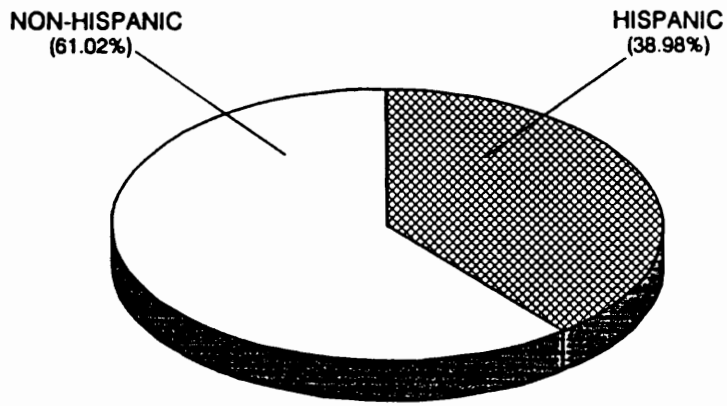

1990

City of Whittier

GENERAL PLAN

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EXHIBIT 3-2
RACE BREAKDOWN

TABLE 3-5
EMPLOYMENT IN WHITTIER

Industry	Jobsites	Employees	Percent
Agriculture	11	97	0.4
Mining	2	[a]	
Construction	81	697	3.1
Manufacturing	99	2,487	11.1
Transportation, Communication, Gas, Electric, Sanitation	47	834[b]	3.7
Wholesale Trade	75	1,718	7.7
Retail Trade	330	6,486	29.0
Finance, Insurance, Real Estate	141	1,821[b]	8.2
Services	662	7,196	32.2
Public Administration	15	395[b]	1.8
Nonclassifiable/unknown	10	242	1.1
TOTAL	1,473	22,331	

[a] Data Suppressed
[b] Estimated

Source: Industrial-Commercial Employment Project, 1984.

FUTURE HOUSING NEEDS

By state law, projections of growth in the entire Southern California region and the housing needed to accommodate this growth are prepared by the Southern California Association of Governments (SCAG). In the Regional Housing Needs Assessment (RHNA), SCAG estimates future housing needs by estimating growth to 1994 and adjusting for regional low-income impaction, desirable vacancy rates and the projected rate of residential demolition. The estimated future housing needs of Whittier are shown in Table 3-6. SCAG has projected that Whittier will need to add 1,589 units between January 1988 and July 1994 to meet the needs of expected new residents, replace substandard units, and maintain a healthy vacancy rate. Between January and September 1988, the City issued 165 building permits and 96 demolition permits for an average annual net gain of approximately 240 units which is slightly less than the growth rate deemed desirable by SCAG (315 units per year).

TABLE 3-6 WHITTIER FUTURE HOUSING NEEDS		
Income Group	**Units**	**Percent**
Very Low Income	243	15.3
Low Income	333	21.0
Moderate Income	291	18.3
High Income	722	45.4
TOTAL	1,589	100.00
Source: Regional Housing Needs Assessment, 1989-1994.		

HOUSEHOLD CHARACTERISTICS

Table 3-7 presents the breakdown of households by income category from the 1980 census. The figures reveal that the incomes of Whittier households are higher than the county average. The median household income for Whittier in 1980 was $19,948, which is 14 percent higher than the median income for Los Angeles County. A full 50 percent of Whittier families earned $20,000 or more in 1980 compared to only 44 percent of families countywide. Additionally, only 16.5 percent of Whittier households had incomes less than $7,500 compared to over 20 percent of Los Angeles County households.

TABLE 3-7 1980 HOUSEHOLD INCOME		
Income Category	**Number of Households**	**Percent**
Less than $5,000	2,698	10.0
$5,000 to $7,499	1,747	6.5
$7,500 to $9,999	1,892	7.0
$10,000 to $14,999	3,619	13.4
$15,000 to $19,999	3,530	13.1
$20,000 to $24,999	3,379	12.6
$25,000 to $34,999	4,528	16.8
$35,000 to $49,999	3,125	11.6
$50,000 and more	2,391	8.9
Source: 1980 U.S. Census		

The median household income for homeowners (60 percent of the total households) was $26,435; for renters $12,703. Table 3-8 presents income data for renters and homeowners. The median area income for Los Angeles in 1980 was $17,551. The $10,000 income level

is 57 percent of the area median, or roughly equivalent to the 50 percent of median threshold for "very low income" households. The $20,000 income level is 114 percent of the area median or roughly the upper level for "moderate income" households (which are defined as between 80 and 120 percent of median). Table 3-8 shows that 38 percent, or over one-third of all renter households fall near or below the very low income category. This is compared to only 13 percent of all homeowner households. Conversely, two-thirds of all homeowner households are in the "high income" category compared to only 25 percent of renters.

TABLE 3-8
HOUSEHOLD INCOME BY TENURE
(FOR SELECTED HOUSEHOLDS)

Tenure	Number of Households	Percent
Homeowners		
Less than $10,000	1,915	13.2
$10,000 to $19,999	2,872	19.8
$20,000 or more	9,742	67.1
Renters		
Less than $10,000	4,100	38.1
$10,000 to $19,999	3,949	36.6
$20,000 or more	2,732	25.3

Source: 1980 U.S. Census

As shown in Table 3-9, the major source of income for Whittier households is earnings from wages and salaries; over 80 percent of households receive income from this source. Over one-fourth of Whittier households receive social security income while less than 2,000 households (or 7 percent) receive public assistance.

TABLE 3-9
SOURCE OF INCOME - WHITTIER HOUSEHOLDS

	Number of Households	Percent
Wage/Salary	22,019	81.9
Social Security	7,052	26.2
Public Assistance	1,893	7.0

Source: 1980 U.S. Census

Census data for 1980 show that only 5.3 percent (987) of families living in Whittier had incomes below the poverty level. This is only one-half of the countywide rate; still more

evidence of Whittier's relatively affluent income profile. A majority of these poverty-level households have children and half have a householder who works. In addition, close to half of the families living in poverty in Whittier are headed by a female, and 72 percent of the poverty-level households are renters, compared to 42 percent of all households. See Table 3-10.

TABLE 3-10
FAMILIES BELOW POVERTY

	Number	Percent
Families Below Poverty Level	987	100.0
Householder Employed	494	50.1
With Children	705	71.4
Female Head	465	47.1
With Elderly Head	105	10.6

Source: 1980 U.S. Census

HOUSING STOCK

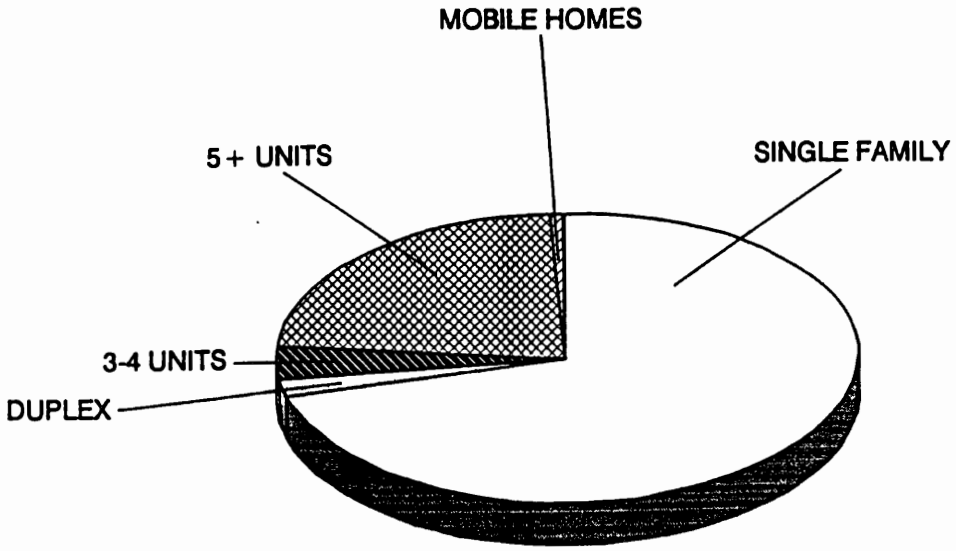
Table 3-11 shows that the last 10 years have seen a slight (less than 3.5 percent) increase in the number of housing units in the City of Whittier. There are currently 28,758 housing units in the City. The housing stock is located primarily in single-family units and small (2- to 4-unit) buildings. The majority of housing units in the City are owner occupied, (57.8 percent compared to 42.2 percent which are rented). Table 3-11 and Exhibit 3-3 provides a breakdown of housing stock in 1980 and 1990.

TABLE 3-11
HOUSING STOCK BREAKDOWN

Stock	1980	Percent	1990	Percent
Single-Family	19,648	70.70	19,968	69.93
Duplex	564	2.03	688	2.41
3-4 Units	1,055	3.80	1,362	4.77
5 + Units	6,336	22.80	6,337	22.19
Mobilehomes	189	0.68	200	0.70
Other	0	0.00	203	0.71
TOTAL	27,792	100.00	28,758	100.00

Source: 1980 and 1990 U.S. Census

With respect to rental units, in September 1981 a survey of 103 apartment complexes in the City with a total of 2,368 units was completed. Distribution of apartment units by bedroom



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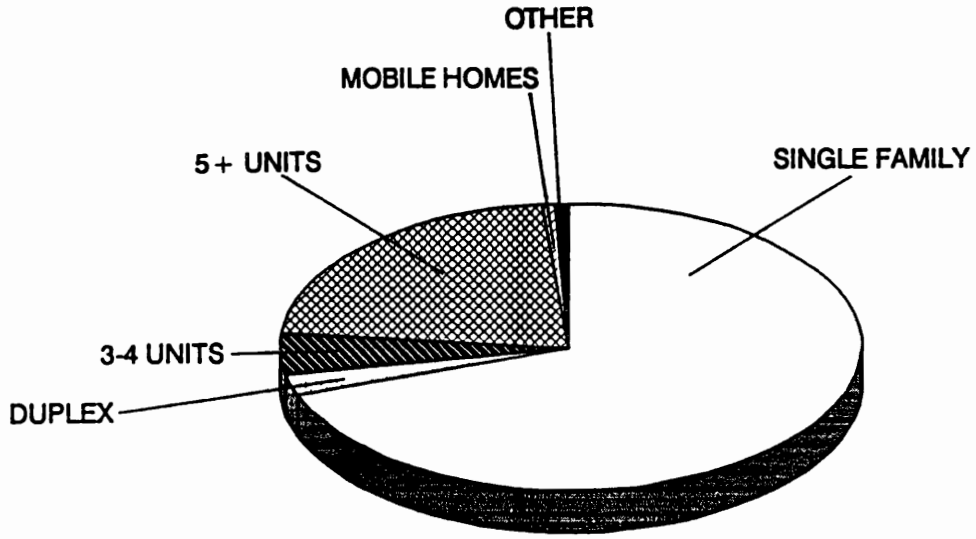

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EXHIBIT 3-3
HOUSING STOCK

size from this survey is presented in Table 3-12, and data for all units from the 1980 census are shown in Table 3-13. Most of the apartment units contain 1 bedroom (40.9 percent) or 2 bedrooms (43.2 percent), and very few units consist of bachelor (12.5 percent) or 3-bedroom units (3.4 percent).

TABLE 3-12
APARTMENT UNIT SIZE, 1981

Number of Bedrooms	Number of Units	Percent
Bachelor	296	12.5
1-Bedroom	969	40.9
2-Bedroom	1,024	43.2
3-Bedroom	79	3.4
TOTAL	2,368	100.0

Source: 1981 Apartment House Survey conducted by TDC Planning.

TABLE 3-13
HOUSING UNIT SIZE

Unit Size	Units	Percent
1-Room	935	3.3
2-Rooms	1,824	6.3
3-Rooms	3,851	13.4
4-Rooms	4,934	17.2
5-Rooms	6,327	22.0
6-Rooms	5,474	19.0
7-Rooms	2,957	10.3
8 or More Rooms	2,456	8.5
TOTAL	28,758	100.0

Source: 1990 U.S. Census

As a City's housing stock ages, more units are likely to wear out and need repair or replacement. The age of Whittier's housing stock is an indicator of housing rehabilitation and production needs. The City of Whittier has 7,773 housing units (or 27.9 percent of the total housing stock) built prior to 1950. Roughly half of these units were built prior to 1940. Units built prior to 1934 were not subject to the safety standards set in the Uniform Building Code. As a result, they are more likely to have substandard original construction and need repair. These units suffered extensively in the October 1987 earthquake.

Overcrowding can also be an indicator of pent up housing demand. There is a slight overcrowding problem in the City of Whittier. Nearly 10 percent of the total housing stock,

or 2,796 units, have 1.01 or more persons per room. Seventy-four percent of these units are renter-occupied and only 26 percent are owner-occupied.

Another factor creating a need to produce new housing is low vacancy rates. When vacancy rates are low, they restrict the opportunity and choice in the City's housing market. The 1990 Census reports a 3.9 percent vacancy rate. According to the Federal Home Loan Bank Board Vacancy Survey, the vacancy rate in 1988 for the Whittier area was 0.8 percent. The rate for single family units was 0.7 percent, and the rate for multiple-family units was 1.3 percent. The vacancy rate for mobile homes in the area was 1.5 percent. To some extent, the low vacancy rate was reflective of the loss of housing in the 1987 earthquake.

Whittier's housing supply, as noted in Table 3-11, amounts to 28,758 units in 1990. Some 1,119 housing units, or 4 percent of the housing stock showed visible evidence of substandard conditions in 1987. This estimate is based on the code inspections of over 5,000 structures which were performed following the October 1987 earthquake. These inspections covered most of the older housing and over half of the total units in the City. Of the total housing stock, about 3 percent are suitable for rehabilitation and approximately one percent are judged unsuitable for rehabilitation. These and other figures are summarized in Table 3-14.

TABLE 3-14
SURVEY OF HOUSING CONDITIONS

Condition	Owner	Percent	Renter	Percent
Standard	15,915	96.0	11,058	96.0
Suitable for Rehabilitation	495	3.0	321	2.8
Unsuitable for Rehabilitation	165	1.0	138	1.2
Total Housing Units	16,575	100.0	11,517	100.0

Source: City of Whittier Housing Assistance Plan, 1988.

A needed improvement to the housing environment is the replacement of substandard housing units which are not suitable for rehabilitation. As noted in Table 3-14, there are an estimated 303 dwelling units which cannot be economically rehabilitated. These housing units need to be replaced by new housing of adequate quality. Because of this, replacement of substandard housing is a source of demand for new construction.

Geographically speaking, housing units needing improvement are concentrated in the older areas of Whittier. Some of the concentration of need is due to the 1987 Whittier earthquake, which hit these older areas especially hard because of the age of the units and the construction techniques of their time period.

AFFORDABILITY

Data on gross rent as percentage of household type by income in 1980 are presented in Table 3-15. As shown earlier, the majority of the City's lower income households are renters and this influences the character of housing assistance needs. In 1980, there were 2,413 (15.1%) households in owner-occupied housing units spending more than 30 percent of their income on housing. The City had 10,907 renter households and 4,446 (41%) of these were spending 30 percent or more of their income on housing costs. The majority of these (3,548 renter households) were actually paying more than 35 percent of their income on housing. The vast majority (75 percent) of households in the lower income bracket spend 30 percent or more of their income for housing costs. For instance, 79 percent of all the renters in the "less than $10,000" group allocate more than 30 percent of their income for shelter. Because of the high home values in California, overpayment is a trend that is expected to continue in the region, including the City of Whittier.

TABLE 3-15
HOUSEHOLDS PAYING OVER 30 PERCENT OF INCOME FOR SHELTER

Income	Owner	Renter
Less than $10,000	811 (5.1%)*	3,391 (29.0%)
$10,000 to $20,000	737 (4.6%)	1,004 (8.6%)
$20,000 or more	865 (5.4%)	51 (0.4%)
TOTAL	2,413 (15.1%)	4,446 (38.1%)

* Percentage of total 15,954 owner-occupied or 11,683 renter-occupied units.
Source: 1980 U.S. Census

Table 3-16 shows the number of low income households paying more than 30 percent of their income for shelter in 1988. There are 4,861 low income households overpaying for housing in the City of Whittier. The majority (64 percent) of these households are renters. As expected, the impact is greater among very low income households. These households represent the existing housing needs of the City. Exhibit 3-4 provides existing and future housing needs based on SCAG estimates.

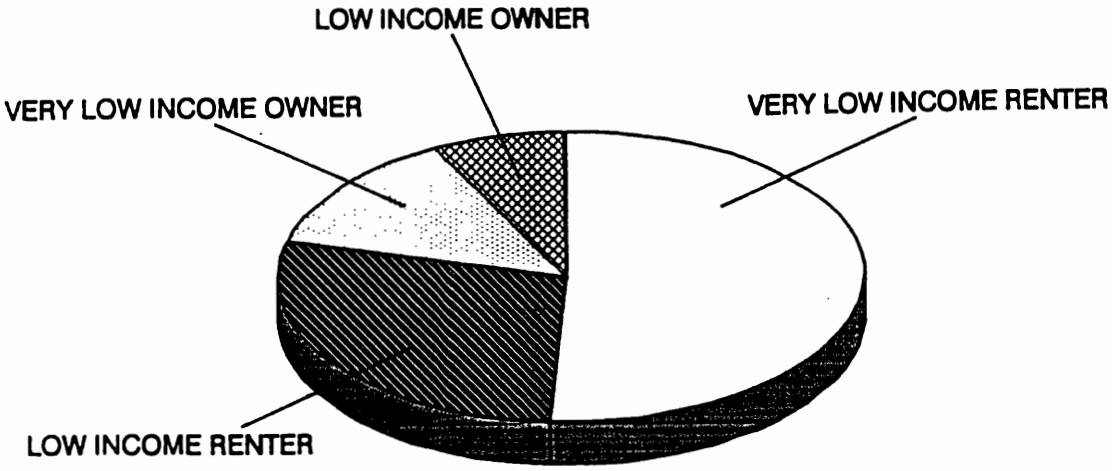
TABLE 3-16 LOW INCOME HOUSEHOLDS OVERPAYING FOR HOUSING - 1988			
Income Group	Renters	Owners	Total
Very Low Income	2,481	648	3,129
Low Income	1,375	357	1,732
Total	3,856	1,005	4,861
Source: Regional Housing Needs Assessment, SCAG, 1988.			

SUBSIDIZED HOUSING

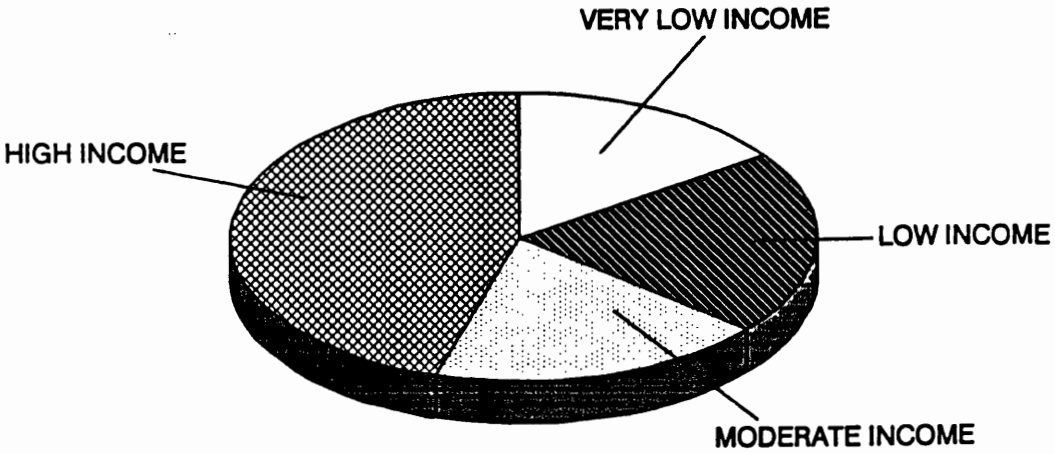
Projects in the City

The City of Whittier has five housing projects which are funded by federal and local housing programs. They provide affordable housing units for senior citizens, disabled persons, and low and moderate income households in the City. Table 3-17 lists these projects and Exhibit 3-5 shows their location.

TABLE 3-17 SUBSIDIZED HOUSING PROJECTS			
Project/Address	Funding Source/Date	Earliest Date of Subsidy Termination	No. of Units
Heritage Park Whittier 12251 Washington Blvd.	County Bond Financing 1990	2030	169 senior housing units
Whittier Lutheran Towers 7215 Bright St.	FHA Section 236 and Section 8 1975	2015 1995 (Section 8)	155 senior housing units with 140 under Section 8
Stephens Whittier 8011 Bright St.	FHA Section 221 (D)(3) 1972	1992	14 units
Whittier Springs 8218 Santa Fe Springs Rd.	FHA Section 202 and Section 8 1985	2025 (FHA) 2005 (Section 8)	13 units
William Penn Manor 7025 Friends St.	FHA Section 202 and Section 8 1991	2031 2011 (Section 8)	74 senior housing units
Source: Inventory of Federally Subsidized Low-Income Rental Units at Risk of Conversion, California Coalition for Rural Housing Project, 1990; City of Whittier, 1992; HUD Rental Housing Handbook, 1991.			

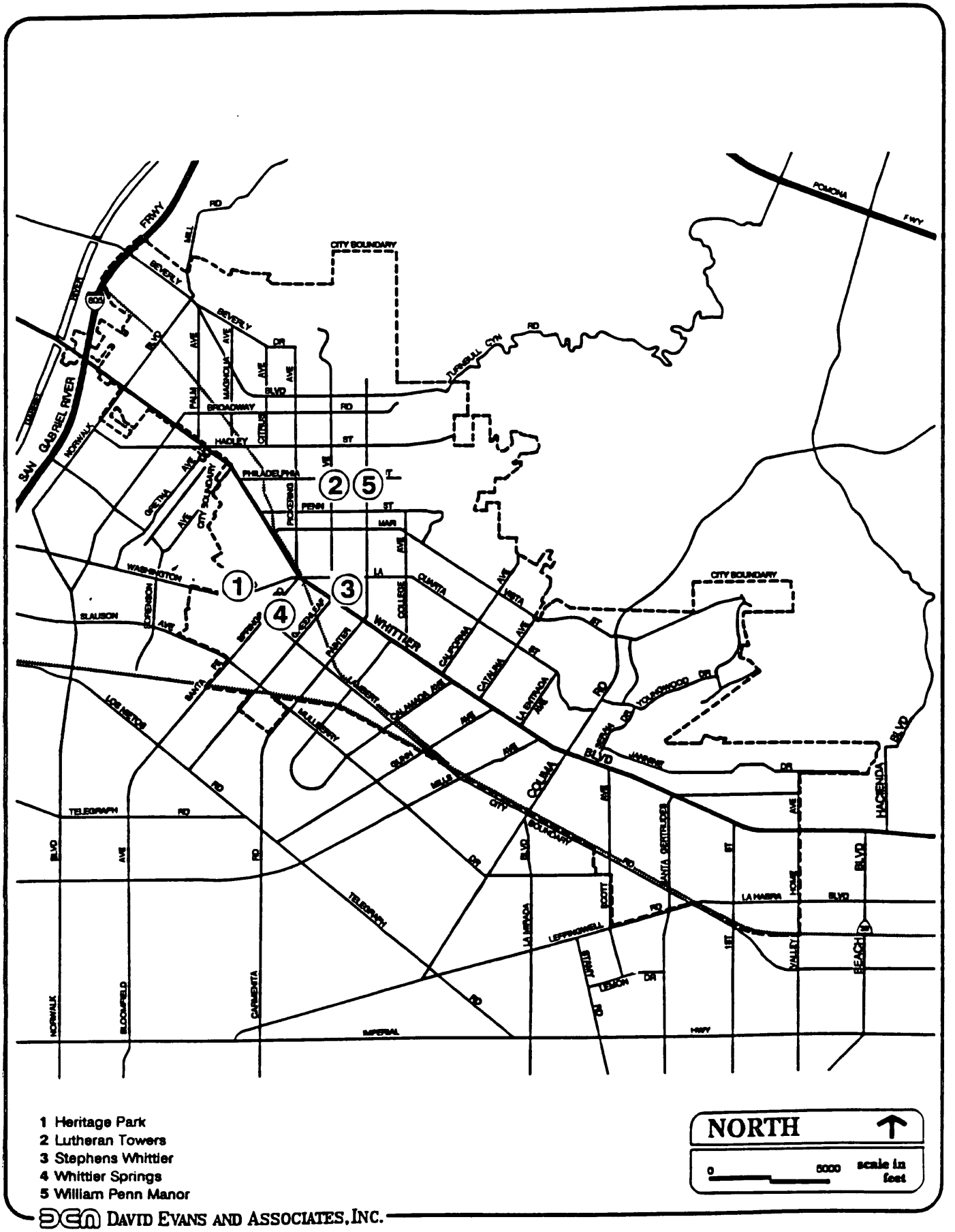


EXISTING



FUTURE

EXHIBIT 3-4
EXISTING & FUTURE HOUSING NEEDS



1 Heritage Park
2 Lutheran Towers
3 Stephens Whittier
4 Whittier Springs
5 William Penn Manor

NORTH

0 5000 scale in feet

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City of Whittier

GENERAL PLAN

EXHIBIT 3-5
SUBSIDIZED HOUSING PROJECTS

These projects have been provided low interest loans and/or rental assistance payments in return for the provision affordable housing units. Others are funded by tax-exempt bonds, redevelopment funds, or provided incentives by the City in exchange for units reserved for special needs or low income households. There is no housing project in Whittier which is funded by State revenue bonds.

Aside from these projects, approximately 10 rental units have been provided rehabilitation loans with a 10-year resale restriction. Also, the City has recently completed rehabilitation on a single family unit for first-time homebuyers.

Units at Risk

Three housing projects are considered to be at risk of conversion to market rate housing within the next 10 years. The other projects with a total of 243 units are not considered at risk at this time. Thus, they are not subject to the more detailed analysis below. The conversion of subsidized housing to market rate housing may occur at any time after termination of the contract or pre-payment of the loan. This means that the affordability controls are terminated and an increase in rents for senior citizens, disabled persons and low-income households currently occupying the units may occur. It is in the City's interest to preserve or replace low-income housing before they are converted.

The Stephens Whittier apartments has 14 units (eight 1-bedroom and six 2-bedroom units) and is owned by Stephens Whittier. The project was granted a $222,000 loan in 1972 under FHA Section 221 (D) (3) - Multifamily Rental Housing For Moderate Income Families. The FHA loan had a prepayment option starting January 1992. Stephens Whittier has filed a Notice of Intent (NOI) to convert the project. However, no plan of action was approved by HUD. Stephens Whittier has since then retracted their NOI application. Because the project has not filed a plan of action, future NOI will be subject to the regulations of Title 6 (Low Income Housing Preservation Residential Homeownership Act - LIHPRHA). This means prepayment of mortgages on Section 236 and 221 programs must show proof that current tenants would not be affected economically; the affordable housing stock in the area is not affected; safe and sanitary housing near jobs is available for low income residents; housing for minorities is not affected; and other restrictions. The future conversion of this project will lead to the loss of 14 low and moderate income housing units in the City.

The Whittier Lutheran Towers has 155 units with 105 studio apartments and fifty 1-bedroom units. It is owned by Gilliam Falkenberg and was constructed in 1975 with HUD Section 236 funds. It currently has a Section 8 contract for 140 of its 155 units. Under Section 8, the tenant pays 30 percent of his gross income to the owner as rent and the Department of Housing and Urban Development (HUD) pays the difference between the tenant's contribution and the fair market rent of the unit. HUD sets fair market rents based on the

median income in the region, the number of persons in a household and other factors. The project's Section 8 contract is up for termination in 1995.

The Whittier Springs apartments has 13 units (twelve 1-bedroom and one 2-bedroom units) and is owned by the Exceptional Children's Fund of Los Angeles. It was granted a $757,300 loan in 1985 under FHA Section 202 - Direct Loans for Housing for the Elderly or Handicapped and a Section 8 contract for 12 of its units. The FHA loan will be eligible for prepayment in 2025 but the Section 8 contract will expire in 2005. The termination of the Section 8 contract will lead to the loss of 13 affordable housing units.

At the expiration of the Section 8 contract, the owner will be allowed to raise rents and the Section 8 subsidy will compensate him. However, the units should remain affordable to low and moderate income households for the life of the project or at least 50 years. Also, at expiration of the Section 8 contract, the owners may choose to renew the contracts for the next five years. Section 8 contracts are automatically reviewed by HUD for the next five-year period, as a general practice. If the owner does not want to renew, a Notice of Intent should be filed one year before expiration. During the year before expiration, HUD may offer incentives (e.g. allowing higher rents or refinancing the mortgage) to preserve the units.

Replacement vs. Preservation

In order to determine the more feasible alternative between preservation and replacement, the City is comparing the cost of buying out the project for preservation and the cost of building a new development with the same number of units. Area realtors were consulted on the housing market in Whittier. Land in the City is estimated to cost approximately $110,000 for a 6,000-square-foot lot which can accommodate 3 units. The Stephens Whittier project is located on 13,508-square-foot parcel; which may cost $250,000. The average cost of construction for a multi-family project in 1992 is approximately $70 per square foot. At a gross floor area of 15,033 square feet, the Stephens Whittier project could be built for approximately $1.05 million at this time.

Because the market is often driven by the number of dwelling units more than anything else, a 14-unit apartment would have a market value based on its gross rent and expenses. Considering average rents in the City right now, a new 14-unit apartment would cost approximately $1.2 to 1.4 million. The market value of the Stephens Whittier project would be around this range, if it converts to market-rate. Although, its daily maintenance expenses would be slightly higher than that of a new development.

Preservation may be a more viable alternative for Stephens Whittier, because it would involve less capital outlay (especially for development fees), would not involve tenant

displacement, and will allow continued use of the existing structure. On the other hand, it will require greater operating costs and less amenity than what would be available in a new development.

Assuming the same basic costs above, the Lutheran Towers can be built for approximately $13 million. The Whittier Springs project has a conversion date of 2005, and estimating its replacement or preservation cost at this time would not reflect real estate trends or inflation costs by then. The City will analyze this project during the Housing Element Update for that planning period.

Available Funds

Available resources in the City of Whittier which may be used to buy-out the Stephens Whittier or Lutheran Towers project include redevelopment funds, City General Fund, CDBG monies, bond financing, non-profit agencies, the Whittier Housing Authority, the California Housing Partnership Corporation, and other entities.

The Whittier Redevelopment Agency has a Low and Moderate Income Housing Fund which represents 20 percent of the tax increment received by the agency. At the end of fiscal year 1991, the fund had a balance of $467,100. It is expected to receive $459,000 from the 1991-1992 tax year for a total of $925,400. Projects planned for this fund total $312,000 which leaves $613,400. This money will be made available for rehabilitation loans and could be used for funding the preservation of rental units at risk. Also, the agency has a fund balance of approximately $2.0 million.

The City's CDBG program receives approximately $700,000 of federal subsidies. The money is used for the City's housing rehabilitation loan program, graffiti abatement, code enforcement, fair housing council services, and other social services benefitting low and moderate income residents. Approximately $100,000 is expected remain after program and administration costs for fiscal year 1991-1992. The City of Whittier's budget is expected to have a balance of $11.3 million at the end of fiscal year 1991-1992. The City may also use bond financing to preserve Stephens Whittier, subject to a two-thirds vote of the local electorate.

These financial resources place Whittier in a position to buy-out the Stephens Whittier project if prepayment occurs. The Lutheran Towers would require additional funding sources than that available in the City. If the City does not want to acquire the property, other private resources and programs could also be tapped for the preservation of low income units. Local lenders may apply for funds from the Federal Housing Finance Board's Affordable Housing Program (AHP). This program is relatively new (2 years old) and

makes subsidized financing available for participating lenders for the purchase and rehabilitation of single family and multi-family housing.

The Corporate Fund for Housing, a local non-profit organization, developed the 169-unit Heritage Park Whittier through a tax-exempt bond issue. Non-profit agencies also developed Lutheran Towers of the West (155 elderly units) and the William Penn Manor (75 elderly units).

The La Habra Neighborhood Housing Services (NHS) is developing affordable housing (10 units in the John Greenleaf Whittier neighborhood of the City and provides home improvement loans at below market rates. Other local organizations which may be in a position to take over affordable housing projects include: Keystone Enterprises, HomeAid, Southern California Presbyterian Homes, Ralph Carrico, TELACU, etc.

Courses of Action

The City of Whittier is developing a program to preserve all affordable housing units in the City. The program shall include talks with the property owner to determine if they intend to prepay the projects or continue the projects through existing incentives. If prepayment is expected or the mortgage/contract due to expire, the tenant association shall be offered to right of first refusal to take over the property. Otherwise, the City shall establish a fund to buy-out the project or actively look for an organization who is interested in maintaining the project as affordable housing. Entities who are involved in affordable housing projects shall be contacted early in the process. If the City is not in a position to buy-out the project, it may also provide rehabilitation funds, technical assistance and other forms of incentives to interested entities who may be interested in acquiring and maintaining affordable housing projects.

SPECIAL HOUSING NEEDS

In shaping a housing strategy, the City of Whittier has taken great care to identify and serve the needs of its special populations. The City acknowledges that certain populations require different housing solutions. A comprehensive response to housing needs must incorporate the special requirements of these populations.

- Elderly: 1990 Census data show that 13.9 percent of Whittier's population is over the age of 64 and 22 percent is at age 55 or over. It is estimated that there are currently 1,587 lower income elderly households residing in Whittier. In 1990, 42 percent of the elderly households were homeowners and 58 percent renters. Elderly households are more likely to be disabled, and

require similar housing modifications. They may also need special security features and access to public transportation and medical services.

- **Disabled:** Another group with special housing needs is the physically disabled population. Correctly serving this population requires housing unit design modifications and alternative solutions to housing accessibility. Though there is no reliable data on the size of the handicapped population in Whittier, the 1980 Census does provide information on the number of persons between the ages of 16 and 64 with either work or public transportation-disabilities. There are 3,640 persons with such disabilities, or 7.9 percent of the adult population under 65 years of age. Among persons 65 and older, 1,606 have disabilities (18 percent).

  A study completed one year earlier than the census revealed that 3.9 percent of Whittier population was handicapped at the time of the study. The difference in figures may be due to different definitions of "handicapped" and "disabled" used in the two studies. Assuming the same percentage of lower income households among the handicapped as in the rest of the population, and using a midpoint figure between the two estimates of handicapped/disabled population, it is estimated that there are currently 4,660 handicapped/disabled persons in Whittier, and 1,630 of these are lower income.

  Handicapped residents need housing with wider doorways, ramps rather than stairs, elevators for two or more story units, modified cabinets, plumbing, and lighting. These modifications are expensive and not usually found in older units. New construction is required by state law to be accessible, but may not have all the features needed by specific individuals.

- **Homeless:** In the past 10 years, the size of the nation's and Los Angeles County's, homeless population has sky-rocketed. As this population has increased so has the need for emergency shelter, transitional housing, and very low income re-entry (such as single room occupancy) housing. City officials and homeless advocates estimate a homeless population in Whittier between 70 and 100 persons. It is estimated that half of these persons are single individuals, and that there are about five homeless families in Whittier. Twenty percent of the homeless persons are children. It is estimated that one-third of the homeless have some mental illness, and one-third are alcohol and/or substance abusers. There was a Salvation Army shelter in the City which was damaged and closed after the October, 1987 earthquake. The City has provided $50,000 of redevelopment funds to the Rio Hondo Temporary

Home in Norwalk. The home serves homeless families by providing shelter (110 beds), meals, child care, job development, and savings and housing assistance. A Homeless Ad Hoc Committee has also been formed to study the homelessness problem in Whittier, to develop ways of alleviating homelessness or providing better services, and to coordinate services available to residents. Several local churches and service agencies operate programs in the City and the surrounding communities to serve the homeless. The City considers all multi-family and commercial zones potentially suitable for emergency shelters for the homeless.

- **Large Families:** Large families (that is those having five or more members) also represent a special housing need because they require larger units than the market normally provides, and because larger units generally cost more. Thus, large families can be caught in a bind because the units they can afford are too small to provide adequate accommodation. It is estimated that there are currently 3,455 large family households in the City of Whittier with approximately 45 percent of these as renters and 55 percent are homeowners.

- **Female-Headed Households:** Female-headed households are disproportionately represented among the poor throughout the United States. This is true in Whittier as it is elsewhere. Though just 5 percent of Whittier families live below the poverty level in 1980, over 20 percent of female-headed families fall in this category. In 1980, there were 2,305 female-headed families in Whittier, 12 percent of all Whittier families; 1,381 of these included children under age 18. In 1990, there were 3,303 female-headed households, an increase of 43%, and 2,031 of these had children. Female-headed households are in need of affordable units which are located near schools, day care centers, and recreation services.

- **Farmworkers:** The 1980 Census indicated that 248 Whittier residents were employed in agriculture or a related field. Since Whittier is urbanized, and located in an urban area, these people are likely to work as gardeners or stable hands, or to be the employees of the ornamental business in the area, rather than the migrant farmworkers which state law is concerned about.

CONSTRAINTS

The availability and affordability of housing within the City of Whittier, as with housing availability in any community, is dependent upon a variety of factors which either encourage or constrain housing development. These constraints range from City ordinances to state legislative mandate to market mechanisms. Often, the combination of these constraints

affect the housing market by making it unaffordable to the consumer or uneconomical to produce for developers. The City of Whittier, similar to municipalities throughout the region, suffers from both governmental and market constraints which make a full range of housing opportunities very difficult to achieve.

Governmental Constraints

The City of Whittier has an excellent record of assisting developers to understand City regulations and proceed expeditiously through the development review process. City fees are lower than those for adjacent Los Angeles County areas (see Table 3-18). Permit processing generally takes less than 3 months, although projects requiring extensive environmental review can take twice as long (6 months). Staff meets with all developers who request assistance prior to submittal to explain City requirements and procedures.

TABLE 3-18
PERMIT AND PROCESSING FEES

Application	Filing Fee	Appeal Fee
Zone Change	$1,000	$150
Variance	500	150
Variance Modification	400	150
Minor Variance	250	150
Conditional Use	1,000	150
Conditional Use Permit Modification	500	150
Minor Conditional Use Permit	250	250
Temporary Use Permit	35	25
Hillside Plan	2,000	150
Precise Plan of Development	1,800	150
Development Review (includes DRB where required)		
a. Level A, Planning Director		
1. Signs, siding, roofing, additions under 100 sq. ft., and patios under 300 sq. ft.	25	25
2. Additions and garages under 600 sq.ft.	100	75
3. Const. over 600 sq.ft.	300	200
4. Third and subseq. corr.	25	n.a.
b. Level B, Zoning Administrator	500	300

TABLE 3-18
PERMIT AND PROCESSING FEES

Application	Filing Fee	Appeal Fee
c. Level C, Planning Commission	1,000	500
d. Level C, Optional Standards	1,500	500
e. Preliminary Review Fee	25% of Level B or C	
Order of Abatement of Nonconforming Building,	fee	150
Structure, or Use	fee	n.a
Lot Line Adjustment	n.a.	150
Equestrian Permit	350	
Environment Review (CEQA)	200	
a. Environmental Initial Study		
1. In House		n.a.
2. Consultant	400	n.a.
b. Negative Declaration	Cost plus $200	n.a.
c. Environmental Impact Report	100	n.a.
d. Notice of Exemption	Cost plus $1,000	n.a.
Certificate of Compliance (R-1 zone)	100	n.a.
Certificate of Compliance (Subdivisions)	100	n.a.
Tentative Parcel Map	150	
Tentative Tract Map	$750+ $10/lot	
Historic Designation	1,500+ $10/lot	n.a.
Uptown Specific Plan Development Review	250	
a. Signs, except neon (admin.)		50
b. Awnings, repaints, storefront remodel and neon	25	
signs		50
c. New Construction or major remodel	50	
1. Up to 2000 sq. ft.		200
2. Over 2000 sq. ft.	300	350
3. Modifications	750	75
d. Special Meeting	100	
General Plan Amendment	Fee plus $500	n.a
General Plan Update Fee	3,000	
Amendment of Zoning Regulations	0.02/$100 valuation	150
Administrative Interpretation	3,500	150
Clarification of Ambiguity	n.a.	50
Correspondence	200	n.a
Agenda Fee	100	n.a
	200	

Source: City of Whittier Planning Department, 1991.

The most direct method by which local governments, including the City of Whittier, are able to affect housing availability, particularly for low- and moderate-income families, is through direct housing subsidies. Unfortunately, such programs are inadequately funded at all levels

of government. As an example, the 1980 census recorded 6,859 renter households in the City of Whittier as paying more than 30 percent of income for rent; slightly more than 27 percent of the rental households are overpaying for housing costs. Yet, only 206 Section 8 certificates and housing vouchers are currently assigned to residents in the City of Whittier. The Federal Government has continued to reduce housing subsidies during the last administration and it appears this trend will continue.

The most significant factor limiting the provision of new housing to meet the needs of all residents of the City appears to be the inability of the existing infrastructure to support increased density. The Uptown area of the City of Whittier is quite old and the sewer and water systems were initially developed based upon population projections which have been exceeded. Most of these systems have not been upgraded since they were installed prior to 1940. The infrastructure is sufficient to meet current demand, but will not support additional development without system improvements. This area has experienced redevelopment pressures from private developers who would like to build to higher density, thereby, providing affordable housing. The City of Whittier has adopted a capital improvement plan to upgrade the sewer and water systems. The improvements will allow for increased density within the City which could assist in providing more affordable housing.

On the other hand, following the October, 1987 earthquake, the City Council authorized the preparation of a specific plan for the Uptown area which was hit hard by the 1987 earthquake. One of the findings of that study, embodied in the specific plan, was that the Uptown itself had more commercially designated land than necessary to meet foreseeable market demand. Therefore, the plan recommended changing some land use designations from commercial to multi-family residential. This would permit construction of up to 1,100 additional units to meet the growth needs projected by SCAG, in close proximity to services and shops.

Whittier has 816 units which are deemed substandard but suitable for rehabilitation. The devastation to housing units suffered in the earthquake of October 1987 resulted in an additional 276 units of substandard housing which did not exist prior to the earthquake. Approximately 174 of these are considered suitable for rehabilitation. Following the 1987 earthquake, building inspectors from all over Los Angeles County volunteered their services to assist the City to identify damaged and hazardous buildings. Over 5,000 structures were inspected, including most of the older housing and over half of all units. It is anticipated that a number of the earthquake damaged units will be rehabilitated by the owners for protection of their economic investment in housing units. However, a number of the units will remain in substandard condition in spite of the efforts of the City of Whittier to maintain and improve the housing stock. The reasons for these units to remain substandard would include the following:

- Many households do not have sufficient income to qualify for a home improvement loan or to afford the payments on a renovation loan.

- The availability of home improvement dollars is limited and most financial institutions will fund only house loans which carry the highest probability of repayment.

- The public funding at both the State and Federal levels has been severely reduced and the costs of home improvement to bring all units into habitable condition is well beyond the available subsidies.

Home improvement costs vary from home to home depending upon the type and extent of the improvements. However, it is currently estimated that home improvements costs in the City of Whittier average between $9,000 and $12,000. These estimated costs include total labor and materials necessary to bring the average substandard unit up to Federal Section 8 housing quality standards. Clearly, these costs are well beyond the ability of most households to assume on a cash basis. Consequently, most families interested in improving their housing will seek traditional bank financing and will often encounter difficulties related to the constraints outlined above.

The high costs associated with major home rehabilitation and/or renovation, as well as difficulties in qualifying for financing will greatly limit the number of Whittier households able to improve their residences. In addition, there is not enough money to meet the estimated rehabilitation needs of the entire City of Whittier. The earthquake in October 1987 damaged a number of homes in the City, adding to the number of substandard units. Further exacerbating the problem is the aging character of the housing stock within the City of Whittier. Much of the housing, particularly in the Uptown area was built before 1930. As the housing ages, it will require greater maintenance and, in all likelihood, major repairs to maintain the unit in good condition.

Consequently, assuming that a major portion of these repairs would require below market financing in order for the owner or renter to qualify for the funding, it is substantially more than is currently available to the City. The below-market funding needed to meet all the home improvement work is estimated at between $9 and $10 million. The estimated dollars at below-market interest needed for rehabilitation is based upon the assumption that 50 percent of the units are occupied by residents who would require long-term financing at rates less than conventional financing. Further, the average rehabilitation cost of $10,500 per unit when factored into the equation results in an estimated $9 to $10 million funding need.

The Community Development Block Grant from which most rehabilitation subsidy is derived has been reduced significantly. Limits have been imposed at the Federal and State level on bond financing by municipalities. Funding at both the Federal and State level is not sufficient to provide the needed subsidies. Realizing the severe limitations to funding sources, the Whittier City Council established areas of priority appropriation. The purpose of identifying these target areas was to maximize the use of available funding resources in areas where the need is greatest. Exhibit 3-6 shows the rehabilitation target areas.

Market Constraints

The most significant factor affecting the affordability of housing within the City of Whittier is the disparity between housing cost and household income levels. The median priced home in the City of Whittier is estimated to be around $175,000.

To purchase this home, a family would be required to produce a 10 percent down payment of $17,500 and carry a mortgage of approximately $1,600 monthly. The qualifying income needed would be between $50,000 and $60,000 annually. Significantly, the annual median family income reported for the City of Whittier in 1980 was $19,948. In 1988, it is estimated to be $32,800.

Typically, loan qualification either through traditional lenders or government-sponsored programs is limited to 30 percent or less of gross income as allowable for housing costs. The median income of the City, thus, would allow purchase of a home in the range of $100,000 or less and still require a down payment of approximately $10,000 or more.

A sales analysis provided by the Whittier Area Board of Realtors (includes La Mirada and La Habra) showed a total of 83 homes sold for under $100,000 during the period May through July 1988. This was compared to more than 690 housing units which sold for prices between $100,000 to $200,000 and more than 100 units which sold for more than $300,000 during this same period.

It is noted that the housing units selling for under $100,000 tend to be older units. While these units are more affordable than the new housing within the City, the units usually are much older and smaller. And, though the family may see a savings in the initial cost of the housing, there often are major repairs needed to maintain or upgrade these homes which may produce unexpected added costs to those already fixed by the initial mortgage on the property.

Land suitable for housing development is very limited in the City of Whittier, making land acquisition a very costly component of development. Additionally, construction costs are also very high. The combination of high land acquisition and construction costs make the

new construction prohibitively expensive for the average income household within the City of Whittier. The City of Whittier will permit the location of mobilehomes on single-family lots, so long as they comply with the design character of the area. However, land costs are so high that it is not economical to choose this option and no one has done so to date.

There is a sizeable rental housing stock within the City of Whittier, approximately 33,123 units. However, the rental inventory is best suited for small families and, thus, is limiting for larger households residing in the City. There is very little vacant land available and the built-out character of the City and limited high density zoning makes it unlikely that greater numbers of rental housing will be built.

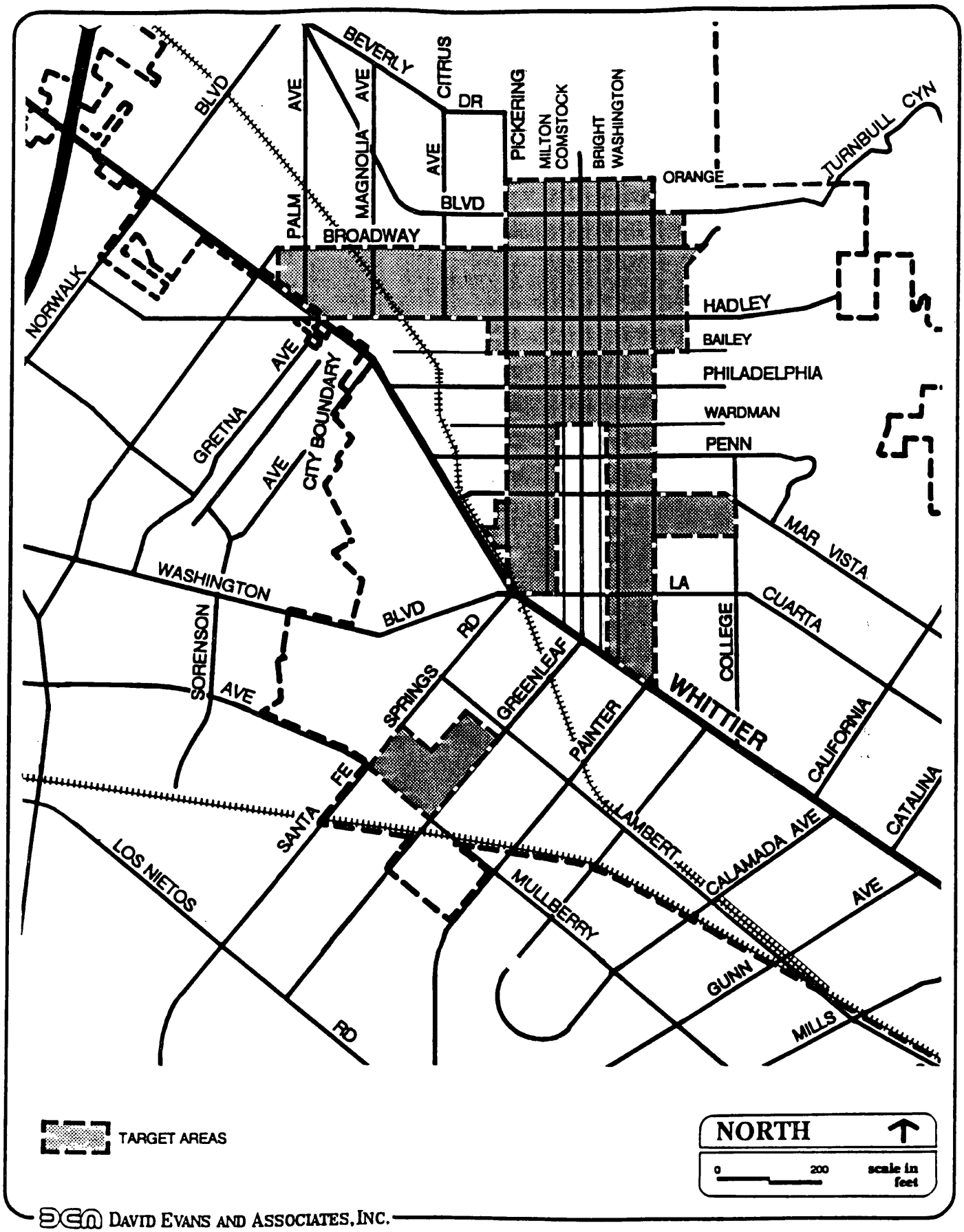
The cost for rental housing must also be explored to determine if there is a rent-to-income constraint for any income level. The Federal guidelines limit housing cost to 30 percent or less of gross income. A family at the very low income level (50 percent of median) would be able to afford maximum monthly rents of $445. A family at the low income level (80 percent of median) would be able to afford maximum monthly rents of $730.

According to information provided by the Fair Housing Council, a total of 491 units were recorded as available for rent during the period June 1988 through August 1988. The vast majority of the units, greater than 90 percent, rented for $475 or more per month. There were only 51 units reported or 10 percent of the total units which were available for rent at less than $400 per month. Fewer than 37 units, or 8 percent of the total units were available at rents less than $300 per month. The majority of the units for rent at less than $400 per month were just rooms, as in a boarding home, or single room units in a complex. Significantly, there were no units larger than a one-bedroom renting at levels affordable to the low- and very low-income households. Alternatively, there are reasonable economic choices for rental housing available to moderate income households and for those generally able to afford market rate housing.

The combined effects of the governmental and market constraints is to place a serious limitation on the provision of housing affordable to residents of the City of Whittier at all income levels. Compounding the problem is the fact that most of the constraints previously discussed are not within the control of the City to address or resolve. And, those constraints which may be within the City's administrative jurisdiction, are often beyond the City's financial ability to resolve.

Land Inventory

The production of housing through new construction as a means of meeting the range of housing needs within the City is greatly circumscribed by the scarcity of vacant land on which to develop. Also affecting the development of vacant land is the general plan and



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City of Whittier
GENERAL PLAN

EXHIBIT 3-6
REHABILITATION PROGRAM TARGET AREAS

zone designations throughout the City. Much of the City is zoned for low to medium density and, since the current infrastructure will not function at greater capacity, these zone designations will change only when infrastructure deficiencies are corrected.

When all vacant parcels are pooled and collectively analyzed, it appears on the surface that there is vacant land available for development which would significantly assist the City's efforts to address the housing production needs of this community. However, many of these parcels are not available for development because of multiple ownership or poor lot configuration, and it would be unsound to attempt development. Some of the limitations to these parcels may at some time be overcome. However, for the most part many of these parcels will not soon be available and for others, development will never be possible.

Most of the vacant land which remains available in Whittier is in the form of smaller, scattered sites. And, when the lots are larger with some excess land which could be used for development, such lots are generally restricted under current zoning and not available for subdivision. Also, some parcels are landlocked, substandard in size, or for various other reasons not suitable for development.

The hillside areas, much of which is vacant, is environmentally sensitive and development in these areas is difficult and often impossible. When development is allowed in the hillside areas, zoning restrictions are at the lowest density which makes the majority of such areas prohibitively expensive for the development of affordable housing. The Hillside Residential (H-R) Zone in the Whittier Zoning Ordinance requires the preparation of a development plan for hillside areas. It limits development density by the percent of slope and minimizes the required grading to maintain the natural terrain. Other standards for the H-R zone do not make these areas suitable for affordable housing projects.

It is estimated that the hillside areas potentially may develop as many as 300 dwelling units. The cost involved in the hillside development means that these units will only meet a small percentage of the housing production need at the high income level.

A survey of vacant parcels within the City of Whittier was conducted for purposes of identifying those parcels suitable for development, data required for updating the housing element. The survey developed an inventory of approximately 60 acres as realistically available for development. Significantly, all the vacant parcels identified are currently under construction or the application process for development has been initiated. The acreage and estimated number of dwelling units to be derived from the vacant parcels is summarized in Table 3-19.

TABLE 3-19
POTENTIAL HOUSING PRODUCTION O[illegible]CANT SITES

General Location	Zoning District	Acreage	Estimated # of Units	Current Status
1. Painter Avenue/Oval Drive	R-L	6.58	60	Complete
2. Murphy Hill Condos	R-H	8.7	126	Complete
3. Worsham Canyon Planned Dev.	R-L (8,200)	13.5	64	Denied
4. Lowell School Site SFD	R-L/R-MH	9.2	70	Under Construction
5. Lowell School Maintenance SFD	R-M (PD)	4.5	35	Final Map Approved
6. Beverly Hills Estates	H-R	17.07	15	Approved
TOTAL		59.55	355	

Source: City of Whittier Planning Department, 1989.

Projections for the City of Whittier are that an additional 1,589 housing units will be needed to meet the community's needs during the effective period of this housing element. In order to produce this number of new dwelling units, approximately 150 acres of vacant or redevelopable land would be required at 10 units per acre and approximately 106 acres if development was permitted at 15 units per acre.

It is obvious that the City's housing production will not approach these numbers with only 42 acres available for development, even should extensive redevelopment to higher densities occur. As summarized above, the parcels are already at some stage in the development process. Further compounding the problem of new housing production is the built-out character of the City of Whittier. The only method by which much land may be generated is through land recycling. It is expected that recycling will be pursued as a means for housing production. However, it is unlikely that large parcels of land will be available since land assembly and lot consolidation, necessary in order to amass large parcels in developed areas, is a lengthy process, as well as laborious and expensive. The City nonetheless encourages recycling of land where feasible and appropriate.

The City of Whittier's guide in the recycling process is the Land Use Element of the General Plan. The Land Use Element estimates a maximum number of dwelling units at 35,661. This is based on the maximum number of dwelling units that can be built within the land use categories, using the allowable densities. This represents an increase to the inventory level which was in use prior to the update of the Land Use Element. The distribution of land uses is summarized in Table 3-20. The potential addition to the housing inventory, based upon the revised figures of the Land Use Element, exceeds/falls short of net housing production needs. The housing supply would, therefore, be sufficient to meet housing production needs using the Land Use Element land supply allocations and residential density designations.

There are several acres of former railroad right-of-way areas which are under private ownership and may be available as a resource for housing development. These areas are vacant but have development limitations in size, shape, configuration, and access, as well as generally being held under multiple ownership, further compounding development potential. If these limitations can be overcome, the property would greatly enhance the housing production capabilities in the City.

TABLE 3-20
WHITTIER DEVELOPMENT CAPACITY

Land Use Category	Acreage	Theoretical Unit Capacity	Existing * Units
Residential			
Hillside	314.27	628	
Low Density	3,785.81	22,715	19,968
Medium Density	225.27	3,379	2,050
Medium High Density	65.90	1,648	6,740
High Density	184.34	6,452	
Urban Design District	(296.74)	742**	
Total	4,575.65	35,564	28,758

* 1990 U.S. Census
** assumes 10 percent of Urban Design District is developed as residential at 25 du/ac.

ENERGY CONSERVATION

Section 65583(a)(7) states that a housing element must include the following:

- Analysis of opportunities for energy conservation with respect to new development.

During the course of reviewing proposed residential projects, alternative ways of promoting energy conservation will be considered as part of the EIR process. Feasible opportunities for energy conservation in new developments will thereafter be presented to the Planning Commission and City Council. Energy conservation opportunities are also evaluated and achieved in the City's housing rehabilitation programs. Costs associated with insulation and weatherization are eligible for funding under the City's housing rehabilitation program. Moreover, the City has adopted the 1988 version of the Uniform Building Code which includes standards to promote energy conservation in new development.

SECTION 4: TRANSPORTATION ELEMENT BACKGROUND REPORT

INTRODUCTION

This report describes the existing transportation system and traffic conditions in the City of Whittier. The existing roadway system is first discussed, followed by a summary of recent traffic volume counts and existing levels of service on arterial links and at key intersections. The highway circulation plan contained in the City's current General Plan Circulation Element is then presented, followed by discussions on transit routes and the bikeway system.

EXISTING ROADWAYS

The existing roadway system in the City of Whittier is illustrated in Exhibit 4-1. The number of midblock travel lanes on individual roadway segments is represented on the diagram by the band width of each arterial facility. As the diagram illustrates, the arterial system is composed of several grid systems which merge at the intersection of Whittier Boulevard, Pickering Avenue, Washington Boulevard and Santa Fe Springs Road. This is the most complex intersection in the City due to the convergence of four arterials and a Union Pacific Railroad bridge that passes over the intersection's northeast corner.

Both the Union Pacific and Southern Pacific Railroads pass through the City. Grade separated crossings of the local street system occur at Norwalk Boulevard and at the five-way intersection noted above.

Regional access to the City is provided by the San Gabriel River Freeway (I-605) which is the major north-south route for inter-regional traffic. The freeway has four travel lanes in each direction and interchanges at Whittier, Washington, and Beverly Boulevards. The I-605 Freeway also provides direct links with major east-west freeways in the region. Other freeways near Whittier include the Santa Ana Freeway (I-5) on the south, and the Pomona (SR-60) and San Bernardino (I-10) Freeways on the north.

The existing roadway system serving the City is comprised of the following streets:

Arterial Streets: East-West Routes

- *Beverly Boulevard* is a four-lane minor arterial west of Pickering Avenue and becomes a two-lane major arterial east of Pickering Avenue to Painter Avenue. Beverly Boulevard then becomes Turnbull Canyon Road which provides access over the Puente Hills to Hacienda Heights and the City of Industry.

- *Lambert Road* is a four-lane minor arterial beginning at Washington Boulevard and running approximately parallel to the railroad tracks on the southeast section of the City. It extends east into the City of La Habra and continues further as a six-lane major arterial into Orange County.

- *Leffingwell Road* is a four-lane minor arterial west of Lambert Road, and becomes a secondary street east of Lambert Road.

- *Mines Boulevard* is a four-lane minor arterial extending from Sorenson Avenue, west to the City of Pico Rivera.

- *Slauson Avenue/Mulberry Drive* is a four-lane minor arterial and ends at Scott Avenue.

- *Washington Boulevard* has four lanes along its length and runs from Los Angeles and ending at its intersection with Whittier Boulevard and Santa Fe Springs Road in Whittier.

- *Whittier Boulevard* is a four-lane state highway (SR-72) that begins in North Orange County and terminates near downtown Los Angeles.

Minor Arterials: North-South Routes

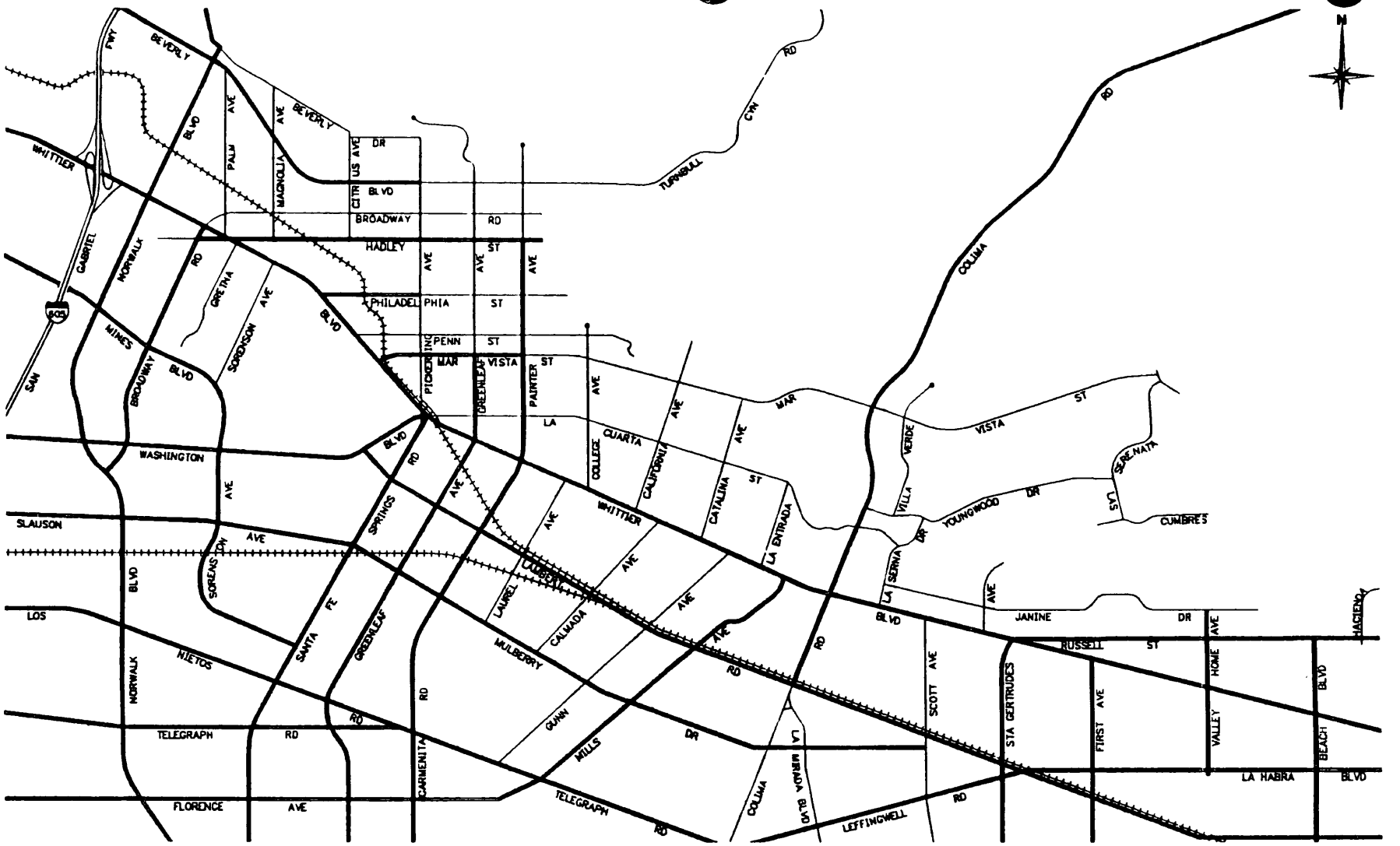
- *Colima Road (County Highway N-8)* is a four-lane minor arterial in the City and crosses over the Puente Hills to Rowland Heights in the north. South of Whittier, Colima Road continues as a secondary street.

- *La Mirada Boulevard* is a two-lane extension of County Highway N-8, south of Lambert Road.

- *Norwalk Boulevard* is a four-lane minor arterial beginning at Beverly Boulevard and running south until Slauson Avenue, where it continues southward as a secondary street.

- *Painter Avenue* is a four-lane minor arterial south of Hadley Street and becomes a two-lane minor arterial from Hadley Street north to Beverly Boulevard. Its northerly extension from Beverly Boulevard serves as a collector street.

- *Santa Fe Springs Road* has four lanes along its entire length where it ends at its intersection with Whittier and Washington Boulevards.



City of Whittier

GENERAL PLAN

SOURCE: Austin-Foust Associates, Inc.

LEGEND

4 Lanes

2 Lanes

Note: Not all collector streets shown

DAVID EVANS AND ASSOCIATES, INC.

EXHIBIT 4-1
EXISTING ROADWAY SYSTEM

- *Sorenson Avenue* is a four-lane minor arterial running from Mines Boulevard south to Santa Fe Springs Road.

- *Workman Mill Road* is a four-lane minor arterial beginning at Beverly Boulevard and extends north past the Pomona Freeway (I-60).

Secondary Streets: East-West Routes

- *Hadley Street* is a four-lane secondary street from Broadway to Painter Avenue, then it becomes a two-lane local street until its easterly terminus.

- *Leffingwell Road* is a four-lane secondary street east of Lambert Road until Valley Home Avenue.

- *Mar Vista Street* is a four-lane secondary street from Whittier Boulevard to Painter Avenue. It becomes a two-lane collector street east of Painter Avenue.

- *Philadelphia Street* is a four-lane secondary street from Whittier Boulevard to Pickering Street. Then, it narrows into two lanes east of Pickering and into Whittier College.

- *Russell Street* is a secondary street beginning at Whittier Boulevard, near Santa Gertrudes Avenue, and extending east into the City of La Habra.

Secondary Streets: North-South Routes

- *Colima Road* is a two-lane secondary street south of Lambert Road and the City limits.

- *College Avenue* is a two-lane secondary street from Whittier Boulevard to Penn Street with a terminus north of Penn Street.

- *Broadway* is a four-lane secondary street from Norwalk Boulevard and extends northeast to Whittier Boulevard. From here, it bends east as a two-lane collector street until Painter Avenue.

- *First Avenue* is a four-lane secondary street, extending south from Whittier Boulevard.

- *Greenleaf Avenue* is a four-lane secondary street south of Mar Vista Street and narrows to two lanes north of Mar Vista Street.

- *Gunn Avenue* is a two-lane secondary street from Telegraph Road to Whittier Boulevard.

- *Laurel Avenue* is a two-lane secondary street from Mulberry Drive to Whittier Boulevard.

- *Magnolia Avenue* is a two-lane secondary street from Whittier Boulevard to Beverly Boulevard.

- *Mills Avenue* is a four-lane secondary street from Whittier Boulevard and extending south to Telegraph Road where it becomes Florence Avenue.

- *Pickering Avenue* is a two-lane secondary street from Whittier Boulevard to Beverly Drive.

- *Santa Gertrudes Avenue* is a four-lane secondary street beginning at Whittier Boulevard and extending south in the City of La Mirada.

- *Scott Avenue* is a two-lane secondary street from Whittier Boulevard and extending south to Lemon Drive.

- *Sorenson Avenue* is a two-lane secondary street from Mines Boulevard and to Hadley Street where it extends north as Magnolia Avenue.

The remaining roadways in the City are collector and local streets, providing one travel lane in each direction.

ROADWAY IMPROVEMENTS

Plans for intersection and street improvements at the following locations have been recently completed or are underway:

Mar Vista Street - Mar Vista Street currently provides only two travel lanes from Whittier Boulevard to Whittier Avenue. This will be widened to four lanes.

Whittier Boulevard and Mar Vista Street - A new traffic signal will be installed at Mar Vista Avenue and Whittier Boulevard.

Painter Avenue at Mar Vista Street - At the intersection of Painter Avenue and Mar Vista Street, the existing signal phasing will be modified to provide protected left turns in the northbound and southbound directions.

Painter Avenue at Lambert Road - At this intersection, the existing signal phasing will also be modified to provide protected left turns in the northbound and southbound directions.

Colima Road at Whittier Boulevard - Colima Road will be widened at its southbound approach and a second eastbound left turn lane will be provided.

CONGESTION MANAGEMENT PLAN

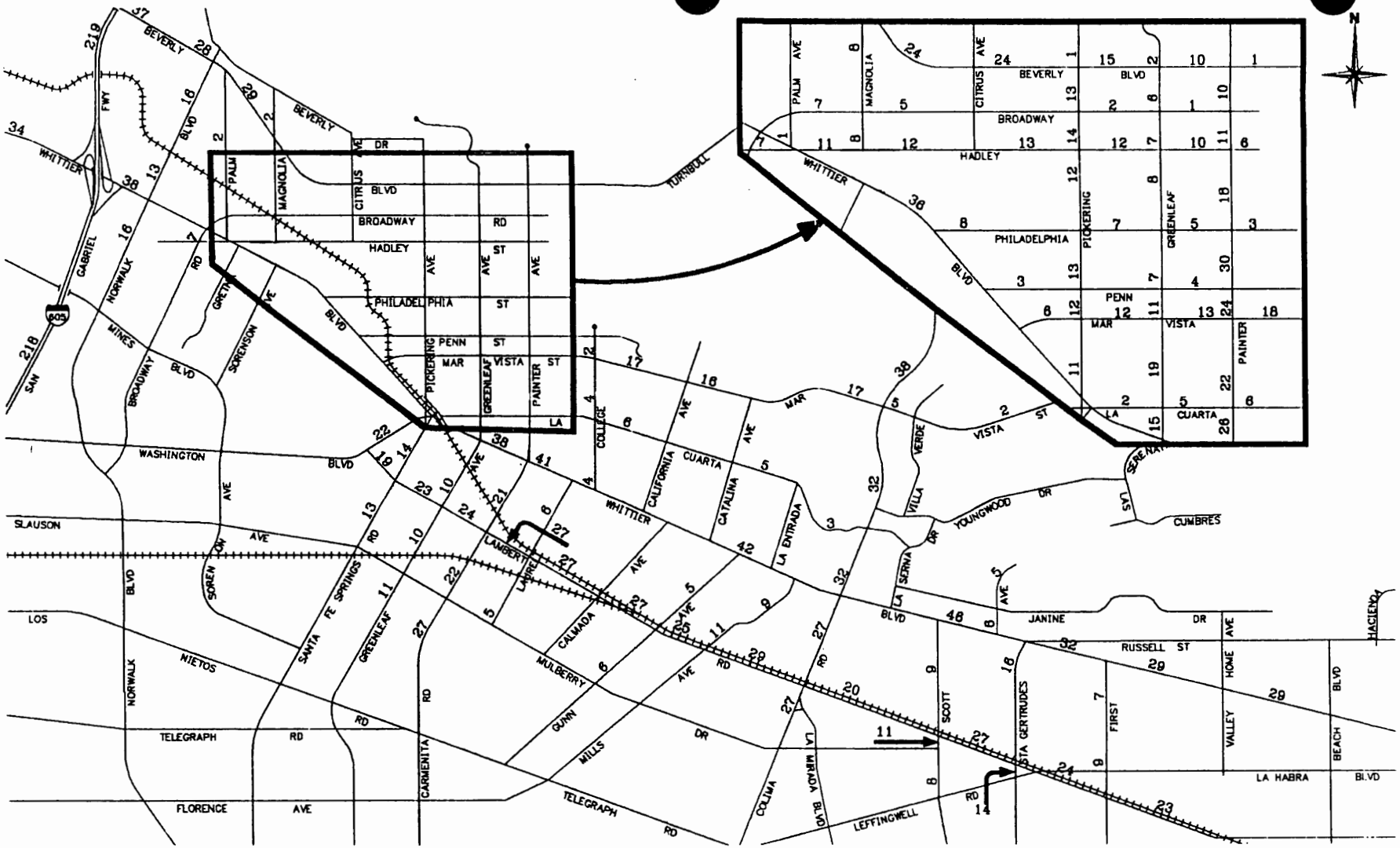
Recent state legislation requires the preparation of a Congestion Management Plan (CMP) for Los Angeles County. The CMP is intended to make cities responsible for the regional traffic impacts of their land use decisions. Compliance with the standards outlined in the CMP will allow cities to continue receiving gas tax monies from the State. The CMP has been completed by the Los Angeles County Transportation Commission (LACTC). LACTC has included Whittier Boulevard (State Highway 72) as part of the county's proposed CMP Roadway Network. Inclusion of this roadway in the CMP network will keep levels of service at E or better on this roadway, along with other standards that have to be met. No other streets in the City of Whittier are included in the CMP system.

CURRENT TRAFFIC VOLUMES AND LEVELS OF SERVICE

Average daily traffic (ADT) volumes reflect the traffic volume on a particular segment of roadway during a 24-hour period on the City's circulation system and are listed in Table 4-1 and shown in Exhibit 4-2. These volumes are based on recent counts taken by the City of Whittier. Existing volumes on the San Gabriel Freeway (I-605) were taken from counts performed by the California State Department of Transportation (Caltrans) in 1990. The heaviest volumes on the arterial system occur along Whittier Boulevard, where volumes range from 29,000 vehicles per day (vpd) east of First Street to 46,000 vpd between Santa Gertrudes and Scott Avenues.

TABLE 4-1
AVERAGE DAILY TRAFFIC AND LEVELS OF SERVICE

Road Segment	No. of Lanes/Type*	Capacity	Existing ADT	V/C	LOS
Beverly Boulevard					
west of Pioneer	4/M	40000	37000	0.93	E
west of Norwalk	4/M	40000	28000	0.70	B
west of Magnolia	4/M	40000	29000	0.73	C
east of Magnolia	4/M	40000	24000	0.60	A
east of Citrus	4/M	40000	24000	0.60	A
east of Pickering	2/M	20000	15000	0.75	C
east of Greenleaf	2/M	20000	10000	0.60	A
east of Painter	2/L	10000	1000	0.10	A
Broadway Avenue					
south of Whittier Blvd	4/S	30000	7000	0.23	A
west of Magnolia	2/C	15000	7000	0.47	A
west of Citrus	2/C	15000	5000	0.33	A
west of Greenleaf	2/C	15000	2000	0.13	A
west of Painter	2/C	15000	1000	0.07	A
Hadley Street					
west of Whittier Blvd	4/S	30000	7000	0.23	A
east of Whittier Blvd	4/S	30000	11000	0.37	A
east of Magnolia	4/S	30000	12000	0.40	A
west of Pickering	4/S	30000	13000	0.43	A
west of Greenleaf	4/S	30000	12000	0.40	A
west of Painter	4/S	30000	10000	0.33	A
east of Painter	4/S	30000	6000	0.20	A
Philadelphia Avenue					
east of Whittier Blvd	4/S	30000	8000	0.27	A
east of Pickering	2/S	15000	7000	0.47	A
east of Greenleaf	2/S	15000	5000	0.33	A
east of Painter	2/L	10000	3000	0.30	A
Penn Street					
east of Whittier Blvd	2/C	15000	3000	0.20	A
west of Painter	2/C	15000	4000	0.27	A



City of Whittier

GENERAL PLAN

SOURCE: Austin-Foust Associates, Inc.

Source: City of Whittier Traffic counts, 1989–1991, and Caltrans counts, 1990.

NOTE: Numbers are in thousands.

DAVID EVANS AND ASSOCIATES, INC.

EXHIBIT 4-2
EXISTING ADT VOLUMES (000's)

TABLE 4-1
AVERAGE DAILY TRAFFIC AND LEVELS OF SERVICE

Road Segment	No. of Lanes/Type*	Capacity	Existing ADT	V/C	LOS
Mar Vista Avenue					
east of Whittier Blvd	4/S	30000	6000	0.20	A
east of Pickering	4/S	30000	12000	0.40	A
east of Greenleaf	4/S	30000	13000	0.43	A
east of Painter	2/C	15000	18000	1.20	F
east of College	2/C	15000	17000	1.13	F
east of California	2/C	15000	16000	1.07	F
east of Catalina	2/C	15000	17000	1.13	F
east of Colima	2/C	15000	5000	0.33	A
east of Villa Verde	2/C	15000	2000	0.13	A
Washington Boulevard					
west of Whittier Blvd	4/M	40000	22000	0.55	A
La Cuarta Street					
east of Whittier Blvd	2/C	15000	2000	0.13	A
east of Painter	2/C	15000	6000	0.40	A
west of Painter	2/C	15000	5000	0.33	A
east of College	2/C	15000	6000	0.40	A
east of Catalina	2/C	15000	5000	0.33	A
east of La Entrada	2/C	15000	3000	0.22	A
Whittier Boulevard					
west of SR-605	4/M	40000	34000	0.85	D
east of SR-605	4/M	40000	38000	0.95	E
east of Norwalk	4/M	40000	36000	0.90	D
east of Five Points	4/M	40000	38000	0.95	E
east of Painter	4/M	40000	41000	1.03	F
east of Mills	4/M	40000	42000	1.05	F
east of Colima	4/M	40000	46000	1.15	F
east of Santa Gertrude	4/M	40000	32000	0.80	C
west of Valley Home	4/M	40000	29000	0.73	C
east of Valley Home	4/M	40000	29000	0.73	C

TABLE 4-1
AVERAGE DAILY TRAFFIC AND LEVELS OF SERVICE

Road Segment	No. of Lanes/Type*	Capacity	Existing ADT	V/C	LOS
Lambert Road					
east of Washington	4/S	30000	19000	0.63	B
east of Santa Fe Springs	4/S	30000	23000	0.77	C
east of Greenleaf	4/S	30000	24000	0.80	C
east of Painter	4/S	30000	27000	0.90	D
east of Laurel	4/S	30000	27000	0.90	D
east of Calmada	4/S	30000	27000	0.90	D
east of Gunn	4/S	30000	25000	0.83	D
east of Mills	4/S	30000	29000	0.97	E
east of Colima	4/S	30000	20000	0.67	B
east of Scott	4/M	40000	27000	0.68	B
east of Santa Gertrude	4/M	40000	24000	0.60	A
east of First	4/M	40000	23000	0.58	A
Norwalk Boulevard					
south of Whittier Blvd	4/M	40000	16000	0.40	A
north of Whittier Blvd	4/M	40000	13000	0.33	A
south of Beverly Blvd	4/M	40000	16000	0.40	A
Palm Avenue					
north of Whittier Blvd	2/C	15000	1000	0.07	A
south of Beverly Blvd	2/C	15000	2000	0.13	A
Magnolia Avenue					
north of Hadley	2/S	15000	8000	0.53	A
north of Broadway	2/S	15000	8000	0.53	A
north of Beverly	2/L	15000	2000	0.20	A
Santa Fe Springs Road					
north of Mulberry	4/M	40000	13000	0.33	A
north of Lambert	4/M	40000	14000	0.35	A
Pickering Road					
north of Whittier Blvd	2/S	15000	11000	0.73	C
north of Mar Vista	2/S	15000	12000	0.80	C
north of Penn	2/S	15000	13000	0.87	D
north of Philadelphia	2/S	15000	12000	0.80	C
north of Hadley	2/S	15000	14000	0.93	E
north of Broadway	2/S	15000	13000	0.87	D
north of Beverly	2/C	15000	1000	0.07	A

TABLE 4-1
AVERAGE DAILY TRAFFIC AND LEVELS OF SERVICE

Road Segment	No. of Lanes/Type*	Capacity	Existing ADT	V/C	LOS
Greenleaf Avenue					
south of Mulberry	4/S	30000	11000	0.37	A
north of Mulberry	4/S	30000	10000	0.33	A
north of Lambert	4/S	30000	10000	0.33	A
north of Whittier Blvd	4/S	30000	15000	0.50	A
north of La Cuarta	4/S	30000	19000	0.63	B
north of Mar Vista	2/S	15000	11000	0.73	C
north of Penn	2/S	15000	7000	0.47	A
north of Philadelphia	2/S	15000	8000	0.53	A
north of Hadley	2/S	15000	7000	0.47	A
north of Broadway	2/S	15000	6000	0.40	A
north of Beverly	2/S	15000	2000	0.13	A
Painter Avenue					
south of Mulberry	4/M	40000	27000	0.68	B
north of Mulberry	4/M	40000	22000	0.55	A
north of Lambert	4/M	40000	21000	0.53	A
north of Whittier Blvd	4/M	40000	26000	0.65	B
north of La Cuarta	4/M	40000	22000	0.55	A
north of Mar Vista	4/M	40000	24000	0.60	A
north of Penn	4/M	40000	30000	0.75	C
north of Philedelphia	4/M	40000	18000	0.45	A
north of Hadley	2/M	20000	11000	0.55	A
north of Broadway	2/M	20000	10000	0.50	A
Laurel Street					
south of Lambert	2/S	15000	5000	0.33	A
south of Whittier Blvd	2/S	15000	6000	0.40	A
College Road					
north of Whittier Blvd	2/S	15000	4000	0.27	A
north of La Cuarta	2/S	15000	4000	0.27	A
north of Mar Vista	2/S	15000	2000	0.13	A
Gunn Avenue					
south of Lambert	2/S	15000	6000	0.40	A
south of Whittier Blvd	2/S	15000	5000	0.33	A
Mills Avenue					
north of Lambert	4/S	30000	11000	0.37	A
south of Whittier Blvd	4/S	30000	9000	0.30	A

TABLE 4-1
AVERAGE DAILY TRAFFIC AND LEVELS OF SERVICE

Road Segment	No. of Lanes/Type*	Capacity	Existing ADT	V/C	LOS
Colima Road					
south of Lambert	4/M	27000	27000	0.68	B
south of Whittier Blvd	4/M	27000	27000	0.68	B
north of Whittier Blvd	4/M	32000	32000	0.80	C
south of Mar Vista	4/M	32000	32000	0.80	C
north of Mar Vista	4/M	38000	38000	0.95	E
Scott Avenue					
south of Mulberry	2/S	15000	8000	0.53	A
south of Lambert	2/S	15000	11000	0.73	C
south of Whittier Blvd	2/S	15000	9000	0.60	A
Santa Gertrudes Avenue					
north of Leffingwell	4/S	30000	14000	0.47	A
south of Whittier Blvd	4/S	30000	16000	0.53	A
north of Whittier Blvd	2/C	15000	6000	0.40	A
north of Janine	2/L	10000	5000	0.50	A
First Avenue					
north of Leffingwell	4/S	30000	9000	0.30	A
south of Whittier Blvd	4/S	30000	7000	0.23	A

ADT - average daily traffic
V/C - volume to capacity ratio
LOS - Level of Service
Source: Austin-Foust Associates, 1991.

*TYPE 4M = 4 Lane Major/Minor
2M = 2 Lane Major/Minor
4S = 4 Lane Secondary
2S - 2 Lane Secondary
2C = 2 Lane Collector
2L = 2 Lane Local

Levels of Service (LOS) were estimated based on volume-to-capacity (V/C) ratios as provided in Table 4-2.

TABLE 4-2
ROAD CAPACITY VALUES (MAXIMUM ADT)

Type of Roadway	LOS A	LOS B	LOS C	LOS D	LOS E
4-lane Major-Augmented	27,000	31,500	36,000	40,500	45,000
4-lane Major	24,000	28,000	32,000	36,000	40,000
2-lane Major-Augmented	15,000	17,500	20,000	22,500	25,000
2-lane Major	12,000	14,000	16,000	18,000	20,000

TABLE 4-2
ROAD CAPACITY VALUES (MAXIMUM ADT)

Type of Roadway	LOS A	LOS B	LOS C	LOS D	LOS E
4-lane Secondary-Augmented	21,000	24,500	28,000	31,500	35,000
4-lane Secondary	18,000	21,000	24,000	27,000	30,000
2-lane Secondary-Augmented	12,000	14,000	16,000	18,000	20,000
2-lane Secondary	9,000	10,500	12,000	13,500	15,000
2-lane Collector	9,000	10,500	12,000	13,500	15,000
2-lane Local	6,000	7,000	8,000	9,000	10,000

Note: Augmented roadways contain additional intersection lanes and, therefore, have higher capacities.

Source: Austin-Foust Associates, Inc., 1991.

Existing AM and PM peak hour turn movement volumes for eleven major intersections throughout the City were collected by Traffic Data Services (TDS) in May 1991. Counts were collected from 7:00 to 9:00 AM and from 4:00 to 6:00 PM. The data presented here represents the maximum one-hour total volume within the two-hour peak periods.

Existing intersection levels of service are calculated using the peak hour counts in combination with the geometric lane configuration of each intersection location. The technique used to assess the operation of an intersection is known as intersection capacity utilization (ICU). A level of service (LOS) scale is used to evaluate intersection performance based on ICU values. The levels of service range from "A" to "F", with LOS "A" representing free flow conditions and LOS "F" representing severe traffic congestion. A detailed description of traffic flow qualities characteristic of the different levels of service and corresponding ICU ranges is summarized in Table 4-3 and illustrated in Exhibit 4-3. Every jurisdiction establishes its own criteria for acceptable congestion levels, and a value of 0.85 (mid-range) is typically used as the maximum acceptable ICU value for an urban community in Los Angeles County.

TABLE 4-3
PEAK HOUR LEVEL OF SERVICE DESCRIPTIONS

Level of Service	Traffic Flow Quality	ICU Value
A	Low volumes; high speeds; speed not restricted by other vehicles; all signal cycles clear with no vehicles waiting through more than one signal cycle.	.00 - .60

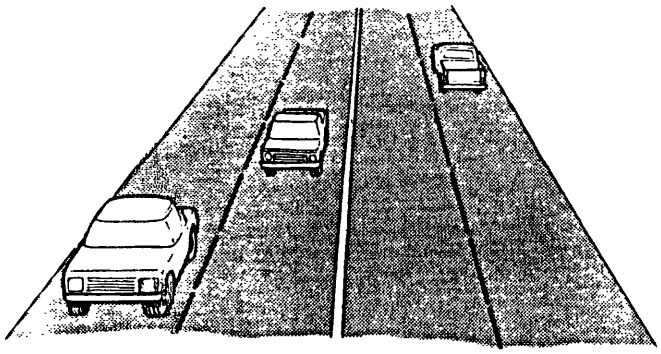
TABLE 4-3
PEAK HOUR LEVEL OF SERVICE DESCRIPTIONS

Level of Service	Traffic Flow Quality	ICU Value
B	Operating speeds beginning to be affected by other traffic; between one and 10 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.	.61 - .70
C	Operating speeds and maneuverability closely controlled by other traffic; between 11 and 30 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods; recommended ideal design standards.	.71 - .80
D	Tolerable operating speeds; 31 to 70 percent of the signal cycle have one or more vehicles which wait through more than one signal cycle during peak traffic periods; often used as design standard in urban areas.	.81 - .90
E	Capacity; the maximum traffic volume an intersection can accommodate; restricted speeds; 71 to 100 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.	.91 - 1.00
F	Long queues of traffic; unstable flow; stoppages of long duration; traffic volume and traffic speed can drop to zero; traffic volume will be less than the volume which occurs at Level of Service "E".	Above 1.00

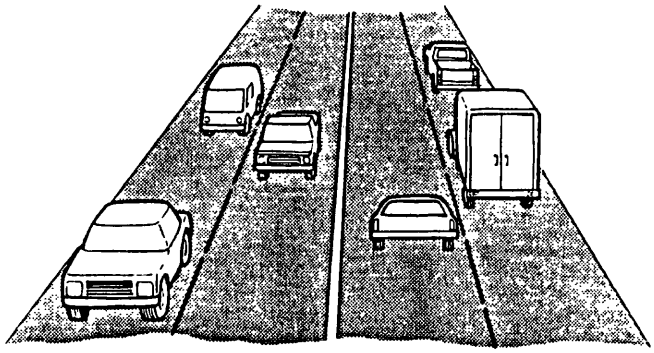
Source: Highway Capacity Manual, Highway Research Board Special Report 87, National Academy of Sciences, Washington D.C., 1965, Page 320.

The study intersections are shown in Exhibit 4-4 and the existing ICU values are listed in Table 4-4 with the date on which each intersection count was performed. These are based on the existing lane configurations illustrated in Exhibits 4-5 and 4-6 (the latter shows the configuration of the intersection of Whittier Boulevard, Pickering Avenue, Washington Boulevard and Santa Fe Springs Road.) As the summaries indicate, a number of intersections show ICU values greater than 0.85, indicating that on the day of the count, the maximum acceptable ICU value was exceeded.

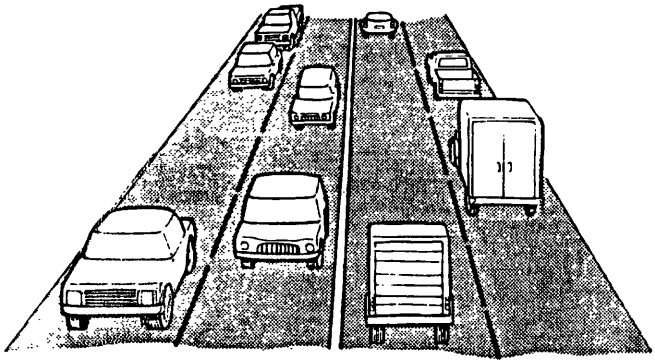
The majority of the study intersections are operating at LOS D or worse. The intersections of Mar Vista Street/Colima Road and Whittier Boulevard/Norwalk Boulevard are operating at LOS F during the morning peak hours. Colima Road/Lambert Road intersection is operating at LOS F during the afternoon peak hours. These streets carry traffic from Whittier, as well as neighboring communities.



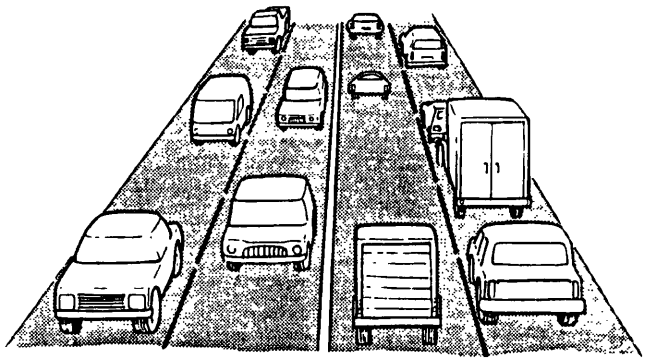
Level of Service A
Free flow in which there is little or no restriction on speed or maneuverability.



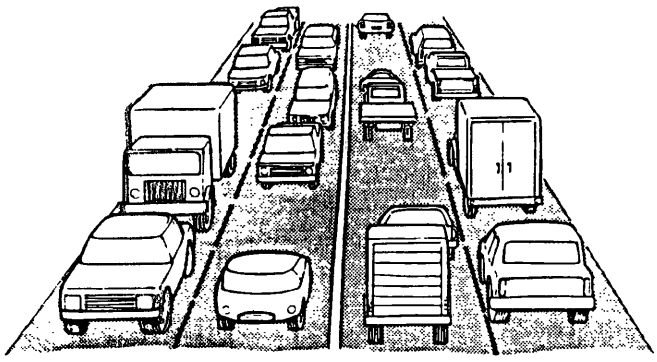
Level of Service B
Stable flow though operating speed is beginning to be restricted by other traffic.



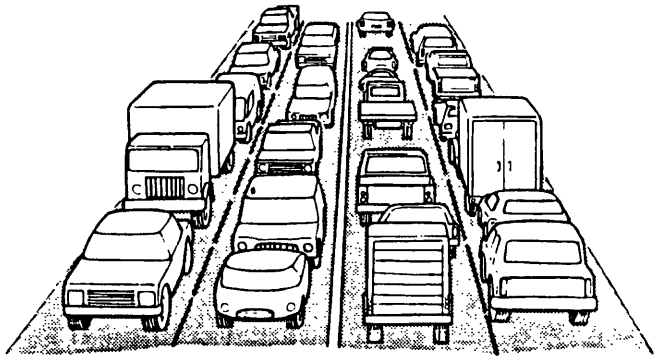
Level of Service C
Stable flow though drivers are becoming restricted in their freedom to select speed, change lanes or pass.



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



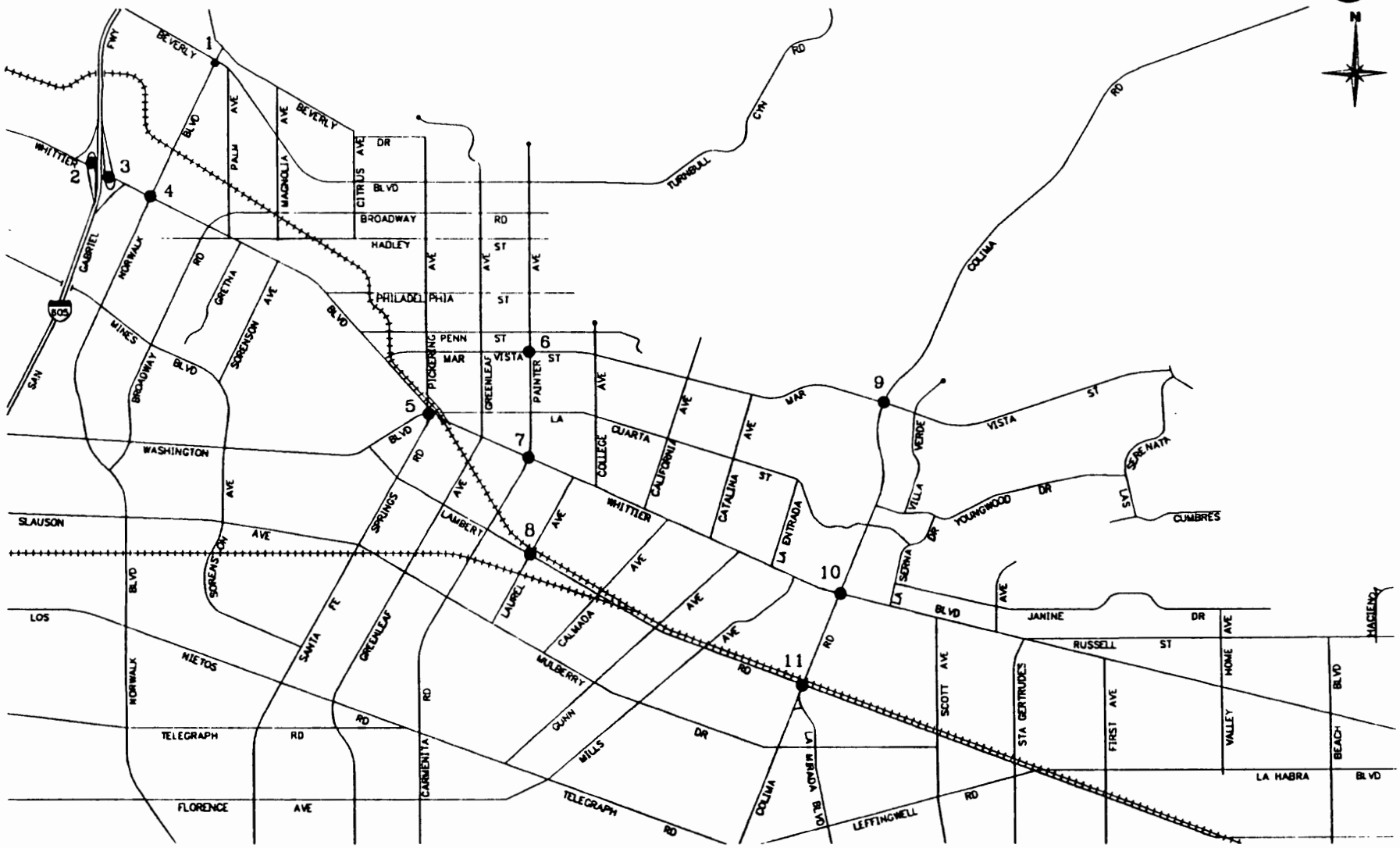
Level of Service E
Speeds and flow rates fluctuate and there is little independence on speed selection or ability to maneuver.



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

DAVID EVANS AND ASSOCIATES, INC.

EXHIBIT 4-3
LEVELS OF SERVICE



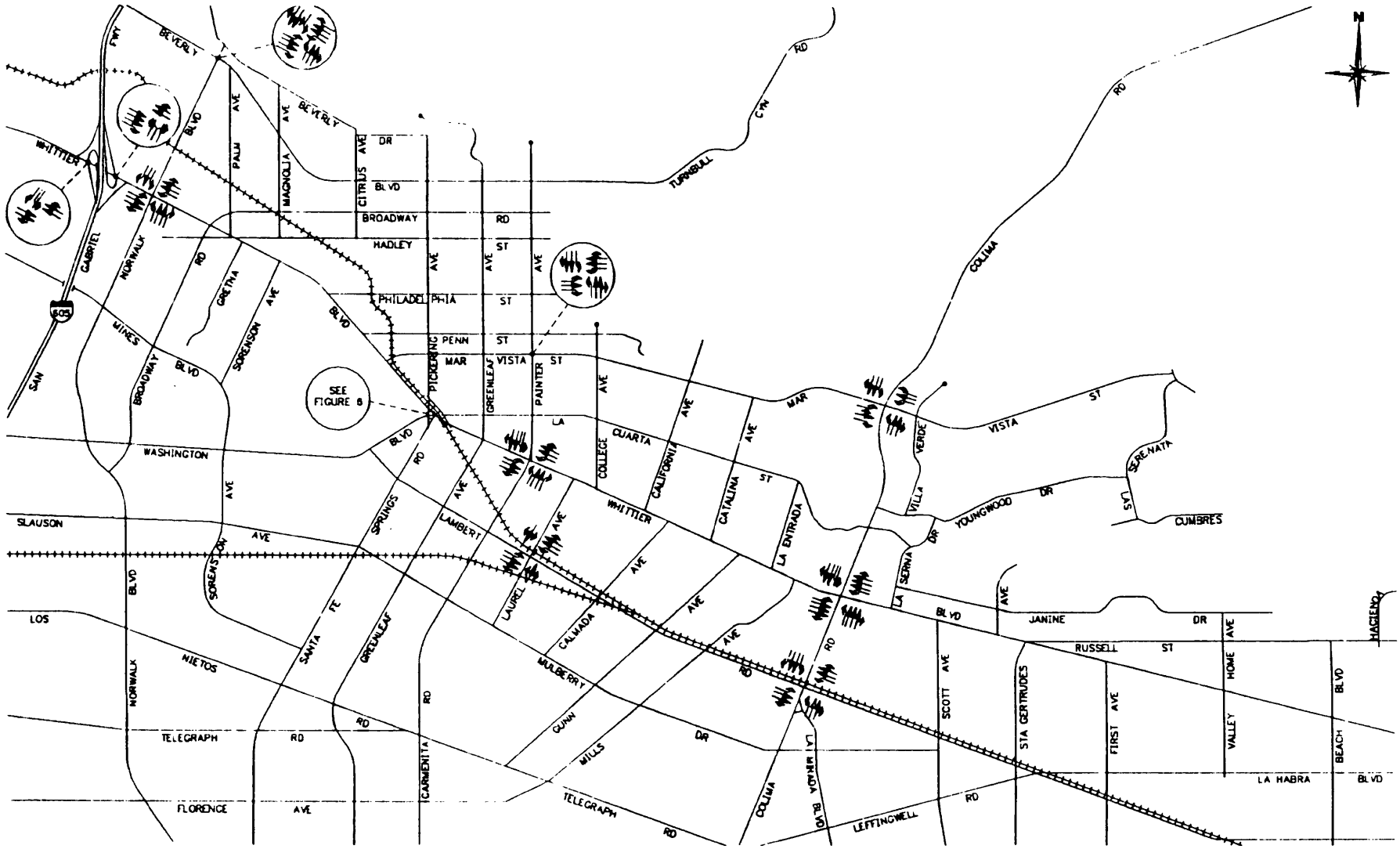
City of Whittier

GENERAL PLAN

SOURCE: Austin-Foust Associates, Inc.

DAVID EVANS AND ASSOCIATES, INC.

EXHIBIT 4-4
INTERSECTION LOCATION MAP



City of Whittier

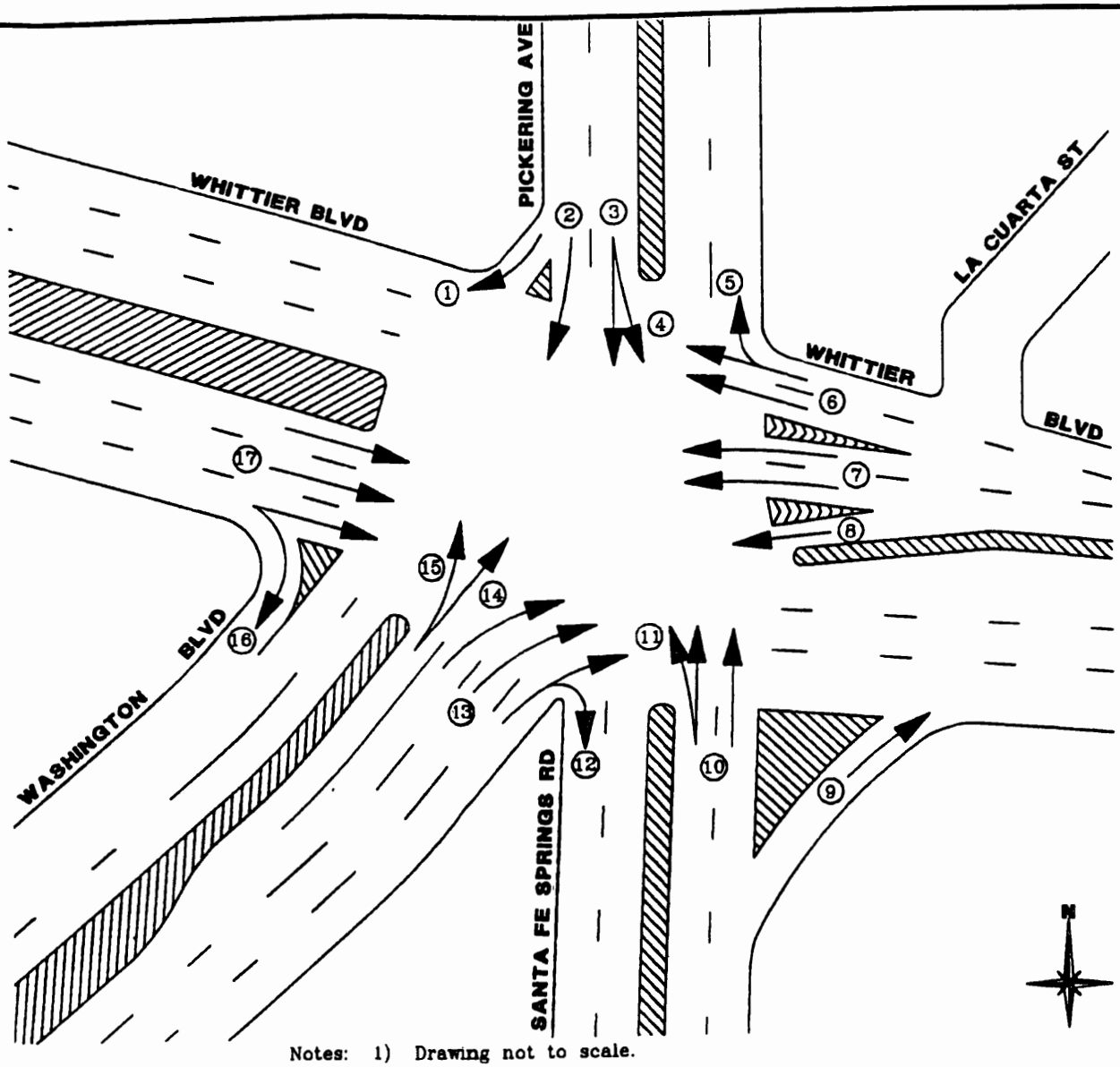
GENERAL PLAN

SOURCE: Austin-Foust Associates, Inc.

Lane Number and Direction

DAVID EVANS AND ASSOCIATES, INC.

EXHIBIT 4-5
EXISTING LANE CONFIGURATIONS



Notes: 1) Drawing not to scale.

2) This drawing illustrates the following:

Movement	Description
1	Pickering to Whittier
2	Pickering to Washington
3	Pickering to Santa Fe Springs
4	Pickering to Whittier
5	Whittier to Pickering
6	Whittier thru.
7	Whittier to Washington
8	Whittier to Santa Fe Springs
9	Santa Fe Springs to Whittier
10	Santa Fe Springs to Pickering
11	Santa Fe Springs to Washington or Whittier
12	Washington to Santa Fe Springs
13	Washington to Whittier
14	Washington to Pickering
15	Washington to Whittier
16	Whittier to Washington
17	Whittier thru or to Santa Fe Springs

SOURCE: Austin-Foust Associates, Inc.

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 4-6
EXISTING LANE CONFIGURATION FOR "5 POINTS" INTERSECTION

TABLE 4-4
EXISTING ICU SUMMARY

Intersection	AM	Count Date	PM	Count Date
1. Norwalk Blvd. & Beverly Blvd.	.95	5/13/91	.84	5/9/91
2. I-605 SB Ramps & Whittier Blvd.	.75	5/15/91	.83	5/14/91
3. I-605 NB Ramps & Whittier Blvd.	.68	5/13/91	.53	5/13/91
4. Norwalk Blvd. & Whittier Blvd.	1.02	5/13/91	.81	5/13/91
5. Whittier, Pickering, Washington, and Santa Fe Springs	.83	5/21/91	.95	5/21/91
6. Painter Ave. & Mar Vista St.	.71	5/09/91	.83	5/09/91
7. Painter Ave. & Whittier Blvd.	.81	5/23/91	.91	5/14/91
8. Laurel Ave. & Lambert Rd.	.91	5/13/91	.68	5/09/91
9. Colima Rd. & Mar Vista St.	1.20	5/09/91	.89	5/08/91
10. Colima Rd. & Whittier Blvd.	.95	5/14/91	.97	5/13/91
11. Colima Rd. & Lambert Rd.	.80	5/10/91	1.21	5/09/91

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
2) See Exhibit 4-4 for intersection locations.

Source: Austin-Foust Associates, 1991.

TRANSPORTATION PLAN

The planned roadway system that is contained in the City's current Circulation Element of the General Plan is illustrated in Exhibit 4-7. The existing roadway network generally corresponds to the Circulation Element with the notable exception of Hadley Street. The City's existing General Plan shows an extension of Hadley Street eastward from Painter Avenue to Colima Road and beyond Colima Road to intersect with Mar Vista Street. This segment of Hadley Street, if built, would be a major arterial.

The roadways in Whittier's circulation system is comprised of four types: arterials, secondary streets, collector streets and local streets.

Arterials are streets and highways designed to move large volumes of traffic between freeway systems and between the freeway and local circulation system. Intersections along arterials are at grade and usually signalized. In many cases, access from private property and collector streets is limited, as is on-street parking. When the arterial roadway 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 impact of the street. Major and minor arterials in Whittier generally have the following standards:

Right-of-way width	100 - 110 feet
Curb-to-curb width	84 feet
Number of travel lanes	4 - 6
Number of parking lanes	0 - 2
Average daily traffic	10,000 - 40,000 vehicles per day

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. Secondary streets are similar to minor arterials since they both have intersections at grade, use traffic signals and restrict parking where necessary. The geometrics of secondary streets are generally as follows:

Right-of-way width	80 - 88 feet
Curb-to-curb width	64 feet
Number of travel lanes	4
Number of parking lanes	0 - 2
Average daily traffic	5,000 - 10,000 vehicles per day

Collector streets distribute traffic from higher classified arterial streets to local access streets and to adjacent properties. Collector streets generally follow these standards:

Right-of-way width	60 - 66 feet
Curb-to-curb width	40 feet
Number of travel lanes	2
Number of parking lanes	0
Average daily traffic	2,500 - 5,000 vehicles per day

Local streets are intended to be low-speed, low-volume streets that provide access to individual properties in the City. Since these streets are not intended to handle through traffic, they are often designed as loop or cul-de-sac streets and discourage traffic other

those to and from residential lots. Due to the large number of local streets in the City, these are not shown in the circulation plan. They are generally designed according to the following standards:

Right-of-way width	60 feet
Curb-to-curb width	40 feet
Number of travel lanes	2
Number of parking lanes	0
Average daily traffic	variable (less than 2,500 vehicles per day)

PUBLIC TRANSIT

An existing network of public bus routes providing access to employment centers, shopping and recreational areas within the City is shown in Exhibit 4-8. Service is provided by both the Southern California Rapid Transit District (SCRTD) and the Whittier Transit. SCRTD routes 104, 270, 275, 470 and 475 traverse the entire length of the City of Whittier. Routes 270, 470 and 471 provide access out of the City to the north, Route 104 provides service to the west and Route 275 provides service with the cities of Norwalk, La Mirada and areas further south.

The Whittier Transit is the City's fixed-route bus system. Its Sunrise Route serves the southern part of the City including the Whittier Quad Shopping Center, Whittwood Mall and various parks and recreation centers. Also, along the Sunrise Route are the public library and the senior center. The Sunset Route passes through the northern parts of the City. It serves the Whittier Quad Shopping Center, Whittwood Mall, Michigan Park, and the Whittier Hospital Medical Center. Exhibit 4-9 shows the Whittier Transit routes.

BIKEWAYS AND BIKEWAY PLAN

The existing network of bicycle routes in the City of Whittier are shown in Exhibit 4-10. The existing bikeways consist of the San Gabriel River Class 1 bike trail and Class 2 bike lanes along parts of Broadway Road, Norwalk Boulevard, Milton Avenue, Painter Avenue, Greenleaf Avenue, Colima Road, La Cuarta Street, and Janine Drive. The Environmental Resource Management Element discusses bikeways and trails in greater detail.

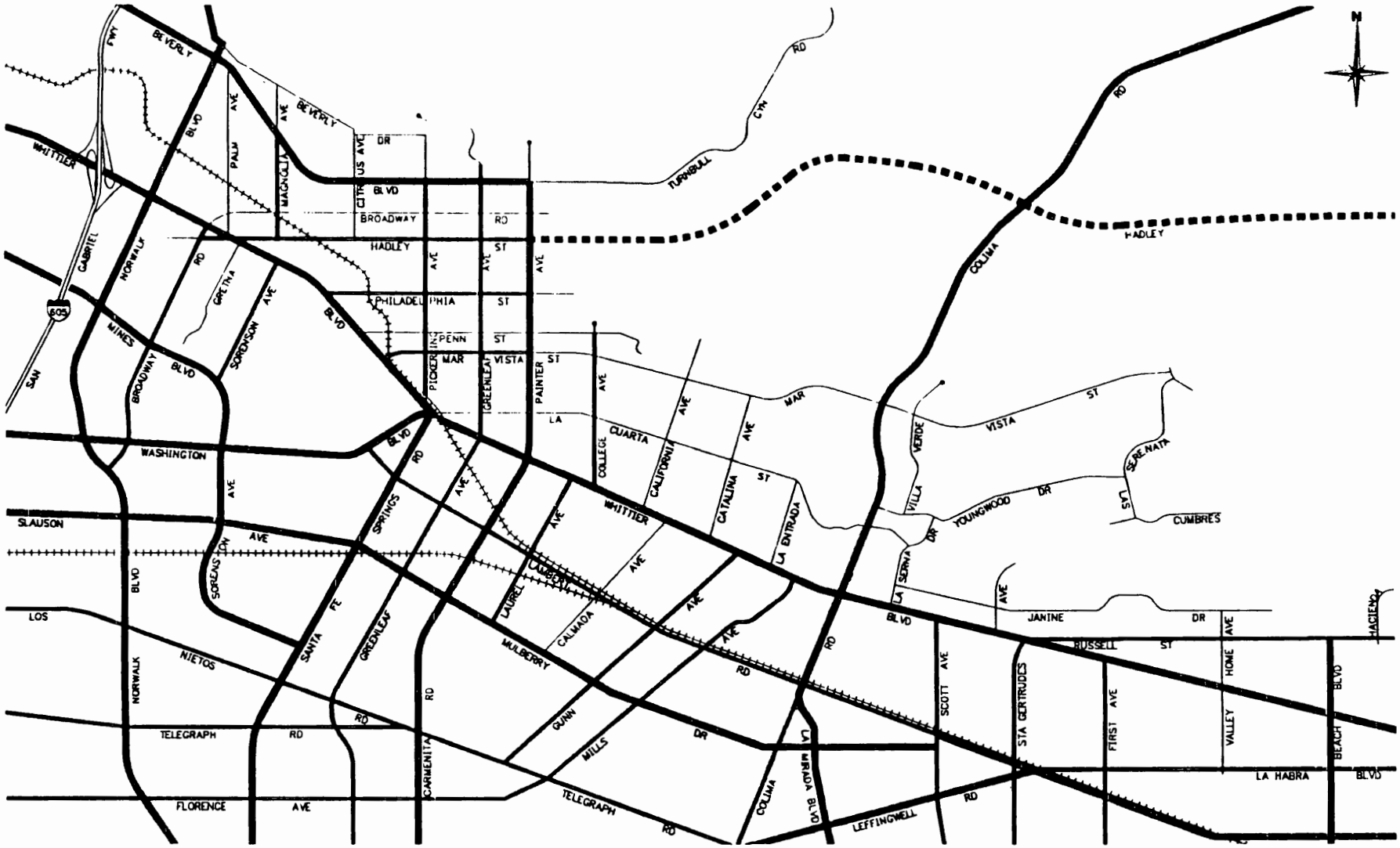
RAILROADS

Two railroad companies currently operate tracks through the City. The Southern Pacific Railroad runs parallel Lambert Road and continues west into the City of Santa Fe Springs and east into the City of La Habra. The Union Pacific Railroad runs off the Southern Pacific track at Mills Avenue and Lambert Road and continues northwest into the City of

Pico Rivera. Both companies only provide transportation for the distribution of goods and equipment and serve primarily the industrial areas west of the City.

AIRPORTS

No major airport facilities exist within the City of Whittier. The closest commercial airports are the Los Angeles International Airport, the Long Beach Municipal Airport and the John Wayne Airport in Orange County and the Ontario International Airport. Transportation to these facilities is available either through private vehicles or public shuttle services.



City of Whittier

GENERAL PLAN

SOURCE: Austin-Foust Associates, Inc.

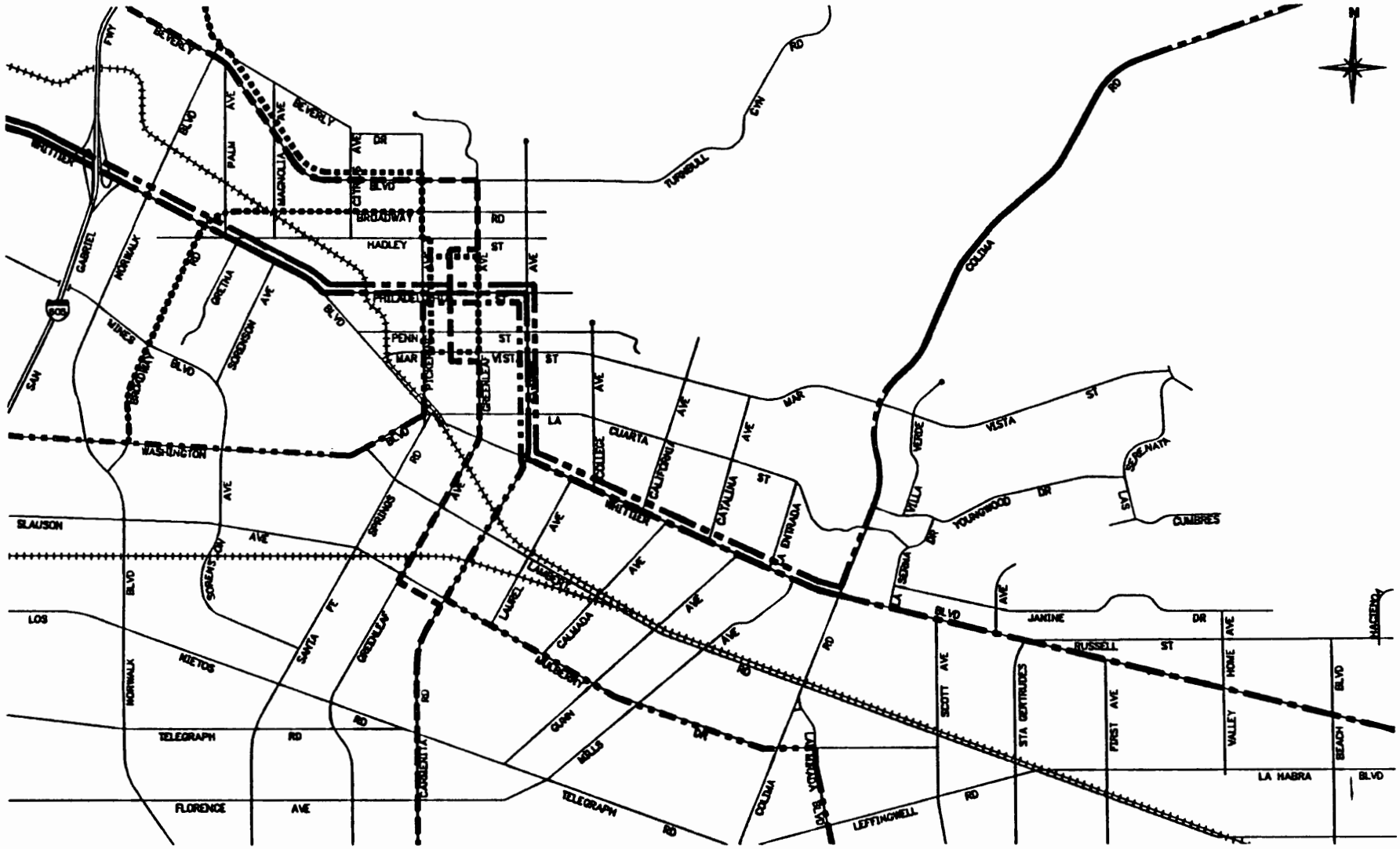
Major Arterial
Secondary Street
Collector Street
Major Arterial (Future)

Note: Not all collector streets are shown

DAVID EVANS AND ASSOCIATES, INC.

EXHIBIT 4-7

BUILDOUT CIRCULATION SYSTEM



City of Whittier

GENERAL PLAN

LEGEND

RTD:

471 — 275

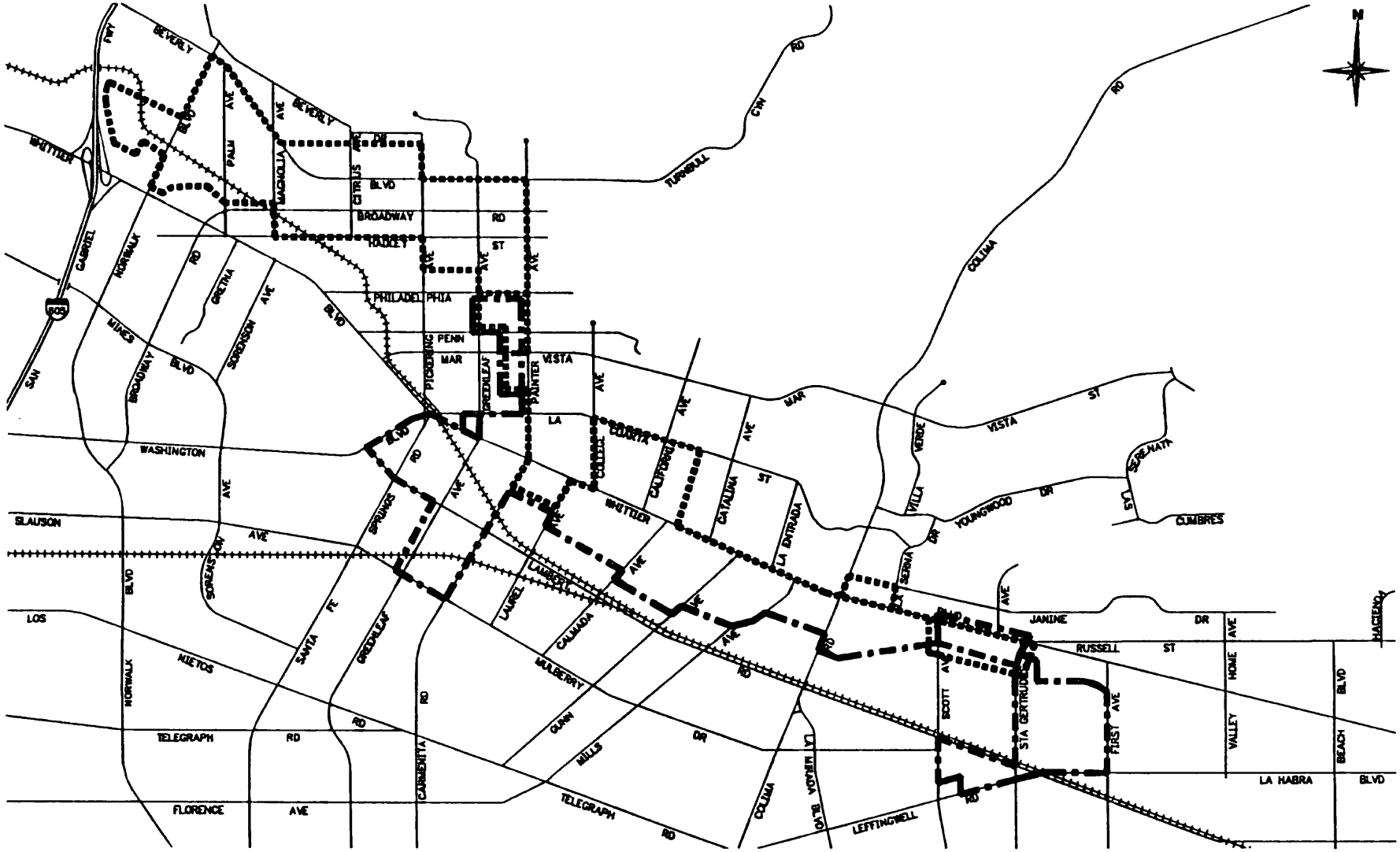
470 — 270

104

SOURCE: Austin-Foust Associates, Inc.

DAVID EVANS AND ASSOCIATES, INC.

EXHIBIT 4-8
RTD BUS ROUTES



City of Whittier

GENERAL PLAN

LEGEND

WHITTIER TRANSIT:

- SUNRISE ROUTE 1
- SUNSET ROUTE 2

SOURCE: Austin-Foust Associates, Inc.

DAVID EVANS AND ASSOCIATES, INC.

EXHIBIT 4-9
WHITTIER TRANSIT

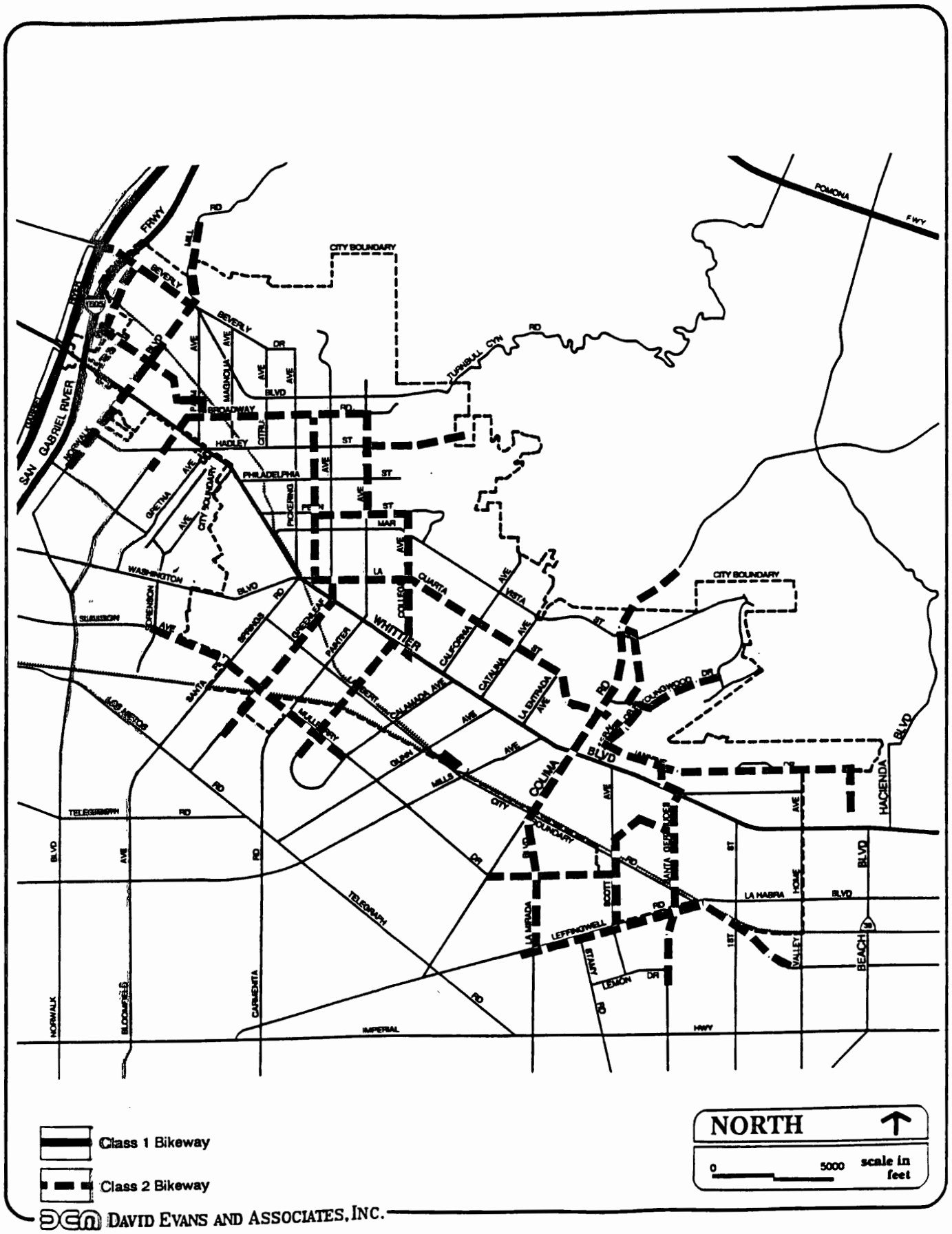


EXHIBIT 4-10
DESIGNATED BIKEWAYS

SECTION 5: ENVIRONMENTAL RESOURCES MANAGEMENT ELEMENT BACKGROUND REPORT

INTRODUCTION

The Environmental Resources Management Element (ERME) combines the state-mandated Conservation and Open Space Elements. This Background Report deals with water, mineral, oil, and plant and animal resources, as well as open space, parks and recreation facilities. This report is divided into two sections. The first section provides background data relating to conservation issues and the second section contains background data on open space and recreation.

Resources considered in the report include water resources, mineral resources, biotic resources, open spaces and scenic highways. Air quality will be addressed in a separate element, as will cultural and historic resources. Many of the City's resources are limited or nonrenewable and need to be preserved and managed to ensure their availability to future generations.

With most of the City developed, the Puente Hills on the north provides the greatest potential for conservation and open space in the City. This area is outside the Whittier City limits and is unincorporated county land. The Puente Hills is largely undeveloped with some oil fields and residential structures at the foothill area. It has an abundance of plant and animal life and creates a scenic backdrop for the City. The combination of plant and animal habitats together with sources of water and the rugged topography creates an ecologically significant area.

GEOLOGICAL RESOURCES

The City of Whittier is on the northeast corner of the Los Angeles coastal plain, just south of the Puente Hills. The City's elevation ranges from 150 to 1000 feet above main sea level. The area consists of alluvial fans deposited by streams draining the Puente Hills located to the north and east of the City. The San Gabriel River, west of the City, serves as the major drainage channel for the area.

The Puente Hills are geologically young in origin with the highest elevation being 1,387 feet above sea level. The Whittier Narrows area separates Merced and Puente Hills. Whittier Narrows is 1.6 to 2 miles wide and generally flat with steep sides. It is the area where the San Gabriel valley and highlands drains to the coastal plain. Small canyons and streams are found throughout the surrounding hills.

The Puente Hills is believed to have been, at one time, part of the San Gabriel Mountains. As wind and rain eroded away parts of the mountains, this debris was washed downstream, eventually becoming a part of the coastline. Later, seismic activity in the area caused the

uplifting of various areas, one of which resulted in the creation of the Puente Hills. The La Vita member of the Puente formation is marine in origin and can be seen occasionally where outcroppings expose these sedimentary rocks on the hills. The Puente Hills are scarred by deep canyons on the west and slopes more gently down the eastern side toward Hacienda Heights. It is here that the majority of natural vegetation exists, providing food and habitats for animals.

The geologic setting relating to seismic characteristics of the City is discussed further in the Public Safety Element Background Report.

Within the planning area, ten soil associations were identified by the U. S. Department of Agriculture Soil Conservation Service. Exhibit 5-1 delineates the general location of soils occurring in the area. These soil associations consists of one or more soil types that have similar characteristics, and each is named for the predominant soil series it contains. Each soil association is described according to the following criteria:

- Natural drainage refers to the soil absorption and percolation qualities.

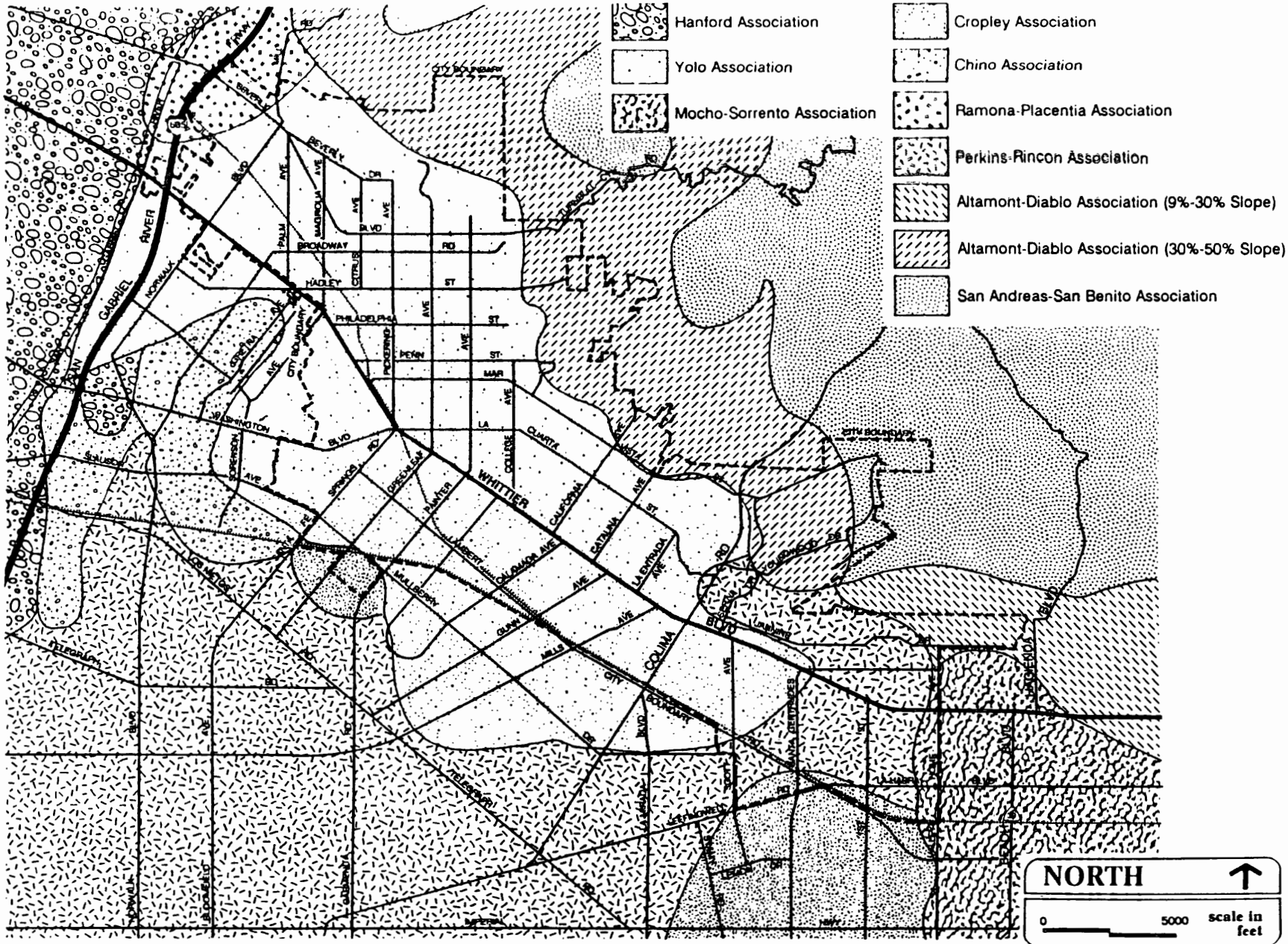
- Runoff potential refers to the soil's ability to channel stormwater runoff to lower areas due to its impermeability.

- Erosion hazard qualifies the soil's potential for erosion from running water, wind, ice or other geologic processes. Soil type, consolidation, vegetative cover, slope and runoff velocity determine the degree of erosion hazard.

- Shrink and swell behavior refers to the change in volume when the soil is wetted. This quality depends on the amount of moisture and the amount and kind of clay in the soil. Soils with higher percentages of clay have higher shrink-swell potential.

- Soil pressure refers to the soil's ability to withstand pressure from structural loads. Allowable soil pressure is considered severe if the soil can withstand loads less than 1,000 pounds per square foot; moderate if it can withstand loads of 1,000 to 2,000 pounds per square foot and slight if it can withstand loads of more than 2,000 pounds per square foot.

- Excavation potential refers to the limitations presented by cobbles, stones, rocks, bedrock and water table to excavation activities. Severe limitations are posed by high percentages of rock and cobble content, shallow hard bedrock and a high water table.



City of Whittier
GENERAL PLAN

SOURCE: General Soil Map, L.A. County, 1969; USDA Soil Conservation Service

DAVID EVANS AND ASSOCIATES, INC.

EXHIBIT 5-1
SOIL ASSOCIATIONS

Table 5-1 provides a summary of the characteristics and qualities of the different soils in the area. Soil properties should be considered in evaluating proposed urban developments and land uses. While the information is general in nature, it provides a basis where more detailed investigation may be needed.

MINERAL RESOURCES

Tertiary sedimentary formations on the Puente Hills contain conglomerate and sandstone deposits which may be used for aggregate. These are found in the La Habra and Fernando Formations and Sycamore Canyon and Soquel members of the Puente Formation. The Sycamore Canyon member consists of fine to coarse-grained sandstone, pebbly conglomerate and interbedded micaceous sandy siltstone. The Sycamore Canyon member is mined near Prado Dam. The Fernando Formation consists of massive sandstone and siltstone and is mined near Carbon Canyon. Thus, the hills have a potential for these resources, although insufficient data is available to determine if the deposits in the Puente Hills are significant and can be economically mined. No significant aggregate resources have been identified by the State Department of Mines and Geology in the Whittier area.

The sands of the La Habra formation have been historically used for plaster, surfacing material and fill. An open sand pit, then known as the Murphy Ranch deposit, was located along West Road at the City's eastern boundary. The deposits were unconsolidated pebbly sand approximately less than 1 inch in diameter and well-rounded. After years of intermittent operation, the pit closed in 1949. A smaller inactive pit was found on Via del Llano Drive, north of the City's eastern boundary. These sand resources do not represent regionally significant deposits.

California oil production in 1991 was 350.0 million barrels (1 barrel = 42 gallons) with an average production of 948,000 to 980,000 barrels per day. Low unstable crude oil prices has led to decreasing oil production in the State. California crude oil is generally of low quality and, thus, is cheaper because of costs associated with refining and transportation. Approximately 296.0 million barrels of oil were produced by onshore wells and 54.2 million barrels by offshore wells.

As of December 1990, estimated recoverable oil reserves in the State totalled 4.2 billion barrels. Oil production in District 1, which includes Long Beach, Los Angeles, Riverside, San Diego, Imperial and San Bernardino counties, was 46.6 million barrels in 1991 and 49.2 million barrels in 1990. The 1990 production in Los Angeles County's 4,918 oil wells was 41.5 million barrels.

There are large oil and natural gas fields in the Whittier area, specially in the Puente Hills. Approximately 855 acres are in the Whittier oil field with 670 acres in the Central Area, 90 acres in the La Habra Area and 95 acres in Rideout Heights. Exhibit 5-2 shows the location of these fields. The first oil well in Whittier was drilled in 1897 to a depth of 984 feet below the surface. Hundreds of oil wells have been drilled since then.

TABLE 5-1
SOILS CHARACTERISTICS AND QUALITY

Soil Name	Soil Profile (dry)			Natural Drainage	Runoff	Erosion Hazard	Shrink-Swell Behavior	Allowable Soil Pressure	Excavation
	Surface Layer	Subsoil	Substratum or Parent Material						
Hanford association, 2 to 5 percent slopes									
Hanford	Pale-brown coarse sandy loam, (8 in.)	Lt.yell.-brn. coarse sandy loam & grav. loamy coarse sand. Slightly acid to mod. alk. throughout. May be stratified below 40 in.		well	slow	slight	low	moderate	slight
Yolo association									
Yolo	Grayish-brown med. acid and sl. acid loam, (18 in.)	Grayish-brn. neutral loam, near silt loam, (18 in.)	Lt. yell.-brn. neutral loam, near silt loam	well	slow	slight	moderate	moderate	slight
Mocho-Sorrento association, 2 to 9 percent slopes									
Mocho	Grayish-brn. loam (15 in.)	Grayish-brn. and lt. brownish-gray loam. Moderately to strongly alkaline throughout becoming more calcareous with depth.		mod.well	slow to medium	slight to moderate	moderate	moderate	slight
Sorrento	Brown, mildy alkaline loam, (7 in.)	Brown moderately alkaline loam, (7 in.)	Yell.-brn. and lt. yell.-brn. mod. alk. loam strongly calc. to over 60 in.	well	slow to medium	slight to moderate	moderate	moderate	slight
Cropley association									
Cropley	Dark gray neutral and mildly alkaline clay, (38 in.)	Grayish-brown mod. alk. and calc. clay, (12 in.)	Grayish-brn. mod. alk. & calc., grav. clay loam. 20% gravel.	well	very slow	slight	high	slight	slight

TABLE 5-1
SOILS CHARACTERISTICS AND QUALITY

Soil Name	Soil Profile (dry)			Natural Drainage	Runoff	Erosion Hazard	Shrink-Swell Behavior	Allowable Soil Pressure	Excavation
	Surface Layer	Subsoil	Substratum or Parent Material						
Chino association									
Chino	Gray and dk. gray loam, silt loam or clay loam, (16 in.)	Gray and lt.brn.-gray silty clay loam and clay loam. Calcareous throughout, mottled in lower part. High water table.		somewhat poor	slow	slight	moderate	moderate	moderate
Ramona-Placentia association, 2 to 5 percent slopes									
Ramona	Brn. to red.-brn. heavy loam, loam, or sandy loam (18 in.)	Brn. to red.-brn. dense clay loam or clay. Some areas with up to 60%.	Brn. to red.-brn. loam or light clay loam, (30 in.) coarse fragments.	well	slow	slight	high	moderate	slight
Placentia	Brn. to red-brn. loam or sandy loam (16 in.) abruptly underlain by dense clay loam subsoil (18 in.)	Dark reddish-brown dense clay loam which restricts roots (48 in.)	Some areas with gravelly or iron-cemented hardpan subsoils.	mod. well	very slow	moderate	high	moderate	slight
Perkins-Rincon association, 0 to 15 percent slopes									
Perkins	Brn. medium acid gravelly loam (12 in.)	Reddish-brown al. acid, grav. clay loam or light clay. (36 in.)	Reddish-brown cobbly alluvium	well	slow to medium	slight to moderate	high	slight	slight

TABLE 5-1
SOILS CHARACTERISTICS AND QUALITY

Soil Name	Soil Profile (dry)			Natural Drainage	Runoff	Erosion Hazard	Shrink-Swell Behavior	Allowable Soil Pressure	Excavation
	Surface Layer	Subsoil	Substratum or Parent Material						
Rincon	Dk. grayish-brown mildly alkaline silty clay loam (13 in.)	Brown mod. alkaline and calcareous silty clay, (22 in.)	Yell.-brn. and white mod. alk, and v. strongly calc. silty clay loam.	well	slow to medium	slight to moderate	high	slight	slight
Altamont-Diablo association, 9 to 30 percent slopes, eroded									
Altamont	Dark brn. neutral clay (12 in.)	Brn. calcareous clay	Partially scattered calcareous soft shale or sandstone at 24 to 36 in.	well	medium to rapid	moderate to high	high	moderate	severe
Diablo	Dark-gray, neutral clay, (20 in.)	Dark grayish-brn. strongly calcareous clay.	Very strongly calcareous shale at 22 to 52 in. Few rock outcrops.	well	medium to rapid	moderate to high	high	moderate	severe
Altamont-Diablo association, 30 to 5 percent slopes, eroded									
Altamont	Dark brn. neutral clay (12 in.) Moderately eroded, therefore reducing soil depth.	Brn. calcareous clay	Partially scattered calcareous soft shale or sandstone a 24 to 36 in.	well	rapid	high	high	moderate	severe

TABLE 5-1
SOILS CHARACTERISTICS AND QUALITY

Soil Name	Soil Profile (dry)			Natural Drainage	Runoff	Erosion Hazard	Shrink-Swell Behavior	Allowable Soil Pressure	Excavation
	Surface Layer	Subsoil	Substratum or Parent Material						
Diablo	Dark-gray, neutral clay, (20 in.) Moderately eroded, therefore reducing soil depth.	Dark grayish-brn. strongly calcareous clay.	Very strongly calcareous shale at 22 to 52 in. Few rock outcrops.	well	rapid	high	high	moderate	severe
San Andreas-San Benito association, 30 to 75 percent slopes, eroded									
San Andreas	Grayish-brn. and brn. neutral and mod. acid fine sandy loam, (15 in.)	Grayish-brn. and brn. med. acid very fine sandy loam, (13 in.)	Very pale-brn. soft med. grained sandstone	well	rapid to very rapid	high to very rich	low	moderate	slight
San Benito	Dk. grayish-brn. neutral clay loam, (28 in.)	Lt. yell.-brn. med. alk. and calcareous clay loam.	Yellowish-brn. soft calc. sandy shales at 36 to 48 in.	well	rapid to very rapid	high to very rich	moderate	moderate	slight

Source: Report and General Soil Map, Los Angeles County, California, U.S.D.A., 1969.

Oil production remains an extractive resource use in Whittier. The oil production fields are located in the western hillside areas and concentrated primarily between Turnbull Canyon Road and Hacienda Boulevard. Crude oil is produced from these wells. Two oil production facilities at the hills are currently in operation. One is owned by Chevron (18.5 acres in LA County) and another operated by McFarland (owned by City of Whittier).

The Whittier area currently has 136 oil and associated gas wells and 7 gas storage/ withdrawal wells in production. In 1990, there were 251 wells abandoned and 30 remain idle but have not been abandoned. In 1990, approximately 314,372 barrels of oil were produced by local wells. This represents approximately 0.76 percent of the total production in Los Angeles County. Cumulative production since drilling in the area began, was 52,109 million barrels with estimated reserves of 3,622 million barrels.

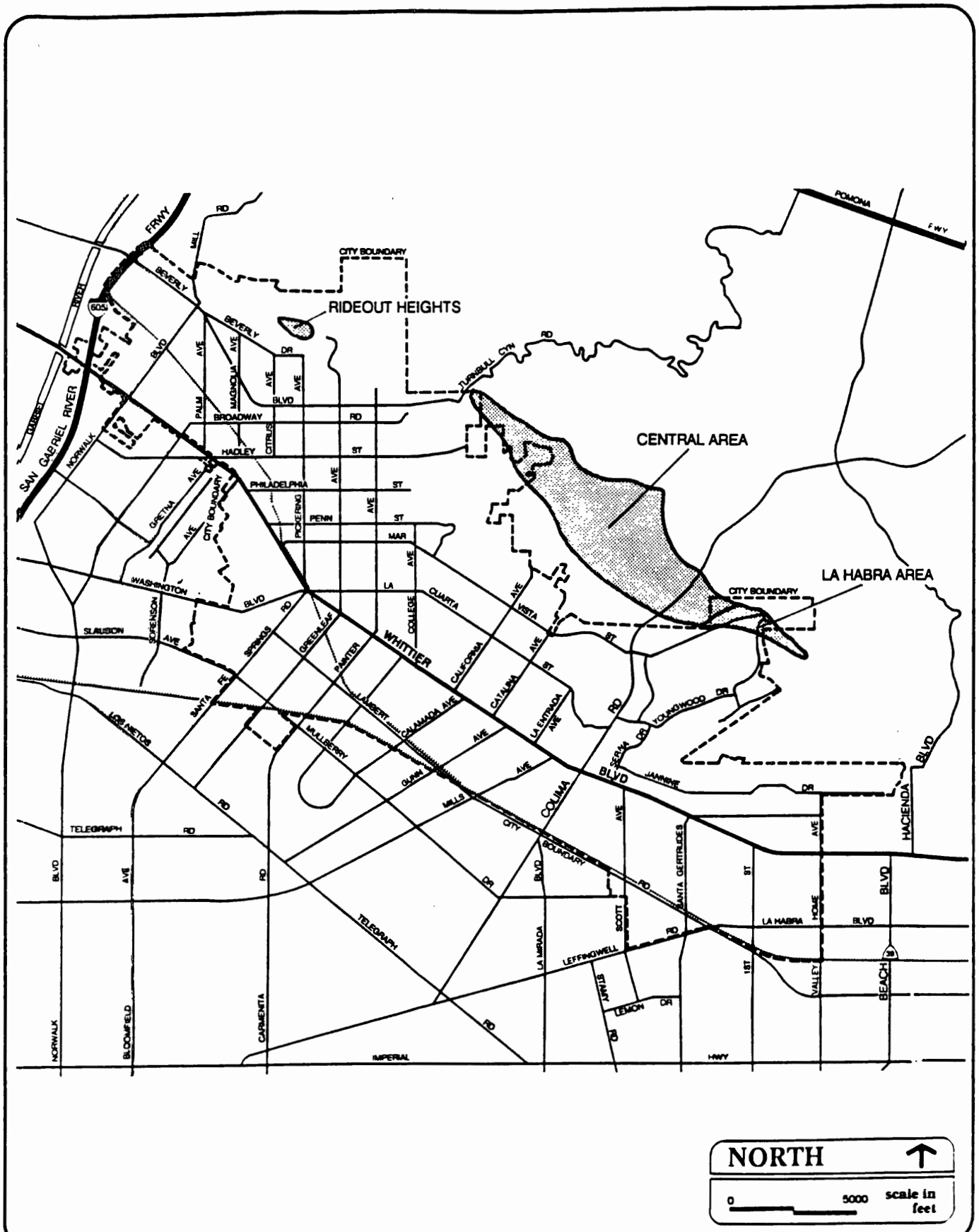
Wells often produced oil, gas and water at the same time. Of the 143 wells in production, 509,236 million cubic feet of gas were produced along with 4.08 million barrels of water. Waterflooding is a method of advanced oil recovery where water is injected into the wells to make crude oil rise. Waterflooding methods produced 217,200 barrels of the total oil production in 1990. Estimates of 1991 production show that approximately 215,000 barrels of oil and 440,000 million cubic feet of gas were produced by oil fields in Whittier.

Oil production operations result in extensive grading of the natural vegetative cover near wells in order to minimize fire hazards. In some instances, oil is dumped on the hillsides to control vegetation growth and lower the fire risk. Not only is the vegetation damaged, but wildlife habitats in the area are lost. Wildlife are driven from their natural habitats, are exposed to oil covered ground, and their food sources are destroyed.

Oil production has kept much of the hillside areas undeveloped. On the other hand, urban developments in oil field areas can limit oil drilling and recovery operations. With the majority of the land in the hills owned by oil companies, the use of the area will depend on the remaining economic life of the Whittier oil fields. The oil fields have been operating for more than 75 years and are likely to continue to operate as long as the oil production is profitable.

WATER RESOURCES

The City of Whittier is underlain by the complex groundwater basin system of the Los Angeles coastal plain. There are four groundwater basins in the coastal plain: the West Coast, Santa Monica, Hollywood and Central Basins. The City of Whittier is within the Central Basin which is bounded on the north and northeast by the Elysian, Repetto, Merced and Puente Hills; on the east by the County line and on the south and west by the Rosecrans, Signal and Bixby Ranch Hills. Groundwater resources in the Central Basin



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 5-2
OIL RESOURCES

generally consists of an upper layer of shallow, unconfined and semi-perched water; a principal body of fresh water underneath; and salt water under the freshwater resources. Water movement is generally from points of recharge (percolation areas, spreading grounds, streams) to points of discharge (groundwater wells, ocean, springs) because of differences in pressure between these points. The major recharge area in the coastal plain is the Whittier Narrows area.

Aquifers underlying the Los Angeles coastal plain resulted from the historical development of the topography for over 100 million years. The deposition of sand, gravel, silt, clay and rock has resulted in a highly complex geologic and groundwater structure. Water-bearing deposits are unconsolidated and semi-consolidated alluvial sediments from Recent times (approximately 15,000 years ago). These deposits hold water, allow water to pass through, and are referred to as aquifers. Non-water-bearing deposits are consolidated rocks and ground layers which provide limited water. They form the boundaries between aquifers.

The Whittier area of the Central groundwater basin starts at the Puente Hills and goes into the Coyote Hills uplift in Santa Fe Springs. Exhibit 5-3 shows cross sections of the geologic structure underlying the Whittier area. The topmost layer of deposition in the area is from the Recent time, consisting of alluvium and the Gaspur aquifer. Alluvium is found on or near the surface of the City of Whittier and much of the County. This layer may be 60 feet thick or less with unconfined and poor quality water of small quantities.

The Gaspur Aquifer is a water-bearing zone with cobbles and pebbles deposited from erosion of the San Gabriel Mountains. The upper layer is medium to coarse-textured sand and the lower layer is sand, gravel, and cobbles. The Gaspur Aquifer is 120 feet thick at the most. The aquifer is partially dewatered but water yields are high. The aquifer merges with the ground surface at the Montebello Forebay between the Rio Hondo and San Gabriel Rivers and between the Los Angeles River and the Harbor Freeway in the Los Angeles Narrows area. It also merges with deeper aquifers at Whittier Narrows, south of the Los Angeles Narrows area and along the Los Angeles River. Near Whittier Narrows, the deep aquifers merge with the Gaspur aquifer and receive recharge. Whittier Narrows serves as major recharge area for the Gaspur aquifer and underlying aquifers.

The Pleistocene period (approximately 1,000,000 years ago) resulted in the deposition of several ground layers including Older Dune Sand, the Lakewood Formation and the San Pedro Formation. The Lakewood Formation includes terrace deposits, Palos Verdes sand and other unnamed deposits. It is generally characterized by variable particle size in the upper layer and a lower layer of gravel and coarse sands. Sand and gravel are interspersed by discontinuous lenses of sandy silt and clay. Near Puente Hills, the Lakewood Formation overlies the San Pedro Formation, Pliocene Pico and Repetto Formations and the Miocene Puente Formation.

The Lakewood Formation contains the Exposition, Gage, and Gardena aquifers and aquicludes (fine sand, silt and clay that transmit water slowly). The Exposition aquifer is beneath the Gaspur aquifer and merges with it between the Los Angeles and San Gabriel Rivers. This aquifer is not found under the Whittier area.

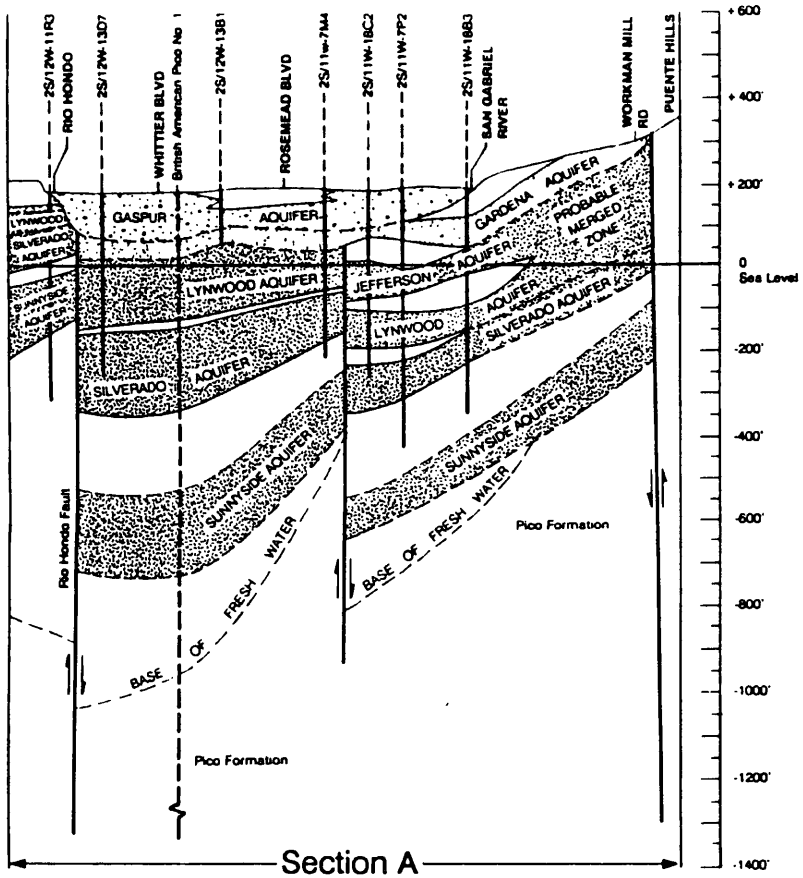
The Gage Aquifer generally lies below the Exposition aquifer and is approximately 10 to 160 feet thick. It has fine to medium sand with varying amounts of coarse yellow sand and gravel. The Gardena Aquifer has coarse deposits that are about the same age as the Gage Aquifer which has fine deposits. The Gardena Aquifer are similar in thickness and elevation to the Gage Aquifer and in direct continuity with it. Both aquifers yield large amounts of water.

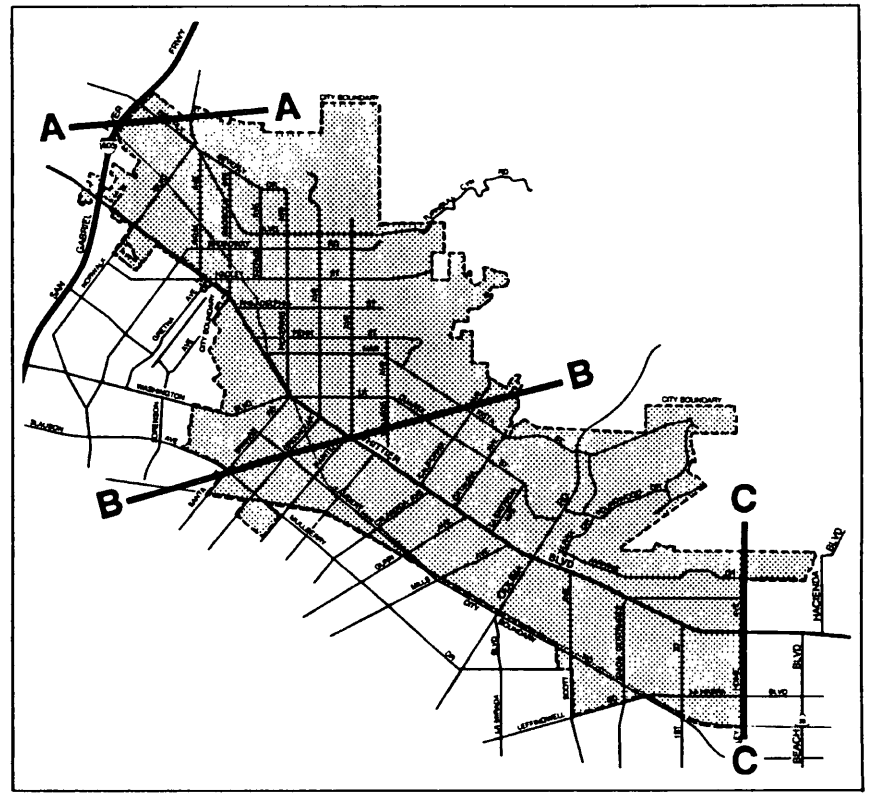
The San Pedro Formation contains deposits of lower Pleistocene age containing San Pedro sand, Timms Point, silt and Lomita Marl. It has five major aquifers with fine grained layers interbedded within the aquifers. These aquifers are the Hollydale, Jefferson, Lynwood, Silverado and Sunnyside Aquifers. They are the principal aquifers used for domestic water in the Los Angeles area.

The Hollydale Aquifer is discontinuous aquifer beneath the Gage-Gardena Aquifer. It consists of yellow sands and gravel in the northeastern sections and grey, blue and black sand with mud, clay and marine shells near the Newport-Inglewood fault. Its boundary is irregular and sinuous, suggesting it was formed by stream deposition but only shallow marine deposits are found. Presence of the Hollydale Aquifer is confirmed only in western area of the Whittier sub-basin. It is 10 to 25 feet thick and consists of sand and gravel with some interbedded clay. It merges with Gage aquifer in south Whittier area. Its lack of continuity and the presence of fine-grained materials do not allow it to store large amounts of water.

The Jefferson Aquifer is found under the entire Whittier area with a thickness ranging from 20 to 40 feet. The aquifer consists of sand and gravel and little interbedded clay and has a maximum depth of 350 feet below sea level. It merges with Hollydale aquifer near Montebello Forebay area. The aquifer is made up to sand with gravelly and clayey layers and has a maximum thickness of 145 feet. Within the City of Whittier, its base is 100 feet below sea level. It merges with overlying and underlying aquifers near the Montebello Forebay and the hillsides at the northwestern section of the City. Very few wells tap the Jefferson Aquifer.

The Lynwood Aquifer is made up of yellow, brown, and red coarse gravel, sand, silts and clay. It has a thickness of 50 to 70 feet within Whittier. The Rio Hondo and Pico faults have caused offsets on the Lynwood Aquifer. It is a major producer of water with a yield ranging from 200 to 2,100 gallons per minute. Its base is 50 to 150 feet below sea level in the Whittier area.





SECTION LOCATIONS

Aquicludes and Deeper undifferentiated formations

Aquifers in Recent Alluvium (Includes Gaspur and Ballona Aquifers)

Aquifers in Lakewood Formation (Includes the Artesia, Exposition, Gage and Gardena Aquifers)

Aquifers in San Pedro Formation (Includes the Hollydale, Jefferson, Lynwood, Silverado and Sunnyside Aquifers)

Water Wells

Oil Wells

Faults

SOURCE: State of California Department of Water Resources, Southern California District

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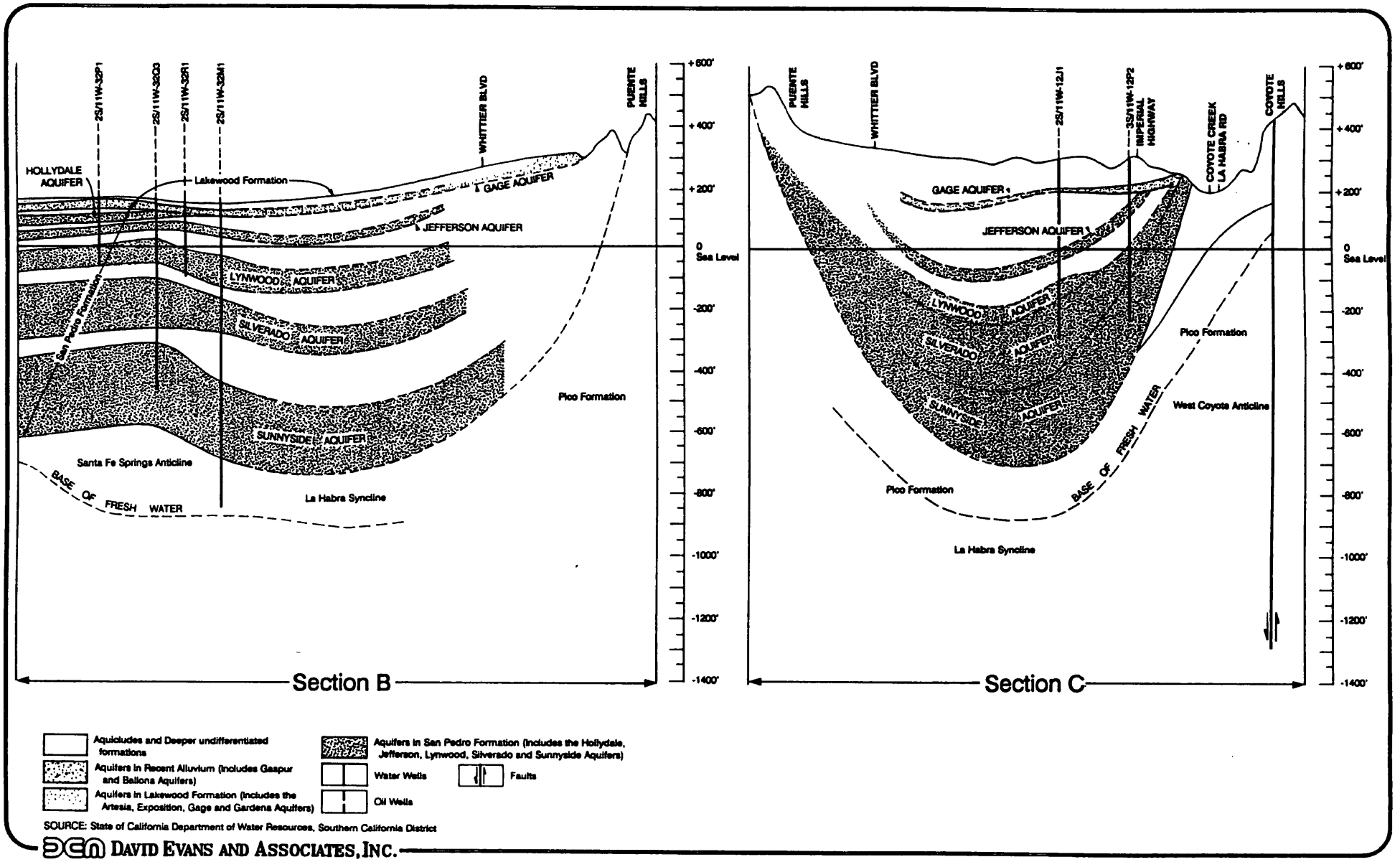
City of Whittier

GENERAL PLAN

EXHIBIT 5-3
IDEALIZED GEOLOGIC SECTIONS



City of Whittier

GENERAL PLAN

EXHIBIT 5-3
IDEALIZED GEOLOGIC SECTION (cont.)

The Silverado Aquifer has yellow to brown coarse to fine sands and gravel interbedded with yellow to brown silts and clays. It has a maximum thickness of 300 feet in the Whittier area at a maximum depth of 500 feet below sea level. It has also been considerably offset by all faults in the region. It is a major water producer with a maximum yield of 4,700 gallons per minute. Within the planning area, this aquifer is found 100 to 500 feet below sea level.

The Sunnyside Aquifer has coarse deposits of sand and gravel with interlayers of sandy clay and clay. Well logs show marine shells and marine type clays and shales are present within the aquifer. It has a maximum thickness of 300 feet and has a maximum yield of 1,500 gallons per minute. It is offset by many faults in the region. Its base is 400 to 700 feet below sea level in Whittier. Outcrops of this aquifer are found in northern boundary of the Whittier and Coyote Hills.

Aquifers beyond the Pleistocene age are not known because well log data are limited. Pliocene and Miocene sediments below the San Pedro formation contain salt water in this area. Pliocene aged deposition is responsible for the formation of the lower and upper members of the Fernando Formation (also called Pico Formation and Repetto Formation). The lower Fernando formation consists of sand, silt, clay marine deposits with beds of marine gravel. Gravel and sand beds intersperse with micaceous siltstone and clays. Water in this formation is generally poor and limited. The upper Fernando Formation consists of siltstone with layers of sandstone, conglomerate and fragmented marine shells. It is approximately 5,000 feet thick.

The Miocene age consists of sedimentary and volcanic rocks forming the Monterey, Modelo and Puente Formations. These formations have a maximum thickness of 11,000 feet and are made up of clay shales, silicareous shales, sandstones and conglomerates. The Topanga Formation is interbedded with Miocene volcanic rocks, is 7,500 feet thick, and consists of shale, sandstone and conglomerate. Older Tertiary and Sedimentary rocks may also underlie the Central Basin since they are found in the Santa Monica Mountains. These rocks are non-water-bearing.

Earthquake faults have caused offsets within the aquifers, resulting in disrupted subsurface water flows and creating zones of cementation and low permeability. In Whittier, these offsets were identified along the Rio Hondo and Pico faults (see Section A of Exhibit 5-2).

Watershed areas serve to capture rainfall and channel surface waters to water recharge areas where the water is retained or slowed and allowed to percolate down into the groundwater aquifers. Watershed land is characterized by steep slopes and a shallow depth of overlying soil. Most of the hillside area has been identified as watershed by the State of California Department of Water Resources and by the Los Angeles County Regional Planning Commission.

Groundwater recharge areas are generally flat or gently sloping with deep alluvial soil through which water can percolate down to the underground aquifer. This area is found in the canyon bottoms near the base of the hills and in the bottoms of unlined channels. Such areas are vital to the maintenance of local groundwater supplies. In 1973, at least 137 wells in the Whittier area produced water from these aquifers which were recharged, at least in part, by runoff from the Puente Hills. Urban development on groundwater recharge areas lessens the amount of water returned to the underground basins.

Overdrafting (when discharge is greater than recharge) of the groundwater has caused water levels to decline over the years. Lower levels increase the cost of pumping and increase the potential for salt water intrusion. In order to ensure the availability of natural water resources for the planning area, land uses at the canyon bottoms and along drainage channels should be compatible with recharge areas.

Flood Protection

Flood protection and drainage has been handled by the County Flood Control District. The District has built various flood control facilities including check dams, debris basins, and flood control channels throughout the county. Natural channelization and stream management allow the percolation of water into the groundwater basins and also allow natural plant and animal communities to exist. Where there is water, there are plant and animal communities. If the natural watershed areas are to be retained, future development within the Puente Hills will have to take measures to preserve undisturbed open space.

Domestic water in the area is provided by the City water system and is derived from local groundwater wells near the Whittier Narrows. Water pumping is controlled by Central Basin Replenishment District. The Central and West Basin Water Replenishment Districts levy an assessment on all parties pumping groundwater in the Central and West Basins. Funds collected are used to purchase surplus water from the Colorado River Aqueduct or the State Water Project. Water is spread and injected into the ground to replenish underground water supply resources. When a water company needs more water than allotted, it buys or leases additional water rights. The district has historically purchased water from Colorado River but in 1974, MWD started to get water from State Water Project.

NATIVE PLANT AND ANIMAL LIFE

The City of Whittier is landscaped with non-native species throughout most of the urbanized areas. Puente Hills represents the largest undeveloped land with native plants and animal species. The majority of vegetation in the Puente Hills are located in the canyon bottoms and slopes of watershed lands. The north slopes have more vegetation because the shade

helps to retain the moisture during the hot summer months. Vegetation is also concentrated in the canyon bottoms primarily because of the availability of water which is not found on higher slopes.

Sycamore Canyon runs in an east-west direction in the Puente Hills (see Exhibit 5-4). It contains one of the largest watershed areas in the hills and, consequently, has many varieties of vegetation including riparian woodlands, sage, and grasses. Sycamore trees are found along the canyon with other plants. In other canyons, plants of similar varieties are found but to lesser degrees. Generally, the variety and density of the vegetation decreases toward the top of the hills and where grasses and chaparral grow. Grasses are dry during the summer and autumn months and present a wildfire potential during these periods. The Los Angeles County Environmental Resources Committee has identified Sycamore Canyon as an ecologically significant area because it is one of the few remaining examples of an association of riparian woodland, coastal sage, and chaparral habitats.

Vegetation on the hills may be classified as grassland, inland sage scrub, mixed chaparral or riparian woodland with some areas supporting non-native eucalyptus trees. Disturbed grassland consists of non-native weeds on disturbed areas and dry farming, non-native annuals including wild mustard, thistle, wild radish, brome grass. Inland sage scrub is identified by moderately dense scrub with California sagebrush on the south and west facing slopes, California buckwheat, toyon, prickly pear, laurel and sumac.

Mixed chaparral is similar to sage scrub but thicker and found on north and east facing slopes and deep canyons. It includes toyon, elderberry, poison oak, and California sagebrush. The dense chaparral in the watershed areas of the Puente Hills reduces the water runoff and allows water to percolate into the ground. Chaparral, as a part of its natural life cycle, requires a periodic burn-off. Otherwise, chaparral thickens and increases the potential for wildfire when it finally does catch fire.

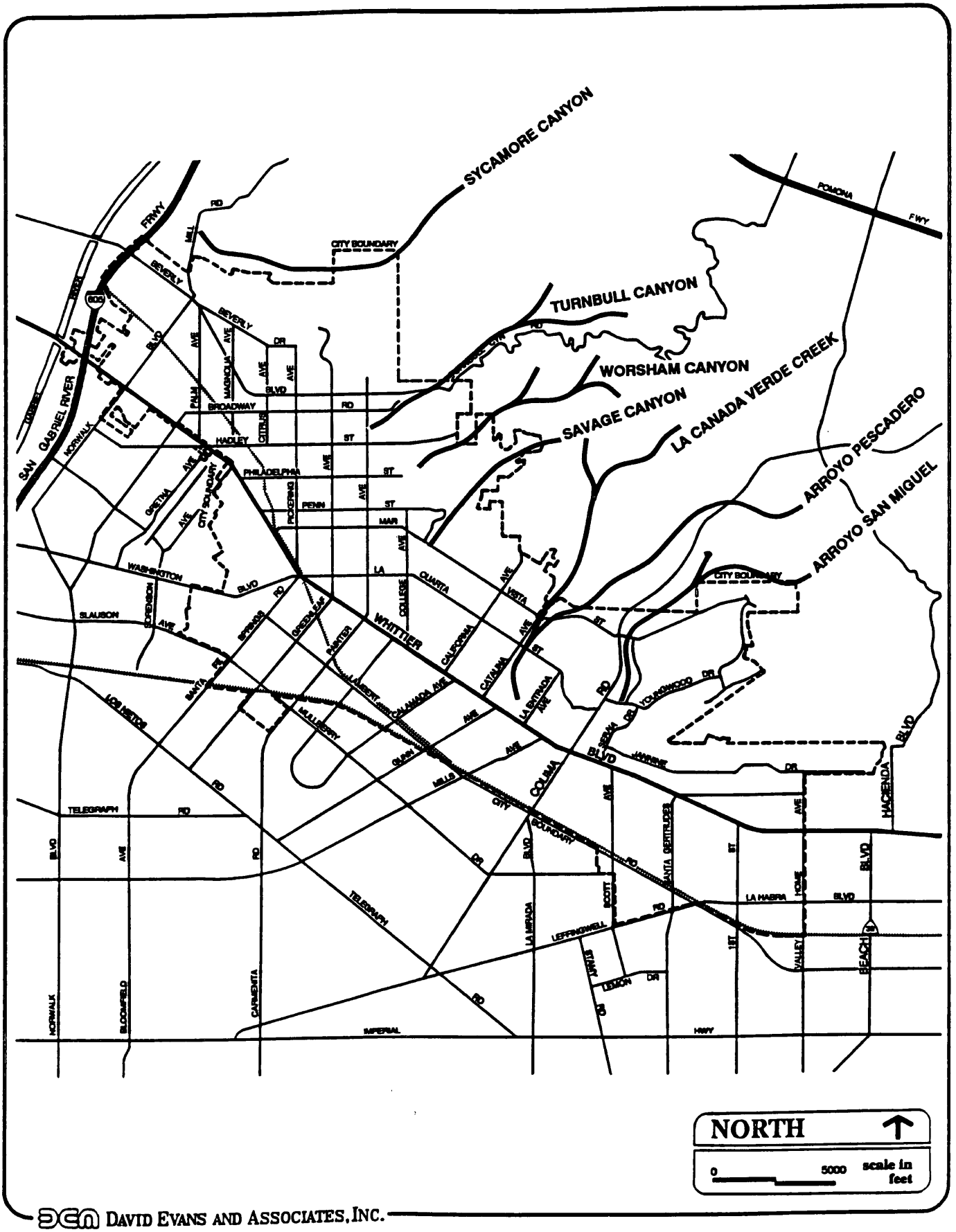
Riparian woodland refers to the major drainage areas such as Sycamore Canyon, Arroyo Pescadero, Arroyo San Miguel and La Canada Verde Creek (see Exhibit 5-4). Plants in these communities include sycamores, live oaks, elderberry, toyon, willow and mulefat.

Other plants that may be found in the area include golden stars, blue dicks, wild oats, chess, giant ryegrass, barley, Italian ryegrass, lemonadeberry, laurel sumac, California pepper, poison oak, wild cherry, sweet fennel, coastal sagebrush, mulefat, thistle, encelia, golden yarrow, match weed, layia, milk thistle, popcorn flower, mustard, peppergrass, prickly pear, elderberry, russian thistle, morning glory, dodder, live-forever, wild cucumber, castor bean, deerweed, lupine, coast live oak, storksbull, horsehound, white sage, black sage, purple sage, sycamore, California buckwheat, miner's lettuce, toyon, willow, monkeyflower, and tree tobacco.

The different plant communities serve as wildlife habitats. Animal species in the area include amphibians, reptiles, birds, rodents and mammals. The water drainage areas support amphibians like the western toad, tree frog, and slender salamander. Reptiles would also be found in the Puente Hills and may include western-fence lizard, side-blotched lizard and western rattlesnake. Other animals that may live in the area are gopher snakes, king snakes and striped racers.

A number of bird species may be found in the hills. They include the California quail, red-tailed hawks, American kestrels, turkey vultures, common crow, brewer's blackbird, linnet, mourning dove, scrub jay, meadow lark, mockingbird, Annas hummingbird, white-crowned sparrow, song sparrow, brown towhee, and Say's phoebe. Rodents and mammals in the area may include California ground squirrels, Audubon's cottontail, pocket gopher, deermouse, harvest mouse, woodrat, coyote, skunk, weasel,and raccoon. Table 5-2 is a list of some of the more common animals found in the Puente Hills along with their preferred habitats.

The natural habitats in the hills is the remaining natural resource area that once prevailed in the planning area. The hills contain ecological areas that are unique and valuable for scientific, educational, and cultural purposes. The viability of the existing plant and animal communities in the hillside areas is highly dependent on the intrusion of urban development.



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 5-4
MAJOR DRAINAGE AREAS

TABLE 5-2 COMMON ANIMALS FOUND IN PUENTE HILLS & WHITTIER	
Animal	**Habitat**
Rabbit	Washes, canyon bottoms, chaparral and grassy hills
Ground Squirrel	Found most often in altered environments such as cemeteries, dumps, urban development, etc.--Sycamore and Turnbull Canyons.
Gopher	Grass-covered areas, flatter terrain, meadows, etc.
Various Mice & Rats	Grasslands, hillside vegetation, prickly-pear cactus, dense streamed and banks.
Skunk	Fields, canyons, chaparral and wooded areas--Sycamore Canyon.
Raccoon	Canyon bottoms near water sources--Sycamore Canyon.
Gray Fox	Primarily chaparral areas.
Coyote	Found along dirt roads, trails, firebreaks and canyon bottoms. This is the dominant carnivore of the area.
Opossum	Seen in abandoned buildings. Mainly in Sycamore Canyon, Whittier College Campus, and the Whittier Narrows area.
Hawks, Quail, and other birds	Canyon bottoms and areas of heavy vegetation and trees are primary habitats.
Mule Deer	Upper Sycamore and Turnbull Canyons are main meadows for their feeding. Also tall grasses and shrubs.
Bobcat and Other Cats	These mammals cover a great deal of territory and don't stay in one place for long periods of time. No permanent habitats in the area. Occasionally seen.
Source: Whittier General Plan.	

Endangered Species

The Federal and State trustee agencies have categorized sensitive plant and animal species according to the following criteria:

- Endangered species are native species or subspecies which are in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

- Threatened species are native species or subspecies not presently threatened by extinction but likely to become an endangered species in the future in the absence of special protection and management efforts.

- Category 1 candidate species are species on which data on file is sufficient to support Federal listing.

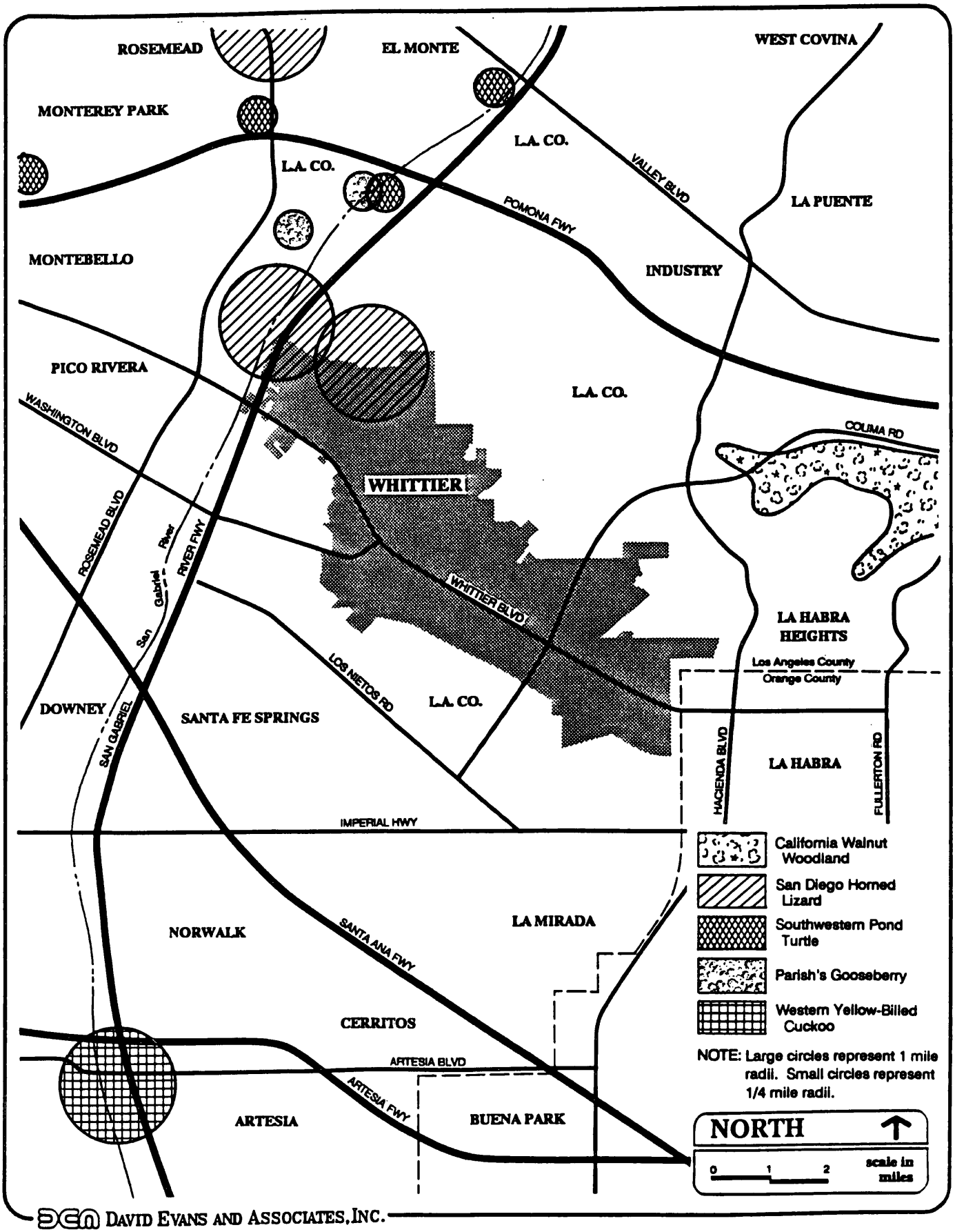
- Category 2 candidate species are species on which threat and/or distribution data are insufficient to support Federal listing.

- Species listed under 3A, 3B, and 3C are those withdrawn from the Federal listing due to the following reasons: Species designated as 3A are those which the Fish and Wildlife Service has overwhelming evidence of extinction. If the species is rediscovered in the future, it may acquire a high priority for listing. Species designated 3B are those which, under current taxonomic understanding, do not represent distinct species and do not meet the Endangered Species Act's definition of a species. Species designated 3C are proven to be more abundant or widespread than previously believed or those not subject to any identifiable threat.

A record search with the Department of Fish and Game Natural Diversity Database identified known habitats of endangered, rare and threatened plant and animal species in and near the City of Whittier. Exhibit 5-5 shows the general location of these sitings.

- The Western Yellow Billed Cuckoo (*Coccyzus Americanus Occidentalis*) is the most common nesting cuckoo. It is about the size of a dove with a brown back and white breast area. It is differentiated from the black-billed cuckoo by large white spots on its black undertail. It has a bright rufous flash in the open wing and a yellow lower mandible. It is often found in woods and brush areas, especially during outbreaks of the tent caterpillars during summer. Its song is guttural and toneless and never in a series of 3 or 4 coos. It is an endangered species in the State listing and 3B in the Federal Listing. It inhabits riparian forest and was found near the San Gabriel River near the Artesia Freeway. It was historically fairly common and nested in the area but the site is now destroyed and unsuitable for the habitat.

- The San Diego Horned Lizard (*Phrynosoma Coronatum Blainvillii*) is about 4 inches long with a yellowish or reddish-gray color. It has a dark mark on the neck and 2 long horns on the back of the neck and several smaller ones around its neck. Two spine rows on each side run along its back. It is considered rare and endangered by the DFG and Category 2 in the Federal



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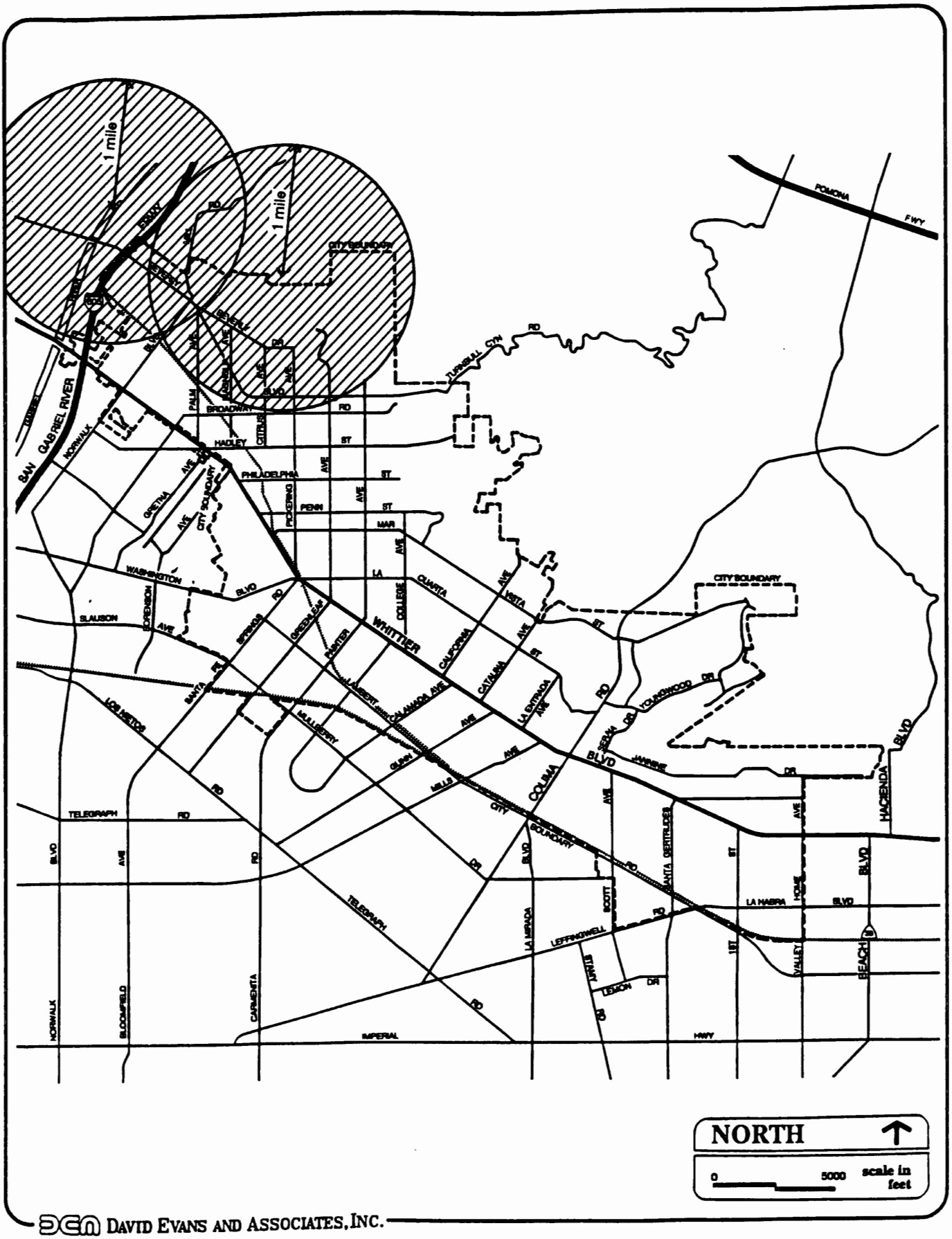
City of Whittier

GENERAL PLAN

EXHIBIT 5-5
ENDANGERED SPECIES



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City of Whittier

GENERAL PLAN

EXHIBIT 5-6
SAN DIEGO HORNED LIZARD

listing. It was located 3 miles southeast of the San Gabriel River, northwest of the City and last observed in 1960. The lizard was located in Sycamore Canyon in the northwestern section of Whittier. The lizard was also found south of the Whittier Narrows Dam along the San Gabriel River with the specimen at the Whittier Narrows Nature Center. It is believed to be in existence at these sites (see Exhibit 5-6).

- The Southwestern Pond Turtle (*Clemmys Marmorata Pallida*) is a fresh water turtle about 1 foot long. It is brownish-yellow in color with a grayish-brown neck with dark spots. It lives most of the time in water and comes out on logs and rocks during summer. It feeds on water plants, insects and dead animals. The female lays eggs on sandy soil. It is considered rare and endangered by the DFG and a Category 2 Federal Listing. It was seen in Monterey Park in 1965 in a gully drainage area south of Orange Avenue and at the San Gabriel River near Mountain View High School in El Monte in 1977. Turtles were found in a small pond at Whittier Narrows Dam near San Gabriel River in 1976. They were also found at the Alhambra Wash where the wash meets the Rio Hondo River at the Whittier Narrows Recreational Area. The species is presumed to be in existence.

- Parish's Gooseberry (*Ribes Divaricatum Var Parishi*) is a thorny bush with 3 to 5 lobed maple-like leaves which are alternate (not opposite like maples). In winter, it grows long papery-scaled brown buds, very narrow leaf scars, lines on twigs and a papery shreddy bark. These plants have 1 to 3 thorns at the base of leafstalks. Their fruits are ball-shaped and bristly in clusters of 1 to 5. The fleshy berries are eaten by most birds and some mammals. Twigs and barks are eaten by animals too. The Parish's Gooseberry is considered endangered by the DFG and Category 2 in the Federal List. It was last seen in 1980 or 1981 at the Whittier Narrows under the power lines and immediately east of a power line, north of the flood control channel. A single plant was found on sandy loam soil growing with Ribes Aureum. Collections may be seen at the Whittier Narrows Nature Center. This plant species is presumed to be in existence.

- The California Walnut Woodland consists of California Walnuts (*Juglans Californica*), strong-smelling 15 to 50-foot trees. Young branches of the tree have brownish fuzz and slender leaflets are 1.5 to 3 feet long. Female flowers are egg-shaped with curved yellow stigmas. It is considered endangered by the DFG but is not included under the state or federal listings. It was found in 1988 1.5 miles south of the Pomona Freeway on Fullerton Road south of Rowland Heights near La Habra Heights. The woodland was a closed canopy

forest on the north slope of the Puente Hills with annual grasses in the understory. Three stands were found, one with 60 percent coast live oak and 2 with 100 percent walnut. It is presumed to be in existence although threatened by nearby residential developments. The walnut woodland was also found north of Brea Boulevard, east of the Orange Freeway on the south side of Puente Hills and is bounded on western end by oil fields. It was mapped as close canopy *Juglans Californica* in 1935 but the canopy has become thin.

Although not reported to the Department of Fish and Game, a live-forever (*Dudleya*) was once found on the slopes of Sycamore Canyon. It is a 6 to 12-inch plant rising from a low circle of fleshy leaves. Flower stems are thin and flowers are yellow, orange or red. This species is considered endangered by the California Native Plant Society.

OPEN SPACE RESOURCES

Open space serves as outdoor recreation areas and allows the preservation of resources and the promotion of health and safety. Open space includes all vacant land in the planning area, including undeveloped private land and public areas left as open space. Some open space areas are unsuitable for development due to steep slopes or unstable ground conditions. There are other areas that remain undeveloped to comply with existing land use controls. They include parks, building setback areas, utility easements, school fields and equestrian trails.

In Whittier, range open space lands are located mainly in the Puente Hills area. The hillside areas above the City are basically undeveloped and provide the area and surrounding region with a unique ecology. Managed resource lands in the Puente Hills include oil production lands, flood control facilities and managed parkland such as the Murphy Ranch Wilderness Park and the Hellman Estate. Also, about 1,610 acres of the hillside area is planned for the expansion of the Rose Hills Memorial Park. Vacant land on the Puente Hills include Workman Hill, Sycamore Canyon, and Savage Canyon Landfill.

Residents have been calling for the preservation of the Puente Hills as a permanent open space area. The Whittier Hills Park Plan outlines the opportunities for a wilderness park for the hillside area extending from Workman Mill Road to Colima Road, north and east of the City. The implementation of the Plan would depend on the availability of funding to acquire all private lands within the proposed park site.

Natural resources in the hillside areas include the natural terrain and geology, soils, water, flora and fauna. Managed resource lands include oil fields, flood control facilities and natural preserves (Murphy Ranch Wilderness Park and Hellman Estate).

Land which is kept as open space for the public health and safety reasons in the planning area include areas with unstable soils, the earthquake fault zones, and areas with high fire risk. Areas with unstable soils are located in the Puente Hills. The Whittier earthquake fault zone runs northwest to southeast along the area north of the City. The hillside area is also a high fire risk zone because of topography and native vegetation. Public safety issues related to the wildfire risk and other constraints are discussed in the Public Safety Element Background Report.

City staff conducted field surveys to identify the location and distribution of development in the City. The information was mapped to define existing land uses. The Land Use Element Background Report discusses the distribution of existing land uses in more detail. Table 5-3 shows the areas which may be considered open space.

TABLE 5-3
OPEN SPACE AREAS

Vacant	265.1 acres	28.50%
Park	410.4 acres	44.12%
Friendly Hills Golf Course	154.8 acres	16.65%
Landfill	99.8 acres	10.73%
Total	930.1 acres	100.0%

Source: Whittier Planning Department, David Evans and Associates, 1991.

The Murphy Ranch Wilderness Park in the Friendly Hills area is a regional nature park. Unlike most parks, this one was left in its natural state rather than "developed" with grass, activity areas, and typical park furniture and buildings. It features riding and hiking trails and some picnic areas. The Hellman Estate is another undeveloped park on 200 acres which is owned by the City and maintained as a wilderness area. These parks provide recreational and educational values to the City. With the lack of undeveloped land, the parks represent important resources to the community.

The City itself is relatively built out with fairly low density development in most areas. Vacant areas are found in a few undeveloped parcels. Many of the large undeveloped areas in the Puente Hills are not suitable for development. They feature steep slopes or serve as water drainage courses. Other areas are large parcels under private ownership and ar likely to develop in the future.

There are a number of private school sites in Whittier, including the Whittier College. Whittier College provides large open spaces visible to the public. These areas influence the urban form and contribute to the community identity of the City.

PARKS AND RECREATIONAL FACILITIES

Manmade and natural recreation areas provide facilities for passive and active leisure activities and sports. These areas include regional parks, local parks, school facilities, public land, and private commercial recreational facilities. Other outdoor recreation areas include private recreational facilities, scenic areas, and school facilities available for the leisure and use of residents.

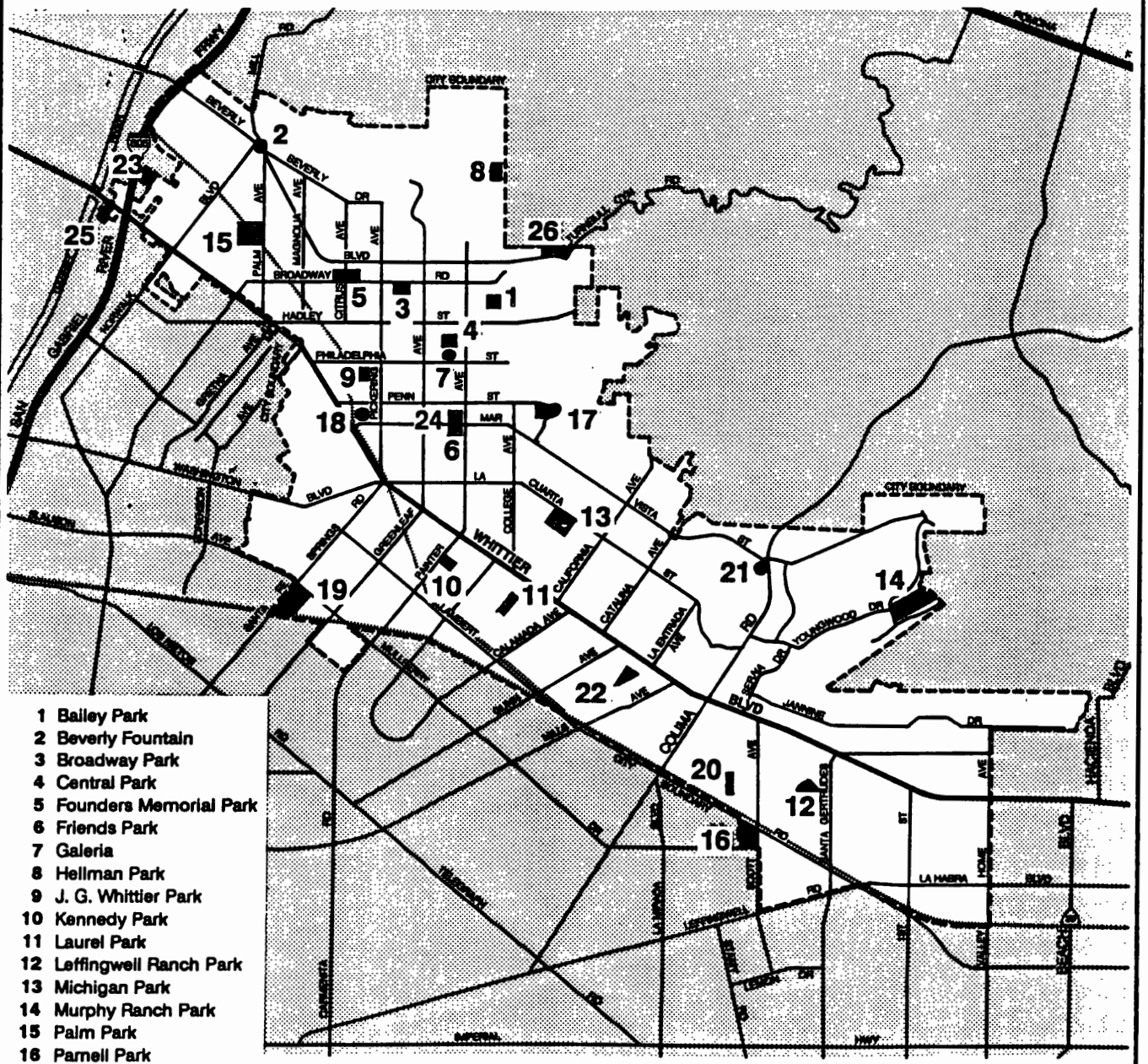
Description of Parks and Recreation Facilities

Public parks include all publicly-owned land which is used for recreation. City parks are found in various locations throughout the City. They are equipped with facilities designed for community, neighborhood, and special uses such as baseball fields, picnic areas, water fountains and play areas. Parks offer recreational, educational, and aesthetic values to the public. Exhibit 5-7 shows the location of all City parks and Exhibit 5-8 summarizes their facilities.

There are 24 City parks with sizes ranging from 1 to 200 acres in size. The total area occupied by City parks is approximately 337.9 acres. Large community parks in the City are Palm, Parnell, Michigan and Penn Parks and 2 wilderness parks - Murphy Ranch and Hellman Estate. Also, there is a 5.4-acre landscaped area on Whittier Boulevard which serves as a roadway median and holds the oldest Walnut Tree in the City. Table 5-4 lists the City parks, their addresses and size.

TABLE 5-4
CITY PARKS

Park Name	Address	Size
Anaconda Park	14575 Anaconda Street	2.5 ac
Bailey Ranch House	13421 Camilla Street	0.5 ac
Broadway Park	12816 Broadway	3.0 ac
Central Park	6532 Friends Avenue	2.0 ac
Founders Memorial Park	6031 Citrus Avenue	4.0 ac
Friends Park	13229 Mar Vista Street	7.5 ac
Gallerias	Greenleaf Avenue	0.5 ac
Guirado Park	5760 Pioneer Boulevard	3.5 ac
Hellman Park	Greenleaf Avenue and Orange Drive	200 ac
Hester Landscape	Hester Avenue	0.5 ac
Hoover(Beverly) Fountain	10839 Beverly Boulevard	1.0 ac



1 Bailey Park
2 Beverly Fountain
3 Broadway Park
4 Central Park
5 Founders Memorial Park
6 Friends Park
7 Galeria
8 Hellman Park
9 J. G. Whittier Park
10 Kennedy Park
11 Laurel Park
12 Leffingwell Ranch Park
13 Michigan Park
14 Murphy Ranch Park
15 Palm Park
16 Parnell Park
17 Penn Park
18 Walnut Tree
19 York Field
20 Hester Landscape
21 Mar Vista Fountain
22 Anaconda Park
23 Guirado Park
24 Joe Miller Field
25 Pio Pico State Park
26 Beverly Hills Estates Park

NORTH

0 5000 scale in feet

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City of Whittier

GENERAL PLAN

EXHIBIT 5-7
EXISTING PARKS

	Recreation Building	Supervised Recreation	Picnic Facilities	Cook Facilities	Playground Equipment	Gymnasium	Swimming Pool	Wading Pool	Multi-Purpose Fields	Baseball Fields	Multi-Purpose Courts	Basketball Courts	Tennis Courts	Volley/Badminton Courts	Handball Courts	Shuffleboard Courts	Rogue Courts	Horseshoe Pits	Overnight Camping	Restrooms	Off-Street Parking	Lighted Facilities
HISTORICAL LANDMARKS																						
Bailey Park																						
Walnut Tree																						
SPECIALTY PARKS																						
Joe Miller Field										●										●	●	
York Field										●								●		●	●	●
MINI PARKS																						
Beverly Fountain																						
The Galerias																						
Hester Landscape																						
Mar Vista Fountain																						
NEIGHBORHOOD PARKS																						
Anaconda Park			●	●	●							●								●		
Guirado Park	●		●	●	●			●		●		2			4					●	●	
Broadway Park	●		●	●	●								2			6	●	2		●	●	●
Central Park			●	●	●															●		●
Founders Memorial Park			●																			
Friends Park			●		●			●	●	1								●		●	●	●
J. G. Whittier Park		●	●		●							1								●		
Kennedy Park		●	●	●	●			●	●									●		●	●	●
Laurel Park		●	●		●													●		●		
Leffingwell Ranch Park			●										4									●
COMMUNITY PARKS																						
Michigan Park		●	●	●	●			●	●	1	●			1				●		●	●	●
Palm Park	●	●	●	●	●		●	●	●	1	●	1	7	1			●	4		●	●	●
Parnell Park	●		●	●	●			●	●	1	●	1		1				●		●	●	●
Penn Park		●	●	●	●			●	●		●			1				●		●		●
NATURAL PARKS																						
Hellman Park																						
Murphy Ranch Park			●	●																		

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City of Whittier

GENERAL PLAN

EXHIBIT 5-8
PARKS AND RECREATION FACILITIES

TABLE 5-4
CITY PARKS

Park Name	Address	Size
Joe Miller Field	7630 Washington Boulevard	---
Kennedy Park	8530 S. Painter Avenue	2.0 ac
Laurel Park	8825 Jacmar Avenue	1.0 ac
Leffingwell Ranch Park	15740 Starbuck Street	2.0 ac
Mar Vista Fountain	Mar Vista and Colima Roads	0.5 ac
Michigan Park	8228 Michigan Avenue	10.0 ac
Murphy Ranch Park	Youngwood and Las Cumbres Avenues	48.0 ac
Palm Park	5703 Palm Avenue/5785 El Rancho Drive	12.0 ac
Parnell Park	10711 Scott Avenue	11.5 ac
Penn Park	13950 Penn Street	8.0 ac
J.G. Whittier Park	7227 S. Whittier Avenue	2.5 ac
York Field	Santa Fe Springs Road and Slauson Avenue	10.0 ac
Walnut Tree Landscape	Whittier Blvd. south of Philadelphia St.	5.4 ac
	TOTAL	337.9 ac

Source: Whittier Parks Department, 1991.

The City also offers recreational programs, organized sports and other activities. They include the Whittier Hills Bike Challenge, Little League baseball, Pop-Warner Football, Whittier Grand Prix, and the Bicycle Race, among others. The City has a Community Center Building with multi-purpose rooms and an auditorium with a stage. The facility can accommodate 10 or more groups at one time.

Aside from City-owned parks, there are nearby County parks. They include Gunn Avenue Park on 10130 S. Gunn Avenue; La Mirada Regional Park at 13701 S. Adelfa Avenue; Amelia Mayberry Park at 13201 E. Meyer Road; McNees Park on Gretna Avenue and Whittier Boulevard; and Sorensen Park on 11419 Rosehedge Drive. The State maintains the Pio Pico State Park on Whittier Boulevard, west of the San Gabriel River Freeway. The park is 2.5 acres in size and contains the Pio Pico Mansion which houses historical and cultural artifacts of the region.

Private outdoor recreation areas are privately-owned and operated for profit or for the benefit of members. Two privately owned facilities in the City: the Friendly Hills Country Club Golf Course and a segment of the railroad right-of-way used for the corralling and riding of horses. Other private facilities include Boys Club, YMCA, YWCA, bowling lanes, billiard parlors, and other recreation associated with membership or fees.

Schools

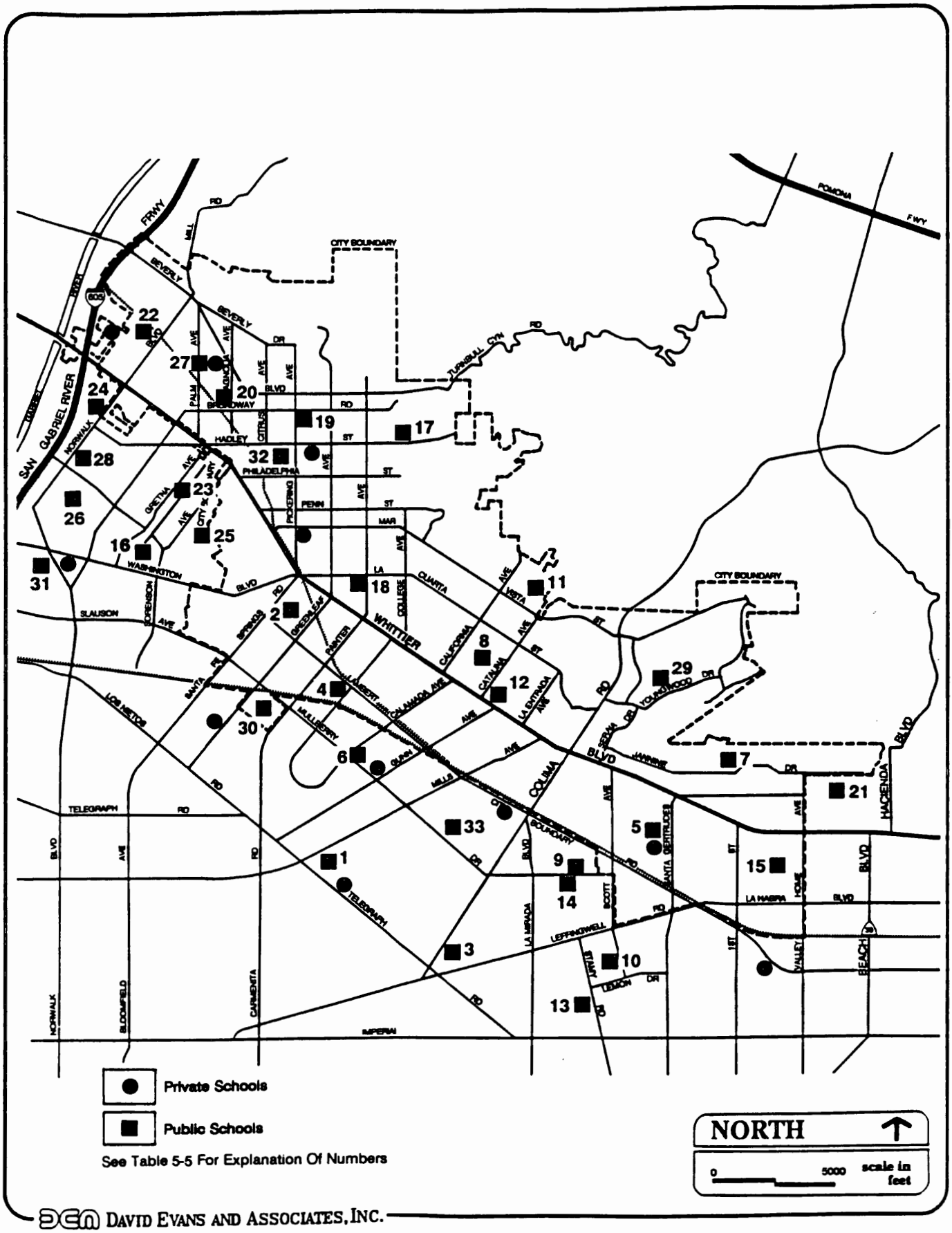
Public school sites are included as open space uses because they contain large open grounds that often supplement park open space. The school districts allow the use of playing fields and school grounds outside of school hours subject to prior arrangements. School sites are located throughout the planning area as shown in Exhibit 5-9. Table 5-5 lists the schools and their locations.

In particular, the Whittier Union High School District has an agreement with the City of Whittier for the use of school recreational facilities by the public. The Whittier Christian High School, the America Youth Soccer Association (AYSO), Parent Teacher Association (PTA), and the Whittier Police Department are groups that use the district's facilities.

Also, the Los Nietos and Lowell Joint School Districts have made their recreational facilities available to the public. Individual groups and organizations can use the facilities with prior arrangements with the schools. Little League, Boy Scouts, Girl Scouts, and PTA groups commonly use these facilities.

TABLE 5-5

Site No.	School	Address	Size (acres)
1	Ceres School	10601 S. Ceres Avenue	10.5
2	Evergreen School	12915 E. Helmer Drive	9.7
3	La Colima School	11225 S. Miller Road	9.6
4	Laurel School	13350 E. Lambert Road	9.1
5	Leffingwell School	10625 Santa Gertrudes Avenue	10.9
6	Mulberry School	10429 E. Mulberry Drive	10.2
7	Murphy Ranch School	16021 E. Janine Drive	10.5
8	Ocean View School	14359 E. Second Street	9.8
9	Orchard Dale School	10625 E. Cole Road	10.1
10	Scott Avenue School	11701 S. Scott Avenue	8.6
11	Mar Vista School (leased out)	8036 S. Ocean View Drive	9.8
12	East Whittier Junior High School	14421 E. Whittier Blvd.	21.0
13	Granada Junior High School	15337 E. Lemon Drive	20.9
14	Hillview Junior High School	10931 S. Stamy Road	18.6



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 5-9
EXISTING SCHOOLS

TABLE 5-5			
Site No.	**School**	**Address**	**Size (acres)**
15	Jordan School	10654 Jordan Road	
16	Washington School	7804 S. Thornlake Ave.	9.0
17	Hoover School	6302 S. Alta Avenue	5.5
18	Jackson School	8015 S. Painter Avenue	4.0
19	Lincoln School	12620 E. Broadway	2.5
20	Longfellow School	6005 S. Magnolia Avenue	5.0
21	Macy School	2301 W. Russell Road	
22	Orange Grove School	10626 E. Orange Grove Ave	10.5
23	Sorensen School	11493 E. Rosehedge Dr.	7.0
24	West Whittier School	6411 S. Norwalk Blvd.	6.5
25	Wiggins School	7348 S. Wexford Ave	
26	Phelan School	7150 S. Cully Avenue	10.0
27	Walter Dexter Junior High School	11532 E. Floral Drive	16.0
28	Edwards Junior High School	6812 S. Norwalk Blvd.	21.0
29	La Serna High School	15501 Youngwood Drive	40.0
30	Frontier High School	9401 S. Painter Avenue	
31	Pioneer High School	10800 E. Benavon Street	40.0
32	Whittier High School	12417 Philadelphia Street	29.48
33	California High School	9800 Mills Avenue	59.3

Refer to Exhibit 5-9 for site location.
Source: Whittier Union High School District, 1991; East Whittier High School District, 1991; Whittier City School District, 1991.

Bicycle and Equestrian Trails

There are a number of county trails near the City of Whittier. Many of the trails run along rivers, washes and flood control channels. In Whittier, the Rio Hondo and San Gabriel Rivers provides riding and hiking trails leading to as far south as Long Beach and north into the Los Angeles National Forest in the San Gabriel Mountains.

The Rio Hondo River Trail is a 15 mile long trail along the Rio Hondo Flood control channel and wash. It is the extension of the Santa Anita Wash east of the City of Arcadia

and passes through the Whittier Narrows Recreation Area south until it joins the Los Angeles River Trail. This trail is used for biking, horse riding and hiking.

The San Gabriel River Trail runs along the San Gabriel River flood control channel for 24 miles, with staging areas at the Whittier Narrows Recreation Area, Santa Fe Dam Recreation Area in Irwindale, El Dorado Park in Long Beach and the Santa Fe Springs Park. The trail starts at the foot of the San Gabriel Mountains, where it is connected to U.S. Forest trails in the Los Angeles National Forest by Van Tassel Trail. The San Gabriel River Trail runs from north to south, until it stops approximately 2 miles from the Long Beach Harbor.

The Skyline Trail runs along the ridge of the Puente Hills. It is 28 miles long from the Whittier Narrows Area, crossing the San Gabriel River Trail and east by the Puente Hills Landfill and into the Schabarum Regional Park. From this park, it continues northerly to the Walnut Creek County Park by the San Bernardino Freeway. The Walnut Creek trail starts from the park and goes northeast into the Frank Bonelli Regional Park in Pomona. The trail features rolling hills, open spaces, and urban areas. It provides views of the San Gabriel valley and the mountain ranges to the north. Proposed extension of the trail from Schabarum Park will lead it into the trail system of San Bernardino County.

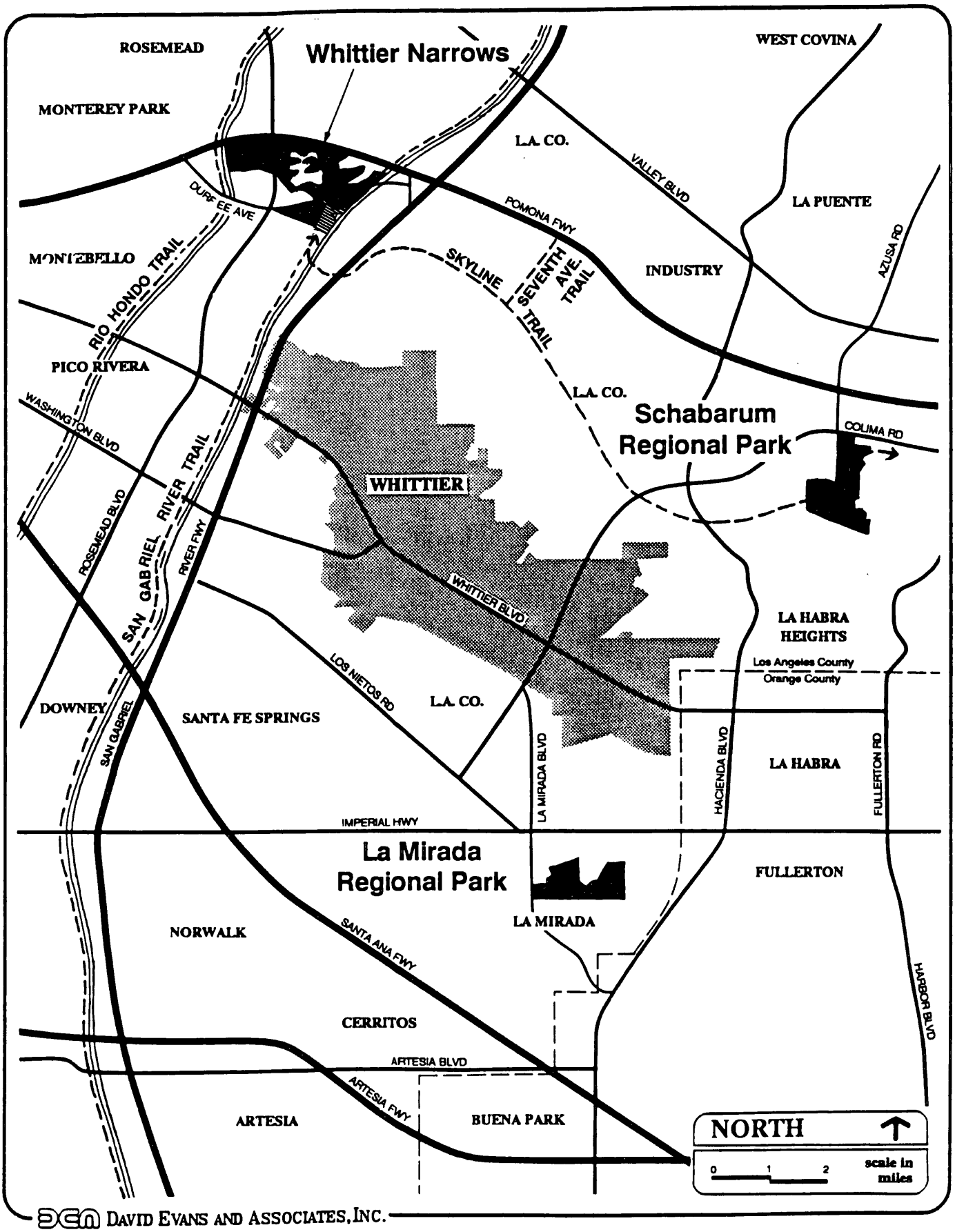
The Seventh Avenue Trail is a 2 mile trail along Seventh Avenue and is primarily an access from the north to the Skyline trail. A proposed Whittier connector trail will provide access from Whittier to the Skyline trail. Regional trails and parks in the area are shown in Exhibit 5-10.

There are designated bicycle routes in the City connecting the western and eastern sections of Whittier and running past the Uptown area. Class 1 routes are exclusive bikeways with minimum crossflows of vehicles and pedestrians. Class 2 routes are restricted bikeways with preferential use of bicycles. These are usually within the roadway on the outside lane by the curb. Exhibit 5-11 shows the designated bicycle lanes in the City.

Regional Parks

There are several regional parks near Whittier (see Exhibit 5-10). The Whittier Narrows Regional Park is located along the Pomona Freeway in El Monte, just west of Whittier. It is a groundwater recharge facility operated by the County Department of Public Works. The park covers approximately 1,092.21 acres of park areas and 206 acres are developed with a golf course.

The La Mirada Regional Park is located south of Whittier in La Mirada. It has approximately 105.56 acres of game fields, picnic areas, and a golf course on 104 acres.



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 5-10
REGIONAL PARKS AND COUNTY TRAILS

The Schabarum (formerly Otterbein) Regional Park is located at the corner of Azusa Avenue and Colima Road, northeast of the City. It covers approximately 589 acres and is linked to Whittier Narrows by the Skyline trail. It features picnic areas, game fields, hiking trails, a horse corral and undeveloped areas.

PARK NEEDS ASSESSMENT

The Puente Hills provide many of the open space and recreation resources of Whittier. Aside from its open space and recreation values, the hills contain unstable soils; is crossed by the Whittier earthquake fault; and has a high fire risk. Development in the area can also adversely affect air quality and destroy watershed and groundwater basin recharge areas. Unplanned development of the hillsides is also likely to destroy valuable scientific, educational, and cultural resources. Since this area is outside the City limits and under private ownership, it is difficult to control the use and development of the area. Still, it is in the City's interest to monitor development in the hillside areas.

The National Parks and Recreation Association has classified parks into different types:

- Mini Parks are approximately 1/4 to 1 acre in size with a 1/4 mile service radius. It often utilizes available vacant land and best located in high density housing and commercial areas. Mini-parks are considered only where larger parks not possible.

- Neighborhood Parks are 1 to 7 acres in size with a 1/2 mile service radius. They may be smaller (1 to 4 acres) if located near schools. The service area of neighborhood parks is defined by arterial streets, railroads and other physical barriers. Neighborhood parks often serve an established residential area and are used by bike-to or walk-to users.

- Community Parks serve several neighborhoods and are 7 to 30 acres with a 1 mile service radius. They serve drive-to users and have facilities such as tennis courts, swimming pools, multi-purpose courts, community center, senior citizen center, and other varied facilities.

- Specialty Parks often have only one facility such as tennis court or baseball field and would be used City-wide. A natural park is often developed by counties since its use is regional. It should cover 50 acres or more to accommodate users from the region. Natural parks may have lakes, and equestrian, hiking and bicycle trails. They often have unique vegetation and topography and are not fully developed.

Plotting the service radius around each park shows that most areas of the City are within easy access of a park. While most of the City is served by community parks (Exhibit 5-12) the northwest, southeast and eastern sections are not within easy access to neighborhood parks (Exhibit 5-13). Only the southeastern section of the City is outside both the community and neighborhood parks service areas.

Existing outdoor recreation areas in Whittier cover approximately 337.9 acres of land. The ratio of open space in public parks is 4.35 acres of parkland for every 1,000 City residents. The National Recreation and Park Association recommends a minimum of ten (10) acres per 1,000 residents of an urban area. This includes 4 acres of local recreation areas and 6 acres of regional recreation areas. In addition, the association recommends that there be within a one hour drive, another 15 acres of extra urban open space for each 1,000 residents.

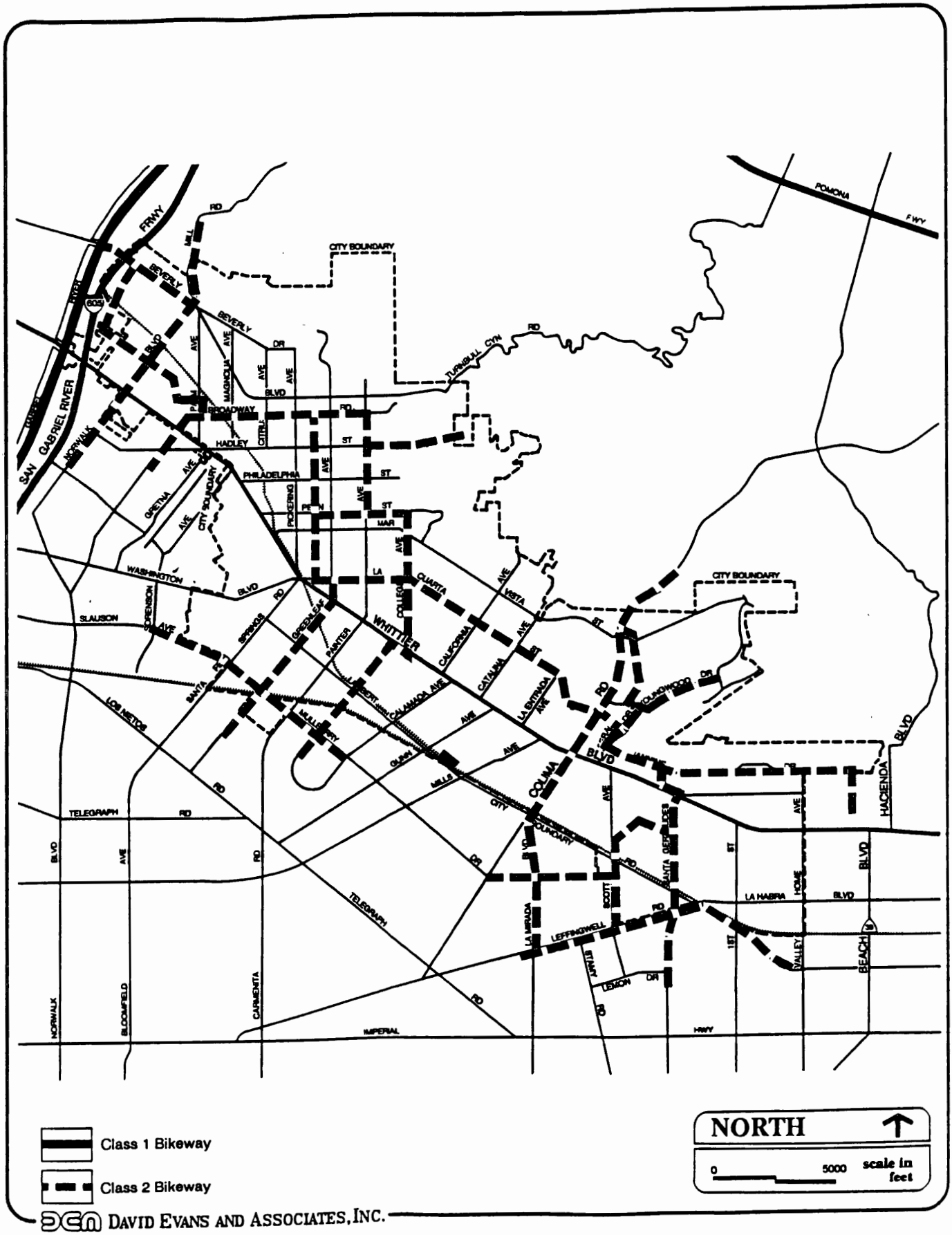
The City of Whittier is within the NPRA standard for local recreation areas. In addition, there are three regional parks in adjacent cities (Whittier Narrows, Schabarum, and La Mirada) and regional facilities (lakes, beaches, and mountains) are within easy driving distance from the City.

A Park Needs Study for Whittier was completed in 1977. It established a Parks Master Plan for the improvement of City parks and recreation facilities. The plan included the creation of better linkages between the different parks in the City; the provision of parks according to the needs of each community; and the creation of better visibility of parks for community identity. Programs and measures that the City can do to further develop its parks and recreational facilities include: buying vacant land or excess school property for new parks, forging more joint agreements for the use of school facilities; expansion of the bikeway system to utilize railroad and flood control rights-of-way; equal distribution of parks in City; and creation of better linkages of bikeways to adjacent cities and the regional system.

SCENIC AREAS

Scenic areas include areas that have unique visual and aesthetic values. The Puente Hills provide a visual framework for the City and a break in urban development. The hills are visible from almost any part of the City. Scenic vistas from the hills also have aesthetic value to the community. All of the Los Angeles Basin and surrounding mountains can be seen from the ridge lines on the hills on a clear day. Because the Puente Hills provide a valuable and unique visual amenity, the entire hillside area should be considered as a scenic resource.

Public and semi-public rights-of-way include power line rights-of-way, flood control easements and railroad rights-of-way. These areas have potential open space value as bicycle and equestrian trails, linear parks, or links between major recreation areas of the

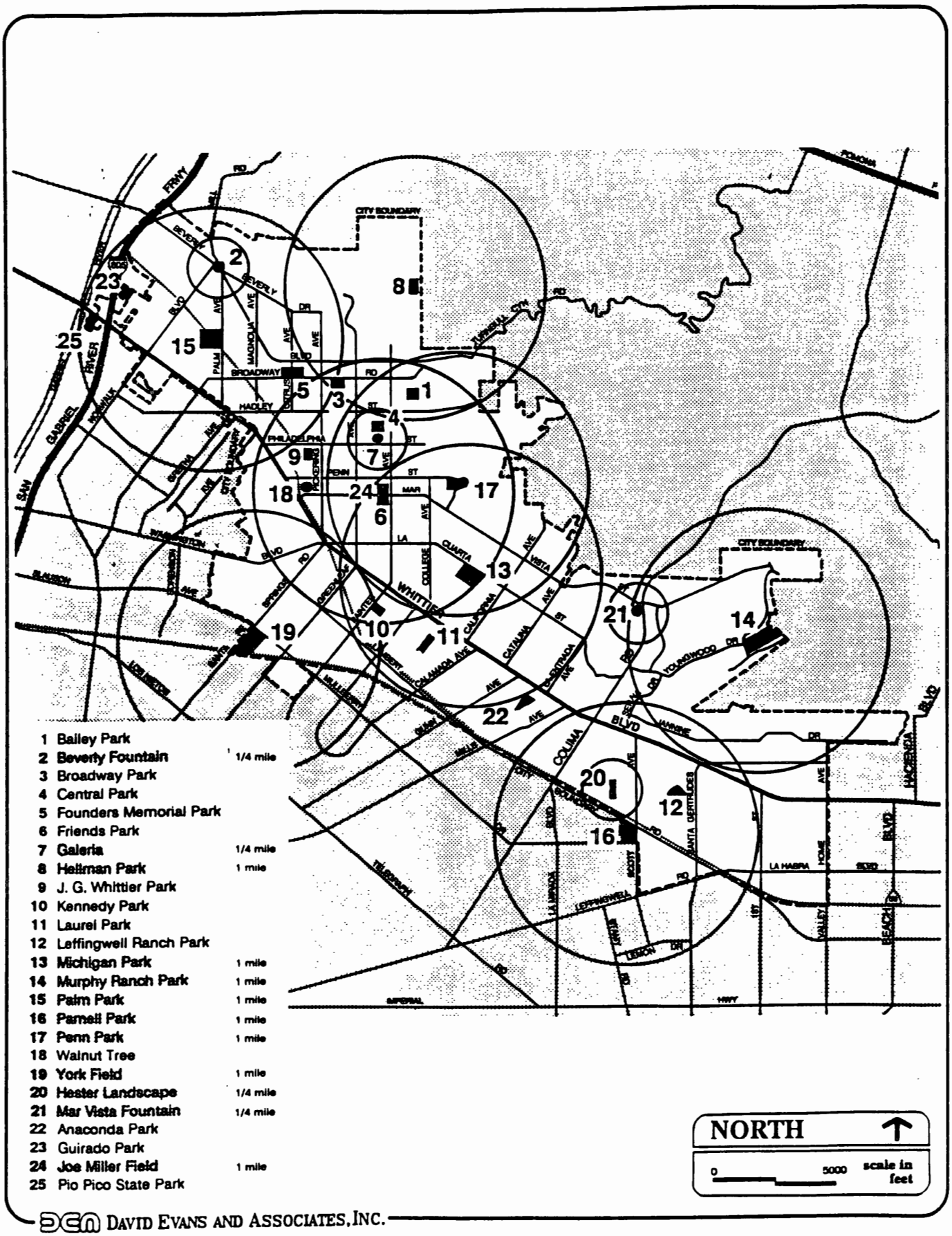


DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 5-11
DESIGNATED BIKEWAYS



1 Bailey Park
2 Beverly Fountain 1/4 mile
3 Broadway Park
4 Central Park
5 Founders Memorial Park
6 Friends Park
7 Galeria 1/4 mile
8 Hellman Park 1 mile
9 J. G. Whittier Park
10 Kennedy Park
11 Laurel Park
12 Leffingwell Ranch Park
13 Michigan Park 1 mile
14 Murphy Ranch Park 1 mile
15 Palm Park 1 mile
16 Parnell Park 1 mile
17 Penn Park 1 mile
18 Walnut Tree
19 York Field 1 mile
20 Hester Landscape 1/4 mile
21 Mar Vista Fountain 1/4 mile
22 Anaconda Park
23 Guirado Park
24 Joe Miller Field 1 mile
25 Pio Pico State Park

NORTH

0 5000 scale in feet

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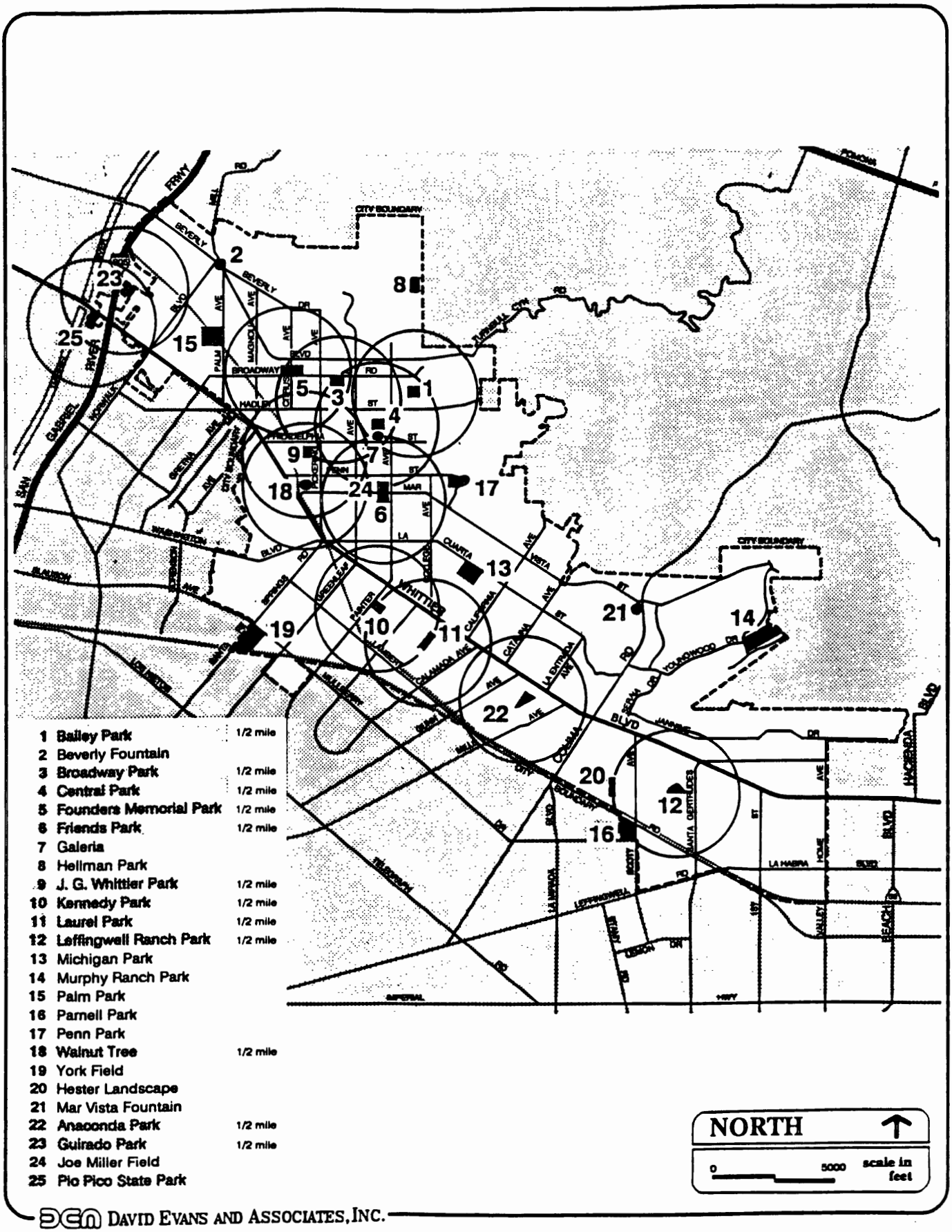
City of Whittier
GENERAL PLAN

EXHIBIT 5-12
PARK SERVICE AREAS
1/4 MILE AND 1 MILE RADII



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 5-13
PARK SERVICE AREAS
1/2 MILE RADII

City. Recreational use of these rights–of-way and easements is limited by their primary use and private ownership. There is a possibility that abandoned railroad rights-of-way could be converted to recreational use in the future. Flood control channels could be enhanced by the preservation of the natural water courses wherever feasible and concrete or riprap materials should be used only where erosion is likely.

Scenic Highways

Scenic highways refer to the road right-of-way and the scenic corridor along the right-of-way. The corridor includes areas adjacent to the roadway that create the visual appearance of the highway. The boundaries of the corridor are usually delineated by visibility from the road. The elements which make the scene are the major components of a scenic highway. These may be scenic, historic, or cultural features that merit recognition or interest as a destination or passive recreation. Scenic highways should provide opportunities for the development of roadside complementary facilities such as rest areas or viewpoints.

The designation of scenic highways should be based on the landscape or recreation resources within the corridor which provide a unique travel experience. There must be distinguishing characteristics such as natural beauty, historic, or cultural value. Other elements which influence scenic quality include proximity and accessibility of the highway; recreation and open space value; visual and aesthetic qualities of the scenic features along the route; and opportunities for compatible recreation and open space land uses along the route.

Routes within the Whittier planning area that may be considered for their scenic potential are shown in Exhibit 5-14. They include:

- Colima Road (east of Mar Vista Street) This route passes through natural undeveloped terrain and offers unique views of large stands of eucalyptus trees on the west slope of the hills. This route connects the City of Whittier directly with Rowland Heights, Hacienda Heights and the Schabarum Regional Park.

- Turnbull Canyon Road (east of Painter Avenue) Turnbull Canyon is historically one of the earliest sources of water for Whittier. The road consists of rugged steep slopes, varied natural vegetation and wildlife habitats, and has easy access to Workman Hill, which offers a 360 degree panorama of the Los Angeles Basin.

- Beverly Boulevard (from Norwalk Boulevard to Pickering Avenue) This street is planted on each side with rows of large mature pine trees and

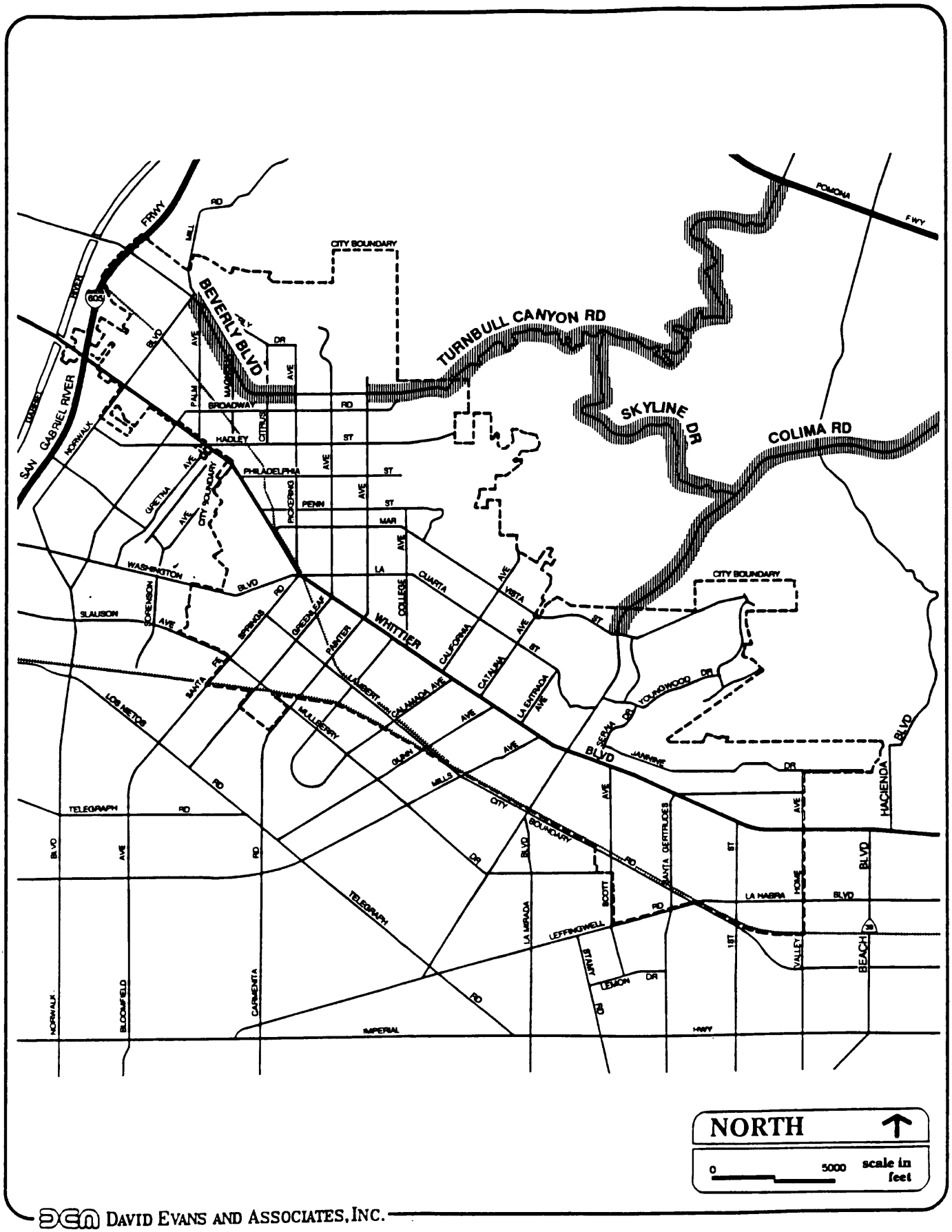
provides the most pleasing entryway into Whittier. The road should be preserved and possibly extended to connect with Turnbull Canyon Road and the westerly limits of the City.

- Skyline Drive (from Turnbull Canyon Road to south of Colima Road) This route is followed by the Skyline Trail which connects Whittier Narrows area with the Schabarum Regional Park. This corridor offers views of the Los Angeles Basin, the San Gabriel Valley, and the San Gabriel Mountains.

Major entryways into the City should also be designed as scenic corridors to help create an identity for the City. The City of Whittier could establish a corridor protection program and an ordinance for the protection of scenic corridors. The ordinance should contain guidelines for signs, utility lines, drainage, architecture and landscaping. The following elements should be considered in the protection and design of scenic highways:

- Roads and drainage ditches, culverts, drop inlets, bridges, etc.
- Buffers to screen out unsightly features existing outside the right-of-way.
- Outstanding scenic features abutting the scenic highway which may be destroyed by future developments.
- Pedestrian, equestrian, and bicycle paths and trails.
- View points, roadside rest areas, and parking turnouts.
- Rights-of-way for planting and landscaping.
- Highway widths to accommodate riding and hiking trails.
- Undergrounding of utility lines unless they are screened from view.

Cooperation with the County should be made for scenic corridors outside the City boundaries.



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 5-14
POTENTIAL SCENIC ROUTES

SECTION 6: AIR QUALITY ELEMENT BACKGROUND REPORT

INTRODUCTION

Southern California's air quality has become severely degraded, despite nearly 45 years of the most stringent pollution control in the nation. Air quality standards set by the State and Federal governments to protect public health are frequently violated. Ozone levels have been exceeded by significantly greater margins more frequently than anywhere else in the nation.

Early efforts in air pollution focused on the reduction of industrial emissions and were later expanded to include automobile emissions. More recently, efforts have been directed at the use of automobile, land, and energy sources rather than on expanding technological controls. Because these actions are largely the responsibility of local governments to implement, local governments are being asked to take a stronger role in air pollution control. The adopted 1989 Air Quality Management Plan (AQMP) for the Basin identified Air Quality Elements in General Plans as the focus for these local efforts.

This Background Report for the Air Quality Element to the City of Whittier General Plan is intended to provide the City's decision makers with information on local air quality, emission sources, and legal requirements for air quality planning. In addition, the report summarizes existing City programs already in place that meet AQMP requirements. This background information will provide the basis for identifying additional programs and policies to be incorporated into an Air Quality Element.

CLIMATE AND METEOROLOGY

The City of Whittier is located in the South Coast Air Basin of California, a 6,600-square-mile area encompassing Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The basin is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It is an area of high air pollution potential.

Regional Climate

The strength and location of a semipermanent, subtropical high pressure cell over the Pacific Ocean primarily controls the climate of the Basin. Climate is also affected by the moderating effects of differential heating between the land area of California and the adjacent Pacific Ocean. Warm summers, mild winters, infrequent rainfall, moderate daytime onshore breezes, and moderate humidities characterize local climatic conditions.

The terrain features of the Basin make it possible for various micro-climates to exist within the area's overall climate. The pattern of mountains and hills within the Basin is primarily responsible for the wide variations of rainfall, temperatures, and localized winds that occur throughout the region. Temperature variations have an important influence on Basin wind flow, dispersion along mountain ridges, vertical mixing, and photochemistry. Since the moderating marine influence decreases with distance from the coast, monthly and annual spreads between temperatures are greatest inland. Precipitation is highly variable seasonally. Summers are often completely dry. There are frequent periods of four to five months with no rain. In the winter, an occasional storm from the high latitudes sweeps across the coast, bringing rain. Annual rainfall is lowest in the coastal plain and inland valleys, higher in the foothills, and highest in the mountains.

City of Whittier Microclimate

The City of Whittier lies in the middle of the Los Angeles Coastal Plain. The area is within the semi-marine microclimatic zone of the South Coast Air Basin. Although generally behind the fog belt, the area is nearly always under the ocean's influence. Winters are seldom cold, frost is rare, and the temperatures seldom fall below twenty-eight degrees Fahrenheit (28°F). Spring days may be cloudy due to the presence of high fog. Summers are warmer than along the coast, but the entire area is reached by sea breezes and is not extremely hot (typical summer temperatures generally range from 68°F to 81°F). The area has lower winter temperatures than a marine climate, but is somewhat warmer and has less fog in the summer. Humidities tend to be lower than at areas close to the coast.

Annual average daytime temperatures range from 84.1 °F in August to 66.6 °F in January. Overnight low temperatures vary from 64.4 °F in summer to 48.4 °F during winter. Annual precipitation at Whittier is 14.85 inches and occurs almost exclusively from late October to early April.

Winds across the City are an important meteorological parameter since they control both the initial dilution rate of locally-generated air pollutant emissions, as well as their regional trajectory. Predominant wind patterns for the Whittier area generally follow those described for the Basin. During the day, the effects of the onshore flow reach inland across the Los Angeles Coastal Plain. During the night, surface radiation cools the air in the surrounding mountains and hills. The air then flows into the valleys and meanders to the coast, producing a gentle "land breeze".

The predominant daytime wind is from the west through southwest directions, demonstrating the effect of the regional onshore flow pattern. At night, the direction of the local offshore flow is generally out of the northeast through east directions at Whittier.

Differences in the frequency and direction of wind in the basin are due to the effects of seasonal and topographical variations. During summer, the nighttime land breeze nearly disappears, and conversely, the daytime sea breeze is weaker and of shorter duration in the winter.

A characteristic of the sea breeze flow that affects the observed daytime wind directions in the Whittier area is evident every month. In July, the onshore flow is at a maximum. (See Exhibit 6-1). The initial onshore flow from the Santa Monica Bay is westerly, while flow across the coast below the Palos Verdes Peninsula is more southerly. As the day progresses, the westerly flow becomes predominant, and the remaining southerly flow is pushed eastward and eventually becomes indistinct.

In summer, the weaker nighttime land breeze does not completely overwhelm the strong daytime onshore flow. As a result, very light southwesterly winds continue throughout most of the night, with variable eddies forming just before sunrise when the winds become non-distinctive. In winter, the land breeze is more pronounced and steady. Nighttime winds are normally sustained from the north-northeast throughout most of the night.

The predominant patterns for the Whittier area are broken by occasional winter storms and episodes of Santa Ana winds. Santa Ana winds are strong northerly or northeasterly winds that originate from the desert of the Great Basin and predominantly occur from September through March. Usually warm, always very dry, and often full of dust, these winds are particularly strong in passes and at the mouths of canyons. On the average, Santa Ana winds occur five to ten times a year, each lasting up to a few days.

Meteorological Influences on Air Quality

Regional flow patterns have an effect on air quality patterns by directing pollutants downwind of sources. Localized meteorological conditions, such as light winds and shallow vertical mixing, and topographical features, such as surrounding mountain ranges, create areas of high pollutant concentrations by hindering dispersal. Temperature inversions especially hamper dispersion by trapping air pollutants in a limited atmospheric volume near the ground. In the month of January, a surface inversion exists on 70 percent of the mornings. The average wind speed in the South Coast Air Basin is less than five miles per hour on 80 percent of the days during the summer smog season. This is a measure of daily stagnation.

During summer's longer daylight hours, plentiful sunshine provides the energy needed to fuel photochemical reactions between nitrogen oxides and reactive organic compounds which form ozone. To reach high levels of ozone requires adequate sunshine, early morning stagnation in source areas, high surface temperatures, strong and low morning inversions,

greatly restricted vertical mixing during the day, and daytime subsidence that strengthens the inversion layer. Because of ozone's long formation time in the atmosphere, ozone patterns are most affected by transport patterns. With southwesterly winds occurring on most days, the most frequent ozone transport route into Whittier is from source areas in the populated areas of the South Coast Air Basin to the west and southwest. Ozone precursor pollutants emitted in Whittier are most likely to contribute to ozone levels in areas to the northeast and east of the City.

In the winter, temperature inversions occur close to ground level during the night and early morning hours. At this time, the greatest pollution problems are from carbon monoxide and nitrogen oxides. High carbon monoxide concentrations occur on winter days with strong surface inversions and light winds. Carbon monoxide transport is extremely limited. Since carbon monoxide is produced almost entirely from automobiles, the highest concentrations are associated with areas of heavy traffic.

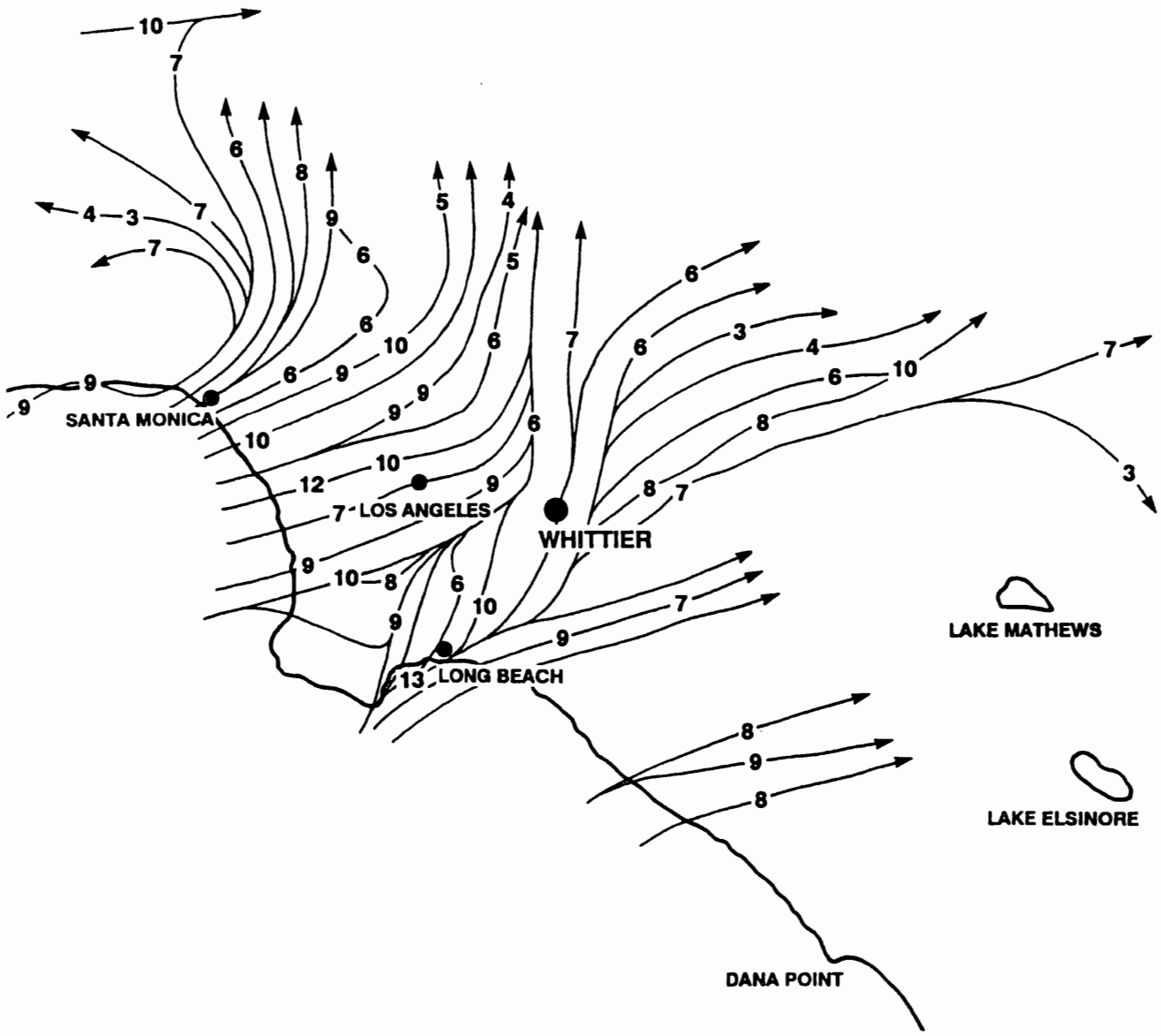
High nitrogen dioxide levels usually occur during the autumn or winter on days with summer-like weather conditions. These conditions include low inversions, limited daytime mixing, and stagnant windflow conditions. Although days are clear, sunlight is limited in duration and intensity and photochemical reactions necessary to form ozone are incomplete.

AIR QUALITY

Air Quality Standards and Pollutants

Air quality standards are set by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) at levels to protect public health and welfare with an adequate margin of safety. The State of California also sets ambient air standards. There are federal and air quality standards for six criteria pollutants: ozone (O_3), carbon monoxide (CO), fine particulate matter (PM_{10}), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). California's ambient air standards are generally stricter than federal standards for the same pollutants. California also has established state standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Federal and California standards are shown on Table 6-1.

The four pollutants of major concern in the South Coast Air Basin are ozone, carbon monoxide, nitrogen dioxide and PM_{10}. Ozone (O_3) is a colorless toxic gas which irritates the lungs and damages materials and vegetation. Carbon monoxide (CO) is a colorless gas which interferes with the transfer of oxygen to the brain. Nitrogen dioxide (NO_2) is a reddish-brown gas which at high levels can cause breathing difficulties. PM_{10} causes a greater health risk than larger sized particles since these fine particles can more easily



NORTH

no scale

0 Average Wind Speeds In Miles Per Hour

NOTE: Information is the most frequent Basin wind flow during July at 12:00 PST.

SOURCE: A Climatological/Air Quality Profile, California South Coast Air Basin, Ralph W. Keith, SCAQMD, 1980

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 6-1
WIND FLOW PATTERNS

penetrate the defenses of the human respiratory system and cause irritation by themselves and in combination with gases.

TABLE 6-1
AMBIENT AIR QUALITY STANDARDS

California		National	
Air Pollutant	**Concentration**	**Primary**	**Secondary**
Ozone	>0.09 ppm, 1-hr avg.[a]	>0.12 ppm, 1-hr avg.	0.12 ppm, 1-hr avg.
Carbon Monoxide	>9.0 ppm, 8-hr. avg. >20 ppm. 1-hr. avg.	>9.0 ppm, 8-hr. avg. >35 ppm, 1-hr avg.	>9.0 ppm, 8-hr. avg.[b] >35 ppm, 1-hr. avg.
Nitrogen Dioxide	>0.25 ppm, 1-hr avg.	0.053 ppm, annual avg.	0.053 ppm, annual avg.[c]
Sulfur Dioxide	≥0.05 ppm, 24-hr avg. with ≥0.10 ppm, 1-hr avg ozone or with 24-hr TSP ≥100 ug/m^3 >.25 ppm, 1-hr. avg.	0.03 ppm, annual avg. >0.14 ppm, 24-hr avg.	>0.50 ppm, 3-hr. avg.
Suspended Particulate Matter (PM_{10})	>30 ug/m^3 annual geometric mean >50 ug/m^3, 24-hr. avg.	>150 ug/m^3, 24-hr avg.; >50 ug/m^3 annual arithmetic mean	>150 ug/m^3, 24-hr avg.; >50 ug/m^3 annual arithmetic mean
Sulfates	≥25 ug/m^3, 24-hr avg.[d]		
Lead	≥1.5 ug/m^3, 30-hr. avg.	≥1.5 ug/m^3, calendar quarter	>1.5 ug/m^3
Hydrogen Sulfide	≥0.03 ppm, 1-hr avg.		
Vinyl Chloride	≥0.010 ppm, 24-hr. avg.		
Visibility-Reducing Particles	In sufficient amount to reduce prevailing visibility to less than 10 miles at relative humidity less than 70%, 1 observation.		

[a] Effective 3/9/87. The standard was previously ≥0.10 ppm, 1-hr. avg.
[b] Effective 9/13/85. The standard changed from ≥9.3 ppm to ≥9.5 ppm.
[c] Effective 7/1/85, standard changed from >.0532 ppm to >.0534 ppm.
[d] Effective 3//9/87, standard changed from ≥25 ppm to >25 ppm.
[e] Effective 7/1/87. The standards were previously:
Primary: Annual geometric mean TSP >75 ug/m^3 and 24-hr avg. TSP >260 ug/m^3
Secondary: Annual geometric mean TSP >60 ug/m^3 and 24-hr avg. TSP >150 ug/m^3

TABLE 6-1
AMBIENT AIR QUALITY STANDARDS

ppm = parts per million by volume
ug/m^3 = micrograms per cubic meter
> = greater than
≥ = greater than or equal to

Source: South Coast Air Quality Management District, 1991.

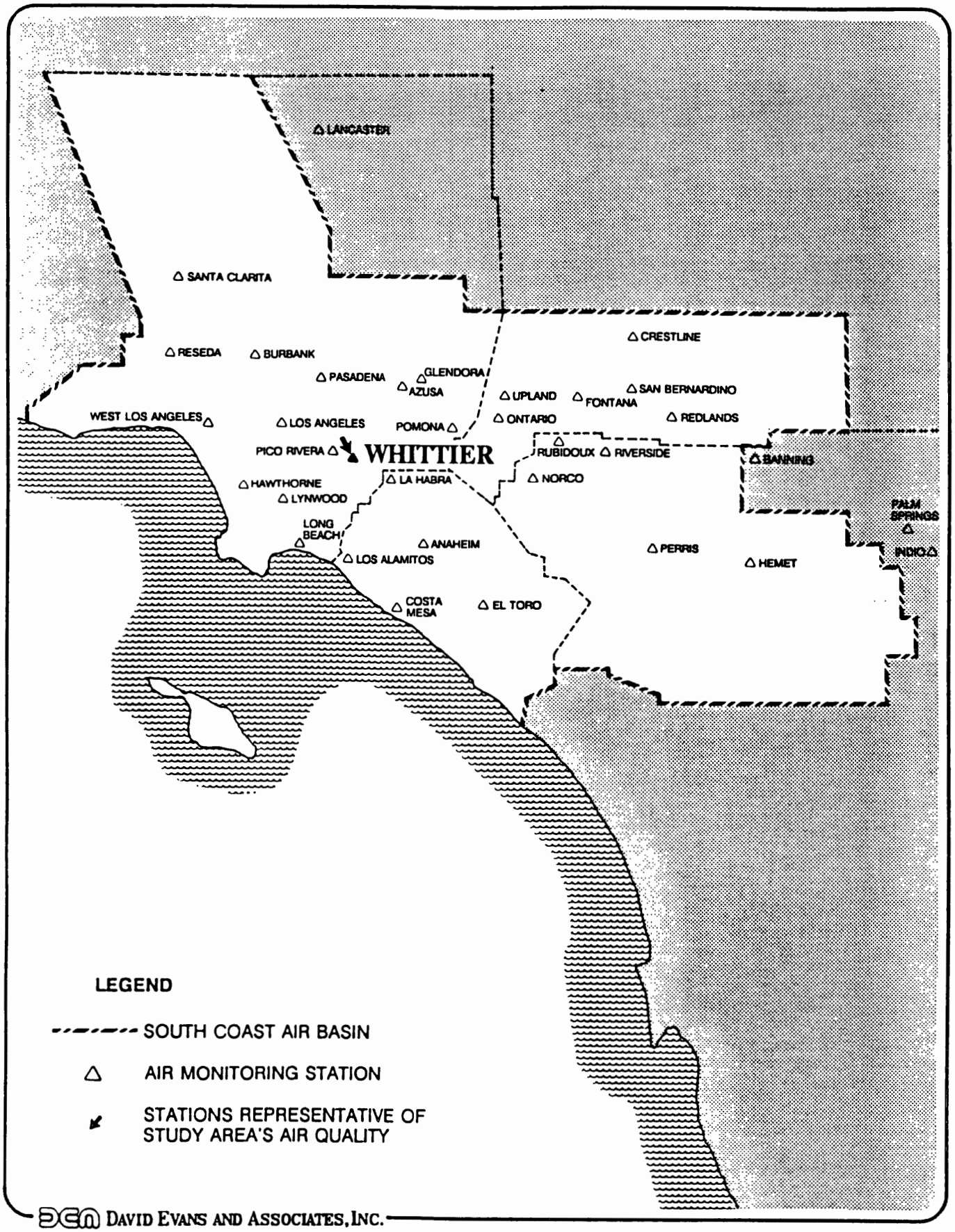
These pollutants come from vehicle exhaust, power generation, natural gas generation and the operation of certain equipment in construction and industry. Exhaust emissions from vehicles vary according to speed, type of engine (gasoline or diesel), the length of use, and the power available. Emissions from stationary sources occur at offsite power plants and are estimated by the amount of natural gas and electric power consumptions. Construction and industrial equipment generate pollutant emissions that are highly variable according to the type and technology of a specific equipment.

Existing Regional Air Quality

To determine regional compliance with air quality standards, the South Coast Air Quality Management District (SCAQMD) samples ambient air at over 32 monitoring stations in and around the Basin. Locations of these stations are shown on Exhibit 6-2. The Basin has not attained national and state standards for ozone, carbon monoxide, nitrogen dioxide, and PM_{10}

Levels of ozone exceed both national and state standards in all areas within the Basin. In 1989, the peak ozone reading was almost three times the National Ambient Air Quality Standard (NAAQS). The Los Angeles urban area exceeds this standard more frequently than any other area in the United States, and also records the highest peak readings. National and state standards for carbon monoxide are exceeded in more densely populated Los Angeles and Orange counties, but not in Riverside and San Bernardino counties.

The national nitrogen dioxide standard is exceeded in Los Angeles County, the only area in the nation which still exceeds this standard. The state nitrogen dioxide standard is exceeded in both Los Angeles and Orange counties. The number of readings over the standard fluctuates from year to year, depending on weather patterns. PM_{10} levels regularly exceed the national and state standards in Los Angeles, Riverside, and San Bernardino counties, and state standards in Orange County. Sulfur dioxide and lead levels in all areas of the Basin are below national and state standard limits.



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City of Whittier

GENERAL PLAN

EXHIBIT 6-2
SCAQMD AIR MONITORING NETWORK

Existing Whittier Air Quality

Ambient air quality in the City of Whittier can be characterized by readings taken at the SCAQMD pollutant monitoring station located in Whittier. (See Exhibit 6-2). Table 6-2 lists the air quality readings at the Whittier station from 1986 through 1990. The SCAQMD monitors ozone, carbon monoxide, and nitrogen dioxide at the Whittier station. Neither PM_{10} nor total particulates are monitored at Whittier or any monitoring station in the general vicinity. The nearest station that monitors PM_{10} is the Los Angeles station. The last five years of PM_{10} data from that station are shown in the table.

TABLE 6-2
SUMMARY OF AIR QUALITY DATA
WHITTIER AIR QUALITY MONITORING STATION

Pollutant Standards[a]	1986	1987	1988	1989	1990
Ozone (O_3)					
State standard (1-hr.avg.>0.09 ppm)[b]					
Number of days State standard exceeded	82	71	72	70	47
Federal standard (1-hr.avg>0.12 ppm)					
Number of days Federal standard exceeded	39	40	29	37	21
Maximum 1-hr concentration (ppm)	0.25	0.23	0.29	0.26	0.19
Carbon Monoxide (CO)					
State standard (1-hr.avg.>20 ppm)					
State standard (8-hr.avg.>9.0 ppm)					
Number of days State 1-hr standard exceeded	0	0	0	0	0
Number of days State 8-hr standard exceeded	0	1	0	0	0
Federal standard (1-hr.avg.>35 ppm)					
Federal standard (8-hr.avg.>9.0 ppm)					
Number of days Federal 1-hr standard exceeded	0	0	0	0	0
Number of days Federal 8-hr standard exceeded	0	1	0	0	0
Maximum 1-hr concentration (ppm)	15	13	13	13	12
Maximum 8-hr concentration (ppm)	NA	9.7	7.29	8.8	9.0
Nitrogen Dioxide (NO_2)					
State standard (1-hr.avg.>0.25 ppm)					
Number of days State standard exceeded	1	0	0	1	0
Federal standard (0.053 AAM in ppm)					
Percent Federal standard exceeded	0	0	0	0	0
Maximum 1-hr concentration (ppm)	0.28	0.25	0.22	0.29	0.23

TABLE 6-2
SUMMARY OF AIR QUALITY DATA
WHITTIER AIR QUALITY MONITORING STATION

Pollutant Standards[a]	1986	1987	1988	1989	1990
Total Suspended Particulates (TSP)[c,d]					
State standard (24-hr.avg.>150 ug/m^3)					
Percent of samples exceeding State standard	3	n.a.	n.a.	n.a.	n.a.
Federal standard (24-hr.avg.>260 ug/m^3)					
Percent of samples exceeding Federal standard	0	n.a.	n.a.	n.a.	n.a.
Maximum 24-hr concentration (ug/m^3)	235	216	257	217	211
Suspended Particulates (PM_{10})[c,d]					
State standard (24-hr.avg.>50 ug/m^3)					
Percent of samples exceeding State standard	66	62.1	56.9	56.9	51.7
Federal standard (24-hr.avg.>150 ug/m^3)					
Percent of samples exceeding Federal standard	n.a.	1.7	0	0	1.7
Maximum 24-hr concentration (ug/m^3)	178	158	130	137	152

AAM - annual arithmetic mean
ppm - parts per million
ug/m^3 - micrograms per cubic meter
NA - not available
n.a. - not applicable

[a] Pollutants shown are those for which South Coast Air Basin is designated a Federal non-attainment area.
[b] The State ozone standard was changed from ≥0.10 to ≥0.09 ppm (1-hr.avg.) in 1987.
[c] TSP standards were superseded by PM_{10} standards in 1987.
[d] TSP and PM_{10} readings are for the Los Angeles Monitoring Station.

Source: SCAQMD Air Quality Data, 1986-1990.

Under predominant meteorological conditions, local emissions in Whittier tend to disperse towards the northeast and east during the day, and slowly drift southwest or south at night. Most industrial emissions contribute to regional ozone concentrations downwind, but can, especially under stagnant meteorological conditions, add to localized levels of ozone and other criteria pollutants (i.e., NO_x, CO, and PM_{10}).

Because of geographical and meteorological conditions, the Whittier area attains high ozone concentrations, and annually records a number of exceedances of the State and Federal ambient standards. Local sources of ozone precursors such as nitrogen dioxide (NO_2) and reactive organic compounds (ROC) contribute to regional levels of ozone. Local ozone concentrations usually result from the transport of precursor emissions produced from

upwind sources. Predominant wind patterns and temperature inversions, limit pollutant dispersion, both vertically and horizontally.

In addition, local automobile traffic contributes on occasion to elevated concentrations of carbon monoxide. Localized carbon monoxide concentrations are greatest in winter and occur at congested intersections generally along Whittier Boulevard. Carbon monoxide levels in the area exceed the State 8-hour standard a few times a year, but are below the 1-hour standard.

Nitrogen dioxide, an ozone precursor, periodically exceeds the state standard. As with other ozone precursors, high concentrations of NO_2 emissions in the City will increase ozone concentrations at downwind locations.

FEDERAL AND STATE AIR QUALITY PLANNING REQUIREMENTS

Federal Clean Air Act Requirements

The Federal Clean Air Act (1977 Amendments) stated that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards by December 31, 1987. The South Coast Air Basin could not meet the deadline for ozone, nitrogen dioxide, carbon monoxide, or PM_{10}. Congress enacted amendments to the Clean Air Act in October 1990 that extend this deadline to 2010 for all areas (including Southern California) that have severely degraded air quality.

The 1990 Amendments divided the nation into five categories of planning regions, depending on the severity of their pollution and set new timetables for attaining the air quality standards. The categories range from "marginal" to "extreme." Attainment deadlines are from three to twenty years, depending on the category. The attainment timeframe applicable to the South Coast Basin, which is the only region in the nation classified as "extreme," is 2010. Deadlines for attaining carbon monoxide and PM_{10} standards are 2000 and 2005, respectively. Each nonattainment area must achieve a 15% reduction from its actual 1990 emissions inventory within six years. Thereafter, each area must achieve a 3% annual reduction.

Provisions of the 1990 Clean Air Amendments that relate to ozone and carbon monoxide non-attainment areas emphasize strategies for reducing vehicle miles travelled, and require submission of a plan revision "that identifies and adopts specific enforceable transportation control strategies and transportation control measures to offset any growth in emissions from growth in vehicle miles travelled (VMT) or number of vehicle trips in such area" to meet statutory requirements for demonstrating periodic emissions reduction requirements.

EPA can withhold certain transportation funds from states which fail to comply with the planning requirements of the Act. If a state fails to correct these planning deficiencies within two years of federal notification, EPA is required to develop a federal implementation plan for the identified nonattainment area or areas.

In the South Coast Air Basin, the agencies designated by the governor to develop regional air quality plans are the South Coast Air Quality Management District and the Southern California Association of Governments (SCAG). The two agencies adopted a revised Air Quality Management Plan (AQMP) on March 17, 1989. This plan, which set an attainment date for all pollutants of 2007, was adopted prior to enactment of the 1990 Clean Air Act Amendments. Therefore, the SCAQMD is required to prepare an amended plan in 1993 to conform to federal Clean Air Act requirements.

The 1989 AQMP emphasized local government measures and required adoption of local air quality elements.

California Clean Air Act

In 1988, the California Legislature enacted the California Clean Air Act (CCAA). The CCAA amended the enabling authority for air pollution control districts in California. The legislature gave these districts, including the SCAQMD, broad new authority through the CCAA to regulate motor vehicle use with indirect source controls in areas that have not met national or state ambient air quality standards.

The CCAA requires that regional emissions be reduced by 5 percent per year, averaged over 3 year periods, until attainment can be demonstrated. Each area that does not currently meet a national or state ambient air quality standard must prepare a plan which demonstrates how the 5 percent reductions will be achieved. A plan was to be locally adopted and submitted to the ARB by June 30, 1991. Areas, including the South Coast Air Basin, with the most heavily degraded air quality are required by the CCAA to reduce emissions 50 percent from 1987 levels by December 31, 2000. Plans must be updated in 1998 if attainment cannot be demonstrated by the year 2000.

1991 Air Quality Management Plan

In July 1991, the South Coast Air Quality Management District adopted the 1991 Air Quality Management Plan, which was prepared to address the requirements of the California Clean Air Act.

Local governments are required by the 1991 AQMP to implement specified AQMP measures, but the 1991 AQMP differs from the earlier 1989 AQMP in how local

governments must comply. Truck restriction and parking management, including policies to revise parking codes, are the only measures required by the 1991 AQMP for inclusion in an air quality element for a city without a large special event center. Bicycle routes which facilitate home/work commuting are required in a general plan, although not necessarily in an air quality element. Other measures can be implemented through adoption of ordinances at least as stringent as model ordinances to be developed by the SCAQMD.

The 1991 AQMP requires local governments to adopt ordinances for the following strategies:

- Person Work Trip Reduction
- Non-motorized Transportation
- Employer Rideshare and Transit Incentives
- Auto Use Restrictions
- Parking Management
- Merchant Transportation Incentives
- Auto Use Restrictions
- Truck Dispatching, Rescheduling and Rerouting

The SCAQMD declared its intent to adopt backstop rules that would be imposed in any city where implementation ordinances are determined by the SCAQMD to be inadequate. Additional local government measures, including control of emissions associated with new construction and reducing emissions from energy use, are also suggested in the AQMP.

Those measures for which the SCAQMD intends to adopt model ordinances are described below and summarized in Table 6-3.

TABLE 6-3
LOCAL ACTIONS REQUIRED OR RECOMMENDED BY 1991 AQMP

AQMP STRATEGY	ORDINANCE		GENERAL PLAN	OTHER
	Required	Optional		
Alternative work weeks, telecommuting by government employees	X			
Alternative work weeks, telecommuting, trip reduction by local employers	X			
Telecommuting centers for new developments	X			

TABLE 6-3
LOCAL ACTIONS REQUIRED OR RECOMMENDED BY 1991 AQMP

AQMP STRATEGY	ORDINANCE		GENERAL PLAN	OTHER
	Required	Optional		
Set-aside local resident space for employers with multiple facilities	X			
Zoning and licensing to allow telecommuting and home employment	X			
Non-work trip reduction programs for special event centers	X			
Bicycle routes that support job and non-work trips			X	
Parking for bicycles, showers and locker facilities for new commercial and industrial facilities	X			
Trip reduction plans for employers of 100 and buildings housing 100	X			
Support for Transportation Management Association formation		X		
Parking management practices			X	
Revised parking codes			X	
Clean Streets Program	X			
Auto-free zones for special event centers (where applicable)			X	
Customer mode-shift incentives for large retail establishments	X			
Improved truck routing, delivery scheduling and shipping and receiving plans	X		X	
Supplemental development standards	X			
Actions to facilitate transit for regional shopping centers	X			

TABLE 6-3 LOCAL ACTIONS REQUIRED OR RECOMMENDED BY 1991 AQMP				
AQMP STRATEGY	ORDINANCE		GENERAL PLAN	OTHER
	Required	Optional		
Local implementation of Regulation XV		X		
Data collection for SCAQMD				X
Source: South Coast Air Quality Management District. 1991 AQMP Appendices IV-C and IV-E.				

The SCAQMD intends to adopt model ordinances for the following measures, which are described in Appendix IV-E of the 1991 AQMP:

Measure 1a - Person Work Trip Reduction

This measure requires that local governments adopt, by December 31, 1992, a program for alternative work weeks and telecommuting by local government employees that would reduce motor vehicle person work trips by 12%, increasing to 20% in 2000, and 30% in 2006. Local governments shall also support state legislation for employer tax credits for telecommuting equipment and services, as well as encourage the development of telecommuting centers.

Local governments are also required by the AQMP to adopt trip reduction ordinances for local employers to reduce employee motor vehicle person work trips through telecommuting; alternative work weeks and non-motorized transportation. The same targets apply as for government employees. The AQMP acknowledges that the impact of Regulation XV was not considered in setting these targets.

Local governments are also expected to adopt ordinances requiring regionally significant housing developments in housing-rich areas and regionally significant employment centers in job-rich areas to implement telecommuting centers in housing-rich areas.

By December 31, 1994, local governments should adopt ordinances that require employers with multiple facilities to set aside space in every office facility above a certain size to facilitate its use by employees who live nearby but would normally work at another location.

Local governments should examine, in conjunction with locally licensed businesses and cable television operators, the feasibility of developing centralized ordering and home delivery services. Local governments must ensure by December 31, 1992 that their zoning and

licensing ordinances permit telecommuting and do not excessively restrict reasonable home occupations. New facilities that include and use video teleconferencing facilities should be given credit for satisfying portions of local or regional indirect source requirements and VMT reductions.

1b - Non-motorized Transportation

In addition to the requirements above, local governments are required by the 1991 AQMP to adopt non-work trip reduction ordinances for large retail establishments and special event centers which require facilities and incentives for non-motorized transportation. If local governments fail to act, the SCAQMD would adopt an Indirect Source regulation requiring these measures.

By December 31, 1994, local governments should include bicycle routes in their General Plans that support the employer and non-work trip bicycle transportation plans included above. One option specified in the AQMP is for local governments to amend their General Plans to allow mixed use and cluster development and local commercial development within walking distance of residential areas.

By December 31, 1993, local governments are required to enact ordinances requiring that bicycle parking spaces be provided in new commercial and industrial developments in excess of 10,000 square feet, and that employee shower and locker facilities be provided in new commercial and industrial development in excess of 100,000 square feet.

2a - Employer Rideshare and Transit Incentives

Local governments are required to adopt an ordinance or regulation by December 31, 1992 to require facilities and buildings with 100 or more employees to submit trip reduction plans. Local governments may adopt one trip reduction ordinance that includes specific individual provisions and traffic reduction targets for this measure, as well as the two measures described above.

If actions are found to be ineffective, local governments should expand the regulation by 1994 to cover businesses and buildings with 25 or more employees. (Note: This measure transfers authority presently utilized by the SCAQMD in administering Regulation XV and expands coverage to include buildings housing 100 employees, as well as individual employers of 100 or more at a single site.)

Local governments shall also encourage the formation of Transportation Management Associations and support legislation favoring vanpools.

2b - Parking Management

By December 31, 1992, local governments are required by the AQMP to adopt an air quality element into their general plans and revise parking codes, as follows:

- Increase daytime parking fees in all congested centers
- Establish a surcharge for single occupancy vehicles and/or discount for multi-occupancy vehicles
- Eliminate peak-period parking on arterial streets
- Require employer-sponsored preferential parking for ridesharers for employers of 100 or more (short term) and 25 or more (long term)
- Establish residential parking zones/permit programs
- Implement short term commercial parking turnover through increased parking fees, shorter time limits, increased enforcement, etc.
- Implement Park and Ride and peripheral parking programs
- Increase parking enforcement
- Cap the number of parking spaces in a zone
- Cap the number of parking spaces permitted per square foot for a particular use
- Reduce the amount of free parking at non-work centers by limiting length of free parking time, validating only for purchase, or importing user charges based upon vehicle passenger occupancy rates
- Develop a local government parking fee structure to support transit and TDM programs
- Restrict residential parking to residents only through a per;mit process in all areas adjacent to congested commercial activity centers
- Allocate additional staff time and/or new parking enforcement techniques to parking enforcement operations
- Eliminate free parking for new non-residential developments

Local governments are required to establish procedures for reporting progress in implementing the above parking restrictions.

2d - Merchant Transportation Incentives

By December 31, 1992, local governments must adopt ordinances which would require large retail establishments to offer customer mode-shift travel incentives and require owners/managers/developers of existing and new retail establishments to provide incentives for non-motorized transportation needs. Suggested incentives include providing bike racks, pathway systems, and mixed use cluster developments.

If local governments do not act, the SCAQMD would adopt an Indirect Source regulation to implement the same control methods.

2e - Auto Use Restrictions

This measure applies only to special event centers with capacities of 10,000 or more and requires incorporation of offsite park-and-ride lots, shuttle services, etc. It also requires designation of auto-free zones in areas of associated pedestrian activity. The SCAQMD would develop a regulation if cities where such facilities are located fail to act.

3a - Truck Dispatching, Rescheduling and Rerouting

This measure requires local governments to adopt air quality elements in general plans which facilitate improved truck routing and delivery scheduling, and which call for the development of shipping and receiving plans. It also calls for local governments to adopt local ordinances or Memorandums of Agreement by December 31, 1992 to facilitate improved truck routing and delivery scheduling.

- Clean Streets Program

Local governments will be required to develop by December 31, 1992 a "clean streets" management program which includes enacting construction carryout and entrainment ordinances and vehicle entrainment ordinances, as well as controlling emissions from unpaved areas. Local governments may adopt Development Impact Fee ordinances or create street maintenance districts to fund this program.

Indirect Source Program

In addition to the programs listed above, the 1991 AQMP set forth the following local government measures as constituting its indirect source program, as required by the California Clean Air Act. The AQMP gives local governments the option of also adopting these measures and implementing them at the local level, or letting the SCAQMD adopt and implement them.

- Environmental Review Program
- Trip Reduction for Schools
- Supplemental Development Standards
- Special Activity Centers
- Enhanced Regulation XV
- Truck Programs
- Registration Program

- Sensitive Receptor Review for Risks from Toxic Air Contaminants

The measures are described in detail in Appendix IV-C of the 1991 AQMP and summarized below:

M-H-1 - Environmental Review Program

The SCAQMD will adopt a rule that will establish standards for the air quality analysis in environmental documents and institute a review program in which the District would validate the adequacy of the air quality analysis for local governments and insure the incorporation of best available mitigation measures. The SCAQMD will also offer pre-project consultation review to developers to insure that mitigation measures are incorporated in project design in order to minimize delays associated with environmental document review. The pre-project review will be similar to review meetings that local governments hold when evaluating subdivisions.

M-H-2 - Trip Reduction for Schools

This measure would require that students at senior high schools and colleges be included in developing Regulation XV plans for the facility and meeting the required Average Vehicle Ridership (AVR).

M-H-3 - Supplemental Developmental Standards

This measure involves a number of source categories ranging from urban tree planting to reduce heat island effects, incorporating design standards that will support carpooling and non-motorized transportation modes such as bicycling through construction of showers and lockers, and actions to reduce vehicle idling. This measure would require local governments to adopt or amend zoning ordinances to specify minimum supplemental development standards for projects that are indirect sources. It would also require warehouses, business parks, etc. to provide consolidated freight loading/unloading zones. The SCAQMD will adopt a model ordinance.

M-H-4 - Special Activity Center

This measure is similar to the Special Event Center measure, but would also apply to airports and regional shopping centers. Suggested actions for shopping centers include offering discounts on merchandise to customers that utilize transit, institute a parcel delivery service for transit riders, give preferential parking to high occupancy vehicles, and working with local governments to establish temporary roadway controls. The City of Carson's local

shuttle service is cited as an example of an approach that could be used to partially fulfill this measure.

The SCAQMD will adopt a model delegation package and give cities the option of implementing the program at the local level, as authorized by Section 40717 (e) (1-3) of the Health and Safety Code.

M-H-5 - Enhanced Regulation XV

This measure would lower the size threshold for firms regulated by Regulation XV, the District's Employer Trip Reduction Rule and increase the average vehicle ridership (AVR) that must be met. Local governments currently have the option of requesting an exemption to Regulation XV so that they can implement the measure by applying for "certification" to the SCAQMD to implement the regulation. To receive such certification, local governments would need to adopt an ordinance at least as stringent as Regulation XV and to permit the District to audit implementation. Although it is not stated, local governments would presumably have to amend the local regulation to conform to Regulation XV each time the latter is amended.

M-H-6 - Truck Programs

The District will adopt a series of rules that would: (1) establish requirements for new and existing facilities that generate large numbers of truck trips, such as truck terminals, truck stops, and warehouses; (2) establish operating practices for facilities that receive trucks; (3) require facilities that attract trucks for the purpose of refueling to reduce truck-related emissions; and (4) restrict truck traffic on arterial streets during peak periods and establish a surcharge. For facilities that generate truck trips, credit would be given towards compliance if the trucks are low-emission vehicles, as defined by the California Air Resources Board. Local governments have the option of applying for certification to administer the program.

SCAG's guidance calls for truck operators to develop voluntary compliance plans. SCAG also states that local governments should consider levying a fine for noncompliance with the voluntary plan.

M-H-7 - Registration Program

This measure would require existing commercial and light industrial facilities to supply data to the SCAQMD on activities that impact the number and time that vehicles arrive at the facility. This information would be provided to the District, along with a small fee to support the cost of the program. Initially, data would be collected through Regulation XV

and the District's permit system. Later, the District would work with local governments to collect the needed data through their business licensing process. For cities that do not have a business licensing process, the SCAQMD would work directly with businesses.

M-H-9 - Sensitive Receptor Review for Risks from Toxic Air Contaminants

The District will develop a regional database and modeling tool for toxic air contaminants, based upon information received under the AB 2588 program. At the request of a city or county, the District will evaluate the potential impacts on a new development from existing toxic sources will be evaluated. A fee will be charged to cover the District's processing costs.

In addition to the above measures, SCAG's guidance calls for amending general plans and adopting ordinances and interregional agreements to implement SCAG's growth management performance (job/housing) goals.

Southern California cities differ significantly in size and character. Therefore, some recommended actions are not applicable to all cities. Other programs need to be tailored to meet the unique conditions of each city.

AQMP Conformity

The EPA requires that local and regional components of state implementation plans (SIPs) that are developed to meet federal standards include conformity procedures for evaluating federally funded projects. Conformity demonstration procedures for the 1989 AQMP extended these demonstration requirements to non-federally funded capacity-enhancing wastewater treatment projects and to regionally significant transportation and general development projects. Guidelines for demonstrating this conformity were developed by SCAG and approved by the SCAQMD and ARB. These conformity requirements were also extended to the 1991 AQMP. Criteria for determining whether a project is required to demonstrate conformity are shown in Table 6-4.

TABLE 6-4
AQMP GENERAL DEVELOPMENT CONFORMITY CRITERIA

1. Airports with at least 50 based aircraft, 25,000 annual itinerant operations, or 35,000 local operations.
2. Airports served by a CAB or PUC certified carrier.
3. Public use airports more than 20 miles away from the nearest airport meeting the above criteria.
4. Sports, entertainment or recreation facilities that accommodate at least 4,000 people per performance, or that contain 1,500 fixed seats or more.
5. Office building or office parks that employ more than 1,000 people or containing over 250,000 square feet.
6. Hotels or motels with 500 rooms or more.
7. New electrical generating facilities or expansion of existing generating facilities.
8. Transmission lines with capacity of 22 kw or more.
9. Flood control project, dams, reservoirs or debris basins on or affecting a major water body that has a tributary area greater than 20,000 acres at the county line, or facilities on a drainage course having a tributary basin greater than 50,000 acres and draining directly into the ocean.
10. Projects in an area that is designated to be of regional significance and concern in the SCAG adopted Conservation and Open Space Plan.
11. Industrial plants and industrial parks that employ more than 1,000 people, occupy more than 40 acres of land or contain more than 650,000 square feet of floor space.
12. Mining operations with more than 40 acres or producing 600,000 short tons annually.
13. Petroleum or gas refineries, recovery operations, storage facilities or expansion of existing facilities (not gas station storage facilities).
14. Designation of a drilling district.
15. Petroleum and gas pipelines that are part of national distribution system.
16. Water ports, or the expansion of an existing port, so that capacity is increased by at least one million short tons of cargo per year.
17. Small craft harbors with 300 or more boat slips or open water moorages, or expansions of an existing harbor to accommodate at least 300 additional boat slips or open water moorages
18. Residential development including mobile home parks with 500 dwellings or more.
19. State highways and arterial roads(construction or major modification) or roads that provide primary access to a regionally significant area (designated in the SCAG adopted Conservation and Open Space Plan).
20. Construction of a post-secondary school, public or private, for 3,000 students or more, or expansion of an existing facility having a capacity of 3,000 students or more by an addition of at least 20 percent more students.
21. Sewage treatment facilities with a capacity of at least 750,000 gallons per day, or the expansion of an existing facility by at least that much, and any proposed interceptor.
22. Shopping centers or trade centers that employ 1,000 persons or more, or contain 500,000 square feet of floor space.

TABLE 6-4 AQMP GENERAL DEVELOPMENT CONFORMITY CRITERIA	
23.	Class I solid waste disposal sites or the expansion of an existing Class I site, or other sites of more than 40 acres, or expansions of sites by at least 40 acres.
24.	Transit projects.
25.	Water treatment facilities with a capacity of 225,000 gallons a day or more, or the expansion of an existing facility by that much, and proposed major arterial water mains.
26.	Construction of a hospital of 500 beds or more, or expansion of a hospital of this size by 20% or more.
Source: SCAQMD, 1991.	

General development projects subject to conformity review must demonstrate that they conform to the subregional job/housing balance goals established in the SCAG's Growth Management Plan and incorporated in the AQMP. If not, such projects must implement trip reduction measures, user fees, or other appropriate mitigation measures which will achieve reductions in vehicle miles traveled (VMT) equivalent to the amount that SCAG estimates would be achieved through meeting the job/housing balance target. The 1991 AQMP simply calls for transportation demand measures equivalent to the job/housing performance goal. These measures must be in addition to all those otherwise required in the AQMP. Job/housing balance is still one option for achieving these reductions.

Initially, SCAG performs the conformity review for all applicable projects. Once a city or county has adopted an Air Quality Element consistent with the AQMP, the local jurisdiction takes over the conformity monitoring and SCAG review is no longer required. Each city or county is responsible for monitoring the cumulative impact of small projects within its jurisdiction to determine whether progress is being made towards achieving job/housing balance. Semi-annual reports on local actions to implement the plan, as well as progress towards achieving job/housing balance or equivalent reductions in VMT are required by SCAG and the SCAQMD in order to compile reports required by the California Air Resources Board as part of its 1989 AQMP approval action.

Conformity procedures for the 1991 AQMP were issued by SCAG in May, 1991. They require that environmental documentation for all regionally significant general development projects be forwarded to SCAG for review through the Inter-Governmental Review process. Staff will complete its review within the CEQA review period, providing the document is received by SCAG at the beginning of the review period. SCAG will charge a fee to cover staff review time and expenses.

Conformity procedures for general development projects are similar to those for the 1989 AQMP. Two areas of difference are (1) that mitigation measures which achieve reductions in vehicle miles traveled equivalent to that which would be achieved through jobs/housing

balance can be substituted for a jobs/housing balance demonstration, and (2) the analysis must show the alternative with the least air quality impact rather than showing that the project will result in no significant long term adverse impacts on air quality.

Comments are advisory to the lead agency. Failure to respond to SCAG's comments could establish a basis for legal challenge. Staff comments are subject to appeal to the Executive Committee. Once a local jurisdiction finds its general plan to be consistent with the AQMP, it may assume responsibility for making is own conformity findings.

Conformity results when a project is contributing to attainment of the appropriate regional vehicle miles traveled (VMT) target for its subregion. The VMT reduction target for the Long Beach/Downey subregion is 1,250,000 miles. Transportation control measures used to make this finding must be in excess of current requirements, including Regulation XV, and other AQMP transportation measures. Alternatively, the project may show conformity by contributing to the jobs/housing performance ratio for the subregion.

POLLUTION SOURCES

Whittier's economy is diversified, ranging from educational, medical and waste disposal facilities to professional and government offices to subregional retail centers to truck distribution centers to small to medium manufacturing companies. This latter category includes machine shops, printers, metal casters, food processors, building supplies, etc. The largest manufacturer in terms of employees is Calcor Space Facility, Inc. with 330 employees; the largest single source of emissions is CMC Printed Bag.

Many local facilities are covered by SCAQMD regulations. Examples of the types of industries which would be regulated include those which conduct metal plating; manufacture fiberglass and plastic products; use or store organic solvents; utilize degreasing equipment; and use materials which emit hazardous air pollutants. Landfills are also subject to regulation. The SCAQMD controls solvent emissions from dry cleaners, print shops, metal platers, etc. Internal combustion engines used in many operations are controlled. Commercial restaurants are subject to SCAQMD regulations covering charbroilers.

Any new, or modified existing, source of emissions that emits more than 1 pound a day of a regulated air pollutant is subject to the requirements of the recently revised SCAQMD Regulation XIII, which requires that all increases in emissions be offset by achieving at least an equal amount of reductions from existing sources. Small sources, i.e. sources emitting less than 2 tons/year of any regulated contaminant, are eligible to receive these offsets from the Community Bank, which is funded through shutdowns of facilities throughout the Basin. In addition, new or modified equipment is required to install Best Available Control Technology (BACT), as specified by the SCAQMD.

Facilities which do not directly emit pollutants but which attract concentrations of motor vehicles are called indirect sources. Within this category, facilities with 100 or more employees are regulated by the SCAQMD's Regulation XV.

Whittier's contribution to regional air pollutant emissions is divided approximately equally among mobile sources; area sources (household emissions and those from commercial sources such as gasoline stations); and stationary or "point" sources, which include manufacturing emissions. Table 6-5 shows the relative contribution of each of these sources in Whittier.

TABLE 6-5
1990 EMISSIONS IN THE CITY OF WHITTIER
(tons/day)

Source	TOG	CO	NO_x	SO_x	PM
Area	4.51	2.21	1.11	0.10	12.60
Mobile	3.78	29.18	4.91	0.24	0.76
Point	4.94	0.31	1.91	0.83	0.43
TOTAL	13.23	31.71	7.92	1.17	13.78

Source: South Coast Air Quality Management District (May 1991)

The SCAQMD collects emissions data from all facilities within the District which annually emit more than 10 tons of any regulated contaminant. The eight largest stationary sources of emissions in the Whittier area in 1989 are listed in Table 6-6 and shown in Exhibit 6-3. Only two of these sources are within the Whittier City limits.

TABLE 6-6
LARGEST EMITTERS IN THE WHITTIER AREA IN 1989

Source/Address	Emission Rate (tons/yr)				
	TOG	CO	NO_x	SO_x	PM
CMC Printed Bag 2615 Pacific Park	192	0	0	0	0
Chevron USA 8000 Catalina Street	74	3	21	0	0
B & R Finishing Co. 10704 Inez Street	21	0	0	0	0

TABLE 6-6
LARGEST EMITTERS IN THE WHITTIER AREA IN 1989

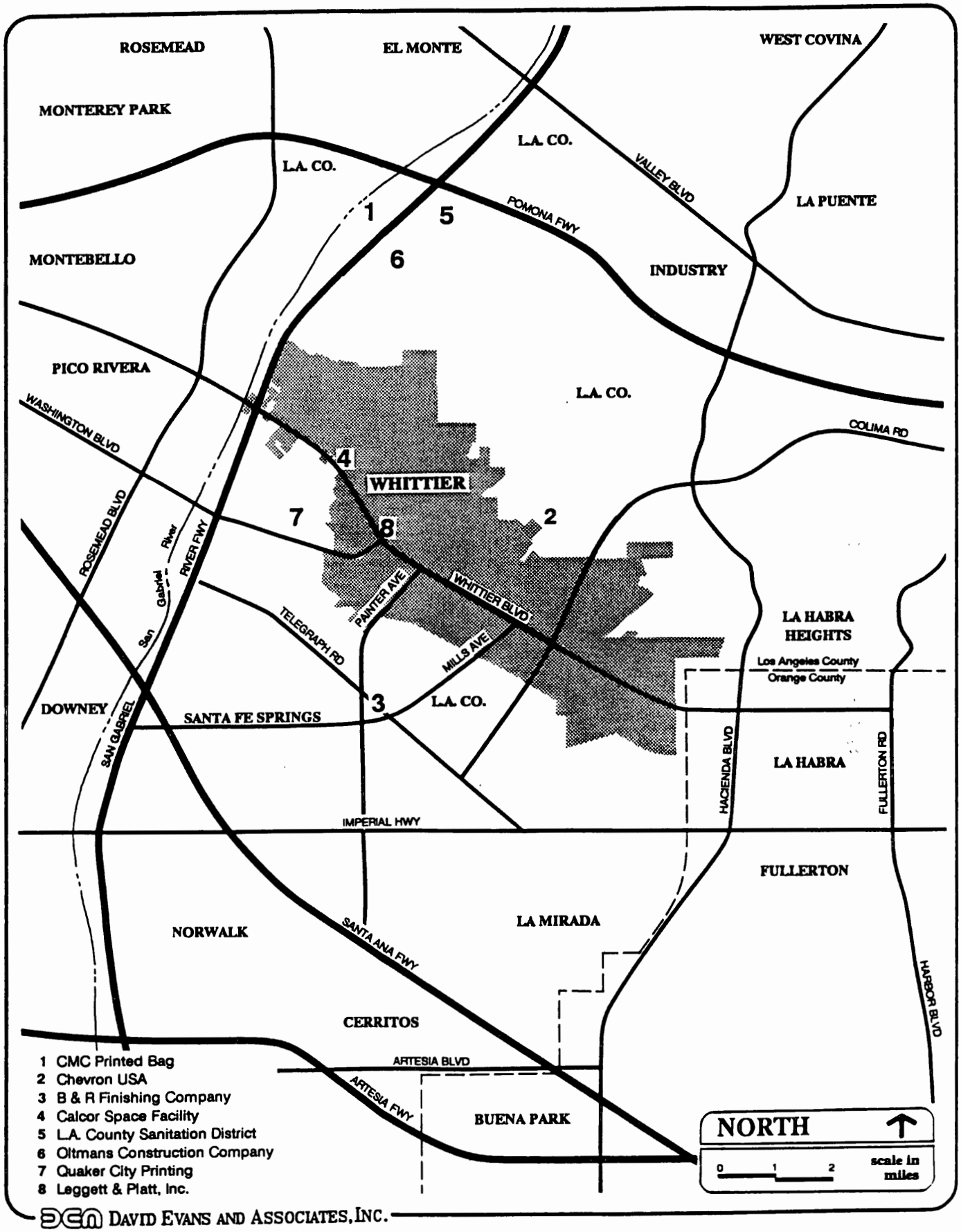
Source/Address	Emission Rate (tons/yr)				
	TOG	CO	NO_x	SO_x	PM
CALCOR Space Facility[b] 12031 Philadelphia	14	0	0	0	0
LA County Sanitation Dist. 2300 S. Workman Mill Road	19	20	64	38	36
Oltmans Construction Co.[a] 10005 Mission Mill Rd.	4	49	1	0	0
Quaker City Printing 11729 E. Washington	25	0	0	0	0
Leggett & Platt, Inc.[b] 12352 E. Whittier Blvd.	18	0	3	0	0

[a] New source established in 1990
[b] Within Whittier City Limits
Source: South Coast Air Quality Management District, May 1991.

The South Coast Air Quality Management District's Regulation XV applies to all facilities which employ 100 or more persons at a single site. Employers subject to the regulation are required to develop plans which include sufficient incentives to bring the average vehicle ridership in employee vehicles to 1.5 persons. In 1991, there were 35 facilities in the City of Whittier which had 100 or more employees at one site. Some employers, such as the Whittier Unified School District, have several facilities which are subject to the Regulation. All eligible facilities on the SCAQMD rolls are shown in Table 6-7.

TABLE 6-7
SOURCES SUBJECT TO SCAQMD REGULATION XV

Source	Address
Alpha Beta Company #150	13413 Telegraph Road
Arga's Mexican Food Products	2825 Pellissier Pl.
Board Ford, Inc.	15265 E. Whittier Blvd.
Broadway Department Store	15600 Whittwood Lane
Calcor Space Facility, Inc.	12031 E. Philadelphia St.
California (State)	11850 E. Whittier Blvd.



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GENERAL PLAN

EXHIBIT 6-3
POLLUTANT EMITTERS

TABLE 6-7
SOURCES SUBJECT TO SCAQMD REGULATION XV

Source	Address
Consolidated Converting Company	2601 Workman Mill Road
Delta Technical Coatings, Inc.	2550 Pellissier Pl.
GTE California	13925 E. Whittier Blvd.
Hinshaw's Dept. Stores, Inc.	13550 Whittier Blvd.
ICBO	5360 S. Workman Mill Road
ISUZU Motors America, Inc.	2300 Pellissier Pl.
J.C. Penney	15740 Whittwood Lane
L.A. County Sheriff Academy	11515 S. Colima Rd.
Los Angeles College of Chiropractors	16200 E. Amber Valley Dr.
Los Angeles Freightliner-GMC	2429 S. Peck Road
Miller Castings, Inc.	2503 Pacific Park Dr.
Presbyterian Intercommunity Hospital	12401 E. Washington Blvd.
Pupil Transportation Cooperative	9401 S. Painter Avenue
Ralphs Grocery Company #162	8510 Painter Avenue
Rose Hills Memorial Park	3900 S. Workman Mill Road
Sanitation District-Puente Hills	2800 S. Workman Mill Road
Sanitation District-San Jose Creek	1955 Workman Mill Road
U.S. Postal Service	8520 Michigan Avenue
Viking Freight System Inc. - Whittier	3200 Workman Mill Road
Whittier College	13406 E. Philadelphia St.
Whittier Hilton	7320 Greenleaf Avenue
Whittier Hospital	15151 Janine Dr.
Whittier Union High	9401 S. Painter Avenue
Whittier Unified School District	9800 Mills Avenue
Whittier Unified School District	15301 E. Youngwood Dr.
Whittier Unified School District	12417 E. Philadelphia

TABLE 6-7 SOURCES SUBJECT TO SCAQMD REGULATION XV	
Source	**Address**
Whittier, City of	12016 Hadley
Whittier, City of	13230 E. Penn St.
Source: South Coast Air Quality Management District, August 1991.	

The SCAQMD received authorization through the California Clean Air Act to adopt rules regulating indirect sources of pollutants. These are facilities which do not have equipment which emit pollutants, but which attract large numbers of automobiles and represent, in aggregate, a significant source of pollution. Colleges, hospitals, and shopping centers are examples of indirect sources, as well as any special event activity, whether occasional or regularly scheduled.

REGIONAL CLEAN AIR INCENTIVES MARKET

In March, 1992, the South Coast Air Quality Management District Board authorized staff to begin development of a regulatory system that would be a major departure from the traditional command and control system. The new program is titled RECLAIM, for Regional Clean Air Incentives Market. Companies subject to the new regulations will be able to achieve required emission reductions of reactive organic gasses, nitrogen oxides, and, potentially, sulfur oxides through their choice of add-on controls, use of reformulated products, and/or purchasing excess emission reductions from other sources. Equipment permits will be replaced with facility permits. Emission rates are to be replaced with mass emission limits. Retrofit control rules will be replaced with annual emission reductions.

The District is recommending that source categories with annual emissions equal to or greater than four tons of these pollutants be included in the program. They estimate that the program will apply to approximately 2,000 sources of ROG, 700 sources of NO_x emissions, and possibly 100 sources of SO_x emissions. Certain essential public services, restaurants, dry cleaners, and gasoline dispensing facilities will be regulated through command and control rules. Additional small source exemptions may also be considered where it appears more cost effective to regulate through source specific rules. Sources that emit less than 4 tons a year may be included in the program at a later date.

WHITTIER PROGRAMS IMPACTING AIR QUALITY PLANNING

As described earlier, Air Quality Elements or their equivalent must be incorporated in local general plans in order to conform to requirements of the adopted 1989 AQMP and the 1991

AQMP. Guidelines for the Development of Local Air Quality Elements have been prepared by the Southern California Association of Governments. These guidelines contain a number of actions which are recommended or required for local governments in order to conform to the 1989 AQMP. Southern California cities differ significantly in size and character. Therefore, some recommended actions are not applicable to all cities and programs need to be tailored to meet the unique conditions of each city.

Identification of existing programs and conditions in the City of Whittier that impact on air quality will help identify opportunities and constraints for new or modified programs. The following discussion expands on City programs that are helping to improve local air quality.

- Land Use. Although primarily residential, the City of Whittier's land uses also provides residents with a balance of shopping, entertainment, and cultural activities. There are also manufacturing and commercial employment areas, as well as the Whittier College.

- New Construction. The City has no special controls on fugitive dust other than complying with the SCAQMD's nuisance regulations. Developers must submit a grading plan before receiving a grading permit; the plan must include dust control on site, such as periodic watering, soil binders, etc. Trucks are not required to cover their loads on city streets. However, the City does notify the developer if complaints are received regarding dust from trucks on city streets.

- Street Trees. The City maintains street trees throughout the City and requires landscaping in new developments.

- Energy. The City uses Title 24, but has no additional ordinances. The City has no fuel-saving or alternate fuel vehicles. It plans to replace vehicles with lower-emitting vehicles as they need to be replaced.

- Truck Travel. Travel by trucks weighing over three tons (6,000 pounds) is prohibited by ordinance on many streets throughout the City. Trucks and trailers of any size can not park on any residential street. Trucks over 6,000 pounds are limited to 30 minute parking on any street or alley between 2:00 a.m. and 6:00 a.m. The City has no noise ordinance restricting trucks.

- Parking. Whittier provides free parking in Uptown. Street parking is limited to two hours between 9 a.m. and 6 p.m. Public parking lots in Uptown have three hour limits. Parking limits apply in selected areas throughout the City.

There are only 13 parking meters in the City, all in a parking structure. Parking fees in the 13 meters are 25 cents per half-hour.

- **Waste/Recycling.** The City runs a City-wide trash collection program and owns the Savage Canyon Landfill. It has a goal of recycling 25 percent of all waste by 1995, and is cooperating with other cities in Southeast Los Angeles County to develop a recycling plan for the region. Emphasis is being placed on developing a market for compost materials. Currently, the City collects toxic materials at the Savage Canyon Landfill for disposal at offsite landfills. Los Angeles County is operating the program and sets the charges.

- **Regulation XV.** The City of Whittier provides monetary incentives to carpoolers. Employees are given $25 a month if the employee carpools at least 4 days/week and $15 for 3 days/week. Drawings are held once a month for participants. Prizes are usually free lunches at a Whittier restaurant.

  The City also provides preferential parking to participants and provides free bus tokens to those who take public transit. It is also experimenting with a 9/80 work week for some departments. Several departments participate in a 4/10 workweek, including the Department of Public Works. These programs are considered successful and the City is meeting its Regulation XV goals. The City's Transit Department administers the program for City employees.

  There are no Transportation Management Associations in the City--or at least the City does not participate in any.

Job/Housing Balance

Whittier is a medium-sized city with a diverse employment base. The majority of Whittier residents who are employed work in manager/professional, sales/technical, and clerical/support and service classifications. Approximately 25 percent are employed in manufacturing. The City is housing-rich, with approximately half as many jobs in the City as there are workers.

Whittier is located in the Long Beach-Downey subregion. For the subregion as a whole, the ratio of jobs to housing units was estimated to be 1.21 jobs per housing unit in 1984 and is projected at 1.26 in 2010. To meet the performance goal of 1.45 jobs per unit set by SCAG, the subregion should increase jobs more than housing units by between 1984 and 2010.

To be consistent with SCAG's 1989 AQMP growth management goals, Whittier would either need to add additional jobs through redevelopment programs or reach agreements with

surrounding cities to show that its housing surplus is being accounted for in subregional job/housing planning.

Transportation

The Southern California Rapid Transit District (RTD) operates several intercity bus routes through the City. These routes also provide transportation within the City. The City is served by the San Gabriel River Freeway (Route 605) running north and south at the western boundary of the City.

There is a designated bikeway system within the City. One existing route links the Uptown area with the surrounding residential neighborhoods. Free transportation is provided by the City for selected recreation activities.

Whittier Transit

The City of Whittier contracts with a private company to run a bus system in Whittier which serves the Uptown Village, as well as commercial and residential areas. Buses run every 40 minutes between 6:30 a.m. 7:00 p.m., Monday through Saturday.

All major destination points in the city are served by the four buses: the Whittier and Presbyterian Hospitals; the Senior Center; libraries and parks; and the City's two shopping centers. The 160 designated bus stops are within easy walking distance of all residents. Ridership has been increasing and currently approximately 1,000 persons use the transit daily.

The Sunset Route serves the northern half of the City, north of Whittier Boulevard. Stops include Michigan Park, Whittier Quad, Whittier Hospital Medical Center, Uptown and Whittwood Mall. The Sunrise Route serves the area south of Whittier Boulevard. It passes along the Whittier Quad, Sierra Education Center, Uptown, Whittwood Mall, Presbyterian Intercommunity Hospital and various other parks. The transfer point of the routes is at Philadelphia and Greenleaf Avenues within the Uptown Village. The City has new trolley style buses, all of which are equipped with wheelchair lifts.

Whittier has transfer agreements with the RTD. It also has transfer agreements with La Mirada Dial-A-Ride at Leffingwell and Santa Gertrudes Streets. In addition, Whittier Transit connects with the Norwalk Transit, the Montebello Municipal Transit, and the Santa Fe Springs Tram.

Rides are 25 cents per boarding, which contributes approximately 8 percent of the average cost per trip. The costs incurred by the transit program is primarily funded by Proposition A monies.

Dial-A-Ride

The City provides Dial-a-Ride service within the City to senior citizens (age 60 and over) and to those who have disabling conditions that limit mobility. Dial-a-Ride provides curb to curb service.

Three hours advance notice is required to schedule a trip, and rides can be scheduled for up to one week in advance. Routine appointments can be scheduled without having to call for each trip. The return trip can be ordered when needed. The average wait for a vehicle is 30 minutes, although 15 minutes is the goal for all pre-scheduled trips. Service is provided seven days a week.

A Dial-a-Ride card costs $9.00 and is good for 30 rides (30 cents per ride per direction). The program operates with five vehicles and back-up taxi service when the Dial-A-Ride vehicles are fully occupied.

SECTION 7: PUBLIC SAFETY ELEMENT BACKGROUND REPORT

INTRODUCTION

The Public Safety Element Background Report discusses existing natural and manmade hazards in the Whittier area. Natural hazards that may be expected, their probable locations, and the likelihood that they will occur is influenced by the local and regional geologic settings. Manmade hazards are dependent on the extent of human activity and the propensity for accidents and errors. The potential for injury and damage from these hazards is directly related to the user population living in an area subject to risk, the stability of structures, and the availability of emergency services. These issues are analyzed in the Background Report to provide a better understanding of the environmental risks in Whittier.

Regional and local earthquakes present a major safety concern in the City. Fault locations and major earthquake events are discussed in this report. Seismically-induced hazards such as groundshaking, surface rupture, slope failure, and liquefaction are also evaluated. Other geologic hazards analyzed include landslides, debris flow, erosion and flooding potential. Likewise, dam inundation, wildfire, urban fire, hazardous materials, crimes and accidents are addressed below. Finally, the adequacy of emergency services is analyzed in terms of manpower, equipment and facilities.

GEOLOGIC CHARACTERISTICS

The Los Angeles basin lies at the north end of the northwest-trending Peninsular Ranges province. This province is transected by the east-trending ridges and valleys of the Transverse Ranges province. The dominant structural feature of the Peninsular Ranges province are northwest-trending fault zones. These zones separate large elongated blocks that stand at different structural elevations. Moreover, the basin is underlain by a structural depression, parts of which have been the sites of discontinuous deposition since Late Cretaceous time (135 million years ago) and of continuous subsidence and chiefly marine deposition since middle Miocene time (25 million years ago).

The Los Angeles basin is a transition zone between the strike-slip faults and other related features of the Peninsular Ranges and the geologic feature of the Transverse Ranges. Both strike-slip and compressional tectonic structures exist within this transition zone. The opening of the Gulf of California in late Pliocene time (2 to 4 million years ago) had a profound effect on the geology of Southern California. In the Los Angeles basin, the type of deformation changed from northwest-southeast extension to north-south compression. Since the onset of compressional tectonics, the upper Pliocene sediments have been uplifted, folded, and in some cases overturned by the north-south compression.

In addition to the compressional geologic features, the basin is also crosscut by northwest to north-northwest striking right-lateral strike-slip faults of late Quaternary age (10,000 to 2 million years ago), including the Whittier fault, the Palos Verdes fault, and the Newport-Inglewood fault. These faults are generally parallel to the San Andreas fault to the east and to offshore faults to the west.

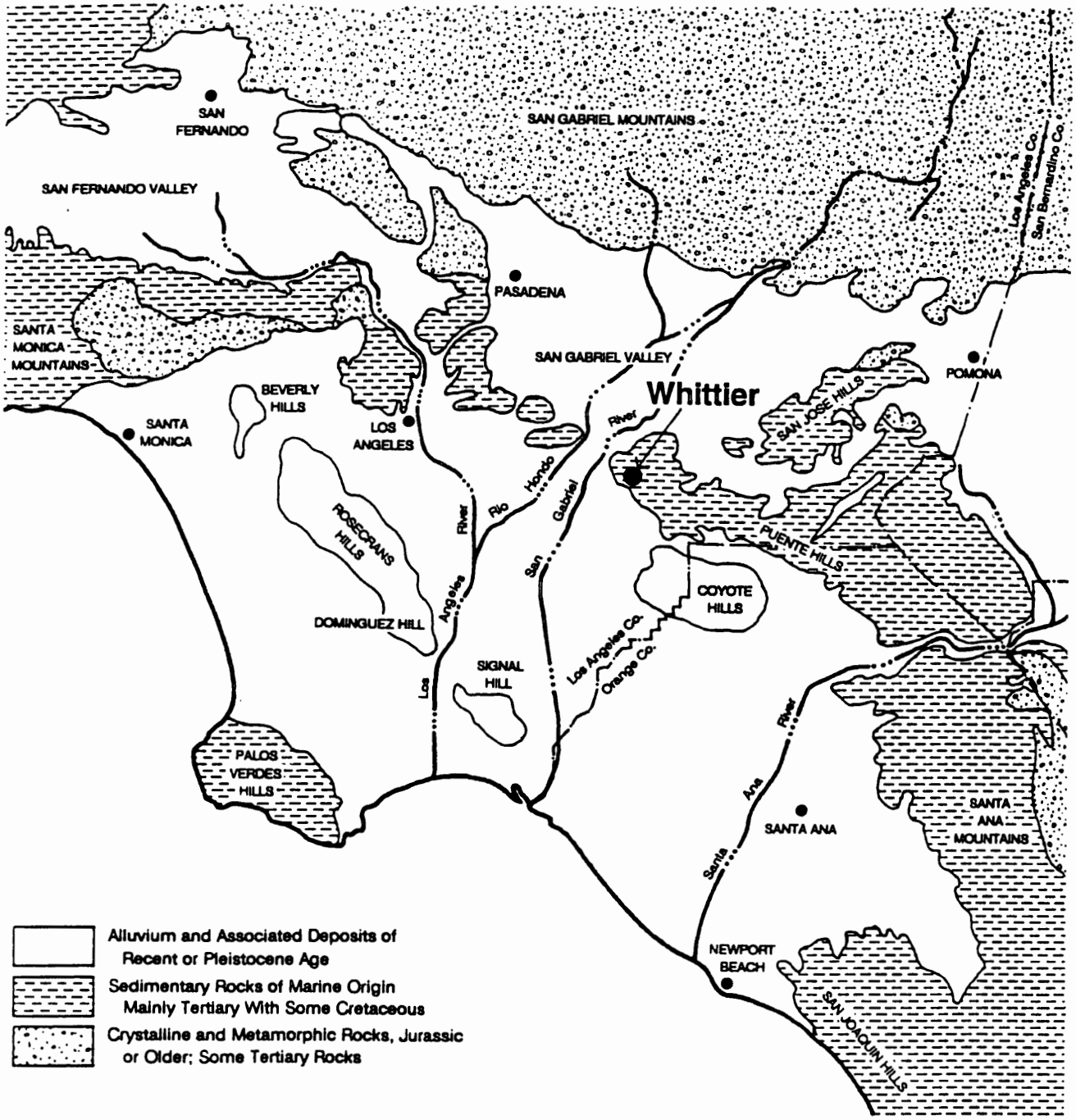
The Puente, Elysian and Repetto Hills, mark the eastern boundary of the Los Angeles basin and represent an eroded structural block uplifted between the Whittier and Chino faults. The Whittier fault is considered to be active and the intervening structural block is still in the process of uplift. The Puente Hills are bounded on the north by the Whittier Narrows (a gap through which the San Gabriel River and Rio Hondo flow) and on the northwest by the Repetto Hills.

The City of Whittier is located along the southern section of the northwestern Puente Hills (also known as the Whittier Hills). The Puente Hills has moderate to highly rugged topography, is relatively flat-topped, and contains numerous southwest to northeast ephemeral streams (water channels above the water table that flow only during rainy seasons and are dry at other times). West of the hills is a lowland plain that slopes gently to the southwest and south toward the Pacific Ocean which is approximately 17 miles away. Elevations range from approximately 500 feet to 1,260 feet above mean sea level (msl) in the northwest portion of the hills to over 1,400 feet msl southeast of Fullerton Road. See Exhibit 7-1.

The majority of the City of Whittier is situated on the lowland surface. Elevations within Whittier range from approximately 150 feet to 1,000 feet above msl and between 150 and 500 for the lower areas. The average slope is approximately 30:1 (horizontal to vertical) as compared to 3:1 or steeper on the hilly areas to the northeast. Drainage is generally toward the south and southwest and into the San Gabriel River. The western portions of Whittier lie on the flood plain of San Gabriel and Rio Hondo Rivers.

Geologic Units

The geologic units exposed in the City of Whittier and surrounding area include both bedrock and surficial deposits. The bedrock units include siltstones, sandstones, and conglomerates of the upper Miocene age Puente Formation, Pliocene age Fernando Formation, and Pleistocene age La Habra Formation. The surficial deposits include colluvium/alluvium and landslide debris, and are generally composed of poorly consolidated sediments of Pleistocene and Holocene age at the canyon bottoms, alluvial aprons and fans, and some landslide deposits in the surrounding bedrock units.



SOURCE: State of California Department of Water Resources, Southern California District

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City of Whittier

GENERAL PLAN

EXHIBIT 7-1
GENERAL GEOLOGY

The Puente Hills area (and San Jose Hills) form the structurally-elevated east half of the northeastern structural block of the Los Angeles basin. The block is wedge-shaped and is at an elevation higher than the central plain of the basin to the south and lower than the San Gabriel Mountains to the north.

The major structural component in the Puente Hills is the Whittier fault. Movement along the fault in this area has created an area of folding and faulting in a narrow band parallel to and north of the Whittier fault. Many of the folds are inclined so that their surfaces are subparallel to the Whittier fault and are overturned to the north. South of the Whittier fault, the rock layers dip to the south less steeply away from the fault.

Puente Formation

The upper Miocene Puente Formation has been divided into four classes or members in the western Puente Hills and include from oldest to youngest the La Vida Member, Soquel Member, Yorba Member, and the Sycamore Canyon Member (Yerkes, 1972). Considerable variation in thickness and exposure of the members are due to the variety of formational contacts and fault relationships. The four classes or members include the following:

- *La Vida Member.* The La Vida Member consists chiefly of pale yellow-brown to pale gray-brown siltstone and sandy siltstone. It is interbedded with pale yellow-brown fine to medium-grained sandstone (with local exposures of dolomite) and tuff. Along Turnbull Canyon Road, the La Vida member is composed principally of layered siltstone and platy porcelaineous shale, with a few impure limy lenses exposed. The sandstone is commonly well-graded, although some graded bedding structure is present in the siltstone. The strata adjoining the Whittier fault are intensely sheared that the individual beds cannot be traced.

- *Soquel Member.* The Soquel Member, in the area west of Hacienda Boulevard, consists chiefly of coarse-grained sandstone that contains an approximately 30 feet thick massive conglomerate. Breccia (coarse rocks) of blocks and slabs of dolomite and siltstone are present in the middle of the member. The lower part of the member consists of interbedded sandstone, sandy siltstone and platy siltstone. North of Whittier, the Soquel Member consists chiefly of coarse breccia and coarse-grained sandstone. Interbedded with the breccia is pebbly sandstone, conglomerate, and minor amounts of sandstone.

- ***Yorba Member.*** The Yorba Member is dominantly a pale white, pale greenish-yellow, or very light gray, layered, platy siltstone and sandy siltstone. It is found with interbedded sandstone and minor gray to yellow-gray dolomite beds.

- ***Sycamore Canyon Member.*** The Sycamore Canyon Member is composed of a rusty brown pebble to cobble (few boulders) conglomerate overlain by a series of pale yellow siltstone, sandy siltstone and fine sandstone beds. Exposures at the Whittier fault are composed of crumpled black siltstone which contains hard, brown sandstone lenses, and tan to gray, medium and fine-grained sandstones, silty sandstone and conglomerate. The bedding structures within the sandstone and silty sandstones are typically thin.

Fernando Formation

The Fernando Formation is the name assigned to the Pliocene age rocks in the Puente Hills and is divided into lower and upper members. The lower member of the Fernando Formation are exposed within the city limits south of Turnbull Canyon. The upper member is exposed in the southern parts of the hills in the City.

- ***Lower Member.*** The Lower Member of the Fernando Formation consists of a series of siltstone, sandstone, and conglomerate, and interbedded conglomerate sandstone. In the Whittier area, it consists of gray-orange to light brown pebble-cobble conglomerate, and pale yellow-brown to light olive-gray sandy siltstone and pale yellow-gray to gray-orange, fine to medium-grained sandstone. The bedding structure in the sandy siltstone, sandstone, and conglomerate is generally massive. Some of the sandstone are well-bedded, platy and graded.

- ***Upper Member.*** The Upper Member of the Fernando Formation is described as principally tan to gray sandy siltstone and silty sandstone with scattered small conglomerate lenses and beds, and fine to medium-grained sandstone with few conglomerate beds. Yerkes (1972) divides the Upper Member into a lower sandstone and conglomerate, a middle sandstone, and an upper sandstone and pebbly sandstone. The lower sandstone is a pale yellow-brown to dark red-brown pebbly sandstone that is thick to massively bedded and underlain by a pale yellow-brown massive conglomerate. The middle sandstone is yellow-gray, contains scattered pebbles, and the

bedding structure is massive. The upper unit consists of a grayish-orange to yellowish-gray, thick bedded (locally cross-bedded) to massive sandstone, and a pale to moderate yellow-brown, massive, pebbly sandstone.

La Habra Formation

The late Pleistocene La Habra Formation consists of an unconsolidated basal cobble-pebble conglomerate, sandstone, and mudstone (and silt) beds. The basal conglomerate is pale yellow-gray to pale yellow-brown, and is massive to very crudely bedded. This is overlain by a pale yellow-gray to moderate red-brown, very coarse-grained to pebbly sandstone that is massive or very crudely bedded. The upper two-thirds of the formation is composed of olive-gray to moderate red-brown, sandy to pebbly mudstone.

Alluvium/Colluvium

Alluvium underlies a majority of the City of Whittier and is of Recent to possibly Late Pleistocene age. The alluvium consists of alluvial fan and terrace deposits that are generally gray, poorly sorted gravel, sand, and silt transported and deposited by flowing water. Alluvial deposits also extend up the canyons principally in active stream channels, and intermittently-active flood plains. These deposits exhibit low density, are generally very porous, and contain organic debris.

Colluvium is a thick residual soil derived from slope wash and in-place weathering of the underlying bedrock. It varies in thickness depending on the underlying material characteristics, vegetation, and slope gradient. Colluvium is typically shallow on the flanks of hillsides and increases in thickness towards the canyon bottoms, within swales, and at the mouth of tributary drainages. These soils are predominantly clayey and of low density, are porous, and often contain considerable amounts of organic matter from vegetation growth.

SEISMIC CHARACTERISTICS

The probability of an earthquake affecting the City of Whittier is dependent on the distance of regional faults to the City and the seismic activity of these faults. The characteristics of the major faults that could impact the project area are discussed in this section. To clarify the technical terms used to describe fault characteristics, Exhibit 7-2 illustrates the various types of faults.

Regional Faults

Numerous faults have been mapped within the southern California region, several of which are within 60 miles of Whittier. The most significant of these are described below and are shown in Exhibit 7-3. Distances to the faults are given as the closest straight-line distance from the City of Whittier Civic Center (City Hall).

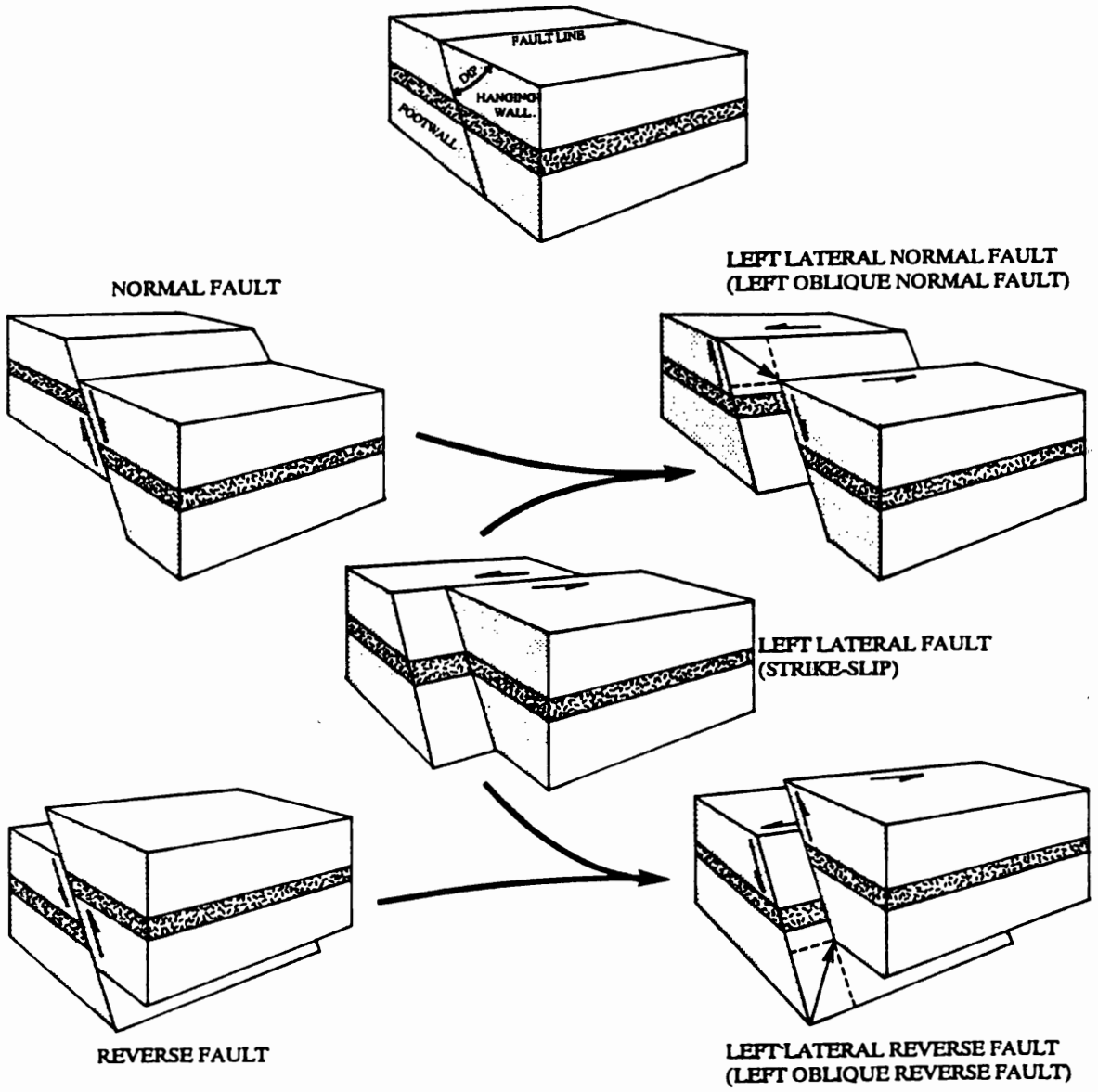
Whittier-Elsinore/Chino Faults

The Whittier fault is part of the Whittier-Elsinore system that parallels the San Jacinto fault. As part of the same right-lateral tectonic system as the San Andreas and San Jacinto faults, the Whittier-Elsinore fault is characterized by right lateral offsets along a series of both right and left-stepping fault segments. Near Santa Ana Canyon, the Elsinore fault branches into the Whittier fault, which borders the Puente Hills to the southwest, and the Chino fault, which borders the Puente Hills to the northeast.

The Whittier fault roughly parallels the northwest limits of the City, crossing the northern boundary about 1.2 miles northeast of City Hall as shown in Exhibit 7-4. The Whittier fault is a steeply northeast-dipping, strike-slip fault with a small reverse component (see Exhibit 7-2). It consists of 1 to 3 subparallel strands in a zone approximately 0.7 mile wide. The length of the Whittier fault, from where it diverges from the Elsinore fault near Corona northwesterly to the City of Whittier, is estimated at 28 to 46 miles by different geologists. The fault strikes 65 to 85 degrees to the northwest and dips 65 to 80 degrees to the north along its northern segment near the City of Whittier. The reported slip rate is 1.2 millimeters per year (mm/yr). Evidence of offset Holocene deposits has been reported northwest of Brea Canyon in Orange County. The segment of the fault near Whittier is interpreted as late Quaternary. However, other investigators have reported Holocene displacement 2.5 miles east of the City in Arroyo San Miguel near Colima Road.

The Whittier fault is considered capable of producing a moderately large earthquake. It has not been designated as an Alquist-Priolo Special Studies Zone. However, traces of the fault near the City of Brea, not far from its junction with the Elsinore fault to the southeast, have been so designated. The largest historical earthquake on this fault occurred in 1976 and had a Richter magnitude of 4.2. The maximum credible earthquake for the Whittier fault is estimated to be of magnitude 7.0.

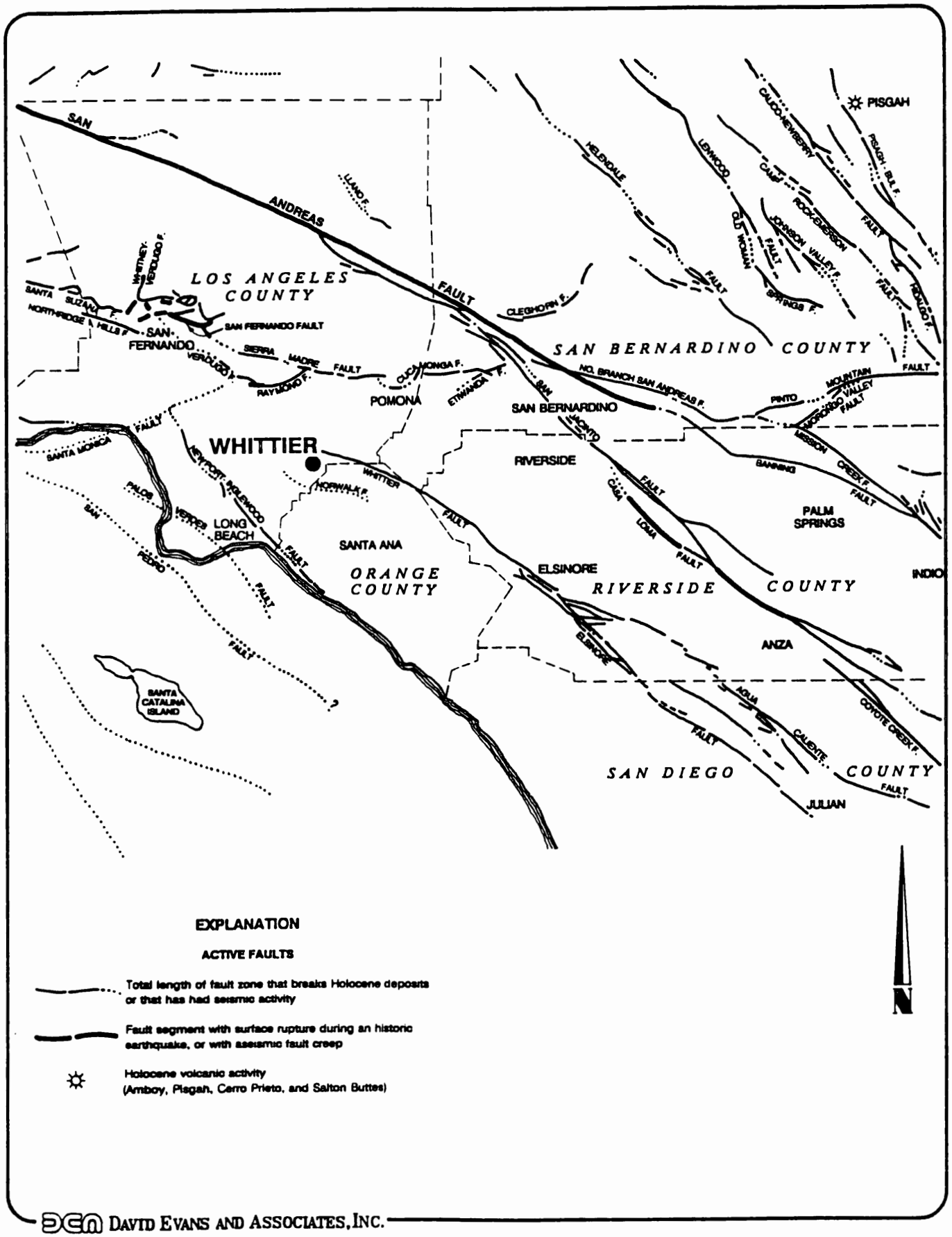
The Elsinore fault extends from Santa Ana Canyon through the City of Elsinore and to the Mexican border for a distance of approximately 137 miles. The northernmost end of the fault is located approximately 26 miles from the Whittier City Hall. This fault is predominantly a right-lateral strike slip fault zone (see Exhibit 7-2) consisting of several



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

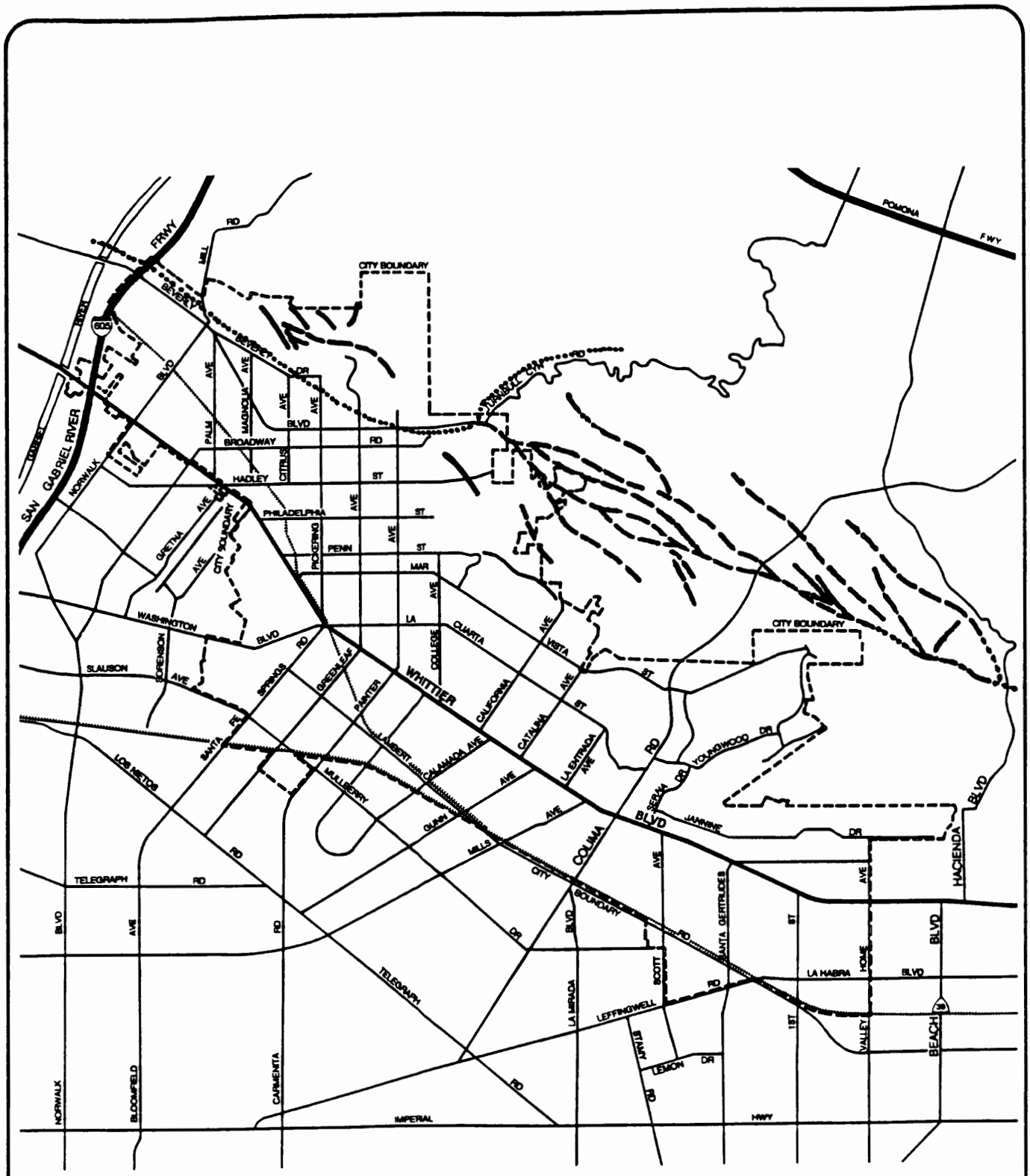
EXHIBIT 7-2
FAULT CHARACTERISTICS



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

EXHIBIT 7-3
MAJOR FAULTS IN SOUTHERN CALIFORNIA



Well Located Surface Trace Fault

Approximately Located Trace Fault

Inferred Buried Fault

SOURCE: Fault Evaluation Report FER-41, December 12, 1977, Drew P. Smith (Supplement); April 20, 1979, E.W. Hart, CDMG

NORTH

0 5000 scale in feet

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 7-4
COMPILATION OF THE WHITTIER FAULT

fault segments that dip steeply to the southwest. The reported slip rate for this fault is 3.0 mm/yr.

The Elsinore fault has produced only one large earthquake in historical time. This was the 1910 magnitude 6.0 earthquake near Lake Elsinore. The historical seismicity has been low along the Elsinore fault but geological evidence suggests a much higher level of prehistoric earthquake activity. Paleoseismic (prehistoric) events are documented by Rockwell et al. (1986) at Glen Ivy Marsh along the Glen Ivy segment of the Elsinore fault. Four or five ground rupture events (one possibly historical) were recognized. The data suggests a recurrence interval of 250 years for earthquakes of magnitude 6 to 7. Based on the lengths of the major fault segments, the zone is believed to be capable of producing a maximum credible earthquake of magnitude 7.25.

The Chino fault is buried along most of its length. Based on geomorphic evidence, it does not appear to have as great a potential for seismic activity as does the Whittier fault. Where exposed in the Puente Hills area, the Chino fault is not as well-expressed as the Elsinore fault.

Elysian Park Fold and Thrust Belt

The Elysian Park fold and thrust belt is located approximately 6 miles northwest of Whittier. It is cross-cut by several strike-slip faults, including the Whittier fault. Prior to the 1987 Whittier earthquake, the Elysian Park fold and thrust belt was unknown. Hauksson and Jones (1989) described it as a zone of gently-dipping buried thrust faults.

The Elysian Park fold and thrust belt appears to be a zone of folds and discontinuous faults that extend from the Elysian Park Anticline to the Montebello Anticline, for a total of 13 miles. It is found between the west-striking reverse faults of the Transverse Ranges to the north and the northwest-striking strike slip faults of the Peninsular Ranges to the south. When slip occurs on buried thrust faults, the ground surface exhibits broad folding rather that surface rupture. It is for this reason that buried thrust faults are thought to be associated with anticlines (layers of rock that slope downward and outward from the location of the fold) in the Los Angeles basin. The anticline that underlies the City of Whittier is part of the Elysian Park fold and thrust belt. The estimated slip rate of 0.2 mm/year is based on comparisons with the Raymond Hill and Whittier faults.

The Elysian Park, and not the Whittier fault, was the site of the 1987 Whittier Narrows earthquake. The available data are insufficient to formulate a definitive assessment about the future earthquake potential of this belt. If the Elysian Park fold and thrust belt is segmented, it could produce earthquakes of moderate (M 5) or large (M 6.7) size. Conversely, should the belt rupture as a whole, a large (M 6.7) or great (M 7.8) earthquake

could result. Based on its possible relationship with the Whittier fault and the 1987 Whittier Narrows earthquake of magnitude 5.9, it may be capable of producing a maximum credible earthquake magnitude of 6.5 anywhere along its length.

Newport-Inglewood Fault

The Newport-Inglewood fault represents a major fault structure in the Los Angeles basin. Located 13 miles southwest of Whittier, the fault consists of a series of left stepping, northwest-trending discontinuous stepped fault segments and anticlinal folds extending approximately 44 miles. The Newport-Inglewood fault is visible on the surface as a series of northwest-trending elongated hills (including Signal Hill and the Dominguez Hills) extending from Newport Beach to Beverly Hills. The fault segments and anticlinal folds are believed to be the expression of a deep-seated fault within the bedrock. The orientation of the structural elements along the zone has been attributed to a nearly vertical right-lateral strike-slip (horizontal) shearing at depth. However, more recent work suggests that the anticlinal folds are related to buried thrust faults similar to the Elysian Park fold and thrust belt. The reported slip rate along the fault is between 0.1 mm/yr to 6.0 mm/yr.

Although no surface faulting has been associated with earthquakes along the Newport-Inglewood fault zone, various segments have a history of moderate to high seismic activity. Recent significant earthquakes on the Newport-Inglewood fault are the 1933 Long Beach earthquake (magnitude 6.3) and the 1920 Inglewood earthquake (magnitude 4.9). The estimated maximum earthquake assigned to the fault is magnitude 7, based on an estimated rupture length versus magnitude relationship and a slip rate of about 0.5 mm/yr.

Sierra Madre Fault System

Located approximately 20 miles north of Whittier, the Sierra Madre fault system forms a prominent 50-mile long east-west structural zone on the south side of the San Gabriel Mountains. It consists of a complex system of north-dipping left lateral/reverse and reverse/left lateral faults. This fault system has been responsible for uplift of the San Gabriel Mountains by reverse faulting in response to north-south tectonic compression. In many places, the faults have placed basement bedrock over alluvium where they dip northerly below the steep topographic front of the San Gabriel Mountains. Geologists indicate that the fault system tends to rupture in discrete structural segments during earthquakes. The Sierra Madre fault system has been divided into the Cucamonga, Duarte, Dunsmore, San Fernando and Sierra Madre segments.

The Sierra Madre fault consists of one to five connected active and potentially active strands in a zone approximately 11 miles long and 0.6 mile wide. A 5.8 earthquake in 1991 occurred on the Sierra Madre segment of the fault, 7 miles north of the City of Monrovia. The Sierra Madre fault has an average slip rate of 2.0 mm/yr.

The San Fernando segment, unknown until the September 9, 1971 earthquake, is comprised of five major reverse-left-oblique stepped strands that strike from 75 degrees east of north to 70 degrees west of north. The fault dips 50 degrees to the north near the surface and shallows to 35 degrees north at depth. The fault is approximately 12 miles long and 3.1 miles wide. The rate of slip for this fault is reported to be 3.0 mm/yr.

The San Fernando segment was the site of the September 9, 1971 San Fernando earthquake of magnitude 6.4. The zone of surface rupture associated with this earthquake extends discontinuously for approximately 9 miles. It has a maximum measured vertical displacement across the entire fault zone of 8.9 miles, with the north side of the fault displaced upward.

The Cucamonga fault segment is an easterly extension of the Sierra Madre fault segment. It consists of 1 to 3 subparallel connected strands 0.6 mile wide and approximately 15 miles long. The fault strikes about 70 degrees east of north, and has moderate to steep northerly dips. The reported slip rate is between 2.9 mm/yr and 6.4 mm/yr. The Cucamonga fault displays fresh-appearing scarps in the alluvial fan deposits, south of the mountains. Other evidence of recent activity has been identified in newly-appearing scarps, measuring up to 3 meters in alluvial areas. Also, in large canyons, the fault has placed crystalline basement beside alluvium, forming bedrock scarps up to 23 meters high.

Although there have been no records of historic earthquakes occurring on the Cucamonga, Duarte, Dunsmore, or Sierra Madre segments, an estimated maximum credible earthquake magnitude of 7 is assigned to all five segments based on comparisons with the San Fernando segment.

Palos Verdes Fault

The Palos Verdes fault strikes southeast, across and offshore of Palos Verdes Peninsula and comes as close as 20 miles to Whittier. The onshore extent of the fault extends from north of the Palos Verdes Peninsula southward across the peninsula to about 9 miles offshore, forming the abrupt northern front of the Palos Verdes Hills. The total length of the fault, including the offshore portions is approximately 50 miles. The Palos Verdes fault coincides with a structure similar to the Elysian Park fold and thrust belt named the Torrance-Wilmington fold and thrust belt. Movement along the Palos Verdes fault appears to accommodate little of the total convergence on the southwest flank of the Los Angeles basin as indicated by a low vertical slip rate. Davis et al. (1989) believe that the convergence is taking place below the Palos Verdes fault at rates between 1.9 and 3.5 mm/yr. The lateral slip rate is not known, although ranges have been reported between 0.02 mm/yr and 0.7 mm/yr. A slip rate of 0.8 mm/yr has been assigned based on a comparison with the Newport-Inglewood fault (a geologically similar zone that parallels the Palos Verdes fault to the northeast).

Strike-slip earthquakes have occurred near the Palos Verdes fault as it heads offshore, both in the San Pedro and Santa Monica Bays. The onshore extent of the fault is assumed to be the central portion of the fault and capable of producing earthquakes similar in size to the 1933 Long Beach earthquake. Two thrust earthquakes (M 4.0 and 4.5) have occurred on the down dip end of the fault on the southwest section of the Los Angeles basin. If the Torrance-Wilmington fold and thrust belt is segmented, it could produce earthquakes of moderate (M 5) or large (M 6.7) size. Should the belt rupture as a whole, a large (M 6.7) or great (M 7.8) earthquake could result. The estimated maximum credible earthquake assigned to this zone is magnitude 7.

San Jacinto Fault

The San Jacinto fault is located 43 miles from Whittier and is similar to the San Andreas fault. It is a large strike-slip fault that has been active for several million years. The San Jacinto fault is approximately 160 miles long and extends from the north near Wrightwood where it joins the San Andreas fault to the south at Superstition Mountain near El Centro. It has been the principal focus of historic release of strain in southern California, between the North American continental and the Pacific oceanic crustal plates. Stepped segments of the San Jacinto fault extend from the area near San Bernardino at its northern end, southeast more than 186 miles across the Imperial Valley and into Baja Norte, Mexico. Geologic, geodetic, and seismologic observations suggest an average slip rate of 8 to 12 mm/yr during late Quaternary time. Where San Jacinto fault joins with the San Andreas fault, approximately 10 mm/yr of slip is transferred to the central segment of the San Andreas fault.

The San Jacinto fault has experienced numerous large earthquakes along its length since 1890. The largest recorded earthquake event on this fault was a magnitude 7 in 1899. As many as nine earthquakes have been reported since then, ranging in magnitude from 6 to 7. The fault is a major active fault in California and its geologic slip rate is slightly less than that of the San Andreas fault. Surface rupture has been associated with several historic earthquakes. The estimated maximum credible earthquake for this zone is magnitude 7.5, based on its estimated rupture length versus magnitude relationship and historical earthquake events.

San Andreas Fault

The San Andreas fault is widely recognized as the longest and most active fault in the State. The northwest to southeast-trending fault has been mapped continuously from Cape Mendocino to the Gulf of California, a distance of over 700 miles. This length is divided into four loosely defined segments: the northern, central, south-central and southern segments. It consists of numerous subparallel faults in a zone from 0.2 to 2.4 miles wide. The south-central segment of the San Andreas fault is approximately 34 miles from Whittier,

and extends from Cajon Pass to Bombay Beach. The displacement on the fault is right-lateral strike-slip, and faults within the zone are vertical.

The San Andreas fault is known to be active from historic earthquakes (some of which have caused ground surface rupture), and from abundant evidence of displacement in Holocene sediments. Two historical earthquakes (M 8+) have occurred along the fault; one in 1857 (surface rupture from Cholame to Cajon Pass, central segment) and one in 1906 (surface rupture from Cape Mendicino to Gilroy, northern segment). The south-central segment was responsible for the 1857 Fort Tejon earthquake (M 7.9).

Recent studies indicate that large earthquakes have occurred along the south-central segment of the fault at widely varying intervals, but averaging every 145 to 200 years. In addition, calculated slip rates are as high as 36 mm/yr for the south-central segment. This segment is estimated to have a 30 percent chance of producing a 7.5 magnitude event by the year 2018. The maximum credible earthquake assigned for the south-central segment of the fault is estimated to be magnitude 8.5.

Norwalk Fault

Although the existence, location, and activity status of the Norwalk fault has long been controversial, its location has generally been placed at the southern end of the Coyote Hills, between Buena Park and Fullerton. The Norwalk fault is generally known only from subsurface information, but late Quaternary activity has been cited based on relatively young surface deposits along a trace of the fault. The fault strikes 65 to 85 degrees west of north and dips steeply to the northeast.

Offshore Faults

The offshore faults of coastal California have been mapped from marine seismic surveys but their seismic potentials have remained generally unknown. Recently, seismologists from the University of California at Los Angeles, conducted Global Positioning Surveys (GPS) that detected crustal motions between satellite receiver sites throughout southern California. About 0.5 inch of movement per year between the offshore islands and the onshore areas of southern California have been detected. This slip rate is equivalent to parts of the southern San Andreas fault.

The offshore faults have remained seismically inactive but evidence suggests that strain is currently building. A sudden release of this stored strain energy could result in a earthquake of magnitude 7 or greater.

Seismicity

The principal considerations for structures in southern California are surface rupture along fault traces and damage to structures and foundations due to seismically-induced groundshaking (strong ground motion). The fault classification criteria adopted by the California Department of Conservation, Division of Mines and Geology (CDMG) is used here. This classification was established as part of state legislation requiring the delineation of special study zones along active or potentially active faults (Alquist-Priolo Special Studies Zone (APSSZ) Act of 1972 and subsequent amendments).

An active fault is defined as one which has exhibited earthquake activity in Holocene time (the last 10,000 to 11,000 years). A fault which has moved during Quaternary time (during the past 2 million years) but not within the last 10,000 to 11,000 years (Holocene time) is considered to be potentially active. Any fault that is pre-Quaternary (older than 2 million years) or without recognized Quaternary displacement is considered inactive. Table 7-2 classifies earthquake faults in the region.

The intensity of groundshaking at a given location depends primarily on the earthquake magnitude, distance from the source (epicenter), and the characteristics of soils and geology of the impacted area. Severe shaking and differential settlement can be expected to occur on consolidated upper Quaternary deposits which include alluvium, slopewash and colluvium, landslide debris, and, to a lesser degree, older alluvial terrace deposits where urbanization has taken place. Many of the strike-slip faults within the Los Angeles basin are capable of generating moderate-sized (M 5) and large (M 6.7) earthquakes. These faults include the Whittier/Elsinore fault, Elysian Park fold and thrust belt, Newport-Inglewood fault, Sierra Madre fault, Palos Verdes fault, San Jacinto fault, San Andreas fault, and the offshore faults.

Historic Earthquakes

The three largest historic earthquakes that have caused major damages in the Los Angeles basin are the 1933 (M 6.3) Long Beach, 1971 (M 6.4) San Fernando, and the 1978 (M 5.9) Whittier Narrows earthquakes. The 1933 Long Beach earthquake occurred on the southern segment of the Newport-Inglewood fault, from Newport Beach to Signal Hill, and showed right-lateral strike-slip movement. The 1971 San Fernando earthquake showed reverse faulting with a component of left-lateral strike slip. It occurred along the San Fernando segment of the Sierra Madre fault zone. The Whittier Narrows earthquake, which occurred on the Elysian thrust fault, showed pure thrust motion on a gently north-dipping plane. Recent earthquake events that have affected the City are shown in Table 7-1.

TABLE 7-1
HISTORIC EARTHQUAKES THAT HAVE AFFECTED THE AREA

Date	Fault or Location	Richter Magnitude
1812	Newport-Inglewood-San Andreas (?)	6.9
1857	San Andreas	7.9
1910	Elsinore?	6.0
1920	Newport-Inglewood	4.7
1925	Santa Barbara	6.8
1929	Norwalk	4.7
1933	Newport-Inglewood (Long Beach)	6.3
1941	Newport-Inglewood(?)	4.9
1941	Newport-Inglewood(?)	5.4
1971	Sierra Madre (San Fernando)	6.6
1971	San Fernando	5.1
1979	San Bernardino Mountains	4.9
1987	Elysian Park-Whittier Narrows	5.9
1987	Elysian Park	5.3
1988	--	5.2
1988	Elysian Park(?)	5.0
1989	Fault complex - Santa Monica Bay	5.0
1991	Sierra Madre	5.8

Note:
1) Richter magnitudes for earthquakes prior to 1933 are estimated as based on historical accounts.
2) ? where fault source has not been verified

Source: Los Angeles County Safety Element, 1990; Seismological Center, California Institute of Technology, 1992.

Aside from earthquakes showing surface evidence, micro-earthquakes below the surface have occurred throughout the region. The rate of micro-earthquakes in the Los Angeles basin and the adjacent offshore area is similar to the average rate for southern California. Except for the Newport-Inglewood fault, micro-earthquakes in the Los Angeles basin do not show any simple correlation with the late Quaternary faults. The random distribution of epicenters suggests that much of the Los Angeles basin is underlain by structures that are capable of generating earthquakes. If there is interconnectivity between these structures, then large earthquakes may be possible. The average depth of micro-seismicity in the region is 9 miles from the surface with the majority occurring between 4 to 7 miles from the surface. These depths reflect the average for the western United States. However, if the earthquakes occur on shallow or horizontal fault planes (as suggested by buried thrust faults), the intensity of shaking would be greater over a larger area. The densest concentration of micro-seismicity in the Los Angeles Basin is associated with aftershock sequences related to past moderate earthquakes.

Maximum Earthquake

Earthquakes in Southern California with Richter magnitude 4.5 and larger, with few exceptions, have occurred on faults that are known to be active. The faults that pose hazards to the City of Whittier are listed in Table 7-2, along with their fault classification, distance from the City, length of the fault, maximum historical earthquake, and estimated maximum credible earthquake magnitude.

TABLE 7-2
REGIONAL EARTHQUAKE FAULTS

Fault Name	Fault Classification	Approx. Fault Length (miles)	Estimated slip rate (mm/yr)	Ref.	Maximum Historic Earthquake Magnitude (year)	Estimated Maximum Credible Earthquake Magnitude	Ref.	Closest distance to City Hall (miles)
Whittier	Right Lateral-Reverse	28 146	1.2	c	4.2 (1976)	7	a	1.2
Elsinore	Right Lateral	137	3.0	b	6.0 (1910)	7-1/4	a	26
Elysian Park-Montebello Zone of Deformation	Reverse	13	0.2	j	6.0 (1987)	6-1/2	h,j	6
Newport-Inglewood	Right Lateral	44	0.5	c	6.3 (1933)	7	a,c	13
Sierra Madre System								20
-Cucamonga	Reverse/Left Lateral	15	3.0	f	–	7	a	
-Duarte	Reverse/Left Lateral	19	3.0		–	7	a	
-Dunsmore	Reverse/Left Lateral	9	3.0	f,i	–	7	a,i	
-San Fernando	Left Lateral/Reverse	12	3.0	f	6.4 (1971)	7	a	
-Sierra Madre	Left Lateral/Reverse	11	2.0	f	–	7	a,c	
Palos Verdes	Reverse/Right Lateral Reverse Reverse/Left Lateral	50 5 14	0.8 0.1 0.2	e,k f	3.9 (1972) – 5.0 (1988)	7 6-1/2 6-3/4	a a a	20
San Jacinto	Right Lateral	160	8.0	f	7.0 (1899)	7-1/2	a,h	43
San Andreas (South-Central)	Right Lateral	196	36.0	g	7.9 (1857)	8-1/2	a,h	34

References:
(a) Based on estimated rupture length and Slemmons (1977 and 1982).
(b) Based on Pinault and Rockwell (1984).
(c) Woodward-Clyde Consultants (1979)
(d) Unknown, assumed to be approximately 0.1 mm/yr.
(e) Based on comparisons with the Newport-Inglewood Fault Zone.
(f) Based on Clarke et al. (1984).
(g) Based on Sieh (1984) and Sieh and Jahns (1984).
(h) Based on historical events.
(i) Based on Crook et al. (1987) and Matti et al. (1982).
(j) Based on comparison with the Raymond Hill and Whittier faults.
(k) Davies et al. (1989).

Seismic Hazards

Earthquakes create different kinds of hazards, the most common of which is strong ground motion. Depending on the geologic characteristics of an area, liquefaction, surface rupture, ground failure, tsunamis (seiche) and slope failure can occur. The earthquake hazards in Whittier are influenced by the area's potential for these seismic effects.

Strong Ground Motion

Strong ground motion results from severe groundshaking produced by a moderate to large earthquake. The distribution of potential damage caused by groundshaking depends on the size and type of fault (e.g., strike-slip or reverse), the orientation of the fault rupture, the basin geometry and topography, and the subsurface geology. Accelerograph records from recent moderate earthquakes have shown wide variance in acceleration amplitudes, frequency content, and duration of groundshaking. The 1987 Whittier Narrows earthquake produced asymmetrical earthquake wave radiation patterns.

Several new complex strong ground motion methodologies are being introduced for earthquake-resistant design. A commonly-used method of predicting regional ground motion is seismic intensity. Seismic intensity describes groundshaking in terms of structural damage and human response. Table 7-3 provides a description of the Modified Mercalli Intensities which measures seismic intensity.

TABLE 7-3
MODIFIED MERCALLI INTENSITY SCALE*

I	Tremor not felt.
II	Tremor felt by persons at rest or in upper floors of a building.
III	Tremor felt indoors. Vibrations feel like a light truck passing by; may not be recognized as an earthquake. Hanging objects swing.
IV	Hanging objects swing. Vibrations feel like a heavy truck passing by, and the jolt feels like a heavy ball striking the walls. Standing cars rock. Windows, dishes and doors rattle. Glasses clink and crockery clashes. Wooden walls and frames crack in the upper range of scale IV.
V	Earth felt outdoors, and its direction can be estimated. Liquids are disturbed, some spilled. Small unstable objects are displaced or upset. Doors swing, closing and opening. Shutters and pictures move. Pendulum clocks stop, start, or change rate.
VI	Earthquake felt by everyone. Windows, dishes, and glassware are broken. Knick-knacks and books fall off shelves; pictures fall off walls. Furniture moves or is overturned. Weak plaster and masonry D are cracked.
VII	Steering of motor cars is affected. Partial collapse of masonry C structures. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting and falling of chimneys, factory stacks, monuments, towers, and elevated tanks. Frame structures, if not bolted to foundation, shift. Loose panel walls are thrown out; decayed pilings brake off.

TABLE 7-3
MODIFIED MERCALLI INTENSITY SCALE*

IX	Masonry D structures destroyed, masonry C heavily damaged, sometimes completely collapsed. General damage to foundations. Frame structures, if not bolted, shift off their foundations. Underground pipes are broken. Conspicuous cracks in the ground.
X	Most masonry and frame structures are destroyed. Most foundations destroyed. Some well-built wooden structures and bridges are destroyed. Serious damage to dams, dikes, and embankments. Underground pipelines are seriously damaged. Large landslides.
XI	Underground pipelines completely out of service. Many and widespread disturbances of the ground, including broad fissures, earth slumps and land slips in soft, wet ground. Sea-waves (tidal waves or tsunami) of significant magnitude. Severe damage to wood-frame structures, especially if near to the shock center.
XII	Damage is nearly total. Lines of sight and level are distorted. Objects are thrown into the air. Great and varied disturbance of the ground, including numerous shearing cracks, landslides, large rockfalls, and numerous and widespread slumping of river banks.

Masonry A:	Good workmanship, mortar and design. Reinforced, especially laterally, and bound together with steel, concrete, etc. Designed to resist lateral forces.
Masonry B:	Good workmanship and mortar. Reinforced, but not designed to resist lateral forces.
Masonry C:	Ordinary workmanship and mortar. Not reinforced or designed to resist horizontal forces.
Masonry D:	Weak materials, such as adobe; poor mortar. Low standards of workmanship; weak horizontally.

These masonry types are not to be confused with the conventional Class A, B, and C construction types.

* Modified and rewritten after Richter (1958) and Toppozada and others (1988) using Rossi-Forel's Intensity Scale.

The U.S. Geological Survey produced a composite ground motion map by comparing estimated Modified Mercalli Intensities from all active faults in the region. The highest intensity at a given site is selected and plotted on the map. The Modified Mercalli Intensity identifies the predicted distribution of potential damage that could be caused by the highest expected ground motion at a site. According to Evernden and Thompson (1985), the composite Modified Mercalli Intensity for the City of Whittier is intensity VII. However, the effect of an earthquake on the Elysian Park fold and thrust belt has not been taken into account. By itself, the Elysian Park thrust is estimated to be capable of producing an earthquake with intensity ranging from VIII to X on the Mercalli scale.

Fault-Induced Ground Surface Rupture

The California Department of Mines and Geology published a series of maps that show active faults with associated setback zones as prescribed by the Alquist-Priolo Special Studies Zone Act. Although parts of the Whittier fault have been designated special studies zones and others are currently under investigation, the portion of the fault that crosses the City of Whittier has not been zoned to date. The Whittier fault is a prominent and reasonably well-defined fault feature along much of its length. Further study of this fault

is likely to result in sufficient evidence proving surface displacement in Holocene time (within the last 10,000 to 11,000 years) and thereby suggesting a significant surface rupture hazard.

The Elysian Park fold and thrust belt is located, in part, below the City of Whittier. Current knowledge indicates that buried thrust faults typically deform the surface above them rather than break to the surface as a surface fault rupture. This does not preclude the potential for surface rupture resulting from earthquakes of magnitude 6.0 or larger.

Slope Stability

Slope stability is dependent on the type of earth material (its porosity, fissility, cohesive/shear strength, internal friction, etc.), steepness of slope, and bedding, jointing, faulting, etc. with reference to the topography. Other significant factors that affect slope stability include rainfall, erosion, seismic shaking, grading activities, and density and type of vegetation.

Liquefaction and Resulting Ground Failure

Liquefaction refers to the total loss of internal shear strength of the soil during groundshaking. High pressures occurring in sediments during repeated earthquake vibration cause the sediment to behave as a liquid. Liquefaction and earthquake-induced ground failure depends on sediment age and type, textural characteristics, and the depth to perched or other groundwater. Sediments that are susceptible to deformation and displacement from groundshaking are generally water-saturated, medium dense to loose cohesionless soil materials within 50 feet of the surface. The U.S. Geological Survey has published liquefaction susceptibility maps for the southern California region based on the above criteria.

The City of Whittier is located in an area that ranges in liquefaction susceptibility from very low to moderate, depending on the location and depth to ground water (Exhibit 7-5). The majority of the City exhibits very low to low liquefaction susceptibility. Areas located in or at the mouths of canyons, and/or areas where there is shallow ground water, are considered to have a moderate liquefaction susceptibility. Liquefaction within the City of Whittier is generally not a hazard as the water table is deeper than 50 feet except for areas along drainage channels with shallow groundwater.

There are four types of ground failure caused by liquefaction: (1) lateral spread, (2) flow failure, (3) ground oscillation and, (4) loss of bearing strength. These types of ground failure can cause broken pipelines and disrupted utilities, damage to foundations, and severe tilting of multi-story structures.

Seismically-Induced Slope Failure

Seismically-induced slope failure is a common occurrence with moderate to large earthquakes. The predominant types of seismically-induced slope failure (as seen during the 1971 San Fernando earthquake, the 1987 Whittier earthquake and the 1989 Loma Prieta earthquake) were shallow, internally disrupted failures such as soil slides, rockfalls, and rock slides. Seismically-induced slope failure can be expected within the hillsides north of the City of Whittier where slopes are 35 degrees or greater. It is also highly probable where coarse rocks cover the bedrock hillsides.

Seismic Effects

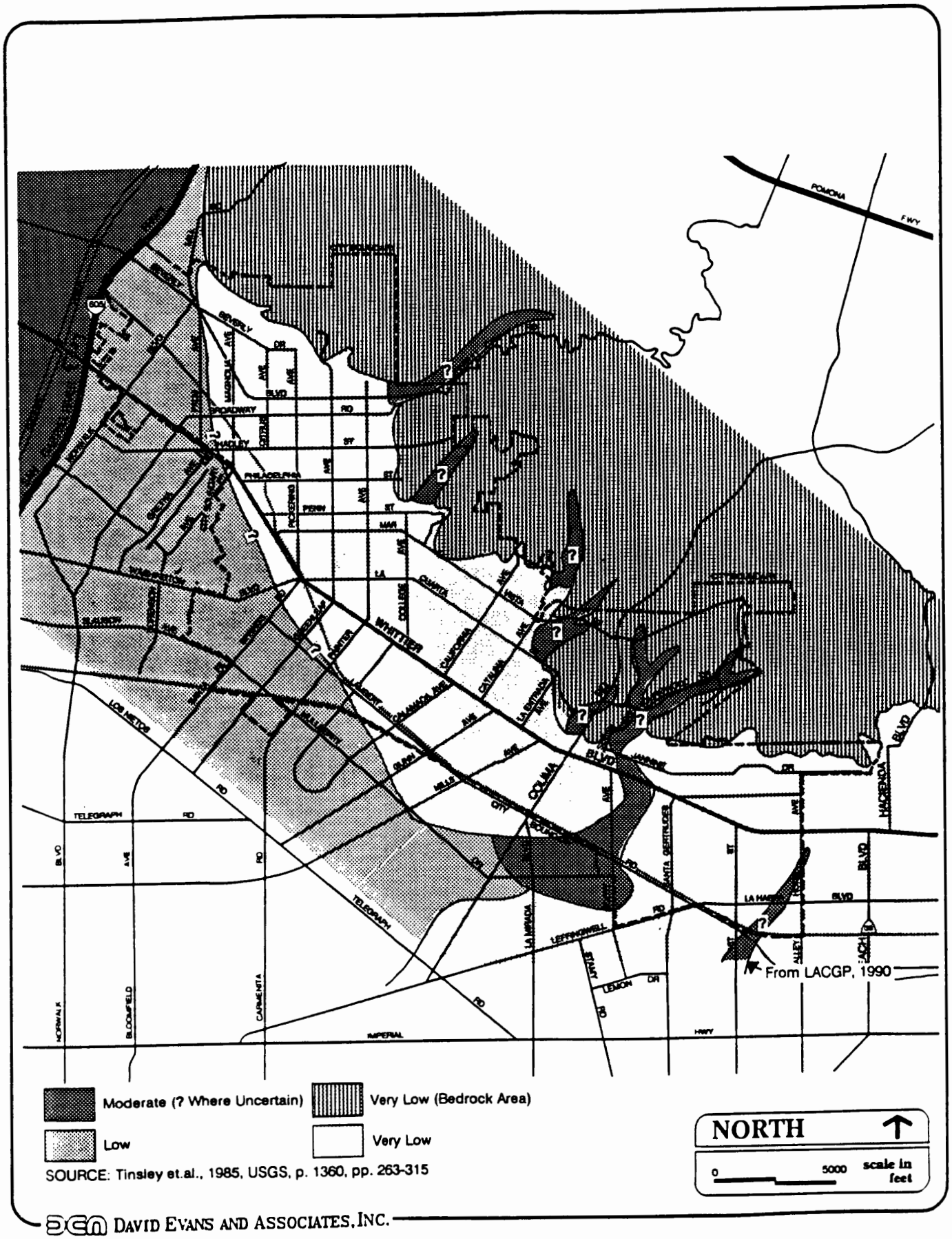
Seismic hazards are often associated with the collapse of structures and subsequent property damage and personal injury. Fires, gas leaks, explosions, hazardous material spills, the interruption of utility services, and damage to infrastructure are secondary hazards of earthquakes.

Structures that are highly susceptible to earthquake hazards include unreinforced masonry buildings, buildings with non-bearing walls and partitions, non-ductile concrete frame buildings, pre-cast tilt-up construction, long span and irregularly-shaped structures, mobile homes and residences not secured to foundations. Older structures were likely built when the seismic design of structures was not required for construction. This makes them less earthquake-resistant than newer buildings.

LANDSLIDES

Bedrock materials involved in landslides vary in composition and condition. A block-type slide may contain relatively intact, dense bedrock materials. Other slides consist of highly fractured and broken, jumbled bedrock. Overall, large ancient landslides tend to be relatively competent internally, with compressible materials present in the upper 10 to 15 feet and along the margins. Common bedrock materials that are expected to be associated with the identified landslide deposits within the Puente Hills include siltstones, silty sandstones and coarse rocks.

Landslides often occur along pre-existing zones of weakness within the bedrock. Local folding of the bedrock adds to the potential for slope failure. Landslides occur where the dip of the bedding of the rock is parallel with the slope. However, many landslides do not seem to be controlled by the position of the bedding relative to the topography but by other factors such as rock type and its attendant characteristics (density of jointing and fracturing).



SOURCE: Tinsley et.al., 1985, USGS, p. 1360, pp. 263-315

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City of Whittier

GENERAL PLAN

EXHIBIT 7-5
RELATIVE LIQUEFACTION SUSCEPTIBILITY

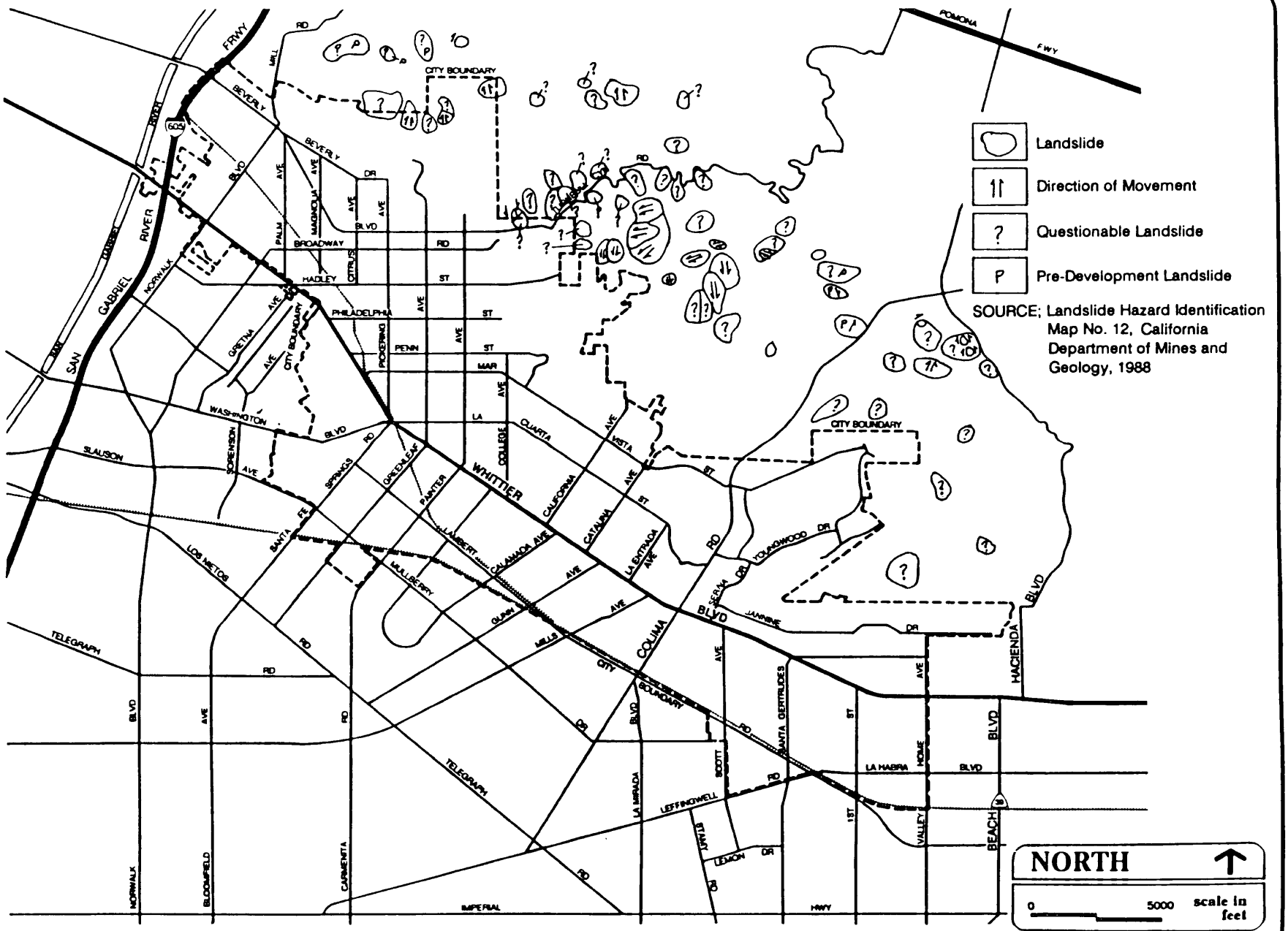

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EXHIBIT 7-6
LANDSLIDE HAZARDS

Natural slope stability in the Puente formation ranges from moderately good (Sycamore Canyon member) to poor (lower Puente siltstone member). Bedrock landslides are not common in the Sycamore Canyon member but surficial failures are common. The lower Puente siltstone is characterized by bedrock landslides and surficial slumps during heavy rains with mudflows occurring on steeper slopes.

Natural slope stability in the Fernando formation ranges from moderate (lower member) to generally fair to poor (lower member). Bedrock landslides are relatively few in the upper member but surficial slumping is common during heavy rainfall. The lower member is characterized by surficial slumps during periods of rainfall with mudflows during heavy rainfall.

Natural slope stability in the La Habra formation is fair due to moderate topographic relief and principal drainage direction. Surficial failures and creep are common in areas underlain by claystone and siltstone, or overlain by thick expansive soil, colluvium and fill derived from these types of material.

Surficial slumping typically occurs in areas where deposits with low cohesion have been subjected to over-steepening or undermining due to erosion along active stream channels. In addition, surficial slumping may occur where bedrock has been over-steepened by folding or faulting.

It is speculated that major landslides in the area (including the Puente Hills) may have occurred at the end of the Pleistocene and/or the beginning of Holocene time, (from approximately 10,000 to 20,000 years ago) in response to varying climatic conditions. In addition, areas with a potential for landsliding are expected to coincide with areas where landsliding has already occurred. This is not to say that areas with no prior record of landsliding are not likely to have landslides. If conditions change that adversely affect slope stability, landslides may occur.

Hillsides underlain by the Puente Formation are prone to landslides. In addition, landslides are more common on south-facing slopes which are typically underlain by thick soil and slopewash deposits. The City's northern boundary along the Puente Hills encompasses hilly terrain with steep slopes and intervening valleys and canyons. Landslides or questionable landslide deposits have been identified by Tan (1988) and are located along the north-facing slopes on the south side of Sycamore Canyon (Exhibit 7-6). Yerkes (1972) notes that slope failures are fairly common in the siltstone units that crop out in the Puente Hills and are especially numerous on slopes underlain by Yorba and Sycamore Canyon members of the Puente Formation. Landslides are combinations of rotational slump in the upslope part and debris flow in the lower part.

A map of relative landslide susceptibility has also been prepared to aid in general land use planning (Exhibit 7-7). Areas are depicted by their relative landslide susceptibility on a scale that includes four levels of susceptibility; least, marginally, generally, and highly susceptible. With the exception of the hilly terrain in the north and southeast parts, the vast majority of the City is designated as either least or marginally susceptible to landslides. The hilly areas are considered generally susceptible with only the northernmost area adjacent to Sycamore Canyon being designated as highly susceptible. The area designated as highly susceptible corresponds to the area in which landslides or questionable landslides have occurred.

EROSION

Erosion is the natural process by which earth materials are loosened, worn away, decomposed or dissolved, and transported to another site within a few feet or many miles away. Precipitation and runoff, running water, and wind are common agents of erosion.

The majority of the City is underlain by alluvium on fairly gentle slopes, and the ground surface is covered by asphalt and concrete, with much of the rain water being diverted to storm drains. The potential for erosion is generally low in exposed natural slopes but greatly increases to highly erodible in excavated slopes or steep channel walls in natural drainages. The potential for erosion, in the parts of the City that border the Puente Hills to the north and east, ranges from low to high, depending on the soil or bedrock type and the amount of vegetation. Barren slopes are usually more susceptible to erosion and subject to rilling or ravelling. In addition, bedrock landslide debris are more susceptible to erosion than adjacent bedrock.

Ordinarily, the rate of erosion proceeds slowly, but may be greatly accelerated if the natural topography is changed by either natural events or unsound development practices. The result can create aesthetic as well as engineering problems, and if left unchecked, poses a threat to life and property.

DEBRIS FLOW

The potential for debris flow (mudflow) depends primarily on the presence of colluvium deposits upslope, the slope, and the increase in soil moisture content typically due to heavy rainfall. Debris flows often occur when saturated soils are subjected to a rainstorm of high intensity and short duration. Another factor contributing to debris flow is the loosening of near-surface soils by weathering. Wetting and drying of soils result in alternate expansion and contraction which, through many cycles, cause a gradual loosening and weakening of surface soils. Root growth and the burrowing of insects and rodents also contribute to

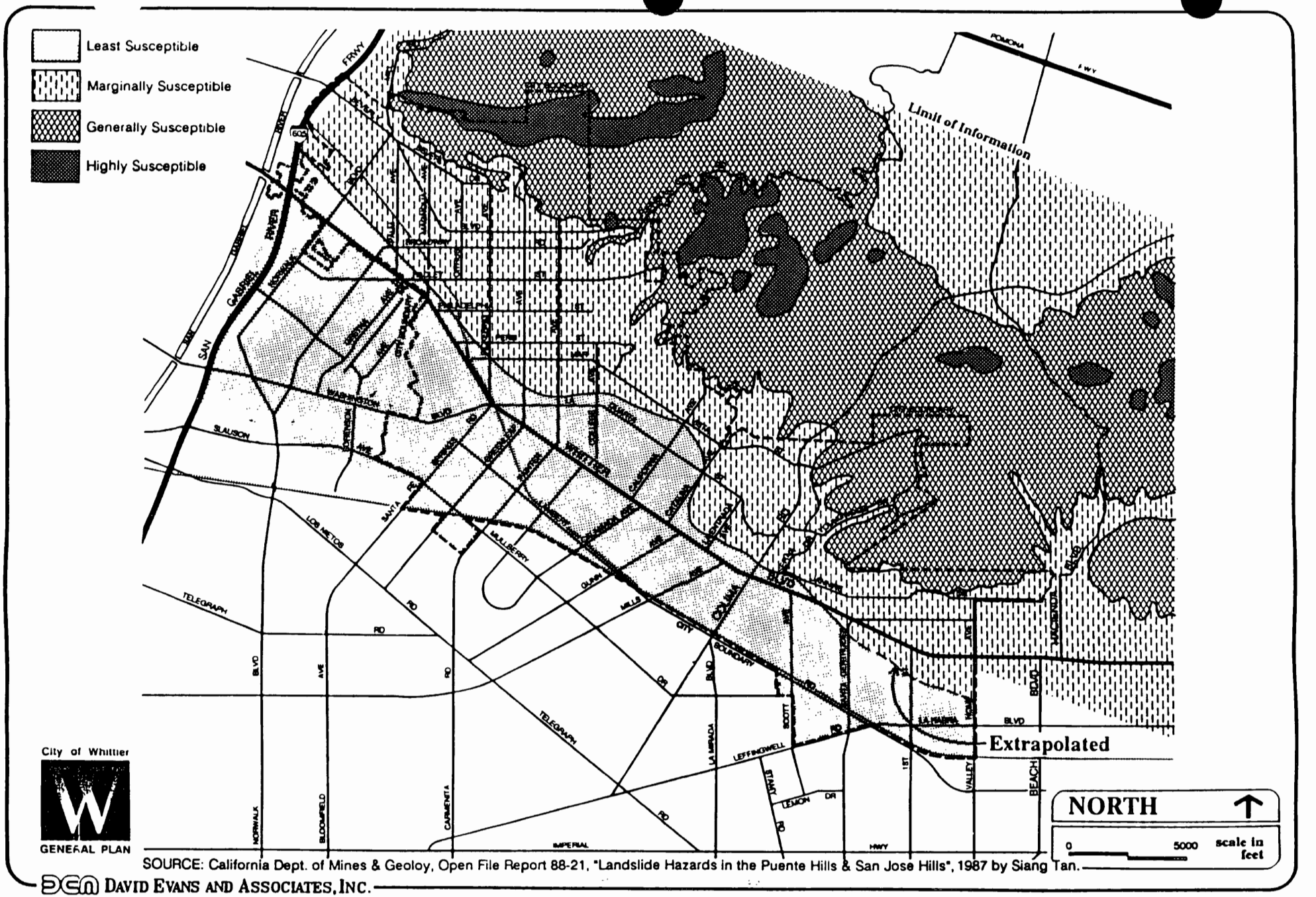


EXHIBIT 7-7
LANDSLIDE SUSCEPTIBILITY MAP

loosening of the soil. This allows more rapid penetration of moisture and when saturation occurs to sufficient depth, the surficial materials begin to flow.

Debris flows commonly originate as shallow soil slumps in rounded, colluvium-filled "hollows" at the heads of natural drainages. The rigid soil mass is deformed into viscous fluid and moves down the natural drainage swale. It takes in additional soil and vegetation scoured from the channel during the flow. The velocity of the flow depends on the viscosity, the slope gradient, the height of the slope, the roughness of the channel, and the baffling effect of vegetation.

FLOODING

Three flood zones, as recognized by Federal Emergency Management Agency (FEMA), have been identified within the City of Whittier. Zone "A" refers to areas of 100-year flood potential. Zone "B" are areas between the limits of the 100-year flood and 500-year flood. They also include certain areas subject to 100-year flooding with average depths less than one foot, where the contributing drainage area is less than one square mile, or areas protected by levees from the base flood. Zone "C" are areas of minimal flooding potential.

The areas subject to flooding as a result of surface-water runoff caused by 500 and 100-year storms are shown in Exhibit 7-8. These areas are local low-lying depressions and areas immediately adjacent to natural or engineered drainage channels. The majority of the City is designated as Zone "C" and has minimum flood potential. The twelve areas designated as Zone "A" have a 100-year flood potential and currently experience street ponding problems. They include short segments of Hadley Street, Palm Avenue, Pickering Avenue, Scott Avenue, Valley Home Avenue, Whittier Boulevard, and Slauson Avenue, among others. Five areas are designated as Zone "B" and have a 100-500 year flood potential. They are small scattered sites along the northeastern and eastern portions of the City.

DAM INUNDATION POTENTIAL

There are four small reservoirs located in the Puente Hills above the City (within city limits) that potentially pose a flood hazard. These include Whittier Storage Facility Numbers 1, 2, 4 and 9. Exhibit 7-9 shows their potential inundation areas. All are constructed of concrete and have capacities ranging between one and ten million gallons. There are several other water tanks located throughout the city, but they pose very minor flood hazards.

Whittier No. 1 Storage Facility

The Whittier No. 1 storage facility (Painter Reservoir) is located 0.15 mile north of the intersection of Painter Avenue and Beverly Boulevard at an elevation of approximately 580 feet msl. The reservoir is a concrete structure with a capacity of approximately 1.0 million gallons (3.07 acre-feet). Water released from this structure would flow southwest across the alluvial fan towards Beverly Boulevard for a distance of about 0.2 mile from the source. The area that may be impacted in the event of failure of the structure is approximately 250,000 square feet wide.

Whittier No. 2 Storage Facility

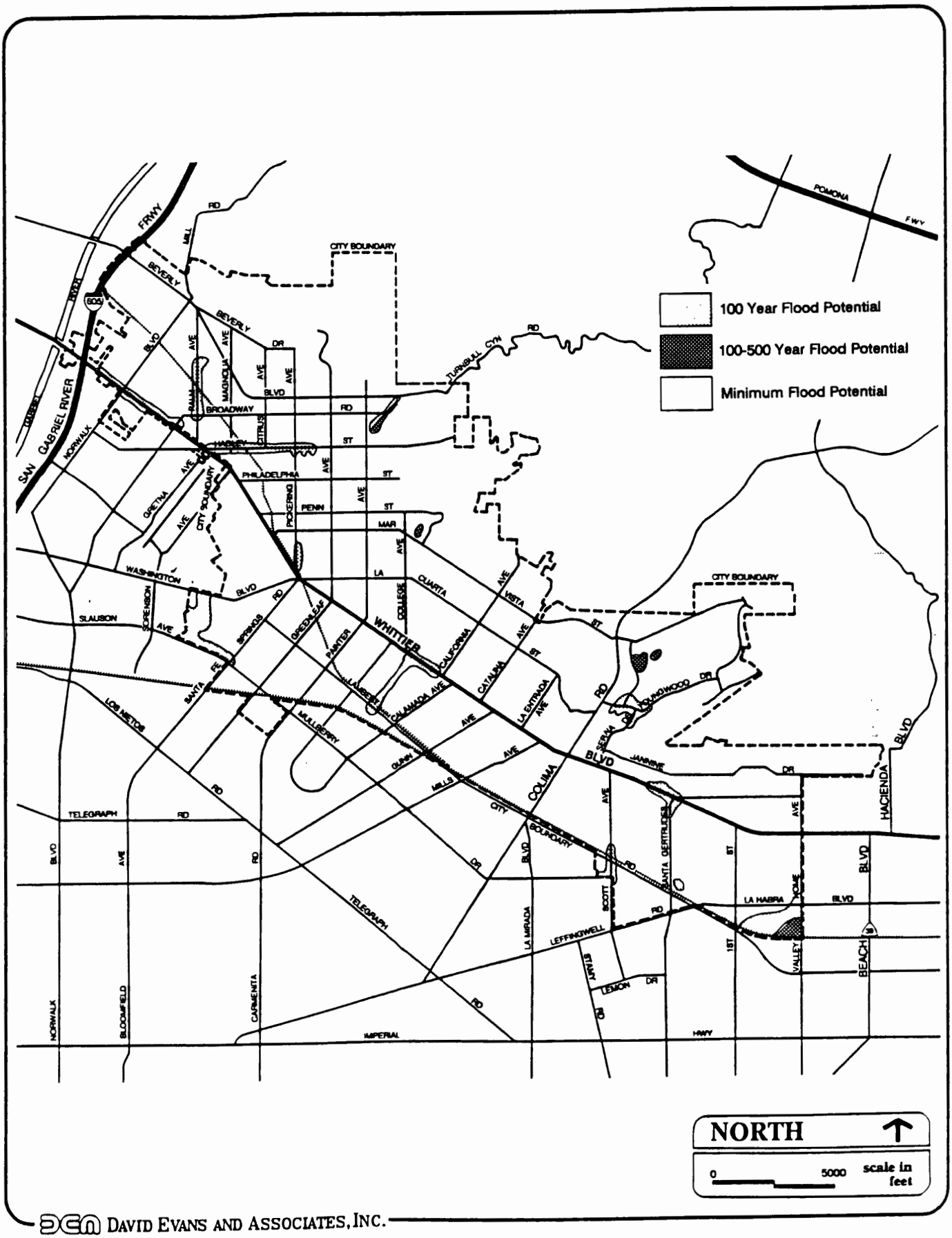
The Whittier No. 2 storage facility (Greenleaf Reservoir) is located 0.35 mile northwest of the intersection of Beverly Boulevard and Painter Avenue at an elevation of approximately 460 feet msl. The reservoir, constructed at the mouth of the junction of three canyons, is a concrete vault structure with a capacity of approximately 6 million gallons (18.4 acre-feet). Water released from this structure would flow southwest across the alluvial fan towards Beverly Boulevard for a distance of approximately 0.5 mile from the reservoir. The potential inundation area is approximately 700,000 square feet wide.

Whittier No. 4 Storage Facility

The Whittier No. 4 storage facility (Hoover Reservoir) is located 0.6 mile east of the intersection of Norwalk and Beverly Boulevards at an elevation of approximately 460 feet msl. The reservoir is a concrete vault structure with a capacity of approximately 9.75 million gallons (30.7 acre-feet). In the event of tank failure, water from the storage facility initially would be confined to the southwest-trending canyon that drains its headward region. Once out of the confines of the canyon walls, the flood waters would flow southward along a natural, gentle swale. Crossing Beverly Boulevard, the flow turns west and northwest along the Pacific Union Railroad alignment, probably stopping just short of Norwalk Boulevard. The total estimated maximum distance of flow is 2.3 miles from the facility with approximately 64 acres within its inundation area.

Whittier No. 9 Storage Facility

The Whittier No. 9 storage facility (Ocean View Reservoir) is located 0.7 mile from the intersection of Colima Road and Mar Vista Street at an elevation of approximately 460 feet msl. The reservoir is a concrete vault structure with a capacity of approximately 4 million gallons (12.3 acre-feet). The area that may be potentially impacted in the event of failure of the structure would cover approximately 500,000 square feet. Water released from this structure would flow southwest within the confines of a gentle swale southwest across the



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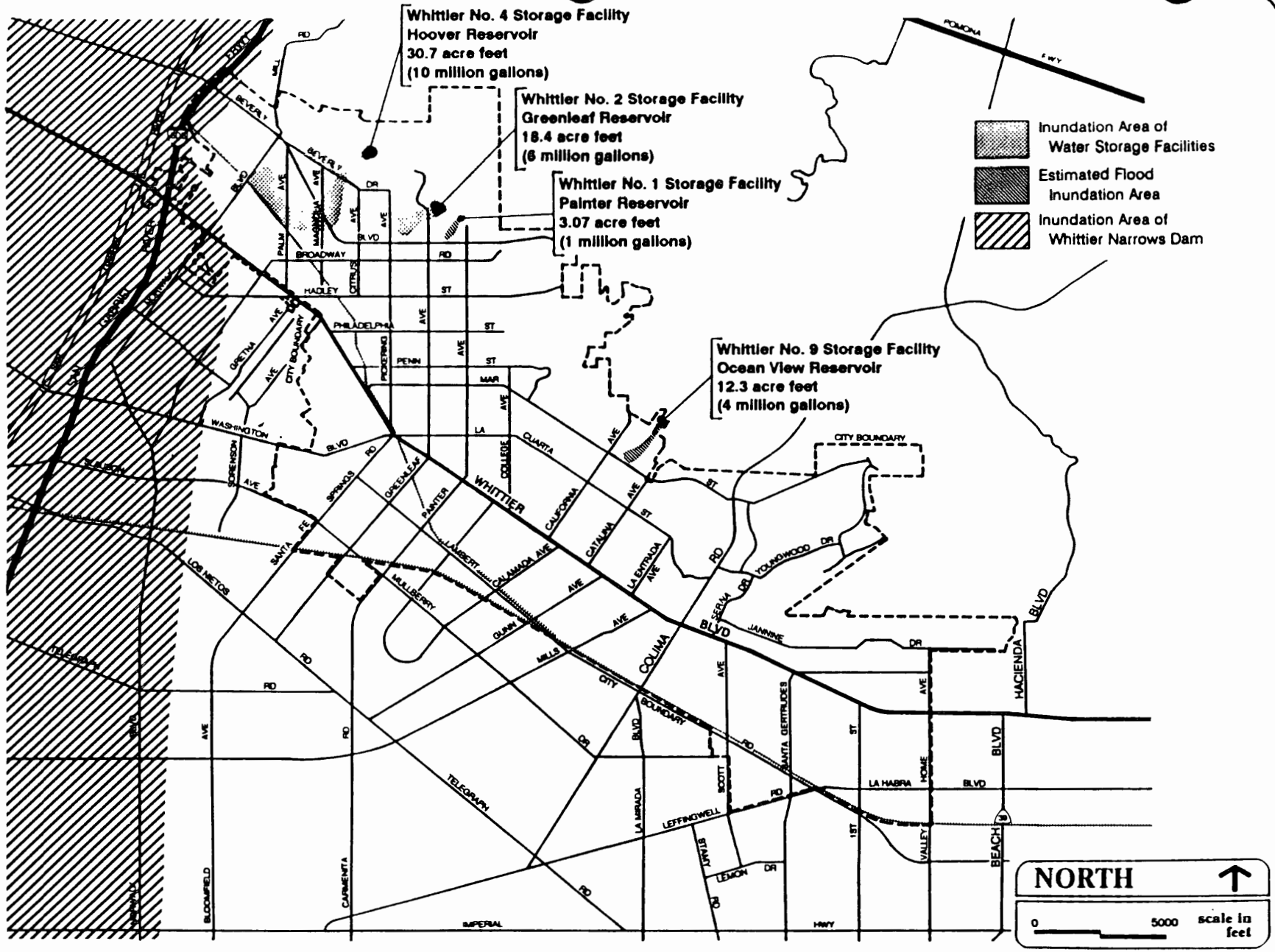
City of Whittier

GENERAL PLAN

EXHIBIT 7-8
FLOOD HAZARDS



City of Whittier
GENERAL PLAN

DAVID EVANS AND ASSOCIATES, INC.

EXHIBIT 7-9
INUNDATION AREAS

alluvial fan towards Mar Vista Street. The total estimated maximum distance of flow is 0.4 mile from the source.

Other Storage Structures

A number of other storage structures (tanks) are located within in the Puente Hills at various sites. All contain less than 1 million gallons and are listed in Table 7-4.

TABLE 7-4
MINOR STORAGE TANKS

Storage Tank	Reservoir Name	Size
Whittier No. 3	College Hills	300,000 gallons
Whittier No. 5	Rideout	150,000 gallons
Whittier No. 6	Hazzard	150,000 gallons
Whittier No. 8	College Hills	475,000 gallons
Whittier No. 10 & 11	Murphy	500,000 gallons (each)
Whittier No. 12	Starlight	300,000 gallons

Damage which could result in the release of water from these structures would cause localized erosion and very limited flooding. Thus, they are not considered significant inundation hazards in the City.

Whittier Narrows Dam

The Whittier Narrows Dam is located 3.8 miles northwest of the City of Whittier Civic Center. It is west of the San Gabriel River flood control channel and the Freeway (SR-605). Inundation from flood waters released from the Whittier Narrows Dam includes a limited area in the northwest corner of the City as shown in Exhibit 7-9.

WILDFIRE

The potential for wildfire is generally restricted to naturally vegetated open space areas in the hills and canyons of the Puente Hills along the northern boundaries of the City. The degree of hazard from wildfire depends on the amount and distribution of seasonal rainfall, the density of native vegetation, the period from the last wildfire, and the amount of development in these areas. Other factors that may cause a fire hazard are associated with oil fields. A map delineating areas of potential wildfire hazards in the undeveloped areas in and adjacent to the City is presented as Exhibit 7-10.

In the Whittier area, the brush is generally thicker on the north facing slopes because they are partially protected and tend to retain more moisture. There are three fire hazards in the area: dry brush, high thick canopy trees, and houses with wooden shingle roofs. According to Mr. Ron Rayhawk of the Whittier Battalion Chief's office, these fire hazards are located along the eastern edge of the City. The primary fire hazard areas are the Turnbull Canyon Road area, the Puente Hills, Friendly Hills, and the area around Colima Road and Calle Terra. The high risk area around Turnbull Canyon is south of the road where homes are found at the top of a steep north-facing slope, and the majority of the hillsides are covered with heavy brush. The undeveloped areas of the Puente Hills is covered with scrub brush, posing a fire hazard. The area east of Colima Road does not have as much brush and therefore do not pose as great a fire hazard. The Friendly Hills area is used by equestrians and contains many high canopy trees. It is also considered a high fire hazard. The areas around Colima Road and Calle Terra are considered high fire hazard areas due to many high canopy trees (primarily Eucalyptus) and a number of houses with wood shingle roofs.

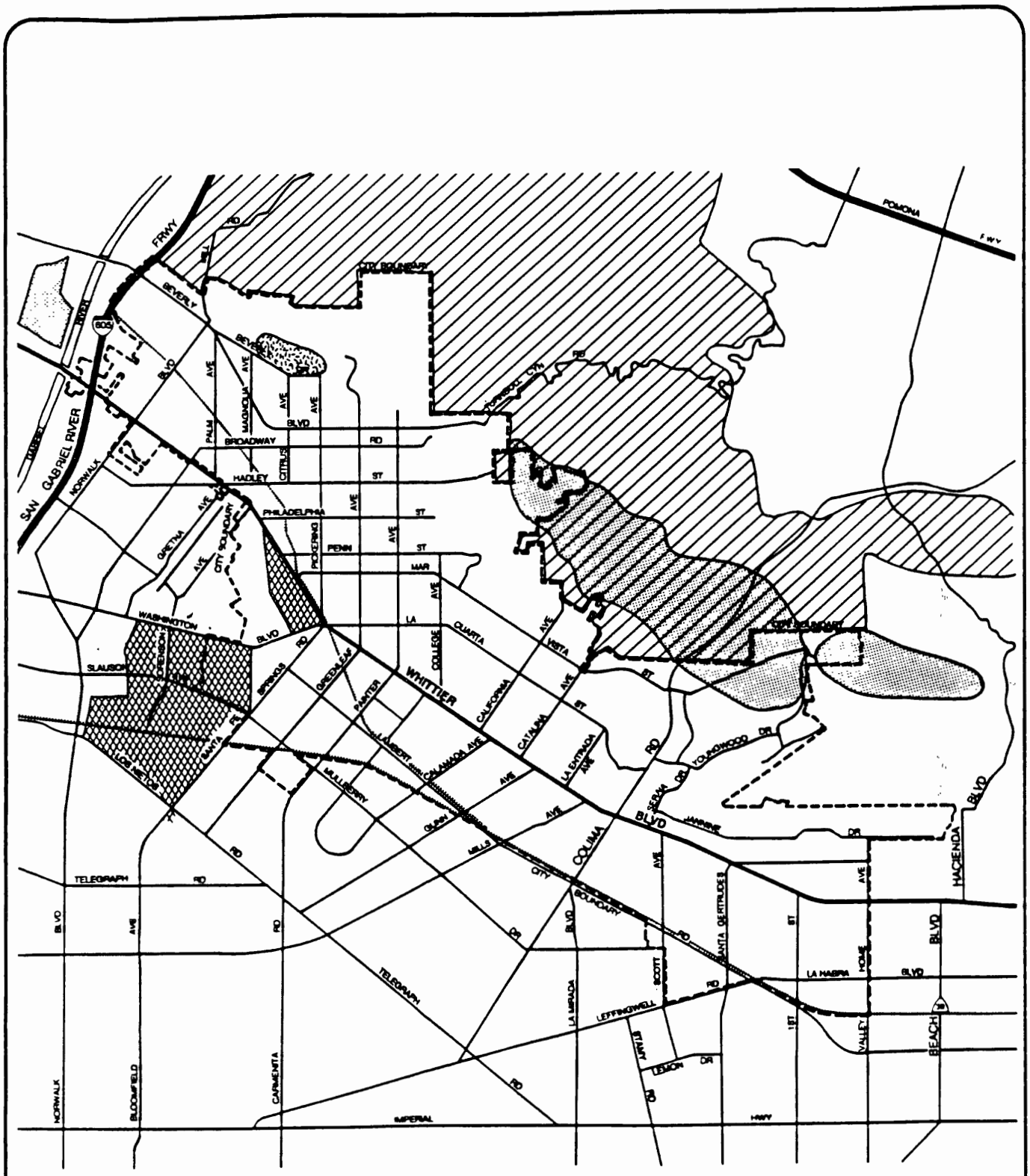
Natural fires caused by lightning or spontaneous combustion are infrequent and represent little threat to the community. However, natural areas of dense vegetation in the Puente Hills may be exposed to man-made fire hazards and are considered a high fire risk. This condition is only exacerbated during the periods of hot, dry desert winds and hot local temperatures, creating the potential for a major threat to lives and property in the City.

Other potential sources of fire, not necessarily associated with the undeveloped areas of the City are the industrialized areas and areas of known shallow methane accumulations. These areas are limited to the developed parts of the City and pose a potential fire hazard to adjacent areas in the case of a major fire.

URBAN FIRE

Urban fires occur in developed areas and destroy buildings and other manmade structures and pose threats to life and safety. Fire disasters are often due to accidents, carelessness, faulty wiring or electrical equipment, as exacerbated by combustible construction materials, the absence of fire alarm and sprinkler systems, and presence of fire-supporting chemicals.

Urban fire hazards in the planning areas are posed by industrial uses (Exhibit 7-10), high voltage power lines (Exhibit 7-11) and high pressure gas lines (Exhibit 7-12). High voltage power transmission lines are not found in the City but 220-kilovolt lines run along the west side of the San Gabriel River and on the Puente Hills. Substations within the City include the Murphy Substation on Painter Avenue by the SPRR railroad; the Westgate Substation on Whittier Boulevard, the Friendly Hills Substation on Colima Road; and the Telegraph Substation on Santa Gertrudes Avenue and Lambert Road. Main gas lines in the City are



DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 7-10
WILDLAND AND SELECTED URBAN FIRE HAZARDS

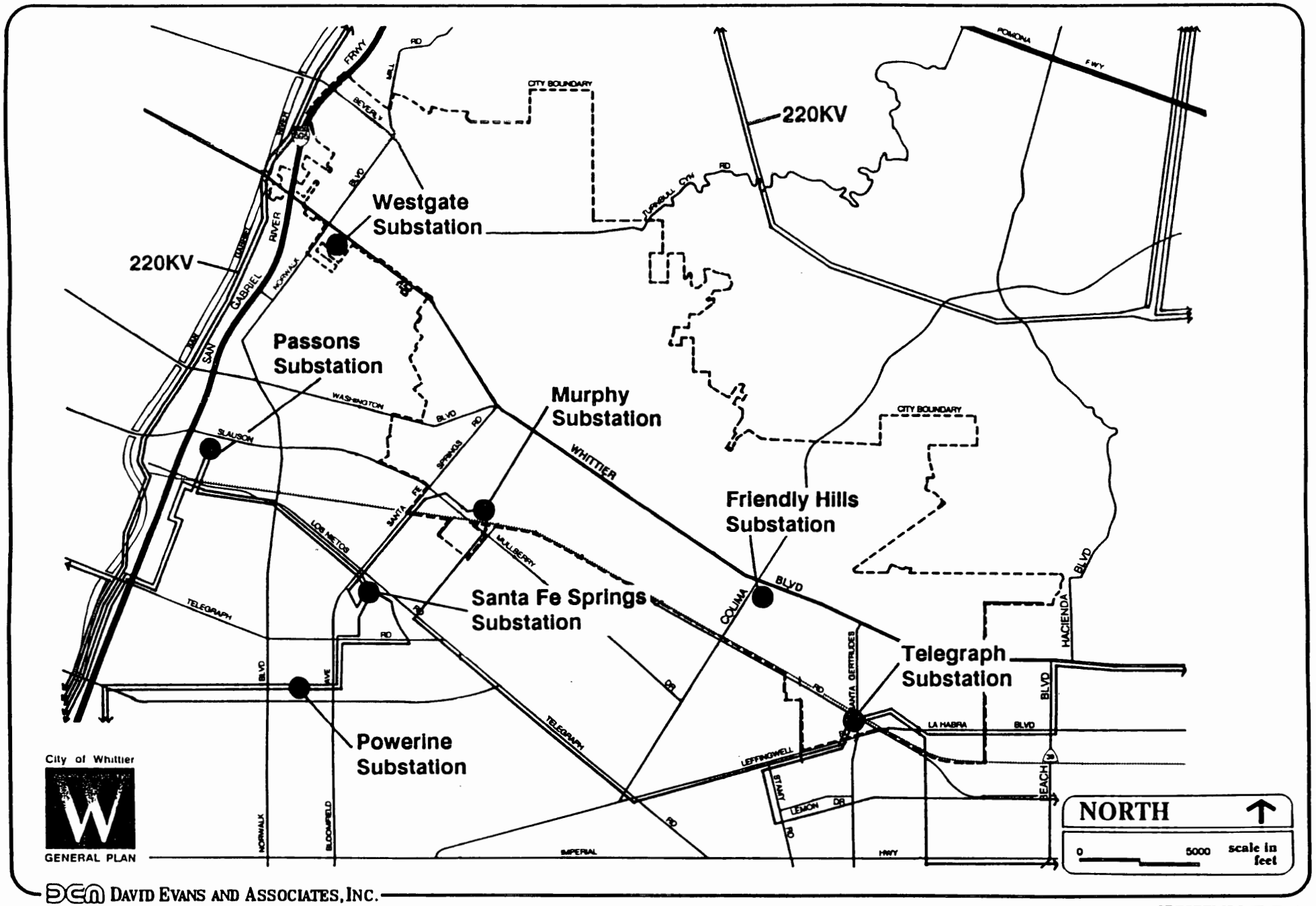


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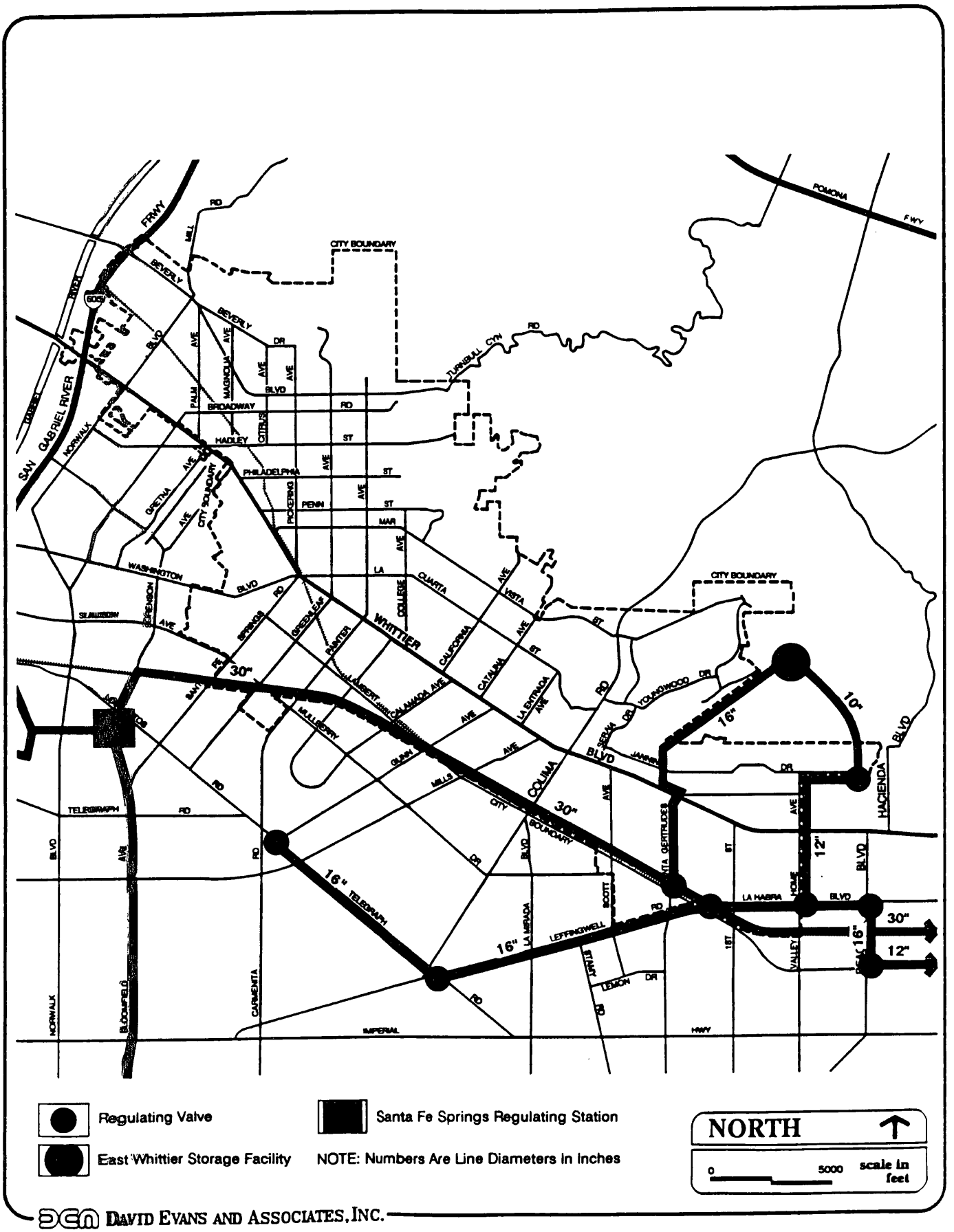
EXHIBIT 7-11
POWER LINES AND SUBSTATIONS



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City of Whittier

GENERAL PLAN

EXHIBIT 7-12
HIGH PRESSURE GAS LINES

pressurized from 300 to 465 pounds per square inch (psi). They range in size from 10 to 30 inches in diameter. The majority of the gas used in Whittier comes from the Santa Fe Springs Station. The East Whittier storage facility utilizes local gas oil from wells in the Puente Hills. The fire hazard posed by structures with substandard electrical systems cannot be readily evaluated.

HAZARDOUS MATERIALS

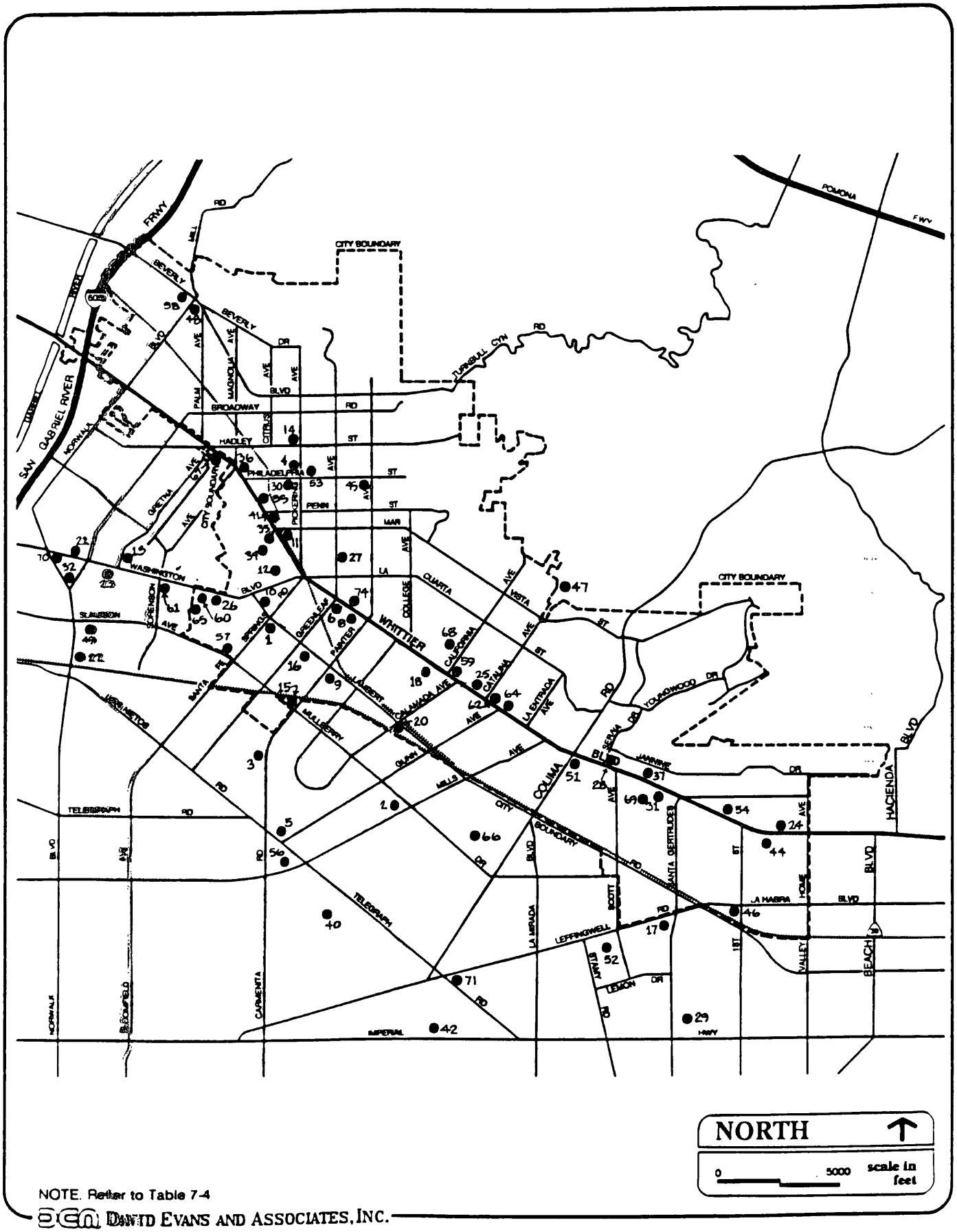
Based on the review of the available records, a number of sites associated with the use of hazardous materials and the generation of hazardous wastes have been identified within the Whittier area. Table 7-5 provides a list of these sites. Exhibits 7-13 through 7-15 show the relative location of identified sites.

TABLE 7-5
HAZARDOUS MATERIALS HANDLERS & WASTE SITES

No.	Site	Address	Source	Status
1	7-Eleven Store 2114-18470/WPD	8438 Santa Fe Springs Rd.	HWIS	3
2	7-Eleven Store 2114-16931/WPD	10011 Mills Rd	HWIS	3
3	7-Eleven Store 2114-16028/WPD	9727 Carmenita Ave	HWIS	3
4	7-Eleven Corp 2114-17896/WPD	12515 E. Philadelphia St.	HWIS	3
5	AAA Body & Paint Shop	13422 Telegraph Rd.	HWIS	2
6	AAMCO Transmission	13130 E. Whittier Blvd.	HWIS	3
7	Agricultural Property	Slauson Ave.	LUST/CORTESE	S
8	Al's Rubber Stamp & Specialty Works	13211H E Whittier Blvd.	HWIS	TSDF
9	America Transmission	13422 Lambert Rd., E.	LUST	S
10	American Medical Enterprises	12508 Lambert Rd., E.	LUST	S
11	Zieman Manufacturing Co.	12425 Whittier Blvd.	HWIS	2
12	Anchor Post Prods Inc. CA	12482 E. Putnam Dr.	HWIS	1
13	Apex Bulk Commodities	11655 Washington Blvd. E.	LUST/CORTESE	U
14	ARCO FAC. #5206	12525 Hadley	LUST	U
15	ARCO Station #1661	9151 Painter Ave.	LUST/CORTESE	G
16	ARCO Station #0211	13010 Lambert Road	LUST/CORTESE	U
17	ARCO Station #6149	15750 Leffingwell Rd.	LUST/CORTESE	G
18	Ask Waste Oil	9112 Strub Ave.	HWIS	TRANS
19	Associated Oil Co.	2118 S. Norwalk Blvd.	ASPIS	PAL

TABLE 7-5
HAZARDOUS MATERIALS HANDLERS & WASTE SITES

No.	Site	Address	Source	Status
20	Atlantic Richfield Co. Sta 1090	14000 E. Lambert	HWIS	1
21	B & W Cleaners	11235 E. Washington Blvd	HWIS	2
22	Barret Station	8728 Norwalk Blvd.	LUST	4
23	BB Plant & Body Center	11506 E Washington Blvd	HWIS	2
24	BC Auto Parts & Service	16511 E. Whittier Blvd.	HWIS	3
25	Ben Niemi Buick	14365 E. Whittier Blvd.	HWIS	2
26	Blower Drive Service	12140 E. Washington Blvd.	HWIS	1
27	Blu White Linen Cirs Inc.	7734 S. Greenleaf Ave.	HWIS	1
28	Board Ford	15265 E. Whittier Blvd.	HWIS/LUST/CORTESE	1,S
29	Bob Perkins Trucking	16017 Landmark Dr.	HWIS	1
30	Bobs Automotive Center Inc.	12510 Philadelphia	HWIS	3
31	Broadway the Whittier	15600 Whittwood	HWIS	3
32	Broadway Cleaners	8023 S. Broadway	HWIS	1
33	C M C Printed Bag Co.	2615 Pacific Park Dr.	HWIS	1
34	C & D Inc. DBA Tool & Jig Plating	7635 S. Baldwin Pl.	HWIS	1
35	Cal-Air Inc.	12484 Whittier Blvd.	HWIS	TRANS
36	Calcor Space Facility Inc.	12031 Philadelphia St.	HWIS	1
37	California Domestic Water Co.	15505 E. Whittier Blvd.	HWIS	2
38	Caltrans Eastern Regional Sta	1940 Workman Mill Rd.	HWIS	1, TRANS
39	Caltrans, Whittier Maint. Station	1940 Workman Mill Rd., S.	LUST/CORTESE	U
40	Candlewood Country Club	14000 Telegraph Rd., E.	LUST/CORTESE	S
41	Carcoa Auto Painting	12615 E. Whittier Blvd.	HWIS	2
42	Chambers Recycle	12206 Colima Rd.	HWIS	TRANS
43	Chem Resource Co.	12236 Coast Dr.	HWIS	1
44	World Oil Co.	16360 Whittier Blvd.	HWIS/LUST/CORTESE	2
45	Chevron Station #8623	7001 Painter Ave., S.	LUST/CORTESE	S
46	Chevron Station #93408	16170 Leffingwell Rd.	LUST/CORTESE	G
47	Chevron Station	8000 Catalina Ave. No.	LUST/CORTESE	
48	Chevron Station #91190	10808 Beverly Blvd. E.	LUST/CORTESE	U
49	Circle K #3064	11642 W. Slauson	HWIS	



NOTE. Refer to Table 7-4

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 7-13
HAZARDOUS MATERIAL SITES
Numbers 1-74

TABLE 7-5
HAZARDOUS MATERIALS HANDLERS & WASTE SITES

No.	Site	Address	Source	Status
50	Circle K #3043	13746 Meyer Road	HWIS	3
51	Cleaning Store The	15030 Whittier Blvd #2	HWIS	1
52	Cousins Waste Oil	15321 Saranac Dr.	HWIS	TRANS
53	Covenant Cooperative Enter Inc.	12727 Philadelphia St. #C	HWIS	3
54	Craig's Automotive	16017 Whittier Blvd.	HWIS	1
55	Crazy Joe's Repair	12630 E. Whittier Blvd.	HWIS	2
56	D & B Machine	10706 Inez	HWIS	3
57	DCR Transmission Parts	12407 Slauson, Ste B	HWIS	3
58	Dicks Salvage Co.	5408 S. Rockne Ave	HWIS	TRANS
59	Discount Tire Ctr #98	14101 W. Whittier Blvd.	HWIS	3
60	D N S Auto Body	12130 Washington Blvd.	HWIS	2
61	Drive Line Service of Whittier	11840 E Washington Blvd	HWIS	3
62	Dry Clean for Less	14153 Whittier Blvd #101 A	HWIS	2
64	East Whittier City School District	14535 Whittier Blvd. E.	LUST/CORTESE	S
65	Eastman Kodak Co. Regl MS D Ctr.	12100 Rivera Rd.	HWIS	1
66	Econo Lube N Tune	12320 Valley View	HWIS	1
67	Ed Prader Automotive	11630 Whittier, Unit D	HWIS	3
68	Environmental Graphics Ptg.	8512 Strub Ave.	HWIS	3
69	Firestone Store #27FT	15710 La Forge	HWIS	3
70	Firestone Store #2798	11230 E. Washington Blvd	HWIS	2
71	Firestone Store 2797	14428 Telegraph Rd.	HWIS	3
72	G I Waste Oil	13528 Excelsior	HWIS	TRANS
73	G D W Trucking	2208 S. Mardell St.	HWIS	TRANS
74	Gen Telephone of CA/Whittier-2	13119 E. Whittier Blvd.	HWIS	1
75	Gen Telephone of CA/Whittier-1	11024 First Ave	HWIS	1
76	General Telephone of Cal.	10603 E. Whittier Blvd.	HWIS	3
77	General Telephone of CA	13687 Telegraph Rd.	HWIS	3
78	Graphic-Dies	11822 E. Washington Blvd	HWIS	1
79	Guirado Dump	Pioneer Rd/Orange Grove Ave	ASPIS	PAM

TABLE 7-5
HAZARDOUS MATERIALS HANDLERS & WASTE SITES

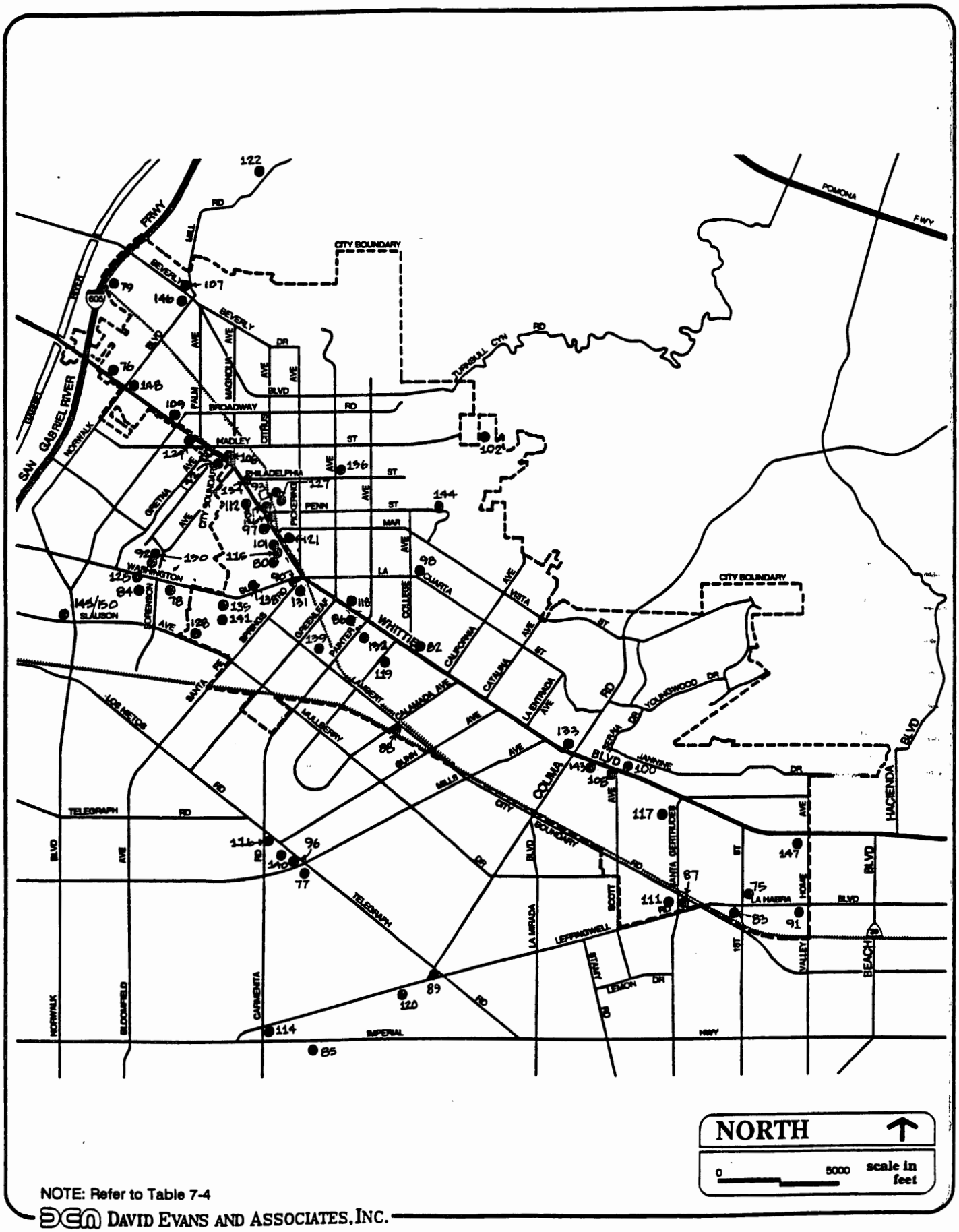
No.	Site	Address	Source	Status
80	Gunlocke Corporation	12468 Putnam Street	LUST/CORTESE	S
81	Halferty & Debeikes Properties	12353 Whittier Blvd.	HWIS	1
82	Harris Oldsmobile Inc.	13617 E. Whittier Blvd.	HWIS	1
83	Holiday One Hour Cleaners	11131 S. First Ave	HWIS	3
84	Hood Corporation	8201 Sorensen Ave	HWIS	1, TRANS
85	Imperial Paving Co., Inc.	13555 Imperial Hwy., E.	LUST	U
86	J & C Auto Supply	13214 Whittier Blvd.	HWIS	2
87	J & R Transmissions	15836 Lambert Rd.	HWIS	3
88	Jiffy Lube #5	1418 Lambert	HWIS	1
89	Jiffy Lube	11705 Colima Rd.	HWIS	3
90	Jones Chevrolet	12560 Whittier Blvd.	HWIS/LUST/CORTESE	U
91	Kings Cleaners	16501 E. Leffingwell Rd.	HWIS	3
92	L & N Precision Radiator	11707 G Washington Blvd.	HWIS	3
93	L & N Body Repair	12301 1/2 Wardman St.	HWIS	1
94	LA County Sanitation Dist.	1965 Workman Mill Rd.	HWIS	1
95	Lankford Charles H Trucking	11419 Newgate Ave	HWIS	TRANS
96	Larry's Body & Paint	13542 E. Telegraph Rd.	HWIS	1
97	Leggett & Platt, Bedline	12352 Whittier Blvd.	HWIS/LUST/CORTESE	1,U
98	Lidyoff Maurice M.	7621 Forest Ave.	HWIS	TRANS
99	Los Angeles Freightliner GMC	2429 South Peck Rd.	HWIS	2
100	McAllister Cadillac, Inc.	15311 E. Whittier Blvd.	HWIS	1
101	McConnell & Jones, DBA WCC Co.	12504 E. Whittier Blvd.	HWIS	TRANS
102	McFarland Energy - Old Whittier	W/2 Sec 22 T2S R11W	HWIS	1
103	Miguels Diesel	2332 S Peck Rd	HWIS	1
104	Miller Castings Inc.	2503 Pacific Park Dr.	HWIS	
106	Mission Rubber Co., Inc.	6533 S. Magnolia Ave.	HWIS	1
107	Mobil S.S. #11-E75	10737 Beverly Blvd. E.	LUST	U
108	Mobil Station	15827 Whittier Blvd. E.	LUST/CORTESE	6
109	Mobil Station #11-E6W	11253 Whittier Blvd.	LUST/CORTESE	U
110	Mobil Station #11-E50	8441 Pioneer Blvd., S.	LUST/CORTESE	U

TABLE 7-5
HAZARDOUS MATERIALS HANDLERS & WASTE SITES

No.	Site	Address	Source	Status
111	Mobil Station #11-EOR	15735 Leffingwell Rd.	LUST/CORTESE	U
112	Modine Manufacturing Co	12252 E. Whittier Blvd.	HWIS/CORTESE/ASPIS/ CERCLIS	1/SIRM/S /I
113	Mustang Equipment Co.	2425 Kella Ave.	HWIS	1
114	Nash Salvage Inc.	13324 E. Leffingwell Rd.	HWIS	TRANS
115	Omega Chemical Co. RP	12504 E. Whittier Blvd.	HWIS	1, TRANS, TSDF
116	One Hour Martinizing Cleaners	13407 Telegraph Rd.	HWIS	3
117	Our Cleaners Inc.	1571 E. La Forge	HWIS	1
118	Pacific Bell	13119 E. Whittier Blvd.	HWIS	1, TRANS
119	Pacific Bell	8414 S. Laurel	HWIS	1
120	Pacific Hazardous Pumping	11818 Valley View Ave	HWIS	TRANS
121	Paragon Machine & Tool Inc.	7352 Whittier Ave	HWIS	2
122	Paul Munroe Hydraulics	9999 Rose Hills Rd.	HWIS	1
123	Puente Hills Landfill #6	2800 S. Workman Mill Rd.	ASPIS/CERCLIS	PAM, SI
124	Precision Transmission	11630 Whittier Blvd, Unit H	HWIS	3
125	Precision Automotive Cauper Exc.	11715 1/2 Washington Blvd.	HWIS	1
126	Preston Weed Control	12363 Whittier Blvd.	LUST/CORTESE	7, S
127	Priti-Paint	12302 3/4 Wardman St.	HWIS	1
128	Pryor-Giggey Company	12393 Slauson Ave. E.	LUST/CORTESE	U
130	Quaker City Pltg & Silversmith	7937 Chatfield Ave.	HWIS	1
131	Rainbow Car Wash	12604 Whittier Blvd. E.	LUST/CORTESE	S
132	Ralphs Grocery Co. #81	13241 E. Whittier Blvd.	HWIS	3
133	Ralphs Grocery Co. #64	14919 Whittier Blvd.	HWIS	3
134	Rasmussen Iron Works	12028 E. Philadelphia St.	HWIS	2
135	Refractory Composites Inc.	12220 A Rivera Rd.	HWIS	2
136	Reliable Printing Service	6743 Bright St.	HWIS	2
137	Rio Hondo Community Dist.	3600 Workman Mill Rd.	HWIS	2
138	Rippy, Fred R. Inc.	12471 Washington Blvd.	HWIS	1

TABLE 7-5
HAZARDOUS MATERIALS HANDLERS & WASTE SITES

No.	Site	Address	Source	Status
139	Roadwest Oil Company	8643 Shoemaker Ave.	HWIS	TRANS
140	Rube's Body & Paint, Inc.	10634 So. Inez	HWIS	1
141	Russ Bassett Corp	8189 Byron Rd.	HWIS	1
142	Sabir Development Inc.	11630 E. Whittier Blvd.	HWIS	3
143	Sackett & Peters	15214 E. Whittier Blvd.	HWIS	2
144	Savage Canyon Landfill	13919 E. Penn St.	HWIS/LUST/CORTESE	3/U
145	Shell Service Station	11515 Slauson	LUST	1
146	Shell Station No. 204-8458-0800	10742 E. Beverly	HWIS/CORTESE/LUST	1, U
147	Winston Tire Company #44	16554 E. Whittier Blvd.	HWIS	3
148	Shell Station	10807 Whittier Blvd.	LUST/CORTESE	S
149	Shell Station	14963 Mulberry Rd., E.	LUST/CORTESE	L
150	Shell Station No. 204-8458-1600	11515 E Slauson	HWIS/CORTESE	1, S
151	Shell Station	11347 Washington Blvd.	LUST/CORTESE	S
152	Sierra Education Center	9401 Painter Ave., S.	LUST	S
153	So. Calif Gas Co/Whittier Base	12460 Mar Vista Dr.	HWIS	2
154	Soabar Co.	12450 E. Whittier Blvd.	HWIS	1
155	Southern California Edison	11954 E. Washington Blvd.	HWIS	3
156	Southland Corp DBA 7-11	8280 Norwalk Blvd.	HWIS	3
157	Southland Corp, The	13939 Whittier Blvd. E.	LUST/CORTESE	S
158	Standard Transmission Exchange	12407 Slauson, Ste B	HWIS	3
159	Stop N Go Market #914	12604 Beverly Blvd.	HWIS	3
160	Stop N Go Market #910	11601 E. Hadley	HWIS	3
161	Sun Nissan Datsun	16050 E. Whittier Blvd.	HWIS	1
162	Susana Transportation Systems. Inc.	2845 Workman Mill Rd.	HWIS	1
163	Swiss Dry Cleaners	15043 Mulberry	HWIS	2
164	Texaco Station	10810 La Mirada Blvd.	LUST/CORTESE	G
165	Texaco Service Station	12608 Hadley Pickering	HWIS	3
166	Thielmann, Mary Ann Property	16161 Leffingwell Rd.	LUST	S
167	Tin Plating Co., The	11748 1/2 Washington Blvd.	HWIS	2
168	Tony's Dry Cleaners	14836 E. Whittier Blvd.	HWIS	1



NOTE: Refer to Table 7-4

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 7-14
HAZARDOUS MATERIAL SITES
Numbers 75-148

TABLE 7-5
HAZARDOUS MATERIALS HANDLERS & WASTE SITES

No.	Site	Address	Source	Status
169	Toyota of Whittier	14577 Whittier Blvd.	HWIS	3
170	Tuneup Masters	11620 E. Hadley	HWIS	3
171	U-Haul Leffingwell 713-80	157707 Leffingwell	HWIS	3
172	Ultra Sonic Deburring	8136 Byron Rd.	HWIS	2
173	Unitog Rental Services	2829 Workman Mill Rd.	HWIS	1
174	Unocal S.S. #4090	14200 Telegraph Rd., E.	LUST/HWIS	U, 3
175	Unocal 76 Station #5091	11808 Washington Blvd. E.	LUST/HWIS	U, 3
176	Unocal Station #5287	7304 Painter Ave., S.	LUST/CORTESE/HWIS	S, 3
177	Unocal 76 Station #5195	16205 Leffingwell Rd.	LUST	S
178	Unocal 76 Station #5619	10506 Whittier Blvd.	LUST/CORTESE/HWIS	U, 3
180	Unocal Station #5350	10805 La Mirada Blvd.	LUST/CORTESE	S
181	Unocal Svc Sta #6 241	11760 Whittier Blvd.	HWIS	3
182	Unocal Svc Sta #3 132	12823 E Hadley St.	HWIS/CORTESE/LUST	3, U
183	Unocal Svc Sta #6 907	10025 E Washington Blvd.	HWIS	3
185	Unocal Svc Sta #4 362	13709 E. Whittier Blvd.	HWIS	3
186	Unocal Svc Sta #4 606	8803 S. Painter	HWIS	3
188	Unocal Svc Sta #3 495	14940 E. Whittier Blvd.	HWIS	3
189	Unocal Svc Sta #5 195	16205 E. Leffingwell	HWIS	3
190	Unocal Svc Sta #5 044	10201 E. Beverly Blvd.	HWIS	3
191	Wholesale Body Shop, The	12213 Philadelphia Ave.	HWIS	2
192	Unocal Svc Sta #4 459	15806 E. Whittier Blvd.	HWIS	3
193	Whittier Propel	12132 Hadley	CERCLIS	RV
194	Urich Motor Co.	13003 E. Whittier Blvd.	HWIS	2
195	USA Petroleum Station #228	11806 Valley View Ave	LUST/CORTESE	G
196	Usary Automotive Repair	13132 E. Whittier Blvd.	HWIS	3
197	Viking Freight System Inc.	3200 Workman Mill Rd.	HWIS	1
198	Vogue International Display Co.	12460 Putnam St.	HWIS	1

TABLE 7-5
HAZARDOUS MATERIALS HANDLERS & WASTE SITES

No.	Site	Address	Source	Status
199	W. Whittier School Dist.	14535 Whittier Blvd.	HWIS	2
200	Walts Cleaners	8002 S. Greenleaf Ave.	HWIS	1
201	Washington Plating Inc.	7060 S. Elmer Ave.	HWIS	1
202	Waste Disposal, Inc.	12731 E. Los Nietos Rd.	CERCLIS/CORTESE/ ASPIS	CO
203	Weddle Auto Repair Corp.	12548 Putnam	HWIS	1
204	Westwat Cleaners	1262 Whittier Blvd.	HWIS	3
205	Whittier College	13729 Earlham Dr.	HWIS/LUST	1, 4
206	Whittier Union High Sch Dist.	9401 S. Painter	HWIS	3
207	Whittier Dodge	16114 E. Whittier Blvd.	HWIS	3
208	Whittier UNSD La Serna High School	15301 E. Youngwood	HWIS	3
209	Whittier City Yard	12016 Hadley St.	HWIS	3
210	Whittier UHSD Pioneer High School	10800 Benavon	HWIS	3
211	Whittier UHSD Whittier High School	12417 E. Philadelphia	HWIS	3
212	Whittier Honda Kawasaki	14043 E. Whittier Blvd.	HWIS	3
213	Whittier UHSD California High School	9800 Mills Ave.	HWIS	3
214	Whittier Hospital Medical Center	15151 E. Janine Dr.	HWIS	1
215	Whittier Chrysler Plymouth	13840 E. Whittier Blvd.	HWIS	2

Status Definitions:

HWIS

1 - Generators who generate at least 1,000 kg/mo of non-acutely hazardous waste or 1 kg/mo of acutely hazardous waste

2 - Generators who generate 100 kg/mo but less than 1,000 kg/mo of non-acutely hazardous waste

3 - Generators who generate less than 100 kg/mo of non-acutely hazardous waste.

TRANS - engaged in off-site transportation of hazardous waste

TSDF - engaged in treatment, storage or disposal of hazardous waste

LUST

D - One or more municipal or domestic wells have been affected by tank leak

G - Groundwater and soil have been affected by tank leak

S - Soil only has been affected by tank leak

U - Undetermined effect on soil and groundwater.

CERCLIS

SI - Site Inspection

RV - Removal Action

CO - Combined Remedial Investigation and Feasibility Study

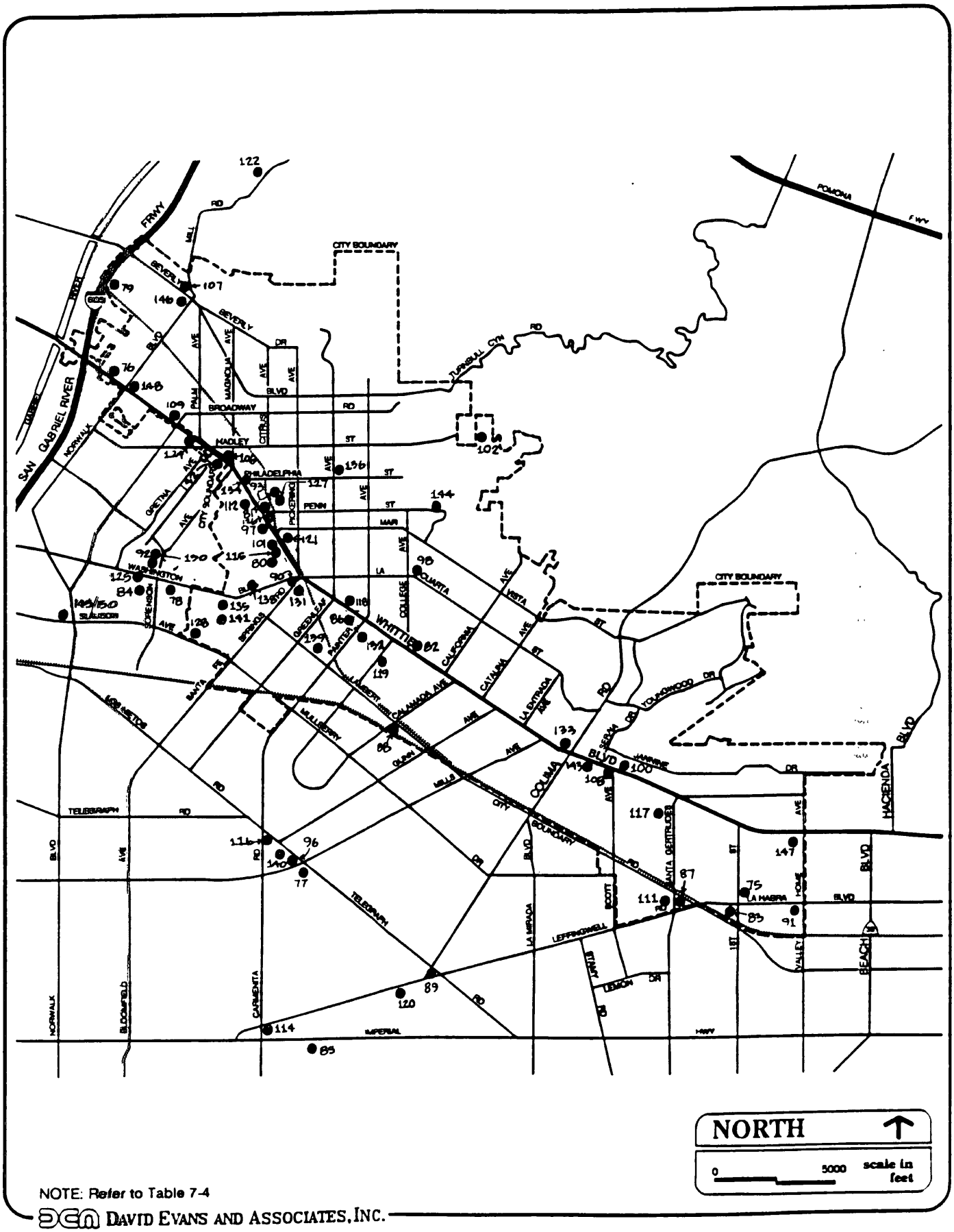
ASPIS

PAL - Preliminary Assessment Required - Low Priority

PAM - Preliminary Assessment Required - Medium Priority

SIRL - Site Inspection Required - Low Priority

SIRM - Site Inspection Required - Medium Priority



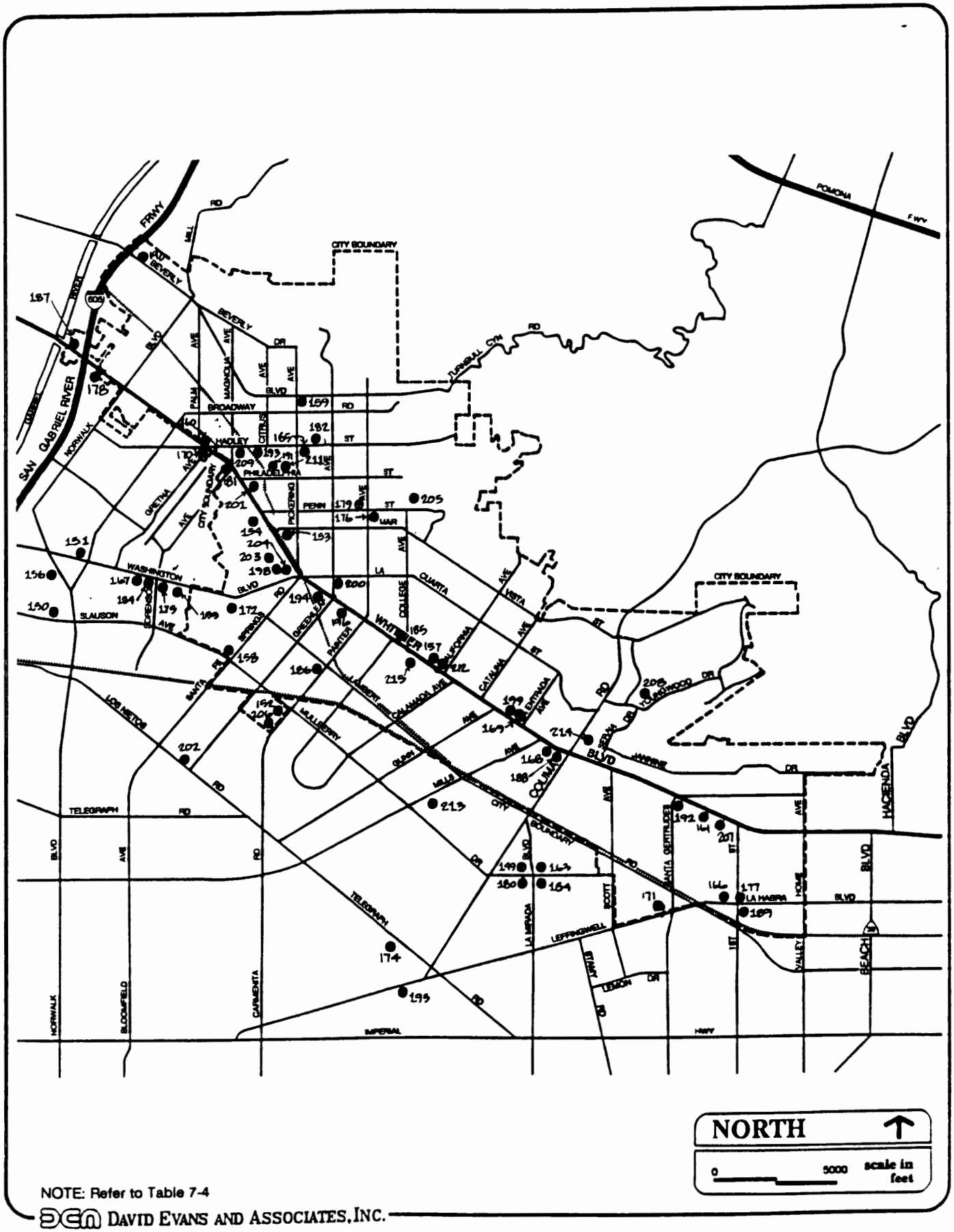
NOTE: Refer to Table 7-4

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 7-14
HAZARDOUS MATERIAL SITES
Numbers 75-148



NOTE: Refer to Table 7-4

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 7-15
HAZARDOUS MATERIAL SITES
Numbers 149-215

The sites identified above require further action and may be currently under investigation. They include sites that fall under the Abandoned Site Program and Federal Superfund and still require mitigation. Also, sites that have in the past or are presently producing or using hazardous wastes or substances are identified. Some Abandoned Site Program and Federal Superfund sites in Whittier are not shown on the map because no further actions were required on them.

Many local, state and federal government records or information identity significant users of hazardous materials and/or generators of hazardous wastes. Although these databases are comprehensive, and updated periodically, the potential still exists that some existing hazardous material sites have not been identified. Therefore, Table 7-5 should not be considered as a complete listing. However, it provides a good first order estimate of the kinds, numbers and locations of sites that are associated with hazardous materials and wastes. The source agencies used to compile this information are listed in Table 7-6.

TABLE 7-6
SOURCES OF HAZARDOUS MATERIALS HANDLERS & WASTE SITES

Database	Type of Records	Agency
CERCLIS	Federal Superfund Sites	U.S. EPA
CORTESE	Hazardous Waste and Substances Site List	California Governor's Office of Planning and Research
BEP	Sites Authorized for cleanup under the California Bond Expenditure Plan	CAL-DHS
ASPIS	Abandoned Site Program	CAL-DHS
HWIS	Hazardous Waste Generators, Treatment, Storage and Disposal Facilities	CAL-DHS
LUST	Leaking Underground Storage Tanks	RWQCB
Local	Information on Users of Hazardous Materials	Whittier Fire Department

Cerclis

The Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) is a database of contaminated properties under the Federal Superfund program. Since 1982, the U.S. Environmental Protection Agency (EPA) has developed and maintained the list pursuant to the Comprehensive Environmental Response, Conservation and Liability Act of 1980 (CERCLA), 42 U.S.C. Section 9601 (1985). The U.S. EPA discovers these sites from citizen reports, routine inspection of hazardous waste generators, treatment, storage and disposal facilities, and other reporting requirements.

Five Federal Superfund sites have been identified in the area. Two sites are located within the City limits but require no further action, and one is located outside the City limits (Puente Hills Landfill). The two Cerclis sites located within the City limits which are currently active include:

- Whittier Propel on 12132 Hadley Street, and
- Modine Manufacturing Company on 12252 Whittier Boulevard.

Hazardous Waste and Substances Sites List (CORTESE)

The California Governor's Office of Planning and Research annually publishes a list of potential and confirmed hazardous waste sites throughout the State of California under Government Code Section 2.65962.5. This listing is called CORTESE after the sponsor of the bill in the Legislature. The database contains over 6,000 entries with 40 of these entries located in Whittier. They are mainly gasoline service stations and oil and vehicle related uses. These sites are also listed in the Leaking Underground Storage Tanks List by the California Regional Water Resources Control Board.

Bond Expenditure Plan (BEP)

The Bond Expenditure Plan (BEP) contains a list of all verified hazardous waste sites that are or will be targeted for abatement by the California State Department of Health Services (DHS) under the Hazardous Substance Cleanup Bond Act of 1984 (Health and Safety Code Section 25356) and the Hazardous Substance Account (HSA). Hazardous waste sites are discovered by the department directly or referred to the department for confirmation and follow-up action by another government agency, such as a local health department, the Regional Water Quality Control Board, a responsible party or a concerned citizen. New sites are added to this database as they are verified and the "Preliminary Assessment, Site Investigation and Hazard Ranking System" processes are completed. This database is updated once annually after approval of the California State legislature.

Abandoned Sites Program Information System (ASPIS)

Developed under Section 25359.6 of the Health and Safety Code, this DHS database contains a listing of potential hazardous waste sites identified by the earlier Abandoned Site Survey Program and the current Rural Site Evaluation Program. Records from the Regional Water Quality Control Boards, Department of Fish and Game and other state environmental regulatory agencies are utilized to make this list. Information concerning the sites in this list should be considered preliminary although confirmed sites from this database are merged into the BEP database once they have been priority ranked. Many of these sites are currently identified as requiring no further action based on DHS determination that no release has occurred or, if a release may have occurred, it did not

represent a significant threat to the public or the environment. Four sites in and near the City of Whittier are currently identified for future site inspection or preliminary assessment.

Hazardous Waste Information Systems (HWIS)

The DHS Toxic Substances Control Division, has developed and maintained lists of hazardous waste generators and hazardous waste treatment storage and disposal facilities in the State of California, pursuant to the Hazardous Waste Control Law (Health and Safety Code Section 25100 et seq.), and the Hazardous Waste Management Act of 1976 (Health and Safety Code Section 25179.1 et seq.). In addition, the law requires all counties to prepare and submit hazardous waste management plans. To assist the counties, the Toxic Substances Control Division maintains a list containing generation and disposal data within each county. This information has been assembled by the Toxic Substances Control Division from manifest reports required from hazardous waste generators.

Seventy-one sites have been identified in and near the City of Whittier. They include gas service stations, industries, dry cleaners, groceries, auto shops, service yards, and hospitals. Two sites have been identified that currently treat, store and/or dispose (TSD facilities) of hazardous wastes. Both TSD facilities and one superfund site are located within approximately 0.8 mile of each other along Whittier Boulevard between Painter Avenue and Mar Vista Street.

Leaking Underground Storage Tanks (LUST)

The California Water Resources Control Board, in cooperation with the Office of Emergency Services, compiles a listing of leaks of hazardous substances from underground storage tanks in the State of California pursuant to Section 25295 (b) of the Health and Safety Code. The nine regional water quality control boards maintain information on all reported leak cases within their jurisdiction, both for those where the regional board and where other local agencies take the lead in overseeing investigations and remedial actions. Although the data represents sites where at least one leak is known to have occurred, it is not uncommon for more than one tank to have leaked at a given site or cleanup case. Fifty sites are listed in Whittier and includes sites listed under the Cortese Database.

Significant Users and Generators

All together, at least 75 sites in the City have been identified generators of hazardous wastes (see Table 7-5). The Federal Superfund site on Whittier Boulevard (Modine Manufacturing) is considered a generator of hazardous waste and is part of the Abandoned Site Program. Some of the generators of hazardous waste are facilities engaged in the off-site transportation of hazardous waste.

The Savage Canyon Landfill is a Class III municipal landfill located north of William Penn Park at 13919 East Penn Street. This site is also identified as having a leaking underground storage tank. The contents of the tank is reported to be diesel and the site is under investigation as of January 11, 1991. There are no hazardous waste landfills currently operating within the City.

Hazardous Waste Transportation Routes

The transportation of hazardous materials is generally regulated by the issuance of permits, not by transportation route (Mr. Gary Adkins, Motor Carrier Safety, California Highway Patrol). Law enforcement agencies are empowered to strictly enforce regulations regarding the inspection of vehicles and the training and licensing of transportation personnel. The transportation of hazardous materials on interstate freeways is controlled by the Bureau of Motor Carrier Safety, U.S. Department of Transportation via vehicle safety inspections.

According to Mr. Keith Glenn, Motor Carrier Safety, U.S. Department of Transportation, the primary concern with respect to the transportation of hazardous materials/wastes on public roads, is its flash point (fire) and explosive potential. Restrictions placed on transporters of hazardous materials/wastes include the avoidance of heavily populated areas unless no other satisfactory route exists, limitations on access to bridges and tunnels, and a one-mile wide zone limitation along freeways for access to fuel and services. The gross vehicular weight is another limitation that restricts transporters from some public roads.

The railroads are similarly regulated in that explosive materials are controlled within the train, but there are no controls regarding train routes. The only restriction is that potentially flammable or explosive materials cannot be any closer than six rail cars from the train locomotive.

Based on the distribution of the five sites identified with the off-site transportation of hazardous waste (Exhibit 7-13), the likely main transportation route within the City limits is Whittier Boulevard (State Highway 72). A number of other boulevards and avenues provide access from these sites to Whittier Boulevard including Beverly Boulevard, Norwalk Boulevard, Greenleaf Avenue, Painter Avenue, and La Cuarta Street. Whittier Boulevard in turn provides access to the San Gabriel River Freeway (Interstate 605) which has been designated as one of the main hazardous waste transportation corridors in Los Angeles County. In addition, the Union Pacific and Southern Pacific Railroad tracks pass along the southern boundaries of the City.

The potential for contamination and harm in the event of a hazardous materials/waste spill or explosion and fire incident is a serious threat to public safety. The degree of impact to the local environment will depend on the nature of the materials involved, the type of

incident (spill, explosion, fire, etc.), the affected population and the capacity of emergency systems to abate the danger.

CRIME AND ACCIDENTS

Criminal elements in a community pose risks to public safety and accidents present safety considerations in planning. Statistics of crime incidence from 1988 to 1991 in Whittier as compiled by the Whittier Police Department are provided in Table 7-7.

TABLE 7-7
CRIME STATISTICS

Type of Crime	1988	1989	1990	1991*
Willful Homicide	1	4	6	4
Forcible Rape	14	17	29	7
Armed Robbery	58	84	82	25
Strong/Arm Robbery	39	54	52	29
Felony Assault	193	257	265	151
Residential Burglary	493	410	463	249
Commercial Burglary	329	191	223	127
Vehicle Burglary	337	423	482	283
Auto Theft	496	488	503	258
Grand Theft	253	297	314	151
Petty Theft	828	1039	1035	508
Shoplifting Burglary	59	89	73	47
Arson	12	22	13	22
Foreign Recoveries	(156)	(138)	(199)	(69)
Total	3,112	3,375	3,540	1,861

* January to June 1991 only.
Source: Whittier Police Department, 1991

The majority of crimes committed in the City consists of petty theft, residential burglary, auto theft, and vehicle burglary. The increase in crime cases was 5 to 8 percent annually from 1988 to 1990. Comparison of 1990 half year statistics with 1991 half year statistic show an increase of 5 percent. Of the 3,112 cases in 1988, 852 or 27% were cleared. Of the 3,375 cases in 1989, 993 or 29% were cleared. In 1990, 976 cases out of 3,540 were cleared (28%).

EMERGENCY SERVICES AND FACILITIES

The availability of emergency services and facilities is presented in this report to determine their adequacy in meeting the needs of Whittier. They include fire and police department staffing and equipment, clinics and hospitals, emergency shelters, evacuation routes and mass care facilities.

Fire Department

Fire protection services for the City of Whittier are provided by the Los Angeles County Fire Department. There are 3 fire stations in the City and their locations are shown in Exhibit 7-16. Table 7-8 summarizes their manpower and resources. As part of the Consolidated Fire Protection District, all other resources of the County Fire Department are available to the City of Whittier as needed.

TABLE 7-8
FIRE STATION STAFF AND EQUIPMENT

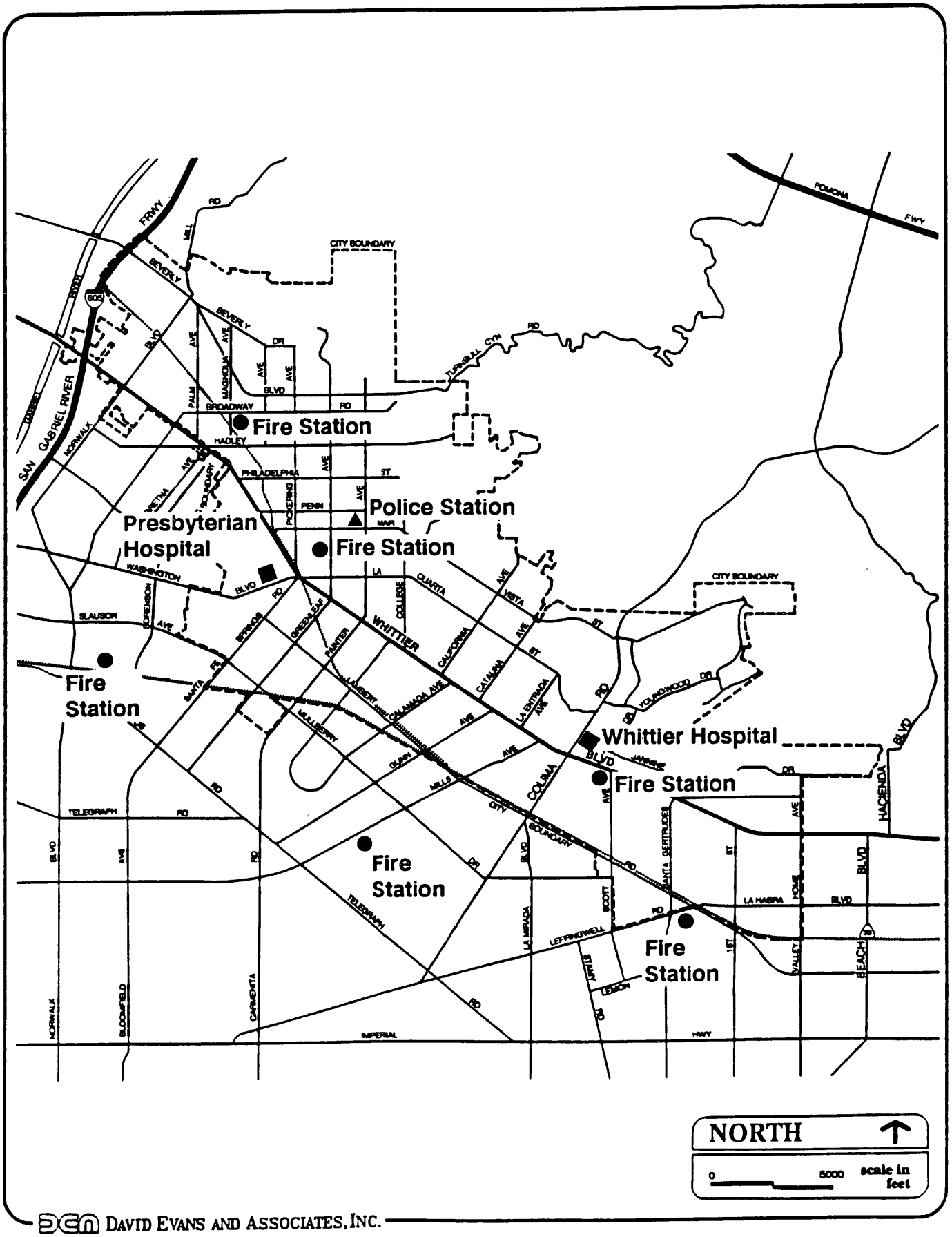
Fire Station	Address	Staff and Equipment
17	12006 Hadley	4 firefighters 1 fire engine
28	7733 S. Greenleaf	9 firefighters 1 fire engine 1 ladder truck 1 paramedic team
59	10021 Scott Avenue	4 firefighters 1 fire engine

Source: Los Angeles County Fire Department, 1991.

The Fire Department is responsible for fire and emergency services, including hazardous material spills. Fire flow requirements range from 1,250 gallons per minute (gpm) at 20 pounds per square inch (psi) residual pressure for two hours for single-family residences to 5,000 gpm at 20 psi for 5 hours for multi-family, commercial and industrial buildings. Hydrant spacing is set at every 300 or 600 feet depending on land use intensity.

Access Roadways

The provision of adequate roadway widths will facilitate emergency response during a disaster. The following roadway standards have been established by the County Fire Department to ensure access for firefighting equipment to all areas of the City: (Exhibits 7-17 and 7-18 show access standards for pumpers and ladder trucks.)

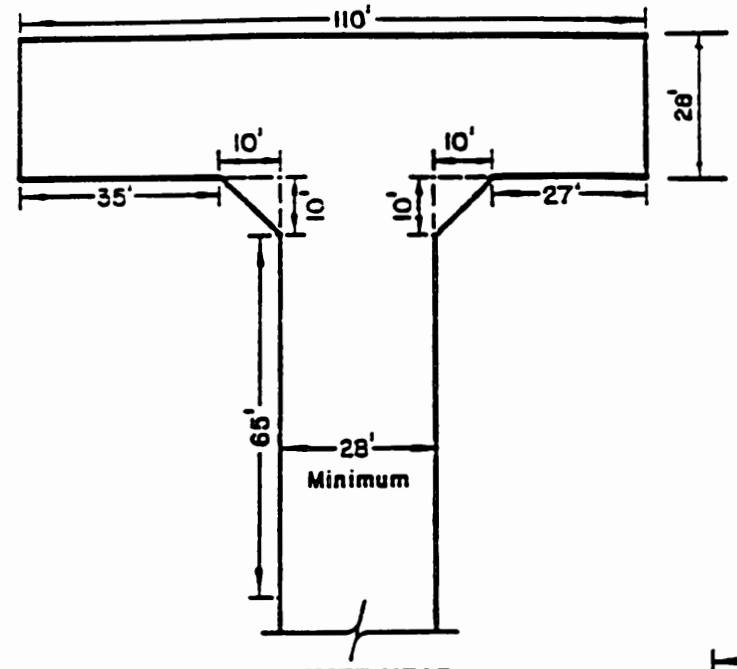


DAVID EVANS AND ASSOCIATES, INC.

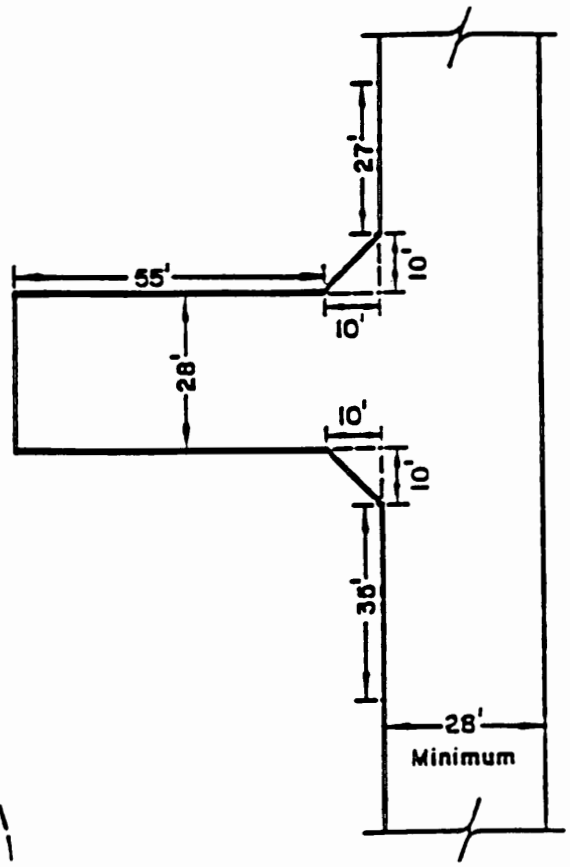
City of Whittier

GENERAL PLAN

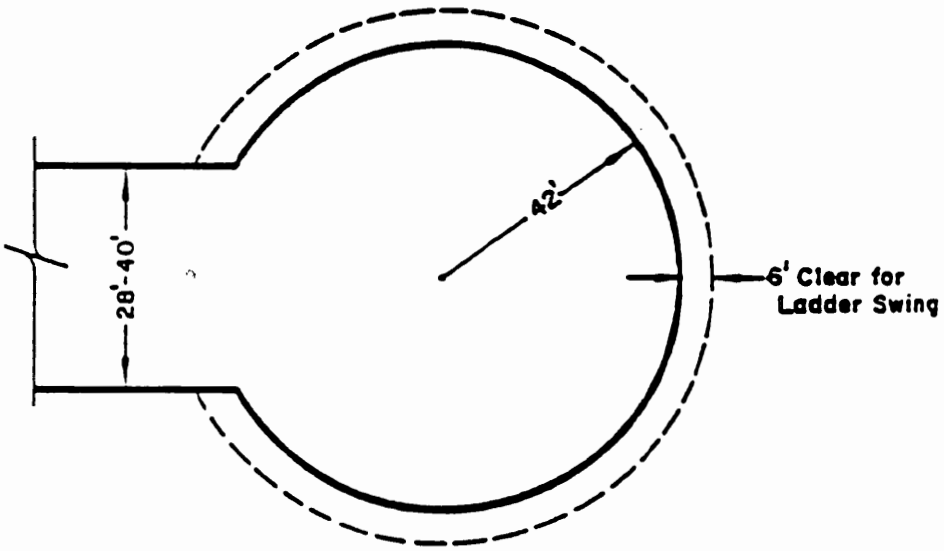
EXHIBIT 7-16
EMERGENCY FACILITIES



HAMMER-HEAD
TURN-AROUND



INTERMEDIATE
TURN-AROUND

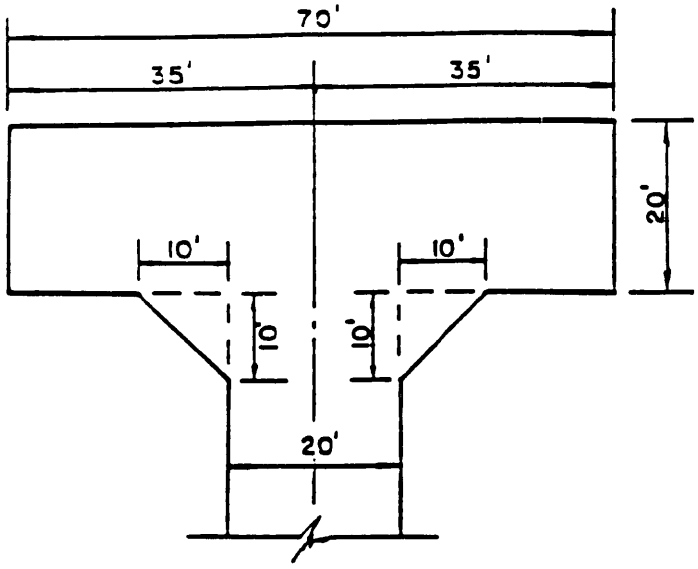


COMMERCIAL, INDUSTRIAL OR
MULTIPLE RESIDENTIAL CUL-DE-SAC

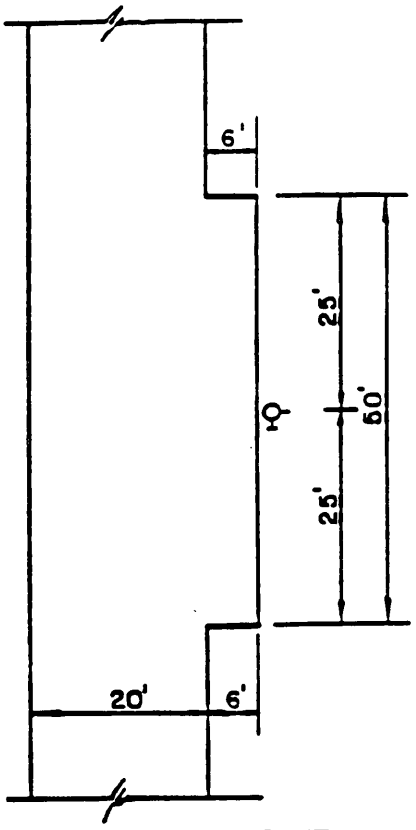
DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

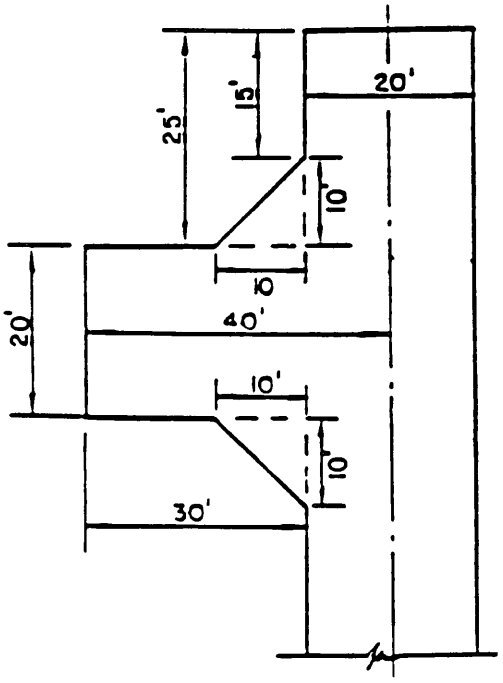
EXHIBIT 7-17
ACCESS ROADWAY STANDARDS
FIRE APPARATUS - LADDER TRUCK & SNORKEL



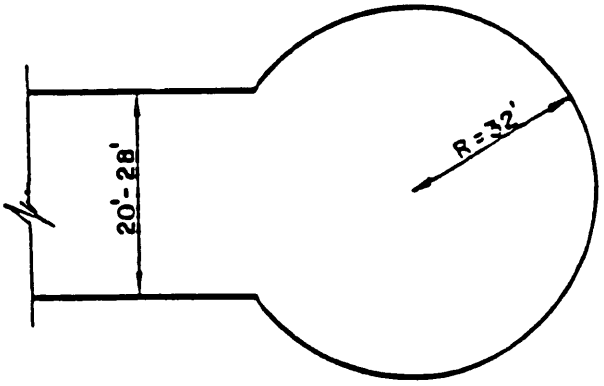
HAMMER-HEAD
TURN-AROUND



AREA ADJACENT
TO HYDRANT



INTERMEDIATE
TURN-AROUND



PRIVATE STREET
(CUL-DE-SAC)

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

EXHIBIT 7-18
ACCESS ROADWAY STANDARDS
FIRE APPARATUS - PUMPER

- Every building hereafter constructed shall be accessible to Fire Department apparatus by way of access roadways with all-weather driving surface capable of supporting the imposed loads of fire apparatus of not less than 20 feet of unobstructed width, clear to the sky, and with adequate roadway turning radius.

- A paved fire apparatus access roadway shall be required when any portion of an exterior wall of the first story of any building is located more than 150 feet from a public vehicle access.

- Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities.

- The required width of any fire apparatus access road shall not be obstructed in any manner, including parking of vehicles. Minimum required widths shall be maintained at all times.

- The Chief shall have the authority to require an increase in the minimum access widths where such width is not adequate for fire or rescue operations.

- When conditions prevent the installation of an approved fire apparatus access road, the chief may permit the installation of a fire-protection system or systems in lieu of a road, provided the system or systems are not otherwise required by this or any other code.

For Industrial and Commercial Developments

- All on-site roadways/driveways serving industrial and commercial properties shall provide a minimum unobstructed width of 26 feet clear to the sky to within 150 feet of all portions of the exterior walls of the first story of any building. The minimum width of 26 feet shall be increased when any of the following conditions exist.

    1. When proposed buildings or portions of buildings are more than three stories or 35 feet in height above the ground level, the width shall be 28 feet to allow Fire Department aerial apparatus. The centerline of the access roadway shall be located parallel to and within 30 feet of the exterior wall on at least one side of such building. The public street may be used when the building wall is within 20 feet of the

street and there are no obstructions such as power and telephone lines, trees, etc.

2. When parallel parking is allowed on one side of the access roadways/driveway, the width shall be 34 feet. Preference is that the parallel parking not be adjacent to the building. If parallel parking is needed on both sides of the access roadways/driveway adjacent to a building, in order to insure the minimum clear width of 26 feet, the driveway shall be 42 feet in width.

- When on-site hydrants are required, roadways/driveway width at the hydrant location shall be a minimum of 26 feet. A linear distance of 25 feet clear is required on both sides of the hydrant.

- Fire Department approved turnarounds shall be required when dead-ending access roadways/driveway exceed 300 feet.

- When access for a given development requires accommodation of Fire Department apparatus, overhead clearance shall be unobstructed clear to the sky.

- Improved walking access may be required to connect vehicular access with the required ingress and egress of the building. Required walking access shall be designed to prevent sharp turns or obstacles which would hinder the carrying of ground ladders, other hand held equipments, or rescue equipment.

- Buildings 75 feet or greater in depth, from an approved Fire Department access roadway to the rear wall of the building, need not have the access roadway extended along the rear side of the building provided the building is protected by an approved fire sprinkler system and a four hour fire rated area separation wall extends along the rear wall of the building. All openings in the wall shall be protected by three hour fire rated assemblies. Any building used for high-piled combustible storage is exempted, but shall comply with Section 81.109 of the Los Angeles County Fire Code.

- Buildings with rail spurs shall have the access roadways located on the opposite side of the tracks from the building. Drill track area may be used for the access roadways provided it has the proper base and the surface of the road is level with the top of the track rail. The edge of the roadway shall be measured six (6) feet from the outside rail of the spur track.

- All the roadways/driveways shall be labeled as "Fire Lane" on the final subdivision map or building plans. Labeling is necessary to assure the access availability for Fire Department use. The designation allows for appropriate notices prohibiting parking.

- All roadways/driveways shall be constructed with paving which will support a 25 ton fire-fighting vehicle. Minimum paving standard shall be 2" of asphaltic concrete, or equal, over 4" of decomposed granite or equivalent.

- All roadways/driveways shall not exceed 15% grade.

For High Density Residential Developments (Apartments, Condominiums, etc.)

- Private access roadways/driveways serving these properties, shall provide a minimum unobstructed 26 feet clear to the sky access for firefighting vehicles, to within 150 feet of all portions of the exterior walls of the first story of any building. The need for 26 feet or greater of access in these properties is as follows:

A. The structural conditions of these properties may require the deployment of a Fire Department aerial apparatus, when fires are beyond the incipient stage. Twenty-eight feet (28') of unobstructed width clear to the sky will accommodate an aerial truck with ground jacks in place, while providing sufficient clear roadway width for evacuation and the deployment of additional fire equipment.

B. Where fire hydrants are required, roadways/driveway width at the hydrant locations shall be a minimum of 26 feet.

- <u>Parking Restrictions</u> - When roadways/driveways measure the following dimensions curb to curb, parking restrictions shall be:

  26 feet: No parking allowed.
  34 feet: Parallel parking allowed on one side only.
  36 feet: Parallel parking is allowed on both sides of the street; except in front of fire hydrants.

- Fire Department approved turnarounds shall be required when dead-ending access roadways/driveways exceed 300 feet.

- When fire hydrants are required, roadways/driveway width at the hydrant locations shall be a minimum of 26 feet. A linear distance of 25 feet clear is required on both sides of the hydrant.

- When access for a given development requires accommodation of Fire Department apparatus, overhead clearance shall be unobstructed clear to the sky.

- All the roadways/driveways shall be labeled as "Fire Lane" on the final subdivision map or building plans. Labeling is necessary to assure the access availability for Fire Department use. The entrance to all required roadways/driveways with restricted parking and intermittent spacing distances of 150 feet shall be posted with Fire Department approved signs with the following wording:

  "NO PARKING - FIRE LANE" in three-inch high letters.

- All roadways/driveways shall be constructed with paving which shall support a 25 ton firefighting vehicle. Minimum paving requirements shall be 2" of asphaltic concrete, or equal, over 4" of decomposed granite or equivalent.

- All roadways/driveways shall not exceed 15% grade.

- Any gates, to control vehicle access, shall be located to allow a vehicle waiting for entrance to be completely off the public roadway. If applicable, it is recommended that the gate(s) swing in both directions. The method of gate control shall be subject to review by the Fire Department.

- Where the access requirements cannot be provided, approved fire protection system or systems shall be provided as required and approved by the Chief.

For Restricted Lots

- A restricted access lot shall mean a lot whose shape and size restricts the width available for vehicle access. The Fire Department will review each project with restricted access and may apply a modification of the standard access requirements if fire and life safety are not adversely affected. The modification from the standard 26 feet of unobstructed access shall not be to less than 20 feet of unobstructed width clear to the sky.

- Due to topographic restrictions brought about by flag lots, this Department will allow a modification from the 26 feet of access required in multiple residential units to a minimum 20 feet of unobstructed width clear to the sky. The modification may be applied subject to the following requirements:

  A. Development has less than ten (10) units.

  B. The lot does not extend beyond 300 feet from an improved public street.

  C. Single driveway.

  D. Maximum of two stories.

  E. The driveway shall be labeled "Fire Lane" on the final subdivision map or building plan.

     The entrance to the driveway and intermittent spacing distances of 150 feet shall be posted with Fire Department approved signs with the following wording:

     "NO PARKING - FIRE LANE" in three-inch high letters.

  F. The driveway shall be constructed with paving which will support a 25 ton firefighting vehicle. Minimum paving requirements shall be 2" of asphaltic concrete, or equal over 4" of decomposed granite or equivalent.

  G. The driveway shall not exceed 15% grade.

For Building Sites not Served by Improved Public Right-of-Ways

- Private access roadways having a grade of 10% or greater shall have a paved surface.

- Private access roadways having a grade of less than 10% may use a surface other than pavement if the proposed surface will support the weight and use of fire apparatus during inclement weather conditions. The proposed road surface shall be designed for:

  (1) Fire apparatus which have a gross weight of up to 50,000 pounds.

(2) Weight distribution is approximately 30% on the front axle and 70% on the rear axle(s). Axle weights will range from 9,000 lbs. to 16,000 lbs. on the front axle and 19,840 lbs. to 34,000 lbs. on the rear axle(s). The rear axle is of a dual tire configuration.

- The 20-foot minimum standard shall be adhered to with the following exceptions:

  a. Where geological or other restricting forces preclude the development of a full 200 feet of driving surface along the entire length of the access road and the access road does not serve more than two single-family dwellings, modifications may be made. A minimum of 15 feet in width with suitable turnouts at not more than 1/4 mile intervals and turn-arounds at not more than 1/2 mile intervals may be acceptable, when in the opinion of the Chief, fire fighting or rescue operations would not be impaired.

  b. Where fire hydrants are required the access road width shall be increased to 26 feet for a minimum of 25 feet on each side of the hydrant location.

- All private access roads shall be extended to within 150 feet of all portions of the exterior walls of the first story of any building exclusive of accessory buildings under 1,000 square feet. This measurement shall be taken along the path of access.

- The maximum allowable grade shall not exceed 15% except where the topography makes it impractical to keep within such grade and then an absolute maximum of 20% will be allowed for up to 150 feet in distance. The average maximum allowed grade including topography difficulties shall be no more than 17%. Grade breaks shall not exceed 10 percent in 10 feet. Grades may be increased where on-site fire protection systems approved by the Fire Chief are provided.

- Road drainage shall be evaluated by an engineering analysis of the site to determine that the proposed roadway is reasonably free of either sheet flow or concentrated channel flow to the extent that damage will not take place such as to impair its usability and capacity to support heavy fire fighting trucks or equipment. Any dip crossing, culvert, or bridge constructed shall be designed to accommodate the widths and grades listed above, be capable of

supporting heavy fire department equipment, and be designed to withstand capital flood flows.

- Where the proposed access way lies within or crosses a dedicated or future dedicated public right-of-way, the Los Angeles County Road Department must approve the improvements. If the access road is to become a public maintained street, the above standards should be upgraded to Los Angeles County Road Department standards.

- When the proposed building(s) conform to all of the following requirements, the density of housing does not exceed one unit per acre, and in the opinion of the Fire Chief, firefighting or rescue operations would not be impaired, access requirements may be modified. Then, the proposed building must incorporate on-site fire protection facilities which will include a supply of water, fire resistant construction, interior automatic fire sprinkler system, and sufficient brush clearance. The sprinkler system shall be installed according to Regulation No. 19 of the Fire Code.

Police Department

Police protection services are provided by the Whittier Police Department. The Department enforces local, state and federal laws. Patrol services are performed within the City and for schools, shopping centers, and other businesses. Traffic enforcement and accident investigations are also provided throughout the City.

The Police Department investigates criminal acts and suspicious circumstances. They file criminal cases and assist in the prosecution of offenders. Special programs in the City include gang suppression, problem-oriented policing, narcotics interdiction, and substance abuse prevention. Mutual aid agreements with the Los Angeles County Sheriff's Department and the La Habra Police Department are in place.

The Police station is located at 7315 S. Painter Avenue, near City Hall. The Department has 91 sworn officers and a number of administrative staff. Police equipment include 26 patrol sedans, 20 investigator vehicles, 2 canine units, 1 narcotics and vice team, 1 drunk driving unit, and 3 motorcycles for traffic officers. Response time for emergency calls averaged 3 minutes and 13 seconds in May 1991. Non-emergency calls had a response time of 12 minutes and 4 seconds.

Demographic and social changes in the area are requiring expanded police services and the Department is likely to need more manpower and equipment in the future. The City continually evaluates the need for improved police services.

Hospitals and Clinics

There are two hospitals in the City: the Presbyterian Intercommunity Hospital on Washington Boulevard and the Whittier Hospital on Colima Road (see Exhibit 7-16). Also, clinics and medical facilities in the area include individual and group practices throughout the commercial areas of the City.

The Whittier Hospital is a private hospital that offers diagnostic services, critical care, cardiology, obstetrics, gynecology, dialysis and general medicine. It has 179 beds and operates an emergency department. Its community services include free physician referral, blood pressure screening, CPR classes, volunteer programs, women's health network, senior care programs, Litelife (obesity) and patient transportation. A medical professional building is located beside the hospital where doctors operate private clinics.

The Presbyterian Intercommunity Hospital is a full service (acute care) hospital with a 358-bed capacity. It offers a wide range of medical services including emergency care, obstetrics, diabetes and scoliosis program and laser facilities. The hospital also offers CPR classes, support services, health screening, rehabilitation programs and courses on a wide variety of health and medical issues. The facility is planning a building expansion to augment their emergency services, women's center and other facilities.

Emergency Care Facilities

The City of Whittier has 88 emergency shelters listed with the Office of Emergency Services. These buildings and their capacities are listed in Table 7-10. Other evacuation centers include local schools, community centers, and gymnasiums.

TABLE 7-9
EMERGENCY SHELTERS

Building Name	Address	FALLOUT SHELTER SPACES				
		PF 0	PF 1	PF 2-3	PF 4+	BSMT
Rio Hondo Admin Bldg	3600 Workman Mill	1,663	1,295	245	0	0
Rio Hondo J C	3600 Workman Mill	1,876	2,058	926	111	0
Rio Hondo J C	3600 Workman Mill	744	1,653	490	85	626
Rio Hondo J C	3600 Workman Mill	0	0	100	0	0
Lt Inn	3600 Workman Mill	1,133	901	296	27	178
Rio Hondo J C Gym	3600 Workman Mill	2,917	739	101	90	157
Bank of America	13415 Tellaco St	0	0	0	21	0
Golden State Bank	8644 Norwalk	0	0	25	0	0
Hillcrest Cong Church	2000 N West Rd	55	35	0	0	0
Whittier Area Baptist Fellowship	8500 S Villa Verde Dr	160	0	0	0	0
E Whittier School	14421 Whittier Blvd	0	306	1,492	1	1,734
Whittier School	14421 Whittier Blvd	0	0	34	5	39
American Savings	15725 Whittier Blvd	0	0	0	795	795
La Serna High School	15301 Youngwood	100	302	0	0	0
La Serna High School	15301 Youngwood	83	318	0	0	0
La Serna High School	15301 Youngwood	0	0	0	13	0
Whittier Hospital	15151 Janine Dr	0	0	1,138	0	1,138
Salem Lutheran Church	6442 S Glengary St	0	158	0	0	158
Whittier Presbyterian Church	6030 S El Rancho Dr	0	0	228	0	228
Plymouth Church	11815 Pilgrim Way	0	129	3	0	0
Auditorium	12417 Philadelphia	676	877	762	1,445	923
Mushroom Growing Basement	12331 E Penn St	0	110	380	270	540
HS Library	12417 Philadelphia	643	626	469	192	1,014
Admin W H S	12417 Philadelphia	24	75	441	366	333
Comm H S	12417 Philadelphia	13	69	178	320	197
SCI W H S	12417 Philadelphia	8	1,085	21	548	569

TABLE 7-9
EMERGENCY SHELTERS

Building Name	Address	FALLOUT SHELTER SPACES				
		PF 0	PF 1	PF 2-3	PF 4+	BSMT
School District	7211 Whittier Ave	620	0	0	0	620
Whittier News Basement	7037 S Comstock Ave	100	0	158	280	438
Post Office Basement	6709 S Washington Ave	120	600	205	175	480
Dockstaders	6727 S Greenleaf Ave	0	0	280	0	280
Marsdens Christy Basement	6707 S Greenleaf Ave	200	220	102	0	102
McAllister Cadillac	7055 Greenleaf	0	0	450	0	450
Hover Hotel Basement	7035 S Greenleaf Ave	1,402	432	313	287	287
Wardman Annex Post Office	7038 S Pickering	0	0	269	0	269
General Telephone Basement	6737 S Bright Ave	410	210	0	265	265
First Methodist Church	13222 E Bailey St	487	135	414	128	542
Bank of America Bldg	13002 E Philadelphia St	404	1,350	470	80	80
Lincoln Elementary School	12620 E Broadway Ave	0	0	65	65	130
1st Methodist-Wesley B	13222 E Bailey St	0	0	141	0	141
YMCA	12817 E Hadley	0	0	65	65	130
United California Bank	6754 S Greenleaf Ave	160	0	0	103	103
American Savings & Loan	13103 E Philadelphia	0	0	46	0	46
Security Bank	12826 Philadelphia	0	0	13	2	0
Crocker City Bank	6707 Bright Ave	0	0	5	11	0
Calvary Baptist Church	6548 S Newlin	0	0	48	0	48
Park Apartments	12031 Beverly Bl	1,418	194	879	660	1,539
Penn Hotel	13200 Philadelphia St	1,710	965	107	412	458
Stauffer Hall	Painter Ave	0	180	60	1	240
Platner Hall WC	7026 Founders Hill	120	350	305	60	70
Johnson Hall Basement	7022 S Founders Hill	50	700	800	70	140
Stauffer Hall Basement	6737 S Stanford Way	680	430	1,750	740	120

TABLE 7-9
EMERGENCY SHELTERS

Building Name	Address	FALLOUT SHELTER SPACES				
		PF 0	PF 1	PF 2-3	PF 4+	BSMT
Wanberg Hall Basement	13737 E Earlham Dr	515	425	325	85	170
Whittier Square	13215 E Pennsylvania St	1,783	4,076	3,534	677	610
Science Bldg	13610 Earlham Dr	0	1,572	2,403	0	0
Maintenance Bldg	12016 Hadley St	85	0	0	0	0
Student Union Whittier College	7214 Painter St	620	0	0	0	0
General Telephone Co Basement	13119 E Whittier Blvd	0	0	0	70	70
Whittier Police Station	7315 Painter St	100	290	325	150	475
Urich Service Station Basement	12911 E Whittier Blvd	0	0	0	108	108
Whittier City Hall	13230 E Penn St	1,115	400	600	435	1,110
Municipal Courts Bldg	7339 S Painter Ave	2,225	1,375	50	1,067	97
National Bank of Whittier	13524 Whittier Blvd	0	0	140	60	170
Parking Structure	7621 S Painter Ave	3,850	1,150	0	0	0
ntral Library	7444 Washington Ave	0	0	140	60	170
Community Center	7630 Washington Ave	0	0	202	0	0
General Telephone	13119 Whittier Blvd	0	0	76	220	296
Holland House Cafeteria	8407 Quadway	0	0	583	0	583
Barrons Pharmacy	8436 S Quadway	0	0	200	0	200
W T Grants Basement	1130 Quadway	0	0	315	0	315
Green Sons Basement	1111 Quadway	0	0	79	0	79
C H Baker Shoes	8413 Quadway	0	0	0	294	294
Chamber of Commerce	14442 Whittier Blvd	20	59	96	0	175
Hinshaw Quadway	8480 S Quadway	3,782	945	4,586	191	5,796
McDonalds	8840 Painter Ave	0	0	0	48	48
Presbyterian Inter Community Hospital	12401 E Washington Blvd	3,200	3,100	6,000	735	275
Calif Hi Sch Gym	9800 S Mills Ave	0	168	11	0	179

TABLE 7-9
EMERGENCY SHELTERS

Building Name	Address	FALLOUT SHELTER SPACES				
		PF 0	PF 1	PF 2-3	PF 4+	BSMT
Calif Hi Sch Lkers	9800 S Mills Ave	0	48	194	0	242
Admin Bldg Calif HS	9800 S Mills Ave	0	0	87	0	87
Science Bldg Calif HS	9800 S Mills Ave	135	0	0	50	50
Bekins Storage	15146 Whittier Blvd	624	1,187	0	0	0
Broadway 2nd Flr	15600 Whittwood Lane	0	0	1,950	0	0
Crocker City	15000 Whittier Blvd	0	15	17	0	0
Bank of America	15320 Whittier Blvd	0	16	11	0	0
Security Bank	15730 Whittwood Ln	0	1	20	0	0
St Andrew Church	11345 Miller	0	0	75	164	239
Hillview School	10931 S Stamy Rd	0	0	0	51	51
McDonalds	15710 Lewffingwell	0	0	0	48	48
Security First Bank	15802 Imperial Hwy E	0	0	10	7	0
	Total Spaces	36,030	31,329	36,174	12,180	28,244

Note:
PF = Protection Factor as determined by the number of times safer to fallot gamma radiation than unprotected.

Category	Range
0	10-19
1	20-39
2	40-69
3	70-99
4	100-149
BSMT	Blast Spaces Located in Basement

Source: Office of Emergency Services, 1988.

SECTION 8: NOISE ELEMENT BACKGROUND REPORT

INTRODUCTION

The Noise Element Background Report discusses the characteristics of sound and noise, guidelines for noise control, and the noise environment in the City of Whittier. It documents existing noise levels at selected sites and estimates the noise generated by existing traffic along major roadways in the City. Identification of noise sources and noise-sensitive land uses will aid the City in planning for the separation or buffering of these uses.

CHARACTERISTICS OF SOUND

Sounds are measured in decibels (dB) with 0 dB representing the lowest sound humans can typically hear and 140 dB as the point where severe damage to the eardrum can occur. While sound does not carry negative connotations, noise refers to unwanted sound. Certain types of sound interfere with daily activities and can cause physical discomfort. Noise has been known to affect the health and well-being of individuals. Annoyance, disruption, speech interference and loss of concentration are the early effects of noise. This can lead to physical and psychological problems (hearing loss, stress, and stress-related health effects) when persons are exposed to excessive and prolonged noises. Exhibit 8-1 shows the noise level of various activities and human reaction to these levels.

The Community Noise Equivalent Level (CNEL) is a noise measurement based on a 24-hour average and adjusted to account for perception by the human ear. It uses an A-weighted sound level (dBA) and provides less weight to lower frequencies and adds 5 dB for evening noise (7 p.m. to 10 p.m.) and 10 dB for the nighttime and early morning hours (10 p.m. to 7 a.m.). The penalty for nighttime, evening and early morning hours accounts for increased sensitivity during times of rest and sleep. The CNEL does not take into account short or intermittent periods of high noise levels.

The day-night average level (Ldn) is an average 24-hour noise level similar to the CNEL. It includes a 10 dB addition for the nighttime hours but not the 5 dB penalty for evening hours. It is within 2 dB of CNEL values during the nighttime hours but less than CNEL values for evening noises.

Noise levels from traffic are often presented as contour intervals to show lines of equal noise exposure. Similar to contour lines on a topographic map that show equal elevation, the noise contour map is used to illustrate the traffic noise levels throughout the community. Noise contours plot the typical noise levels along a roadway. As a rule, noise contours are provided for the 55 dB, 60 dB, 65 dB, and 70 dB noise levels.

Noise Reduction

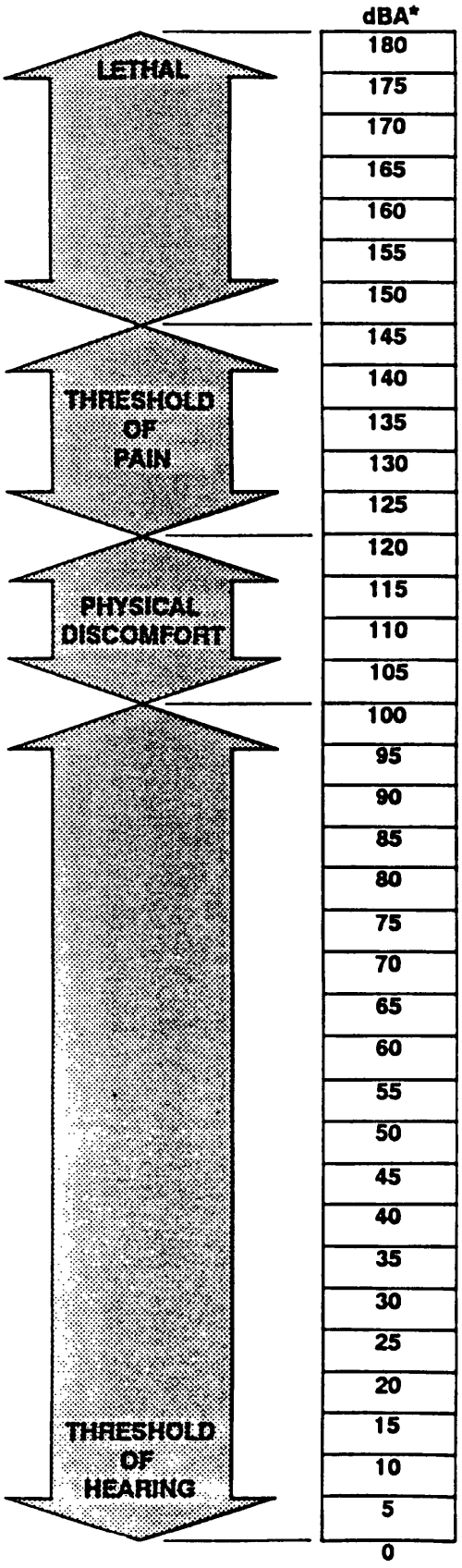
Noise is reduced in different ways. Any physical barrier to its path can either absorb or reflect the noise. This results in a quieter environment for the area protected by the barrier. The farther away the noise source is, the softer the sound. Trees, berms, and other barriers to the path of noise will help to damper its effect. Wind direction also influences the travel of noise. Noise is generally louder along the dominant wind flow direction.

Noise insulation may contain noises within an structure and prevent adverse impacts on adjacent areas. At the same time, insulation can protect persons and activities inside the building from being disrupted by outside noises. Where noise reduction methods are not feasible, "masking" may be used. Masking is the addition of another noise type to prevail over the less pleasant noise. For example, noise masking may use sounds of water, music, rustling leaves, and other relaxing sounds to drown out traffic noise, crowds, or any other offensive noise.

The five basic noise reduction measures include:

- Control the noise at the source (enclosure, insulation, alternative designs, etc.)
- Interrupt the path of the noise (barriers, distance separation, buffers, etc.)
- Prevent intrusion of exterior noise (insulation, blank walls, double-glaze windows, etc.)
- Masking the noise with more pleasant sounds
- Personal protection (earplugs, adaptation to the noise or vacation of the noise-impacted area.)

As with most pollution problems, the best way to control noise is to regulate it at the source. Personal protection should be done only when all other measures are not possible. However, noise sources cannot always be effectively controlled and interruption of the noise path is the most common and acceptable solution. Where noise sources cannot be economically or physically controlled to a point of compatibility with other "quiet" land uses, the separation of land uses through land use controls may be necessary. Some communities develop noise ordinances to control noise problems. Whittier has not adopted such an ordinance and should consider doing so.



*The unit of sound is the decibel (dB). The loudness of sound is typically measured using a sound meter, the A-Scale of which corresponds closely to the way the human ear perceives sound. Thus the sound level for noise evaluations is frequently expressed in dBA.

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier
GENERAL PLAN

EXHIBIT 8-1
ACOUSTICAL SCALE

STATE AND FEDERAL GUIDELINES

A number of federal and state agencies have adopted standards and recommended noise criteria to protect people in both the working and home environments. Table 8-1 provides a chart of noise control responsibility by agency. While only the primary activities of each agency are identified, many of the agencies are directly or indirectly involved in all control areas. A summary of existing noise regulations is provided below.

Federal Regulations

In 1969 and 1970, the Department of Labor established occupational noise regulations through the Walsh-Healey Public Contracts Act and set standards for noise exposure for all businesses engaged in interstate commerce through the Occupational Safety and Health Act (OSHA).

The Federal Highway Administration (FHWA) has set design standards for the planning and design of federally-funded highway projects.

The Department of Housing and Urban Development (HUD) has environmental criteria for determining project acceptability of HUD-assisted housing and financial assistance programs. It includes noise standards of 65 dB Ldn for residential areas. These standards can be used to assess the exposure of sites to present and future noise conditions.

In 1972, the Noise Control Act authorized the Environmental Protection Agency to publish data on the effects of noise. This included noise levels requisite to protect public health (hearing loss) and welfare (annoyance) with an adequate margin of safety.

TABLE 8-1
NOISE CONTROL RESPONSIBILITY BY ACTIVITY AND AGENCY

Agency	Highway Noise	Aviation Noise	Occupational Noise	Construction Noise	Land Use Compatibility	Building Siting	Complaints	Research	Product Noise
Federal Dept. of Housing and Urban Dev.					X	X			X
Dept. of Labor			X	X					
Environmental Protection Agency	X	X	X			X			
Federal Aviation Administration		X							
Federal Highway Administration	X								
State Dept. of Health	X			X	X	X		X	X
Dept. of Transportation	X	X	X			X			X
County of Los Angeles	X								X
City of Whittier City Council	X			X	X				
Building Dept.			X	X		X	X	X	
Planning Dept.			X	X	X	X	X	X	X
Police Dept.			X				X		

State Regulations

The State of California has adopted noise standards for areas not regulated by the federal government. State standards cover noise from motor vehicles, freeway noise affecting classrooms, noise insulation of structures, occupational noise control and airport noise. The California Motor Vehicle Code sets noise limits for vehicles according to type of vehicle and date of manufacture.

California Streets and Highways Code Division 1, Chapter 1, Article 6 requires State-funded noise abatement programs for freeway construction or any use which will result in noise levels exceeding 55 dBA L_{10} or 52 dBA Leq at existing classrooms, libraries, multi-purpose rooms, and pupil personnel services of public and private elementary and secondary schools. The noise abatement program may include acoustical treatment, elimination of windows, air conditioning, sound buffer structures and other mitigation measures.

Sound Transmission Control Standards in the California Administrative Code, Title 24, Building Standards, Chapter 2.5 outline noise insulation performance standards for new hotels, motels, apartment houses, and dwellings other than detached single-family units. It requires an interior noise level of 45 dB CNEL or less for residential projects. For projects near noise sources (airport, major roads, and industrial areas), an acoustical analysis must be made to show compliance with the standards.

Noise standards in Title 21, Public Works, Chapter 25, Division of Aeronautics of the same code require compatible land uses within a criterion CNEL contour. Compatible and incompatible land uses have been identified for areas within an airport's 65 dB CNEL. Occupational Noise Control Standards are also found in Title 8, Industrial Relations, Chapter 4 of the state Administrative Code. It provides permissible noise level exposure at the workplace in terms of permitted hours per weekday.

The California Office of Noise Control has prepared "Guidelines for the Preparation and Content of Noise Elements of General Plans". This provides a guide for land use compatibility of noise sensitive land uses in areas subject to noise levels of 55 to 80 dB CNEL or Ldn. Residential uses are normally unacceptable in areas with 70 dB CNEL and conditionally acceptable within 60 to 70 dB CNEL. The CNEL land use compatibility standards are shown in Exhibit 8-2. This chart has been utilized by many cities to determine acceptable noise levels for new developments.

EXISTING NOISE ENVIRONMENT

Noise sources are classified as mobile sources if they are associated with vehicular traffic, railroad trains, airplanes, and other forms of transportation. They are stationary sources if the noise is created by stationary activities, equipment or site-specific uses.

Traffic Noise

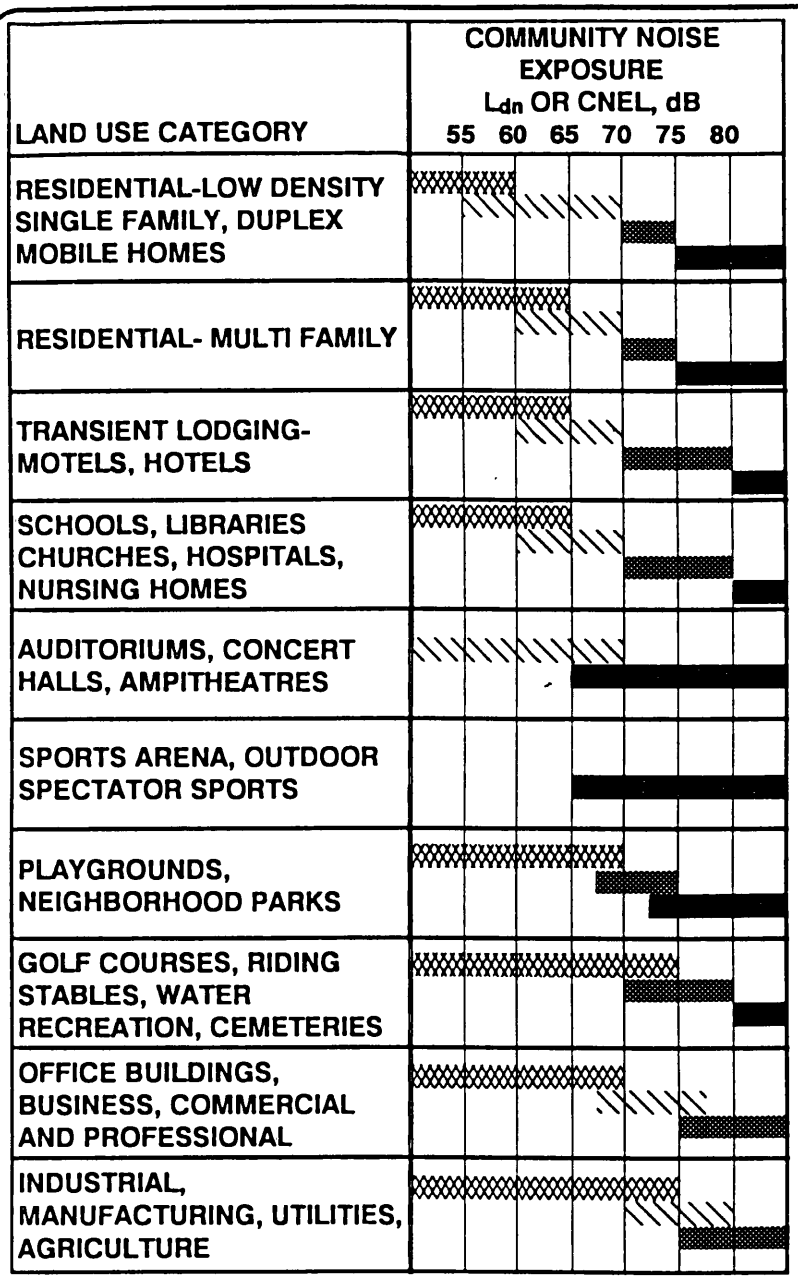
Traffic noise consists of sounds from horns, engines, tire squeal, sirens, and various noises caused by cars, trucks, buses, motorcycles, police cars, emergency vehicles, and other related sources. Traffic on city streets represent the most predominant type of noise in the City.

The San Gabriel River Freeway (SR-605) is a source of freeway noise in Whittier but its impact on the City is limited to the northwest section where is passes. The high volume of traffic on the freeway generates noise in Whittier but this noise is reduced by the lower elevation of the freeway. Noise impacts are directly related to the number of vehicles using this freeway segment. Traffic volume is currently estimated at a total of 219,000 vehicles per day in both directions on the freeway.

Vehicles on surface streets also constitute a major source of noise. Whittier Boulevard is a primary highway which carries large volumes of traffic everyday. Land uses along this highway do not generally include residential areas, hospitals, churches, schools and other noise-sensitive uses. Exceptions include the Nelles School for Boys, the East Whittier Junior High School, and residential uses between Jacmar and Bovar Avenues; between Norwalk Boulevard and Broadway; and between La Entrada and La Puebla Avenues. The noise impacts of Whittier Boulevard are generally limited to the commercial and industrial uses along the road.

Other major transportation corridors in the City include Beverly Boulevard, Hadley Street, Painter Street, Greenleaf Avenue, Colima Road, Mar Vista Street, Broadway, Norwalk Boulevard, Pickering Street, Lambert Road, and Washington Boulevard/La Cuarta Street. Vehicular noise from these streets are influenced by:

- Daily and peak-hour automobile traffic
- Number of trucks and buses
- Slope gradient of the road
- Stop and go traffic (signals, stop signs, etc.)



LEGEND

NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features inclued in the design.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

CONSIDERATIONS IN DETERMINATION OF NOISE-COMPATIBLE LAND USE

A. NORMALIZED NOISE EXPOSURE DESIRED

Where sufficient data exists, evaluate land use suitability with respect to a 'normalized' value of CNEL or Ldn. Normalized values are obtained by adding or subtracting the constants described in Table 1 to the measured or calculated value of CNEL or Ldn.

B. NOISE SOURCE CHARACTERISTICS

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65dB CNEL as the criterion which airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. In order to facilitate the purposes of the Act, one of which is to encourage land uses compatible with the 65dB CNEL criterion wherever possible and in order to facilitate the ability of airports to comply with the Act, residential uses located in Community Noise Exposure Areas greater than 65dB should be discouraged and considered located within normally unacceptable areas.

C. SUITABLE INTERIOR ENVIRONMENTS

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45 dB CNEL of Ldn. This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum acceptable distance to a noise source.

D. ACCEPTABLE OUTDOOR ENVIRONMENTS

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered 'normally acceptable' for that land use category, may be appropriate.

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EXHIBIT 8-2
NOISE COMPATIBILITY

- Average speed of traffic
- Barriers between roadway and adjacent uses
- Mechanical condition of the vehicles

Revisions of the California Vehicle Code lowered the vehicle noise level limits by adding restrictions and regulations affecting test procedures, exhaust standards, and noise standards for tires. Even with stricter legislation, streets and highways will continue to be the primary sources of noise. It is very difficult to protect residential areas from the noises of motor vehicles, modified exhausts, squealing tires, horns, and similar noises.

Aircraft Noise

Aircraft noise can create conflicts at and around airports and their traffic lanes or flight paths. Whittier does not have airport facilities. The nearest airport is the Fullerton Municipal Airport, approximately 3 miles south of the City. The major source of aircraft noise emanates from planes flying overhead. In addition, the City is located in an approach to Los Angeles International Airport and noise from jet aircraft is audible throughout the day and evening. The Puente Hills serves as a barrier to small aircraft from flying too low over the City. Thus, the higher the planes, the less noise is heard in the City. Low-flying aircraft is limited to occasional private airplanes that fly at lower levels than the hilltop elevations.

Railroad Noise

There are two major railroad lines through Whittier. The longest one is the Union Pacific Railroad (UPRR) which passes north-south along the western section of Whittier. It has one scheduled train every other day. The tracks merge with the Southern Pacific Railroad (SPRR) near Lambert Road and Gunn Avenue. The SPRR line runs northwest-southeast along Lambert Road. Train and railroad noises and railyard operations arising from the use of the UPRR tracks are limited. The low volume of train traffic translates to minimal noise impacts in the City.

Commercial and Industrial Noise

Commercial and industrial uses may create noise associated with equipment, work activities, patrons, and deliveries as part of the day-to-day operations of businesses. The commercial areas in Whittier are concentrated along Whittier Boulevard and the Uptown Village. Industrial uses are located along Whittier Boulevard on the western section of the City. Aside from these stationary noise sources, Whittier Boulevard is also a major transportation

route. The noise levels from stationary sources within these areas are higher than other areas of the City. Table 8-2 provides typical sound levels for various equipment. Exhibit 8-3 shows construction equipment noise levels.

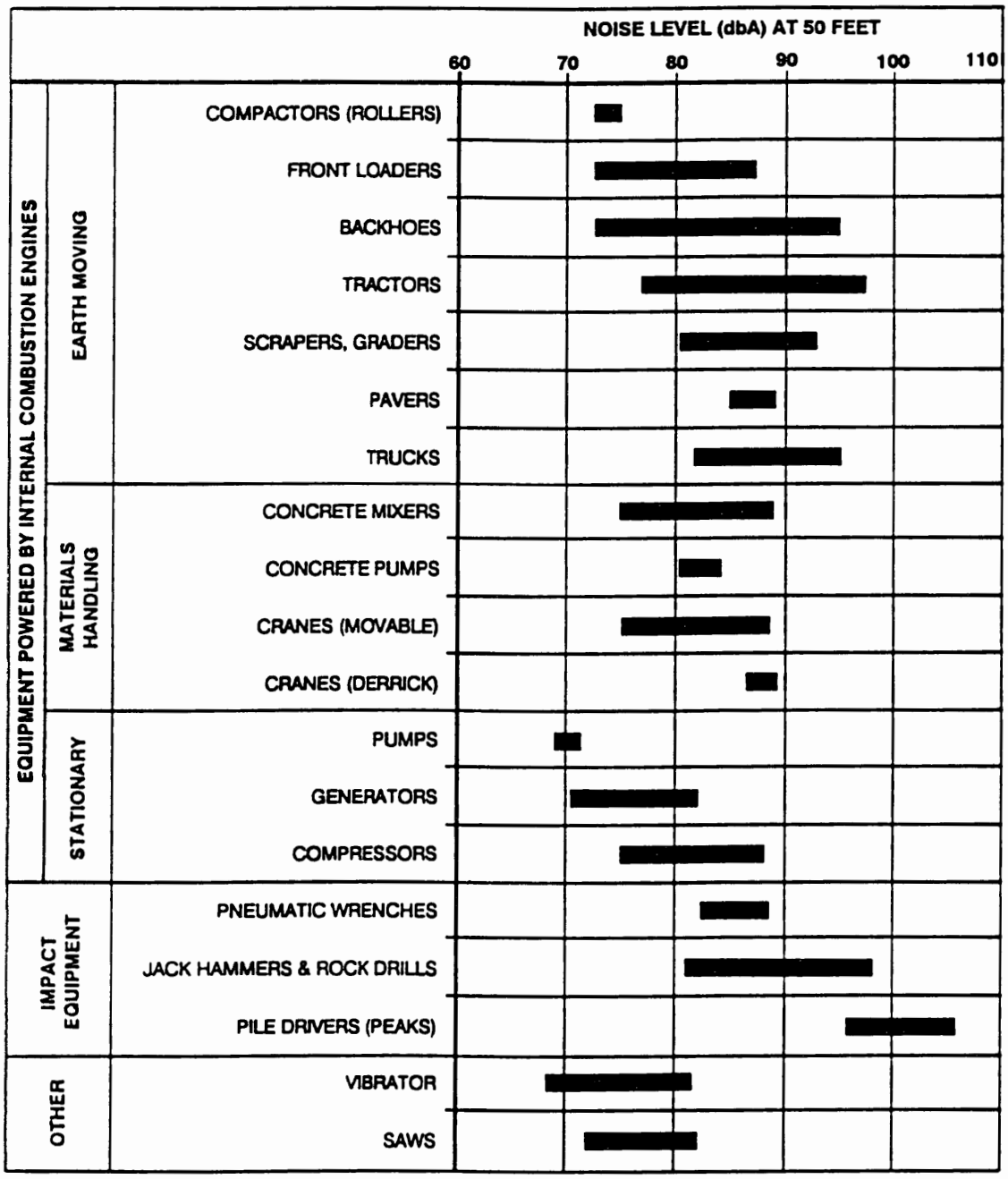
TABLE 8-2
SOUND LEVELS FOR BUILDING EQUIPMENT AT 3 FT.

Building Equipment	Range of Sound Level (dBA)
Ballast Fluorescent Lamp	20-50
Fan Coil Units	25-55
Diffusers, Grilles, Register	20-60
Induction Units	25-60
Dehumidifiers	40-70
Humidifiers	50-70
Mixing Boxes, Terminal Reheat Units, etc.	25-80
Unit Heaters	45-80
Transformers	70-80
Elevators	85
Absorption Machines	88
Boilers	55-90
Rooftop Air Conditioning Units	70-90
Pumps	45-95
Steam Valves	60-95
Self-contained Air Conditioning Units	55-95
Chiller - Rotary Screw Compressors	65-95
Condensers - Air-Cooled	80-95
Pneumatic Transport Systems	60-100
Central Station Air Conditioning Units	70-100
Chiller - Reciprocating Compressor	80-100
Electric Motors	20-100
Fans	40-105
Chiller - Centrifugal Compressor	75-105
Air Compressor	75-105
Cooling Towers	85-110
Diesel Engines	90-110
Gas Turbines	90-105

Source: Environmental Protection Agency. Noise from Construction Equipment and Operations, Building Equipment & Home Appliances. 1971.

Residential Noise

Residential noise is unlikely to be disruptive. Typical residential noise comes from activities, where power lawnmowers, small power tools, air-conditioning units, radios, stereos, musical instruments, and appliances are used. Whittier residential neighborhoods are, for the most



SOURCE: Environmental Protection Agency, NTID 300-1

EXHIBIT 8-3
NOISE LEVELS FOR TYPICAL CONSTRUCTION EQUIPMENT

part, pleasant and quiet places to live with no major residential noise problems. Table 8-3 provides the range of noise levels for a number of household appliances.

TABLE 8-3
NOISE LEVELS FOR APPLIANCES

Appliance	A-Weighted Sound Levels at 3 ft. (dBA)	
	Range	Mean
Freezer	39-45	42
Refrigerator	35-53	43
Heater, Electric	--	47
Hair Clipper	--	50
Toothbrush, Electric	48-55	52
Humidifier	42-65	53
Fan	38-69	57
Dehumidifier	52-62	57
Clothes Dryer	51-66	58
Air Condition	56-67	58
Shaver, Electric	57-69	60
Water Faucet	61	61
Hair Dryer	59-65	61
Clothes Washer	47-72	62
Water Closet	46-76	63
Dishwasher	54-72	65
Can Opener, Electric	54-76	66
Food Mixer	49-79	67
Knife, Electric	65-75	71
Knife Sharpener, Electric	--	72
Sewing Machine	70-74	72
Oral Lavage	70-74	72
Vacuum Cleaner	62-85	72
Food Blender	62-88	75
Coffee Mill	75-79	77
Food Waste Disposer	67-93	78
Edger and Trimmer	--	81
Home Shop Tools	63-98	83
Hedge Clippers	--	84
Lawn Mower, Electric	81-89	85

Source: Environmental Protection Agency. Noise from Construction Equipment and Operators, Building Equipment & Home Appliances. 1971.

Recreational Noise

Recreational activities in ball fields, outdoor swimming pools, school playgrounds, active parks, and other facilities can create noise in the community. Fortunately, these activities often take place during the daytime hours and occur for short periods only after dark. Recreational noise is less irritating to most people than other types of noise. In Whittier, it has not resulted in many noise complaints. Another recreational-related noise is the use of off-road vehicles, motorcycles and dirt bikes on vacant and undeveloped areas of the Puente Hills.

Noise-sensitive Uses

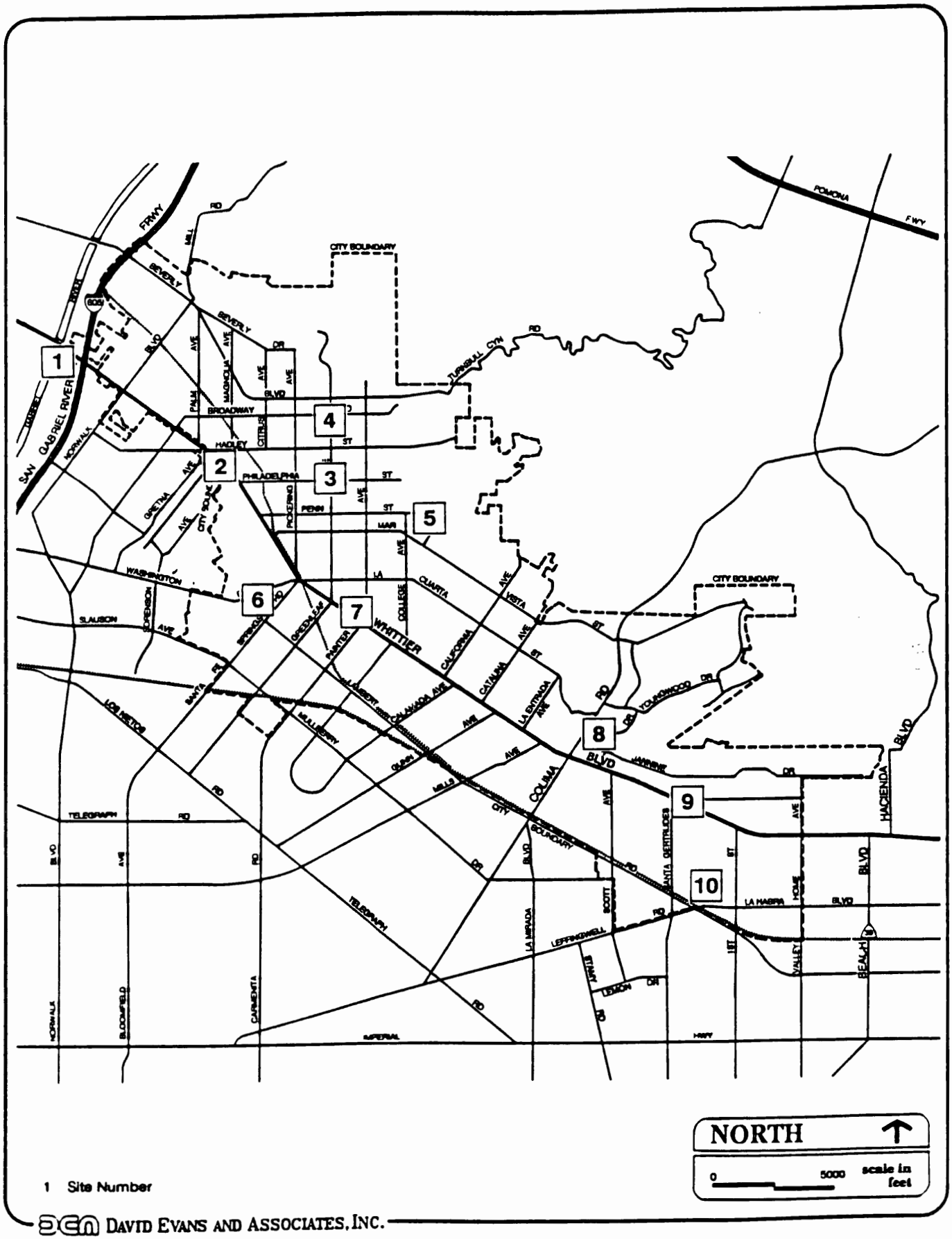
Residential uses are sensitive to noise impacts, particularly during the nighttime hours. Sleep and rest can easily be disrupted by noise during the night. Schools and libraries are also noise-sensitive. Excessive noises can annoy students and teachers, leading to speech interference, loss of concentration, difficulty in listening and other impacts that impair learning activities. The location of these facilities are discussed in the Land Use Element Background Report.

Hospitals and nursing homes also present a special concern. Day to day hospital operations and recovering patients are especially sensitive to noise. Older residents are often more sensitive to noises than others. Churches and religious services may be disrupted by noise, although activities within these centers often occur outside of peak hour traffic.

Noise Survey

A noise measurement survey was conducted on May 29 and 30, 1991 at ten different locations in Whittier. Site No. 1 is the Pio Pico State Park adjacent to the San Gabriel River Freeway. Site No. 2 is by the Fred Nelles School for Boys. Site Nos. 3 and 4 are within Uptown Whittier. Site No. 5 is at Penn Park, across the Savage Canyon Landfill. Site No. 6 is near the Presbyterian Hospital. Site No. 7 is at the Whittier Quad. Site No. 8 is across from the Whittier Hospital Medical Center. Site No. 9 is at Whittwood Mall and Site No. 10 is where the Southern Pacific Railroad, Leffingwell Road and Lambert Road intersect. Exhibit 8-4 shows the noise measurement locations.

The noise readings were taken for 15 minute intervals from 10:30 a.m. to 3:30 p.m. The results of the survey are summarized in Table 8-4. The noise measurements recorded typical noise levels for 90%, 50%, 33%, and 10% of the time. In addition, the maximum noise level recorded during the 15-minute period is shown.



1 Site Number

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 8-4
NOISE MEASUREMENT LOCATIONS

TABLE 8-4
NOISE MEASUREMENTS

Site	Location	L_{max}	L_{10}	L_{33}	L_{50}	L_{90}
1	Pio Pico Park	87	87.0	83.2	81.4	76.4
2	Whittier Blvd./Sorensen Avenue	87	85.6	81.6	79.8	74.7
3	Philadelphia Street/Greenleaf Avenue	87	84.4	80.3	78.3	74.5
4	Greenleaf Avenue-Camilla/Broadway	77	77.0	71.0	68.1	63.7
5	William Penn Park	77	76.8	68.9	66.1	63.4
6	Washington Blvd./Lambert Road	87	85.9	82.1	75.3	75.7
7	Whittier Blvd./Painter Avenue	87	86.3	82.4	80.8	76.9
8	Whittier Hospital	87	85.4	81.6	79.3	74.3
9	Whittier Blvd./Santa Gertrudes Street	87	84.2	79.5	77.4	74.0
10	Leffingwell Road/Lambert Road	87	86.5	83.4	81.3	74.5

Notes: L_{max} is the maximum sound level recorded during the noise measurement duration.
L_{10} is the sound level exceeded 10 percent of the noise measurement duration.
L_{33} is the sound level exceeded 33 percent of the noise measurement duration.
L_{50} is the sound level exceeded 50 percent of the noise measurement duration.
L_{90} is the sound level exceeded 90 percent of the noise measurement duration. It is also considered the background noise level.
Source: David Evans and Associates, 1991.

The majority of noise sources at the survey sites were cars, buses and trucks along the roadways. Aircraft noises from planes flying overhead also contributed to the prevailing noises. Vehicle horns and motorcycles created high pitched noises intermittently. A light breeze was felt during the surveys which increased the noise levels measured by the sound meter. The noisiest areas were those located near the freeway and major streets. Quiet areas are residential neighborhoods on local streets.

Calculated Traffic Noise Levels

Existing noise along major roadways may be estimated using the Federal Highway Administration's Highway Traffic Noise Prediction Model (FHWA-RD-77-108). Major roadways were selected for the modelling, with the results provided in Table 8-5. The estimates are based on an average speed of 35 miles per hour, a roadway slope of 1 percent, completely paved roads, and traffic consisting mainly of automobiles. The roadway width and average daily traffic are the major factors that determine noise generation.

TABLE 8-5
EXISTING ROADWAY NOISE LEVELS

Road Segment	Distance from Roadway Centerline to CNEL (feet)				
	70 CNEL	65 CNEL	60 CNEL	55 CNEL	CNEL at 50'from CL
Beverly Blvd.					
SR-605/Carley	60.9	182.6	574.2	1814.6	69.30
Carley/Palm	0.0	138.9	434.8	1373.4	68.09
Palm/Magnolia	0.0	143.7	450.3	1422.4	68.24
Magnolia/Pickering	0.0	119.5	372.8	1177.3	67.42
Pickering/Greenleaf	0.0	76.4	233.6	736.0	65.38
Greenleaf/Painter	0.0	0.0	155.7	491.4	64.23
Painter/Turnbull Canyon	0.0	0.0	0.0	0.0	54.23
Whittier Blvd.					
West of SR-605	56.6	168.0	527.7	1667.5	68.93
SR-605/Painter	62.4	187.5	589.7	1863.6	69.42
Painter/Calmada	66.8	202.1	636.2	2010.7	69.75
Calmada/Santa Gertrudes	74.2	226.5	713.7	2255.9	70.25
Santa Gertrudes/First	0.0	158.3	496.8	1569.5	68.67
East of First Street	0.0	143.7	450.3	1422.4	68.24
Hadley Avenue					
Glengarry/Whittier Blvd.	0.0	0.0	110.5	344.0	62.07
Whittier Blvd./Hoover	0.0	57.7	171.8	539.9	64.03
Hoover/Pickering	0.0	64.7	195.0	613.4	64.59
Pickering/Greenleaf	0.0	62.3	187.3	588.9	64.41
Greenleaf/Painter	0.0	0.0	156.5	490.9	63.62
East of Painter Avenue	0.0	0.0	95.3	295.0	61.40
Mar Vista					
Whittier Blvd/Pickering	0.0	0.0	95.3	295.0	61.40
Pickering/Painter	0.0	64.7	195.0	613.4	64.59
Painter/California	0.0	86.5	272.1	859.8	66.66
California/Colima	0.0	81.6	256.5	810.7	66.40
Washington					
West of Whittier Blvd.	0.0	109.8	341.9	1079.2	67.04

TABLE 8-5
EXISTING ROADWAY NOISE LEVELS

Road Segment	Distance from Roadway Centerline to CNEL (feet)				
	70 CNEL	65 CNEL	60 CNEL	55 CNEL	CNEL at 50'from CL
Lambert Avenue					
Santa Fe Springs/Laurel	0.0	138.9	434.8	1373.4	68.09
Laurel/Calmada	0.0	119.5	372.8	1177.3	67.42
Calmada/Gunn	0.0	134.0	419.3	1324.4	67.93
Gunn/Colima	0.0	143.7	450.3	1422.4	68.24
Colima/Scott	0.0	100.2	310.9	981.1	66.63
Scott/Santa Gertrudes	0.0	134.0	419.3	1324.4	67.93
Santa Gertrudes/Beach Blvd.	0.0	119.5	372.8	1177.3	67.42
Colima					
South of Whittier Blvd.	0.0	133.0	419.6	1326.5	68.54
Whittier Blvd./Mar Vista	0.0	158.3	496.8	1569.5	68.67
North of Mar Vista	62.4	187.5	589.7	1863.6	69.42
Santa Fe					
South of Lambert Rd.	0.0	67.0	202.7	637.9	64.76
Lambert/Whittier Blvd.	0.0	71.7	218.1	686.9	65.08
Norwalk					
South of Whittier Blvd.	0.0	81.1	249.0	785.0	65.66
Whittier Blvd/El Rancho	0.0	67.0	202.7	637.9	64.76
El Rancho/Beverly Blvd.	0.0	81.1	249.0	785.0	65.66
Pickering					
Whittier Blvd/Penn	0.0	54.9	171.2	540.5	64.64
Penn/Hadley	0.0	62.2	194.5	614.2	65.20
Hadley/Beverly Blvd	0.0	64.6	202.2	638.8	65.37
Greenleaf					
South of Whittier Blvd.	0.0	0.0	156.5	490.9	63.62
Whittier Blvd/La Cuarta	0.0	76.4	233.6	736.0	65.38
La Cuarta/Franklin	0.0	95.4	295.4	932.1	66.41
Franklin/Beverly Blvd.	0.0	0.0	110.5	344.0	62.07

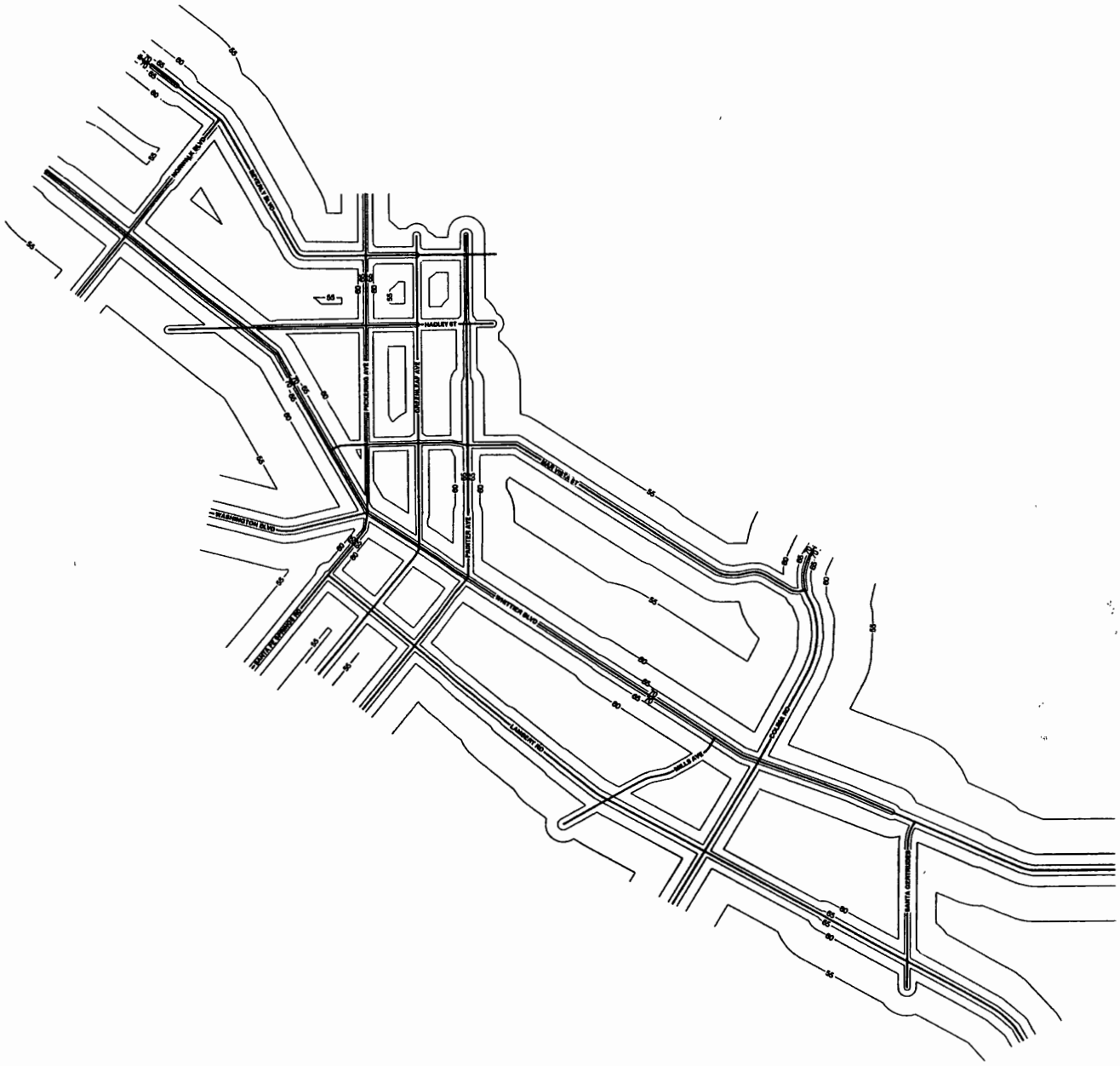
TABLE 8-5
EXISTING ROADWAY NOISE LEVELS

Road Segment	Distance from Roadway Centerline to CNEL (feet)				
	70 CNEL	65 CNEL	60 CNEL	55 CNEL	CNEL at 50'from CL
Painter					
South of Oval Drive	0.0	109.8	341.9	1079.2	67.04
Oval/Whittier Blvd.	0.0	105.0	326.4	1030.1	66.84
Whittier Blvd/La Cuarta	0.0	129.2	403.8	1275.3	67.77
La Cuarta/Penn	0.0	119.5	372.8	1177.3	67.42
Penn/Philadelphia	0.0	148.6	465.8	1471.5	68.39
Philadelphia/Hadley	0.0	90.6	279.9	883.1	66.17
Hadley/Beverly Blvd.	0.0	55.4	164.2	515.4	63.83
Mills Avenue	0.0	0.0	156.5	490.9	63.62
Santa Gertrudes Avenue	0.0	81.1	249.0	785.0	65.66

Source: FHWA Traffic Noise Prediction Model, David Evans & Associates, Inc., 1991.

The 65 dB CNEL is the area having a time-average sound level of approximately 65 dB. It may experience sound levels higher and lower than 65 dB. In areas where buffers, land forms, and other noise path barriers exist, the noise contours overestimate the noise levels. It is impossible to analyze each segment for the different types and location of noise barriers. Therefore, the noise contour map provides a worst case scenario and acoustical analysis should be performed for specific noise impact areas.

Peak hour traffic will also create noise impacts higher than the numbers above. A higher percentage of truck traffic will also increase the noise levels. On the other hand, buildings and landscaping serve to buffer noises and would result in lower noise impacts that estimated in this table. Exhibit 8-5 is the estimated noise contours based on existing traffic volumes along major streets.



Existing Noise Contour in CNEL

DAVID EVANS AND ASSOCIATES, INC.

City of Whittier

GENERAL PLAN

EXHIBIT 8-5
EXISTING NOISE CONTOURS

SECTION 9: HISTORIC RESOURCES ELEMENT BACKGROUND REPORT

INTRODUCTION

The City of Whittier was incorporated in 1898, making it one of the oldest cities in Los Angeles County. The City has a wide variety of cultural resources which include the homes and businesses of early residents and founders, along with other notable sites. This Background Report provides an inventory of cultural resources that must be considered in future planning. It provides a brief history of the planning area, describes paleontological resources that may be found in the area, documents important archaeological resources, and details important historic resources in the community.

HISTORICAL OVERVIEW

The City of Whittier is within the historic territory of the Gabrieliño Indians (as derived from the nearest mission - the San Gabriel Mission). The territory includes the watersheds of the Los Angeles, San Gabriel and Santa Ana rivers and smaller streams in the Santa Monica and Santa Ana Mountains. This cultural sphere also includes the Los Angeles Basin, the coastline from Aliso Creek to Topanga Creek, and the islands of San Clemente, San Nicholas and Santa Catalina.

In 1769, all land in Whittier and the surrounding region was vested to the King of Spain. The land was declared property of the San Gabriel Mission in 1771. Jose Nieto received grazing rights to the land in 1784. In 1833, Juan Crispin Perez petitioned for a grant to Rancho Paso De Bartolo Viejo which included the Whittier area. In 1850, Pio Pico, the last Mexican Governor of California, purchased a part of the rancho from the descendants of Perez. Approximately 9,000 acres were deeded to Pio Pico in 1881. On his land, referred to as "El Ranchito" (Little Ranch), Pico built an adobe house near the bank of the San Gabriel River. This house was destroyed by the floods of 1883. A second adobe was constructed and is still standing today.

The final survey of Rancho Paso de Bartolo Viejo rendered much of the area as public lands. Individuals began filing claims, with the first claim filed by Jacob F. Gerkins. Gerkins was a German farmer who came to Los Angeles in 1854. His claim, filed under the Homestead Act on December 2, 1868, set aside a quarter section (160 acres) of the area which today lies north of Hadley Street and east of Greenleaf Avenue.

Through purchase and foreclosure, the land came into the hands of John M. Thomas, an Indiana farmer who had come to Los Angeles in 1868. Thomas constructed Whittier's first building which still stands at 522 East Camilla Street. The Thomas Ranch was then acquired by J. Mills Boal, James R. Boal and John D. Burch for $33,000.00.

During this period, Aquilla H. Pickering (a resident of Chicago), was completing plans for establishing a Quaker community in California. During the early part of 1887, Pickering and his wife Hannah, went to California to select a site for a future settlement. After searching from Sacramento on the north to Ensenada on the south, they were about to give up until they saw the Thomas Ranch, which was for sale at the time. The Pickerings decided that the Thomas Ranch was an ideal place for a Quaker settlement.

A council of Southern California Friends were called at once and on May 3, 1887, the Thomas Ranch was purchased by the Pickering Land and Water Company. According to some historians, it was at the first meeting that the colony was named "Whittier" in honor of the New England Quaker poet, John Greenleaf Whittier. The Quakers began settling in town in 1887. Auction sales on tract sites were the popular form of buying property. The townsite was surveyed and subdivided the same year and the sale of lots started. One-acre lots sold for $100 to $200 and five-acre lots outside the townsite were offered at $1,000 each.

The sale of the Whittier town lots corresponded with the real estate boom of the eighties which was sweeping over all of Southern California. The town was flooded with potential buyers from Pasadena and Los Angeles. Buildings were rapidly being constructed throughout the area. One of the first buildings was the Hotel Lindley, which was built by Hiram Gibbs, a brother-in-law of Aquilla Pickering. It was located on the southeast corner of Philadelphia and Bright Avenues.

Two groups of rival businessmen and builders began to develop the town center. Four brick buildings were built at the corner of Greenleaf and Hadley Street in an attempt to draw the business there. The other town center was known as the Strawbridge tract at the corner of Greenleaf and Penn. About this time, a drug store opened on North Greenleaf in the Bufkin block, north of the present California Bank. On the southwest corner of Greenleaf and Philadelphia Avenues, a building was erected by a Pasadena man where Willet Doty opened a general merchandise store and post office.

In 1940, Murphy Ranch Company began development of the open Friendly Hills subdivision. Initially, many citrus ranchers opposed development and the loss of agricultural land. Nevertheless, the farmers and ranchers sold their holdings for subdivision development in the 1950's when the crops failed.

PALEONTOLOGICAL RESOURCES

Sedimentary rocks in the planning area that are known to produce fossils include the Miocene Monterey and Repetto Formations, Late Pliocene Fernando Formation, the

Pleistocene Palos Verdes Sand and other Quaternary sediments. Fossils are often found in these sediments when the ground surface layer is removed for excavation or construction.

The Monterey Formation (approximately 9 to 12 million years ago) is an important lithologic unit comprised of marine sediments and is moderately fossiliferous. Specimens from this formation include vertebrate remains of aquatic carnivores such as walruses, sea lions and other marine animals such as whales and fishes, and aquatic birds including shearwaters and auks. As many of the specimens are isolated occurrences, there is no way of predicting where they will be found. The Topanga Formation, also marine in origin, occurs stratigraphically below the Monterey Formation in the area, and has been known to produce a similar suite of fossils.

The Fernando Formation (approximately 2.5 to 5 million years ago) is a marine sedimentary deposit composed of siltstone, conglomerate and fine sandstones. This formation is moderately fossiliferous and has yielded fossils including ray-finned bony fishes, sharks, snakes, and primitive artiodactyla. However, this is not an exhaustive taxonomic list of the types of fossils that may be expected to occur within this formation.

A record search of known paleontological sites indicated that one site was found near Penn Park and the Savage Canyon Landfill. The geology of the area is of the Fernando Formation of late Pliocene age. Fossils found were of whales and dolphins probably related to the American Land Mammal Age (2.5 to 5 million years ago).

The Quaternary deposits throughout the study area consist of unnamed alluvial units. There is a possibility that vertebrate fossils will be encountered by excavation. Several important Pleistocene ("Ice Age") fossil faunas (approximately 400,000 to 1.8 million years ago) and some Rancholabrean (approximately 10,000 to 400,000 years ago) fossils have been recovered in and near the planning area. These fossils include an extensive and well studied assemblage of marine invertebrates and vertebrates such as sharks and terrestrial animals such as sloth, mammoth, mastodon, camel, horse, bison, birds and reptiles.

Any of these fossils could be found as disarticulated or associated skeletons, but usually occur as isolated bones. Any significant excavation within the planning area will almost certainly uncover fossils such as mentioned above. Additionally, surface activities, such as foot and vehicle traffic can destroy fossils that have weathered out beneath the surface. Construction in the Whittier area should be very closely monitored during any excavation so that any fossils found may be quickly and safely recovered. All planning documents and environmental assessments should include references to the fossil resources (including invertebrates) and make strong recommendations for collecting and salvage of specimens wherever subsurface sedimentary rocks and surficial alluvium are disturbed. Such

recommendation has support in existing County, State and Federal guidelines. A program for the collection and salvage of fossils should be established before grading activities start.

ARCHAEOLOGICAL RESOURCES

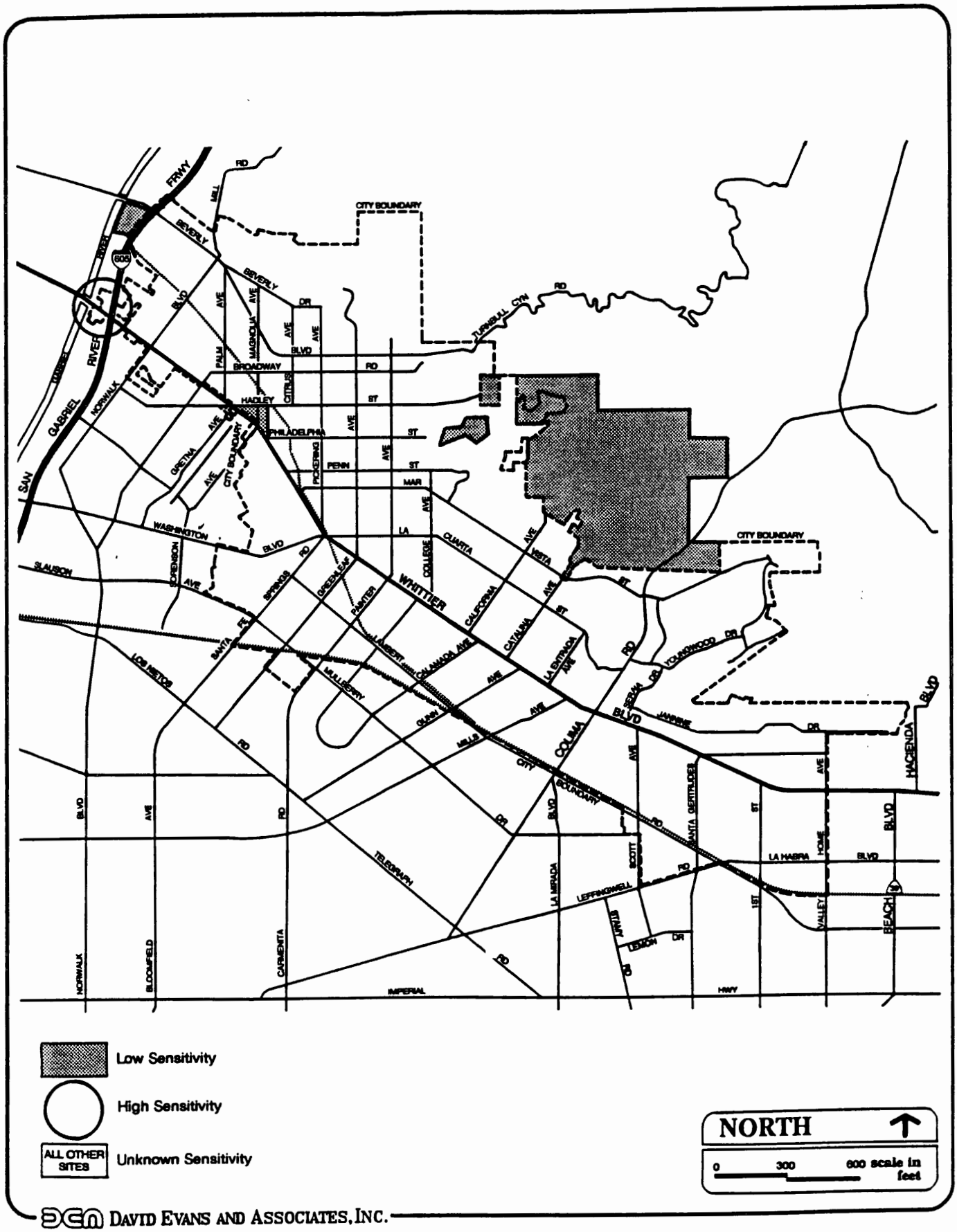
A record search at the UCLA Archaeological Center revealed the presence of known historic and archaeological resources in the Whittier area. One prehistoric site was identified near the intersection of Whittier Boulevard and the San Gabriel River Freeway. It is recorded as LAn-182a and is believed to be the site of a historic Gabrieliño Village. The occupied area may have been at the knoll of sandy soil, downstream of the Pio Pico Mansion; near the Southern Pacific Junction Tower; or near the Tomas Sanchez Colima House. The two latter sites were Indian graveyards. It may also have been west of the old Guarado place where the first settler built his home. These sites were suggested by Juan Ramirez to John Harrington and are located along the San Gabriel River. The village was known as Sejat and occupied by the Shoshonean-speaking Indians. The Indians lived in brush huts and survived on wild seeds, honey and small game animals. When the village became populous, Indians migrated south into the San Juan Capistrano Valley.

Archaeological surveys have been recorded for six different locations in the planning area. Approximately 1,058 acres were surveyed in total. These surveys uncovered unrecorded middens, a tightly packed rock scatter or possible hearth, burnt bone fragments, tarring pebbles, chert flakes, fire-altered stones, fired clay and seeds, mano, pestles and metate. These discoveries were primarily located within and around the Pio Pico Mansion. The other five site surveys uncovered no archaeological resources and are considered to have low sensitivity. Exhibit 9-1 provides archaeological sensitivity of the planning area.

There are also potential sites of archaeological value in the hillside areas. The Whittier planning area is within the historic territory of the Gabrieliño Indians. Village sites may be discovered in the canyon areas where there is available fresh water supply for a good part of the year. Such sites could easily be obliterated by development unless adequate standards are placed for the preservation of archaeological resources.

HISTORIC RESOURCES

During the 1970's, three studies were prepared documenting historic resources in the City. The first, a publication of the Whittier Historical Society and Rio Hondo College in 1977 entitled Founders and Friends provides a listing and description of 59 sites in the City which were determined to be of "historical interest".



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City of Whittier
GENERAL PLAN

EXHIBIT 9-1
ARCHAEOLOGICAL SENSITIVITY

A second study was conducted in 1977 by the Los Angeles County Museum of Natural History. This study was more of a formal inventory, using standardized inventory forms and assigning a classification to each building surveyed including eligibility for the National Register. This inventory identified 49 potential historic buildings in the City.

The City was not involved in, nor did the City sanction, either of these works. However, in 1978 the City contracted with Charles Hall Page and Associates to conduct a study of the Uptown Whittier area in conjunction with the creation of the Whittier Uptown Village. This initial study produced a map showing "buildings of architectural distinction" and "background buildings". The report states that these buildings, "contribute to the identifiable character of the built environment..."

The Federal Government maintains an official listing of the nation's cultural resources that are worthy of preservation. Listing in the National Register makes property owners eligible for Federal grants-in-aid for historic preservation through State Programs. All nominations to the National Register are made by the State through the State Historic Preservation Officer. Federal agencies may also nominate properties under their jurisdiction or control through designated Federal Representatives. This process is described in Part 60 of Chapter I of Title 36 of the Code of Federal Regulations (effective April 1, 1976).

Criteria has been established by the Federal Government to guide State and Federal agencies and the Secretary of the Interior in evaluating potential entries (other than areas of the National Park System and National Historic Landmarks) for the National Register. The site or structure must first be significant in terms of American history, architecture, archeology, and culture. It should meet the following criteria:

- The site or structure must be associated with events that have made a significant contribution to the broad patterns of our history; or

- The site or structure must be associated with the lives of persons significant in our past; or

- The site or structure must embody the distinctive characteristics of a type, period, or method of construction or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or

- The site or structure must have yielded, or may be likely to yield, information important to the prehistory or history of the area.

Cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, commemorative properties, and properties that have achieved significance within the past 50 years are not considered eligible for the National Register. However, such properties will qualify if they are integral parts of historic districts that meet the above criteria or if they fall within the following categories:

- A religious property deriving primary significance related to architectural, artistic or historical importance;
- A building or structure removed from its original location but which is significant primarily for architectural value, or where the surviving structure is associated with a historic person or event;
- A birthplace or grave of a historical figure of outstanding importance if there is no other appropriate site or building directly associated with his productive life;
- A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events;
- A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived;
- A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own historical significance; or
- A property achieving significance within the past 50 years if it is of exceptional importance.

Six sites within the City have been placed in the National Register of Historic Places. They are listed in Table 9-1.

TABLE 9-1
NATIONAL REGISTER SITES

National Register Number	Site and Address	Comments
77-000304	Jonathan Bailey House 13421 E. Camilla Street	Small redwood cabin built by Gerkins and later to become home of Jonathan Bailey, president of the Pickering Land and Water Company
80-000815	Orin Jordan House 8310 S. Comstock Avenue	
82-000969	Bank of America 13002 E. Philadelphia Street	formerly National Bank of Whittier
73-000408	Pio Pico Mansion 6003 Pioneer Boulevard	Home of Pio Pico, last governor under Mexican rule; built in 1852, flood damaged in 1867 and 1883-1884; rebuilt in 1885; historic artifacts found on site; known as El Ranchito; could be Indian Village site; designated State park in June 1927.
78-000701	Southern Pacific Railroad Station on blocks on Philadelphia Street	Built in 1888 as passenger and freight station for riders of the Red Cars; moved in 1991.
80-000816	Standard Oil Building 7257 Bright Avenue	

Source: National Register of Historic Places, 1990; UCLA Archaeological Center, 1991.

The Pio Pico House, in addition to being on the National Register, is a state historic park. The park is located on the corner of Pioneer and Whittier Boulevards and is the site of the home of Pio Pico and the historical and cultural resources related to his era. The site covers 3.5 acres with 1.2 acres owned by state and 2.3 acres leased from the City of Whittier. The site is developed with residence, park service quarters, public rest rooms, pumping stations and reservoirs. Another 3 acres is used for storing old gravestones. The area is now urbanized with the freeway, channelized river and roadways around the site. The site became a state museum in 1915 and a state park in 1927.

According to the City of Whittier Historical Committee and the Whittier Historical Society, there are a number of sites and structures of historical significance in Whittier. Some have already been preserved, others have been recognized and identified by signs or plaques as

landmarks, and others are in need of attention and preservation. These sites are summarized in Table 9-2. Key sites, in addition to the Pio Pico Mansion, include the following:

- Jonathan Bailey House - This was the first house in the townsite of Whittier. It was built by Jacob Gerkins who originally owned the land and which became the City of Whittier in 1887. This house was the first meeting place for the Society of Friends.

- East Whittier Friends Church - This church has the largest congregation of the Society of Friends in the United States, including Richard Nixon and his family.

- Simon Murphy Home - This house, built in 1890, was the home of Simon Murphy who was responsible for developing an adequate water supply for East Whittier, and making agriculture possible. His son later donated land and a hospital to the community in 1921.

- Hadley and Greenleaf Intersection - This intersection was the site of four brick buildings erected in 1888 to attract development northward from Philadelphia and Penn Streets.

TABLE 9-2
HISTORICAL STRUCTURES

Structure	Address	Year Built	Comments
Lou Henry Hoover School (Whittier City School District)	6302 Alta	1938	Recommended for Historic Register
Residence	1322 Bailey		
Southern Pacific Railroad Station	11825 Bailey	1888	Historic Register
First Baptist Church	13106 Bailey	1921	
William P. Briggs (Arolan) House	6502 Bright	1901	Recommended for Historic Register
Edward Chase (Bullard) House	6523 Bright	1894	Recommended for Historic Register Oldest House in Uptown
Residences	7042/7052/7058 Bright		

TABLE 9-2
HISTORICAL STRUCTURES

Structure	Address	Year Built	Comments
Lincoln School	12620 Broadway	1930's	
Founders Park	Broadway & Gregory Avenue		Grave of George Caralambo or Greek George; Calif. Historical Landmark 646.
Fletcher (Anna Hayes) House	8119 California	1898	
Jacob Bickel House	8401 California	1910	
Jonathan Bailey House	13421 Camilla	1887	Historic Register
Sucksdorf House	8404 Catalina Avenue	1931	For Review
Sucksdorf House	8531 Catalina Avenue	1911	For Review
Albert Rideout House	11818 Circle	1913	Further Review
Curtis Jackson House	10214 Colima	1895	
Simon Murphy (Griffith) House	7758 College	1890	Recommended for Historic Register
Crook House	8114 College Ave.	1911	For Review
William Loftus (Kimble) House	5837 Comstock	1911	
First City Hall	7026 Comstock		Demolished
Orin L. Jordan (Ferraro) House	8310 Comstock		Historic Register
Dorland (Ferraro) House & Barn	12348 Dorland	1888	Recommended for Historic Register
Residence	6546 Friends		
Johnson (Harrison) House	6554 Friends	1912	Recommended for Historic Register
Whittier Women's Club (American Red Cross)	6705 Friends		Recommended for Historic Register
Residence	6706 Friends		
Residence	7026 Friends		
Residence	7040 Friends		
Whittier's First Bakery	7302 Greenleaf	1858	
Edward R. Guirado (Martin) House	6237 Greenleaf	1905	Recommended for Historic Register

TABLE 9-2
HISTORICAL STRUCTURES

Structure	Address	Year Built	Comments
Lindley Building	6501 Greenleaf	1888	Demolished
First Christian Church	6533 Greenleaf	1923	Further Review
United California Bank (Hader)	6754 Greenleaf		Recommended for Historic Register
Wardman Theater (Walnut Properties)	7040 Greenleaf		Recommended for Historic Register
Residence	7053 Greenleaf		
Buckmaster House	7643 Greenleaf	1910	Further Review
Ice Cream Plant (Politis)	12025 Hadley		Recommended for Historic Register
Residence	13218 Hadley St		
Residence	13302 Hadley St		
Edward Coffin House	12808 La Cuarta		
Strawbridge-McGee House	13648 La Cuarta	1888	Further Review
Murphy Ranch Superintendent's House (Jordan)	8600 La Tremolina Lane		Recommended for Historic Register
Hiram Biggs House	13634 Mar Vista	1890	
Fred Sargent House	8109 Michigan		Further Review
Williams House	8201 Michigan Avenue	1912	For Review
Strong (Stackhouse) House	11114 Orange		Recommended for Historic Register
C.W. Harvey (Light) House	5854 Painter	1888	Recommended for Historic Register
Smullins (Thomas) House	6045 Painter		Recommended for Historic Register
John B. Chaffey House	6222 Painter	1911	Further Review
Lindley Baldwin House	6354 Painter	1887	Further Review
John B.Green House	7037 Painter	1901	
John S. Butman House	7051 Painter	1903	
Residence	13227 Park St		
Residence	12625 Penn St		

TABLE 9-2
HISTORICAL STRUCTURES

Structure	Address	Year Built	Comments
Standard Oil Building (Mission Court))	13033 Penn	1914	Recommended for Historic Register
Mendenhall (Whittier College)	Philadelphia		Recommended for Historic Register
Auditorium and Gymnasium (Whittier Union High School District)	12417 Philadelphia		Recommended for Historic Register
First National Bank of Whittier (Bank of America)	13002 Philadelphia	1922	Historic Register
Goodyear Tire (Haendiges)	13303 Philadelphia	1930	
Whittier College (American Savings and Loan Assoc)	13406 Philadelphia	1888	
Manning House	5706 Pioneer Avenue	1895	For Review
Pio Pico Mansion (State of California)	6003 Pioneer		Historic Register
West House and Barn	15935 Russell Street	1910	For Review
Christie House	13953 Second Street	1929	For Review
Pump House (East Whittier Woman's Club)	14148 Second		Recommended for Historic Register
Frank Milhouse (Wright) House	13542 Starbuck	1897	Further Review
Aubrey Wardman House (Whittier College)	13952 Summit	1925	Recommended for Historic Register
E. Whittier Water Co. Pump House	13024 Walnut	1891	Further Review
George E. Chaffey house	6505 Washington	1912	Further Review
William King House	6237 Washington	1907	
Residence	6513 Washington		
Sutherland (Barclay Charles) House	6537 Washington	1893	Recommended for Historic Register
Residence	6543 Washington		
Residence	7027 Washington		
Landreth (Harrington) House	7055 Washington	1905	Recommended for Historic Register
St. Matthias Episcopal Church	7056 Washington	1929	

TABLE 9-2
HISTORICAL STRUCTURES

Structure	Address	Year Built	Comments
John Greenleaf Whittier Elementary School	7211 Whittier Ave.	1915	
Fred C. Nelles School	11850 Whittier Blvd.	1891	Formerly "Whittier State School"; California Historial Landmark 947.
Citrus Assn. Packing House	12327 Whittier Blvd.	1902	Recommended for Historic Register
"Nixon Home"	6799 Worsham	1932	
Whittier Walnut Tree	On Whittier Blvd. Median	1907	Calif. Historical Landmark 681
William L. Plotts (York) House	7722 York	1911	Recommended for Historic Register

Source: Whittier Cultural Arts Commission; Uptown Whittier Specific Plan; Founders & Friends; General Plan Project Team surveys.

Because of Whittier's long and colorful history, many other historical and cultural sites exist throughout the City but are too numerous to mention here. Local historical and preservation groups have complete lists and additional information. Greater cooperation is needed at the local as well as other levels to effectively implement and continue preservation efforts.

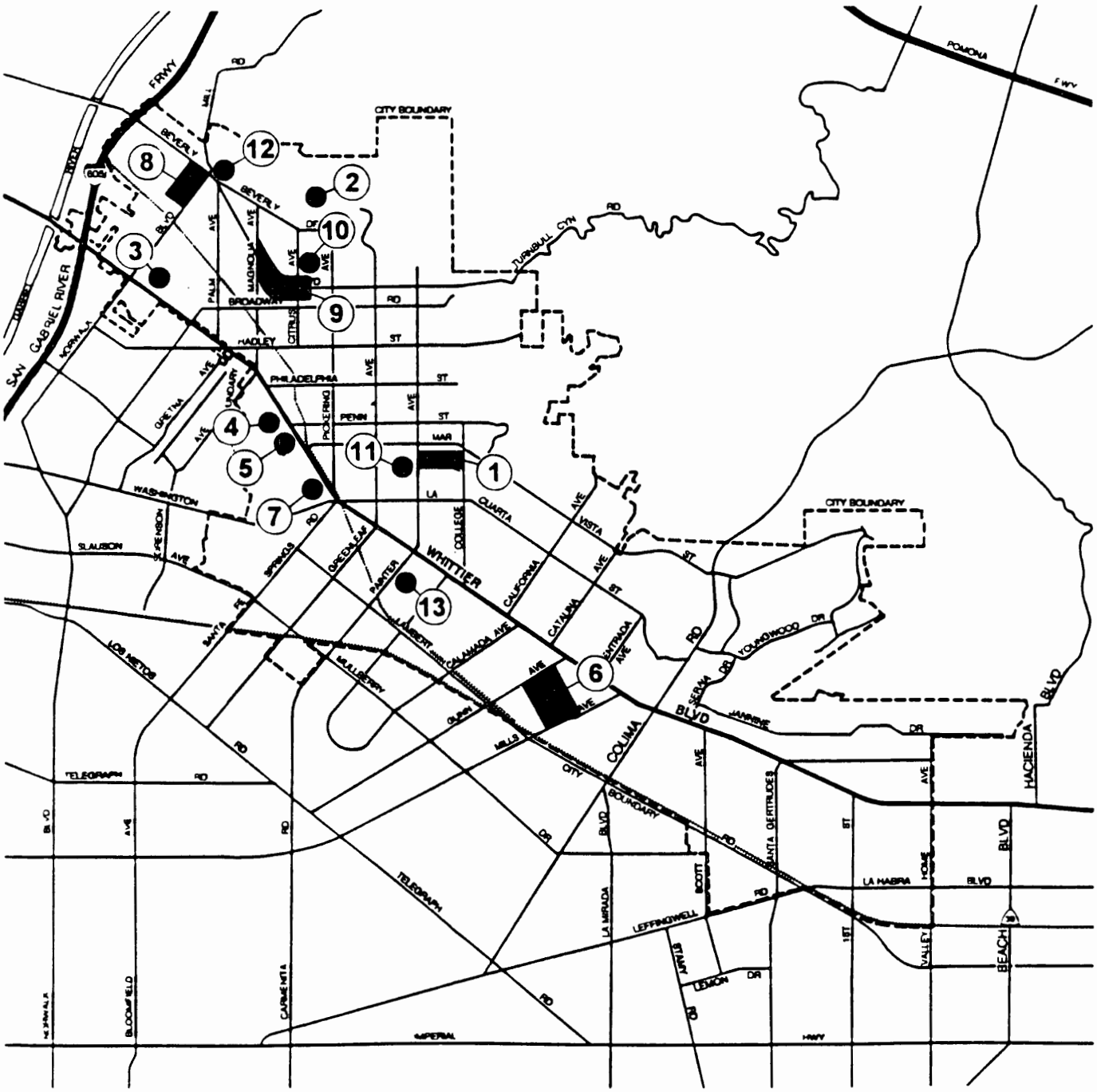
Significant Landscapes

Aside from its historical structures, the City of Whittier contains landscapes which lend the area beauty and distinctive views. These include single trees in parks or private lots and parkway plantings that have created unique street corridors throughout the City. A number of the trees and landscapes also have historical value. A study of exceptional trees in the region includes 13 sites in Whittier which are considered significant due to age, historical/cultural value, aesthetic quality, endemic status, location, rarity and size. Table 9-3 lists these trees and Exhibit 9-2 shows their locations. These trees should be preserved for posterity and the enjoyment of future generations.

TABLE 9-3
SIGNIFICANT LANDSCAPES

Tree	Type	Location
1. Orchid Tree	Parkway Trees	13400-13700 block of Walnut St.
2. Toog	Single Tree	Rideout Way
3. Cedar-of-Lebanon	Single Tree (planted 1888)	11200 E. Howard Street
4. Banyan Fig	Single Tree (planted 1904)	Fred Nelles School
5. Silk Oak	Single Tree (planted 1900)	Fred Nelles School
		Carnell, LaForge, Flomar Dr between Gunn and Mills Ave.
6. Jaracanda	Parkway Trees	Whittier Blvd median
7. Paradox Walnut	Single Tree (planted 1907)	5400 block of Rockne Avenue
8. Tulip tree	Parkway Trees	5800 Magnolia Avenue
9. Avocado, Alligator Pear "Ganter Avocado"	Single Tree (planted 1905)	
10. Canary Island Pine	Parkway Trees	12000 block of Beverly Blvd.
11. Italian Stone Pine	Single Tree	7700 Painter Avenue
12. Plumeria, Frangipani	Single Tree	Davidson Drive
13. Montezuma Cypress	Single Tree	Kennedy Park - 8600 Painter Ave

Source: Exceptional Trees of Los Angeles, 1988.



NOTE. Site Numbers Refer to Table 9-3

NORTH

0 5000 scale in feet

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City of Whittier

GENERAL PLAN

EXHIBIT 9-2
EXCEPTIONAL TREES

APPENDIX

APPENDIX A
INTERSECTION CAPACITY UTILIZATION WORKSHEETS

Peak hour intersection volume/capacity ratios are calculated by means of intersection capacity utilization (ICU) values. ICU calculations were performed for the intersections shown in Exhibit 4-4.

For simplicity, signalization is assumed at each intersection; precise ICU calculations of existing non-signalized intersections would require a more detailed analysis. Dependent on the control type, actual capacity could be higher or lower than what is given in the ICU. For instance, at a two-way stop-sign controlled intersection, capacity on the major street would be higher than what is shown on the ICU and capacity on the side street would be lower. At an intersection controlled with a four-way stop-sign, actual capacity for each approach would be lower than what is given in the ICU.

The ICU procedure is based on the critical movement methodology, indicating the amount of capacity utilized by each critical move. The methodology also incorporates a check for right-turn capacity utilization. Both right-turn-on-green (RTOG) and right-turn-on-red (RTOR) capacity availability are calculated and checked against the total right-turn capacity need. If insufficient capacity is available, then an adjustment is made to the total capacity utilization value. The following example shows how this adjustment is made.

EXAMPLE FOR NORTHBOUND RIGHT (NBR)

1. Right-Turn-On-Green (RTOG)

If NBT is critical move, then:

RTOG = V/C (NBT), otherwise,

RTOG = V/C (NBL) + V/C (SBT) - V/C (SBL)

2. Right-Turn-On-Red (RTOR)

If WBL is critical move, then:

RTOR = V/C (WBL), otherwise

RTOR = V/C (EBL) + V/C (WBT) - V/C (EBT)

3. Total Right-Turn Capacity (RTC) Availability For NBR

RTC = RTOG + factor x RTOR
Where factor = .75 (to reflect lower saturation flow rate for RTOR)
Right-turn adjustment is then as follows:
Additional ICU = V/C (NBR) - RTC

A negative value indicates that adequate capacity is available and no adjustment is necessary.

A level of service (LOS) scale is used to evaluate intersection performance based on the ICU values. The levels range from "A" to "F", with LOS "A" representing free flow traffic and LOS "F" representing severe traffic congestion. The table below describes each LOS and provides its corresponding ICU equivalent.

1. **Norwalk Blvd & Beverly Blvd**

EXISTING (1991)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	257	.16*	199	.12
NBT	2	3200	311	.10	660	.22*
NBR	0	0	15		45	
SBL	1.5		519		499	{.16}*
SBT	1.5	4800	716	.28*	255	.16
SBR	0		115		31	
EBL	1	1600	63	.05*	77	.05
EBT	2	3200	500	.16	1167	.36*
EBR	1	1600	171	.11	259	.16
WBL	1	1600	34	.05	59	.05*
WBT	2	3200	1248	.39*	646	.20
WBR	1	1600	430	.27	444	.28

TOTAL CAPACITY UTILIZATION **.88** **.79**

BUILDOUT WITH EXISTING LANES

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	310	.19*	240	.15
NBT	2	3200	370	.12	780	.26*
NBR	0	0	20		60	
SBL	1.5		580		560	{.19}*
SBT	1.5	4800	840	.32*	300	.19
SBR	0		120		30	
EBL	1	1600	60	.05*	80	.05
EBT	2	3200	570	.18	1330	.42*
EBR	1	1600	210	.13	310	.19
WBL	1	1600	40	.05	80	.05*
WBT	2	3200	1420	.44*	730	.23
WBR	1	1600	480	.30	490	.31

TOTAL CAPACITY UTILIZATION **1.00** **.92**

2. I-605 SB Ramps & Whittier Bl

EXISTING (1991)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	212	.07*	521	.16*
SBT	0	0	0		0	
SBR	1	1600	234	.15	153	.10
EBL	0	0	0		0	
EBT	2	3200	878	.32	1933	.67*
EBR	0	0	159		206	
WBL	0	0	0		0	
WBT	2	3200	1522	.60*	859	.33
WBR	0	0	412		196	
Right Turn Adjustment			SBR	.08*		
TOTAL CAPACITY UTILIZATION				.75		.83

BUILDOUT WITH EXISTING LANES

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	220	.07*	580	.18*
SBT	0	0	0		0	
SBR	1	1600	290	.18	190	.12
EBL	0	0	0		0	
EBT	2	3200	1090	.39	2370	.81*
EBR	0	0	160		210	
WBL	0	0	0		0	
WBT	2	3200	1840	.72*	1040	.39
WBR	0	0	470		220	
Right Turn Adjustment			SBR	.11*		
TOTAL CAPACITY UTILIZATION				.90		.99

2. I-605 SB Ramps & Whittier Bl

BUILDOUT WITH PROPOSED IMPROVEMENTS

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	220	.07*	580	.18*
SBT	0	0	0		0	
SBR	1	1600	290	.18	190	.12
EBL	0	0	0		0	
EBT	3	4800	1090	.26	2370	.54*
EBR	0	0	160		210	
WBL	0	0	0		0	
WBT	2	3200	1840	.72*	1040	.39
WBR	0	0	470		220	
Right Turn Adjustment			SBR	.11*		
TOTAL CAPACITY UTILIZATION				**.90**		**.72**

3. I-605 NB Ramps & Whittier Bl

EXISTING (1991)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		211	{.07}*	216	{.12}*
NBT	0	4800	0	.07	0	.12
NBR	1.5		147		348	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	634	.13	1717	.36
EBR	1	1600	118	.07	251	.16
WBL	0	0	0		0	
WBT	2	3200	1514	.59*	1090	.43*
WBR	0	0	361		283	

TOTAL CAPACITY UTILIZATION .66 .55

BUILDOUT WITH EXISTING LANES

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		220	{.09}*	216	.14*
NBT	0	4800	0	.09	0	
NBR	1.5		207		460	.14
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	760	.16	2070	.43
EBR	1	1600	140	.09	280	.18
WBL	0	0	0		0	
WBT	2	3200	1940	.76*	1400	.55*
WBR	0	0	480		370	

TOTAL CAPACITY UTILIZATION .85 .69

4. Norwalk Blvd & Whittier Blvd

EXISTING (1991)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	74	.05*	143	.09*
NBT	2	3200	354	.11	670	.21
NBR	1	1600	20	.05	52	.05
SBL	1	1600	79	.05	77	.05
SBT	1	1600	540	.34*	317	.20*
SBR	1	1600	167	.10	76	.05
EBL	1	1600	45	.05*	132	.08
EBT	2	3200	536	.21	1334	.47*
EBR	0	0	129		182	
WBL	1	1600	61	.05	50	.05*
WBT	2	3200	1782	.58*	1092	.37
WBR	0	0	87		94	

TOTAL CAPACITY UTILIZATION 1.02 .81

BUILDOUT WITH EXISTING LANES

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	90	.06*	180	.11*
NBT	2	3200	420	.13	790	.25
NBR	1	1600	20	.05	50	.05
SBL	1	1600	90	.06	90	.06
SBT	1	1600	630	.39*	370	.23*
SBR	1	1600	240	.15	120	.08
EBL	1	1600	70	.05*	200	.13
EBT	2	3200	680	.27	1690	.60*
EBR	0	0	170		230	
WBL	1	1600	60	.05	50	.05*
WBT	2	3200	2250	.74*	1390	.47
WBR	0	0	110		110	

TOTAL CAPACITY UTILIZATION 1.24 .99

4. Norwalk Blvd & Whittier Blvd

BUILDOUT WITH PROPOSED IMPROVEMENTS

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	90	.06*	180	.11
NBT	2	3200	420	.13	790	.25*
NBR	1	1600	20	.05	50	.05
SBL	1	1600	90	.06	90	.06*
SBT	2	3200	630	.20*	370	.12
SBR	1	1600	240	.15	120	.08
EBL	1	1600	70	.05*	200	.13
EBT	3	4800	680	.18	1690	.40*
EBR	0	0	170		230	
WBL	1	1600	60	.05	50	.05*
WBT	3	4800	2250	.49*	1390	.31
WBR	0	0	110		110	

TOTAL CAPACITY UTILIZATION .80 .76

5. 5-POINTS INTERSECTION

EXISTING PEAK HOUR VOLUMES

PHASE	MOVEMENT	#LANES	CAPACITY	-----AM----- VOLUME	V/C	-----PM----- VOLUME	V/C
A	8	1	1600	49	0.03	50	0.04
	14&15	1	1600	100	0.06 *	242	0.15 *
B & C	5&6	2	3200	771	0.24	291	0.09
	7	2	3200	896	0.28 *	651	0.20 *
	12&13	3	4800	255	0.05	780	0.16
	16	1	1600	67	0.04	44	0.03
	17	3	4800	586	0.12 *	1213	0.25 *
D	9	1	1600	58	0.04	227	0.14
	10&11	2	3200	478	0.15 *	520	0.16 *
E	1	1	1600	33	0.02	12	0.01
	2	1	1600	160	0.10	73	0.05
	3&4	1	1600	348	0.22 *	299	0.19 *
TOTAL CAPACITY UTILIZATION:					0.83		0.95

NOTE: "MOVEMENT" REFERS TO FIGURE-II-5 IN REPORT.
* = CRITICAL MOVEMENT

5. 5-POINTS INTERSECTION

BUILDOUT PEAK HOUR VOLUMES WITH EXISTING LANES

PHASE	MOVEMENT	#LANES	CAPACITY	AM VOLUME	AM V/C	PM VOLUME	PM V/C
A	8	1	1600	80	0.05	80	0.05
	14&15	1	1600	120	0.08 *	290	0.18 *
B & C	5&6	2	3200	1010	0.32	390	0.12
	7	2	3200	1070	0.33 *	800	0.25 *
	12&13	3	4800	300	0.06	920	0.19
	16	1	1600	80	0.05	50	0.03
	17	3	4800	730	0.15 *	1530	0.32 *
D	9	1	1600	70	0.04	290	0.18
	10&11	2	3200	580	0.18 *	620	0.19 *
E	1	1	1600	40	0.03	10	0.01
	2	1	1600	190	0.12	70	0.04
	3&4	1	1600	410	0.26 *	370	0.23 *
TOTAL CAPACITY UTILIZATION:					1.00		1.17

NOTE: "MOVEMENT" REFERS TO FIGURE II-5 IN REPORT.
* = CRITICAL MOVEMENT

5. 5-POINTS INTERSECTION

BUILDOUT PEAK HOUR VOLUMES WITH PROPOSED INTERSECTION IMPROVEMENTS

PHASE	MOVEMENT	#LANES	CAPACITY	AM VOLUME	AM V/C	PM VOLUME	PM V/C
A	8	1	1600	80	0.05	80	0.05
	14&15	1	1600	120	0.08 *	290	0.18 *
B & C	5&6	2	3200	1010	0.32	390	0.12
	7	2	3200	1070	0.33 *	800	0.25 *
	12&13	3	4800	300	0.06	920	0.19
	16	1	1600	80	0.05	50	0.03
	17	3	4800	730	0.15 *	1530	0.32 *
D	9	1	1600	70	0.04	290	0.18
	10&11	2	3200	580	0.18 *	620	0.19 *
E	1	1	1600	40	0.03	10	0.01
	2	1	1600	190	0.12	70	0.04
	3&4	2	3200	410	0.13 *	370	0.12 *
TOTAL CAPACITY UTILIZATION:					0.87		1.06

NOTE: "MOVEMENT" REFERS TO FIGURE II-5 IN REPORT.
* = CRITICAL MOVEMENT

6. Painter Ave & Mar Vista St

EXISTING (1991)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	107	.07	90	.06
NBT	2	3200	537	.18*	666	.24*
NBR	0	0	28		107	
SBL	1	1600	172	.11*	399	.25*
SBT	2	3200	503	.16	795	.26
SBR	0	0	15		25	
EBL	1	1600	2	.05*	37	.05
EBT	1	1600	192	.12	471	.29*
EBR	1	1600	64	.05	195	.12
WBL	1	1600	79	.05	58	.05*
WBT	2	3200	845	.37*	271	.14
WBR	0	0	331		171	

TOTAL CAPACITY UTILIZATION .71 .83

BUILDOUT WITH EXISTING LANES

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	130	.08	110	.07
NBT	2	3200	610	.20*	770	.27*
NBR	0	0	20		100	
SBL	1	1600	200	.13*	470	.29*
SBT	2	3200	580	.19	910	.30
SBR	0	0	20		40	
EBL	1	1600	10	.05*	60	.05
EBT	1	1600	230	.14	580	.36*
EBR	1	1600	80	.05	230	.14
WBL	1	1600	70	.05	50	.05*
WBT	2	3200	1020	.44*	330	.17
WBR	0	0	380		200	

TOTAL CAPACITY UTILIZATION .82 .97

7. Painter Ave & Whittier Blvd

EXISTING (1991)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	147	.09*	194	.12
NBT	2	3200	382	.12	493	.15*
NBR	1	1600	53	.05	147	.09
SBL	2	3200	261	.08	538	.17*
SBT	2	3200	430	.15*	446	.16
SBR	0	0	53		52	
EBL	1	1600	43	.05*	85	.05
EBT	2	3200	584	.21	1548	.52*
EBR	0	0	73		132	
WBL	1	1600	120	.08	115	.07*
WBT	2	3200	1353	.52*	867	.35
WBR	0	0	325		258	

TOTAL CAPACITY UTILIZATION .81 .91

BUILDOUT WITH EXISTING LANES

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	180	.11*	240	.15
NBT	2	3200	450	.14	580	.18*
NBR	1	1600	60	.05	170	.11
SBL	2	3200	310	.10	640	.20*
SBT	2	3200	510	.18*	530	.18
SBR	0	0	70		60	
EBL	1	1600	50	.05*	110	.07
EBT	2	3200	740	.26	1960	.66*
EBR	0	0	90		160	
WBL	1	1600	140	.09	140	.09*
WBT	2	3200	1710	.66*	1100	.44
WBR	0	0	390		310	

TOTAL CAPACITY UTILIZATION 1.00 1.13

7. Painter Ave & Whittier Blvd

BUILDOUT WITH PROPOSED IMPROVEMENTS

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	180	.11*	240	.15
NBT	2	3200	450	.14	580	.18*
NBR	1	1600	60	.05	170	.11
SBL	2	3200	310	.10	640	.20*
SBT	2	3200	510	.18*	530	.18
SBR	0	0	70		60	
EBL	1	1600	50	.05*	110	.07
EBT	3	4800	740	.17	1960	.44*
EBR	0	0	90		160	
WBL	1	1600	140	.09	140	.09*
WBT	3	4800	1710	.44*	1100	.29
WBR	0	0	390		310	
TOTAL CAPACITY UTILIZATION				.78		.91

8. Laurel Ave & Lambert Rd

EXISTING (1991)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	154	{.10}*	35	{.05}*
NBT	1	1600	254	.35	131	.12
NBR	0	0	147		24	
SBL	0	0	171		95	
SBT	1	1600	239	.40*	143	.18*
SBR	0	0	228		48	
EBL	1	1600	153	.10*	97	.06
EBT	2	3200	678	.25	1374	.45*
EBR	0	0	129		66	
WBL	1	1600	156	.10	27	.05*
WBT	2	3200	1169	.41*	697	.24
WBR	0	0	158		56	

TOTAL CAPACITY UTILIZATION 1.01 .73

BUILDOUT WITH EXISTING LANES

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	190	{.12}*	40	{.05}*
NBT	1	1600	300	.42	160	.14
NBR	0	0	180		30	
SBL	0	0	200		110	
SBT	1	1600	280	.46*	170	.21*
SBR	0	0	260		60	
EBL	1	1600	180	.11*	110	.07
EBT	2	3200	810	.30	1630	.53*
EBR	0	0	160		80	
WBL	1	1600	190	.12	30	.05*
WBT	2	3200	1390	.49*	830	.28
WBR	0	0	180		60	

TOTAL CAPACITY UTILIZATION 1.18 .84

8. Laurel Ave & Lambert Rd

BUILDOUT WITH PROPOSED IMPROVEMENTS

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	190	.12*	40	.05*
NBT	1	1600	300	.30	160	.12
NBR	0	0	180		30	
SBL	1	1600	200	.13	110	.07
SBT	1	1600	280	.34*	170	.14*
SBR	0	0	260		60	
EBL	1	1600	180	.11*	110	.07
EBT	2	3200	810	.30	1630	.53*
EBR	0	0	160		80	
WBL	1	1600	190	.12	30	.05*
WBT	2	3200	1390	.49*	830	.28
WBR	0	0	180		60	

TOTAL CAPACITY UTILIZATION 1.06 .77

9. Colima Rd & Mar Vista St

EXISTING (1991)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	211	.13*	190	.12
NBT	2	3200	695	.23	1710	.54*
NBR	0	0	36		33	
SBL	1	1600	34	.05	45	.05*
SBT	2	3200	1880	.88*	946	.39
SBR	0	0	925		313	
EBL	1.5		218	{.10}*	588	{.20}*
EBT	0.5	3200	91	.10	61	.20
EBR	1	1600	137	.09	233	.15
WBL	1	1600	73	.05	18	.05
WBT	1	1600	153	.10*	76	.05*
WBR	1	1600	64	.05	81	.05

TOTAL CAPACITY UTILIZATION 1.21 .84

BUILDOUT WITH EXISTING LANES

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	240	.15*	220	.14
NBT	2	3200	750	.25	1850	.59*
NBR	0	0	40		40	
SBL	1	1600	40	.05	50	.05*
SBT	2	3200	2020	.97*	1020	.43
SBR	0	0	1080		370	
EBL	1.5		250	{.11}*	690	{.24}*
EBT	0.5	3200	110	.11	80	.24
EBR	1	1600	160	.10	270	.17
WBL	1	1600	90	.06	20	.05
WBT	1	1600	190	.12*	100	.06*
WBR	1	1600	70	.05	100	.06

TOTAL CAPACITY UTILIZATION 1.35 .94

9. Colima Rd & Mar Vista St

BUILDOUT WITH PROPOSED IMPROVEMENTS

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	240	.15*	220	.14
NBT	2	3200	750	.25	1850	.59*
NBR	0	0	40		40	
SBL	1	1600	40	.05	50	.05*
SBT	2	3200	2020	.63*	1020	.32
SBR	1	1600	1080	.68	370	.23
EBL	1.5		250	{.11}*	690	{.24}*
EBT	0.5	3200	110	.11	80	.24
EBR	1	1600	160	.10	270	.17
WBL	1	1600	90	.06	20	.05
WBT	1	1600	190	.12*	100	.06*
WBR	1	1600	70	.05	100	.06

TOTAL CAPACITY UTILIZATION 1.01 .94

10. Colima Rd & Whittier Blvd

EXISTING (1991)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	171	.11*	172	.11*
NBT	3	4800	753	.17	968	.22
NBR	0	0	67		99	
SBL	2	3200	164	.05	346	.11
SBT	2	3200	981	.41*	691	.26*
SBR	0	0	325		133	
EBL	1	1600	222	.14*	539	.34*
EBT	3	4800	664	.16	1386	.32
EBR	0	0	123		149	
WBL	1	1600	123	.08	195	.12
WBT	3	4800	1273	.29*	1038	.26*
WBR	0	0	138		224	

TOTAL CAPACITY UTILIZATION .95 .97

BUILDOUT WITH EXISTING LANES

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	220	.14*	230	.14*
NBT	3	4800	840	.19	1090	.25
NBR	0	0	70		110	
SBL	2	3200	170	.05	380	.12
SBT	2	3200	1100	.48*	790	.30*
SBR	0	0	430		180	
EBL	1	1600	290	.18*	700	.44*
EBT	3	4800	820	.20	1730	.40
EBR	0	0	160		200	
WBL	1	1600	130	.08	210	.13
WBT	3	4800	1560	.35*	1300	.32*
WBR	0	0	140		240	

TOTAL CAPACITY UTILIZATION 1.15 1.20

10. Colima Rd & Whittier Blvd

BUILDOUT WITH PROPOSED IMPROVEMENTS

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	220	.14*	230	.14*
NBT	3	4800	840	.19	1090	.25
NBR	0	0	70		110	
SBL	2	3200	170	.05	380	.12
SBT	2	3200	1100	.34*	790	.25*
SBR	1	1600	430	.27	180	.11
EBL	2	3200	290	.09*	700	.22*
EBT	3	4800	820	.20	1730	.40
EBR	0	0	160		200	
WBL	2	3200	130	.05	210	.07
WBT	3	4800	1560	.35*	1300	.32*
WBR	0	0	140		240	

TOTAL CAPACITY UTILIZATION .92 .93

11. Colima Rd & Lambert Rd

EXISTING (1991)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	140	.09*	217	.14
NBT	2	3200	767	.26	1423	.48*
NBR	0	0	55		119	
SBL	1	1600	58	.05	89	.06*
SBT	2	3200	854	.27*	964	.30
SBR	1	1600	191	.12	114	.07
EBL	1	1600	97	.06*	264	.17
EBT	2	3200	615	.23	1778	.62*
EBR	0	0	128		196	
WBL	1	1600	60	.05	76	.05*
WBT	2	3200	1151	.38*	870	.30
WBR	0	0	67		97	

TOTAL CAPACITY UTILIZATION .80 1.21

BUILDOUT WITH EXISTING LANES

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	160	.10*	240	.15
NBT	2	3200	890	.30	1640	.56*
NBR	0	0	60		140	
SBL	1	1600	70	.05	100	.06*
SBT	2	3200	980	.31*	1110	.35
SBR	1	1600	220	.14	130	.08
EBL	1	1600	110	.07*	290	.18
EBT	2	3200	700	.27	2040	.71*
EBR	0	0	150		220	
WBL	1	1600	70	.05	90	.06*
WBT	2	3200	1320	.44*	1000	.35
WBR	0	0	80		110	

TOTAL CAPACITY UTILIZATION .92 1.39