Lemon Grove General Plan

"A guide for preserving our small town heritage while advancing civic and economic opportunities."

October 22, 1996

LEMON GROVE GENERAL PLAN

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Community Participation

Giroux and Associates
Noise and Air Quality Modeling

Gallegos & Associates
Cultural Resource Study

HISTORIC PHOTOS

Lemon Grove Historical Society

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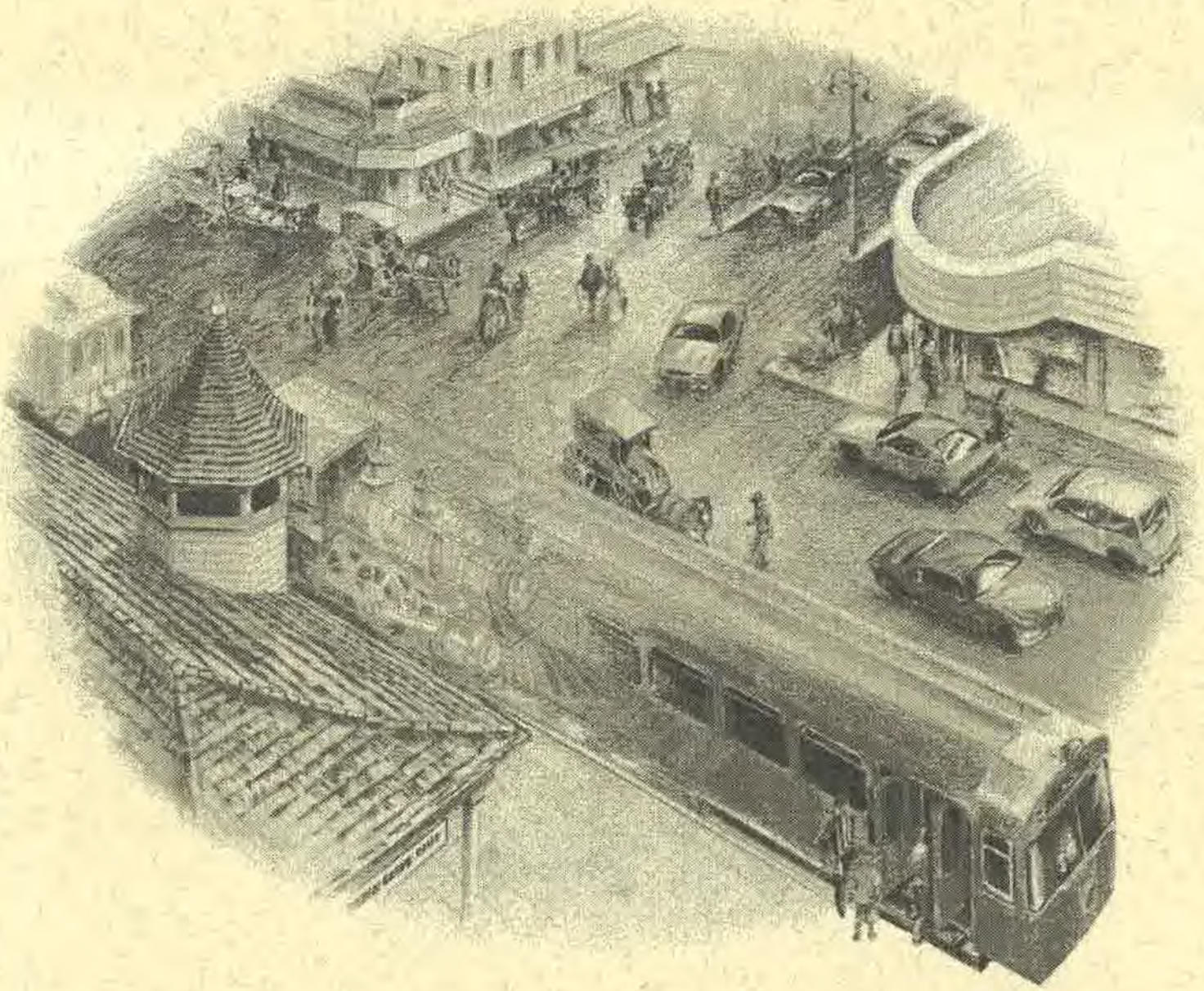


INTRODUCTION

General Plan Implementation Manual

INTRODUCTION

Purpose

A City with unique historic roots and small town atmosphere, Lemon Grove still exhibits community pride and spirit in this modern era. As the 21st Century approaches, opportunities for community advancement abound. The *Lemon Grove General Plan* charts the course for the 21st Century, while preserving the community's small town charm and spirit. Appreciating Lemon Grove's unique history is essential to understand the community's aspirations for the future.

"...the 'blueprint' for the City's future, with the overriding goal of achieving the community's vision."

The *General Plan* represents a comprehensive plan for the City, and establishes strategies to achieve community goals pertaining to development, circulation patterns, aesthetics, public safety, open space and other civic matters. The *General Plan* is often referred to as the "blueprint" for the City's future, with the overriding goal of achieving the community's vision. Elected officials and City staff, when considering community development proposals, infrastructure improvements and public service investments, will rely on the *General Plan* for guidance.

Legislative Authority

Under state planning law, each city must adopt a comprehensive, long-term general plan for the physical development of the city (Government Code Section 65300). The plan must consist of a statement of development policies, and include seven mandatory elements and any optional element that the city chooses to adopt. The mandatory elements include land use, circulation, housing, conservation, open space, noise and safety. State planning law establishes minimal requirements for the content of the mandatory elements. The mandatory elements may be combined, and all of the elements (both mandatory and optional) must be integrated and consistent. Moreover, all of the elements have equal status.

The *Lemon Grove General Plan* meets the requirements of state planning law, and includes all the mandatory elements. Furthermore, the policies and plans within the elements are consistent throughout the *General Plan* and sometimes even overlap.

Unknown lady in front of Lemon Grove General Store, circa 1905. Courtesy of Lemon Grove Historical Society.

Planning Context

For many decades Lemon Grove existed as a thriving unincorporated community governed by the County of San Diego. In 1977, the community voted to incorporate as a city and transfer governmental jurisdiction from the County to the local residents. One of the new City's first tasks was preparing a *General Plan* to guide local community development. The first *Lemon Grove General Plan* was adopted in 1980.

"As the 21st Century approaches, Lemon Grove faces new opportunities and challenges."

As the 21st Century approaches, Lemon Grove faces new opportunities and challenges. Since adoption of the 1980 *General Plan,* a trolley has been constructed through the community, redevelopment of the Broadway commercial district has occurred, and concerns about preserving the established neighborhoods have grown. Moreover, many of the residents and business owners alike desire urban amenities, such as sidewalks and cultural centers, yet cherish the small town atmosphere.

In 1994, the City Council recognized that the *General Plan* needed updating to address more recent trends and evolving community goals. The Council consequently initiated a program to evaluate the City's goals for the future and update the *General Plan*.

Geographic Setting

The City of Lemon Grove is located in the southwest portion of San Diego County, which comprises the southwest corner of California (Figure I-1). San Diego County is located about 150 miles south of downtown Los Angeles, and immediately north of the United States-Mexico border. Lemon Grove is centrally located within the greater San Diego/Tijuana urban area, affording residents and businesses easy access to the population and employment centers.

Encompassing 3.75 square miles, the City boundaries are defined by the SR-94 freeway to the north, Sweetwater Road to the east, 69th Street and MacArthur Drive on the west, and various residential streets to the south (Figure I-2). The City of La Mesa lies just north of the City, across SR-94. To the east of the City is the unincorporated community of Spring Valley. Several City of San Diego communities (Encanto, Oak Park and Rolando) wrap around the western portion of the City. The SR-125 freeway is planned to extend along the City's eastern boundary.

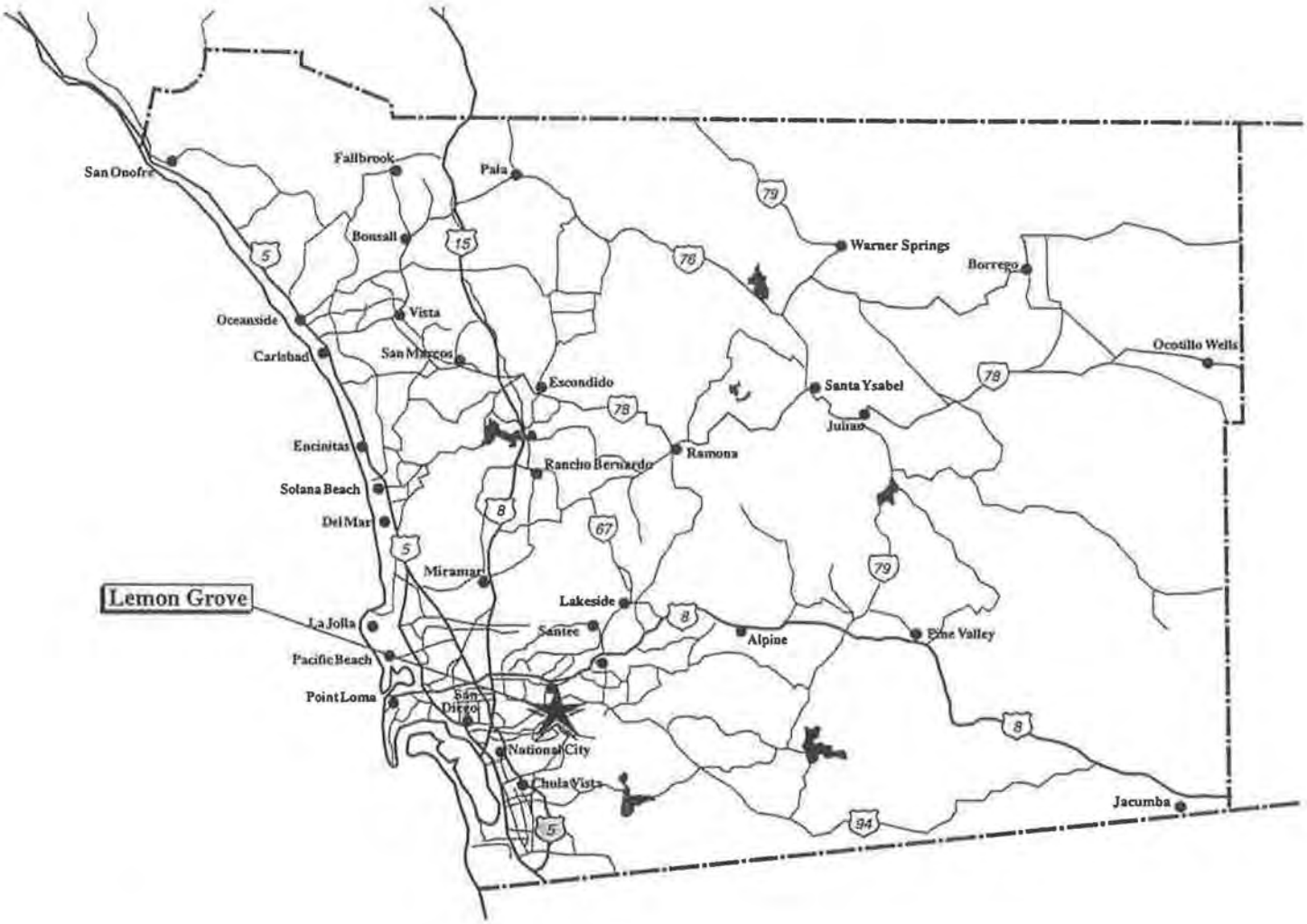
"Early residents, charmed by ideal weather...claimed 'Best Climate on Earth!'"

Lemon Grove enjoys warm, mild weather characteristic of mediterranean climates. Summers are warm and dry, and winters are cooler with occasional rains. Cool ocean breezes enhance the temperate climate. Early residents, charmed by the ideal weather conditions, claimed that Lemon Grove has the "Best Climate on Earth," which still serves as the City's official motto.

Varied environmental features distinguish the local landscape. Coastal mesas and drainages dominate, and elevations range from approximately 280 feet above sea level (ASL) in the northwestern part of the City to 528 feet ASL near the northeastern boundary. Several seasonal streams flow through the City during rain events, and the shallow groundwater table results in several natural springs. The City is primarily developed and little native vegetation remains. However, mature landscaping throughout the City provides a sense of history and permanence.

Community History

The history of Lemon Grove dates back to 1869 when Robert Allison purchased a portion of Rancho Mission San Diego. A rail line was extended from San Diego to Lemon Grove in 1890, and the production



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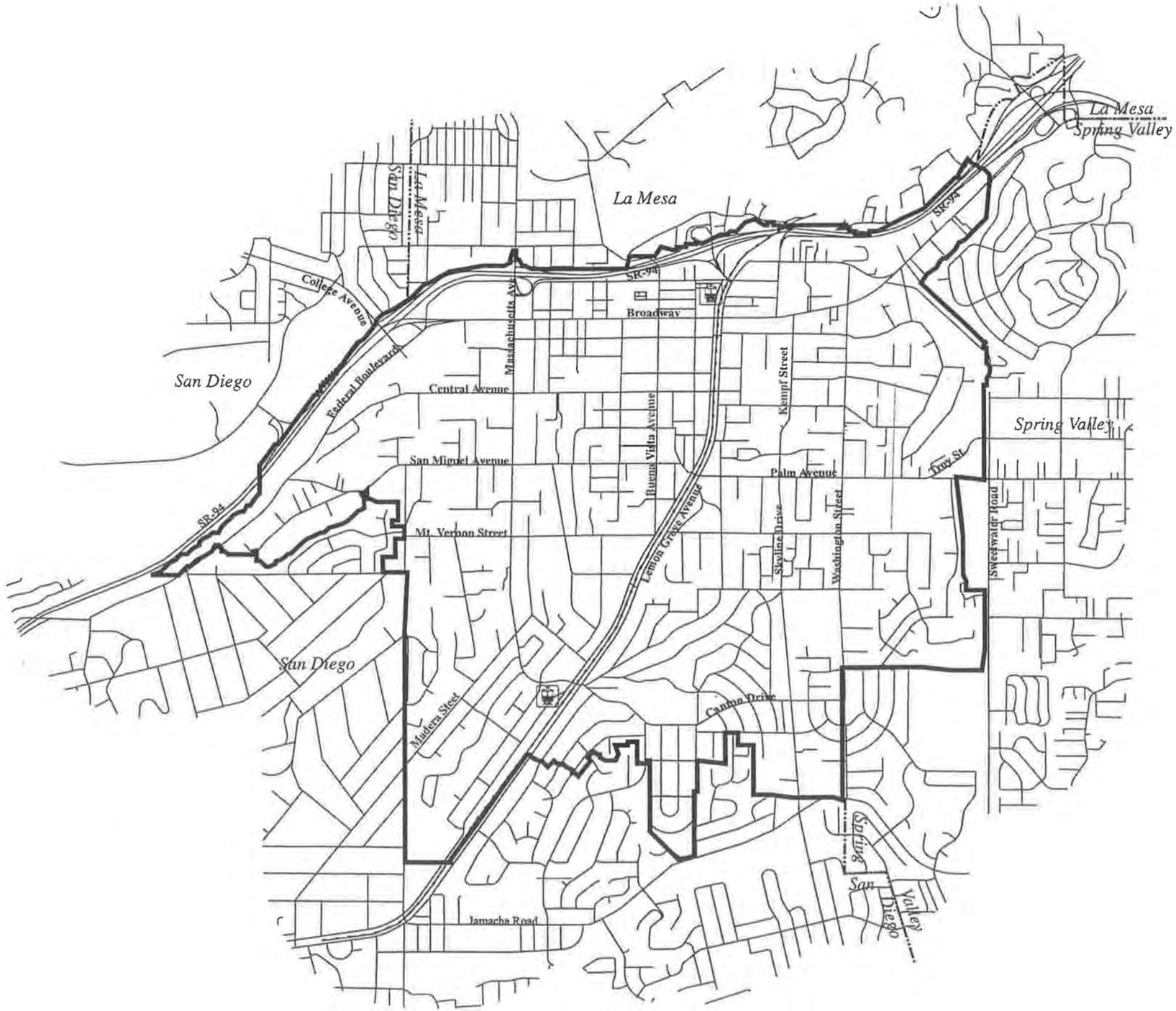
Not to Scale

Figure I-1
Regional Location



Legend

- Lemon Grove City Boundary
- Surrounding City Boundaries
- MTDB Trolley System
- Trolley Station

Source: RUIS

N

1 inch = 2,000 feet

Figure I-2
City of Lemon Grove

"The history of Lemon Grove dates back to 1869 . . ."

"The little agricultural town prospered...due to the climate, beauty of orchards and homes, and enthusiastic public spirit."

of citrus and berry crops boomed in the warm, temperate climate. The first subdivision occurred in 1892 and between 15 and 20 structures were constructed. The center of town was established along the rail tracks, and included a small depot, the first store which housed the post office, and a school.

After the turn of the century, more homes were constructed as new settlers arrived to enjoy the "Best Climate on Earth." The little agricultural town prospered and schools, churches and even a country club were constructed. In 1905, Lemon Grove earned the status of the "Pasadena of San Diego County" due to the climate, the beauty of orchards and homes, and enthusiastic public spirit. Homes with ten acres of citrus groves attracted affluent mid-westerners. Five citrus packing plants supported agricultural production and the population of Lemon Grove reached 500 by 1912.

During the 1920s, community pride grew stronger than ever. The town's monument - a 3,000-pound lemon - was crafted of wood and plaster in 1928. Constructed by Veteran of Foreign War volunteers, the lemon served as the centerpiece for a float in an agricultural parade. Throughout

Rounding the curve on Cuyamaca Railroad, looking south towards downtown Lemon Grove, 1892. Courtesy of Lemon Grove Historical Society.

the 1930s, home construction continued alongside citrus and garden vegetable crop production.

Residential development flourished during the 1940s, particularly after World War II. Citrus orchards slowly gave way to single-family neighborhoods. The boom lasted until about 1970 when the number of housing units numbered about 7,500, and the population reached about 20,000. During this period, business activity focused along Broadway, Federal Boulevard and Lemon Grove Avenue. By the mid-1970s, most of the vacant land in the City had been developed and the growth rate dropped off substantially. In 1977, the community incorporated as the City of Lemon Grove to gain local control over development and tax revenues.

Current Conditions

The Lemon Grove of today is characterized by a well established land use pattern. The commercial and industrial areas primarily occur around Broadway in the northern part of the City, near State Route 94 (SR-94). The traditional downtown, located on Broadway east of Lemon Grove Avenue, provides additional shopping opportunities. Commercial activity continues to extend down Lemon Grove Avenue. The SR-94 freeway provides regional access, and the San Diego Trolley East Line runs parallel to Lemon Grove Avenue and intersects Broadway.

"Traditional downtown... commercial activity... well-established neighborhoods... municipal parks... schools and churches."

The most recent estimate of the Lemon Grove population is 25,175 based on 1995 State Department of Finance population estimates. Well-established neighborhoods occupy most of the area south of Broadway. Single-family homes constructed in diverse architectural styles predominate in the neighborhoods. Condominium and apartment buildings also occur in some neighborhoods. Most multi-family residential development has been focused along major transportation routes, and within one or two blocks of Broadway. Several municipal parks provide recreational opportunities, and schools and churches are scattered throughout the neighborhoods.

The Lemon Grove monument - the famous 3,000-pound lemon - sits prominently in the town center, and recalls images of the community's early industrious spirit and agricultural roots. Moreover, a number of buildings from the old days still stand and provide a connection to the historic origins.

Lemon Grove Speaks Out

The City Council, when launching this General Plan update, made community participation in the planning process a priority. Since adoption of the City's first *General Plan* in 1980, aspirations for the City have evolved. The *General Plan* must represent the current desires of the local residents and business owners, and address the concerns that are most important to the community. Moreover, input from all groups in the community is imperative.

"...community participation in the planning process a priority."

To obtain input from the community, the *General Plan* program included a substantial community participation. Public input served as the basis for the Vision for the Future and the related elements. A brief summary of the outreach programs follows below.

Lemon Grove Pioneers: William Lindsay, Ed Sonka and Leslie Schults, 1918. Courtesy of Lemon Grove Historical Society.

General Plan Advisory Committee (GPAC)

A 17-member citizens committee met nearly 20 times during the *General Plan* update, and served as an intermediary between the community at large and the General Plan project team. Input was provided at all of the critical stages of the planning process. The City Council, when appointing the committee, took all efforts to ensure that its demographic composition reflected that of the City.

Town Meetings

Two Town Meetings contributed additional input from the community. The first Town Meeting was held at the beginning of the program to assess the community's ideas and concerns, and approximately 15 civic groups and organizations participated. The second Town Meeting focused on land use development alternatives and provided a forum for public comment.

General Plan Survey

The City distributed a questionnaire to every home and business address to determine the community's goals and identify development issues. Residents and business owners returned a total of 947 surveys for a response rate of about ten percent.

Kids City Planning Program

Because families are an important component of the community, the City requested input from the children. Several sessions were conducted with a local fifth-grade class to discuss cities and how to improve Lemon Grove. The program culminated in the production of the Kids Element, which was presented to the GPAC and the City Council.

General Plan Newsletter

Three newsletters were distributed citywide at intervals throughout the General Plan update. In addition to describing the project progress, the newsletters announced upcoming Town Meetings and other opportunities for community input.

Economic Development Task Force

The Economic Development Task Force-appointed to develop strategies to enhance vitality of the local business community - commented during the formulation of the General Plan objectives and policies and the land use plan. The input from the Task Force helped to ensure that the General Plan promotes sustainable business activity.

Issue Papers

At critical junctures during the planning program, the following three Issue Papers were published: Issue Paper No. 1, "Planning Issues;" Issue Paper No. 2, "Vision, Objectives and Policies;" and Issue Paper No. 3, "Land Use and Circulation Alternatives." The Issue Papers facilitated a "building-block" approach to developing the *General Plan*, and allowed consideration of comprehensive goals before establishing implementation details. The GPAC and community at large provided considerable input on each Issue Paper.

The relationship of the community involvement programs and evolution of the *General Plan* is illustrated in Figure I-3.

General Plan Organization

The *General Plan* is organized into seven chapters, or elements, each of which are preceded by a statement of the community's Vision for the Future. Each element is interrelated with the others, and together the elements establish guidelines to achieve the Vision. The elements include the:

"The General Plan is organized into seven chapters or elements."

- Community Development Element;
- Mobility Element;
- Public Facilities Element;
- Safety Element;
- Noise Element;
- Conservation and Recreation Element; and
- Housing Element

A standardized format is used throughout the elements. Following a brief introduction to each element, objectives and policies are presented. The plan to achieve the objectives and policies concludes each element. An *objective* is defined as a statement of a desired end. A policy is a rule or course of action that indicates how the objectives will be achieved.

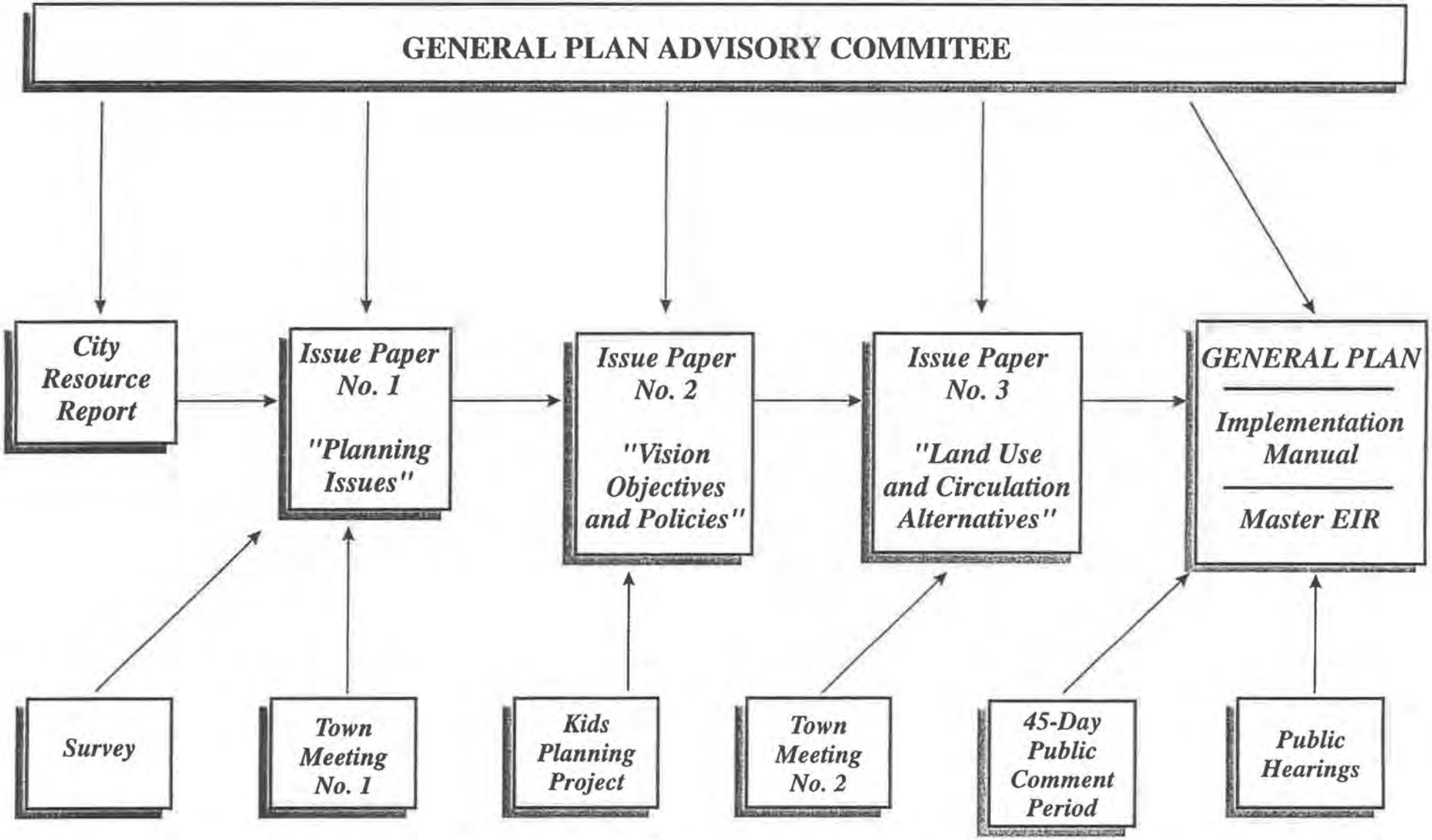


Figure I-3
General Plan Program

Specific programs to implement the *General Plan* policies comprise the *General Plan Implementation Manual,* a separate document.

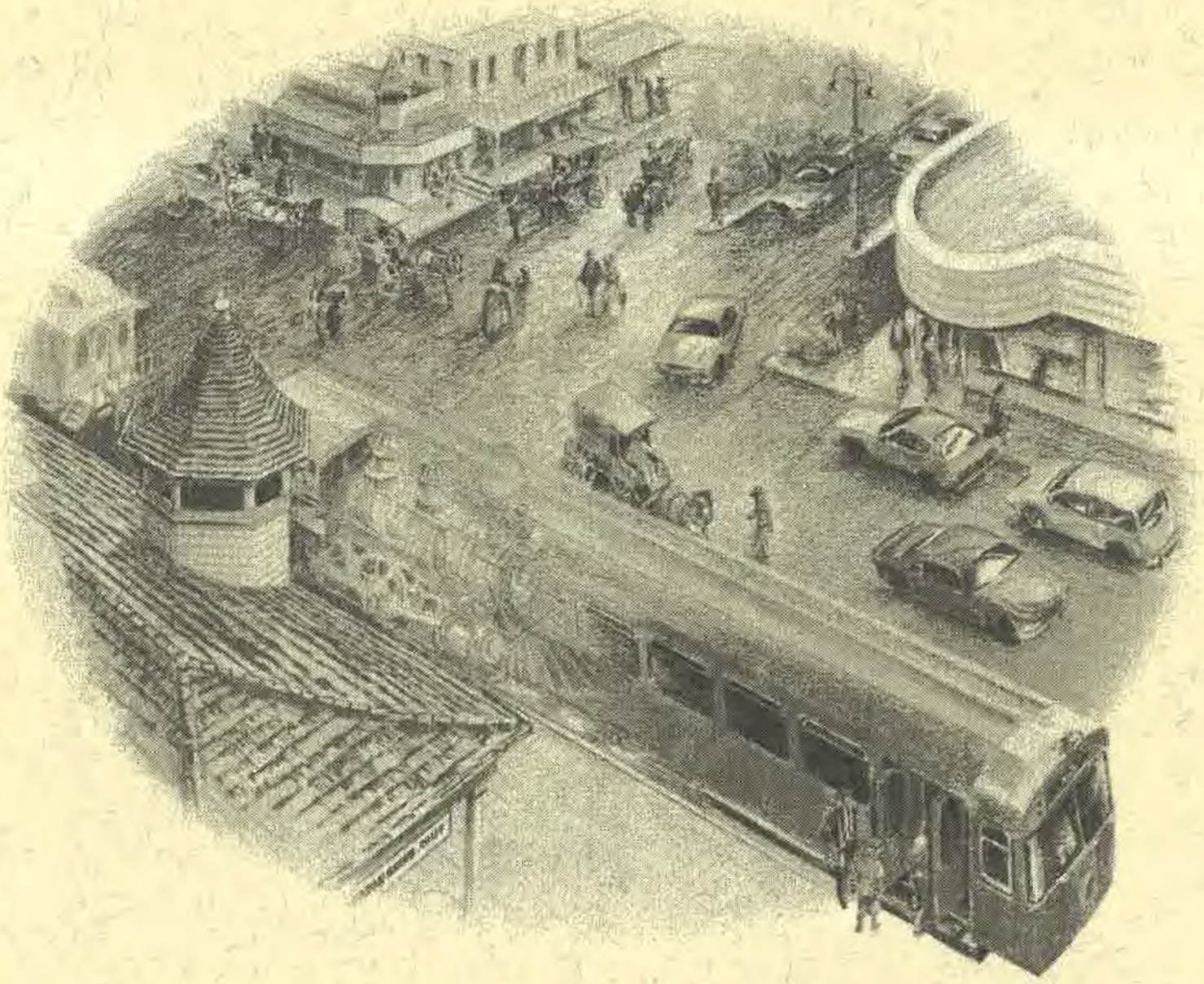
The Housing Element was recently revised in 1992, and State law does not require an update until 1997. The 1992 Housing Element is included in the updated General Plan, but the format of the element deviates from the format of the other elements.

Related Documents

"...City Resources Report, General Plan Implementation Manual and Master EIR."

Three additional documents are directly related to the *General Plan: The City Resources Report, General Plan Implementation Manual* and *Master Environmental Impact Report (EIR). City Resources* documents current environmental and development conditions. Based on the conclusions of this report, issues to address in the *General Plan* were identified. The *Implementation Manual* contains specific programs directly related to the *General Plan* elements. The programs will help the City to implement and achieve the *General Plan* Vision and policies.

The *Master EIR* analyzes the environmental impacts resulting from the implementation of the *General Plan*. Where environmental impacts are identified, the *Master EIR* requires mitigation measures to reduce the impacts. The mitigation measures correspond to individual programs contained in the *General Plan Implementation Manual.* This relationship will help the City to effectively implement the *Master EIR* mitigation measures and reduce the environmental impacts from *General Plan* implementation.



VISION FOR THE FUTURE

Lemon Grove General Plan

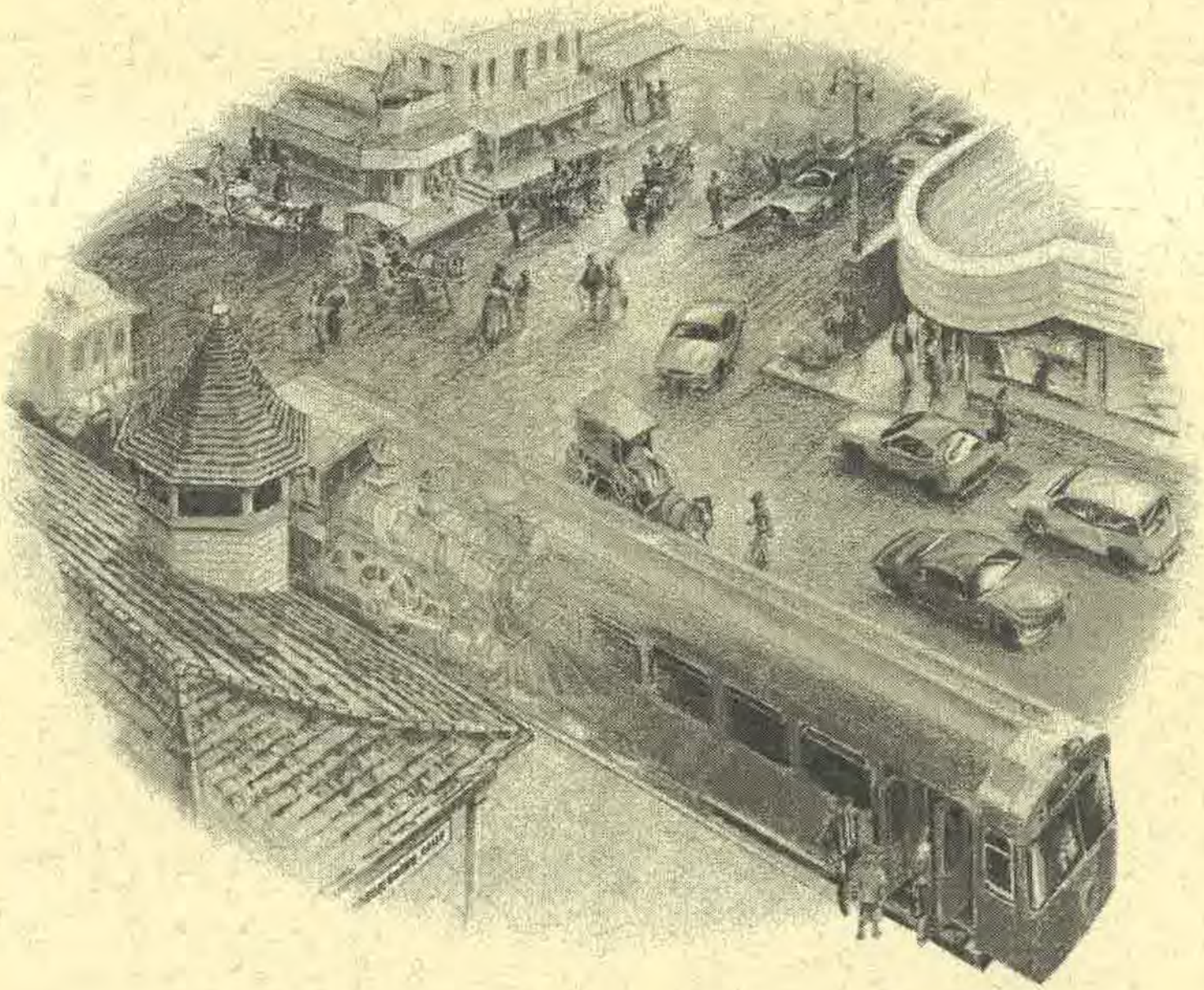
VISION FOR THE FUTURE

"...'best climate' also means the feeling and spirit of Lemon Grove."

Lemon Grove is known for having the "Best Climate on Earth," recalling the community's agricultural origins. As we approach the new century, "best climate" also means the feeling and spirit of Lemon Grove. Our vision statement - our goal for the future - embraces this broader definition of the "best climate." The City is envisioned as a place where:

- Our small town feeling, beauty and heritage are sustained;
- Urban and cultural amenities are enriched;
- All people have the opportunity to enjoy personal growth and participate in community life;
- Established neighborhoods are preserved and enhanced; and
- The business community prospers, and new businesses join and contribute to community life.

The Big Lemon's first outing, 1928. Courtesy of Lemon Grove Historical Society.



COMMUNITY DEVELOPMENT ELEMENT

Lemon Grove General Plan

Community Development Element

INTRODUCTION

Implementing the Vision

The Vision for the Future represents our hopes and desires for Lemon Grove. We embrace our small town feeling and heritage, and desire opportunities for all people to participate in the rich community life. Our envisioned future City offers enriched urban and cultural amenities while enhancing and beautifying the neighborhoods, our collective foundation. Prosperous businesses contribute to this vital community. The Community Development Element, which establishes direction for new development, economic advancement and aesthetic renewal, shows how to achieve this Vision.

Purpose

State planning law requires California cities to adopt specific elements in their general plans. The Lemon Grove Community Development Element fulfills the state requirements for the land use element, as defined in Section 65302(a) of the Government Code. The land use element must identify the proposed distribution and intensity of housing, businesses, industry, open space, natural resources and public facilities. The element serves as the central framework for the entire General Plan in that the objectives, policies, maps and plans directly relate to the other elements. Section 65303 of the Government Code permits general plans to address additional topics that relate to the physical development of a city. Pursuant to this provision, the Community Development Element addresses economic development and community design/aesthetics in addition to land use.

Scope

"The Community Development Element focuses on land use and economic development, community design and aesthetics."

The Community Development Element focuses on land use and economic development, community design and aesthetics. The Vision for the Future is closely tied to the type and location of land uses in the City. Almost all of the City is developed, and achieving the community's goals requires long-term redevelopment in specific locations, particularly the traditional downtown and Broadway commercial corridor. Sufficient land must be assigned for commercial and manufacturing enterprises, considering business needs such as freeway access and customer populations. Alternatively, some goals involve preserving certain areas such as the established neighborhoods. The element also addresses the visual attractiveness of Lemon Grove, including enhancing aesthetic experiences

INTRODUCTION

First through fourth grades, Lemon Grove Grammar School, 1908. Photo courtesy of Lemon Grove Historical Society.

"The Community Development Element is organized in three sections: 1) Introduction, 2) Objectives and Policies and 3) Plan."

upon arriving and traveling through the community. The architecture of new development can help reinforce the image articulated in the Vision.

The Community Development Element is organized into three sections: 1) Introduction, 2) Objectives and Policies and 3) Plan. This Introduction explains the relationship between the element and the *General Plan* Vision for the Future, state planning requirements, and related plans and programs. In the section entitled Objectives and Policies, community development issues are summarized and then objectives and policies addressing the issues follow. An *objective* represents the desired end point or goal while a *policy* signifies a broad, general rule or course of action to achieve the objective. All of the goals and objectives are extensions of the Vision for the Future.

The Community Development Plan - the final section of the element - directly builds on the objectives and policies. The plan describes the framework for implementing the objectives and policies and summarizes the steps to revitalize, enhance and beautify the community and ultimately realize the Vision for the Future. Specific implementation measures for the Community Development Element are provided in the *General Plan*

Implementation Manual. All of the objectives and policies in this element are directly represented by one or more implementation measures.

Related Plans and Programs

"...all other [City] planning documents...must conform to the General Plan policies and programs."

California Planning Law

The State of California provides a legal framework within which a city must exercise its land use functions. The California Government Code contains requirements for establishing planning agencies, commissions and departments; adoption of general plans, specific plans and zoning regulations; and processing subdivisions. The general plan is a city's master planning document and all other planning documents - such as zoning ordinances and specific plans - must conform to the general plan policies and programs.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) of 1970 requires thorough analysis of the environmental impacts of proposed development, infrastructure and planning projects. Prior to approving a project, the CEQA process requires assessing the potential environmental impacts and identifying mitigation measures to reduce the impacts to acceptable levels. The required environmental review process plays a major role in processing and considering development proposals. In Lemon Grove, CEQA is an effective planning tool to analyze proposals and minimize community impacts.

SANDAG Series 8 Regional Growth Projections

The San Diego Association of Governments (SANDAG) prepares growth forecasts for San Diego County. The most recent forecast, called Series 8, was finalized in 1995 and estimates population and residential growth out to 2015. Series 8 indicates that the Lemon Grove population will increase by approximately 25 percent between 1990 and 2015, reaching approximately 29,697 persons. In comparison, the overall population in San Diego County is expected to increase about 53 percent during the same time period. Series 8 shows that housing in Lemon Grove will increase by approximately 20 percent, from 8,638 to 10,374 units. Because almost the entire City is developed, almost all new residential development will consist of apartments and condominiums according to Series 8. Housing in San Diego County should increase by 52 percent between 1990 and 2015. The Series 8 projections for Lemon Grove are largely based on the existing development policies in the 1980 *Lemon Grove General Plan* and regional growth trends. Table CD-2 located

later in the Community Development Element provides growth estimates based on the updated draft *General Plan*.

SANDAG Regional Growth Management Strategy

The *Regional Growth Management Strategy* was adopted by the San Diego Association of Governments Board in 1993. The strategy was mandated by the voters through Proposition C, the Regional Planning and Growth Control Initiative. The strategy takes a "quality of life" approach to growth management, establishing standards, objectives and policies related to nine quality of life factors: air quality, transportation/ congestion management, water, sewage disposal, sensitive lands/open space, solid waste management, hazardous waste management, housing and economic prosperity. Through a joint powers agreement, the local cities including Lemon Grove agreed to certify the consistency of their general plans with the *Regional Growth Management Strategy.*

SANDAG Land Use Distribution Element

In 1995, the SANDAG Board approved the *Land Use Distribution Element*, a component of the *Regional Growth Management Strategy.* The element links the location, intensity and design of urban communities with the regional transportation system. New office, residential and commercial development should focus around rail transit stations and major bus corridors. These mixed use centers will allow residents to travel more by transit, walking and bicycling. The land use recommendations are intended to reduce traffic congestion and thereby improve air quality conditions. Additional benefits include retaining more regional open space for recreation and natural habitat.

1980 Lemon Grove General Plan

"The first Lemon Grove General Plan was adopted in 1980 following incorporation of the City..."

The first *Lemon Grove General Plan* was adopted in 1980 following incorporation of the City in 1977. The General Plan Map designates the types and densities/intensities of permitted land uses in addition to a circulation network. The land use designations generally reflect the existing development pattern with the exception of residential densification in the Central Avenue area. Because most of the City was developed when the plan was prepared, a system of Special Treatment Areas (STAs) was established to identify areas with significant development or redevelopment potential. Policies for the STAs focused on the unique site characteristics and development opportunities.

Lemon Grove Development Code

The City's *Development Code* was adopted in 1983 and contains the *Subdivision Ordinance, Zoning Ordinance* and *City-Wide Ordinances*.

Subdivision Ordinance. The *Subdivision Ordinance* applies when the owner of a parcel of land proposes its division into two or more smaller parcels. Subdivisions involving four or less parcels are subject to the Minor Subdivision regulations while subdivisions involving more than four parcels are regulated by the Major Subdivision regulations.

Zoning Ordinance. The City is divided into various zoning districts for the purpose of regulating development. Each zone corresponds to a section of the *Zoning Ordinance* that identifies permitted uses and uses subject to certain conditions and requiring a conditional use permit. The *Zoning Ordinance* also contains development regulations applied on a City-wide basis, such as requirements for off-street parking, landscaping, screening and yards. According to state planning law, the *Zoning Ordinance* must be consistent with the *General Plan*.

City-Wide Ordinances. The *City-Wide Ordinances* section contain various ordinances regulating specific aspects of land use in the City. Most of the ordinances apply to land development and actions requiring permits.

Lemon Grove Redevelopment Plan/Project Area

"A Redevelopment Plan was adopted...to redevelop, rehabilitate and revitalize the Project Area."

The California Community Redevelopment Law permits local jurisdictions to use tax increment financing to implement improvement projects and facilitate redevelopment in blighted areas (Health and Safety Code Section 33000 et. seq.). In 1986, the Lemon Grove Community Development Agency adopted a Project Area with a 40-year project life, expiring in 2026 (Figure CD-1). A *Redevelopment Plan* was simultaneously adopted, providing the Agency with a program to redevelop, rehabilitate and revitalize the Project Area. Development within the Project Area is regulated by the *Lemon Grove General Plan* and *Zoning Ordinance*. Major redevelopment projects implemented to date include the downtown facade enhancement program; downtown streetscape, parking and circulation improvements; and assistance in the development of large-scale retail centers and automobile dealerships.

Specific Plans

Specific plans provide detailed development or redevelopment plans for larger project areas and are governed by Section 65450 of the California Government Code. Cities sometimes use specific plans to deal with unique planning conditions in a particular area. The only specific plans currently in effect in Lemon Grove are the *Village Grove Specific Plan* and the *Broadway Commercial Project Specific Plan* (Figure CD-2). The *Village Grove Specific Plan* permits medium/high density residential and commercial development in the northeast corner of the City, and the *Broadway Commercial Project Specific Plan* allows heavy commercial development in an area north of Broadway. Both specific plan areas have been fully developed with the exception of 4.1 acres of commercial development permitted under the *Village Grove Specific Plan.* According to state planning law, specific plans must be consistent with the *General Plan.*

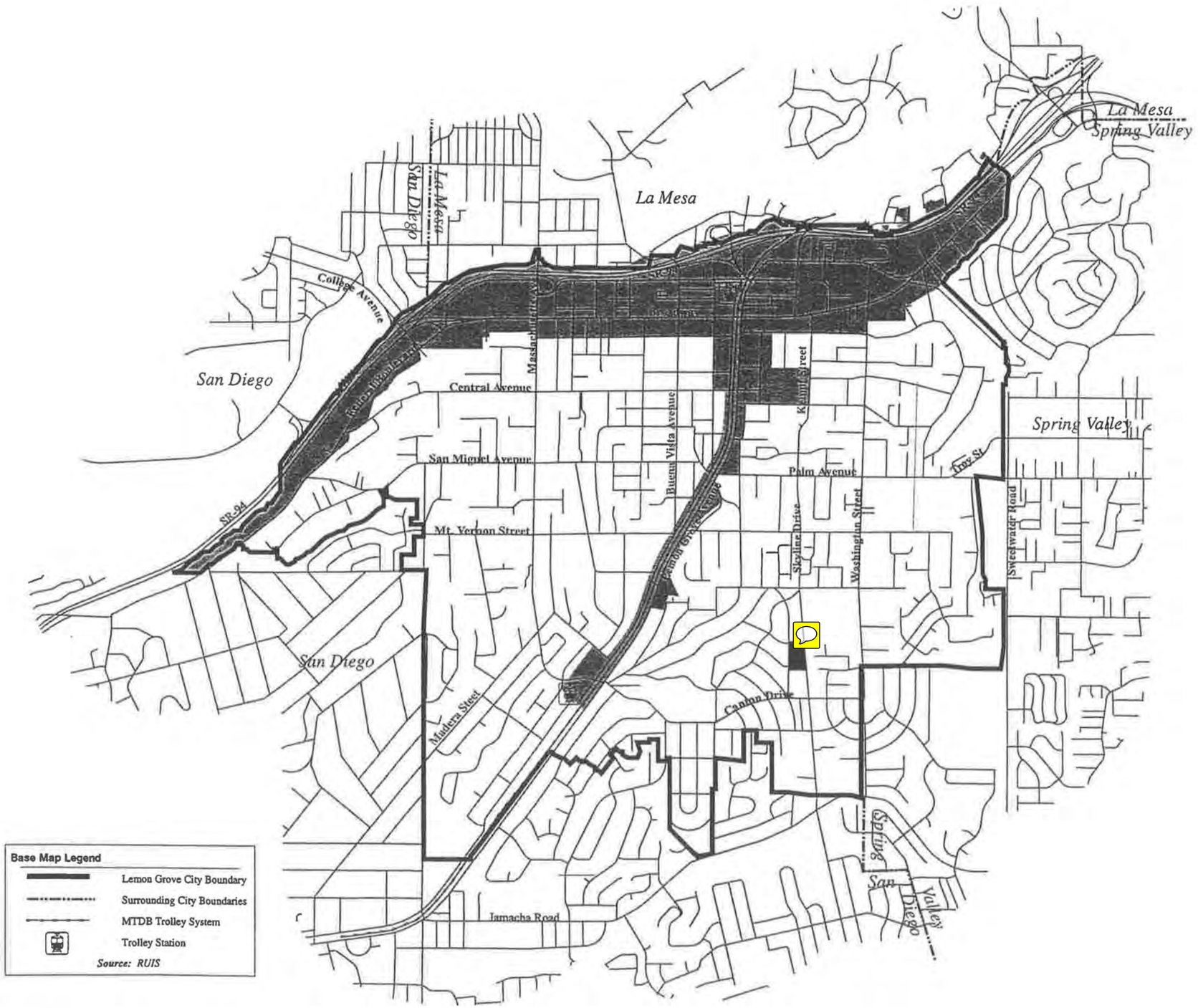
"...specific plans deal with unique planning conditions in a particular area."

SR-125 Freeway Construction Project

Caltrans has finalized the environmental documentation and approved the construction of the State Route 125 (SR-125) freeway project. The new freeway will generally follow the existing path of Sweetwater Road, and comprise Lemon Grove's eastern boundary once completed. In the area of the existing intersection of Sweetwater Road and Broadway, an elevated interchange reaching 80 to 100 feet above the existing grade will connect the SR-125 to the existing SR-94 freeway. A number of existing homes and property along the eastern boundary of the City will be purchased to complete the required freeway right-of-way. In the Final Environmental Impact Report for the project, mitigation programs are established to reduce the impact of the freeway on Lemon Grove. Freeway construction in the Lemon Grove area is scheduled to commence in mid-1998.

"The new freeway will...comprise Lemon Grove's eastern boundary..."

Community Development Element



Legend

Project Area 1A

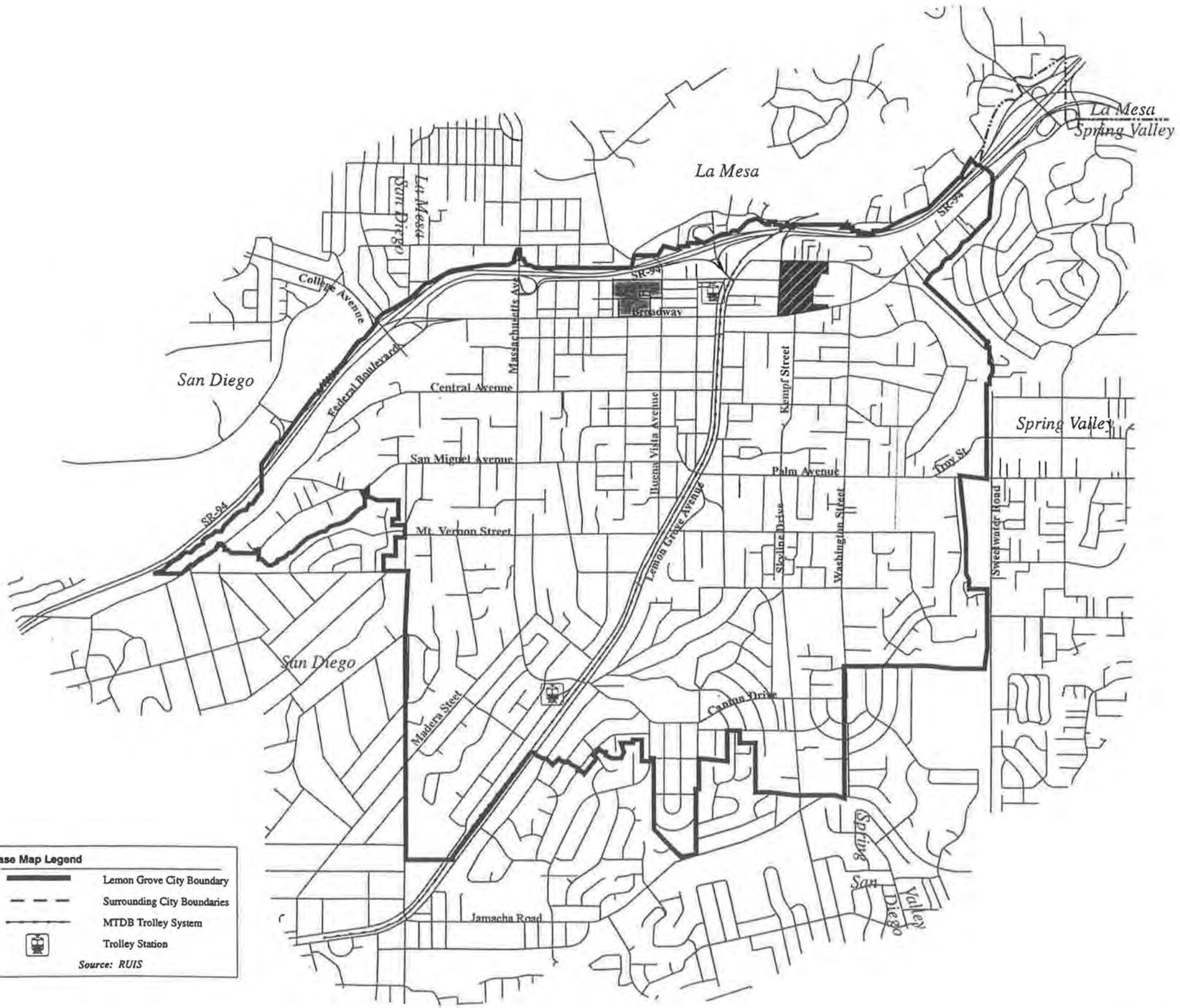
Project Area 1B

Source: Lemon Grove Community Deveopment Agency, 1986.

N

1 inch = 2,000 feet

Figure CD-1
Redevelopment Project Area



Legend

Broadway Commercial Project Specific Plan Area

Village Grove Specific Plan Area

Source: 1992 Broadway Commercial Project Specific Plan and 1987 Village Grove Specific Plan

N

1 inch = 2,000 feet

Figure CD-2
Existing Specific Plan Areas

Community Development Element

OBJECTIVES AND POLICIES

Balanced Community

Lemon Grove has a well-established commercial corridor along Broadway, with a traditional, pedestrian-oriented downtown core. Pockets of light industrial uses and multi-family residential development also occur around Broadway. The remainder of the City consists of residential neighborhoods.

Objective 1.0: A balanced community with pleasant neighborhoods, a vibrant downtown village and opportunities for economic development.

Policy 1.1: Protect and enhance established neighborhoods.

Policy 1.2: Promote a lively, pedestrian-friendly downtown village with a mix of shops, offices, condominiums, apartments and public facilities served by a variety of transportation options.

Policy 1.3: Encourage redevelopment of the Broadway corridor with commercial uses that attract regional shoppers in addition to serving local residents.

Policy 1.4: Facilitate business development adjacent to the downtown village and Broadway commercial district.

Policy 1.5: Foster revitalization of the light industrial district along Federal Boulevard.

Policy 1.6: Plan for development compatible with the future SR-125 freeway.

Policy 1.7: Promote a healthy, family-oriented community through appropriate land use and development decisions.

New Housing

The City anticipates incremental population growth requiring limited amounts of new housing. New residences can enhance community aesthetics and revitalize declining areas.

Objective 2.0: Housing to meet the existing and future needs of Lemon Grove residents.

Policy 2.1: Promote quality single-family development that is compatible with the existing neighborhoods.

Policy 2.2: Focus new apartment and condominium development in the downtown village, next to the Massachusetts Avenue trolley station and in other emerging multiple-family areas while stabilizing the established neighborhoods.

Policy 2.3: Require that new condominium and apartment development provides quality housing opportunities that uplift the visual quality of the surrounding area.

Policy 2.4: Continue to implement the Housing Element, and update as required by the State of California.

Policy 2.5: Work towards adequate housing opportunities for special needs groups such as female-headed households, large families, disabled persons, seniors and low income households.

Community Life

Residents desire centers for community life, where people can socialize and enjoy cultural activities. In earlier years, locals met at the country club, live theaters, restaurants and the library. Schools and churches

Grove Theater, southeast of Lemon Grove Avenue and Lester Avenue, circa 1955. Photo courtesy of Lemon Grove Historical Society.

also served as community focal points. Due to shifting economic and development trends in the San Diego region, many of these historic hubs of community life have been diminished.

Objective 3.0: Public facilities and entertainment opportunities centralized in the heart of the community.

Policy 3.1: Adjacent to the downtown village, consider establishing a civic center with the library, City Hall, museum, performance space, park, plaza, and/or other public amenities.

Policy 3.2: Pursue new local entertainment opportunities.

Policy 3.3: Hold public events to inspire community pride and strengthen the image of Lemon Grove to outsiders.

Policy 3.4: Regularly inform residents and business owners about community programs and events.

Economic Development

Diverse business interests are present in the City, and the light industrial and retail sectors have expanded in recent years. As the eastern San Diego bedroom communities in the SR-94 corridor grow and develop, Lemon Grove businesses have the opportunity to capture some of the new demand for nearby office space, professional services and shopping.

Business Expansion

Objective 4.0: Expansion of commercial enterprises, light industries and professional services.

Policy 4.1: Promote Lemon Grove as a business and commercial hub to serve the SR-94 freeway corridor bedroom communities.

Policy 4.2: Expand shopping and entertainment opportunities through revitalization of the Broadway commercial district and the downtown village.

Policy 4.3: Cultivate small businesses.

Policy 4.4: Attract economic growth and increase property values by investing in public improvements throughout the City.

Policy 4.5: Continue ongoing communication with the business community to identify economic development constraints and opportunities.

Policy 4.6: Promote economic development that positively impacts community health and social justice in addition to job availability, economic revitalization and tax revenues.

Community Design/ Aesthetics

Lemon Grove retains a small town image that connotes friendliness, informality, pleasant living and safety. The "human-scale" of the community reinforces this image.

Objective 5.0: Renewal of Lemon Grove's small town image and aesthetic qualities.

Policy 5.1: Identify architectural themes for the downtown village and civic center that facilitate community interaction, pedestrian circulation, security and transit use.

Policy 5.2: Establish identifiable gateways and community boulevards evoking a sense of arrival.

Policy 5.3: Create an inviting City image from the SR-94 freeway.

Policy 5.4: Create and maintain attractive public areas that contribute to a scenic community.

Policy 5.5: Promote development that enhances and is compatible with the surrounding environs.

Policy 5.6: Consider the incorporation of art in public areas

Interjurisdictional Coordination

Lemon Grove is an integral part of the greater San Diego metropolitan area. Many issues affecting the quality of life of local residents transcend jurisdictional boundaries, such as economic conditions, traffic, air quality, open space and population growth.

Objective 6.0: Involvement in regional forums addressing environmental, development and economic issues.

Policy 6.1: Increase representation on regional boards and committees.

Policy 6.2: Monitor development in adjacent areas.

Policy 6.2: Consider adjusting the City boundaries to coincide with the Lemon Grove School District boundaries, natural features and the circulation network.

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Community Development Element

PLAN

Balanced Community

"The City is committed to balancing community development and business interests with broader public health, safety and well-being."

One of the principal means of achieving the Vision and community development objectives and policies consists of directing where and what type of development should occur. The City is committed to balancing community development and business interests with broader public health, safety and well-being. The well-being of all residents - especially children, youth and families - is inextricably tied to the City's overall stability. The objectives and policies set forth a balanced community consisting of the downtown village, Broadway commercial corridor, business development areas and vital neighborhoods. Revitalization of the downtown village will enhance the physical heart of the City and expand the range of local shopping, social and recreational opportunities. Continued development of new commercial uses attracting regional shoppers will generate needed tax revenues for needed public services and infrastructure improvements while providing local residents with diversified shopping options. High quality jobs and additional tax revenue will be generated by light industrial, manufacturing and professional businesses.

Understanding the integral link between land use and transportation, redevelopment is emphasized around the trolley stations, bus corridors and SR-94 freeway. Focusing retail, office, apartments and condominiums around transit centers enables people to walk and bicycle to work and shop. This strategy reduces traffic congestion as well as improving regional air quality conditions. Concentrating commercial and business development near the freeway enables efficient regional access and protects outlying neighborhoods from offensive noise and traffic. Areas outside of the transportation hub, primarily consisting of established residential neighborhoods, are planned for enhancement rather than new, higher density development. In the following sections, the Land Use Plan is presented and described in detail.

Land Use Plan

The Land Use Plan for the City is illustrated in Figure CD-3 and shows where various types of development should occur. The Land Use Plan depicts eleven categories of land uses encompassing a range of residential, business and public uses. Table CD-1 summarizes the land

use categories. The four residential categories differ in housing type and density - the higher density categories permit more dwelling units in a given area than the lower density categories. Three business-oriented categories provide for commercial, professional office, manufacturing and industrial uses. A combination of higher density residential, office and retail uses comprise the mixed-use category. The remaining categories facilitate public and institutional uses, parks and recreational centers, and transportation uses such as roads and the trolley stations. The Land Use Plan also depicts eight Special Treatment Areas (STAs) requiring focused planning attention. Complete descriptions of the land use categories and the STAs are provided in subsequent sections.

The maximum amount of development that can occur within each category is also specified in Table CD-1. The concepts of density and intensity describe the level of development in a given area. Density is used to measure residential development while intensity is used to assess non-residential development (that is, commercial, light industrial, public and recreational uses). Density is defined as the number of dwelling units (or houses) per acre. Four units per acre is less dense than 20 units per acre. Densities below 14 units per acre usually consist of detached, separated houses while greater densities typically consist of attached units such as duplexes, apartments and condominiums.

The intensity of non-residential development is measured using the floor area ratio (FAR). The FAR is the ratio between the total gross floor area of all buildings on a lot and the total area of that lot. For example, a building with 5,000 square feet of floor area on a 10,000 square-foot lot would have a FAR of 0.5 while a building with 20,000 square feet of floor area on the same lot would have a FAR of 2.0. The greater the FAR, the larger the building and the greater number of stories.

"The Land Use Plan sets forth the community's goals regarding the future character of the City...transitions will be gradual."

The Land Use Plan sets forth the community's goals regarding the future form and character of the City. In some areas, the planned use shown on the Land Use Plan differs from the existing land use. These changes will not occur overnight. The transitions will be gradual and rely on favorable market conditions. New construction will only occur when property owners perceive benefits from new development. However, the Land Use Plan will mold new development according to the community's goals embodied in the *General Plan*. Table CD-2 shows the development capacity of the land use plan. If the land use categories were developed fully according to the permitted density/intensity, the level of development depicted in the table may be reached. The table also shows the population that could occur from *General Plan* implementation.

TABLE CD-1
PROPOSED LAND USE CATEGORIES AND DENSITIES/INTENSITIES

Land Use Categories	Maximum Development Per Net Acre (a, b, c)	Expected Development Per Net Acre (d)	Land Use Category Description
Low Density Residential	4 DUs/acre	3 DUs/acre	Detached houses. Typical uses include uses such as accessory dwelling units, churches, day care, open space, public facilities, home businesses and others which are compatible with the surrounding neighborhood.
Low/Medium Density Residential	7 DUs/acre	5.25 DUs/acre	Detached houses. Typical uses include uses such as accessory dwelling units, churches, day care, open space, public facilities, home businesses and others which are compatible with the surrounding neighborhood.
Medium Density Residential	14 DUs/acre	14 DUs/acre	Detached and attached houses, including duplexes and town houses, and limited condominiums and apartments. Typical uses include uses such as accessory dwelling units, churches, day care, open space, public facilities, home businesses and others which are compatible with the surrounding neighborhood.
Medium/High Density Residential	29 DUs/acre	24.5 DUs/acre	Duplexes, town houses, condominiums and apartments. Typical uses include uses such as accessory dwelling units, churches, day care, open space, public facilities, home businesses and others which are compatible with the surrounding neighborhood.
Mixed Use	43 DUs/acre and 2.0:1 FAR	20 DUs/acre; 1.25:1 FAR	Mix of residential (condominiums and apartments), retail and office uses within the same building, lot or area, with the intent of creating lively pedestrian-oriented villages near the trolley stations. Retail includes entertainment and neighborhood-serving businesses. Where mixes of uses occur within the same building, locate retail uses on the street level.
Retail Commercial	1.0:1 FAR	0.5:1 FAR	Retail operations providing a broad range of goods and services, catering to both local and regional customers. Includes shopping centers, department stores, grocery stores, professional services and other compatible retail businesses that are auto-oriented.
General Business	1.2:1 FAR	0.6:1 FAR	Professional office, wholesale businesses, research and development, high technology production, and sales. Includes commercial uses that support business uses.

Land Use Categories	Maximum Development Per Net Acre (a, b, c)	Expected Development Per Net Acre (d)	Land Use Category Description
Industrial	0.7:1 FAR	0.5:1 FAR	Mixture of manufacturing, processing, warehousing and storage uses that do not generate appreciable air and water pollutants, noise, hazardous materials and odors that might be offensive to residents and other businesses.
Public/Institutional Facilities	1.0:1 FAR	0.4:1 FAR	Public uses and service facilities, such as government offices and facilities, schools, public utilities, post office, libraries, fire and law enforcement stations, social service facilities and churches.
Parks/Recreation	0.5:1 FAR	0.1:1 FAR	Community and neighborhood parks, public recreation and community centers.
Transportation	N/A (e)	N/A	Streets, freeway and trolley corridors and stations, bus facilities, "park-and-ride" lots and associated rights-of-ways. If Caltrans permits development within the right-of-way after SR-125 freeway is constructed, the development must conform to the following designations: east and west of SR-125 - Retail Commercial, and south of the Broadway commercial corridor - same designation as the designation of adjacent properties.
Special Treatment Areas - Overlays I Downtown Village II Massachusetts Station III Regional Commercial IV Western Central Avenue Residential V Federal Boulevard Automobile Sales District VI Central Lemon Grove Avenue VII Troy Street/SR-125 Planning Area VIII Eastern Central Avenue Residential			

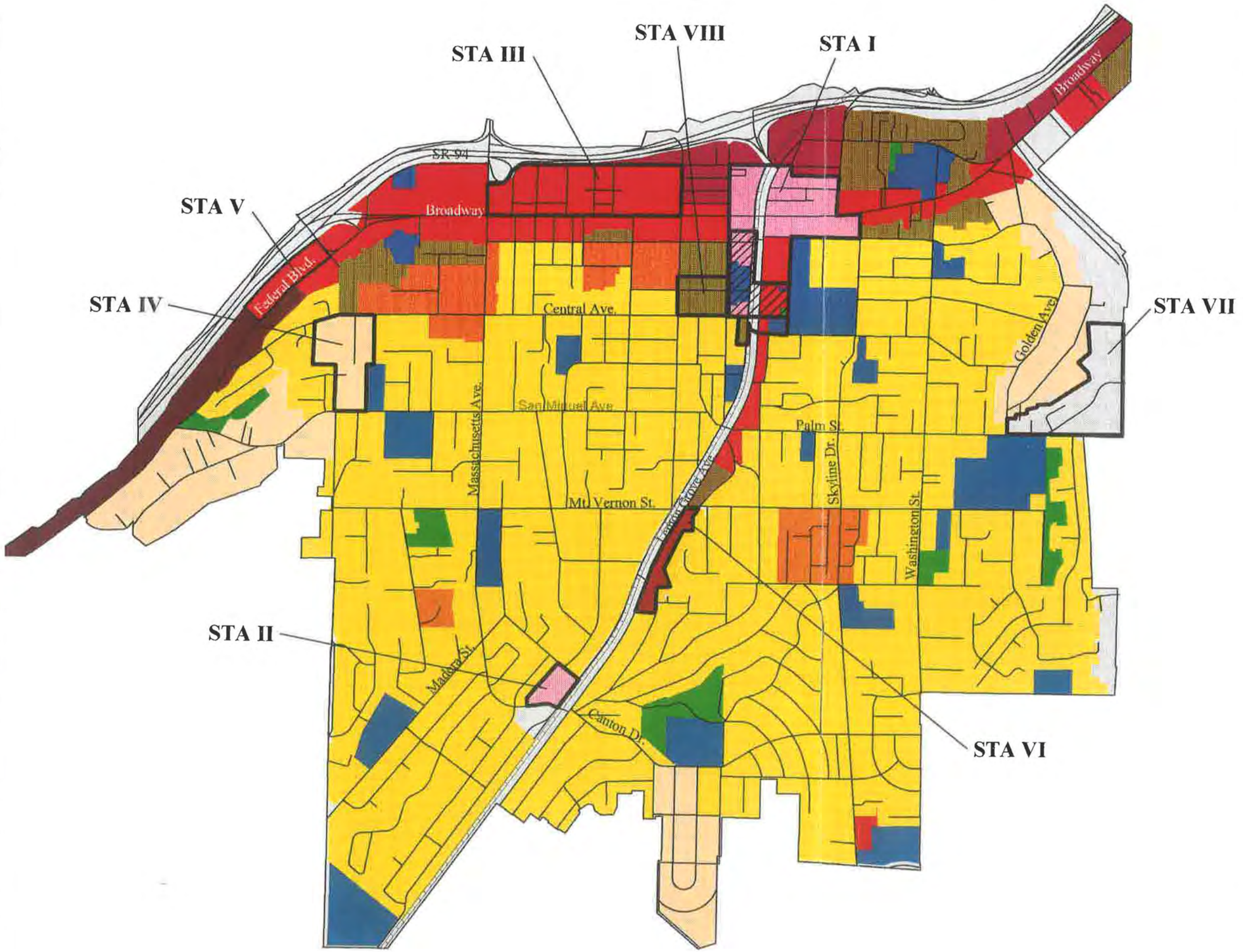
(a) The density of residential development is expressed in dwelling units per acre (DUs/acre). The intensity of non-residential development is expressed in floor area ratio (FAR), which is the ratio of building floor area to the land area.

(b) The maximum development represents the greatest level of development that can occur on individual parcels of land.

(c) The maximum density within the residential categories may be exceeded for projects providing affordable housing, in accordance with the density bonus provisions of Section 65915 of the California Government Code.

(d) The expected development reflects the fact that the development which has occurred to date has not reached the maximum allowed density or intensity, and future development is also expected to be less dense/intense that the permitted maximum. The expected development provides a more realistic picture of future development within the land use categories, and is therefore used to project population and buildout data.

(e) In general, development will not occur within transportation rights-of-way. Through negotiations with Caltrans, development may occur in the future SR-125 freeway right-of-way, near the SR-94 freeway. Such development will be subject to Caltrans lease requirements, and must be consistent with the Lemon Grove General Plan.



Legend

- Low Density Residential
- Low/Medium Density Residential
- Medium Density Residential
- Medium/High Density Residential
- Mixed Use
- Retail Commercial
- General Business
- Public/Institutional
- Parks/Recreation
- Industrial
- Transportation
- Trolley

- Special Treatment Area (STA)
- Civic Center Concept Area

STA I, Downtown Village
STA II, Massachusetts Station
STA III, Regional Commercial
STA IV, Western Central Avenue Residential
STA V, Federal Boulevard Automobile Sales District
STA VI, Central Lemon Grove Avenue
STA VII, SR-125 Interchange Planning Area
STA VIII, Eastern Central Avenue Residential

N

1 inch = 2,000 feet

Figure CD-3
Land Use Plan

TABLE CD-2
LAND USE PLAN DEVELOPMENT POTENTIAL

LAND USE CATEGORY	ACRES	MAXIMUM DEVELOPMENT (a)	EXPECTED DEVELOPMENT (a)	DWELLING UNITS	THOUSAND SQUARE FEET	POPULATION (b)
Low Density Residential	146.9	Up to 4 du/ac	3 du/ac	442		1,224
Low/Medium Density Residential	1,160.8	4.1 - 7 du/ac	5.25 du/ac	6,094		16,881
Medium Density Residential	67.6	7.1 - 14 du/ac	12 du/ac	812		2,248
Medium/High Density Residential	75.0	14.1-29 du/ac	25 du/ac	1,875		5,194
Mixed Use	27.7	43 du/ac, 2.0:1 FAR	20 du/ac, 1.25:1 FAR	554	1,508.3	1,535
Retail Commercial	130.2	1.0:1 FAR	0.5:1 FAR		2,835.8	
General Business	46.4	1.2:1 FAR	0.6:1 FAR		1,212.7	
Industrial	32.2	0.7:1 FAR	0.6:1 FAR		841.1	
Public/Institutional	146.0	1.0:1 FAR	0.4:1 FAR		2543.9	965
Parks/Recreation	36.6	0.5:1 FAR	0.1:1 FAR		159.6	
Transportation	636.5	N/A	N/A			
TOTAL	**2,506.0**			**9,777**	**9,101.3**	**28,046**

(a) The maximum development and expected development is based on net acres.

(b) Population estimates are based on 2.77 persons per unit for the residential uses based on 1995 population data published by the California Department of Finance. For the institutional uses, the population estimate is based on the group quarters estimate for 2015 from SANDAG Series 8.

Special Treatment Areas

"STAs have significant potential for new development or redevelopment, or require special planning attention."

The Land Use Plan (Figure CD-3) designates seven Special Treatment Areas (STAs). The STAs have significant potential for new development or redevelopment, or require special planning attention. To ensure that future development achieves the community's goals, specific guidelines are established for each STA.

STA I, Downtown Village

The Downtown Village STA contains the traditional downtown commercial district located around the intersection of Broadway and Lemon Grove Avenue. A mix of retail and office uses presently dominate the STA, but some multiple-family residences also occur. Other important features include the downtown trolley station, City Hall and Fireman's Park. Downtown retains its traditional pedestrian-scale and is easily accessible from the SR-94 freeway, major roads, and bus and trolley service. Similar to traditional downtowns across the country, the downtown Lemon Grove retail market has declined due to the rising popularity of regional malls and large department stores. Many downtowns, however, have come back by providing unique shopping and recreational alternatives. A critical component of the City's redevelopment program, downtown has benefitted from past facade, circulation and parking improvements.

"The Downtown Village is planned for a lively mix of retail, office, condominium and apartment development supported by a variety of transportation options."

The Downtown Village is planned for a lively mix of retail, office, condominium and apartment development supported by a variety of transportation options. In addition to supporting the village residents, shops and restaurants will provide recreational opportunities for Lemon Grove residents and others from adjacent communities. The residential population will in turn increase the viability of the village shops. Trolley and bus lines traversing the village will allow residents to commute to regional work centers via transit while also providing access to the downtown village from nearby communities. To provide more opportunities for mixed use development, the traditional northern boundary of downtown is extended north by a half block. Future redevelopment programs must further define the downtown's market niche and establish strategies to compete with larger discount stores and regional malls.

To optimize village redevelopment efforts and achieve the community's objectives, the City anticipates preparing a specific plan that should address the following components.

- Regulations to implement the mixed land use concept, wherein a combination of shops, offices, civic facilities and multi-family

Main Street, circa 1940. Photo courtesy of Lemon Grove Historical Society.

residential development is encouraged within the same building, site or block. When mixed uses occur in the same building, the ground floor should be devoted to retail uses while using the upper floors for offices and/or residences.

- Incentive programs to assist businesses in redevelopment, facade enhancement and architectural renovations; signage upgrades and streetscape improvements; and development of second- and third-story mixed uses. Emphasize incentives to encourage housing development within the village.

- Entertainment uses such as restaurants, outdoor eateries, book and record stores, galleries and hobby shops.

- Use of the existing civic facilities and park as well as the future civic center as critical village components to heighten activity and community interaction.

- A village marketing program, developed in close coordination with the downtown businesses. The program should be diverse, strive to better position the village as a regional shopping center,

and include a downtown merchants association with the purpose of collaborative management, promotions and advertising.

- Local and regional activities, such as parades, farmers markets and festivals within the village, to create activity and generate business for the merchants.

- Locations for enhanced pedestrian access and crossings in addition to bicycle facilities. Storefront enhancements and circulation patterns (sidewalks, parking, transit access) to encourage walking throughout the village.

- Any additional parking needs required to accommodate the increased development. Acquisitions needed for additional parking areas will be identified and the City will consider reducing parking standards for mixed use development in conjunction with the planning and implementation of public parking areas.

- Appropriate relocation assistance for residents and businesses who are involuntarily displaced by public land acquisitions per the requirements of the California Community Redevelopment Law.

- Potential for artisan and craft production studios in the Downtown Village.

- Cultural and land use history of downtown, and incorporation of historical trends in the land use plan and architectural guidelines.

- Strategies to facilitate the economic use of historic buildings.

"Architectural design...can influence shops and restaurants patronage, desire to live in the village, and transit ridership."

Architectural design and aesthetic qualities will contribute to the success of downtown redevelopment. In addition to creating a fun and enjoyable place where people want to spend time, design can influence shops and restaurants patronage, desire to live in the village, and transit ridership. The specific plan for the village should address the following design considerations.

- Architectural, landscape, signage and lighting guidelines for both private and public areas reflecting Lemon Grove's small town image, while enhancing and unifying the retail commercial uses along Broadway. The use of art to enhance public areas will be considered.

- Pedestrian amenities to focus shoppers' attention towards shops and stores.

- An automobile traffic study and pedestrian movement plan to help eliminate conflicts with automobiles and encourage transit use, and includes pedestrian crossings along Broadway that are safe and aesthetically pleasing. Pedestrians should be given equal consideration at all roadway intersections. The specific plan should explore architectural, pavement and landscape treatments that create more sidewalk space and enhance pedestrian movement while facilitating traffic safety, parking and through movement of automobiles.

- To promote the village as an entry to Lemon Grove and a shopping destination, define village entry points and edges to create a sense of arrival similar to regional shopping centers.

- Since the village serves as one of the major entries to Lemon Grove, address the appearance and traffic movement at the intersections of Lemon Grove Avenue, North Avenue and the SR-94 freeway.

- To ensure consistent implementation of the design concepts, consider establishing a design review process for architectural design and plan implementation.

STA II, Massachusetts Station

"The Massachusetts STA...is planned to...1) increase use of trolley... 2) provide neighborhood shopping opportunities..."

The Massachusetts Station STA encompasses the existing commercial site across from the Massachusetts Avenue trolley station. Redevelopment of the site with a mix of residential and neighborhood commercial is planned to achieve two primary goals: 1) increase the number of residents that can walk to the trolley station and use the trolley to commute, and 2) provide neighborhood shopping opportunities to reduce driving and encourage walking and bicycling.

Development within the Massachusetts Station STA should strive to implement the following criteria.

- To foster the relationship between the residential and commercial uses and trolley ridership, development within the STA should relate to the trolley station through design, access, landscaping,

architectural theme and/or signage. Moreover, the STA should serve as the focal point for the southern portion of the City.

- The residential component should consist of condominiums and/or apartments, and not exceed the density established by the underlying land use category established in Table CD-1.

- The neighborhood commercial component should consist of stores and services serving the daily needs of the surrounding neighborhoods. Uses typically permitted in neighborhood commercial districts should be considered, such as a grocery store, pharmacy, dry cleaner, laundromat, video rental, shoe repair, deli and/or child care.

- Building heights should not exceed the elevations of the adjacent residences to reduce impacts to nearby neighbors.

- Encourage the developer to reduce the elevation of a portion of the site to the approximate elevation of Main Street using appropriate grading techniques. This would significantly increase the visibility and viability of the new stores and facilities. Reducing the elevation would also increase the permitted building heights established above.

- Implement recommendations to improve automobile safety at the intersection of Massachusetts and Lemon Grove Avenue.

- Study options to enhance pedestrian crossing from the STA to the Massachusetts Station.

- The developer should be required to prepare and process a specific plan establishing the site plan, building sizes, residential densities, design concepts, grading plan, infrastructure improvements and landscaping in addition to the above requirements.

- Consider assisting the development of housing with the Community Development Agency's Low/Moderate Income Housing Set-Aside Fund.

STA III, Regional Commercial

"The Regional Commercial STA is planned for continued redevelopment with large retail stores."

The Regional Commercial STA is planned for continued redevelopment with large retail stores. Uses within this STA shall serve both local residents and attract shoppers from adjacent communities. Good freeway access and visibility contribute to the area's suitability for regional commercial uses. In addition to diversified shopping opportunities, the regional commercial uses will generate tax revenue for needed public services and infrastructure. Some of the existing business and residential properties in the STA are unproductive and blighted, and new commercial development will also improve overall community aesthetic and development conditions. The STA is part of the City's Redevelopment Project Area.

The following policies apply to new development in the Regional Commercial District STA.

- Encourage large-lot retail uses on parcels comprised of at least one block or three acres.
- Promote retail uses that serve local residents and attract regional shoppers, and permit accessory or ancillary uses that contribute to the development and maintenance of a modern retail sales district.
- Strive for architecture and site design that enhances the surrounding area and overall Broadway commercial corridor. The bulky appearance of large buildings should be reduced using architectural details, and varied facades, roof lines and building materials. Require landscaping to soften and mask large buildings, break up uniform parking areas, and beautify the Broadway commercial corridor.
- Permit large retail stores to be visible from the SR-94 freeway without diminishing the visual image of the City from the freeway. Regulate signage and require landscaping and architectural details as necessary to avoid unsightly views of the backs of buildings.
- Use the redevelopment process as appropriate to assist projects with significant community benefits as needed (i.e., assistance with infrastructure improvements, lot consolidation, relocation, etc.).

- Residents and businesses who are involuntarily displaced by public land acquisitions must receive appropriate relocation assistance per the requirements of the California Community Redevelopment Law.

STA IV, Western Central Avenue Residential

"The Western Central Avenue Residential STA...is designated for residential development, similar to that found on neighboring properties."

The land within the Western Central Avenue Residential STA was originally designated as future right-of-way for the College Avenue extension project, (see Figure CD-3). The City abandoned the project and designated the right-of-way area for residential development, similar to that found on neighboring properties. With the exception of this STA, the right-of-way areas have since been developed or are subject to approved development plans. STA IV consists of a mixture of individually owned lots and some land owned by the City. The topography slopes moderately toward the center of the site and features a ravine running westward.

Development of the West Central Residential Development STA should conform to the following policies.

- Consistent with the Land Use Plan (Figure CD-3), restrict residential development to a maximum four dwelling units per acre, and lots should consist of a minimum of 10,000 square feet.

- Designating the ravine and an appropriate buffer as open space should be considered to protect the drainage and avoid potential impacts from flooding.

- Preserve the visual character of the topography through employment of sensitive grading techniques.

- The architecture, lot layout and building materials should be compatible with the residential development in surrounding neighborhoods.

- The site plan, design concepts, grading plan, infrastructure improvements and landscaping should reflect the above requirements.

STA V, Federal Boulevard Automobile Sales District

"STA V supports car dealerships and automotive services...which yield tax reserve for local public services and infrastructure..."

The Federal Boulevard Automobile Sales District STA illustrated in Figure CD-3 supports car dealerships and automotive services and shops. The highly visible freeway location contributes to the dealerships' success, which in turn yields tax revenue for local public services and infrastructure improvements.

The following policies apply to future development and business activities in the Federal Boulevard Automobile Sales District STA.

- Only permit car dealerships and related automotive services and shops.
- Require measures to reduce impacts to nearby residents, and monitor ongoing businesses for conformance with all applicable regulations and conditions.

STA VI, Central Lemon Grove Avenue

"STA VI is planned for continued use as a business district...requires special planning to avoid impacts to the community."

STA VI is planned for continued use as a business district. Due to steep slopes, access limitations and proximity to established neighborhoods, future development requires special planning to avoid impacts to the community. Future businesses should be limited to activities that generate low levels of traffic and noise. New development should be subject to the following conditions:

- A geotechnical study and incorporation of appropriate measures to protect the stability of the steep embankment at the rear of lots to the south as well as the geologic stability of both the new development and adjacent properties.
- A traffic study to identify access points from Lemon Grove Avenue that minimize disruptions to traffic flow.
- Relinquished vehicle access from Noble Street.
- Limiting the height of new structures to three stories or 35 feet, whichever is more restrictive.

STA VII, Troy Street/SR-125 Planning Area

"The purpose of STA VII is to alert property owners that future conditions could justify ...on- and off-ramps..."

The Troy Street/SR-125 Planning Area lies in the eastern portion of the City at the eastern terminus of Palm Avenue and Troy Street. The City's Freeway Agreement with Caltrans does not provide for the construction of on- or off-ramp connections to SR-125 at this location. Even though the City does not believe that on- and off-ramps are warranted at present, it acknowledges that the community's traffic circulation needs can change over a period of time. Therefore, the City will work with Caltrans, area property owners, and other interested groups and agencies to monitor the relationship between SR-125 and the City's system of streets. The purpose of STA VII is to alert property owners that future conditions could justify the construction of on- and off-ramps at Troy Street and SR-125. The boundaries of the STA are general and encompass the ultimate right-of-way of any potential freeway ramp. Development within the generalized STA boundaries can occur according to the provisions of the underlying land use category shown in the Land Use Plan (Figure CD-3).

STA VIII, Eastern Central Avenue

"...special planning policies are needed to help ensure that...new development blends in with nearby neighbors."

STA VIII lies with the established Central Avenue neighborhood yet within walking distance of downtown, the trolley station and planned civic center area. Some apartment and condominium development has occurred in recent years within the STA and continued development could help support downtown commerce and expand opportunities for transit use. Because preserving neighborhood quality is a primary community goal, the following special planning policies are needed to help ensure that the architecture and scale of new development blends in with nearby neighbors.

- Permit development of single lots at a density of 14 dwelling units per one acre.
- Allow development according to the Medium/High Density Residential designation (29 dwelling units per one acre) where lots have a minimum of 100 feet of frontage on a public street and a minimum size of 15,000 square feet.
- Limit development to a maximum of two stories in height or 25 feet, whichever is more restrictive.

Other Focus Areas

In addition to the Special Treatment Areas, the City plans to focus attention on enhancing and revitalizing several other areas including the established neighborhoods, emerging multiple-family neighborhoods, Broadway retail commercial, general business areas, Federal Boulevard industrial district, East Broadway, and existing Specific Plan areas. The following sections set for the plan for these areas.

Established Neighborhoods

"One of the community's primary goals is to protect and enhance established neighborhoods..."

One of the community's primary goals is to protect and enhance the established neighborhoods that comprise the majority of the City (see Figure CD-3). These neighborhoods mostly consist of houses constructed during the post-World War II real estate boom. Estate and farm houses from the early days are scattered throughout the City. Most houses and yards have been well maintained but some have a run-down appearance. Many of the neighborhoods lack sidewalks. In recent years, new development has largely consisted of subdividing large lots and constructing new detached houses or attached units (apartments or condominiums), or developing the remaining vacant lots.

William Lindsay's step-brother's home at 7575 Central Avenue, built in 1910. Photo courtesy of Lemon Grove Historical Society

New development and traffic have disrupted the tranquility of some neighborhoods in recent years. The Land Use Plan in Figure CD-3 is intended to stabilize the neighborhoods by focusing new apartment and condominium development in appropriate locations, and preventing additional multiple-family residential development in stable single-family residential areas. In limited areas, new single-family houses could be constructed. The City will require that all new residential development be integrated with the surrounding neighborhood through the use of suitable architecture and site design. Traffic and access affect neighborhood safety and peacefulness. The Mobility Element sets forth a plan to control traffic in the neighborhoods and reduce hazards related to speeding vehicles. A plan to construct sidewalks linking neighborhood activity centers is also established in the Mobility Element.

Advancements in communications technology are increasing the number of people that can conduct business from their homes. Neighborhoods benefit from home occupations when appropriately controlled. These benefits include increased security from people present in the neighborhood during the day, greater flexibility to meet family needs, and increased patronage of local commercial establishments. However, home occupations that generate traffic or noise, or involve storage of materials or cars, can conflict with residential life. The City will continue to enforce the Home Occupation Ordinance which establishes specific restrictions to protect neighborhood tranquility. Revisions to the Home Occupation Ordinance will be considered as needed to address work-at-home work home business trends.

"The City will actively encourage clean and safe neighborhoods..."

The City will actively encourage clean and safe neighborhoods through programs such as continued enforcement of the Abandoned Vehicles, Vehicle and Equipment Storage Ordinance and Weed Control and Waste Matter Ordinance, co-sponsoring Paint Lemon Grove and solid waste collection day for bulky items, and requiring compliance with all applicable building code and *Zoning Ordinance* requirements. The City will also monitor residential treatment facilities and group homes to help minimize neighborhood nuisances and disruptions. Facility operators and managers and the appropriate licensing agencies will be contacted as necessary to remedy disruptive situations.

Broadway Retail Commercial

Portions of the Broadway commercial corridor lie outside of designated Special Treatment Areas. While these areas are not subject to specific STA goals and policies, their continued revitalization will contribute to

Looking east on Broadway, from Imperial Avenue (now Lemon Grove Avenue), 1957. Photo courtesy of Lemon Grove Historical Society.

"...the Broadway commercial corridor ...will contribute to overall community stability, local shopping opportunities and municipal tax revenue."

overall community stability, local shopping opportunities and municipal tax revenue. The City will monitor the Broadway thoroughfare commercial activity and support redevelopment. The entire Broadway commercial corridor lies within the Redevelopment Project Area, and the Community Development Agency will provide assistance under the provisions of the California Community Redevelopment Law as feasible for projects providing public benefit. Strive to establish medical and dental offices due to the current lack of such services.

Skyline Commercial Center Concept

"...The City will monitor the market demand for a new commercial center..."

The southern portion of the City presently lacks a modern commercial center, forcing residents to drive to the northern part of the City for daily items. There is some current demand for a new commercial center at the southern end of Skyline Drive at Jamacha Boulevard, encompassing existing older commercial properties and the sizable church property. The SR-125 freeway project includes construction of an interchange at Jamacha Boulevard which could further increase the demand for new commercial development. The City will monitor the market demand for a new commercial center in this area once the freeway is constructed and consider any necessary General Plan and Zoning amendments required to facilitate such development.

General Business

The general business areas primarily lie north of the Downtown Village, adjacent to the SR-94 freeway. Additional property for business development occurs along Broadway, east of the planned SR-125 freeway. The General Business land use category provides for the continuation of the current mix of commercial, service and light manufacturing businesses. Dilapidated and run-down properties occur within the business areas, and some of the facilities were constructed without regard for community aesthetics. The business areas flank the freeway and are often first seen by visitors entering the City. Public investment in street improvements is needed and as businesses grow and prosper, the community hopes that business owners will reinvest in their properties and reduce the blighted appearance.

"Long-term goals...include redevelopment with office buildings for professional services in addition to new facilities for light manufacturing and commercial operations."

Long-term goals for the business areas include redevelopment with office buildings for professional services in addition to new facilities for light manufacturing and commercial operations. Proximity to the SR-94 freeway, planned SR-125 freeway and trolley in addition to the central location between downtown and the SR-94 bedroom communities make the business development areas attractive to business operators. Furthermore, the nearby downtown village provides amenities for employees and support services. The redevelopment process established by the California Community Redevelopment Law should be used to assist developers consolidate land and finance infrastructure improvements where feasible. Pedestrian-oriented settings linking the business areas to the downtown village and trolley station should be promoted in new projects.

Federal Boulevard Industrial District

"The Federal Boulevard area...is particularly suited for industrial activity."

The Federal Boulevard area has developed with a mix of industrial uses over the years, including manufacturing, storage and materials processing. These uses generate high quality jobs for local residents in addition to generating tax revenue. The area is particularly suited for industrial activities. Business operators enjoy easy access to the SR-94 freeway, and nearby residences above Federal Boulevard are protected from noise, odors, traffic and other nuisances by the topographic gradation. Some properties show signs of deterioration and deferred maintenance, but few vacancies occur. The Land Use Plan (Figure CD-3) permits continued industrial activity along Federal Boulevard and both business owners and the community desire revitalization.

Revitalization of the Federal Boulevard industrial district will occur as existing businesses prosper and reinvest in their facilities. The establishment of new businesses will also help renew the area. The City plans to actively assist existing and new businesses to obtain necessary permits for facility expansions and construction. The City will also market the area to business operators looking for new homes. When warranted by significant public benefit and potential blight elimination, the Community Development Agency anticipates using the redevelopment process to assist with infrastructure improvements.

The natural topography and drainage infrastructure inadequacies result in flooding during heavy rains. The flooding often disrupts business activities, causes property damage, and accelerates deterioration of the Federal Boulevard roadway. Because the City does not presently participate in the National Flood Insurance Administration (NFIA) program administered by the Federal Emergency Management Agency (FEMA), property owners cannot obtain federal flood insurance. Improving the Federal Boulevard drainage system, and participating in the NFIA program are City priorities. Having access to flood insurance may give property owners and businesses along Federal Boulevard incentive to reinvest and rehabilitate the area.

The industrial district is highly visible to SR-94 freeway drivers and serves as the western gateway to the City. The deteriorated appearance of some properties diminishes the visual image of the community. The City will compel property and business owners to ameliorate dilapidated properties by requiring aesthetic improvements as conditions of permits. The City will consider partnerships with property owners to enhance appearances from SR-94.

East Broadway

"The eastern section of Broadway... merits special planning attention."

The eastern extension of Broadway past Sweetwater Road merits special planning attention. The planned SR-125 freeway will generally follow Sweetwater Road and will connect with the SR-94 freeway via an 80- to 100-foot elevated interchange. The East Broadway area could become isolated from the remainder of the City, facilitating property dilapidation and blight. After careful study, the community has determined that the existing mix of business and multiple-family residential should continue.

The City plans to monitor the construction of the SR-125 freeway including an assessment of whether all required mitigation measures are properly implemented to reduce community impacts. Once the freeway is

constructed, excess right-of-way may be sold for development. The City will monitor reversion of right-of-way and consider amending the General Plan to establish any needed land use policies. Furthermore, Caltrans may lease freeway right-of-way under the interchange for development purposes. The City will work with Caltrans to limit any future development within the right-of-way to uses that are compatible with surrounding uses and consistent with the General Plan goals.

Reversion of Skyline Drive Neighborhood Commercial Area

"...commercial uses should revert back to single-family housing..."

A small commercial area presently occurs on the west side of Skyline Drive, in the middle of the block bounded by Dayton and Canton Drives. A mix of converted single-family homes and older commercial buildings are surrounded by single-family neighborhoods. The high number of vacancies, transient nature of the existing businesses, and run-down appearance reflect the low viability of commercial activity within this area. The Land Use Plan (Figure CD-3) shows that the commercial uses should revert back to single-family housing, compatible with the dominant land use pattern.

The commercial area is part of the Project Area established under the California Community Redevelopment Law. To assist in the transition from commercial to residential use, the Community Development Agency could exercise its redevelopment powers. The Community Development Agency will consider assisting residential development to meet the housing requirements of the Community Redevelopment Law. Any future development should be compatible with the density and scale of the surrounding neighborhood.

Existing Specific Plans

Only two specific plans are currently in effect in Lemon Grove: the *Village Grove Specific Plan* and *Broadway Commercial Project Specific Plan,* (see Figure CD-2). Both specific plan areas have been fully developed according to the plans with the exception of the commercial portion of the *Village Grove Specific Plan.* Future development or redevelopment within the specific plan areas should conform to the applicable policies unless the City amends the specific plans to accommodate deviations.

New Housing

Housing should be constructed for new residents, and some new housing should help meet the unique needs of under-served groups such as the elderly, single-parent families and the disabled. Declining areas can

benefit by new housing development as well. The Lemon Grove Housing Element establishes the City's plan for new housing development and compliance with the housing requirements legislated by the state.

New Development

"Housing should be constructed for new residents, and some new housing should help...under-served groups..."

Construction of new single-family homes could occur within STA IV, West Central Residential and the old Skyline Drive neighborhood commercial area. The City, however, is almost completely developed, and most new housing will consist of condominiums and apartments resulting from the redevelopment of lots with single houses or underutilized commercial areas. In addition to providing housing for the growing population, multiple-family residences serve the unique needs of seniors, small households and young adults.

The Land Use Plan identifies sites for new condominium and apartment development, (see Figure CD-3). The City will particularly focus new multiple-family residential development within STA I, Downtown Village and STA II, Massachusetts Trolley Station which are both planned as mixed use areas. Other emerging multiple-family neighborhoods are designated as Medium Density Residential and Medium-High Density Residential, and the Land Use Plan shows new development potentially occurring in the following areas:

- North of Lemon Grove Way, northeast of the downtown village and near the SR-94 freeway and planned SR-125 freeway;
- Massachusetts Avenue, between Broadway and Central Avenue;
- Along Central Avenue and north of Central Avenue, west of Massachusetts Avenue;
- South of Central Avenue, between Olive and Main Streets; and
- South of Pacific Avenue, between West and Buena Vista Streets.

"New condominium and apartment development should provide quality housing opportunities and uplift aesthetics."

New condominium and apartment development should provide quality housing opportunities and uplift aesthetics of the surrounding area. Future projects will be subject to the guidelines established below.

- New condominiums and apartments should positively contribute to the surrounding neighborhoods through the use of architecture that reflects and is compatible with the scale, design

characteristics, building orientation, landscaping, building materials and color of nearby residences.

- Landscaping should be incorporated to help new development blend in with the surrounding area and soften the appearance of new structures.

- The scale of new development should not overwhelm the surrounding area. The perceived bulk of new buildings can be reduced through the use of architectural detail, upper story setbacks, and variation in building materials.

- Acceptable noise levels shall be achieved through the use of suitable insulation, windows and ventilation systems pursuant to the state Title 24 standards.

- Play areas for children should be required either on the premises or within short, safe walking distances.

Lemon Grove Housing Element

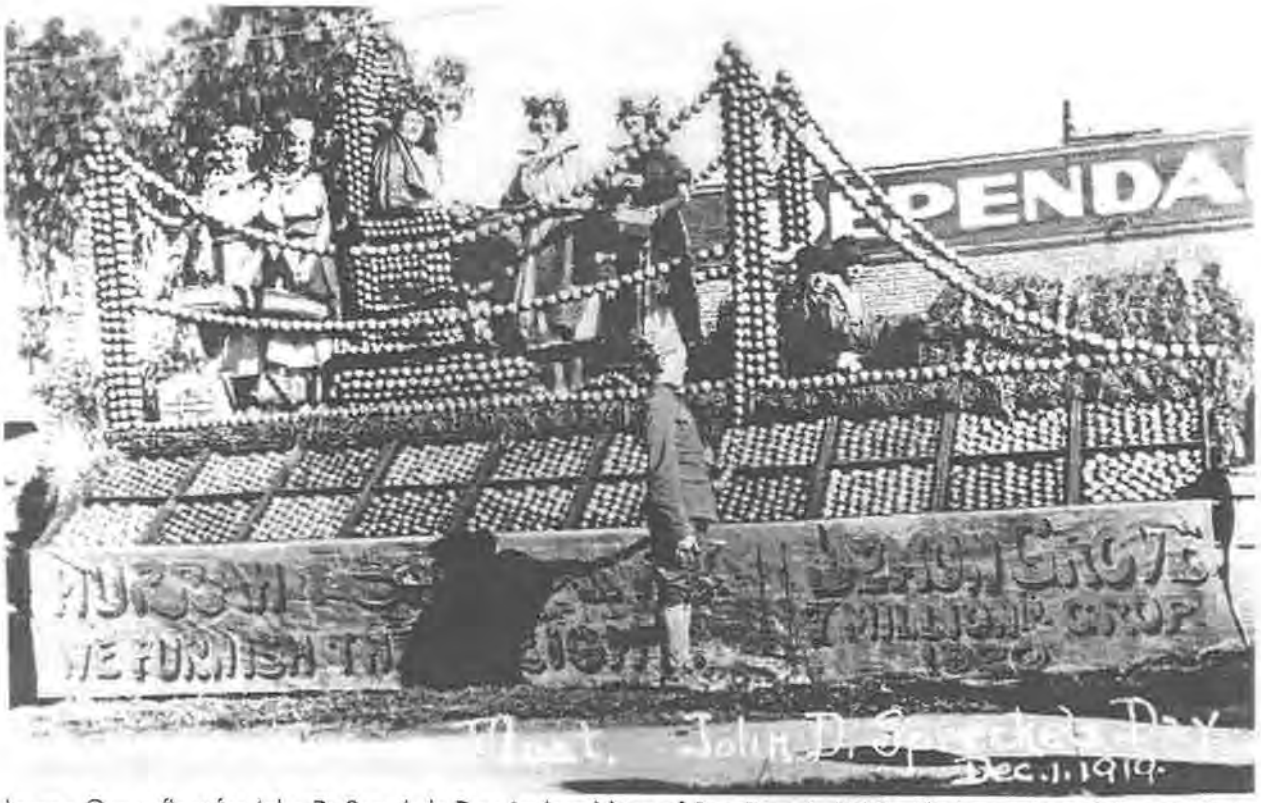
The City will continue implementing the Lemon Grove Housing Element, and periodically update the element to reflect population and development trends as required by state law. Besides assuring an adequate housing supply to accommodate Lemon Grove's fair share of regional growth, the City will focus on ensuring housing opportunities for special needs groups. Housing for female-headed households, large families, disabled persons, seniors and low income households is often limited but the shortfall can be partially offset by active facilitation by the City.

Community Life

"The small town character esteemed by modern-day residents is closely tied to active community life."

Lemon Grove has a rich history of community involvement. Early civic organizations, agricultural associations, social clubs and the Chamber of Commerce played essential roles in community development. Even while the small town grew into a city, residents and business owners continued to associate for the purposes of establishing needed civic facilities, helping the less fortunate, and socializing. The nearly 20-year grass roots effort to incorporate continues to serve as a source of civic pride.

The small town character esteemed by modern-day residents is closely tied to active community life. Lemon Grovers still participate in civic,



Lemon Grove float for John D. Spreckels Day (railroad king of San Diego), 1919. Photo courtesy of Lemon Grove Historical Society.

business, social and religious organizations yielding abundant community benefits. Protecting the small town character envisioned by the community involves enhancing and facilitating the community life of the next generation.

Civic Center

"Residents desire a hub for civic facilities, serving as the heart of the community."

Residents desire a central hub for civic facilities, serving as the heart of the community. Such a civic center could provide opportunities for cultural enrichment, establishing relationships with other residents, and participating in civic matters. Possible components include the library, City Hall, museum, public performance space, law enforcement station, recreation center, meeting space for community groups, and an open plaza or park.

A "Civic Center Concept Area" is delineated on the Land Use Plan (see Figures 3 and 11). The concept area lies along Lemon Grove Avenue in the area of the existing City Hall and fire station, and comprises the

southern portion of the downtown village. This location maximizes accessibility by trolley, bus, walking, cycling and driving, and allows the civic center to contribute to the overall revitalization of the historic downtown. The architecture of the civic center should be compatible with the village design themes and art could enrich public areas.

Due to the required capital expenditures, the civic center is considered a long-range goal. However, given the community's success in working together to achieve common goals, the prospects of establishing a dynamic, interactive civic center are excellent.

Public Events

"Public events - such as Old Time Days - stimulate community pride...and heighten the image of Lemon Grove to outsiders."

Public events - such as Old Time Days - stimulate community pride and involvement and heighten the image of Lemon Grove to outsiders. When outsiders attend such events, they learn about local businesses and shopping opportunities in addition to enjoying themselves. The City will continue to co-sponsor and help organize events like Old Time Days, Summer Concerts in the Park, Paint Lemon Grove and the Youth Easter Egg Hunt. New events reflecting the wide cultural interests of the citizenry will be considered, such as a farmers market in the downtown village or an ethnic fair. Advertising the events in adjacent communities will increase attendance.

Community Outreach

Community outreach programs can also bolster community life. Residents and business owners who are informed of community programs and events will be more likely to participate. Outreach programs should include programs like regular distribution of the City newsletter, holding annual neighborhood meetings, providing information at City Hall about volunteer programs, and using banners to advertise community events.

Economic Development

A strong, healthy economy is an important component of a stable community. Local businesses contribute local jobs, nearby shopping and service opportunities, and tax revenue for public infrastructure and services. With a strong economic sector, people can live, work and shop in the same community, and businesses investments will help prevent conditions of blight that affect many older cities. Moreover, healthy businesses are likely to contribute to the community. All of these benefits help contribute to increase property values and community stability. The City is committed to economic development that positively impacts community health and social justice in addition to job availability, economic revitalization and tax revenues.

"Lemon Grove has always supported an active business sector."

Lemon Grove has always supported an active business sector. More small businesses are established than larger ones, reflecting the relatively small size of the City and national economic trends. Businesses enjoy efficient freeway access via the SR-94 freeway (and the SR-125 freeway in the future), and affordable facility leases. Types of business include commercial enterprises ranging from the "mom-and-pop" shop to large department stores and dealerships, professional services, and light

Mesa Grove Produce, east of Costabella Drive and north of Lemon Grove Way, circa 1910. Photo courtesy of Lemon Grove Historical Society.

industries including manufacturing, materials processing and warehousing.

"Diversifying and expanded local shopping opportunities will allow sales tax paid by locals residents to be reinvested back into the community rather than benefitting other communities."

To strengthen the business sector, the City will promote Lemon Grove as a hub to serve the SR-94 corridor bedroom communities. The City offers a unique combination of freeway accessibility, close proximity to both downtown San Diego and east county communities, and capacity for expanded commercial, light industrial and professional office development. Small businesses will particularly be fostered to increase high quality jobs and make the best use of the smaller business districts. A business climate and investment conditions that encourage entrepreneurs and developers will be cultivated. This will be accomplished in part by investing in public improvements in the business areas, and continuing ongoing communications with the business community to identify economic development opportunities and constraints.

Expanded commercial uses will benefit the community. Many residents travel outside of the City to shop for goods other than groceries and sundry everyday items. Diversifying and expanded local shopping opportunities will allow sales tax paid by locals residents to be reinvested back into the community rather than benefitting other communities. Residents will also benefit from the increased convenience. Revitalization of the downtown village will focus on unique, "one-of-a-kind" shops, restaurants and entertainment uses while larger, national chain department stores will be encouraged to the west on Broadway. Both of these retail environments will serve local residents in addition to attracting shoppers from adjacent communities.

Community Design/ Aesthetics

"Lemon Grove retains a small-town character, and the prevalent land use patterns, architecture and mature landscaping reflect the post-war development boom."

The aesthetics of a community - the feeling of beauty and identification - significantly contribute to people's satisfaction and enjoyment. Views and noticeable boundaries help define a city, create a "sense of place," and provide a sense of arrival. Landmarks serve as identifiable visual images of the community. Strong aesthetics foster civic pride and attract newcomers, thereby strengthening property values. In addition, visitors drawn to the area benefit local businesses.

Lemon Grove retains a small-town character, and the prevalent land use patterns, architecture and mature landscaping reflect the post-war development boom. Older structures constructed just after the turn of the Twentieth Century serve as reminders of the community's agricultural origins. The City has some distinct landmarks such as "The Lemon" and the downtown trolley station but the boundaries are generally ambiguous.

Due to the age of the City, some properties show signs of neglect and the wide mix of site designs and architecture project an image of a "hodge-podge" rather than a cohesive, pleasant town. Several programs will enhance the small town image of Lemon Grove, strengthen visual identify, and enhance community aesthetics.

Gateways and Boundaries

"Broadway and Lemon Grove Avenue should be celebrated as community boulevards..."

To evoke a sense of arrival, gateways to the community and major thoroughfares will be reinforced. The downtown village will serve as the primary gateway from the SR-94 freeway. The intersections of College Avenue/Broadway and Massachusetts Avenue/Broadway in addition to the Massachusetts trolley station will provide secondary gateways. Redevelopment within these gateways will incorporate designs and landscaping that reflects Lemon Grove's small town image. Broadway and Lemon Grove Avenue should be celebrated as community boulevards with distinctive landscaping, banners and directional signage.

Many people in the greater San Diego region only know Lemon Grove by the visual image from the SR-94 freeway. Some of the commercial, light industrial, storage and residential uses occurring along the freeway are run-down and lack appropriate screening by fencing or landscaping. The disorderly view diminishes the passer-by's as well as the local resident's perception of the community, and discourages people from visiting. Cleaning-up the view from the freeway will involve enforcing existing building codes and regulations and implementing greater screening. The City plans to coordinate with Caltrans to construct decorative fencing or walls and establish substantial landscaping along the freeway edges. A future signage program could alert freeway travelers to the unique shopping opportunities in the downtown village and along Broadway, and direct people to the civic center (once constructed). Clean-up efforts could also involve continuing efforts to remove billboards and relocating overhead utility lines underground.

Public Areas

"Attractive public areas...contribute to a scenic community."

Attractive public areas such as parks, medians, parking areas, sidewalks, civic buildings and schools contribute to a scenic community. Public areas can beautify the surroundings when landscaping is properly maintained, trash is picked-up, and hard surfaces are routinely cleaned. Because aggressive maintenance can tax the City's limited resources, the City will promote volunteer clean-up programs. The City also plans

to continue coordinating with the school district to improve the appearance of neighborhood schools.

One of the most visible public spaces consists of the trolley corridor. The tracks extend the entire length of the City, from the southern boundary and up through downtown, and parallel Lemon Grove Avenue, a primary transportation arterial. Beautifying the trolley corridor will enrich the entire community in addition to making Lemon Grove an attractive destination for trolley riders. Landscaping enhancements are planned for the trolley right-of-way as well as the Lemon Grove Avenue medians.

Design Standards

"...new development must positively contribute to enhanced... commercial/ business districts and neighborhoods."

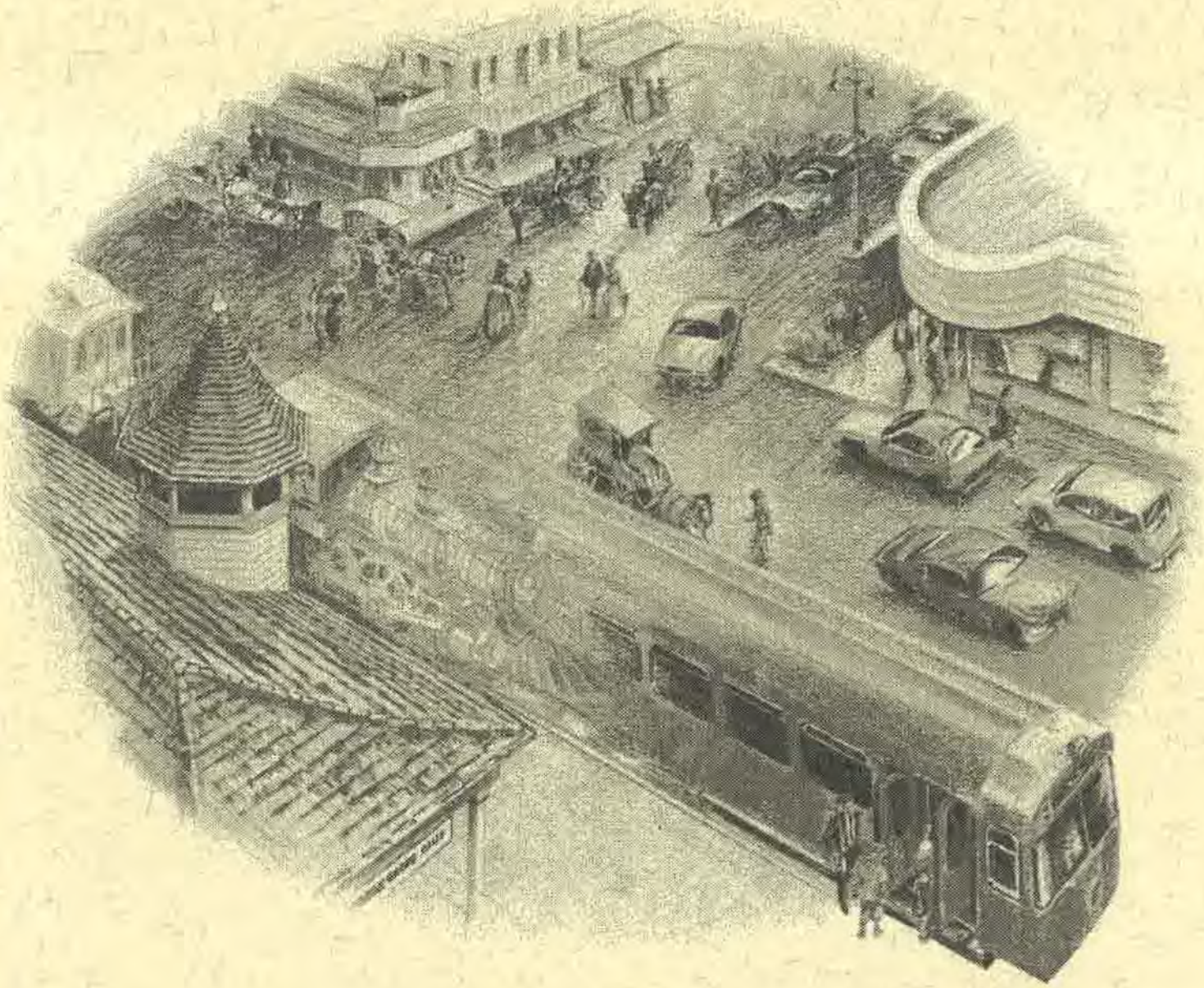
New development can strengthen community aesthetics by providing pleasing architecture and landscaping and/or helping to clean-up an area by rejuvenating blighted properties. New development can alternatively diminish aesthetics by detracting from or overshadowing surrounding features. For continued beautification of Lemon Grove, new development must positively contribute to enhanced visual quality, within both the commercial/business districts and neighborhoods. The Zoning Ordinance should be revised to establish minimum design standards for all land use types. A design review process for multiple-family residential, commercial, mixed use, business and light industrial development will further protect the community from obtrusive projects.

Interjurisdictional Coordination

Lemon Grove is an integral part of the greater San Diego metropolitan area. Many issues affecting the quality of life of local residents transcend jurisdictional boundaries, such as economic conditions, traffic, air quality, open space and population growth. The City will participate in regional planning forums addressing environmental, development and economic issues that affect Lemon Grove. Greater participation will allow representation of the City's best interest, facilitate more effective local implementation of regional programs, and increase the probability of receiving funding from regional, state and federal sources for local programs.

To become more involved in regional planning, City elected officials and staff should serve on regional boards and commissions. The City also plans to review and comment on proposed regional plans, specifically focusing on the feasibility of local implementation and the plans' effects on Lemon Grove. Development proposals in adjacent communities should also be reviewed to identify potential impacts to Lemon Grove.

As a long-term goal, an adjustment to the City boundaries will be considered so that they coincide with the school district boundaries, natural features and the circulation network. This would increase the effectiveness of infrastructure planning. Cooperatively with adjacent jurisdictions, the City should study the benefits of boundary modifications to better serve the residents of Lemon Grove.



MOBILITY ELEMENT

Lemon Grove General Plan

Mobility Element

INTRODUCTION

Implementing the Vision

The Vision for the Future reflects the desire of the City of Lemon Grove to maintain a small town feeling and preserve established neighborhoods while encouraging economic prosperity, personal growth, and cultural and urban enrichment. Achieving these goals requires that all residents have access to neighborhood, community and regional centers. The Mobility Element will help implement this Vision by providing a transportation system that safely and efficiently serves both residents and businesses. Lemon Grove's diverse mobility options include the automobile, transit (bus and trolley), bicycling and walking.

Purpose

State planning law requires California cities to adopt specific elements in their general plans. The Lemon Grove Mobility Element fulfills the state requirements for the circulation element, as defined in Section 65302(b) of the Government Code. According to the state requirements,

"...a transportation system that safely and efficiently service both residents and businesses."

"A circulation element consists of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the Community Development Element of the plan."

State law indicates that the Mobility Element should set forth policies and plans to:

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

The Mobility Element identifies and establishes the City's policies governing the system of roadways, intersections, bicycle and pedestrian facilities, and other components of the transportation system such as bus transit and the San Diego Trolley. These facilities and services collectively provide for the movement of persons and goods throughout

INTRODUCTION

Ted Schnitzlein on motorcycle, circa 1910. Photo courtesy of Lemon Grove Historical Society.

"...an effective roadway system, efficient traffic operations and adequate parking...with walking, bicycling and transit..."

the City. The Mobility Element identifies a street network and related design standards to ensure an effective roadway system, efficient traffic operations and adequate parking. The element also strives to achieve well-maintained streets and safe traffic flow through neighborhoods. Walking, bicycling and transit are integral components of the element, providing a wide range of commuting and recreational opportunities.

Scope

The Mobility Element is organized into three sections: 1) Introduction, 2) Goals and Objectives and 3) Plan. This Introduction explains the relationship between the element and the General Plan Vision, state planning requirements and related plans and programs. In the section entitled Goals and Objectives, the community's mobility issues are summarized and objectives and policies are presented to address these

issues. An objective represents the desired end point or goal while a policy signifies a broad, general rule or course of action to achieve the objective. All of the goals and objectives are extensions of the Vision for the Future.

The Mobility Plan - the final section of the element - directly builds on the goals and objectives. The Plan describes the framework for implementing the objectives and policies and summarizes the steps that the community will take to make the Vision for the Future a reality. Specific implementation measures for the Mobility Element are provided in the General Plan Implementation Manual. All of the objectives and policies in this element are directly represented by one or more implementation measures.

Related Plans and Programs

The following discussion provides an overview of the local, regional, state and federal plans and programs related to the Mobility Element. These plans and programs are important because they can influence and guide transportation patterns and infrastructure development in Lemon Grove.

"These plans and programs...influence and guide transportation patterns and infrastructure development in Lemon Grove."

Intermodal Surface Transportation Efficiency Act

The Intermodal Surface Transportation Efficiency Act (ISTEA) is the primary federal program governing the improvement of local and regional transportation systems. ISTEA includes provisions and funding programs which encourage comprehensive multi-modal transportation systems, including alternative transportation modes such as buses, trolleys, and bikeways. One of the primary goals of this program is to improve air quality.

San Diego Association of Governments (SANDAG) Regional Transportation Plan

The Regional Transportation Plan (RTP) is a set of policies, plans and programs guiding the coordination and orderly programming of transportation improvements among local, regional, state and federal agencies. It is developed and adopted by SANDAG through a comprehensive and cooperative planning process, and is updated every two years. The document contains major transportation issues, goals, objectives, policies and specific actions to guide regional-level decision making. Lemon Grove is one of the 18 local member agencies of SANDAG. Local transportation projects must be consistent with the RTP

in order to obtain state, federal or regional transportation sales tax funding.

SANDAG Regional Transportation Improvement Program

The Regional Transportation Improvement Program (RTIP) identifies the major individual transportation improvement projects to be constructed in the next seven years. These projects have been identified by SANDAG and local governments to meet the region's growing travel needs.

SANDAG Regional Growth Management Strategy

The Regional Growth Management Strategy creates a process for the Cities and County of San Diego to balance population growth, development, infrastructure requirements and conservation. The Strategy has been developed by SANDAG and uses a quality of life approach, focusing on eight environmental and economic factors: Air quality, water, sewage treatment, sensitive lands preservation and open space protection, solid and hazardous waste management, housing and traffic congestion. All local jurisdictions, including Lemon Grove, must certify that local General Plans are consistent with the Strategy.

SANDAG Congestion Management Program

The Congestion Management Program (CMP) has been developed by SANDAG to facilitate the development of a balanced transportation system. The CMP relates anticipated population, traffic and development to the performance of the regional transportation system. A transportation demand management (TDM) program, land use analysis program and a capital improvement program are included. The CMP, as an element of the RGMS, represents the regional effort to more directly link land use, transportation and improved air quality. All local jurisdictions, including Lemon Grove, are required to implement and monitor the CMP on key regional transportation facilities.

Metropolitan Transit Development Board (MTDB) Short Range Transit Plan

The Short Range Transit Plan (SRTP) provides a seven-year implementation plan for improvements to the regional transit system. The primary goal of the SRTP is to increase transit ridership by improving bus and trolley service. Recent plans have emphasized service refinements to reduce

operating costs in light of budgetary constraints. MTDB is the umbrella agency for bus operators and private companies (such as taxis) who provide transit services in the City. The City coordinates with MTDB and SANDAG to ensure the provision of adequate transit services and facilities.

Regional Air Quality Strategy

Developed jointly by SANDAG and the San Diego Air Pollution Control District (APCD), the Regional Air Quality Strategy (RAQS) establishes the regional plan to attain state and federal air quality standards by 1997. To meet this goal, the RAQS establishes the following strategies: 1) increased use of clean fuel motor vehicles in fleets; 2) specific control measures for stationary sources of air pollution (such as electrical power generation) and areawide sources (such as barbecue lighter fluid); and 3) transportation control measures (such as trip reduction programs and transportation system management).

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Mobility Element

OBJECTIVES AND POLICIES

Roadway System

A well-designed and maintained roadway system enhances safety, ensures adequate capacity to meet future travel needs and minimizes negative impacts on surrounding neighborhoods and businesses. Streets should be designated by function, such as arterial and collector, and a consistent set of roadway design standards will help to implement the designated function.

Objective 1.0: An efficient and safe roadway system reflecting existing and planned development patterns.

Policy 1.1: Designate a hierarchical roadway system.

Policy 1.2: Increase the efficiency of the roadway system without impacting established land use patterns.

Policy 1.3: Improve traffic safety and operations, especially in neighborhoods and around trolley crossings.

Policy 1.4: Enhance access to regional transportation routes.

Policy 1.5: Maintain the street system to reduce accident potential and avoid costly repairs.

Policy 1.6: Construct street improvements as needed to accommodate future traffic levels from regional growth and local development.

Public Transit

Lemon Grove has a comprehensive public transit system. The trolley and bus service link residents to the regional activity centers, and a local shuttle serves a wide area of the community.

Objective 2.0: Increased use of local and regional transit services.

Policy 2.1: Continue to provide comprehensive local and regional transit service, improving operations and coverage as needed.

Policy 2.2: Link public transit services (trolley, bus and shuttle) to bicycle and pedestrian access routes.

Policy 2.3: Promote land use patterns that encourage use of the trolley and bus service.

Policy 2.4: Provide adequate access and services for the elderly and disabled.

Policy 2.5: Promote transit that supports youth activity patterns.

Policy 2.6: Improve traffic flow and bus operations at high activity bus and trolley stops.

Bicycle Facilities

Bicycles can serve as an alternative to the automobile, relieving traffic congestion and improving air quality. Bicycles also serve recreational and exercise purposes. Lemon Grove has numerous opportunities to provide bicycle facilities which link local activity centers and provide connections with the regional bikeway system.

Objective 3.0: Routine use of the bicycle for transportation.

Policy 3.1: Provide bicycle facilities that link local activity centers (downtown, schools, parks) and the regional bikeway system.

Policy 3.2: Encourage residents to use bicycles as an alternative mode of travel for both local and commuter trips by publicizing and maintaining bicycle routes.

Policy 3.3: Promote bicycle storage facilities and racks in activity centers and at major bus and trolley stops.

Policy 3.4: Promote bicycle safety habits and bicycle awareness among motorists.

Pedestrian Facilities

Sidewalks are an important part of the mobility system. Walking serves as an alternative mode of transportation for short local trips as well as a form of recreation and exercise. Sidewalks encourage walking by safely separating pedestrians from traffic.

Objective 4.0: Pedestrian facilities that encourage walking as a mode of transportation and recreation.

Policy 4.1: Pursue sidewalk construction on one or both sides of all collector and major roads.

Policy 4.2: Consider providing sidewalks on local streets that lead or provide access to schools, parks, trolley stations and bus stops.

Policy 4.3: Implement pedestrian facilities accessible to the elderly and disabled population where feasible.

Policy 4.4: Identify new sidewalk requirements based upon need, right-of-way availability and financial feasibility.

Parking

Adequate on- and off-street parking is important to the viability of Lemon Grove businesses. Parking also benefits residents by providing convenient access to local destinations.

Objective 5.0: Adequate supply of on- and off-street parking.

Policy 5.1: Review the City parking standards and require conformance in new development.

Policy 5.2: Consider reducing parking requirements for new mixed use development around the trolley stations and within the Downtown Village.

Policy 5.3: Direct drivers to off-street parking facilities with clear signage, particularly in the Downtown Village.

Policy 5.4: Encourage shared parking for developments that have opposite peak parking times, (such as churches and offices/schools).

Policy 5.5: Consider paving shoulders for on-street parking along major roads, particularly those with high on-street parking demand.

Policy 5.6: Properly maintain public parking areas and encourage maintenance of private parking lots.

Policy 5.7: Review City off-street parking requirements and provide secure, useable and conveniently located bicycle parking, storage facilities or racks for residential, commercial and industrial developments.

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Mobility Element

PLAN

Overview

The Mobility Plan details how the objectives and policies presented in the previous section will be achieved. The plan contains generalized recommendations and specific strategies to achieve the mobility objectives. A separate document, the General Plan Implementation Manual, contains individual action programs to implement the plan outlined below.

Roadway System

An effective roadway system consists of several components. The most important component is a Roadway Circulation Plan based on a hierarchial system of streets. This hierarchial system defines roadway classification types, each of which has an associated set of design and traffic capacity standards based upon safety and level of service (LOS) requirements.

Roadway Circulation Plan

"...a Roadway Circulation Plan based on a hierarchical system of streets."

The Roadway Circulation Plan is closely linked with the Community Development Element. The Circulation Plan recommends street improvements based on the future land use development patterns. The type and density of land use results in projected traffic levels. Most of the existing City streets have sufficient capacity to accommodate the additional traffic which may result from new development. However, certain streets do not and are therefore recommended for additional through or turn lanes to ensure safe and efficient traffic flow.

Figure M-1 illustrates the Lemon Grove Roadway Circulation Plan. Future SR-125 is included in the plan as a six-lane freeway. A four-lane median within the right-of-way will also be provided for optional future improvements, such as additional mixed traffic or high-occupancy-vehicle (HOV) lanes, or mass transit services. The design selected for implementation by Caltrans includes a full freeway to freeway interchange with SR-94, and a full interchange at Jamacha Boulevard. This freeway would complete the final link of the "South Inner Loop" freeway system included in the SANDAG Regional Transportation Plan.

Functional Roadway Classifications

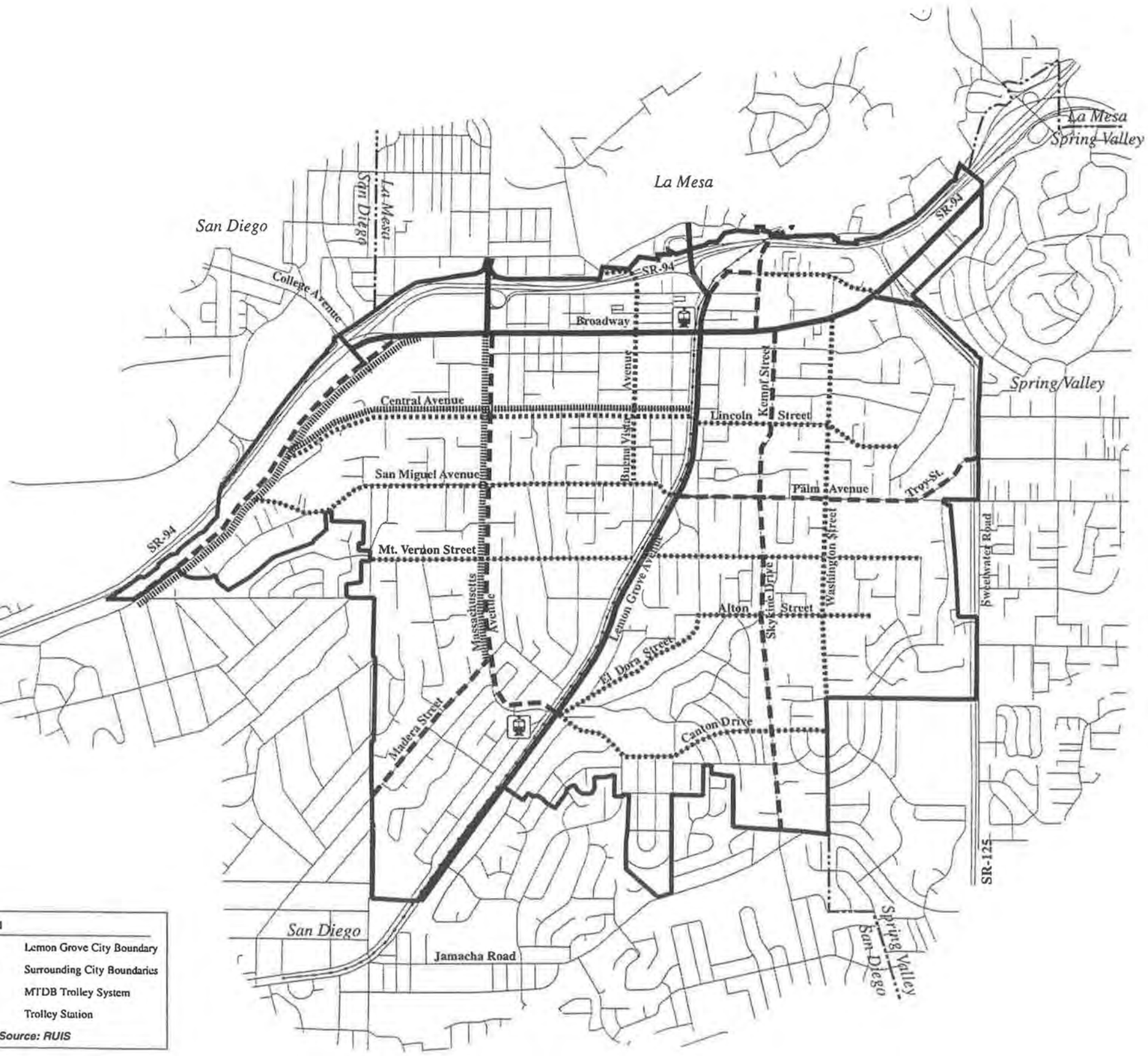
Four roadway classifications based upon function are identified in the Roadway Circulation Plan. All of the classifications were derived from the existing County of San Diego standards, with the exception of the Class II Collector, which has been added to better reflect the nature of Lemon Grove's street system. The four types of roadways are defined as follows:

"Four roadway classifications are identified: Major Road, Class I Collector, Class II Collector and Class III Collector."

- Major Road - A four-lane divided roadway with access and parking controlled as necessary to maintain traffic flow. The primary function of a Major Road is to provide mobility. Access to adjacent properties is a secondary function, and driveway entrance and exit points should be limited. The streets with the highest traffic volumes in Lemon Grove are classified as Major Roads.

- Class I Collector - A four-lane undivided road which circulates local traffic and provides access between major roads and neighborhood collectors. Class I collectors are designed to accommodate four lanes of traffic but carry lower volumes at slower speeds than a four-lane major road. Left turn lanes should be provided at intersections with other Class I collectors and major roads. Driveway access should also be limited.

Lemon Grove General Store, northwest of Pacific Avenue and Main Street, 1937. Photo courtesy of Lemon Grove Historical Society.



Legend

- 4-LANE MAJOR
- CLASS I COLLECTOR
- CLASS II COLLECTOR
- CLASS III COLLECTOR
- RESIDENTIAL/LOCAL COLLECTOR
- SPECIFIC STREET PLAN

N

1 inch = 2,000 feet

Source: BRW, Inc.

Figure M-1
Roadway Circulation Plan

- Class II Collector - A two-lane roadway with a two-way center left turn lane. This classification was developed to provide for safer traffic flow in residential or commercial areas with through streets serving as major collectors. A two-way center left turn lane ensures safer driveway access to and from residential and commercial properties by providing a center lane as a "safety net" in high traffic areas where access may be difficult. Class II Collectors are designed to carry two lanes of traffic at lower volumes and slower speeds than the four-lane Class I Collector. Parking would typically be allowed.

- Class III Collector - A two-lane undivided road which primarily distributes traffic to and from major roads and higher class collectors, and allows access to adjacent properties and residential streets. Class III Collectors accommodate low volumes and should be designed to discourage through traffic in residential areas. Parking is typically allowed, and may be denied at critical locations (intersections, fire hydrants, utilities).

Local and residential collectors, which are two-lane, undivided roadways providing access to and through Lemon Grove's residential areas, are not designated as Mobility Element roadways. These local streets are intended to carry low volumes of local neighborhood traffic.

Roadway Design Standards

An effective roadway system relies upon a consistent set of design standards to specify roadway geometry and right-of-way requirements for each roadway classification type. Figure M-2 illustrates typical cross-sections for the roadway classifications. These roadway design standards are based upon the level of service (LOS) concept and roadway capacity thresholds as discussed below.

"The level of service (LOS) concept... measures the ability of a roadway to handle traffic."

The level of service (LOS) concept provides a basis for describing the operating conditions of a roadway by measuring the ability of a roadway to handle traffic. Level of service is based on the driver's concept of traffic congestion and delay, and provides a consistent method for evaluating traffic conditions and making recommendations for improving or expanding the roadway network. Standard traffic engineering practice defines six levels of service, varying from A (free flow) to F (severe congestion). Implementation of the Roadway Circulation Plan will ensure acceptable LOS C or better. The LOS definitions are summarized in Table M-1.

TABLE M-1
LEVEL OF SERVICE (LOS) DEFINITIONS

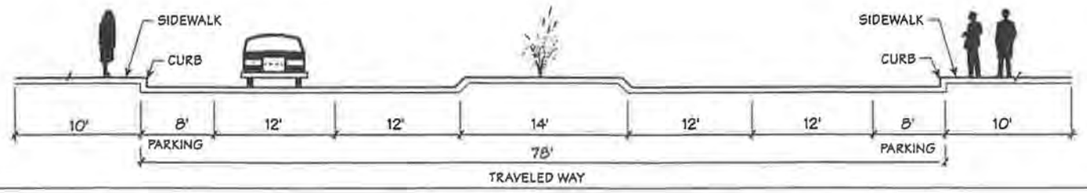
Level of Service (LOS)	Traffic Flow Quality
A	Low volumes, high speed; speed is not restricted by other vehicles; all signal cycles clear with no vehicles waiting through more than one signal cycle.
B	Operating speed beginning to be affected by other traffic; between one and ten percent of signal cycles have one or more vehicles which wait through more than one cycle during peak traffic periods.
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 standard.
D	Tolerable operating speeds; 31 to 70 percent of the signal cycles 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.
E	Capacity; the maximum traffic volume of an intersection can accommodate; restricted speeds; 71 to 100 percent of the signal cycles have one or more vehicles which wait though more than one signal cycle during peak traffic periods.
F	Long queues of traffic; unstable flow; stoppages of long duration; traffic volume and traffic speed can drop to zero; traffic volume may be less than volumes which occurs at LOS E.

Source: 1994 Highway Capacity Manual; BRW, Inc.

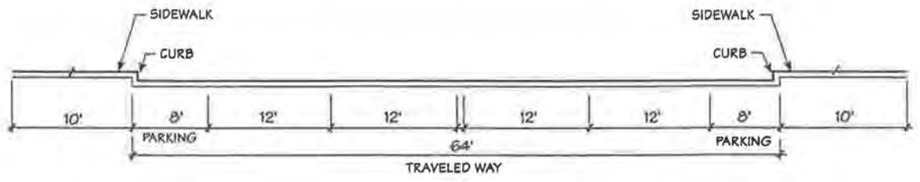
"Level of Service C is generally accepted as the design standard for roadways, while LOS D is considered the minimum acceptable LOS."

Table M-2 presents the roadway capacity thresholds by roadway classification. Capacity thresholds are defined in terms of average daily traffic (ADT) volumes and have a corresponding Level of Service (LOS). Level of Service C is generally accepted as the design standard for roadways, while LOS D is considered the minimum acceptable LOS. LOS E and F represent significant levels of congestions, and are therefore not acceptable. Figure M-3 displays projected Year 2015 traffic volumes as derived from the SANDAG Regional Travel Demand Model. The model estimates future trip making and roadway use based on future land uses as shown in Lemon Grove's land use plan.

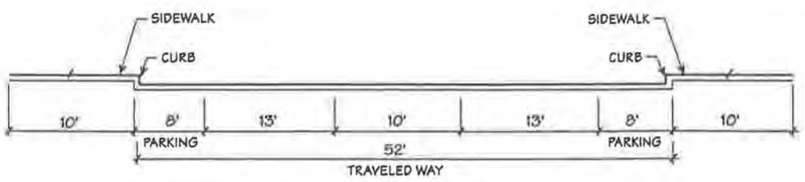
FOUR-LANE MAJOR



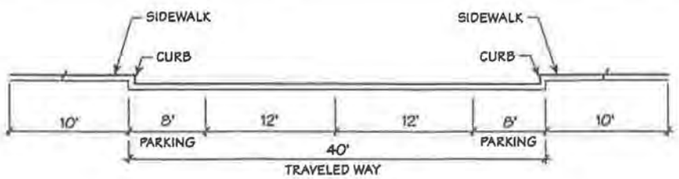
CLASS I COLLECTOR



CLASS II COLLECTOR



CLASS III COLLECTOR



Note: *Total Right-of-Way can vary depending on whether parking and/or sidewalk strip is provided

Legend

Four-Lane Major - A four-lane divided roadway with access and parking controlled as necessary to maintain flow. Primary function is to provide mobility; access is secondary.

Class I Collector - A four-lane undivided road intended to provide access between major roads and local or residential streets; parking controlled as necessary.

Class II Collector - A two-lane roadway with a center turn lane to allow for safe access to and from adjacent properties; parking is typically allowed.

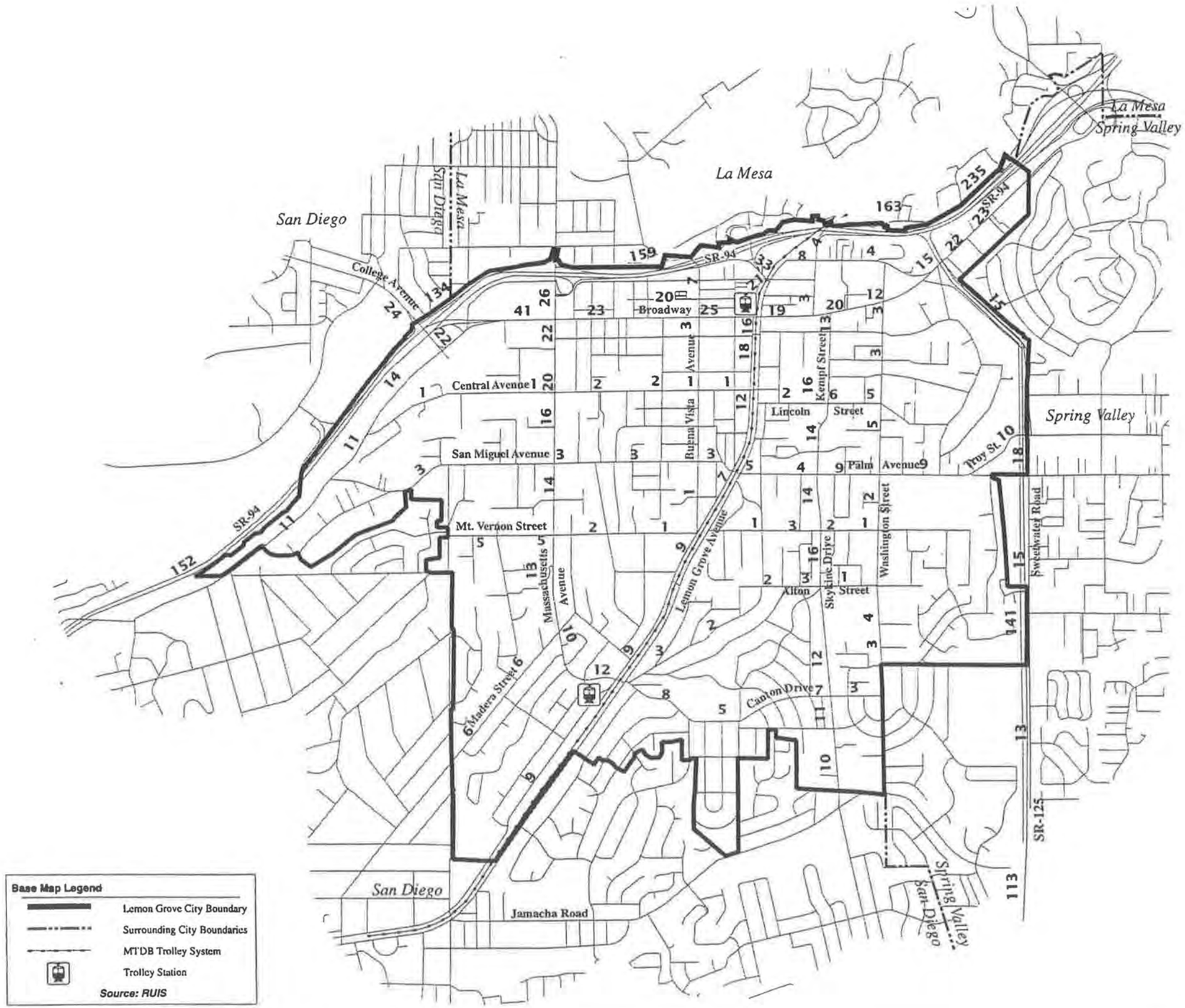
Class III Collector - A two-lane undivided road. The main function is to provide access to adjacent properties and distribute traffic to and from higher class roadways; parking is typically allowed.

N

1 inch = 2,000 feet

Source: BRW, Inc.

Figure M-2
Typical Cross-Sections



Legend

X = Year 2015 ADT Volumes (in 1000's)

N

1 inch = 2,000 feet

Source: SANDAG

Figure M-3
Forecasted Year 2015
Average (ADT) Volumes

TABLE M-2
ROADWAY CLASSIFICATIONS AND LEVEL OF SERVICE (LOS) CAPACITY STANDARDS

Classification/ Definition	Right-of-Way (Ft.)	Travelway (Ft.)	LOS C Capacity (ADT)	LOS D Capacity (ADT)	LOS E Capacity (ADT)
Major Road	98	78	30,000	33,400	37,000
Class I Collector	84	64	22,000	24,800	27,500
Class II Collector	72	52	16,000	20,000	24,000
Class III Collector	60	40	7,500	9,000	10,000

Source: BRW, Inc.; November 1995.
Notes: LOS C is generally used as the design standard for roadway capacity.
LOS D is the minimum acceptable level of service.
LOS E and F are not acceptable.

The addition of a Class II Bike Lane on any facility would increase the cross-section by 10 feet to allow for two bike lanes (five feet each minimum), or make approved trade-offs for parking or lane width if right-of-way is limited. Class III bike routes would share the vehicle lane right-of-way.

Specific Street Plans

"Specific Street Plans provide special design standards for streets with unique land use and right-of-way constraints."

Specific Street Plans provide special design standards for streets with unique land use and right-of-way constraints. The plans provide for a safe pavement width and travelway within a modified right-of-way requirement. Table M-3 summarizes the Specific Street Plans.

TABLE M-3
SPECIFIC STREET PLANS

Roadway	Segment		Standard Cross-Sections		
	From	To	Right-of-Way (Ft.)	Travelway (Ft.)	Sidewalk (Ft.)
Central Ave.	Main St.	Federal Blvd.	56	40	8
Federal Blvd.	MacArthur Dr.	College Ave.	86	66	10
Lester Ave.	Lemon Grove Ave.	Grove St.	64	44	10
North Ave.	Vista Ave.	Buena Vista Ave.	60	40	10
Massachusetts Ave.[1]	Broadway	Madera St.	80	64	8

[1]Reflects Class II cross-section with six-foot bike lanes and eight-foot sidewalks on each side.

Source: City of Lemon Grove; BRW, Inc.

Roadway System Strategies

An efficient roadway system as specified by the Roadway Circulation Plan will require implementation of several specific strategies. These strategies primarily relate to traffic operations, traffic safety, regional access and street maintenance.

"An efficient roadway system... will require... strategies related to traffic operations, traffic safety, regional access and street maintenance."

Traffic Operations

Traffic Flow. Redevelopment of the commercial and industrial areas along Broadway will increase traffic volumes beyond current levels. Methods will be examined to maintain efficient traffic flow along this busy arterial. These methods include signal timing optimization plans, as well as arterial access management studies. Signal optimization will better coordinate the traffic signals to minimize delays and smooth traffic flow. The management of access along major arterials will determine the potential for combining driveways and access points to improve traffic flow. This is important because a high number of access points inhibits driver behavior and reduces the capacity of the roadway, resulting in less efficient traffic flow.

Trolley Crossings. Trolley crossings can present confusing situations for the driver and can result in complicated traffic signal operations. The San Diego Trolley East Line passes through Lemon Grove along Lemon Grove Avenue and crosses several roadways in the City, including Massachusetts Avenue, San Miguel Avenue/Palm Street, Central Avenue, Broadway, and North Avenue, near the Lemon Grove Avenue/SR-94 interchange. To ensure driver safety, the plan calls for all trolley crossings to be improved with well-marked and visible signage and pavement markings. The City should continue to coordinate with the Metropolitan Transportation Development Board (MTDB) to study and improve traffic signal timing and operations at trolley crossings to ensure safe and acceptable intersection operations.

Intersection Operations. Another important element of an effective roadway system related to traffic operations is intersection operations. Traffic congestion is typically experienced at major intersections, particularly during peak periods. This Mobility Element recommends LOS D or better for both daily and peak hour intersection operations.

Lemon Grove Avenue/SR-94 Intersection. As part of this Mobility Element, Lemon Grove Avenue/SR-94 intersection was analyzed. This intersection is one the primary entryways into the City. It has been noted by the public and City staff that long traffic delays and traffic queues can

occur at this intersection. Heavy traffic movements are primarily associated with access to and from SR-94 from Lemon Grove Avenue which require crossing the trolley tracks. Other intersection movements are relatively low.

The evaluation of current operations has found the intersection to be operating at LOS C during the AM peak period and LOS D in the PM peak period, which is generally considered acceptable. However, certain movements do experience significant delays, primarily due to the proximity of the intersection to the trolley tracks, as discussed below.

The major intersection movements consist of the northbound Lemon Grove Avenue left turn (Phase 5) and the eastbound right turn from the SR-94 freeway (Phase 4 and overlap). Both of these movements cross the MTDB Trolley Tracks.

When a trolley actuation occurs, resulting queues on the major movements have been observed to be significantly long, even during off-peak traffic periods. An initial investigation into the signal timing and trolley actuation procedures identified the following reasons for the long queue lengths and resulting delays. The start up phases following a trolley pre-emption appear to begin with the less critical movements. The result is that the heaviest movements in the intersection are the last to be serviced after the train gates open. The initial phases could potentially be set to begin service to the approaches with the higher demand and thus reduce the queue length for those approaches.

The Lemon Grove Trolley Station provides an opportunity to coordinate the departure of eastbound trolleys with the adjacent traffic signal operation. When a trolley actuation occurs, the least impactive point in the intersection cycle length for it to occur appears to be at the end of the northbound Lemon Grove Avenue left turn phase (Phase 5). The heaviest volumes will have just cleared the intersection and the less critical approaches will bear more of the impacts of the trolley crossing.

Congestion Management Program. The Congestion Management Program is administered by SANDAG to facilitate the development of a balanced, efficient regional transportation system. The goal of the program is to ensure the efficient operation of key regional transportation facilities, like SR-94 and the future SR-125. The City will help implement the Congestion Management Program by ensuring that development proposals are assessed for conformance and completing the self-certification process every two years.

Rail car stopped in Lemon Grove, circa 1910. Photo courtesy of Lemon Grove Historical Society.

manner. This program could be updated on a regular basis to incorporate community requests as appropriate. This method will allow the City to identify problems areas and avoid expensive repairs at a later date.

Regular preventive street maintenance to repair deteriorating pavement sections can prevent future problems which may develop as a result of storm run-off, heavy vehicle utilization and ongoing wear and tear of the pavement surface. As part of this program, the City will examine the use of higher quality and more durable pavement materials. Furthermore, any improvements to roadways and infrastructure should maintain and repair bikeway facilities consistent with the Bikeway Surface Tolerance standards of the Highway Design Manual.

Public Transit

The City has a comprehensive mix of public transit services, consisting of the San Diego Trolley, local bus and shuttle services. Figure M-4 illustrates the public transit services in the City. This variety of transit service provides viable alternatives to the private automobile for the citizens of Lemon Grove. The focus of the public transit portion of the City Mobility Element is to increase the use and efficiency of available services. Encouraging the use of transit is generally accomplished through two courses of action:

- The provision of convenient access via bus stops or trolley stations, and
- Efficient and frequent transit service levels.

"...the San Diego Trolley, local bus and shuttle service... provide viable alternatives to the private automobile..."

The provision of convenient access to public transit will be accomplished by providing convenient bus stop locations and facilities and encouraging mixed use development. Bus shelters are not currently provided at bus stops in the City, but can greatly improve waiting conditions for riders. The City is in the process of selecting a design scheme to provide for shelters at transit centers and major bus stops. As the City continues to develop, the City will review current bus stop locations to ensure that shelters are provided at the busiest bus stops, that disruption to traffic flow is minimal and that bus stops are accessible to the elderly and handicapped.

"Mixed-use development... encourages the use of transit, walking and bicycling..."

The General Plan Community Development Element complements the Mobility Element public transit objectives with the recommendation for mixed-use development near transit centers. Mixed-use development is intended to provide medium and high density residential land uses in same zone as commercial and public land uses. By providing a wide variety of service in close proximity to residents and ensuring convenient access to alternative modes of transportation, this type of transit-oriented development encourages the use of transit, walking and bicycling as convenient alternatives to the automobile.

As a key component of this plan, the City will strive to maintain efficient levels of transit service within financial limitations. This will be accomplished by coordinating with MTDB and identifying opportunities to increase the frequency of service. The trolley stations provide a focus for transit utilization in the City. As such, local bus routes should provide feeder type service to trolley stations. The trolley links residents to employment centers in the eastern communities of La Mesa and El Cajon and in downtown San Diego. The City will also coordinate with MTDB to ensure that timed transfers between the bus and trolley are in effect to minimize waiting time for riders. The City will work with MTDB to monitor

ridership of the bus and trolley system, in order to identify emerging activity centers and performance trends. Scheduling and route adjustments will be also be coordinated with MTDB as appropriate to maintain efficient levels of service.

Bicycle Facilities

"Bicycle facilities have become increasingly popular...for commuting, environmental, health and recreational purposes."

This Mobility Element contains a Bicycle Facilities Sub-Element (Appendix A), which provides a needs assessment and phased implementation program for the Lemon Grove Bikeway Plan. Bicycle facilities have become increasingly popular in the San Diego region for commuting, environmental, health and recreational purposes. The communities surrounding Lemon Grove have developed and implemented their own bikeway plans that serve local destinations as well as provide linkages with the Regional Bikeway Plan as envisioned by SANDAG. In a similar manner, the Lemon Grove Bikeway Plan maintains the continuity of the regional bikeway system and provides residents with an alternative way to meet local travel needs. Three types of bicycle facilities are defined by Caltrans, including:

- Class I Bike Path with exclusive right-of-way and minimal interaction with automobiles.
- Class II Bike Lanes with striped pavement markings delineating a safe travelway for bicyclists within the paved area of the roadway.
- Class III Bike Routes with bicyclists sharing the travel lane with automobiles. Bike routes signs are provided at regular intervals on the roadway.

"The Lemon Grove Bikeway Plan... provides safe linkages to activity centers...and other forms of transportation."

Figure M-5 illustrates the recommended Lemon Grove Bikeway Plan. This plan includes the provision of Class II Bike Lanes and Class III Bike Routes to provide safe linkages to activity centers such as schools, parks, residential neighborhoods and commercial areas. In addition, bicycle connections are encouraged with other forms of transportation including the trolley, bus, and carpools at trolley stations, bus stops and park-and-ride lots. Secure, useable and conveniently located storage facilities and bike racks will be provided at key locations as an additional means of encouraging people to use bicycles as a form of transportation.

Pedestrian Facilities

Sidewalks are an important part of Lemon Grove's circulation system. Sidewalks are generally limited in many areas of the City. Many residents enjoy walking along neighborhood streets such as Central Avenue, San Miguel and Kempf Street where sidewalks are not currently provided.

Legend

- San Diego Trolley East Line
- County Transit System (CTS) Bus Routes (816,856)
- Lemon Grove Shuttle CTS Route 875
- San Diego Transit (SDTC) Bus Routes (4,11,36)
- Trolley Station

CTS WHEELS Demand Responsive System - Not Shown

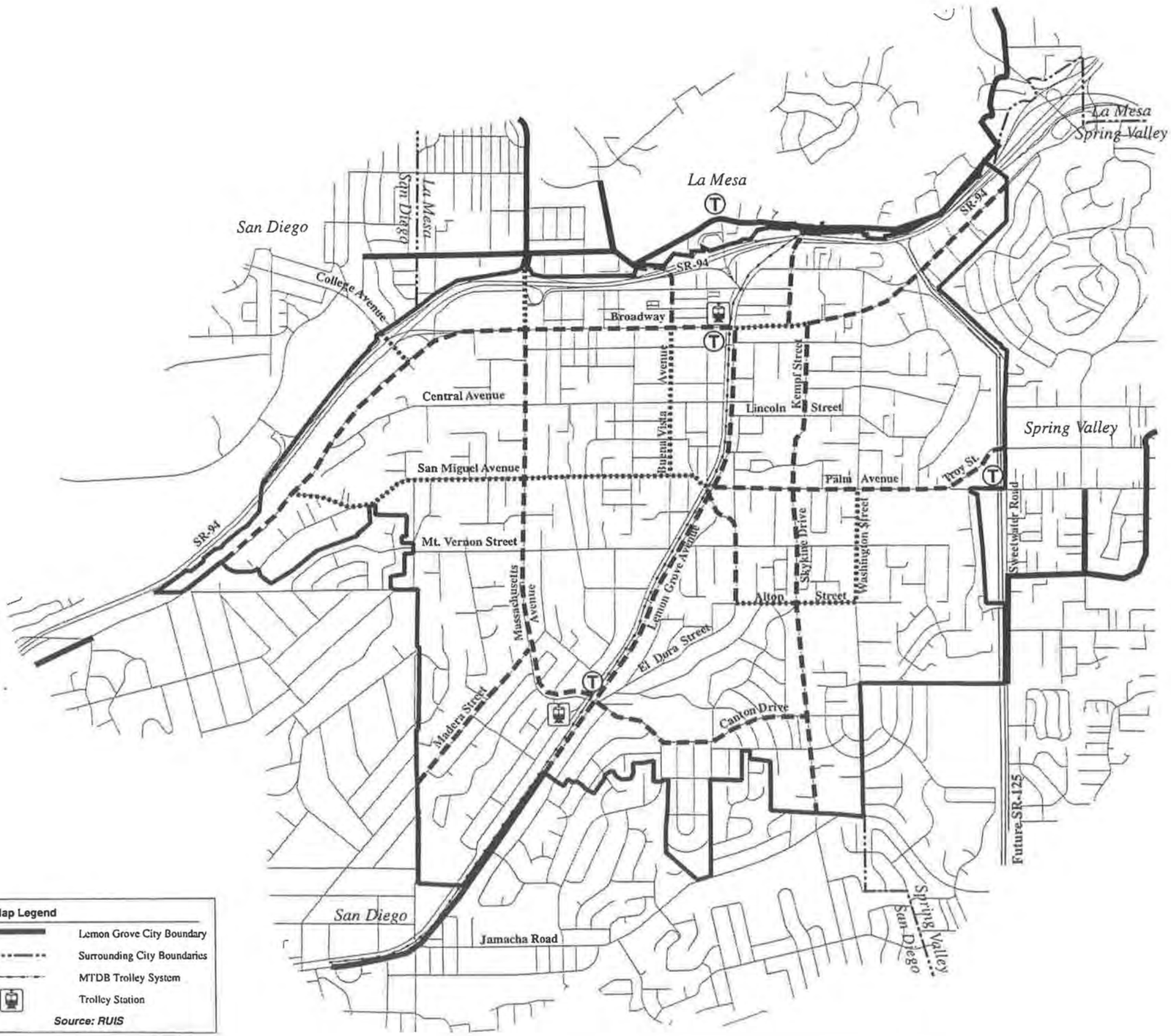
Source: BRW, Inc.

N

1 inch = 2,000 feet

Source: MTDB.

Figure M-4
Public Transit Service



Base Map Legend

- Lemon Grove City Boundary
- Surrounding City Boundaries
- MTDB Trolley System
- Trolley Station

Source: RUIS

Mobility Element

Legend

- Existing Bicycle Facility
- Recommended Class II Bicycle Lane
- Recommended Class III Bicycle Route
- Ⓣ Transfer Location

Notes:

1) The Lemon Grove Avenue median will be narrowed by four feet between Mt. Vernon Street and the City Limits to avoid removal of parking on southeast side.

2) Canton Street will initially be improved to a Class III Bike Route and upgraded to a Class II Bike Lane only if determined to be appropriate by future analysis.

N

1 inch = 2,000 feet

Source: BRW, Inc.,

Figure M-5
Bikeway Plan

Figure M-6 illustrates the City's major pedestrian corridors. With the exception of the pedestrian path between San Miguel Avenue and Mt. Vernon Street, the corridors are generally located along major streets providing access to key activity centers and local streets providing pedestrian access between neighborhoods. The lack of sidewalks along some streets can threaten public safety and discourage residents from walking to their destinations. The City will strive to construct sidewalks along all major and collector roadways. Pedestrian facilities should be accessible to the elderly and disabled people through the use of curb ramps in compliance with the Americans with Disability Act standards.

"The City will strive to construct sidewalks along all major and collector roadways."

The City will promote the inclusion of sidewalk improvements as part of the improvement plans for roadways as properties develop or redevelop. The City will include sidewalk improvements in the Capital Improvement Program. Based on need and available funding, sidewalks will be phased over a period of time.

Parking

Adequate and convenient parking is important to residents and business owners alike. Because many of the streets have been developed without design standards, on-street parking is often provided on dirt shoulders, particularly in older residential neighborhoods and along streets such as San Miguel Avenue, Central Avenue, Kempf Street and Federal Boulevard. Implementation of the roadway design standard will facilitate adequate pavement and improve on-street parking.

"Adequate and convenient parking is important to residents and business owners alike."

In a number of locations, limited off-street parking is provided for convenient access to the commercial areas along Lemon Grove Avenue and Broadway. The planned redevelopment of several commercial areas along Broadway will present the City with an opportunity to provide adequate off-street parking. The City parking standards will be reviewed to determine if a greater share of parking should be allocated to compact cars in areas where large parking lots are proposed. The parking standards could also be revised to reflect the Community Development Element's provision for mixed use development, which could decrease trip making and parking requirements, particularly in the vicinity of trolley stations.

The Downtown Village area east of Lemon Grove Avenue should emphasize the orientation of traffic to the existing off-street parking to the rear of the stores. This will help create a pedestrian friendly atmosphere. Additional signage and on-street parking restrictions will be implemented as necessary.

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Figure M-6
Pedestrian Corridors

Attachment A

BICYCLE FACILITIES SUB-ELEMENT

Bicycle Facilities Sub-Element

INTRODUCTION

Overview

The Lemon Grove Bikeway Plan has been developed as a sub-element of the Lemon Grove Mobility Element. The Bicycle Facilities Sub-Element is a policy-level document which contains a planning-level analysis of how the Bikeway Plan was developed, as well as strategies and tools to implement the blueprint for future bikeways in the City of Lemon Grove.

Purpose

This sub-element is intended to provide the City of Lemon Grove with a comprehensive Bikeway Plan designed to meet commuter and recreational user needs. The Bikeway Plan is based on a review of existing local and regional conditions, bicycle facility policies and standards, and is directly related to the objectives and policies for bicycle facilities as identified by the General Plan Advisory Committee (GPAC). In addition to existing conditions, the following bicycle facility issues are addressed in this sub-element planning document:

- Regional Connectivity
- Transfer Point/Activity Center Analysis
- Bikeway Plan and Route Descriptions
- Implementation Requirements and Funding Sources
- Safety Awareness Program

According to the San Diego Association of Governments (SANDAG), bicycle facilities have become increasingly utilized in the San Diego region for several reasons, including commuting, recreation, health and environmental. All of the cities in the San Diego region have adopted general bikeway plans including San Diego, La Mesa and El Cajon, which are in close proximity to Lemon Grove. While Lemon Grove has indicated a desire to develop a Bikeway Plan in the past, there are no existing bicycle facilities in the City. For these reasons, the Bikeway Plan for the City of Lemon Grove is also intended to maintain continuity of the regional bikeway system to provide residents with an alternative mode for making both local and regional trips.

The Lemon Grove Bikeway Plan is also designed to provide safe connectivity to activity centers such as schools, open space/parks, residential neighborhoods and commercial areas within the City and in

adjoining jurisdictions. Where feasible, bicycle facilities should be implemented in conjunction with pedestrian facilities (sidewalks) in order to provide an integrated and comprehensive pedestrian and bicycle circulation system.

Bicycle Facilities Sub-Element

OBJECTIVES AND POLICIES

The Lemon Grove General Plan Mobility Element establishes the objectives and policies for the Bicycle Facilities Sub-Element. They are as follows:

Objective 1.0: Routine use of the bicycle for transportation.

Policy 1.1: Provide bicycle facilities that link with local activity centers (downtown, schools, parks) and the regional bikeway system.

Policy 1.2: Encourage residents to use bicycles as an alternative mode of travel for both local and commuter trips by publicizing routes and proper maintenance.

Policy 1.3: Provide bicycle storage facilities and racks in activity centers and at major bus and trolley stops.

Policy 1.4: Aggressively implement a Bicycle Safety Awareness Program to promote bicycle safety habits.

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Bicycle Facilities Sub-Element

EXISTING CONDITIONS

This section presents an overview of existing bicycle facilities and associated regional policies. A discussion of Caltrans bicycle facility classifications and design standards is also provided. All of these existing conditions influence the development of the Bikeway Plan and play a role in defining priorities for implementation.

Existing Bicycle Routes and Storage Facilities

Lemon Grove does not currently have any designated bicycle facilities within the City limits. However, several existing bicycle facilities are located in the adjacent Cities of San Diego and La Mesa, as well as in the community of Spring Valley. Figure 1 illustrates the location of bicycle facilities surrounding Lemon Grove. One of the objectives of the Lemon Grove Bikeway Plan is to link with these existing facilities to provide a comprehensive inter-community and regional bikeway system.

Bicycle system amenities such as lockers and racks are also present in and/or adjacent to Lemon Grove. The San Diego Trolley East Line provides ten bicycle lockers at the Lemon Grove Depot station and eight lockers at the Massachusetts Avenue station. All lockers are in use, and there is a waiting list for the Lemon Grove Depot location. Bicycle racks are also provided at the trolley stations. The park-and-ride lot near SR-94 and Lemon Grove Avenue recently removed the four underutilized lockers at that location. However, a "Bike Parking" sign remains at that location. Bicycle racks, while provided at schools, are not provided in other areas of the City.

SANDAG Regional Bikeway Plan

SANDAG has designated several bicycle corridors to serve the regional bikeway system. The SANDAG Regional Bicycle Facilities Committee, which includes members from each member agency, the Port, County, Caltrans, the Metropolitan Transit Development Board (MTDB) and citizens, developed a bikeway system that was adopted as part of the 1994 Regional Transportation Plan (RTP). This bikeway system is illustrated in Figure 2 and consists of both existing and proposed facilities which fall into three general categories:

- Regional Corridor Bikeways: These bikeways are defined as traversing three communities or two communities and the unincorporated County area, and service high-activity centers such as schools, parks/open space, employment centers and shopping centers. These corridors are generally located several miles apart and include state highways where possible.

- Regional Feeder Bikeways: These facilities traverse two communities or connect a major community with a Regional Corridor Route. These types of routes are typically located in high-density residential areas and are designed to serve activity centers, particularly schools and employment sites.

- Local Service Routes: Facilities defined by local jurisdictions in their respective bikeway plans. While the previous Lemon Grove General Plan (1980) indicated that the City would adopt a bicycle route system and promote bicycle use through appropriate improvements, a master bikeway plan was not adopted. This Bikeway Plan will serve as the recommended local service routes for the City of Lemon Grove.

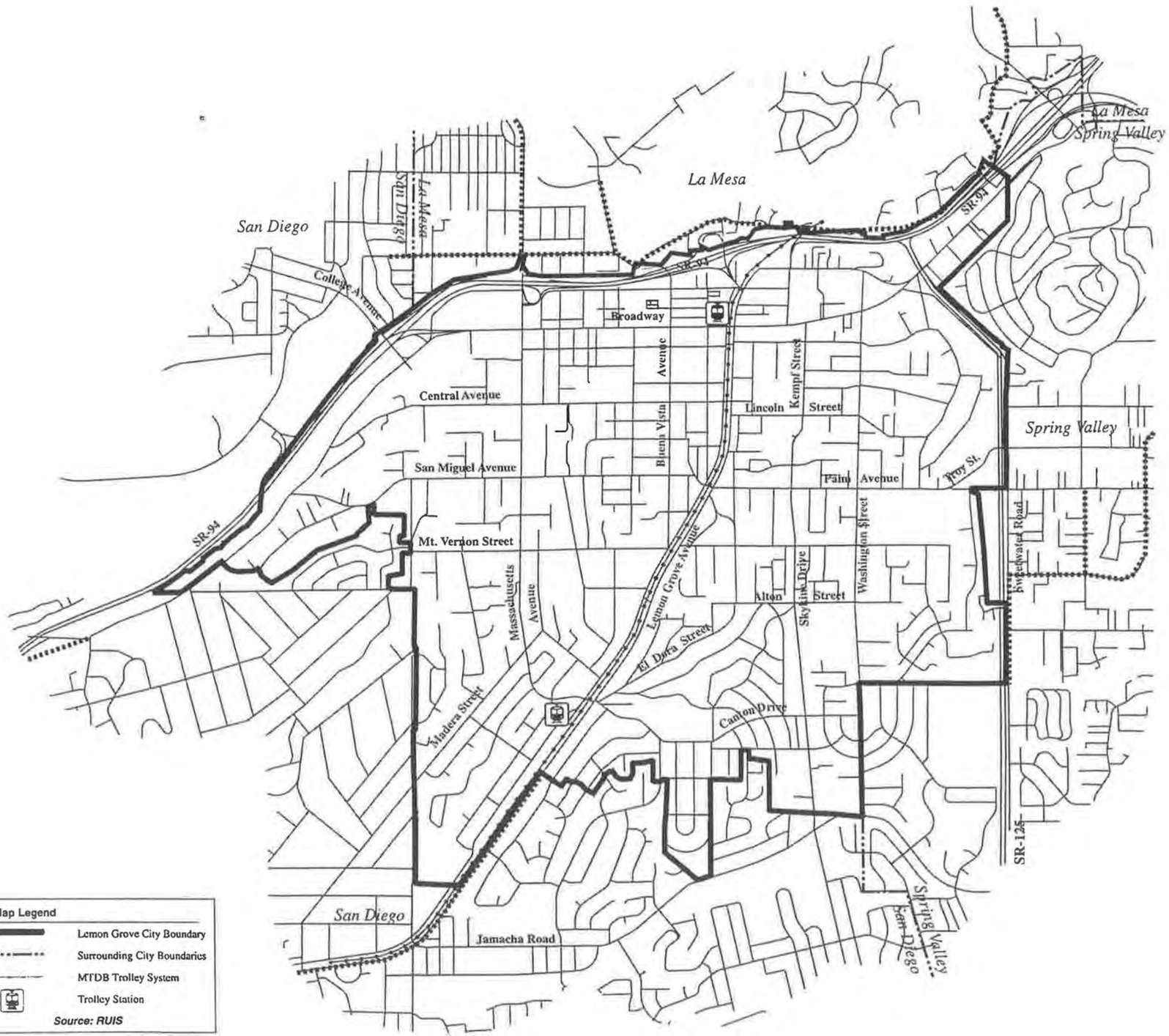
Facility Classifications and Design Standards

The proposed bicycle facility network for the City of Lemon Grove will be based on the standard bicycle facility classifications and design standards as developed by Caltrans. Appendix A of this sub-element contains the Bikeway Planning and Design chapter from the Caltrans Highway Design Manual (Chapter 1000). Three classes of bicycles facilities are defined:

- Class I Bike Paths: Facilities with exclusive right-of-way with cross flows by motorists minimized. Bike paths are designed for exclusive use by bicyclists and pedestrians. The minimum paved width for a two-way bike path is eight feet. A one-way path typically requires five feet.

- Class II Bike Lanes: One-way facilities established within the paved area of roadways for the preferential use of bicyclists. Bike lane stripes are intended to promote an orderly flow of traffic between areas reserved by bicycles and lanes occupied by vehicles. Additional pavement markings and bike lane signs also support separated flow. Bike lanes are typically four to five feet wide depending on the characteristics of the roadway.

General Plan Bicycle Sub-Element



Base Map Legend

- Lemon Grove City Boundary
- Surrounding City Boundaries
- MTDB Trolley System
- Trolley Station

Source: RUIS

Legend

- EXISTING BICYCLE FACILITY

N

1 inch = 2,000 feet

Source: BRW, Inc.

Figure B-1
Existing Bicycle Facilities

General Plan Bicycle Sub-Element

Base Map Legend

- Lemon Grove City Boundary
- Surrounding City Boundaries
- MTDB Trolley System
- Trolley Station

Source: RUIS

Legend

- REGIONAL CORRIDOR BIKEWAY
- REGIONAL FEEDER BIKEWAY
  (Based on SANDAG Regional Transportation Plan Recommendations)

N

1 inch = 2,000 feet

Source: BRW, Inc

Figure B-2
Regional Bikeway Designations

- Class III Bike Routes: Shared facilities, either with motor vehicles on the street or with pedestrians on the sidewalk; bicycle usage is secondary. These facilities are intended to provide continuity to the bikeway system by connecting discontinuous segments of Class I or II facilities. The minimum width is dependent on many factors, and the route is generally designated by signs.

According to the Caltrans Highway Design Manual, routes should be signed only if the following apply:

- They provide through and direct travel in bicycle demand corridors.
- Connect discontinuous segments of bike lanes.
- An effort has been made to adjust traffic control devices (stop signs/signals) to give greater priority to bicyclists as compared to alternative streets.
- Street parking has been removed or restricted in areas of critical width to provide improved safety.
- Travel surface has been improved or is in good condition.
- Route will be maintained at higher level than alternative streets.

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Bicycle Facilities Sub-Element

SYSTEM ANALYSIS

This section presents an analysis of the opportunities and constraints associated with the Lemon Grove Bikeway Plan. These opportunities relate to the potential of linking with existing or planned regional and local routes and transfer points. Constraints generally relate to the limited public right-of-way typical of any developed community, as well as the trade-offs associated with roadway design standards.

Regional Connectivity

The Lemon Grove Bikeway Plan will contain many of the feeder and major corridor routes envisioned by SANDAG to be part of the regional bikeway system. The Bikeway Plan is designed to implement routes which can become elements of this system, as well as link to existing or planned regional routes.

Opportunities exist to implement regionally significant routes along Federal Boulevard, Broadway, Massachusetts Avenue and Lemon Grove Avenue. These routes provide continuous bicycle facilities through the region and would link with existing or planned routes on Massachusetts Avenue north of SR-94, Imperial Avenue, Jamacha Road and Sweetwater Road. It is preferable that higher class bicycle facilities, Class II Bike Lane or above, be implemented on these high volume roadways to provide for a safer, more defined bikeway.

Local Transfer Points/ Activity Centers

In addition to providing connections to regional routes and existing bicycle facilities outside city limits, the bikeway plan will be designed to link local and regional activity centers. Activity centers include schools, parks, commercial areas, public buildings, as well as transit centers and park-and-ride locations. Transit centers and park-and-ride lots provide opportunities for persons to transfer from their bicycle to the trolley, bus or carpools to complete a longer trip.

Figure 3 illustrates the primary activity centers in and around Lemon Grove, and indicates where bicycle facilities could be located to connect these areas.

One of the primary activity centers is the Downtown Village area along Broadway, which will include mixed use development (both commercial and residential uses in one area). The Community Development Element of the General Plan recommends that the area north of Broadway be zoned for regional and community serving retail stores. In addition, the area along Federal Boulevard will continue to serve auto dealerships and industrial uses. This entire corridor provides a wide range of shopping and retail services, and is also a major employment area. The provision of bike lanes along Broadway and Federal Boulevard will create a safer, more efficient option for using bicycles as a mode of transportation in this corridor.

There are also several schools and community parks throughout Lemon Grove. Bicycle facilities will directly access schools along San Miguel Avenue, Madera Street, Palm Avenue/Troy Street and Canton Drive. In addition, the proposed bikeway system would provide various routes to downtown Lemon Grove, providing access to City Hall, the Community Center, Lemon Grove Middle School and Recreation Center, Golden Avenue Elementary School and the Library.

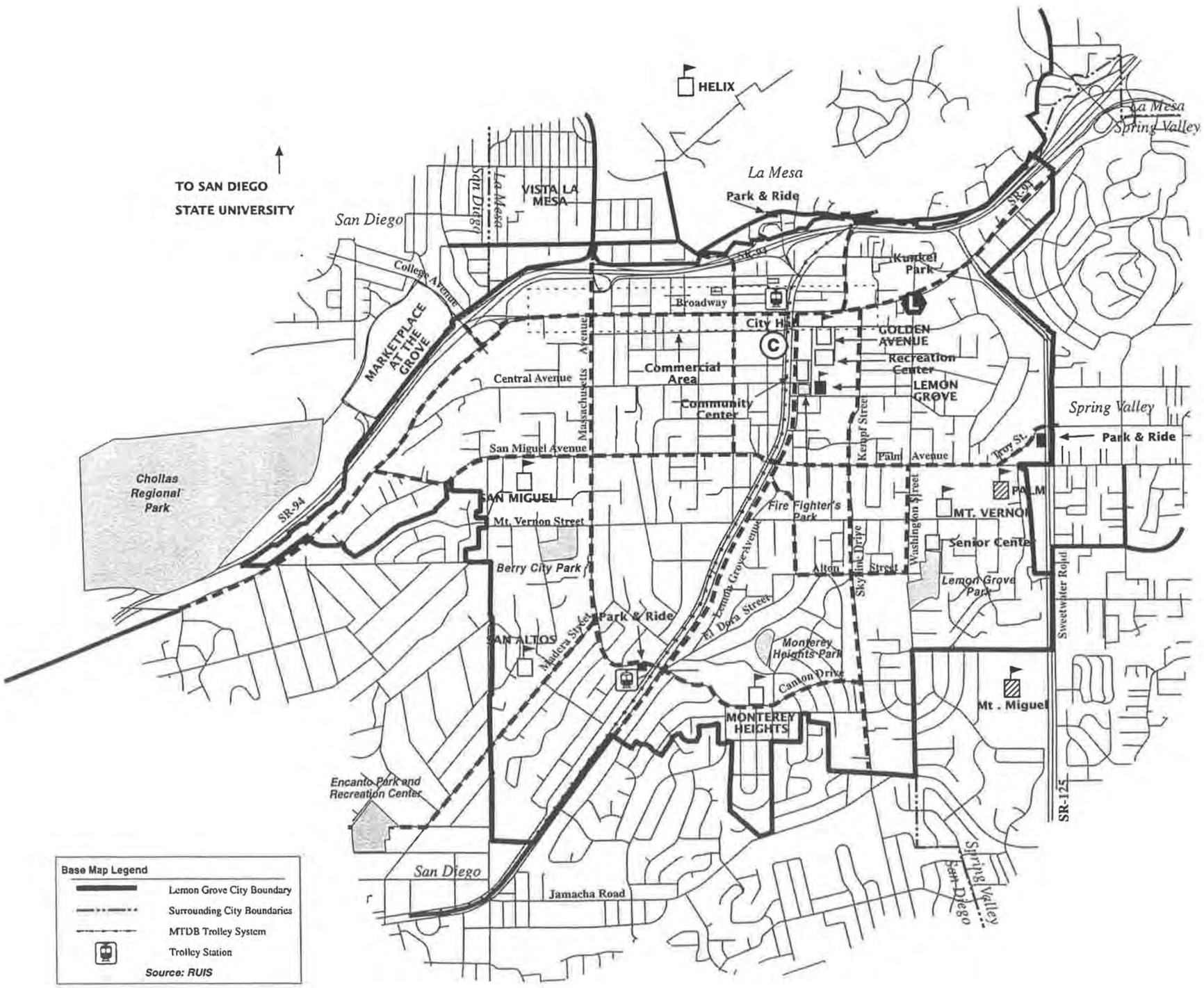
Lemon Grove is fortunate to have numerous choices for transportation and circulation. A safe and well-marked bikeway plan can be instrumental in encouraging residents to use the bicycle as a link in completing an entire trip, particularly work-trips. This can benefit the environment by reducing traffic congestion and improving air quality.

One of the most important aspects of encouraging individuals to use the bicycle as a form of transportation is the provision of adequate bicycle-related storage facilities and amenities. These types of amenities include bicycle lockers or bike racks at transfer points, bus bike racks on regional bus routes, and bicycle racks at major activity centers or destination points. A lack of these facilities can be counter-productive in terms of encouraging use of the bikeway system.

Roadway Classifications and Right-of-Way Constraints

Roadway design standards and right-of-way constraints can affect the type of bicycle facility which can be implemented on a street. At the current time, several roadways in Lemon Grove do not have adequate right-of-way to expand for parking and/or sidewalks, and thus may preclude the implementation a Class II Bike Lane unless additional right-of-way is secured or one or both sides of parking are eliminated. Figure 4 illustrates the Roadway Circulation Plan, while Figure 5 presents the typical roadway cross-sections. In general, the procurement of additional

General Plan Bicycle Sub-Element



Base Map Legend

- Lemon Grove City Boundary
- Surrounding City Boundaries
- MTDB Trolley System
- Trolley Station

Source: RUIS

Legend

- CITY HALL/SHERIFF - Proposed Civic Center Location
- TROLLEY STATION
- ELEMENTARY SCHOOL
- MIDDLE SCHOOL
- HIGH SCHOOL
- LIBRARY
- EXISTING BICYCLE FACILITY
- PROPOSED BICYCLE FACILITY

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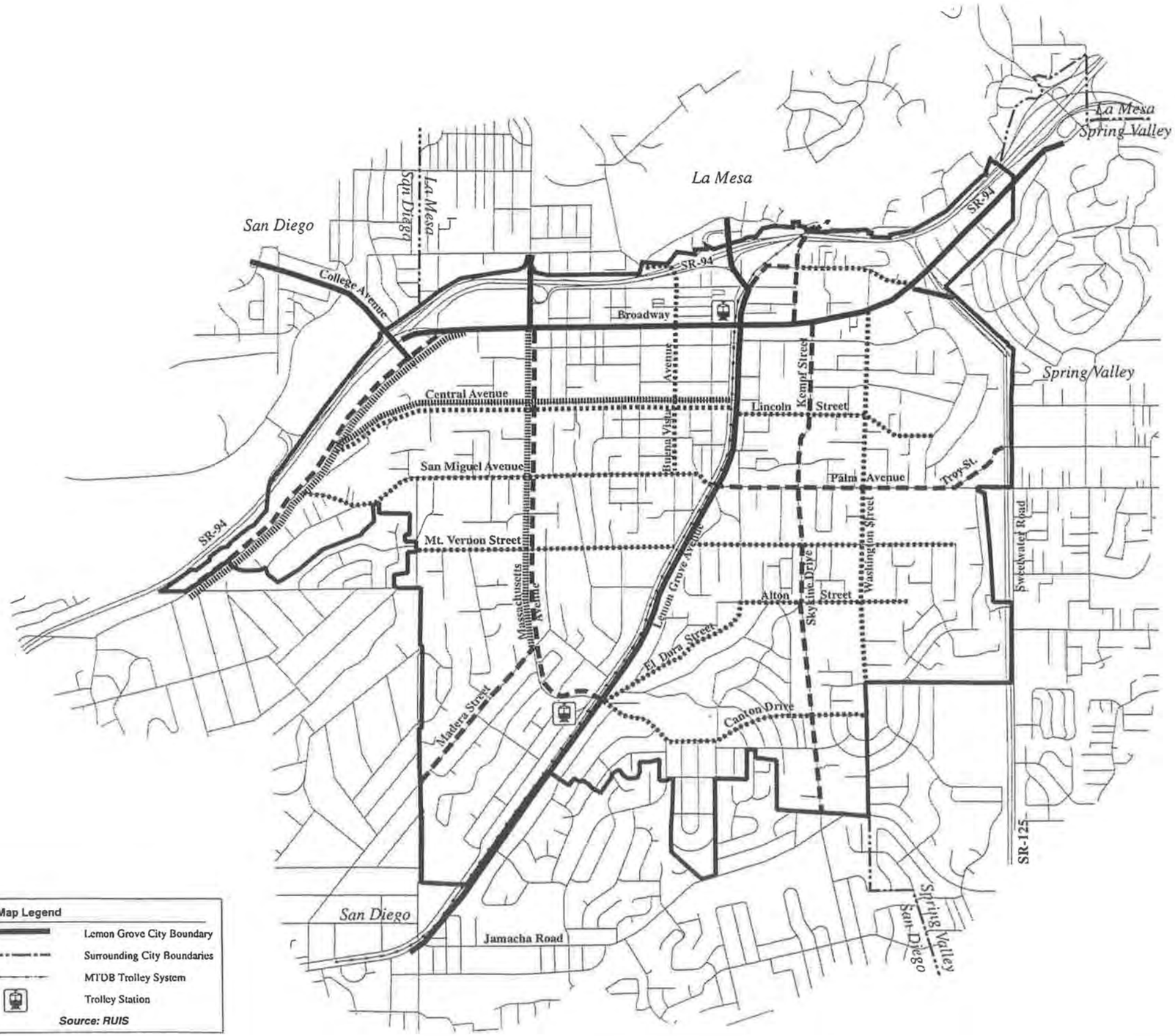
1 inch = 2,000 feet

Source: BRW, Inc

Figure B-3
Activity Centers

General Plan Bicycle Sub-Element



Base Map Legend

- Lemon Grove City Boundary
- Surrounding City Boundaries
- MTDB Trolley System
- Trolley Station

Source: RUIS

Legend

- 4-LANE MAJOR
- CLASS I COLLECTOR
- CLASS II COLLECTOR
- CLASS III COLLECTOR
- RESIDENTIAL/LOCAL COLLECTOR
- SPECIFIC STREET PLAN

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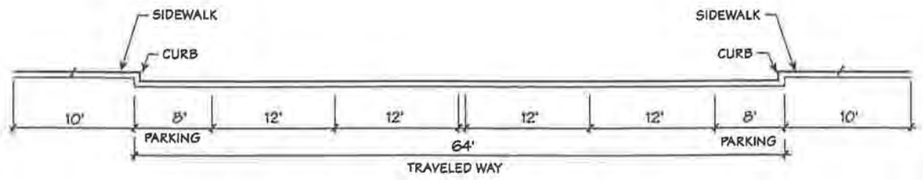
1 inch = 2,000 feet

Source: BRW, Inc.

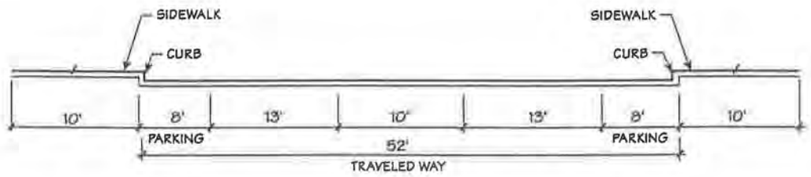
Figure B-4
Roadway Circulation Plan

FOUR-LANE MAJOR

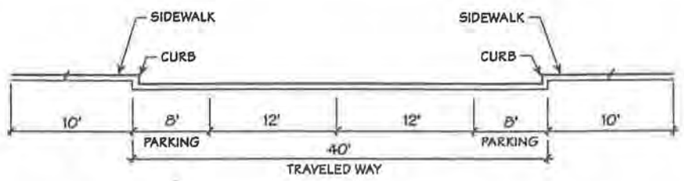
CLASS I COLLECTOR



CLASS II COLLECTOR



CLASS III COLLECTOR



Note: *Total Right-of-Way can vary depending on whether parking and/or sidewalk strip is provided

Legend

Four-Lane Major - A four-lane divided roadway with access and parking controlled as necessary to maintain flow. Primary function is to provide mobility; access is secondary.

Class I Collector - A four-lane undivided road intended to provide access between major roads and local or residential streets; parking controlled as necessary.

Class II Collector - A two-lane roadway with a center turn lane to allow for safe access to and from adjacent properties; parking is typically allowed.

Class III Collector - A two-lane undivided road. The main function is to provide access to adjacent properties and distribute traffic to and from higher class roadways; parking is typically allowed.

N

1 inch = 2,000 feet

Source: BRW, Inc.

Figure B-5
Typical Roadway Cross-Sections

right-of-way to implement the Bikeway Plan should be avoided. However, there may be some cases where securing additional right-of-way may not significantly impact a property owner and will benefit the bicycling community. While the plan is intended to reconfigure the existing pavement striping by removing parking on one or both sides, reducing lane width or adding pavement width within the existing right-of-way where feasible, additional right-of-way may be necessary in certain cases.

Where future traffic volumes are low and right-of-way constraints are present, a signed bicycle route may be more appropriate. Trade-offs for reduced lane widths or elimination of on-street parking required for bike lanes will need to be acceptable to the City and residents in the area. Class II Bike Lanes will be applicable on major roads and collectors with higher traffic volumes.

Figure 6 shows the types of modifications which will be applied to the typical roadway cross-sections (refer to Figure 5) with a Class III Bike Route, and shows the trade-offs associated with a Class II Bike Lane if additional right-of-way is not secured. The three Design Options (A,B,C) illustrated in Figure 6 are as follows:

- Option A: Class III Bike Route, which shares the travel way with the automobile traffic. Signage indicating the street as a "Bike Route" is provided.

- Option B: Provides for a Class II Bike Lane, with parking eliminated on one-side and the pavement restriped for a five-foot bike lane on the curb side and a four-foot bike lane next to the retained parking strip. Outside lane width reduced by 0.5 feet.

- Option C: Includes a Class II Bike Lane, with parking eliminated on both sides. Outside lane width increased to 14 feet.

The following section presents the Bikeway Plan. The route descriptions for the plan identify which design option is applicable to roadways which would incorporate a bicycle facility.

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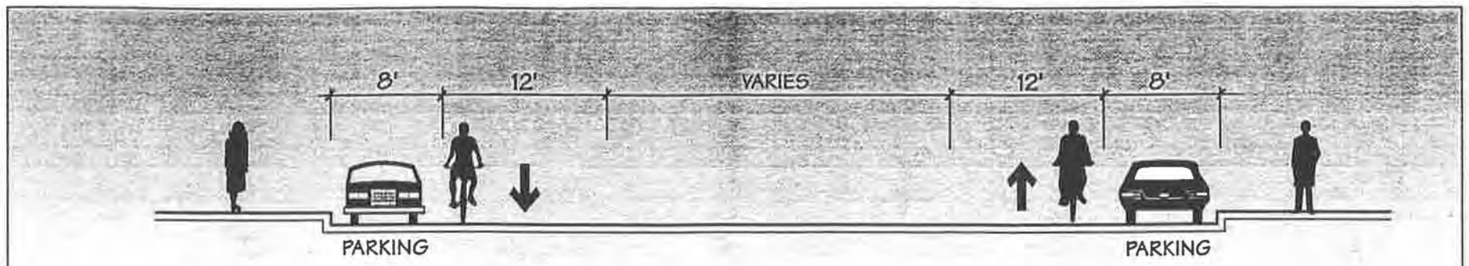
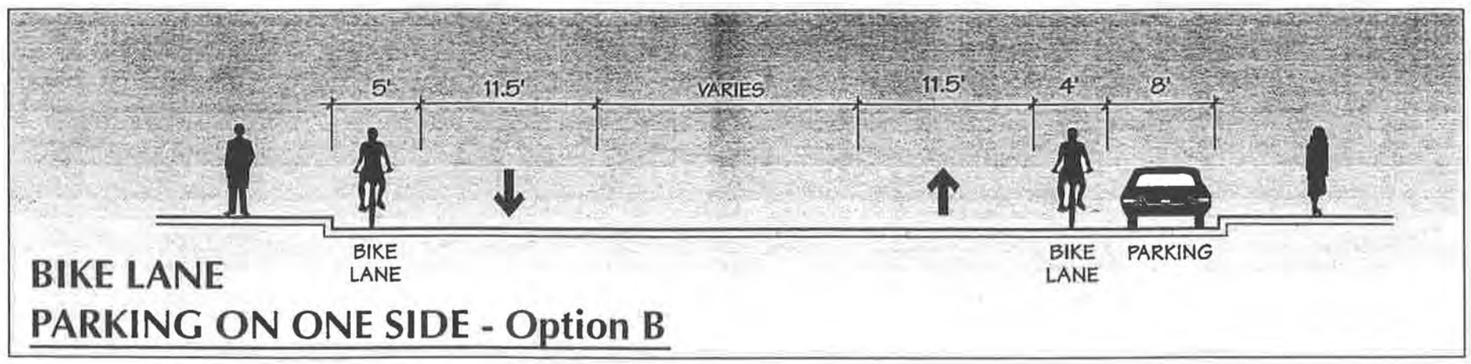
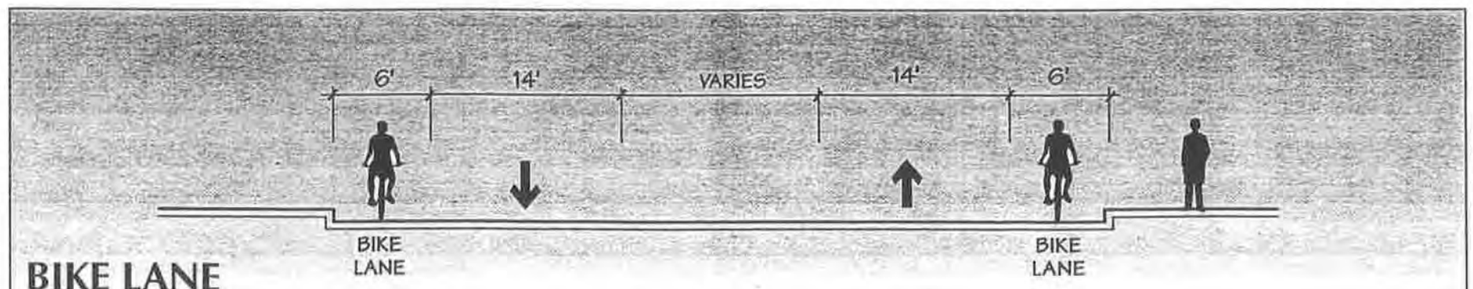


BIKE ROUTE - Option A



BIKE LANE
PARKING ON ONE SIDE - Option B



BIKE LANE
NO PARKING - Option C

Legend

N

1 inch = 2,000 feet

Source: BRW, Inc.

Figure B-6
Roadway Cross-Sections with Bicycle Facilities

Bicycle Facilities Sub-Element

BIKEWAY PLAN

The Lemon Grove Bikeway Plan is based on the existing conditions inventory and systems analysis presented in the previous sections. In addition, hands-on bicycling reviews, discussions with City staff and comments from the General Plan Advisory Committee were also taken into consideration. The following sections describe each bicycle facility, the recommended locations for transfer points, and bicycle facility storage requirements.

Bikeway Plan

The Bikeway Plan integrates the existing and proposed regional and local bikeway plans and policies by providing connections to the existing bicycle network and recommended that regional bikeways be designated as Class II Bike Lanes. Several guidelines were used to develop a bikeway plan which achieves the Bicycle Facilities Sub-Element objectives and policies. These guidelines include:

- Design the bicycle network so that it is an attractive alternative to the auto.
- Provide a bikeway network appropriate for both commuter and short internal trips as well as for the recreational user.
- Link local and regional activity centers and major destination areas.
- Integrate bicycle facilities with the existing transit system in order to provide a multi-modal circulation system.
- Incorporate bicycle facilities into the Roadway Circulation Plan focusing on trade-offs between bicycle safety and parking/lane width.

Bikeway facilities are recommended for implementation on all classification of roadways, from four-lane major road to two-lane collector roadways. These roadways link residential, public and commercial land uses, and cross the San Diego trolley system. Figure 7 illustrates the Recommended Bikeway Plan, indicating roadways recommended for either a Class II Bike Lane or Class III Bike Route. If additional right-of-way is not secured, Class II bike lanes require the reconfiguration of the street striping or parking which could result in variations of the typical

roadway cross-sections to accommodate the minimum bicycle facility width requirements. Class III bike routes share vehicle right-of-way and typically require the posting of a bike route sign every 150 to 200 feet to indicate that the route is a designated and recommended route. Additional destination signage can be added to indicate the route leads to a popular destination.

Table 1 provides a description of each roadway recommended as incorporating a Class II Bike Lane. Bike routes are not included, as those facilities only require signage along the route and are typically have low traffic volumes. Appendix B contains illustration for the typical cross-sections for each roadway segment(s) with a Class II Bike Lane.

Transfer Locations and Facility Needs

The transportation options in Lemon Grove present a wide range of opportunities to interface with the Bikeway Plan. Intermodal transfer locations are included on Figure 7. While many of these transfer locations currently provide bicycle storage facilities, additional facilities will be needed at some locations to increase the attractiveness and feasibility of using the bicycle as a link in a trip. The following discussion provides an overview of existing and recommended intermodal transfer locations.

Trolley Stations

Trolley stations provide an excellent opportunity for bicyclist to transfer to another form of transportation. The City of Lemon Grove has two trolley stations, including the Massachusetts Avenue Station and the Lemon Grove Depot, located in the southwest corner of the intersection of Lemon Grove Avenue and Broadway. The Massachusetts Avenue Station has ample parking available on site. Thus, this station is more attractive as a transfer point for those who wish to park and ride. As stated previously, eight bicycle lockers are provided for those who wish to switch modes from bicycle to carpool, or bicycle to trolley. Bicycle racks are also provided, but are not as attractive due to potential theft. Permits are also available for individuals who wish to carry their bicycle onto the trolley.

The Lemon Grove Depot does not have off-street parking facilities, and currently provides ten bicycle lockers. Because off-street parking is not available at this location, the demand for bicycle lockers is potentially higher than at the Massachusetts Station. There is currently a waiting list for additional locker space. Bicycle racks are also provided.

TABLE 1
DESCRIPTION OF BICYCLE FACILITIES

Roadway	Description
Federal Boulevard	Federal Boulevard was adopted as a Specific Street Plan between College Avenue and MacArthur Drive in May 1994, and includes bike lanes in the adopted cross-section. The specific street plan calls for an 86 feet right-of-way width and a 66 feet roadbed width (curb to curb). This cross-section is comparable to the Class II Collector classification, but has slightly wider travel lanes due to the industrial nature of the area and parking on both sides. Federal Boulevard is a regional corridor bikeway as contained in the Regional Transportation Plan.
Broadway	Broadway is a four-lane Major Road with a center median. Parking is typically provided on both sides. West of Lemon Grove Avenue, Design Option C is recommended in order to provide bike lanes, as Broadway is defined as a regional corridor bikeway in the Regional Transportation Plan. East of Lemon Grove Avenue the pavement is wide enough to provide for a bike lane and retain parking. Eastbound Broadway from College Avenue to Massachusetts is three lanes with no parking; thus, a bike route will have to be provided on the south side of this segment as future volumes warrant maintaining three travel lanes.
Buena Vista Avenue	Buena Vista Avenue north of Broadway is recommended as a Bike Lane using Design Option B. This lane would link with existing facilities north of SR-94. An underpass is provided at SR-94. This underpass is a fairly tight curve and may present a sight distance problem. Additional signage should be placed on this segment. Buena Vista Avenue is also recommended as a Bike Route south of Broadway to San Miguel Avenue (Option A).
Grove Street	Class II Bike Lanes are recommended for Grove Street north of Broadway. This roadway is recommended to be upgraded from a two-lane collector to a two-lane Class II Collector with a center left turn lane. The pavement width is currently wide enough to restripe in order to retain parking on both sides and accommodate bike lanes.
Lemon Grove Avenue	Lemon Grove Avenue is recommended to accommodate Class II Bike Lanes from the southern City limits north to Broadway using Design Option C. These bike lanes would connect with the existing lanes on Imperial Avenue south of the city as part of the regional feeder system, and provide a linkage to the recommended bike lanes on Broadway.
Massachusetts Avenue	Class II Bike Lanes are recommended for Massachusetts Avenue from Lemon Grove Avenue to Broadway. Parking would be eliminated on one side under Design Option B. Massachusetts Avenue is defined as a regional feeder bikeway according to the Regional Transportation Plan. Right-of-way is constrained south of Madera Street. In order to avoid right-of-way impacts between Madera and El Prado (current pavement width of 40 feet) the outside lanes would be reduced from 13 feet to 11 feet with no parking and 4 foot bike lanes on each side. From El Prado to Lemon Grove the cross-section would only require reducing the outside lanes with from 13 feet to 12 feet. Parking could be retained.
Madera Street	Class II Bike Lanes are recommended for Madera Street from Massachusetts Avenue to the City limits. Design Option B would be required on portions of the segment between Massachusetts Avenue and Sonoma Lane as pavement width varies from 50 to 63 feet. Pavement width is adequate to retain parking and provide bike lanes south of Sonoma Lane.

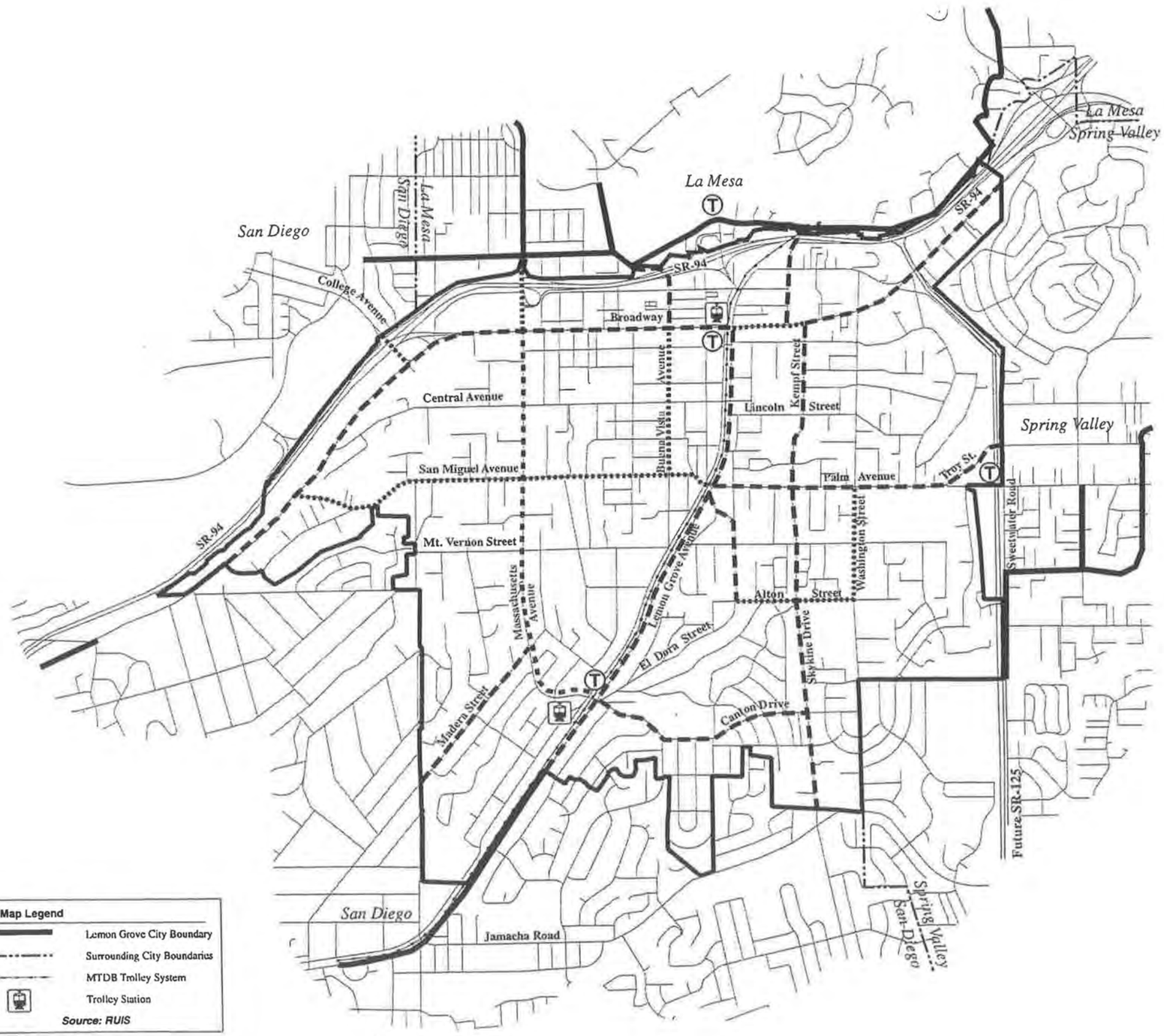
TABLE 1
DESCRIPTION OF BICYCLE FACILITIES

Roadway	Description
Skyline Drive	Class II Bike Lanes are recommended from Lincoln Street south to the City limits. Design Option B would be necessary from Lincoln Street to Mt. Vernon Avenue. Pavement width is adequate to provide bike lanes and retain parking from Mt. Vernon to Alton Drive. South of Alton Drive, Skyline Drive is recommended to be downgraded from its currently underutilized Class I Collector classification to a Class II Collector. This downgrade will allow parking to be retained, while providing for bike lanes and a buffer between traffic and residences along Skyline.
Kempf Street	Pavement width and right-of-way along Kempf Street is constrained in several locations, and no parking is provided. The provision of bike lanes on Kempf will require up to six feet of additional right-of-way between Golden Avenue and Darryl Street. Between Darryl and Lincoln Street, pavement width is sufficient to maintain four travel lanes and provide a 4 foot bike lane on each side. No parking would be provided.
Palm/Troy Street	Class II Bike Lanes are recommended for Palm Avenue and Troy Street. Design Option B will be necessary for Palm Street. Troy Street will be widened and realigned with the construction of SR-125. The current Caltrans design for Troy Street is a Class I Collector, with the option to provide for parking or bike lanes (Option B or Option C). The City of Lemon Grove should coordinate with Caltrans to implement bike lanes on this roadway concurrent with the construction of the overpass.
Canton Drive	The Bikeway Plan recommends that Class II Bike Lanes be implemented on Canton Drive between Lemon Grove Avenue and Skyline Drive. Right-of-way is constrained along Canton. However, the existing pavement width will allow parking to be retained on one side using Design Option B.

SOURCE: BRW, Inc., November 1995.

Note: Class III Bike Routes are not included in Table 1.

General Plan Bicycle Sub-Element



Legend

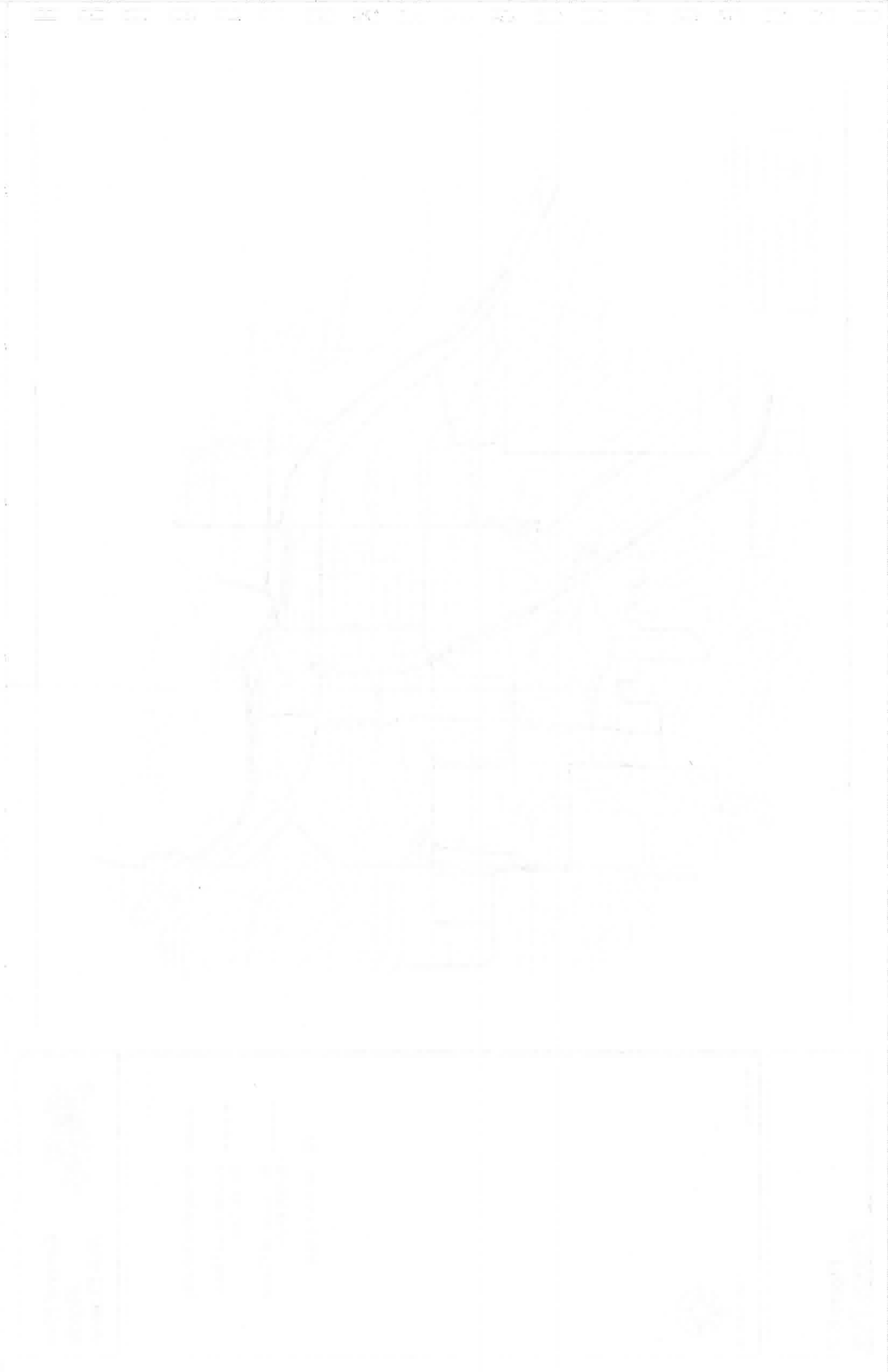
- Existing Bicycle Facility
- Recommended Class II Bicycle Lane
- Recommended Class III Bicycle Route
- Ⓣ Transfer Location

N

1 inch = 2,000 feet

Source: BRW, Inc.

Figure B-7
Bikeway Path



The City of Lemon Grove should continue to coordinate with Caltrans and MTDB to place additional lockers at each of the trolley stations, particularly at the Lemon Grove Depot. Trolley stations will continue to be important intermodal transfer locations, and the provision of additional bicycle storage facilities can greatly increase the attractiveness of using the bicycle as a link in completing a longer trip.

Bus Stops

Lemon Grove also has a comprehensive bus transit system. Fixed-route bus service includes Routes 36, 816, 856 and 875, the Lemon Grove Shuttle. Routes 4 and 11 also operate just south of the City. MTDB has designated the Massachusetts Avenue and Lemon Grove Depot Trolley Stations as transfer points for the bus system. Routes 36, 856 and 875, the Lemon Grove Shuttle, all meet at the Lemon Grove Depot. Routes 816 and 875 meet at the Massachusetts Avenue Station. Most buses are equipped with bike racks. The recommended Bikeway Plan provides bike lanes along the arterials which access these major transfer points. As stated above, additional storage facilities, including lockers and racks, should be provided at transfer points.

Park-and-Ride Locations

Two park-and-ride locations are present in Lemon Grove. The Lemon Grove Park-and-Ride is located north of the SR-94/Lemon Grove Avenue interchange. There is also a park-and-ride located at the southwest corner of Sweetwater Road and Troy Street. Caltrans has indicated that this park-and-ride will be retained with the construction of the planned SR-125 freeway. While the bicycle lockers at the Lemon Grove Park-and-Ride were recently removed, the City will monitor the demand for reinstalling lockers at this site as it may be in the interest of the Cities of Lemon Grove and La Mesa to provide lockers at this location with the implementation of the Bikeway Plan. The Bikeway Plan will provide important linkages to the existing routes north of SR-94, which could potentially result in a higher demand for those facilities.

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Bicycle Facilities Sub-Element

IMPLEMENTATION REQUIREMENTS

This chapter provides an overview of the implementation requirements of the Lemon Grove Bikeway Plan. Two basic steps are necessary to implement the plan. They are as follows:

- Develop a staged implementation program, which prioritizes elements of the bikeway plan based on specific criteria.
- Evaluate the available federal, state and local funding sources and complete application process for funds.

The following sections describe the recommended phasing plan for prioritizing projects for implementation. The various types of funding sources available are also discussed. The criteria developed for prioritizing projects relate to achievement of the Bicycle Facilities Sub-Element goals and objectives. In addition, a project must be evaluated for estimated cost, eligibility for outside funding and the ease of including it as part of the Regional Transportation Plan and Regional Transportation Improvement Program (RTIP) for funding purposes.

Project Prioritization

The Lemon Grove Bikeway Plan would most likely be implemented over a period of time dependent on available funding. This staged implementation could be accomplished in phases. Phase I could address facilities with a more immediate need, such as those which link with regional routes and are recognized by existing users. Phase II would then address the long-term needs of the community.

Several criteria should be considered for the selection of projects for phased implementation. Many of these criteria relate to funding application requirements. The project prioritization criteria recommended for the City of Lemon Grove are as follows:

- Regional route
- Links with existing facilities
- Intermodal transfer opportunities
- Safety considerations and traffic flow

- Serves a high number of local or regional activity centers
- Eligible for federal, state or regional funding
- Existing bicycle storage facilities provided
- Parking/roadway configuration impacts

The phased implementation of bicycle facilities should be based on the above criteria. Those routes which most favorably meet the criteria should be implemented during Phase I, and the appropriate applications made by the City to obtain funding.

Phasing Plan

This section presents the recommended phasing plan to implement the Lemon Grove Bikeway Plan. Figure 8 provides an illustration of the implementation phasing. Based on the above defined criteria, the following recommendations are made for Phase I and Phase II.

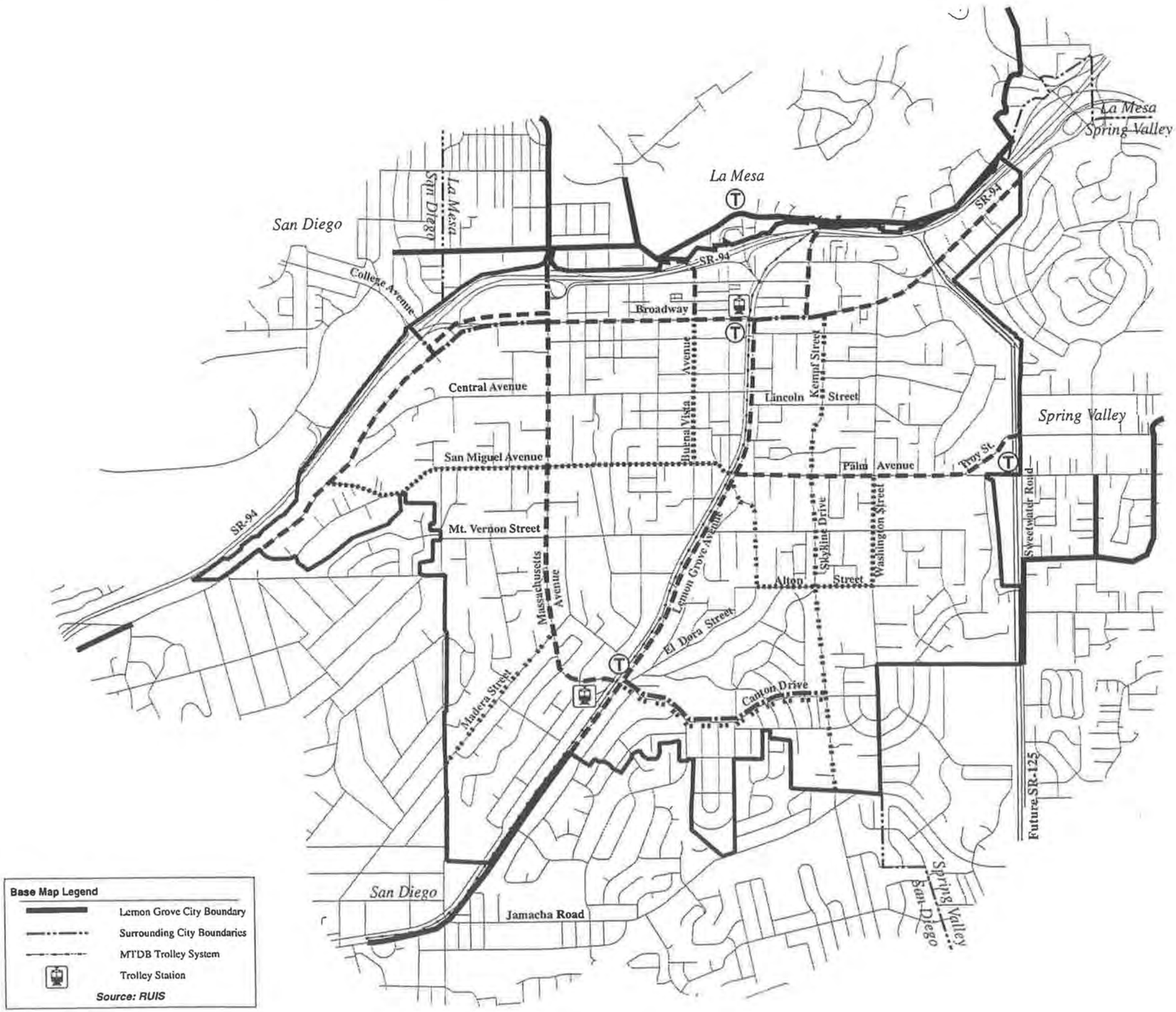
Phase I - Implement the following bikeways to provide for regional connectivity and to link to existing bicycle facilities surrounding Lemon Grove:

- Federal Boulevard/Broadway- Class II Bike Lanes (Class III Bike Route on south side from College to Massachusetts)
- Federal Boulevard - Class II Bike Lanes
- Lemon Grove Avenue - Class II Bike Lanes
- Massachusetts Avenue - Class II Bike Lanes
- Buena Vista Avenue (north of Broadway) - Class II Bike Lanes
- Grove Street (north of Broadway) - Class II Bike Lanes
- Palm/Troy Street - Class II Bike Lanes (with the construction of SR-125)

Phase II - The following bicycle facilities are recommended for implementation during Phase II to complete the local bicycle network.

- Kempf/Skyline Drive - Class II Bike Lanes
- Canton Drive - Class II Bike Lanes
- Madera Street - Class II Bike Lanes
- San Miguel Avenue - Class III Bike Route
- Buena Vista Avenue - Class III Bike Route (south of Broadway)
- Washington Street - Class III Bike Route (Palm to Alton)
- Alton Street - Class III Bike Route (Washington to Skyline)
- Cypress Avenue - Class III Bike Route (Lemon Grove Avenue to Alton)

General Plan Bicycle Sub-Element



Base Map Legend

- Lemon Grove City Boundary
- Surrounding City Boundaries
- MTDB Trolley System
- Trolley Station

Source: RUIS

Legend

- Existing Bicycle Facility
- Transfer Location

PHASE 1

- Bicycle Lane
- Bicycle Route

PHASE 2

- Bicycle Lane
- Bicycle Route

N

1 inch = 2,000 feet

Source: BRW, Inc.

Figure B-8
Implementation Phases

Potential Future Projects

Although no Class I Bike Paths are recommended in the Lemon Grove Bikeway Plan, Class I Bike Paths can attract a much greater number and variety of user groups. Bike paths require more detailed environmental and engineering feasibility analysis and should be evaluated apart from the General Plan. One option that could be evaluated in the future is the possibility of implementing a Class I facility within the San Diego Trolley right-of-way. This type of facility would link downtown San Diego with East County and provide a continuous path for commuters and recreational users. This is similar to the recently initiated Oceanside to San Diego coastal rail trail feasibility study.

Funding Sources

The most critical part of implementing a bikeway plan is securing adequate funding. Bicycle planning efforts have increased steadily since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991. Funding sources typically used for bicycle facility funding are through ISTEA, the California Bicycle Transportation Act, TransNet, and the Transportation Development Act.

In addition to these primary funding sources, there are several additional funding sources available from federal, state and local agencies and programs, as well as through private resources. The *Guide to Bicycle Program Funding in California* (Planning and Conservation League Foundation, April 1995) contains a comprehensive overview of more than 50 actual and potential funding sources for bicycle programs. The following is a summary of the most promising funding sources for Lemon Grove. These sources are ranked according to their potential for funding Bikeway Plan projects.

Federal Funding Sources

Federal funding through ISTEA is generally divided between rail, highway and bicycle projects. Lemon Grove will compete with several other projects for funding of transportation-related projects. Monies have been allocated through 1997, and ISTEA II may not be approved for the next fiscal year. Congestion Mitigation and Air Quality (CMAQ) funding may be available in a few years but is currently programmed for the near term. ISTEA funding prospects are described below:

1. *ISTEA Transportation Enhancement Activities (TEA) Program* - States must set aside 10 percent of the annual Surface Transportation Program (STP) apportionment to the TEA program. Local agencies must match 20 percent of funding for bicycle/pedestrian projects.

Lemon Grove would apply to have SANDAG recommend the project to the California Transportation Commission (CTC). Approved projects would be added to the State Transportation Improvement Program (STIP).

2. *ISTEA Congestion Mitigation and Air Quality (CMAQ) Program* - CMAQ funds are utilized for projects in Clean Air Act non-attainment areas. Bicycle and pedestrian projects must have a local match of 20 percent. Allocations are made on the basis of priorities developed in the RTP by SANDAG in cooperation with local jurisdictions. SANDAG must include the project in the current or next RTIP.

State Funding Sources

1. *California Bicycle Transportation Act - Bicycle Lane Account (BLA)* - Funds used to improve the safety and convenience of bicycling, with required local match of 10 percent. Jurisdictions must have approved bicycle plans. Priority projects serve commuters, have activity centers at each endpoint and close missing links of local/regional plans. Proposals must be submitted to Caltrans. Projects must be completed within two years of receipt of funds.

2. *Minor A/Minor B Programs* - Caltrans headquarters allocates monies to Caltrans district offices according to need and population. Minor B programs fund projects up to $100,000 for projects such as bicycle facilities and park-and-ride lot improvement. The City needs to coordinate with Caltrans to prioritize projects.

Local and Regional Funding Sources

1. *SANDAG - County TransNet Funds* - SANDAG provides approximately $1 million for bicycle transportation projects per year until 2007. In 1995, applications have totalled $4.0 to $6.0 million, indicating the high level of competition. The SANDAG Bicycle Facilities Committee recommends projects every June. Funds are allocated that same month. Coordinate with SANDAG to obtain funding for local facilities.

2. *Local Transportation Fund (LTF)* - Two percent of LTF funds from the Transportation Development Act (TDA) (¼ cent county sales tax) must be earmarked towards bicycle and pedestrian facilities. These funds can be used as local match for federal and state programs. If a

jurisdiction elects to use the funds for bicycle programs, up to five percent of the money can be used towards a bicycle safety education program. Funds are allocated yearly by regional population or competitively.

3. *Developer Fees (Traffic mitigation fees)* - Possible fees for new development where a bikeway is planned, particularly if traffic impacts are expected. The City must demonstrate a proportionate relationship between the impact and improvement.

In summary, ISTEA programs, despite the question of future existence, are some of the most promising funding sources. The State Bicycle Lane Account and SANDAG TransNet funds are most likely the best sources for Lemon Grove to pursue, given the ability of the recommended system to enhance and complete missing links in the regional bikeway system.

In addition to the above funding programs, other types of miscellaneous fees, permits and taxes could be used to fund the bikeway plan. For example, a benefit assessment district could be established to improve a roadway with a recommended bicycle facility. The City could also allocate additional funds to their Capital Improvement Program or financing plan.

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Bicycle Facilities Sub-Element

BICYCLE SAFETY AWARENESS PROGRAM

The City should utilize a Safety Awareness Program to educate both automobile drivers and bicyclists, especially children. The purpose of the program is to reinforce bicycle safety habits and prevent unnecessary accidents from occurring. An increase in bicycle use can lead to an increase in bicycle-related accidents, particularly for children, who may not be knowledgeable of the safety and road rules associated with bicycle use. A Bicycle Safety Awareness Program can greatly improve bicycle safety habits, for both drivers and bicyclists. As a result of preventable bicycle accidents, which resulted in more than 20,000 injuries to children in 1994, a new California State Law went into effect on January 1, 1994, requiring children under the age of 18 to wear a helmet while riding a bicycle. According to the New England Journal of Medicine, wearing a bicycle helmet can reduce the chance of a serious head injury by up to 85 percent.

Safety Strategies for Automobile Drivers

The Lemon Grove Bikeway Plan is designed according to Caltrans minimum specifications to provide a safe and well-marked travelway for bicyclists. Bike lanes are particularly helpful in delineating a separation between bicyclists and automobiles to avoid potential conflicts. Bike routes require more careful attention by drivers and bicyclists because they share the travelway. As part of the implementation of the Bikeway Plan, the City of Lemon Grove should distribute driver safety tips through community service groups and organizations, the City newsletter and schools. Increasing the awareness of automobile drivers relative to bicyclists is one of the first steps towards an effective safety awareness strategy.

The following is a summary of general safety rules and regulations of which drivers should be aware regarding bicyclists:

- Be aware of and pay attention to bicyclists on the roadway
- Obey all traffic signals, signs, and pavement markings
- Use caution when making right turns on streets with designated bike routes or bike lanes

- Be careful when opening car doors alongside bicycle lanes or routes
- Pay attention to bicycle signs
- Use extra caution near activity areas such as schools and parks

Safety Strategies for Bicyclists

The provision of a Bikeway Plan must be accompanied by an effort to educate those who will use the system. Each bicyclist must be responsible for practicing safe bicycle habits. In order to teach this responsibility, the City should provide safety tips through the City newsletter and encourage local community groups and schools to educate the public about bicycle safety, and most importantly teach safe bicycle practices to children.

In San Diego County, one of the most effective ways to educate children is the Heads Up Program. This program is provided to schools at no charge and is funded by the California Office of Traffic Safety and the San Diego Association of Governments. The San Diego Safe Kids Coalition collaborated with Children's Hospital, the Trauma Research and Education Program and the County of San Diego Office of Emergency Medical Services to develop this innovative and educational program which targets specific safety issues associated with bicycle use and encourages the use of bicycle helmets.

A similar program called Safe Moves provides bicycle safety and traffic education to schools throughout Los Angeles and Southern California. Similar to Heads Up, the goal of Safe Moves is to saves lives through education. Both programs emphasize parent and adult participation to reinforce safety habits.

Bicycle Safety Awareness Program

The City's Bicycle Safety Awareness Program will include active participation in programs such as these to serve as the primary method of disseminating bicycle safety information to children as well as adults. The funding grant for the Heads Up program expires in June 1996 and may not be available to the community. If safety programs such as Heads Up are not available for Lemon Grove, the City will work with the Lemon Grove School District and community groups to provide a similar Bicycle Safety Awareness program to school age children. This will entail the creation of a Bicycle Safety Committee comprised of City, the Lemon Grove sheriff's office, community and school district representatives. This committee will coordinate the presentation of the program in City schools.

BICYCLE SAFETY AWARENESS PROGRAM

The most effective method of presenting this program to children is a high-energy assembly format. The program would utilize visuals (videos or slides), act out different bicycle scenarios and recruit role models to provide children with "pep" talks on the importance of safe habits and bicycle helmet use. The Heads Up Program provides a guide to Bicycle Safety Resources and a list of free publications available for use by the Lemon Grove Bicycle Safety Committee in tailoring a presentation which is suitable for their schools during the implementation of the Bikeway Plan. This list is contained in Appendix C.

APPENDIX A

Highway Design Manual
Chapter 1000

Bikeway Planning and Design

CHAPTER 1000 BIKEWAY PLANNING AND DESIGN

Topic 1001 - General Information

Index 1001.1 - Definitions

"Bikeway" means all facilities that provide primarily for bicycle travel.

(1) Class I Bikeway (Bike Path). Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow minimized.

(2) Class II Bikeway (Bike Lane). Provides a striped lane for one-way bike travel on a street or highway.

(3) Class III Bikeway (Bike Route). Provides for shared use with pedestrian or motor vehicle traffic.

1001.2 Streets and Highways Code References - Chapter 8 - Nonmotorized Transportation

(a) Section 887 -- Definition of nonmotorized facility.

(b) Section 887.6 -- Agreements with local agencies to construct and maintain nonmotorized facilities.

(c) Section 887.8 -- Payment for construction and maintenance of nonmotorized facilities approximately paralleling state highways.

(d) Section 888 -- Severance of existing major nonmotorized route by freeway construction.

(e) Section 888.2 -- Incorporation of non-motorized facilities in the design of freeways.

(f) Section 888.4 -- Requires Caltrans to budget not less than $360,000 annually for nonmotorized facilities used in conjunction with the state highway system.

(g) Section 890.4 -- Class I, II, and III bike-way definitions.

(h) Section 890.6 - 890.8 -- Caltrans and local agencies to develop design criteria and symbols for signs, markers, and traffic control devices for bikeways and roadways where bicycle travel is permitted.

(i) Section 891 -- Local agencies must comply with design criteria and uniform symbols.

(j) Section 892 -- Use of abandoned right-of-way as a nonmotorized facility.

1001.3 Vehicle Code References - Bicycle Operation

(a) Section 21200 -- Bicyclist's rights and responsibilities for traveling on highways.

(b) Section 21202 -- Bicyclist's position on roadways when traveling slower than the normal traffic speed.

(c) Section 21206 -- Allows local agencies to regulate operation of bicycles on pedestrian or bicycle facilities.

(d) Section 21207 -- Allows local agencies to establish bike lanes on non-state highways.

(e) Section 21207.5 -- Prohibits motorized bicycles on bike paths or bike lanes.

(f) Section 21208 -- Specifies permitted movements by bicyclists from bike lanes.

(g) Section 21209 -- Specifies permitted movements by motorists in bike lanes.

(h) Section 21209 -- Prohibits bicycle parking on sidewalks unless pedestrians have an adequate path.

(i) Section 21210 -- Prohibits impeding or obstruction of bicyclists on bike paths.

(j) Section 21212 -- Requires a bicyclist under 18 years of age to wear an approved helmet.

(k) Section 21717 -- Requires a motorist to drive in a bike lane prior to making a turn.

(l) Section 21960 -- Use of freeway shoulders by bicyclists.

Topic 1002 - General Planning Criteria

1002.1 Introduction

Bicycle travel can be enhanced by improved maintenance and by upgrading existing roads used regularly by bicyclists, regardless of whether or not bikeways are designated. This effort requires increased attention to the right-hand portion of roadways where bicyclists are expected to ride. On new construction, and major reconstruction projects, adequate width should be provided to permit shared use by motorists and bicyclists. **On resurfacing projects, the entire paved shoulder and traveled way shall be resurfaced. When adding lanes or turn pockets, a minimum 1.2 m shoulder shall be provided (see Topic 405 and Table 302.1).** When feasible, a wider shoulder should be considered. When placing a roadway edge stripe, sufficient room outside the stripe should be provided for bicyclists. When considering the restriping of roadways for more traffic lanes, the impact on bicycle travel should be assessed. Bicycle and pedestrian traffic through construction zones should be addressed in the project development process. These efforts, to preserve or improve an area for bicyclists to ride, can benefit motorists as well as bicyclists.

1002.2 The Role of Bikeways

Bikeways are one element of an effort to improve bicycling safety and convenience - either to help accommodate motor vehicle and bicycle traffic on shared roadways, or to complement the road system to meet needs not adequately met by roads.

Off-street bikeways in exclusive corridors can be effective in providing new recreational opportunities, or in some instances, desirable commuter routes. They can also be used to close gaps where barriers exist to bicycle travel (e.g., river crossing). On-street bikeways can serve to enhance safety and convenience, especially if other commitments are made in conjunction with establishment of bikeways, such as: elimination of parking or increasing roadway width, elimination of surface irregularities and roadway obstacles, frequent street sweeping, establishing intersection priority on the bike route street as compared with the majority of cross streets, and installation of bicycle-sensitive loop detectors at signalized intersections.

1002.3 The Decision to Develop Bikeways

The decision to develop bikeways should be made with the knowledge that bikeways are not the solution to all bicycle-related problems. Many of the common problems are related to improper bicyclist and motorist behavior and can only be corrected through effective education and enforcement programs. The development of well conceived bikeways can have a positive effect on bicyclist and motorist behavior. Conversely, poorly conceived bikeways can be counterproductive to education and enforcement programs.

1002.4 Selection of the Type of Facility

The type of facility to select in meeting the bicycle need is dependent on many factors, but the following applications are the most common for each type.

(1) Shared Roadway (No Bikeway Designation). Most bicycle travel in the State now occurs on streets and highways without bikeway designations. This probably will be true in the future as well. In some instances, entire street systems may be fully adequate for safe and efficient bicycle travel, and signing and striping for bicycle use may be unnecessary. In other cases, routes may be unsuitable for bicycle travel, and it would be inappropriate to encourage additional bicycle travel by designating the routes as bikeways. Finally, routes may not be along high bicycle demand corridors, and it would be inappropriate to designate bikeways regardless of roadway conditions (e.g., on minor residential streets).

Many rural highways are used by touring bicyclists for intercity and recreational travel. In most cases, it would be inappropriate to designate the highways as bikeways because of the limited use and the lack of continuity with other bike routes. However, the development and maintenance of 1.2 m paved roadway shoulders with a standard 100 mm edge stripe can

significantly improve the safety and convenience for bicyclists and motorists along such routes.

(2) *Class I Bikeway (Bike Path).* Generally, bike paths should be used to serve corridors not served by streets and highways or where wide right of way exists, permitting such facilities to be constructed away from the influence of parallel streets. Bike paths should offer opportunities not provided by the road system. They can either provide a recreational opportunity, or in some instances, can serve as direct high-speed commute routes if cross flow by motor vehicles can be minimized. The most common applications are along rivers, ocean fronts, canals, utility right of way, abandoned railroad right of way, within college campuses, or within and between parks. There may also be situations where such facilities can be provided as part of planned developments. Another common application of Class I facilities is to close gaps to bicycle travel caused by construction of freeways or because of the existence of natural barriers (rivers, mountains, etc.).

(3) *Class II Bikeway (Bike Lane).* Bike lanes are established along streets in corridors where there is significant bicycle demand, and where there are distinct needs that can be served by them. The purpose should be to improve conditions for bicyclists in the corridors. Bike lanes are intended to delineate the right of way assigned to bicyclists and motorists and to provide for more predictable movements by each. But a more important reason for constructing bike lanes is to better accommodate bicyclists through corridors where insufficient room exists for safe bicycling on existing streets. This can be accomplished by reducing the number of lanes, or prohibiting parking on given streets in order to delineate bike lanes. In addition, other things can be done on bike lane streets to improve the situation for bicyclists, that might not be possible on all streets (e.g., improvements to the surface, augmented sweeping programs, special signal facilities, etc.). Generally, stripes alone will not measurably enhance bicycling.

If bicycle travel is to be controlled by delineation, special efforts should be made to assure that high levels of service are provided with these lanes.

In selecting appropriate streets for bike lanes, location criteria discussed in the next section should be considered.

(4) *Class III Bikeway (Bike Route).* Bike routes are shared facilities which serve either to:

(a) Provide continuity to other bicycle facilities (usually Class II bikeways); or

(b) Designate preferred routes through high demand corridors.

As with bike lanes, designation of bike routes should indicate to bicyclists that there are particular advantages to using these routes as compared with alternative routes. This means that responsible agencies have taken actions to assure that these routes are suitable as shared routes and will be maintained in a manner consistent with the needs of bicyclists. Normally, bike routes are shared with motor vehicles. The use of sidewalks as Class III bikeways is strongly discouraged.

It is emphasized that the designation of bikeways as Class I, II and III should not be construed as a hierarchy of bikeways; that one is better than the other. Each class of bikeway has its appropriate application.

In selecting the proper facility, an overriding concern is to assure that the proposed facility will not encourage or require bicyclists or motorists to operate in a manner that is inconsistent with the rules of the road.

An important consideration in selecting the type of facility is continuity. Alternating segments of Class I and Class II (or Class III) bikeways along a route are generally incompatible, as street crossings by bicyclists are required when the route changes character. Also, wrong-way bicycle travel will occur on the street beyond the ends of bike paths because of the inconvenience of having to cross the street.

Topic 1003 - Design Criteria

1003.1 Class I Bikeways

Class I bikeways (bike paths) are facilities with exclusive right of way, with cross flows by motorists minimized. Section 890.4 of the Streets and Highways Code describes Class I bikeways as serving "the exclusive use of bicycles and pedestrians". However, experience has shown that if significant pedestrian use is anticipated, separate facilities for pedestrians are necessary to minimize conflicts. Dual use by pedestrians and bicycles is undesirable, and the two should be separated wherever possible.

Sidewalk facilities are not considered Class I facilities because they are primarily intended to serve pedestrians, generally cannot meet the design standards for Class I bikeways, and do not minimize motorist cross flows. See Index 1003.3 for discussion relative to sidewalk bikeways.

By State law, motorized bicycles ("mopeds") are prohibited on bike paths unless authorized by ordinance or approval of the agency having jurisdiction over the path. Likewise, all motor vehicles are prohibited from bike paths. These prohibitions can be strengthened by signing.

(1) *Widths.* **The minimum paved width for a two-way bike path shall be 2.4 m. The minimum paved width for a one-way bike path shall be 1.5 m. A minimum 0.6 m wide graded area shall be provided adjacent to the pavement (see Figure 1003.1A).** A 1.0 m graded area is recommended to provide clearance from poles, trees, walls, fences, guardrails, or other lateral obstructions. A wider graded area can also serve as a jogging path. Where the paved width is wider than the minimum required, the graded area may be reduced accordingly; however, the graded area is a desirable feature regardless of the paved width. Development of a one-way bike path should be undertaken only after careful consideration due to the problems of enforcing one-way operation and the difficulties in maintaining a path of restricted width.

Where heavy bicycle volumes are anticipated and/or significant pedestrian traffic is expected, the paved width of a two-way path should be greater than 2.4 m, preferably 3.6 m or more. Another important factor to consider in determining the appropriate width is that bicyclists will tend to ride side by side on bike paths, necessitating more width for safe use.

Experience has shown that paved paths less than 3.6 m wide sometimes break up along the edge as a result of loads from maintenance vehicles.

Where equestrians are expected, a separate facility should be provided.

(2) *Clearance to Obstructions.* **A minimum 0.6 m horizontal clearance to obstructions shall be provided adjacent to the pavement (see Figure 1003.1A).** A 1.0 m clearance is recommended. Where the paved width is wider than the minimum required, the clearance may be reduced accordingly; however, an adequate clearance is desirable regardless of the paved width. If a wide path is paved contiguous with a continuous fixed object (e.g., block wall), a 100 mm white edge stripe, 0.3 m from the fixed object, is recommended to minimize the likelihood of a bicyclist hitting it. **The clear width on structures between railings shall be not less than 2.4 m.** It is desirable that the clear width of structures be equal to the minimum clear width of the path (i.e., 3.6 m).

The vertical clearance to obstructions across the clear width of the path shall be a minimum of 2.5 m. Where practical, a vertical clearance of 3 m is desirable.

(3) *Striping and Signing.* A yellow centerline stripe may be used to separate opposing directions of travel. A centerline stripe is particularly beneficial in the following circumstances:

(a) Where there is heavy use;

(b) On curves with restricted sight distance; and,

Figure 1003.1A

Two-way Bike Path on Separate Right of Way

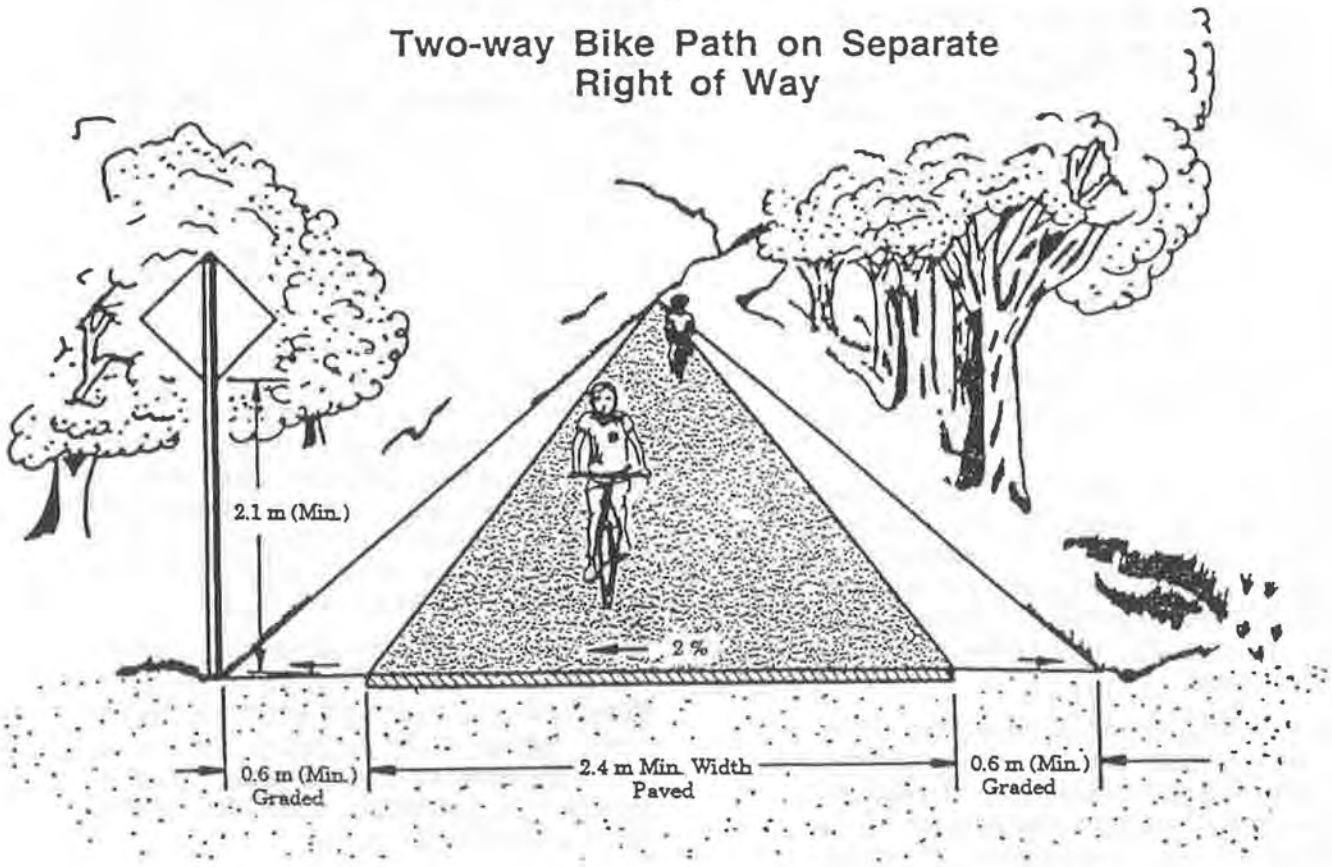
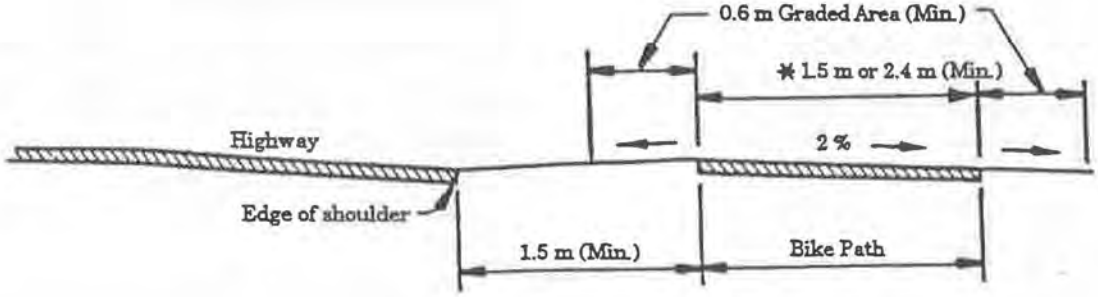


Figure 1003.1B

Typical Cross Section of Bike Path Along Highway



NOTE: See Index 1003.1(5).

* One - Way: 1.5 m Minimum Width
Two - Way: 2.4 m Minimum Width

(c) Where the path is unlighted and nighttime riding is expected. (Refer to Topic 1004 for signing and striping details.)

(4) Intersections with Highways. Intersections are a prime consideration in bike path design. If alternate locations for a bike path are available, the one with the most favorable intersection conditions should be selected.

Where motor vehicle cross traffic and bicycle traffic is heavy, grade separations are desirable to eliminate intersection conflicts. Where grade separations are not feasible, assignment of right of way by traffic signals should be considered. Where traffic is not heavy, stop or yield signs for bicyclists may suffice.

Bicycle path intersections and approaches should be on relatively flat grades. Stopping sight distances at intersections should be checked and adequate warning should be given to permit bicyclists to stop before reaching the intersection, especially on downgrades.

When crossing an arterial street, the crossing should either occur at the pedestrian crossing, where motorists can be expected to stop, or at a location completely out of the influence of any intersection to permit adequate opportunity for bicyclists to see turning vehicles. When crossing at midblock locations, right of way should be assigned by devices such as yield signs, stop signs, or traffic signals which can be activated by bicyclists. Even when crossing within or adjacent to the pedestrian crossing, stop or yield signs for bicyclists should be placed to minimize potential for conflict resulting from turning autos. Where bike path stop or yield signs are visible to approaching motor vehicle traffic, they should be shielded to avoid confusion. In some cases, Bike Xing signs may be placed in advance of the crossing to alert motorists. Ramps should be installed in the curbs, to preserve the utility of the bike path. Ramps should be the same width as the bicycle paths. Curb cuts and ramps should provide a smooth transition between the bicycle paths and the roadway.

(5) Separation Between Bike Paths and Highways. A wide separation is recommended between bike paths and adjacent highways (see Figure 1003.1B). **Bike paths closer than 1.5 m from the edge of the shoulder shall include a physical barrier to prevent bicyclists from encroaching onto the highway. Bike paths within the clear recovery zone of freeways shall include a physical barrier separation.** Suitable barriers could include chain link fences or dense shrubs. Low barriers (e.g., dikes, raised traffic bars) next to a highway are not recommended because bicyclists could fall over them and into oncoming automobile traffic. In instances where there is danger of motorists encroaching into the bike path, a positive barrier (e.g., concrete barrier, steel guardrailing) should be provided. See Index 1003.6 for criteria relative to bike paths carried over highway bridges.

Bike paths immediately adjacent to streets and highways are not recommended. They should not be considered a substitute for the street, because many bicyclists will find it less convenient to ride on these types of facilities as compared with the streets, particularly for utility trips.

(6) Bike Paths in the Median of Highways. As a general rule, bike paths in the median of highways are not recommended because they require movements contrary to normal rules of the road. Specific problems with such facilities include:

(a) Bicyclist right turns from the center of roadways are unnatural for bicyclists and confusing to motorists.

(b) Proper bicyclist movements through intersections with signals are unclear.

(c) Left-turning motorists must cross one direction of motor vehicle traffic and two directions of bicycle traffic, which increases conflicts.

(d) Where intersections are infrequent, bicyclists will enter or exit bike paths at midblock.

(e) Where medians are landscaped, visual relationships between bicyclists and motorists at intersections are impaired.

For the above reasons, bike paths in the median of highways should be considered only when the above problems can be avoided. **Bike paths shall not be designed in the medians of freeways or expressways.**

(7) *Design Speed.* The proper design speed for a bike path is dependent on the expected type of use and on the terrain. **The minimum design speed for bike paths shall be 40 km/h except as noted in** Table 1003.1.

Table 1003.1

Bike Path Design Speeds

Type of Facility	Design Speed (km/h)
Bike Paths with Mopeds Prohibited	40
Bike Paths with Mopeds Permitted	50
Bike Paths on Long Downgrades (steeper than 4%, and longer than 150 m)	50

Installation of "speed bumps" or other similar surface obstructions, intended to cause bicyclists to slow down in advance of intersections or other geometric constraints, shall not be used. These devices cannot compensate for improper design.

(8) *Horizontal Alignment and Superelevation.* The minimum radius of curvature negotiable by a bicycle is a function of the superelevation rate of the bicycle path surface, the coefficient of friction between the bicycle tires and the bicycle path surface, and the speed of the bicycle.

For most bicycle path applications the superelevation rate will vary from a minimum of 2 percent (the minimum necessary to encourage adequate drainage) to a maximum of approximately 5 percent (beyond which maneuvering difficulties by slow bicyclists and adult tricyclists might be expected). A straight 2% cross slope is recommended on tangent sections. The minimum superelevation rate of 2% will be adequate for most conditions and will simplify construction. Superelevation rates steeper than 5 percent should be avoided on bike paths expected to have adult tricycle traffic.

The coefficient of friction depends upon speed; surface type, roughness, and condition; tire type and condition; and whether the surface is wet or dry. Friction factors used for design should be selected based upon the point at which centrifugal force causes the bicyclist to recognize a feeling of discomfort and instinctively act to avoid higher speed. Extrapolating from values used in highway design, design friction factors for paved bicycle paths can be assumed to vary from 0.31 at 20 km/h to 0.21 at 50 km/h. Although there is no data available for unpaved surfaces, it is suggested that friction factors be reduced by 50 percent to allow a sufficient margin of safety.

The minimum radius of curvature can be selected from Figure 1003.1C. When curve radii smaller than those shown in Figure 1003.1C must be used on bicycle paths because of right of way, topographical or other considerations, standard curve warning signs and supplemental pavement markings should be installed. The negative effects of nonstandard curves can also be partially offset by widening the pavement through the curves.

(9) *Stopping Sight Distance.* To provide bicyclists with an opportunity to see and react to the unexpected, a bicycle path should be designed with adequate stopping sight distances. The distance required to bring a bicycle to a full controlled stop is a function of the bicyclist's perception and brake reaction time, the initial speed of the bicycle, the coefficient of friction between the tires and the pavement, and the braking ability of the bicycle.

Figure 1003.1D indicates the minimum stopping sight distances for various design speeds and grades. For two-way bike paths, the descending direction, that is, where "G" is negative, will control the design.

(10) *Length of Crest Vertical Curves.* Figure 1003.1E indicates the minimum lengths of crest vertical curves for varying design speeds.

(11) *Lateral Clearance on Horizontal Curves.* Figure 1003.1F indicates the minimum clearances to line of sight obstructions for horizontal curves. The required lateral clearance is obtained by entering Figure 1003.1F with the stopping sight distance from Figure 1003.1D and the proposed horizontal curve radius.

Bicyclists frequently ride abreast of each other on bicycle paths, and on narrow bicycle paths, bicyclists have a tendency to ride near the middle of the path. For these reasons, and because of the serious consequences of a head on bicycle accident, lateral clearances on horizontal curves should be calculated based on the sum of the stopping sight distances for bicyclists traveling in opposite directions around the curve. Where this is not possible or feasible, consideration should be given to widening the path through the curve, installing a yellow center stripe, installing a curve ahead warning sign, or some combination of these alternatives.

(12) *Grades.* Bike paths generally attract less skilled bicyclists, so it is important to avoid steep grades in their design. Bicyclists not physically conditioned will be unable to negotiate long, steep uphill grades. Since novice bicyclists often ride poorly maintained bicycles, long downgrades can cause problems. For these reasons, bike paths with long, steep grades will generally receive very little use. The maximum grade rate recommended for bike paths is 5%. It is desirable that sustained grades be limited to 2% if a wide range of riders is to be accommodated. Steeper grades can be tolerated for short segments (e.g., up to about 150 m). Where steeper grades are necessitated, the design speed should be increased and additional width should be provided for maneuverability.

(13) *Structural Section.* The structural section of a bike path should be designed in the same manner as a highway, with consideration given to the quality of the basement soil and the anticipated loads the bikeway will experience. It is important to construct and maintain a smooth riding surface with skid resistant qualities. Principal loads will normally be from maintenance and emergency vehicles. Expansive soil should be given special consideration and will probably require a special structural section. A minimum pavement thickness of 50 mm of asphalt concrete is recommended. Type "A" or "B" asphalt concrete (as described in Department of Transportation Standard Specifications), with 12.5 mm maximum aggregate and medium grading is recommended. Consideration should be given to increasing the asphalt content to provide increased pavement life. Consideration should also be given to sterilization of basement soil to preclude possible weed growth through the pavement.

At unpaved highway or driveway crossings of bicycle paths, the highway or driveway should be paved a minimum of 3 m on each side of the crossing to reduce the amount of gravel being scattered along the path by motor vehicles. The pavement structure at the crossing should be adequate to sustain the expected loading at that location.

(14) *Drainage.* For proper drainage, the surface of a bike path should have a cross slope of 2%. Sloping in one direction usually simplifies longitudinal drainage design and surface construction, and accordingly is the preferred practice. Ordinarily, surface drainage from the path will be adequately dissipated as it flows down the gently sloping shoulder. However, when a bike path is constructed on the side of a hill, a drainage ditch of suitable dimensions may be necessary on the uphill side to intercept the hillside drainage. Where necessary, catch basins with drains should be provided to carry intercepted water across the path. Such ditches should be designed in such a way that no undue obstacle is presented to bicyclists.

Culverts or bridges are necessary where a bike path crosses a drainage channel.

Figure 1003.1C

Curve Radii & Superelevations

$$R = \frac{V^2}{127\left(\frac{e}{100} + f\right)}$$

where,

R = Minimum radius of curvature (m),

V = Design Speed (km/h),

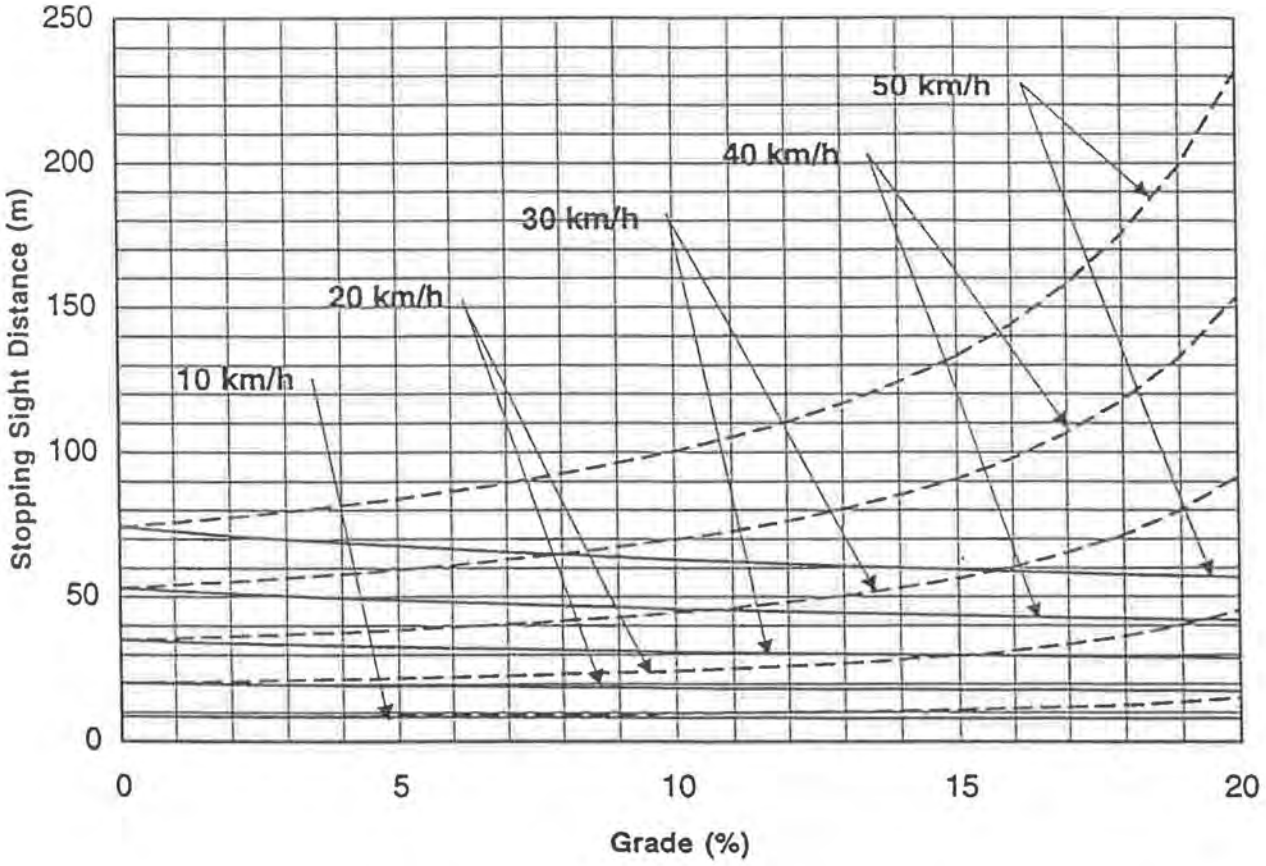
e = Rate of bikeway superelevation, percent

f = Coefficient of friction

Design Speed-V (km/h)	Friction Factor-f	Superelevation-e (%)	Minimum Radius-R (m)
20	0.31	2	10
30	0.28	2	24
40	0.25	2	47
50	0.21	2	86
20	0.31	3	9
30	0.28	3	23
40	0.25	3	45
50	0.21	3	82
20	0.31	4	9
30	0.28	4	22
40	0.25	4	43
50	0.21	4	79
20	0.31	5	9
30	0.28	5	21
40	0.25	5	42
50	0.21	5	76

Figure 1003.1D

Stopping Sight Distance



$$S = \frac{V^2}{254\,(f \pm G)} + \frac{V}{1.4}$$

Descend ------
Ascend ——

Where : S = stopping sight, m
V = velocity, km/h
f = coefficient of friction (use 0.25)
G = grade, m/m (rise/run)

Figure 1003.1E

Stopping Sight Distances for Crest Vertical Curves

$L = 25 - \frac{450}{A}$ when $S > L$

$L = \frac{AS^2}{450}$ when $S < L$

Height of cyclist eye - 1400 mm
Height of object - 100 mm

Double line represents S=L
L = Min. length of vertical curve - meters
A = Algebraic grade difference-%
S = Stopping sight distance - meters
V = Design speed km/h (Refer to Figure 1003.1D to determine "V", after "S" is determined.

GIVEN "A" AND "L"; FIND "S"

A (%)	L=50 m S (m)	L=100 m S (m)	L=150 m S (m)	L=200 m S (m)	L=250 m S (m)	L=300 m S (m)
4.5	75					
5	70	95				
5.5	66	90				
6	63	87				
6.5	60	83				
7	57	80	98			
7.5	55	77	95			
8	53	75	92			
8.5	51	73	89	103		
9	50	71	87	100		
9.5	49	69	84	97		
10	47	67	82	95		
10.5	46	65	80	93		
11	45	64	78	90		
11.5	44	63	77	88	99	
12	43	61	75	87	97	
12.5	42	60	73	85	95	
13	42	59	72	83	93	
13.5	41	58	71	82	91	
14	40	57	69	80	90	98
14.5	39	56	68	79	88	96
15	39	55	67	77	87	95

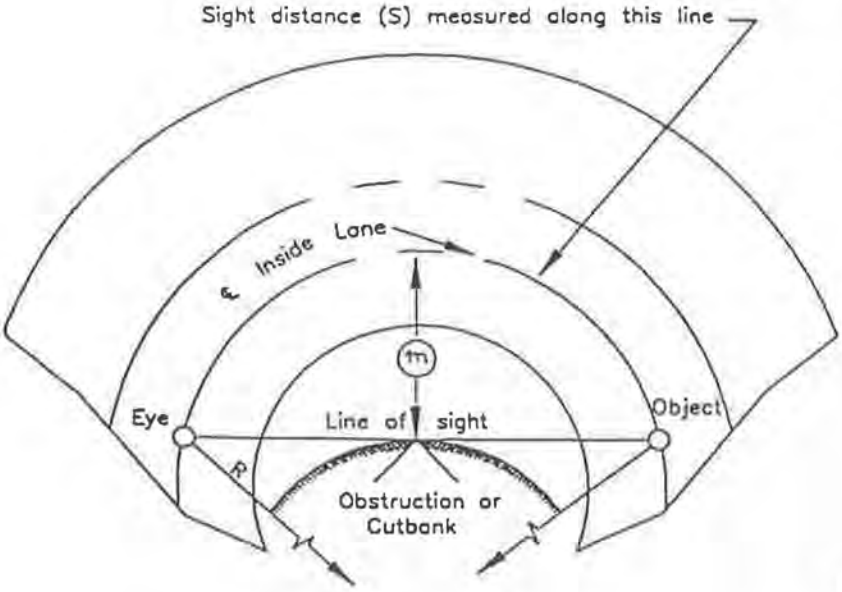
Figure 1003.1E

Stopping Sight Distances for Crest Vertical Curves (continued)

GIVEN "A" AND "S"; FIND "L"

A (%)	S=10 m L (m)	S=15 m L (m)	S=20 m L (m)	S=25 m L (m)	S=30 m L (m)	S=35 m L (m)	S=40 m L (m)	S=45 m L (m)	S=50 m L (m)
5									10.0
6							5.0	15.0	25.0
7						5.7	15.7	25.7	35.7
8					3.8	13.8	23.8	33.8	43.8
9					10.0	20.0	30.0	40.0	50.0
10				5.0	15.0	25.0	35.0	45.0	55.6
11				9.1	19.1	29.1	39.1	49.5	61.1
12			2.5	12.5	22.5	32.5	42.7	54.0	66.7
13			5.4	15.4	25.4	35.4	46.2	58.5	72.2
14			7.9	17.9	27.9	38.1	49.8	63.0	77.8
15			10.0	20.0	30.0	40.8	53.3	67.5	83.3
16		1.9	11.9	21.9	32.0	43.6	56.9	72.0	88.9
17		3.5	13.5	23.5	34.0	46.3	60.4	76.5	94.4
18		5.0	15.0	25.0	36.0	49.0	64.0	81.0	100.0
19		6.3	16.3	26.4	38.0	51.7	67.6	85.5	105.6
20		7.5	17.5	27.8	40.0	54.4	71.1	90.0	111.1
21		8.6	18.6	29.2	42.0	57.2	74.7	94.5	116.7
22		9.5	19.6	30.6	44.0	59.9	78.2	99.0	122.2
23		10.4	20.4	31.9	46.0	62.6	81.8	103.5	127.8
24		11.3	21.3	33.3	48.0	65.3	85.3	108.0	133.3
25		12.0	22.2	34.7	50.0	68.1	88.9	112.5	138.9
26		12.7	23.1	36.1	52.0	70.8	92.4	117.0	144.4
27		13.3	24.0	37.5	54.0	73.5	96.0	121.5	150.0
28	4	13.9	24.9	38.9	56.0	76.2	99.6	126.0	155.6
29	4	14.5	25.8	40.3	58.0	78.9	103.1	130.5	161.1
30	5	15.0	26.7	41.7	60.0	81.7	106.7	135.0	166.7

Figure 1003.1F
Lateral Clearances on Horizontal Curves



S = Sight distance in meters.
R = Radius of ℄ of lane in meters.
m = Distance from ℄ of lane in meters.
V = Design speed for S in km/h.
(Refer to Figure 1003.1D to determine "V", after "S" is determined.)

Angle is expressed in degrees

$$m = R\left[1-\cos\left(\frac{28.65S}{R}\right)\right]$$

$$S = \frac{R}{28.65}\left[\cos^{-1}\left(\frac{R-m}{R}\right)\right]$$

Formula applies only when S is equal to or less than length of curve.

Line of sight is 600 mm above ℄ inside lane at point of obstruction.

GIVEN "R" AND "S"; FIND "m"

R (m)	S=10 m *m* meters	S=20 m *m* meters	S=30 m *m* meters	S=40 m *m* meters	S=50 *m* meters	S=60 m *m* meters	S=70 m *m* meters	S=80 m *m* meters	S=90 m *m* meters	S=100 m *m* meters	S=110 m *m* meters
25	0.50	1.97	4.37	7.58	11.49	15.94	20.75	25.73	30.68	35.41	39.72
50	0.25	1.00	2.23	3.95	6.12	8.73	11.76	15.17	18.92	22.99	27.32
75	0.17	0.67	1.50	2.65	4.13	5.92	8.02	10.42	13.10	16.06	19.28
100	0.12	0.50	1.12	1.99	3.11	4.47	6.06	7.90	9.96	12.24	14.75
125	0.10	0.40	0.90	1.60	2.49	3.58	4.87	6.35	8.01	9.87	11.91
150	0.08	0.33	0.75	1.33	2.08	2.99	4.07	5.30	6.70	8.26	9.97
175	0.07	0.29	0.64	1.14	1.78	2.57	3.49	4.55	5.75	7.10	8.57
200	0.06	0.25	0.56	1.00	1.56	2.25	3.06	3.99	5.04	6.22	7.52
225	0.06	0.22	0.50	0.89	1.39	2.00	2.72	3.55	4.49	5.53	6.69
250	0.05	0.20	0.45	0.80	1.25	1.80	2.45	3.19	4.04	4.98	6.03
275	0.05	0.18	0.41	0.73	1.14	1.63	2.22	2.90	3.67	4.53	5.48
300	0.04	0.17	0.37	0.67	1.04	1.50	2.04	2.66	3.37	4.16	5.03
350	0.04	0.14	0.32	0.57	0.89	1.29	1.75	2.28	2.89	3.57	4.31
400	0.03	0.13	0.28	0.50	0.78	1.12	1.53	2.00	2.53	3.12	3.78
500	0.03	0.10	0.23	0.40	0.62	0.90	1.22	1.60	2.02	2.50	3.02
600	0.02	0.08	0.19	0.33	0.52	0.75	1.02	1.33	1.69	2.08	2.52
700	0.02	0.07	0.16	0.29	0.45	0.64	0.87	1.14	1.45	1.79	2.16
800	0.02	0.06	0.14	0.25	0.39	0.56	0.77	1.00	1.27	1.56	1.89
900	0.01	0.06	0.13	0.22	0.35	0.50	0.68	0.89	1.12	1.39	1.68
1000	0.01	0.05	0.11	0.20	0.31	0.45	0.61	0.80	1.01	1.25	1.51

Figure 1003.1F

Lateral Clearances on Horizontal Curves (continued)

GIVEN "R" AND "m"; FIND "S"

R (m)	$m = 1$ meter S (m)	$m = 2$ meters S (m)	$m = 3$ meters S (m)	$m = 4$ meters S (m)	$m = 5$ meters S (m)	$m = 6$ meters S (m)	$m = 7$ meters S (m)	$m = 8$ meters S (m)	$m = 9$ meters S (m)	$m = 10$ meters S (m)	$m = 11$ meters S (m)
25	14.19	20.13	24.74	28.67	32.17	35.37	38.35	41.15	43.81	46.36	48.82
50	20.03	28.38	34.81	40.27	45.10	49.49	53.55	57.35	60.93	64.35	67.61
75	24.52	34.72	42.57	49.21	55.08	60.40	65.32	69.91	74.23	78.34	82.26
100	28.31	40.06	49.11	56.75	63.51	69.63	75.27	80.54	85.50	90.20	94.68
125	31.64	44.78	54.88	63.41	70.94	77.77	84.06	89.92	95.44	100.67	105.66
150	34.66	49.04	60.10	69.43	77.67	85.13	92.00	98.41	104.44	110.15	115.60
175	37.43	52.96	64.90	74.97	83.86	91.91	99.32	106.23	112.73	118.88	124.75
200	40.01	56.61	69.36	80.13	89.62	98.22	106.13	113.51	120.45	127.01	133.27
225	42.44	60.04	73.56	84.97	95.04	104.15	112.53	120.35	127.70	134.66	141.28
250	44.73	63.28	77.53	89.56	100.16	109.76	118.59	126.82	134.56	141.89	148.86
275	46.91	66.37	81.31	93.92	105.03	115.09	124.35	132.98	141.09	148.77	156.08
300	49.00	69.32	84.92	98.08	109.69	120.19	129.86	138.86	147.33	155.34	162.97
350	52.92	74.86	91.71	105.92	118.45	129.79	140.22	149.94	159.08	167.72	175.95
400	56.58	80.03	98.03	113.22	126.61	138.73	149.87	160.26	170.01	179.25	188.04
500	63.25	89.47	109.59	126.57	141.53	155.06	167.52	179.11	190.01	200.32	210.13
600	69.29	98.00	120.04	138.63	155.02	169.83	183.47	196.16	208.09	219.38	230.12
700	74.84	105.85	129.65	149.73	167.42	183.42	198.14	211.85	224.72	236.91	248.50
800	80.00	113.15	138.60	160.05	178.97	196.07	211.80	226.45	240.21	253.23	265.62
900	84.85	120.01	147.00	169.76	189.81	207.95	224.63	240.16	254.75	268.56	281.69
1000	89.44	126.50	154.95	178.93	200.07	219.18	236.76	253.13	268.51	283.06	296.90

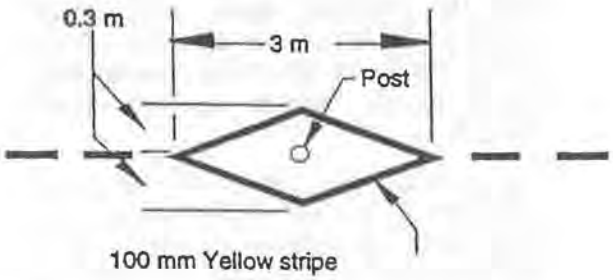
(15) Barrier Posts. It may be necessary to install barrier posts at entrances to bike paths to prevent motor vehicles from entering. When locating such installations, care should be taken to assure that barriers are well marked and visible to bicyclists, day or night (i.e., install reflectors or reflectorized tape).

Striping an envelope around the barriers is recommended (see Figure 1003.1G). If sight distance is limited, special advance warning signs or painted pavement warnings should be provided. Where more than one post is necessary, a 1.5 m spacing should be used to permit passage of bicycle-towed trailers, adult tricycles, and to assure adequate room for safe bicycle passage without dismounting. Barrier post installations should be designed so they are removable to permit entrance by emergency and service vehicles.

Generally, barrier configurations that preclude entry by motorcycles present safety and convenience problems for bicyclists. Such devices should be used only where extreme problems are encountered.

Figure 1003.1G

Barrier Post Striping



(16) Lighting. Fixed-source lighting reduces conflicts along paths and at intersections. In addition, lighting allows the bicyclist to see the bicycle path direction, surface conditions, and obstacles. Lighting for bicycle paths is important and should be considered where riding at night is expected, such as bicycle paths serving college students or commuters, and at highway intersections. Lighting should also be considered through underpasses or tunnels, and when nighttime security could be a problem.

Depending on the location, average maintained horizontal illumination levels of 5 lux to 22 lux should be considered. Where special security problems exist, higher illumination levels may be considered. Light standards (poles) should meet the recommended horizontal and vertical clearances. Luminaires and standards should be at a scale appropriate for a pedestrian or bicycle path.

1003.2 Class II Bikeways

Class II bikeways (bike lanes) for preferential use by bicycles are established within the paved area of highways. Bike lane stripes are intended to promote an orderly flow of traffic, by establishing specific lines of demarcation between areas reserved for bicycles and lanes to be occupied by motor vehicles. This effect is supported by bike lane signs and pavement markings. Bike lane stripes can increase bicyclists' confidence that motorists will not stray into their path of travel if they remain within the bike lane. Likewise, with more certainty as to where bicyclists will be, passing motorists are less apt to swerve toward opposing traffic in making certain they will not hit bicyclists.

Class II bike lanes shall be one-way facilities. Two-way bike lanes (or bike paths that are contiguous to the roadway) are not permitted, as such facilities have proved unsatisfactory and promote riding against the flow of motor vehicle traffic.

(1) Widths. Typical Class II bikeway configurations are illustrated in Figure 1003.2A and are described below:

(a) Figure 1003.2A-(1) depicts bike lanes on an urban type curbed street where parking stalls (or continuous parking stripes) are marked. Bike lanes are located between the parking area and the traffic lanes. **As indicated, 1.5 m shall be the minimum width of bike lane where parking stalls are marked.** If parking volume is substantial or turnover high, an additional 0.3 m to 0.6 m of width is desirable.

Bike lanes shall not be placed between the parking area and the curb. Such facilities increase the conflict between bicyclists and opening car doors and reduce visibility at intersections. Also, they prevent bicyclists from leaving the bike lane to turn left and cannot be effectively maintained.

(b) Figure 1003.2A-(2) depicts bike lanes on an urban-type curbed street, where parking is permitted, but without parking stripe or stall marking. Bike lanes are established in conjunction with the parking areas. **As indicated, 3.3 m or 3.6 m (depending on the type of curb) shall be the minimum width of the bike lane where parking is permitted.** This type of lane is satisfacory where parking is not extensive and where turnover of parked cars is infrequent. However, if parking is substantial, turnover of parked cars is high, truck traffic is substantial, or if vehicle speeds exceed 55 km/h, additional width is recommended.

(c) Figure 1003.2A-(3) depicts bike lanes along the outer portions of an urban type curbed street, where parking is prohibited. This is generally the most desirable configuration for bike lanes, as it eliminates potential conflicts resulting from auto parking (e.g., opening car doors). **As indicated, if no gutter exists, the minimum bike lane width shall be 1.2 m. With a normal 600 mm gutter, the minimum bike lane width shall be 1.5 m.** The intent is to provide a minimum 1.2 m wide bike lane, but with at least 0.9 m between the traffic lane and the longitudinal joint at the concrete gutter, since the gutter reduces the effective width of the bike lane for two reasons. First, the longitudinal joint may not always be smooth, and may be difficult to ride along. Secondly, the gutter does not provide a suitable surface for bicycle travel. Where gutters are wide (say, 1.2 m), an additional 0.9 m must be provided because bicyclists should not be expected to ride in the gutter. Wherever possible, the width of bike lanes should be increased to 1.8 m to 2.4 m to provide forgreater safety. 2.4 m bike lanes can also serve as emergency parking areas for disabled vehicles.

Striping bike lanes next to curbs where parking is prohibited only during certain hours shall be done only in conjunction with special signing to designate the hours bike lanes are to be effective. Since the Vehicle Code requires bicyclists to ride in bike lanes where provided (except under certain conditions), proper signing is necessary to inform bicyclists that they are required to ride in bike lanes only during the course of the parking prohibition. This type of bike lane should be considered only if the vast majority of bicycle travel would occur during the hours of the parking prohibition, and only if there is a firm commitment to enforce the parking prohibition. Because of the obvious complications, this type of bike lane is not encouraged for general application.

Figure 1003.2A(4) depicts bike lanes on a highway without curbs and gutters. This location is in an undeveloped area where infrequent parking is handled off the pavement. This can be accomplished by supplementing the bike lane signing with R25 (park off pavement) signs, or R26 (no parking) signs. **Minimum widths shall be as shown.** Additional width is desirable, particularly where motor vehicle speeds exceed 55 km/h.

The typical traffic lane width next to a bike lane is 3.6 m. Lane widths narrower than 3.6 m must receive approval as discussed in Index 82.2. There are situations where it may be necessary to reduce the width of the traffic lanes in order to stripe bike lanes. In determining the appropriateness of narrower traffic lanes, consideration should be given to factors such as motor vehicle speeds, truck volumes, alignment, and sight distance. Where favorable conditions exist, traffic lanes of 3.3 m may be feasible.

Bike lanes are not advisable on long, steep downgrades, where bicycle speeds greater than 50 km/h are expected. As grades increase, downhill bicycle speeds will increase, which increases the problem of riding near the edge of the roadway. In such situations, bicycle speeds can approach those of motor vehicles, and experienced bicyclists will generally move into the motor vehicle lanes to increase sight distance and maneuverability. If bike lanes are to be striped, additional width should be provided to accommodate higher bicycle speeds.

If the bike lanes are to be located on one-way streets, they should be placed on the right side of the street. Bike lanes on the left side would cause bicyclists and motorists to undertake crossing maneuvers in making left turns onto a two-way street.

(2) *Striping and Signing.* Details for striping and signing of bike lanes are included under Topic 1004.

Raised barriers (e.g., raised traffic bars and asphalt concrete dikes) or raised pavement markers shall not be used to delineate bike lanes. Raised barriers prevent motorists from merging into bike lanes before making right turns, as required by the Vehicle Code, and restrict the movement of bicyclists desiring to enter or exit bike lanes. They also impede routine maintenance. Raised pavement markers increase the difficulty for bicyclists when entering or exiting bike lanes, and discourage motorists from merging into bike lanes before making right turns.

Bike lane stripes should be placed a constant distance from the outside motor vehicle lane. Bike lanes with parking permitted (3.3 m to 3.9 m between the bike lane line and the curb) should not be directed toward the curb at intersections or localized areas where parking is prohibited. Such a practice prevents bicyclists from following a straight course. Where transitions from one type of bike lane to another are necessary, smooth tapers should be provided.

(3) *Intersection Design.* Most auto/bicycle accidents occur at intersections. For this reason, bikeway design at intersections should be accomplished in a manner that will minimize confusion by motorists and bicyclists, and will permit both to operate in accordance with the normal rules of the road.

Figure 1003.2B illustrates a typical intersection of multilane streets, with bike lanes on all approaches. Some common movements of motor vehicles and bicycles are shown. A prevalent type of accident involves straight-through bicycle traffic and right-turning motorists. Left-turning bicyclists also have problems, as the bike lane is on the right side of the street, and bicyclists have to cross the path of cars traveling in both directions. Some bicyclists are proficient enough to merge across one or more lanes of traffic, to use the inside lane or left-turn lane provided for motor vehicles. However, there are many who do not feel comfortable making this maneuver. They have the option of making a two-legged left turn by riding along a course similar to that followed by pedestrians, as shown in the diagram. Young children will often prefer to dismount and change directions by walking their bike in the crosswalk.

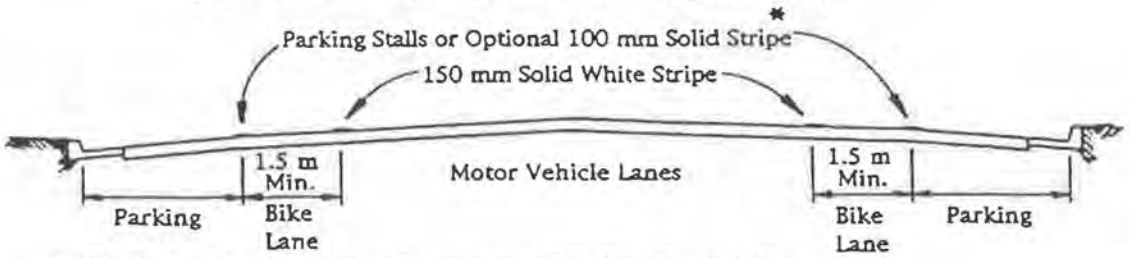
At intersections where there is a bike lane and traffic-actuated signal, installation of bicycle-sensitive detectors within the bike lane is desirable. Push button detectors are not as satisfactory as those located in the pavement because the cyclist must stop to actuate the push button. It is also desirable that detectors in left-turn lanes be sensitive enough to detect bicycles (see Chapter 9 of the Traffic Manual and Standard Plans for bicycle-sensitive detector designs).

At intersections (without bike lanes) with significant bicycle use and a traffic-actuated signal, it is desirable to install detectors that are sensitive enough to detect bicycles.

Figure 1003.2C illustrates recommended striping patterns for bike lanes crossing a motorist right-turn-only lane. When confronted with such intersections, bicyclists will have to merge with right-turning motorists. Since bicyclists are typically

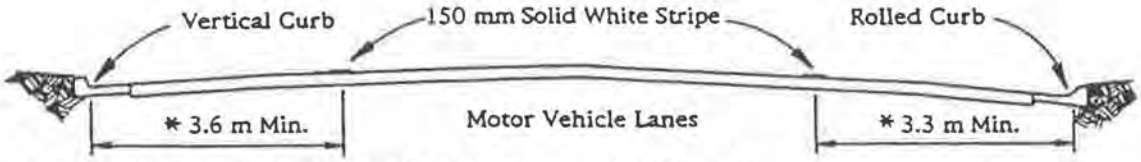
Figure 1003.2A

Typical Bike Lane Cross Sections (On 2-lane or Multilane Highways)



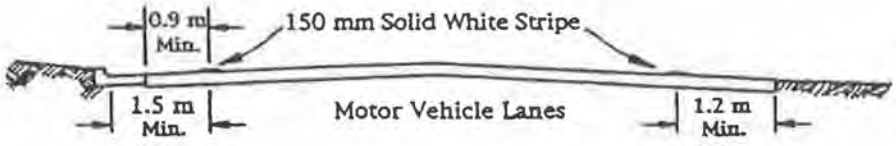
* The optional solid white stripe may be advisable where stalls are unnecessary (because parking is light) but there is concern that motorists may misconstrue the bike lane to be a traffic lane.

(1) STRIPED PARKING

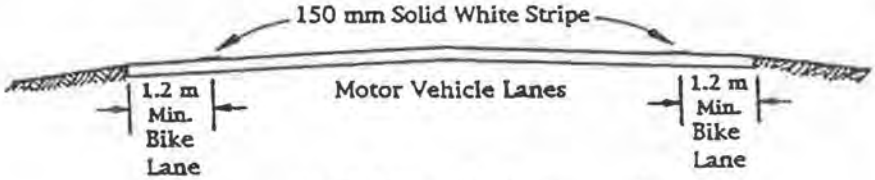


* 3.9 m is recommended where there is substantial parking or turnover of parked cars is high (e.g. commercial areas)

(2) PARKING PERMITTED WITHOUT PARKING STRIPE OR STALL



(3) PARKING PROHIBITED



(4) TYPICAL ROADWAY IN OUTLYING AREAS PARKING RESTRICTED

Figure 1003.2B

Typical Bicycle/Auto Movements at Intersections of Multilane Streets

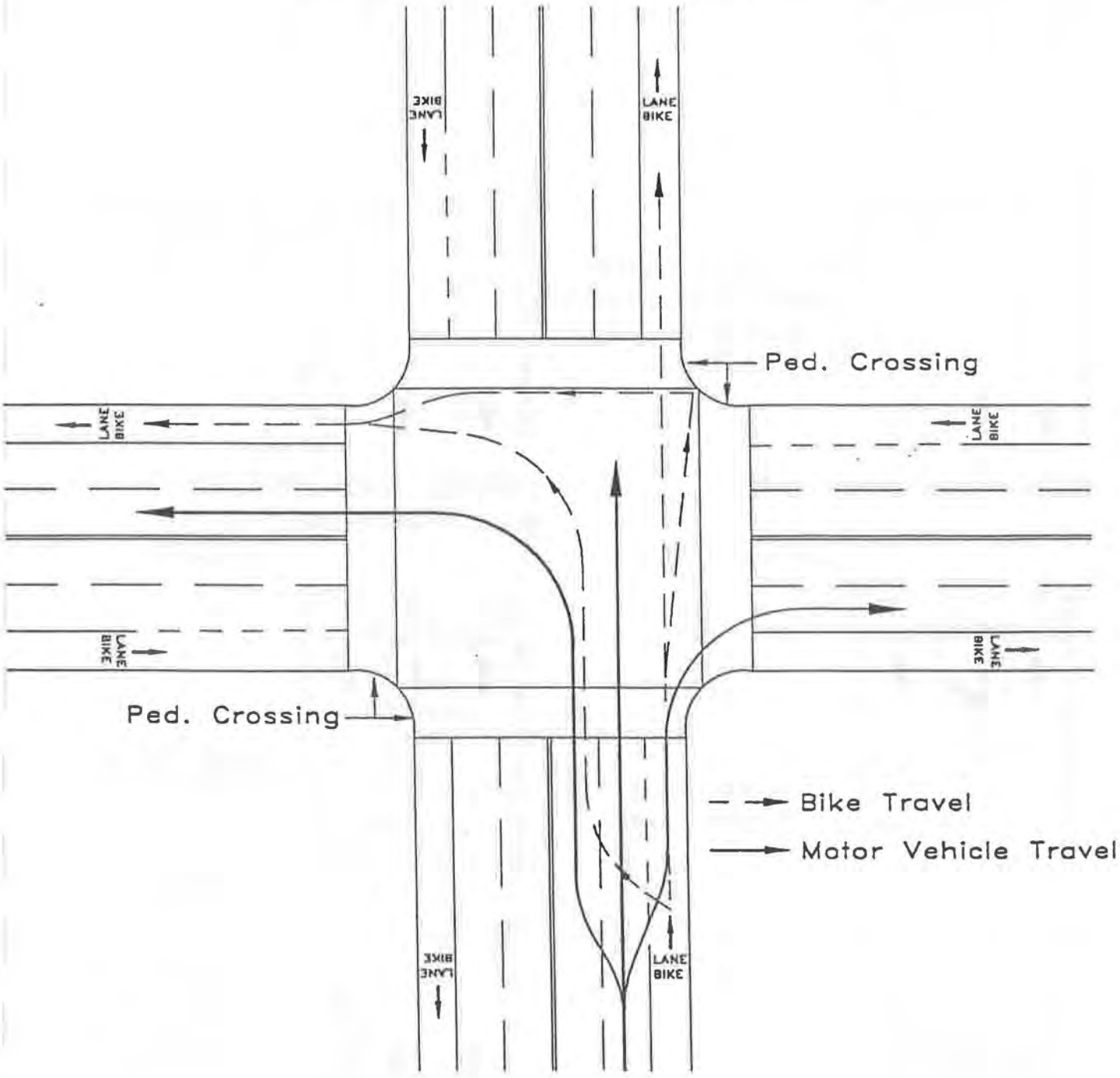
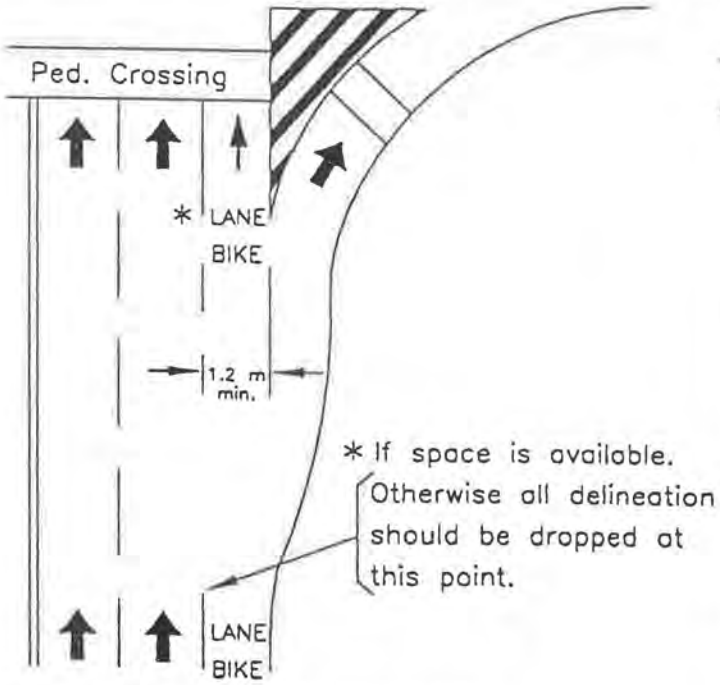
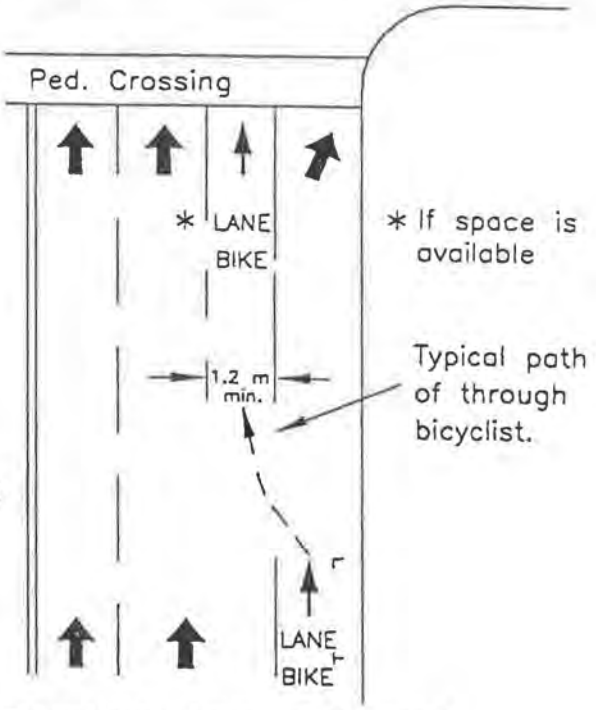


Figure 1003.2C

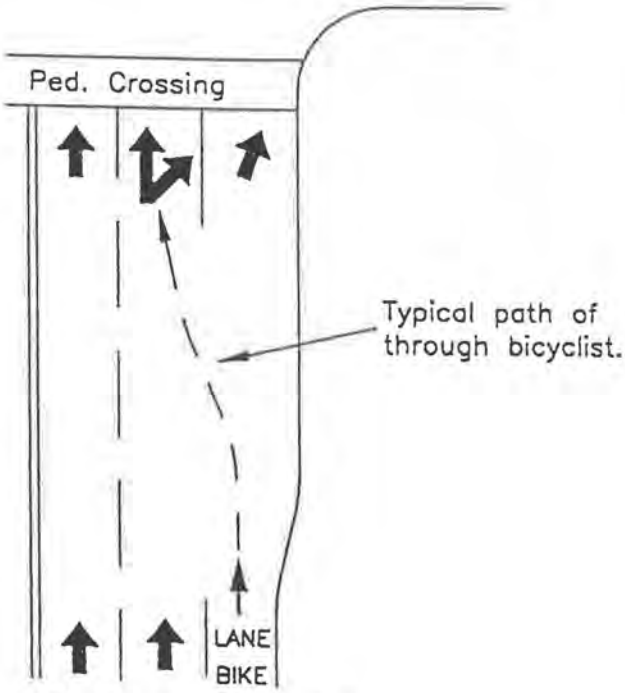
Bike Lanes Approaching Motorist Right-turn-only Lanes



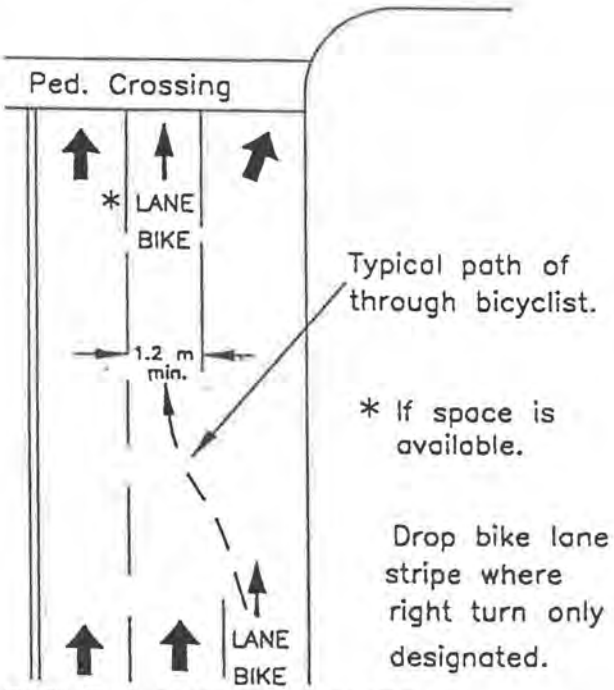
RIGHT–TURN–ONLY LANE



PARKING AREA BECOMES RIGHT–TURN–ONLY LANE



OPTIONAL DOUBLE RIGHT–TURN–ONLY LANE



RIGHT LANE BECOMES RIGHT–TURN–ONLY LANE

traveling at speeds less than motorists,they should signal and merge where there is sufficient gap in right-turning traffic, rather than at any predetermined location. For this reason, it is recommended that all delineation be dropped at the approach of the right-turn lane (or off-ramp). A pair of parallel lines (delineating a bike lane crossing) to channel the bike merge is not recommended, as bicyclists will be encouraged to cross at a predetermined location, rather than when there is a safe gap in right-turning traffic. Also, some bicyclists are apt to assume they have the right of way, and may not check for right-turning motor vehicle traffic.

A dashed line across the right-turn-only lane is not recommended on extremely long lanes, or where there are double right-turn-only lanes. For these types of intersections, all striping should be dropped to permit judgment by the bicyclists to prevail. A Bike Xing sign may be used to warn motorists of the potential for bicyclists crossing their path.

1003.3 Class III Bikeways

Class III bikeways (bike routes) are intended to provide continuity to the bikeway system. Bike routes are established along through routes not served by Class I or II bikeways, or to connect discontinuous segments of bikeway (normally bike lanes). Class III facilities are shared facilities, either with motor vehicles on the street, or with pedestrians on sidewalks, and in either case bicycle usage is secondary. Class III facilities are established by placing Bike Route signs along roadways.

Minimum widths for Class III bikeways are not presented, as the acceptable width is dependent on many factors, including the volume and character of vehicular traffic on the road, typical speeds, vertical and horizontal alignment, sight distance, and parking conditions.

Since bicyclists are permitted on all highways (except prohibited freeways), the decision to sign the route should be based on the advisability of encouraging bicycle travel on the route and other factors listed below.

(1) On-street Bike Route Criteria. To be of benefit to bicyclists, bike routes should offer a higher degree of service than alternative streets. Routes should be signed only if some of the following apply:

(a) They provide for through and direct travel in bicycle-demand corridors.

(b) Connect discontinuous segments of bike lanes.

(c) An effort has been made to adjust traffic control devices (stop signs, signals) to give greater priority to bicyclists, as compared with alternative streets. This could include placement of bicycle-sensitive detectors on the right-hand portion of the road, where bicyclists are expected to ride.

(d) Street parking has been removed or restricted in areas of critical width to provide improved safety.

(e) Surface imperfections or irregularities have been corrected (e.g., utility covers adjusted to grade, potholes filled, etc.).

(f) Maintenance of the route will be at a higher standard than that of other comparable streets (e.g., more frequent street sweeping).

(2) Sidewalk Bikeway Criteria. In general, the designated use of sidewalks (as a Class III bikeway) for bicycle travel is unsatisfactory.

It is important to recognize that the development of extremely wide sidewalks does not necessarily add to the safety of sidewalk bicycle travel, as wide sidewalks will encourage higher speed bicycle use and can increase potential for conflicts with motor vehicles at intersections, as well as with pedestrians and fixed objects.

Sidewalk bikeways should be considered only under special circumstances, such as:

(a) To provide bikeway continuity along high speed or heavily traveled roadways having inadequate space for bicyclists, and uninterrupted by driveways and intersections for long distances.

(b) On long, narrow bridges. In such cases, ramps should be installed at the sidewalk approaches. If approach bikeways are two-way, sidewalk facilities should also be two-way.

Whenever sidewalk bikeways are established, a special effort should be made to remove unnecessary obstacles. Whenever bicyclists are directed from bike lanes to sidewalks, curb cuts should be flush with the street to assure that bicyclists are not subjected to problems associated with crossing a vertical lip at a flat angle. Also curb cuts at each intersection are necessary, as well as bikeway yield or stop signs at uncontrolled intersections. Curb cuts should be wide enough to accommodate adult tricycles and two-wheel bicycle trailers.

In residential areas, sidewalk riding by young children too inexperienced to ride in the street is common. With lower bicycle speeds and lower auto speeds, potential conflicts are somewhat lessened, but still exist. Nevertheless, this type of sidewalk bicycle use is accepted. But it is inappropriate to sign these facilities as bikeways. Bicyclists should not be encouraged (through signing) to ride facilities that are not designed to accommodate bicycle travel.

(3) *Destination Signing of Bike Routes.* For Bike Route signs to be more functional, supplemental plates may be placed beneath them when located along routes leading to high demand destinations (e.g., "To Downtown"; "To State College"; etc.-- see Figure 1004.4 for typical signing).

There are instances where it is necessary to sign a route to direct bicyclists to a logical destination, but where the route does not offer any of the above listed bike route features. In such cases, the route should not be signed as a bike route; however, destination signing may be advisable. A typical application of destination signing would be where bicyclists are directed off a highway to bypass a section of freeway. Special signs would be placed to guide bicyclists to the next logical destination. The intent is to direct bicyclists in the same way as motorists would be directed if a highway detour was necessitated.

1003.4 Bicycles on Freeways

In some instances, bicyclists are permitted on freeways. Seldom would a freeway be signed or striped as a bikeway, but it can be opened for use if it meets certain criteria. Essentially, the criteria involve assessing the safety and convenience of the freeway as compared with available alternate routes. However, a freeway should not be opened to bicycle use if it is determined to be incompatible. The Headquarters Traffic Reviewer and the OPPD Coordinator must approve any proposals to open freeways to bicyclists.

If a suitable alternate route exists, it would normally be unnecessary to open the freeway. However, if the alternate route is unsuitable for bicycle travel the freeway may be a better alternative for bicyclists. In determining the suitability of an alternate route, safety should be the paramount consideration. The following factors should be considered:

- Number of intersections
- Shoulder widths
- Traffic volumes
- Vehicle speeds
- Bus, truck and recreational vehicle volumes
- Grades
- Travel time

When a suitable alternate route does not exist, a freeway shoulder may be considered for bicycle travel. Normally, freeways in urban areas will have characteristics that make it unfeasible to permit bicycle use. In determining if the freeway shoulder is suitable for bicycle travel, the following factors should be considered;

- Shoulder widths
- Bicycle hazards on shoulders (drainage grates, expansion joints, etc.)
- Number and location of entrance/exit ramps
- Traffic volumes on entrance/exit ramps

When bicyclists are permitted on segments of freeway, it will be necessary to modify and supplement freeway regulatory signs, particularly those at freeway ramp entrances and exits (see Chapter 4 of the Traffic Manual).

Where no reasonable alternate route exists within a freeway corridor, the Department should coordinate with local agencies to develop or improve existing routes or provide parallel bikeways within or adjacent to the freeway right of way.

The long term goal is to provide a safe and convenient non-freeway route for bicycle travel.

1003.5 Multipurpose Trails

In some instances, it may be appropriate for agencies to develop multipurpose trails - for hikers, joggers, equestrians, bicyclists, etc. Many of these trails will not be paved and will not meet the standards for Class I bikeways. As such, these facilities should not be signed as bikeways. Rather, they should be designated as multipurpose trails (or similar designation), along with regulatory signing to restrict motor vehicles, as appropriate.

If multipurpose trails are primarily to serve bicycle travel, they should be developed in accordance with standards for Class I bikeways. In general, multipurpose trails are not recommended as high speed transportation facilities for bicyclists because of conflicts between bicyclists and pedestrians. Wherever possible, separate bicycle and pedestrian paths should be provided. If this is not feasible, additional width, signing and striping should be used to minimize conflicts.

It is undesirable to mix mopeds and bicycles on the same facility. In general, mopeds should not be allowed on multipurpose trails because of conflicts with slower moving bicyclists and pedestrians. In some cases where an alternate route for mopeds does not exist, additional width, signing, and striping should be used to minimize conflicts. Increased patrolling by law enforcement personnel is also recommended to enforce speed limits and other rules of the road.

It is usually not desirable to mix horses and bicycle traffic on the same multipurpose trail. Bicyclists are often not aware of the need for slower speeds and additional operating space near horses. Horses can be startled easily and may be unpredictable if they perceive approaching bicyclists as a danger. In addition, pavement requirements for safe bicycle travel are not suitable for horses. For these reasons, a bridle trail separate from the multipurpose trail is recommended wherever possible.

1003.6 Miscellaneous Bikeway Criteria

The following are miscellaneous bikeway criteria which should be followed to the extent pertinent to Class I, II and III bikeways. Some, by their very nature, will not apply to all classes of bikeway. Many of the criteria are important to consider on any highway where bicycle travel is expected, without regard to whether or not bikeways are established.

(1) Bridges. Bikeways on highway bridges must be carefully coordinated with approach bikeways to make sure that all elements are compatible. For example, bicycle traffic bound in opposite directions is best accommodated by bike lanes on each side of a highway. In such cases, a two-way bike path on one side of a bridge would normally be inappropriate, as one direction of bicycle traffic would be required to cross the highway at grade twice to get to and from the bridge bike path. Because of the inconvenience, many bicyclists will be encouraged to ride on the wrong side of the highway beyond the bridge termini.

The following criteria apply to a two-way bike path on one side of a highway bridge:

(a) The bikeway approach to the bridge should be by way of a separate two-way facility for the reason explained above.

(b) **A physical separation, such as a chain link fence or railing, shall be provided to offset the adverse effects of having bicycles traveling against motor vehicle traffic.** The physical separation should be designed to minimize fixed end hazards to motor vehicles and if the bridge is an interchange structure, to minimize sight distance restrictions at ramp intersections.

It is recommended that bikeway bridge railings or fences placed between traffic lanes and bikeways be at least 1.4 m high to minimize the likelihood of bicyclists falling over the railings. Standard bridge railings which are lower than 1.4 m can be retrofitted with lightweight upper railings or

chain link fence suitable to restrain bicyclists.

Separate highway overcrossing structures for bikeway traffic shall conform to Caltrans' standard pedestrian overcrossing design loading. The minimum clear width shall be the paved width of the approach bikeway but not less than 2.4 m. If pedestrians are to use the structure, additional width is recommended.

(2) *Surface Quality.* The surface to be used by bicyclists should be smooth, free of potholes, and the pavement edge uniform. For rideability on new construction, the finished surface of bikeways should not vary more than 6 mm from the lower edge of a 2.4 m long straight edge when laid on the surface in any direction.

Table 1003.6

BIKEWAY SURFACE TOLERANCES

Direction of Travel	Grooves(1)	Steps(2)
Parallel to travel	No more than 12 mm wide	No more than 10 mm high
Perpendicular to travel	---	No more than 20 mm high

(1) Groove–A narrow slot in the surface that could catch a bicycle wheel, such as a gap between two concrete slabs.

(2) Step--A ridge in the pavement, such as that which might exist between the pavement and a concrete gutter or manhole cover; or that might exist between two pavement blankets when the top level does not extend to the edge of the roadway.

Table 1003.6 indicates the recommended bikeway surface tolerances for Class II and III bikeways developed on existing streets to minimize the potential for causing bicyclists to lose control of their bicycle (Note: Stricter tolerances should be achieved on new bikeway construction.) Shoulder rumble strips are not suitable as a riding surface for bicycles. See Traffic Manual Section 6-03.2 for additional information regarding rumble strip design considerations for bicycles.

(3) *Drainage Grates, Manhole Covers, and Driveways.* Drainage inlet grates, manhole covers, etc., on bikeways should be designed and installed in a manner that provides an adequate surface for bicyclists. They should be maintained flush with the surface when resurfacing.

Drainage inlet grates on bikeways shall have openings narrow enough and short enough to assure bicycle tires will not drop into the grates (e.g., reticuline type), regardless of the direction of bicycle travel. Where it is not immediately feasible to replace existing grates with standard grates designed for bicycles, 25 mm x 6 mm steel cross straps should be welded to the grates at a spacing of 150 mm to 200 mm on centers to reduce the size of the openings adequately.

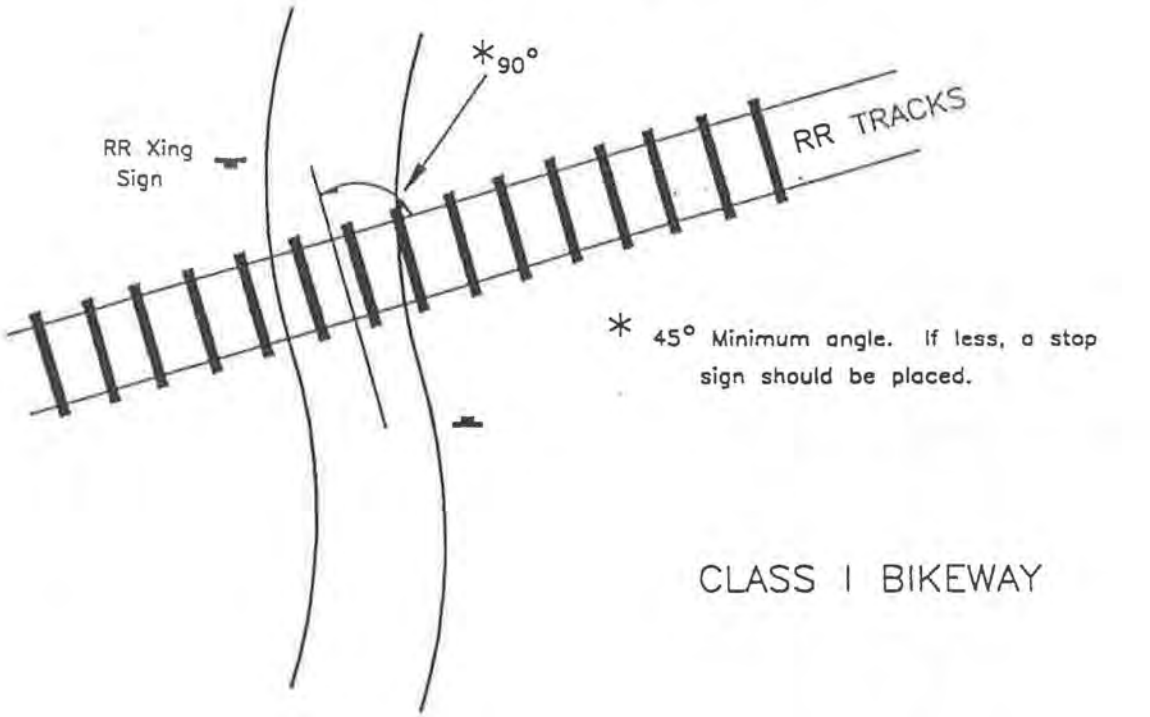
Corrective actions described above are recommended on all highways where bicycle travel is permitted, whether or not bikeways are designated.

Future driveway construction should avoid construction of a vertical lip from the driveway to the gutter, as the lip may create a problem for bicyclists when entering from the edge of the roadway at a flat angle. If a lip is deemed necessary, the height should be limited to 15 mm.

(4) *At-grade Railroad Crossings and Cattle Guards.* Whenever it is necessary to cross railroad tracks with a bikeway, special care must be taken to assure that the safety of bicyclists is protected. The bikeway crossing should be at least as wide as the approaches of the bikeway. Wherever possible, the crossing should be straight and at right angles to the rails. For on-street bikeways where a skew is unavoidable, the shoulder (or bike lane) should be widened, if possible, to permit bicyclists to cross at right angles (see Figure 1003.6A). If this is not possible, special construction and materials should be considered to keep the flangeway depth and width to a minimum. Pavement should be maintained so ridge

Figure 1003.6A

Railroad Crossings



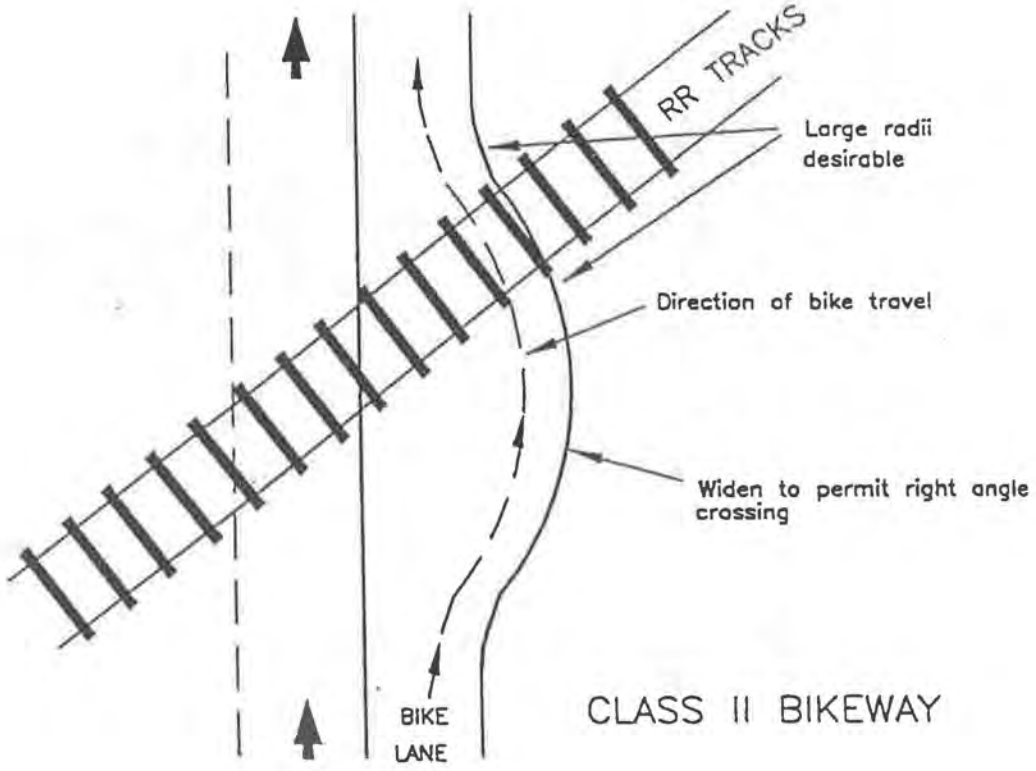
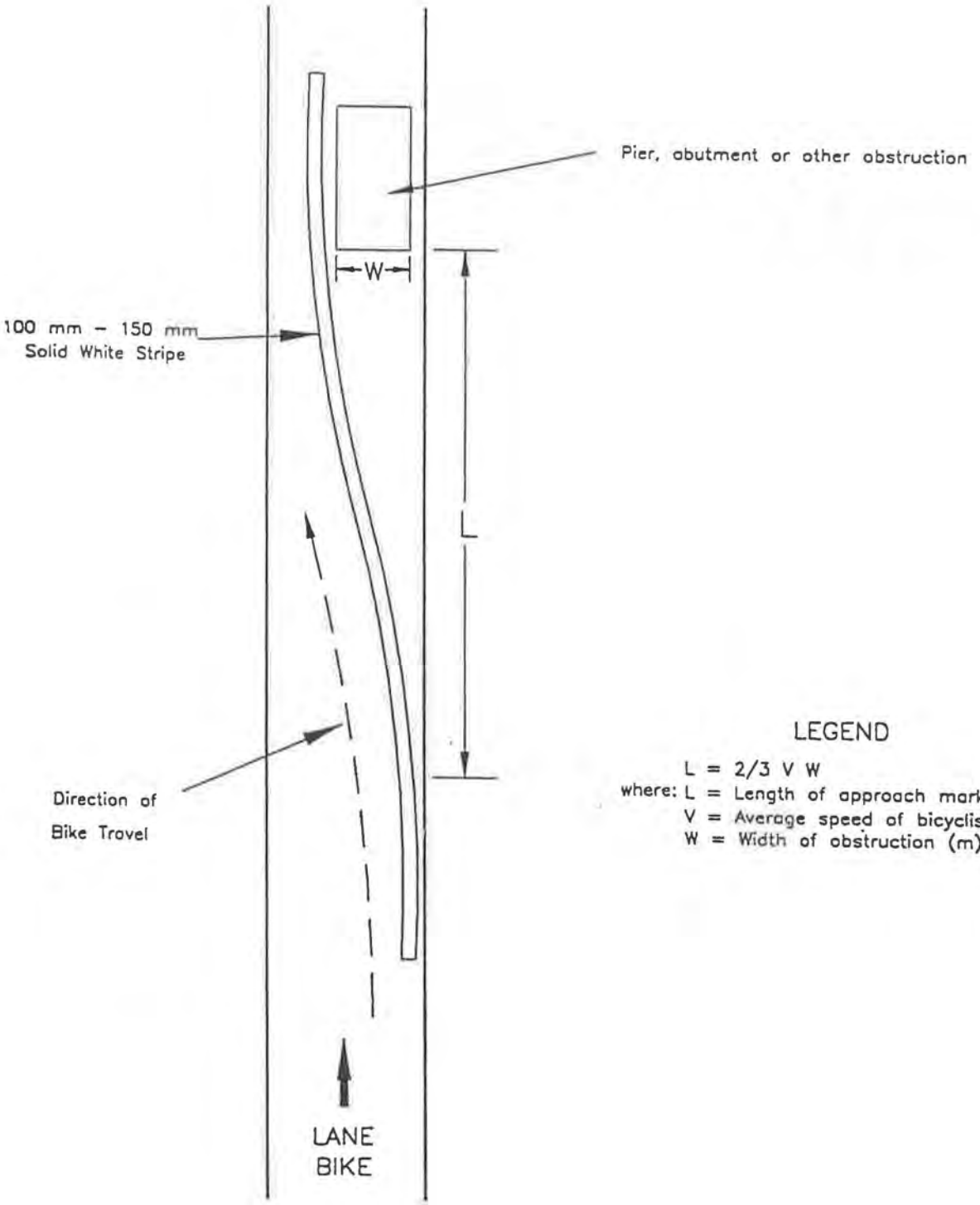


Figure 1003.6B

Obstruction Markings



LEGEND

L = 2/3 V W

where: L = Length of approach marking (m)
V = Average speed of bicyclists (km/h)
W = Width of obstruction (m)

buildup does not occur next to the rails. In some cases, timber plank crossings can be justified and can provide for a smoother crossing. Where hazards to bicyclist cannot be avoided, appropriate signs should be installed to warn bicyclists of the danger.

All railroad crossings are regulated by the California Public Utilities Commission (CPUC). All new bike path railroad crossings must be approved by the CPUC. Necessary railroad protection will be determined based on a joint field review involving the applicant, the railroad company, and the CPUC.

The presence of cattle guards along any roadway where bicyclists are expected should be clearly marked with adequate advance warning.

(5) *Obstruction Markings.* Vertical barriers and obstructions, such as abutments, piers, and other features causing bikeway constriction, should be clearly marked to gain the attention of approaching bicyclists. This treatment should be used only where unavoidable, and is by no means a substitute for good bikeway design. An example of an obstruction marking is shown in Figure 1003.6B. Signs, reflectors, diagonal black and yellow markings, or other treatments will be appropriate in other instances to alert bicyclists to potential obstructions.

Topic 1004 - Uniform Signs, Markings and Traffic Control Devices

1004.1 Introduction

Per Section 891 of the Streets and Highways Code, uniform signs, markings, and traffic control devices shall be used. As such this section is mandatory, except where permissive language is used. See the Traffic Manual for detailed specifications.

1004.2 Bike Path (Class I)

An optional 100 mm yellow stripe may be placed to separate opposing directions of travel. (See Index 1003.1(3) for additional information.) A 0.9 m long stripe with a 2.7 m space is the recommended striping pattern, but may be revised, depending on the situation.

Standard regulatory, warning, and guide signs used on highways may be used on bike paths, as appropriate (and may be scaled down in size). Special regulatory, warning, and guide signs may also be used to meet specific needs.

White painted word (or symbol) warning markings on the pavement may be used as an effective means of alerting bicyclists to approaching hazards, such as sharp curves, barrier posts, etc.

1004.3 Bike Lanes (Class II)

Bike lanes require standard signing and pavement markings as shown on Figure 1004.3. This figure also depicts the proper method of striping bike lanes through intersections. Bike lane lines are not typically extended through intersections. Where motor vehicle right turns are not permitted, the solid bike lane stripe should extend to the edge of the intersection, and begin again on the far side. Where right turns are permitted, the solid stripe should terminate 30 m to 60 m prior to the intersection. A dashed line, as shown in Figure 1004.3, may be carried to, or near, the intersection. Where city blocks are short (less than 120 m), the length of dashed stripe is typically close to 30 m. Where blocks are longer or motor vehicle speeds are high (greater than 60 km/h), the length of dashed stripe should be increased to 60 m.

The R81 bike lane sign shall be placed at the beginning of all bike lanes, on the far side of every arterial street intersection, at all major changes in direction, and at maximum 1 km intervals.

Bike lane pavement markings shall be placed on the far side of each intersection, and may be placed at other locations as desired.

Raised pavement markers or other raised barriers shall not be used to delineate bike lanes.

The G93 Bike Route sign may also be used along bike lanes, but its primary purpose should be to provide directional signing and destination signing where necessary. A proliferation of

Bike Route signs along signed and striped bike lanes serves no useful purpose.

Many signs on the roadway also will apply to bicyclists in bike lanes. Standard regulatory, warning, and guide signs used specifically in conjunction with bike lanes are shown in Chapter 4 of the Traffic Manual.

1004.4 Bike Routes (Class III)

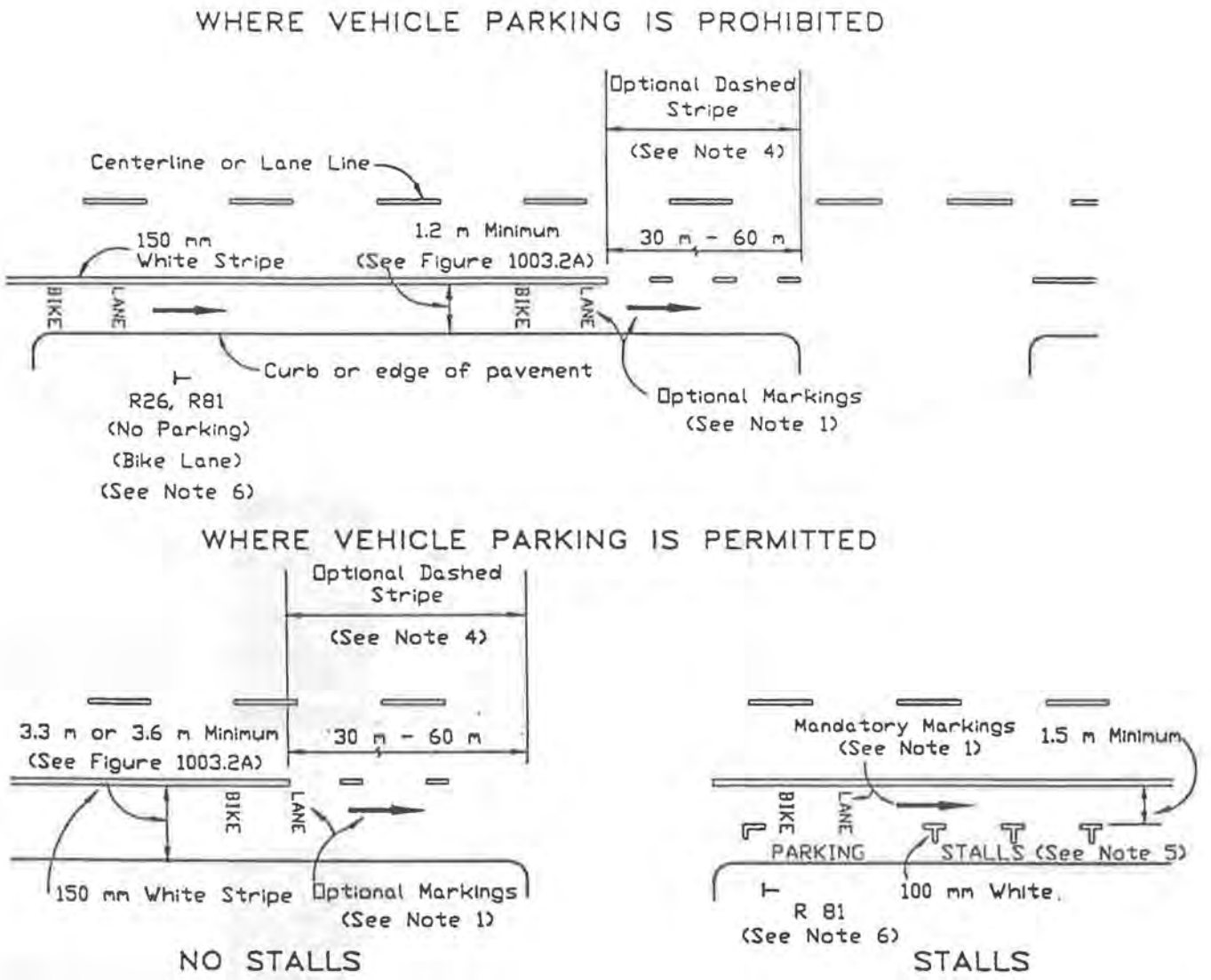
Bike routes are shared routes and do not require pavement markings. In some instances, a 100 mm white edge stripe separating the traffic lanes from the shoulder can be helpful in providing for safer shared use. This practice is particularly applicable on rural highways, and on major arterials in urban areas where there is no vehicle parking.

Bike routes are established through placement of the G93 Bike Route sign. Bike route signs are to be placed periodically along the route. At changes in direction, the bike route signs are supplemented by G33 directional arrows. Typical bike route signing is shown on Figure 1004.4. The figure shows how destination signing, through application of a special plate, can make the Bike Route sign more functional for the bicyclist. This type of signing is recommended when a bike route leads to a high demand destination (e.g., downtown, college, etc.).

Many signs on the roadway also will apply to bicyclists. Standard warning and guide signs used specifically in conjunction with bike routes are shown in Chapter 4 of the Traffic Manual.

Figure 1004.3

Bike Lane Signs and Markings

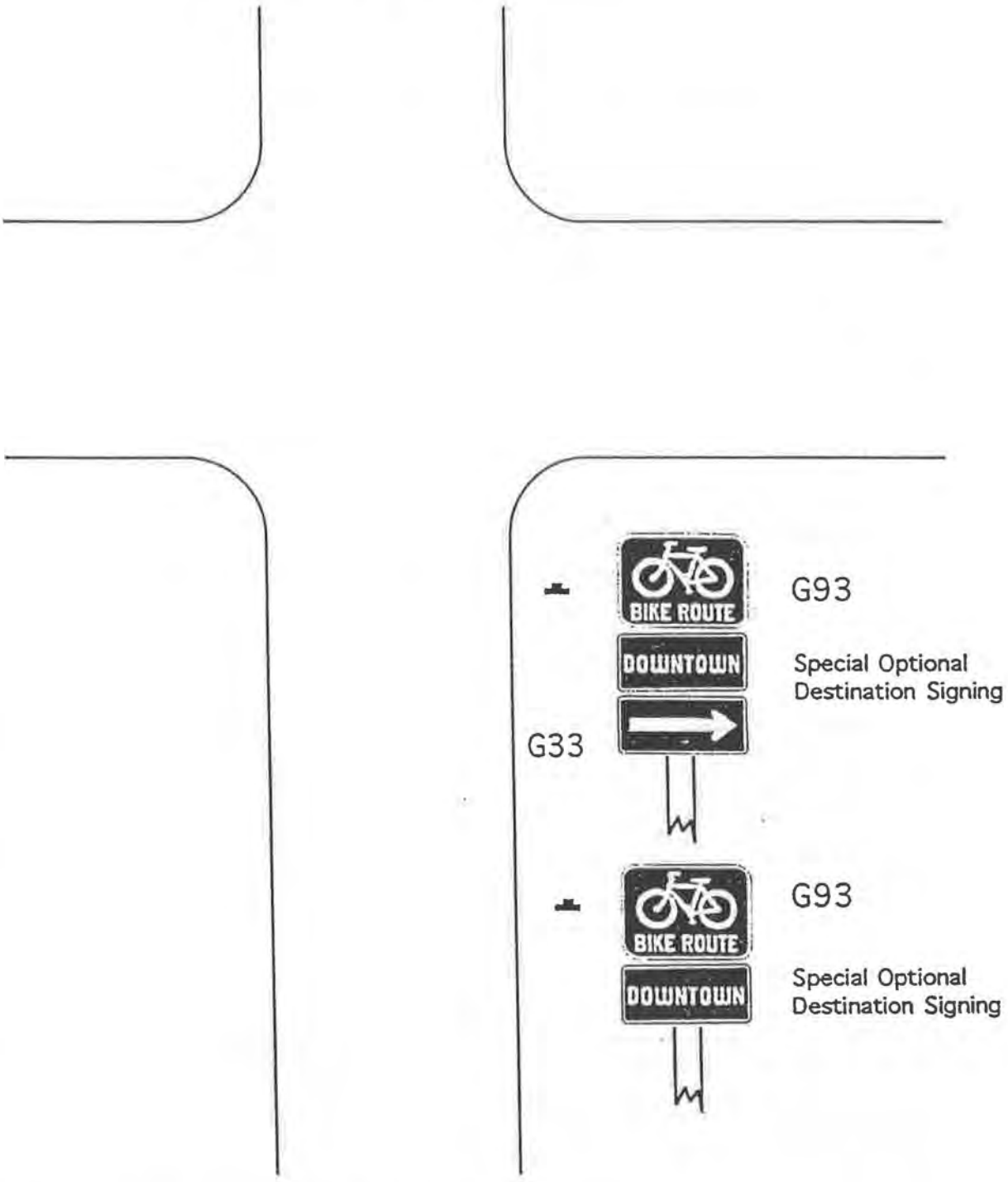


NOTES:

1. The Bike Lane pavement markings shall be placed on the far side of each intersection, and may be placed at other locations as desired.
2. The use of the bicycle symbol pavement marking to supplement the word message is optional.
3. The G93 Bike Route sign may be placed intermittently along the bike lane if desired.
4. Where motorist right turns are permitted, the solid bike lane line shall either be dropped entirely, or dashed as shown, beginning at a point between 30 m and 60 m in advance of the intersection. Refer to Detail 39A in the Traffic Manual for striping pattern dimensions.
5. In areas where parking stalls are not necessary (because parking is light), it is permissible to paint a 100 mm solid white stripe to fully delineate the bike lane. This may be advisable where there is concern that motorists may misconstrue the bike lane to be a traffic lane.
6. The R81 bike lane sign shall be placed at the beginning of all bike lanes, on the far side of every arterial street intersection, at all major changes in direction, and at maximum 0.8 km intervals.

Figure 1004.4

Bike Route Signing

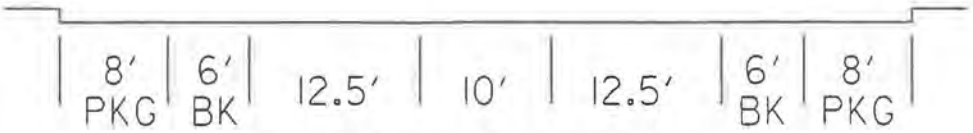


NOTES: The G93 Bike Route signs shall be placed at all points where the route changes direction and periodically as necessary.

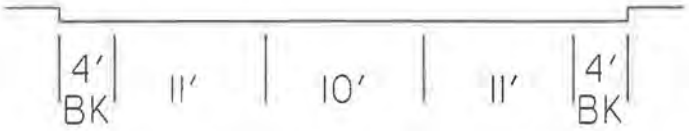
APPENDIX B

Roadway Segments

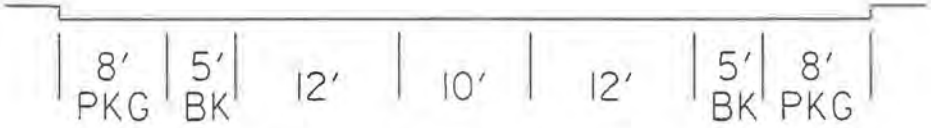
Typical Cross-Sections with Bicycle Facilities



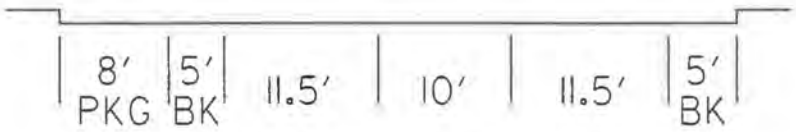
MASSACHUSETTS AVENUE
BROADWAY TO MADERA 63'



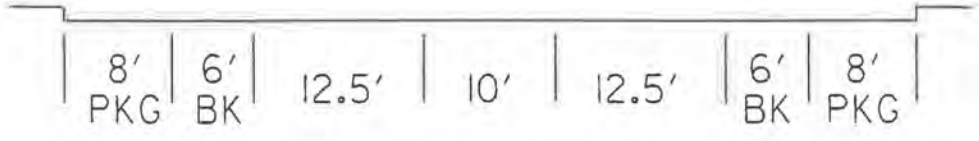
MASSACHUSETTS AVENUE
MADERA TO EL PRADO 40'



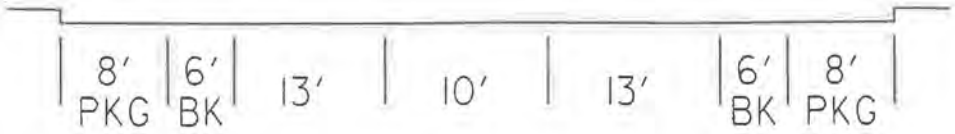
MASSACHUSETTS AVENUE
EL PRADO TO LEMON GROVE AVE 60'



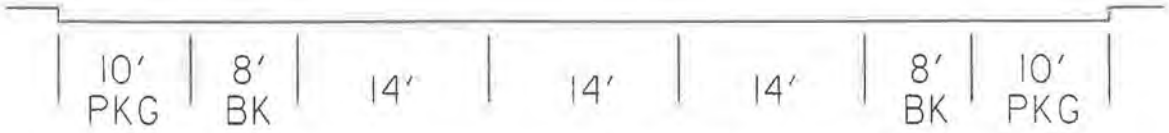
MADERA STREET
MASSACHUSETTS AVE TO SONOMA 50'



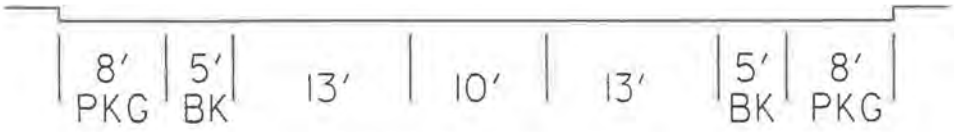
MADERA STREET
SONOMA TO CITY LIMITS 63'



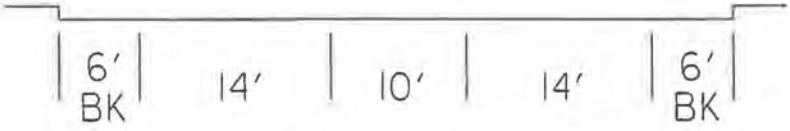
SKYLINE DRIVE
LINCOLN ST TO MT VERNON 64'



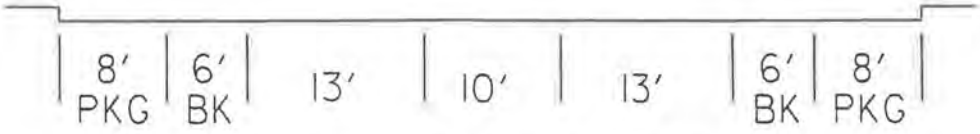
SKYLINE DRIVE
MT VERNON TO ALTON 78'



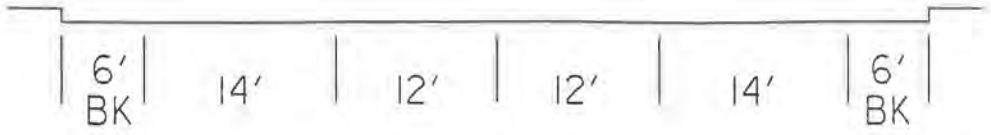
SKYLINE DRIVE
ALTON TO CITY LIMITS 62'



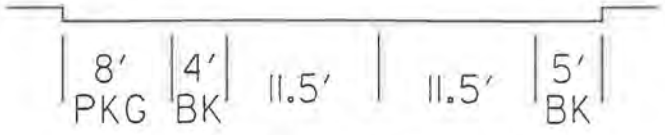
KEMPF STREET
GOLDEN AVE TO LINCOLN 50'



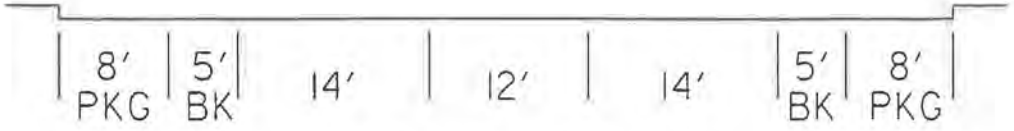
PALM/TROY STREET
LEMON GROVE AVE TO SR-125 64'



TROY STREET/SR-125 OVERPASS 64'

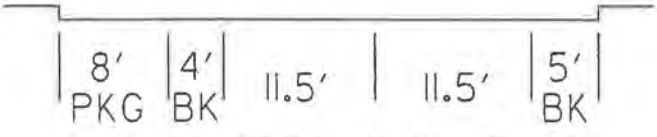


CANTON DRIVE 40'
(PHASE II, ONLY IF APPROPRIATE)

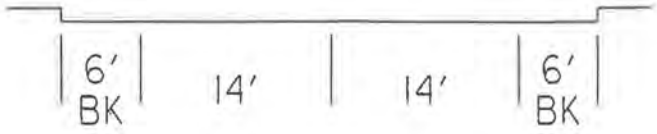


FEDERAL BLVD 66'
(SPECIFIC STREET PLAN)

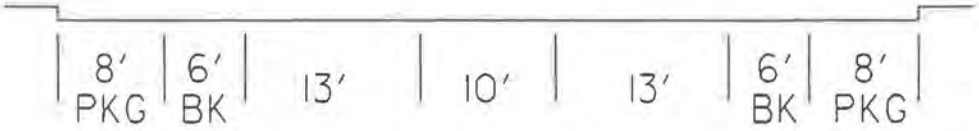
BROADWAY 78'
(CLASS III BIKE ROUTE ON SOUTH SIDE BETWEEN COLLEGE AND MASSACHUSETTS DUE TO THREE TRAVEL LANES)



BUENA VISTA AVENUE 40'
NORTH OF BROADWAY



BUENA VISTA AVE/SR-94 UNDERPASS



GROVE STREET 64'

LEMON GROVE AVENUE 80'
(MEDIAN WOULD BE NARROWED TO 12' AND BIKE LANE TO 4' ON SOUTHEAST SIDE BETWEEN MT. VERNON AND CITY LIMITS TO RETAIN PARKING)

BICYCLE SAFETY RESOURCE GUIDE

We highly recommend that you incorporate bicycle safety education into your curriculum throughout the year. We have included a list of resources from which you can gather additional information and get help on designing activities that will reinforce bicycle safety habits. Call upon your PTA, principal, school safety committee and others to help utilize these resources.

Bicycle Safety Assemblies, Rodeo's and Equipment Safety Checks

California Highway Patrol:

Call the public affairs office nearest your district.

- East County 440-4303
- North County 757-1675
- Central San Diego 296-6661

Automobile Club of Southern California (AAA)

Public Safety Department 464-7001, extension 230 (County schools only)

Sheriffs' Bike Safety Offices:

- Chula Vista 691-5151
- Escondido 741-4707
- La Mesa 469-6119
- Lemon Grove 441-4100
- Poway 738-2532
- San Diego 495-7832
- Santee 258-3180
- Vista 940-4556

Other Resources

Bicycling Instruction Classes
San Diego Velodrome Association
Morley Field, Balboa Park
296-3345

Map of Bicycle Paths, Lanes and Route in San Diego County
CalTrans
231-BIKE

Vehicle Code Book Including Bicycle Codes
Departmet of Motor Vehicles
688-0227

FREE PUBLICATIONS

Bicycle Forum Emporium and Technical Notes
A catalogue of safety and encouragement materials.

Bikecentennial
P.O. Box 8308
Missoula, MT 59807

Sprocketman's Six Safety Tips to Color
An eight-page coloring book for children ages 4-8.

Cascade Bicycle Club
P.O. Box 31299
Seattle, WA 98103 (206) 522-1952

For Your Bicycle Safety
A 14-page coloring book with safety rhymes and illustrations.
One free copy per person.

Ohio Dept. of Transportation
Bicycle Administration
25 S. Front St.,
Columbus, OH 43215 (614) 466-3741

Let's Talk About Helmets.
A 21-page coloring/activity book showing different people of all ages involved in various activities which require wearing a helmet.

SNELL Memorial Foundation
P.O. Box 493
St. James, NY 11780 (516) 862-6440

Do You Make the Eight Common Biking Mistakes?
A seven-page booklet for children grades 4 and up.

Adventure Cycling Association
Box 8308
Missoula, MT 59807-8308 (406) 721-1776

FREE PUBLICATIONS (CONTINUED)

A Five Minute Short Course On Bicycle Safety & Street Smarts:
Traffic Tips for Bike Drivers, Bicycle Ride Inspection Checklist and Find the Hazard
Booklets for elementary age children. One copy each free. Bicycle Safety Quiz which is a two pages of 20 true-false questions for Junior High students. Bike Right poster. Bicycle Safety is Everyone's Concern is for parents and teachers to teach children bicycle safety skills.

Minnesota Community Bicycle Safety Program
4-H Youth Development
340 Coffey Hall, University of Minnesota
St. Paul, MN 55108 (612) 625-9717

The Brain is Fragile and the Damage Real
A four-page brochure that describes biking as an adventure but urges kids to think of themselves as athletes who know how to protect themselves from injury. One free copy.

Headstrong Coalition
900 Potomac St.
Aurora, CO 80011 (303) 364-1937

Along For The Ride
An eight-page brochure and video on bicycle safety tips from U.S. National Cycling Team coach. One free copy.

NHTSA
Safety Countermeasures Division
NTS-23, 400 7th St. S.W.
Washington, DC 20590 (202) 366-2761

Bicycle Helmet Curriculum Guide
A 68-page guide containing information for activists who want to educate children about bike safety, bike rules and helmet use. The book is divided into sections geared toward different age groups from kindergarten through middle school.

Michigan Department of Health
Health Surveillance Section
3423 North Logan
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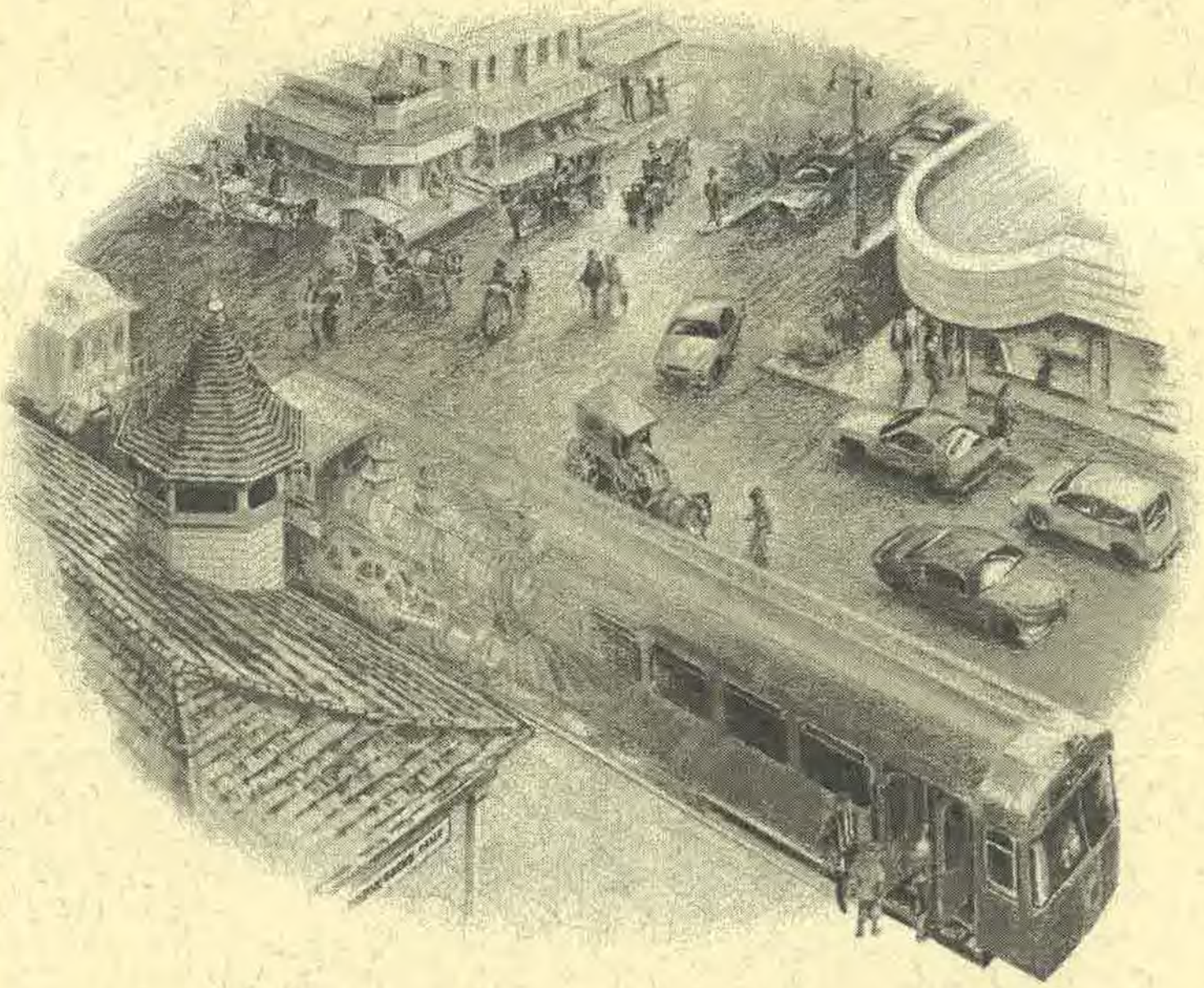

PUBLIC FACILITIES ELEMENT

Lemon Grove General Plan

Public Facilities Element

INTRODUCTION

Implementing the Vision

Public facilities collectively refer to utilities (water, sewer, power and telecommunications services) and public services (schools, library, law enforcement and fire protection). In urban areas like Lemon Grove, neighborhoods and businesses depend on efficient, accessible public facilities and infrastructure. Our Vision for the Future summons opportunities for personal growth and community life, enriched cultural and urban amenities, and a prosperous business community. The availability of reliable public facilities helps achieve these goals.

Purpose

While state planning law requires cities to adopt specific elements in their general plans, the California Government Code does not require a public facilities element. However, the Code permits a general plan to include other elements and subjects that relate to the physical development of a city, like public facilities (Section 65303). Once an optional element has been adopted, it becomes a full-fledged part of the general plan, with the same legal force and effect as one of the mandatory elements. The Lemon Grove Public Facilities Element is prepared under the provisions for optional elements, and addresses the public facilities and services needed by future development as well as the existing community.

Scope

"Water, sewer, electricity, natural gas, telephone, cable, solid waste, fire protection, law enforcement, schools and library facilities and services are examined in this element."

The Public Facilities Element establishes the community's plan to provide and maintain infrastructure and public services. In addition to ensuring that today's residents and businesses are adequately served by infrastructure and services, the City must make sure that future development also can be served without diminishing the service to existing users. This element addresses the broad range of public facilities relied upon by Lemon Grove, including public facilities supplied by the City and those supplied by other agencies and private companies. Water, sewer, electricity, natural gas, telephone, cable, solid waste, fire protection, law enforcement, schools and library facilities and services are all examined in the following pages of this element.

Other General Plan elements consider public facility issues. Transportation facilities, such as roads and transit service, and parks and recreational

INTRODUCTION

First sewer connection near Avalon Cafe, northeast of Golden Avenue and Lemon Grove Avenue, 1947. Photo courtesy of Lemon Grove Historical Society.

programs are also important public facilities, but are respectively covered in the Mobility Element and Conservation and Recreation Element. Although the Public Facilities Element addresses water service and solid waste collection services, the Conservation and Recreation Element covers water conservation and waste recycling.

"The Public Facilities Element is organized into three sections: 1) Introduction, 2) Objectives and Policies and 3) Plan."

The Public Facilities Element is organized into three sections: 1) Introduction, 2) Objectives and Policies and 3) Plan. This Introduction explains the relationship between the element and the *General Plan* Vision for the Future, state planning requirements, and related plans and programs. In the section entitled Goals and Objectives, the public facility issues are summarized and goals and objectives addressing the issues follow. An *objective* represents the desired end point or goal while a *policy* signifies a broad, general rule or course of action to achieve the objective. All of the goals and objectives extend from the Vision for the Future.

The Public Facilities Plan - the final section of the element - directly builds on the objectives and policies. The plan describes the framework for implementing the objectives and policies and summarizes the steps that will help the community to realize the Vision for the Future. Specific implementation measures for the Public Facilities Element are provided

in the *General Plan Implementation Manual*. All of the objectives and policies in this element are directly represented by one or more implementation measures.

Related Plans and Programs

As described below, several plans and programs influence public facilities and services in Lemon Grove.

"...several plans and programs influence public facilities and services in Lemon Grove."

Series 8 Regional Growth Projections

The San Diego Association of Governments (SANDAG) prepares growth forecasts for San Diego County. The most recent forecast, called Series 8, was released in finalized in 1995 and estimates population and residential growth out to 2015. Series 8 indicates that population will increase by approximately 25 percent between 1990 and 2015, reaching 29,697 persons, and housing will increase by approximately 20 percent, from 8,638 to 10,374 units. The Series 8 projections are based on the 1980 General Plan land use policies. Growth projections based on the Land Use Plan in the 1996 General Plan indicate that population could increase to 28,046 and housing could increase to 9,777 units by 2015, (see the Community Development Element).

Regional Growth Management Strategy

The *Regional Growth Management Strategy* was adopted by the San Diego Association of Governments Board in 1993. Adoption of the strategy was mandated by the voters through Proposition C, the Regional Planning and Growth Control Initiative. The strategy takes a "quality of life" approach to growth management, establishing standards, objectives and policies related maintaining the high quality of life factors enjoyed in the region. Overarching goals include natural resource management and ensuring adequate infrastructure and public services for projected growth. Specific policies relate to the efficient provision of water and sewer service and solid waste management. Through a joint powers agreement, the local cities including Lemon Grove have agreed to certify the consistency of their general plans with the *Regional Growth Management Strategy*.

Long-Range Service Plans

Most of the service providers have long-range service plans that identify the infrastructure improvements needed to serve new development. The Public Facilities Plan, the last section of the element, discusses the providers' long-range service plans in relationship to local service needs.

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Public Facilities Element

OBJECTIVES AND POLICIES

Water and Sewer

The Helix Water District provides municipal water service in Lemon Grove, which includes operation and maintenance of the water distribution infrastructure. The sewer service - the collection and disposal of wastewater - is furnished by the Lemon Grove Sanitation District. The entire City contains established water and sewer infrastructure.

Objective 1.0: Adequate and reliable water and sewer service.

Policy 1.1: Cooperate with Helix Water District by facilitating water facility maintenance and improvements required for new development.

Policy 1.2: Participate in Helix Water District's long-range planning programs.

Policy 1.3: Identify improvements to the sewer system needed to accommodate existing demand in addition to anticipated development.

Policy 1.4: Participate in regional planning programs for wastewater treatment and reclamation.

Power

Power sources in Lemon Grove include both electricity and natural gas and adequate infrastructure is distributed throughout the City.

Objective 2.0: Sufficient electrical and natural gas service.

Policy 2.1: In conjunction with the power service provider(s), help identify power infrastructure improvements required for existing and new development.

Policy 2.2: Work with the power service provider(s) to continue undergrounding utility facilities and removing overhead facilities.

Telecommunications

Burgeoning telecommunication services - presently consisting of telephone and cable - allow residents and business to interact with the global community from remote locations. Telecommunication technologies and capabilities continue to advance at accelerated rates.

Objective 3.0: State-of-the-art telecommunication services.

Policy 3.1: To facilitate a competitive business climate, encourage telecommunication service providers to install state-of-the-art infrastructure in Lemon Grove.

Policy 3.2: Monitor new cellular and wireless facilities to minimize community impacts.

Solid Waste

The City contracts with a private company to collect residential, commercial and municipal solid waste. Local solid waste services include recycling.

Objective 4.0: Efficient solid waste collection and disposal service.

Policy 4.1: Maintain regular solid waste collection services to safeguard public health and local aesthetics.

Fire Protection and Law Enforcement

Fire protection services are provided by the Lemon Grove Fire Department, and the City contracts with the County Sheriff's Department for law enforcement services. Both the Fire Department and Sheriff's Department serve the community from centrally located stations.

Objective 5.0: Maintain sufficient levels of fire protection and law enforcement services to protect public safety and property.

Policy 5.1: Continue to adequately staff the Fire Department to ensure that response time standards for emergency calls are met.

Policy 5.2: Upgrade the Fire Department equipment as required to protect the public from fire hazards, and ensure the safety of the fire fighters.

Policy 5.3: Provide adequate law enforcement service to meet the City's response time standards.

Policy 5.4: Continue supporting a local law enforcement office to enhance public safety.

Policy 5.5: Encourage the law enforcement provider and Fire Department to actively participate in the community.

Schools

The Lemon Grove School District operates the elementary and middle schools in the community. Local high school students attend Mount Miguel and Helix High Schools, which are operated by Grossmont Union High School District.

Objective 6.0: Schools that cultivate and educate the children, and serve as neighborhood centers.

Policy 6.1: Work closely with the school districts to identify needs for public education facilities and programs.

Policy 6.2: With the school districts, co-sponsor extra-curricular recreation and educational programs.

Policy 6.3: Assist the school districts in expanding volunteer assistance.

Policy 6.4: Coordinate with the local school districts to ensure campus and student safety.

Library

The Lemon Grove Library is operated by the San Diego County Library, and is presently located within a commercial area on Broadway.

Objective 7.0: A library that facilitates intellectual and cultural pursuits, and serves as a center for community life.

Policy 7.1: Participate in library planning programs to ensure availability of adequate local facilities and services, including state-of-the-art information services.

Policy 7.2: Consider relocating the library to the planned civic center to increase its role as a community center.

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Public Facilities Element

PLAN

Water and Sewer

Water and sewer services are critical, interrelated components of the City's infrastructure system. Households, businesses and civic facilities all rely upon safe, clean water. An efficient sewer system is required to collect and transport wastewater to a treatment plant.

Water

"About 90 percent of the district's water supply originates in northern California or the Colorado River basin..."

The Helix Water District provides water service in Lemon Grove. About 90 percent of the district's water supply originates in northern California or the Colorado River basin and the remaining ten percent consists of local runoff within the San Diego region. The imported water is purchased from the San Diego County Water Authority, which obtains supplies from the Metropolitan Water District. Water is treated at the R.M. Levy Water Treatment Plant and distributed throughout Lemon Grove by various lines. The main components of the local system consists of a 3.99 million gallon storage tank and a 27-inch transmission line located in Main Street (see Figure PF-1).

"Since the City is almost completely developed, the district's long-range plans primarily consist of maintaining the water infrastructure."

Since the City is almost completely developed, the district's long-range plans primarily consist of maintaining the water infrastructure. Overall the distribution lines in Lemon Grove are in good condition and are adequate to meet the service needs of the City. Older, deteriorated facilities are repaired as needed through the district's ongoing replacement program. The City will work closely with the district to identify faulty lines or capacity deficiencies, and facilitate the construction of improvements. To make sure that Lemon Grove's water needs are fairly represented, the City will participate in the district's long-range and master planning programs.

The capacity of localized portions of the system may require enlargement to accommodate the increased demand from new development. The City will require developers to coordinate with Helix Water District and identify necessary improvements. District policy requires developers to fund all improvements and then grant the new facilities to the district for operation and maintenance. To ensure that facilities will not be oversized and induce undesired growth, the City will request that the capacity of

new facilities reflect the development levels anticipated by the *General Plan*.

Sewer

The Lemon Grove Sanitation District provides sewer service within the City. The County of San Diego originally staffed and managed the district. When Lemon Grove incorporated in 1977, the City obtained responsibility for the district. The Public Works Department manages the district and contracts out for maintenance tasks. Figure PF-1 shows the location of the main trunks, which direct wastewater to the Point Loma wastewater treatment plant, operated by the City of San Diego Metropolitan Wastewater Department (Metro).

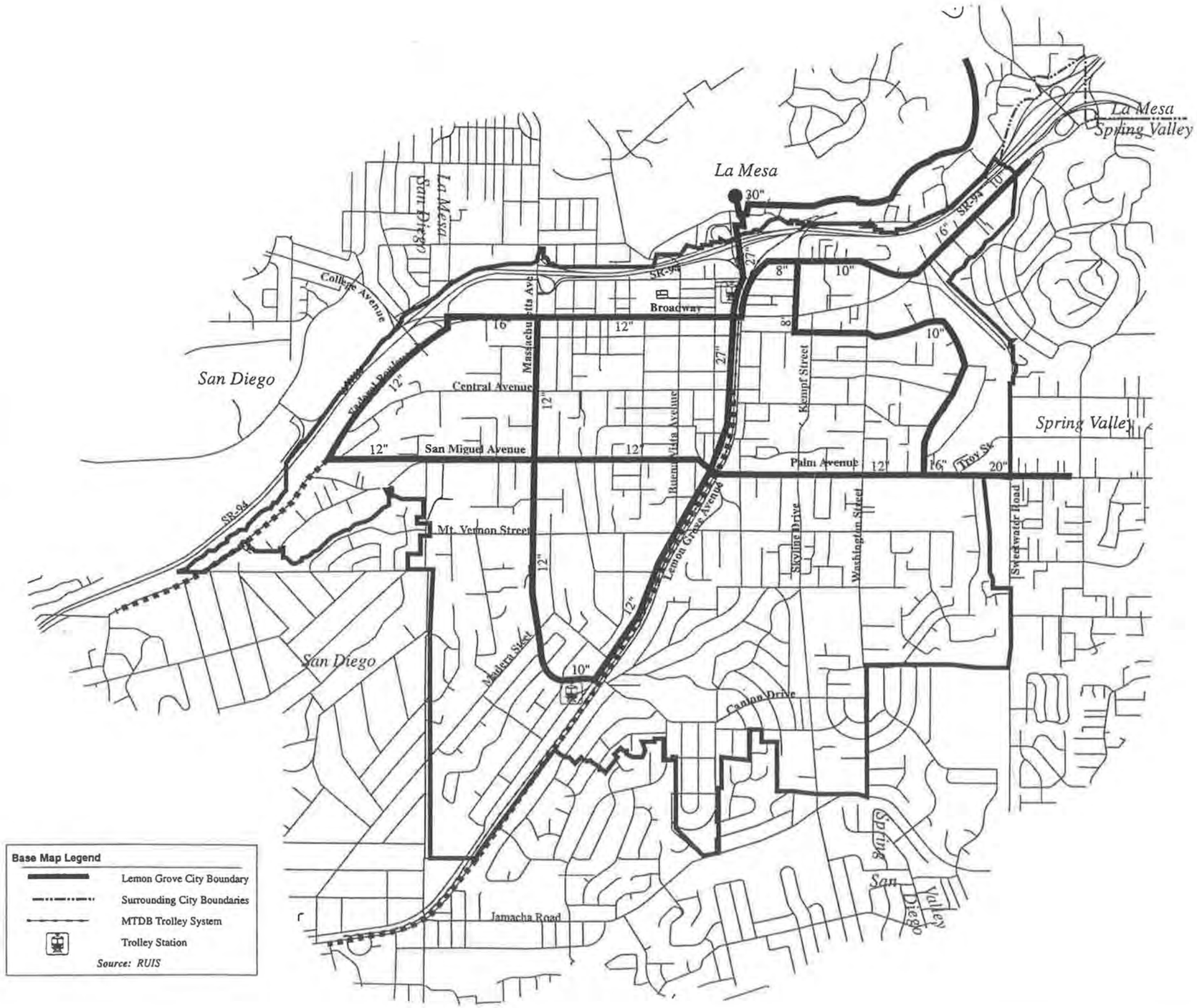
Long-range planning guidance is provided by a comprehensive engineering study conducted in 1981. While the study provides direction for future improvements, the recommended capacity enhancements may be too big due to exaggerated population growth estimates and unanticipated water conservation practices. While sewer service and adequate capacity are available throughout the City, system reliability depends on continued maintenance. Most of the sewer infrastructure is in good condition, but some trunks exhibit signs of deterioration and need replacement. The Lemon Grove Sanitation District will continue to identify damaged and deteriorated lines and prioritize improvements according to damage severity and potential public health hazards. The district will also participate in Metro's long-range wastewater treatment and reclamation planning programs.

"Most of the sewer infrastructure is in good condition, but some trunks exhibit signs of deterioration and need replacement."

For new development and redevelopment projects, the Lemon Grove Sanitation District, with assistance from the developer, will identify necessary infrastructure improvements to accommodate any increase in service demand. Developers will be required to fund all improvements and then grant the new facilities to the district for operation and maintenance. The district will size facilities to reflect the development levels anticipated by the *General Plan*.

Small islands within the City lie outside of the district, and wastewater disposal in these areas relies on septic systems. There is also sporadic septic system use within the district. While septic systems can be appropriate for residences on large lots in rural areas, public health problems can arise from septic system use in urbanized areas. The Lemon Grove Sanitation District will continue to encourage property owners with septic systems to connect to the sewer system. This will require

"The Lemon Grove Sanitation District will continue to encourage property owners with septic systems to connect to the sewer system."



Legend

- Water distribution system
- Wastewater distribution system
- Tank

NOTE: Wastewater from the City is also deposited into the Sweetwater trunk, which is operated by the County.
Source: City of Lemon Grove, 1995

NOTE: All locations are approximate
Source: Helix Water District, 1995

N

1 inch = 2,000 feet

Figure PF-1
Water Distribution and Wastewater Collection Systems

annexing the new property into the district with approval from the Local Agency Formation Commission.

Power

San Diego Gas & Electric presently provides power service to the City. However, recent federal statutes will soon allow competitive power providers to serve the greater San Diego region including Lemon Grove. The City will coordinate closely with service providers wanting to enter the local power market to reduce the potential for overlapping infrastructure or environmental impacts.

Electricity is distributed via 4,000- and 12,000-volt lines throughout the City, and facilities lie both above ground and underground. The main natural gas distribution line extends down Lemon Grove Avenue and smaller lines branch out to serve the City. Both the electrical and natural gas systems adequately serve the City, and both have capacity for future development and redevelopment projects. San Diego Gas & Electric continually monitors the electrical and natural gas systems to ensure that adequate capacity is available for projected growth. The City will require that developers coordinate with the power provider(s) to identify service requirements and any necessary infrastructure improvements.

"...both [electrical and natural gas systems] have capacity for future development and redevelopment projects."

Undergrounding overhead power lines would enhance aesthetics in local business areas and neighborhoods. Each year, San Diego Gas & Electric allocates funds to convert overhead electric distribution lines to underground lines. Under the provisions of California Public Utility Commission Rule 20A, the City may designate major streets for undergrounding overhead lines. However, conversion of other overhead utilities such as telephone and cable lines requires separate funding. Major streets should be targeted for underground lines and specific projects planned in coordination with the appropriate providers.

Telecommunications

Telecommunication services in Lemon Grove presently consist of telephone and cable services, provided respectively by Pacific Bell and Cox Cable. Both the telephone and cable infrastructure adequately serve local residents and businesses and can accommodate anticipated development.

"Technological advancements continue to yield more efficient communication options."

Technological advancements continue to yield more efficient communication options. State-of-the-art telecommunication services facilitate a competitive business climate. Furthermore, telecommunication

services allow residents to set up home offices which decreases commuting, enhances neighborhood security and gives working parents flexibility. Both of the existing telephone and cable providers are upgrading infrastructure to facilitate high speed data transmission and interactive video capabilities. The City will urge telecommunication service providers to install high-tech facilities in Lemon Grove. The City will also advocate constructing new office and industrial buildings with state-of-the-art telecommunications circuits.

Several companies provide cellular and wireless telephone service in the San Diego region and each company has individual infrastructure requirements. To avoid community impacts, the City will promote co-locating new cellular and wireless facilities with existing utility infrastructure, locating facilities in non-residential areas, and facility designs that blend in with the surrounding area.

Solid Waste

Urban communities like Lemon Grove generate considerable amounts of trash. Efficient solid waste collection protects public health and encourages a neat and clean community. The City contracts with a private service provider for solid waste collection and disposal.

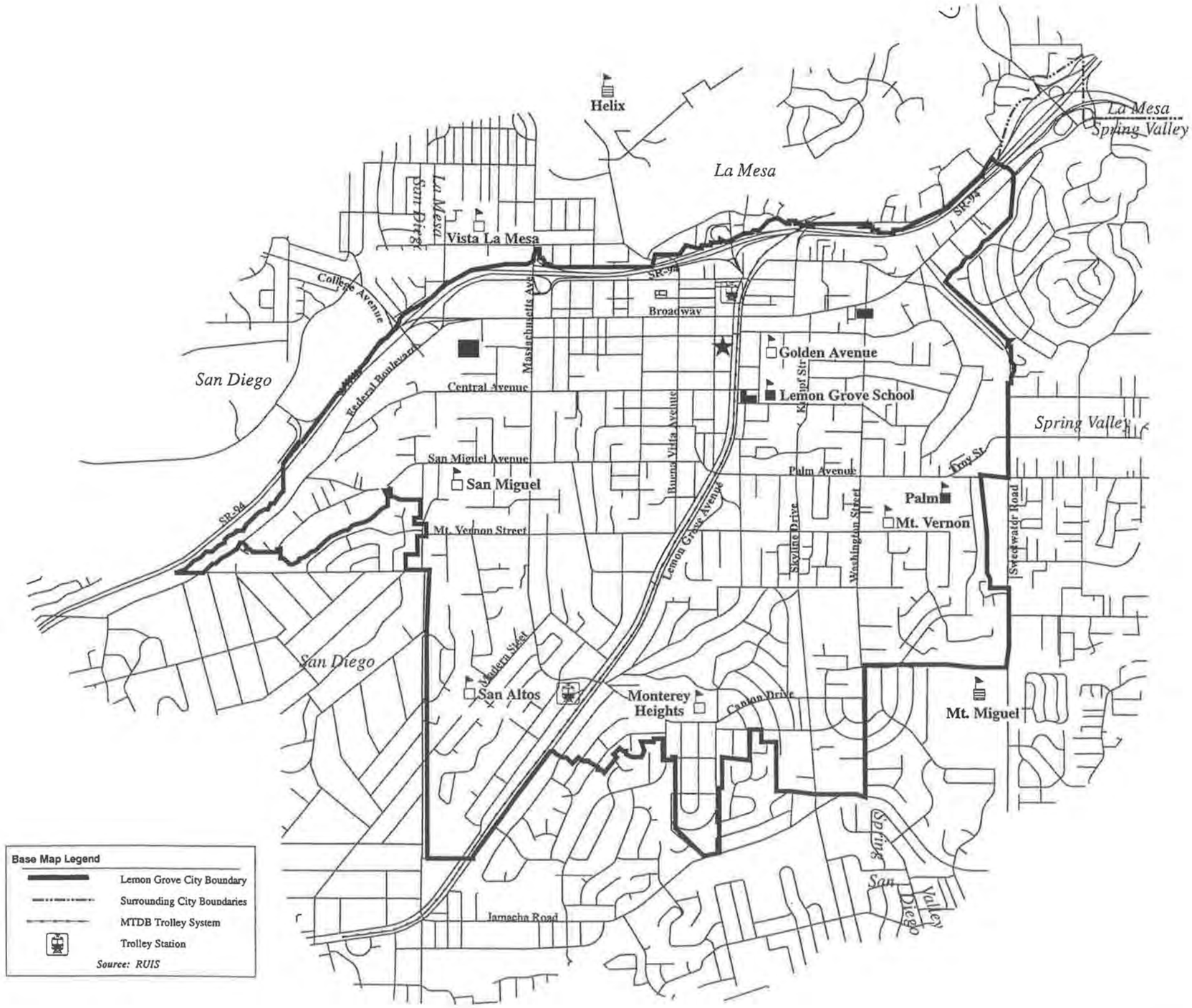
"Efficient solid waste collection protects public health and encourages a neat and clean community."

To ensure good service, the City will continue to monitor the provider's activities and request service modifications to serve the community's changing needs. The City will also continue to sponsor an annual clean-up day with the provider, giving residents the opportunity to properly dispose of large, bulky items. Residents will also be encouraged to properly dispose of household hazardous materials at designated regional hazardous waste collection days. The City will continue to reduce the waste stream impacting landfills through expanded solid waste recycling and reuse, according to the *Source Reduction and Recycling Element.*

Fire Protection and Law Enforcement

Fire protection and law enforcement services contribute to a safe, secure community. In Lemon Grove, fire protection along with emergency medical services are provided by the City's own Fire Department. The City contracts with the County of San Diego Sheriff's Department for law enforcement. Both the Fire Department and Sheriff's stations are centrally located within the community, facilitating quick access to the entire City (see Figure PF-2).

Several strategies will facilitate dependable, competent fire protection services. The City will continue using a service standard to help determine



Legend

- Fire Station
- Sheriffs Station/City Hall
- Elementary School
- Middle School
- High School
- Library
- County Social Services Office

Source: City of Lemon Grove, 1995.

N

1 inch = 2,000 feet

Figure PF-2
Public Services Facilities

if public safety is adequately protected. Fire Department staffing and equipment will be expanded as needed to meet the service standard and minimize hazards to the staff and public. The Department will continue to enhance its capabilities and staffing through mutual aid agreements with fire departments in the surrounding communities.

"Effective fire protection and law enforcement requires two-way relationships with the community."

The City will work with the Sheriff's Department to provide law enforcement services that meet unique community needs and afford suitable protection from crime. Service standards will be used to help determine whether the City is obtaining appropriate service. Service contracts with the Sheriff's Department will reflect these service standards, respond to local demographics and crime trends, and emphasize crime prevention. Maintaining the Sheriff's station in Lemon Grove will facilitate local additional law enforcement presence in addition to the contracted staffing. The City should also continue to support and help recruit for citizen crime prevention programs like the Retired Senior Volunteer Patrol (RSVP) and Neighborhood Watch.

Effective fire protection and law enforcement requires two-way relationships with the community. The staff must understand the unique needs and conditions in the community and the public must lend support to the departments' programs. The City will encourage the Fire Department and Sheriff's Department to actively participate in all facets of community life, including involvement in area business, senior and youth activities. The Safety Element contains strategies to reduce fire hazards and crime.

Schools

"The welfare of the entire community in part relies on competent, stable schools."

The welfare of the entire community in part relies on competent, stable schools. The primary goal of schools obviously is to educate and nurture local children, our future leaders. Schools also contribute to neighborhood life by providing social centers, recreational facilities and open space. The direct relationship between residential property values and school ratings reflects the significance of good schools. The Lemon Grove School District operates the local elementary and middle schools while high school students attend Grossmont Union High School District schools. Long-range planning by the districts consists of forecasting local student populations and identifying the staff and facilities required to sufficiently serve new and existing students. The Lemon Grove School District anticipates 1,540 new students between 1993 and 2010.

Lemon Grove recognizes that new residential development will increase the number of local students attending school. To safeguard competent

"Community goals to provide youth recreational programs and positive alternatives overlap with the schools' objectives to cultivate student character, creativity and academic prowess."

educational opportunities for each child, the City will work closely with the school districts to help formulate strategies to overcome any existing or anticipated overcrowding and facility limitations. Students need safe, secure environments to reach their learning potential. Student safety is a priority for both the City and school districts, requiring joint efforts to identify potential threats and the actions required to restore peaceful conditions.

The community and schools share similar long-range ambitions. Community goals to provide youth recreational programs and positive alternatives overlap with the schools' objectives to cultivate student character, creativity and academic prowess. The City will co-sponsor recreational and educational programs for area youth with the school districts. Well-maintained schools provide a source of neighborhood pride in addition to a safe student environment, and efforts to enhance school grounds will be actively supported. The City will help organize campus clean-up days in conjunction with parents, students, civic groups and businesses in the community. Interaction between the community and schools will be further developed through expanded volunteer assistance in local classrooms.

Library

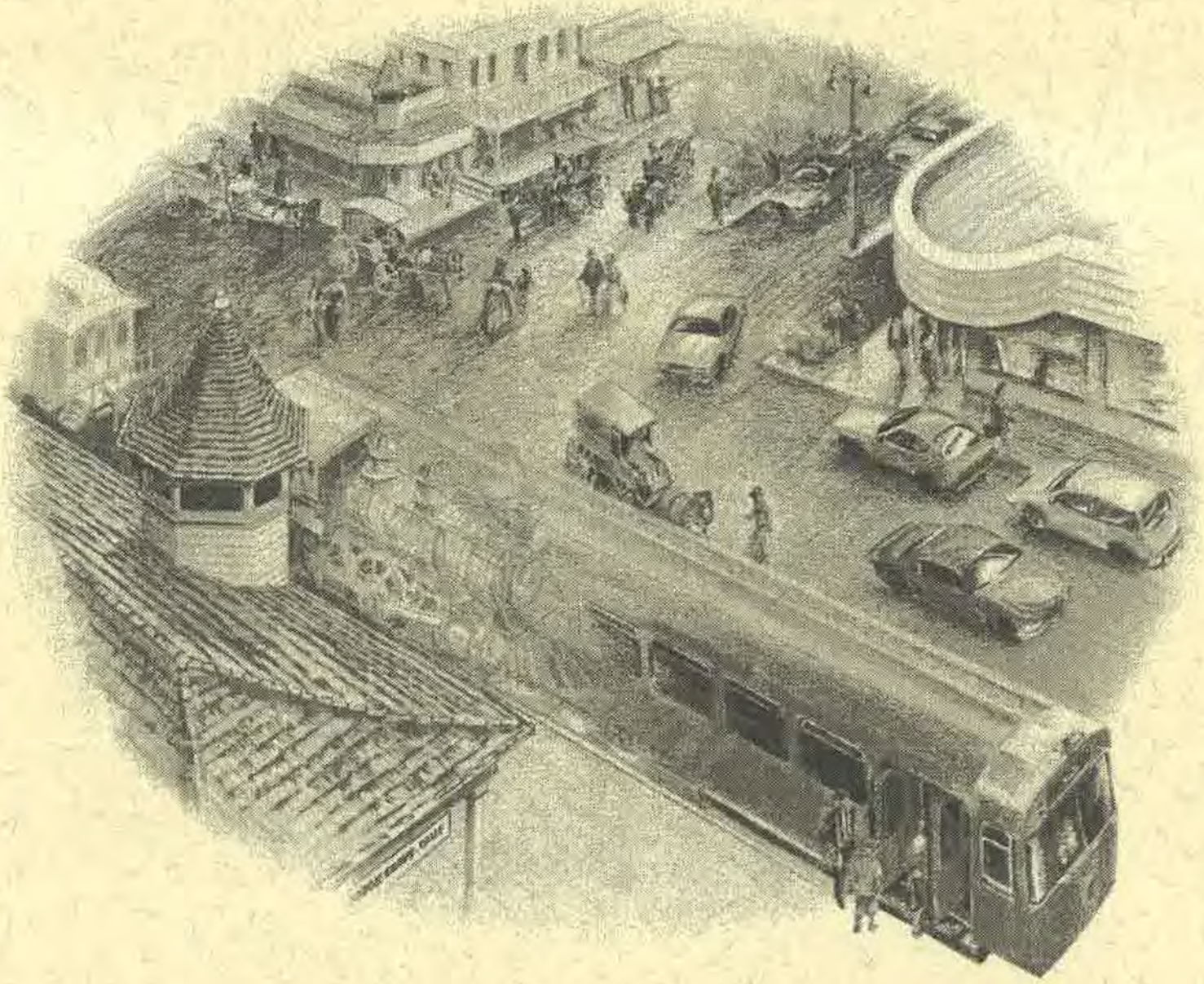
"The City intends to help the library move to the planned civic center, facilitating its use as a cultural center..."

The Lemon Grove Library has provided a community focus for intellectual and cultural pursuits. The library, operated by the San Diego County Library, is presently hidden in a commercial area and residents would like the facility's prominence in the community restored. In future years, the City intends to help the library move to the planned civic center (see the Community Development Element). Accessibility to the library will increase, facilitating its use as a cultural center for residents of all ages and ethnic backgrounds.

Other strategies will help to promote library use. By participating in County Library planning programs, the City can request books, facilities and state-of-the art information services that reflect local demographic and ethic interests. The community significantly benefits from the Friends

of Lemon Grove Library fundraising for the library and provide outreach programs promoting literacy. The City should assist the Friends in these endeavors by advertising events and helping find corporate sponsors for funding.

Lemon Grove Library at northeastern corner of Golden Avenue and Imperial Avenue (now Lemon Grove Avenue), circa 1945. Photo courtesy of Lemon Grove Historical Society.



SAFETY ELEMENT

Lemon Grove General Plan

Safety Element

INTRODUCTION

Implementing the Vision

Our Vision for the Future calls for sustaining Lemon Grove's small town feeling that fosters personal growth and encourages participation in community life. Enhanced neighborhood life and a prosperous business community also comprise an integral components of the Vision. Underlying these goal is the requirement for a safe environment, where people and property are protected from hazards arising from natural events or urban life. With the basic human requirement for safety met, the community - residents and businesses alike - can focus on productive aspirations.

Purpose

State planning law requires California cities to adopt specific elements in their general plans. The Lemon Grove Safety Element fulfills the state planning mandate for the public safety element, as defined in Section 65302(g) of the Government Code. According to the state requirements, the element must address the following hazards that pertain to the City:

"...a safe environment, where people and property are protected from hazards..."

- Seismically induced conditions, including surface rupture, ground shaking, ground failure, tsunami and seiche
- Slope instability leading to mudslides and landslides
- Subsidence and other geologic hazards
- Flooding
- Wildland/urban interface fires
- Evacuation routes

The Lemon Grove *City Resources Report* indicates that the probability of surface rupture, tsunami, wildfire and seiche is extremely low, and the City's Safety Element therefore does not address these conditions. Additional safety concerns identified in the *City Resources Report* include hazardous materials and crime. Section 65303 of the Government Code,

Lemon Grove Fire Department (same location as current fire station southwest of School Lane and Central Avenue), 1964. Photo courtesy of Lemon Grove Historical Society.

permits general plans to address additional topics related to the physical development of a city.

Scope

"...the community's plan to protect public health and safety and reduce risks associated with natural conditions and urban areas."

The Safety Element establishes the community's plan to protect public health and safety and reduce risks associated with natural conditions and urban areas. In Lemon Grove, natural conditions potentially resulting in injury and property damage include geologic phenomena, such as earthquakes and unstable slopes, and flooding during heavy rains. Urban areas contain inherent threats associated with structural fires, hazardous materials and crime. Hazardous materials refer to substances with the potential to damage human health or the environment. Emergency preparedness, the community's response strategy for disasters, is an integral component of the Safety Element. Other safety considerations - traffic hazards, pedestrian and bicycle safety, truck routes, fire protection and law enforcement services, and noise - are addressed in other elements of the *General Plan*

The Safety Element is organized into three sections: 1) Introduction, 2) Objectives and Policies and 3) Plan. This Introduction explains the relationship between the element and the *General Plan* Vision for the Future, state planning requirements, and related plans and programs.

INTRODUCTION

In the section entitled Objectives and Policies, local safety issues are summarized and then objectives and policies addressing the issues follow. An *objective* represents the desired end point or goal while a *policy* signifies a broad, general rule or course of action to achieve the objective. All of the goals and objectives are extensions of the Vision for the Future.

The Safety Plan - the final section of the element - directly builds on the objectives and policies. The plan describes the framework for achieving the objectives and policies and summarizes the steps that the community will take to protect public safety and ultimately realize the Vision for the Future. Specific implementation measures for the Safety Element are provided in the *General Plan Implementation Manual*. All of the objectives and policies in this element are directly represented by one or more implementation measures.

Related Plans and Programs

National Flood Insurance Administration Program (NFIA)

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Administration program, which provides federal flood insurance subsidies and federally-financed loans for property owners in flood-prone areas. To quality for federal flood insurance, the flood hazard areas in a city must be identified and the city must implement a planning system to avoid flood hazards. FEMA has mapped flood-prone areas in Lemon Grove but the City does not currently participate in the NFIA program.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act of 1970 requires thorough analysis of the environmental impacts of proposed development, infrastructure and planning projects. Prior to approving a project, the CEQA requires assessing the potential environmental impacts and identifying mitigation measures to reduce the impacts to acceptable levels. The CEQA process requires identifying potential impacts to public safety. In Lemon Grove, CEQA will continue to be an effective tool to analyze development proposals and safeguard the community.

Alquist-Priolo Special Studies Zones Act

Pursuant to this act, the state Geologist delineates special study zones along traces of potentially and recently active major faults. Affected cities and counties must inform the public of special studies zones and

regulate development accordingly. No potentially or recently active fault traverses Lemon Grove and no special studies zone has therefore been defined.

Hazardous Materials Permits

To reduce the potential for hazardous materials accidents and environmental contamination, federal, state and local agencies closely regulate the use of hazardous materials. Using, storing, disposing and/or transporting hazardous materials requires obtaining permits from the California Environmental Protection Agency and the County of San Diego Hazardous Materials Management Division. Conditions of the permit require safe material handling to minimize safety risks.

County Hazardous Waste Management Plan

Lemon Grove is subject to the County of San Diego *Hazardous Waste Management Plan,* which provides policy direction for the effective, safe management of hazardous wastes. Subjects covered in the plan include existing management systems, household hazardous waste, hazardous waste minimization, hazardous waste generation and facility needs, and siting and permitting hazardous waste facilities.

Household Hazardous Waste Element

A draft *Household Hazardous Waste Element* was prepared for the City in 1991. The element aims to prevent the illegal disposal of household hazardous materials such as paint, insecticides and automotive fluids. Short- and long-term actions to improve disposal practices are established.

City of Lemon Grove Codes

The City has adopted the latest Uniform Fire Code, Uniform Building Code, Uniform Mechanical Code and the National Electrical Code which contain structural requirements for existing and new buildings. The codes are designed to ensure structural integrity during seismic and other hazardous events, thereby preventing injuries and loss of life.

Lemon Grove Emergency Plan

Recently updated in 1992, the *Emergency Plan* provides the framework for responding to any type of emergency or disaster that might befall the City. The plan incorporates the multi-hazard or all hazard planning

approach, where various types of disasters are approached similarly in terms of evacuation, fire fighting, law enforcement, medical assistance and rescue.

Lemon Grove Storm Drainage General Plan

The 1974 *Storm Drainage General Plan* identifies storm drainage requirements and the necessary improvements to reduce property damage and nuisances from flooding.

Fire Prevention Ordinance

The City Weed Control and Waste Matter Ordinance permits the Fire Department Chief to identify potential fire hazards on private property, notice the property owner, and require clean-up to reduce the potential for fire.

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Safety Element

OBJECTIVES AND POLICIES

Geologic Conditions

Lemon Grove is subject to earthquakes, which can result in property damage, injuries and casualties. In addition, the majority of soils in the City are subject to shrink-swell behavior, and several minor slope failures have occurred.

Objective 1.0: Minimal risk of injury and property damage from seismic and other geologic conditions.

Policy 1.1: Require that new and existing development can withstand earthquakes and other geologic hazards.

Policy 1.2: Educate the public about earthquake preparedness.

Policy 1.3: Help prevent future slope slippage through adequate planning.

Flooding

Flooding most significantly affects the industrial uses located along Federal Boulevard. Localized flooding also occurs in several other residential areas during periods of prolonged rain.

Objective 2.0: Better drainage to avoid flooding.

Policy 2.1: Work to improve drainage along Federal Boulevard and in other areas subject to localized flooding.

Policy 2.2: Consider participating in the National Flood Insurance Administration program.

Fire

While the risk of wildland fire is low, residential, commercial, industrial and public properties are subject to structural fires. Most causes of urban fire can be prevented.

Objective 3.0: Protection from fire hazards.

Policy 3.1: Educate the community about fire prevention and safety.

Policy 3.2: Provide sufficient fire prevention and suppression services.

Policy 3.3: Prevent dangerous structural fires throughout the City.

Hazardous Materials

Hazardous materials are used, transported, produced and stored for a variety of purposes in Lemon Grove, and are associated with commercial, light industrial, public and residential areas.

Objective 4.0: Low risk of public exposure to hazardous materials or environmental degradation.

Policy 4.1: Encourage proper use, storage and disposal of hazardous materials.

Policy 4.2: Promote the safe use and disposal of hazardous materials used in households.

Policy 4.3: Discourage the occurrence of hazardous materials in populated areas.

Policy 4.4: Help facilitate clean-up of contaminated sites.

Crime

Lemon Grove has experienced relatively low levels of criminal activity. As the population grows and urbanization increases in the greater San Diego region greater crime prevention will be needed.

Objective 5.0: A community where all residents feel secure and are not fearful of criminal activity.

Policy 5.1: Promote positive relationships between the diverse ethnic and cultural groups in the community.

Policy 5.2: Emphasize crime prevention as the cornerstone of all law enforcement programs.

Policy 5.3: Maintain adequate levels of law enforcement, focusing on areas with higher crime rates.

Policy 5.4: Work to reduce the potential for drug dealing and gang activity around schools

Policy 5.5: Require that new development deters crime to the extent possible.

Emergency Preparedness

The Lemon Grove *Emergency Plan* outlines how the City will respond to emergencies and disasters, and is the foundation of emergency preparedness in the community.

Objective 6.0: Swift and efficient response to emergencies and disasters.

Policy 6.1: Periodically train City staff to effectively implement the Emergency Plan.

Policy 6.2: Update the Emergency Plan as needed to respond to changes in emergency response systems and public safety threats.

Policy 6.3: Educate the community about emergency preparedness and evacuation routes.

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Safety Element

PLAN

Geologic Conditions

Planning for a safe community requires consideration of geologic conditions, particularly in active seismic regions like California. While the most prevalent geologic hazard in Lemon Grove consists of earthquakes, safety planning must also address slope stability and expansive soils.

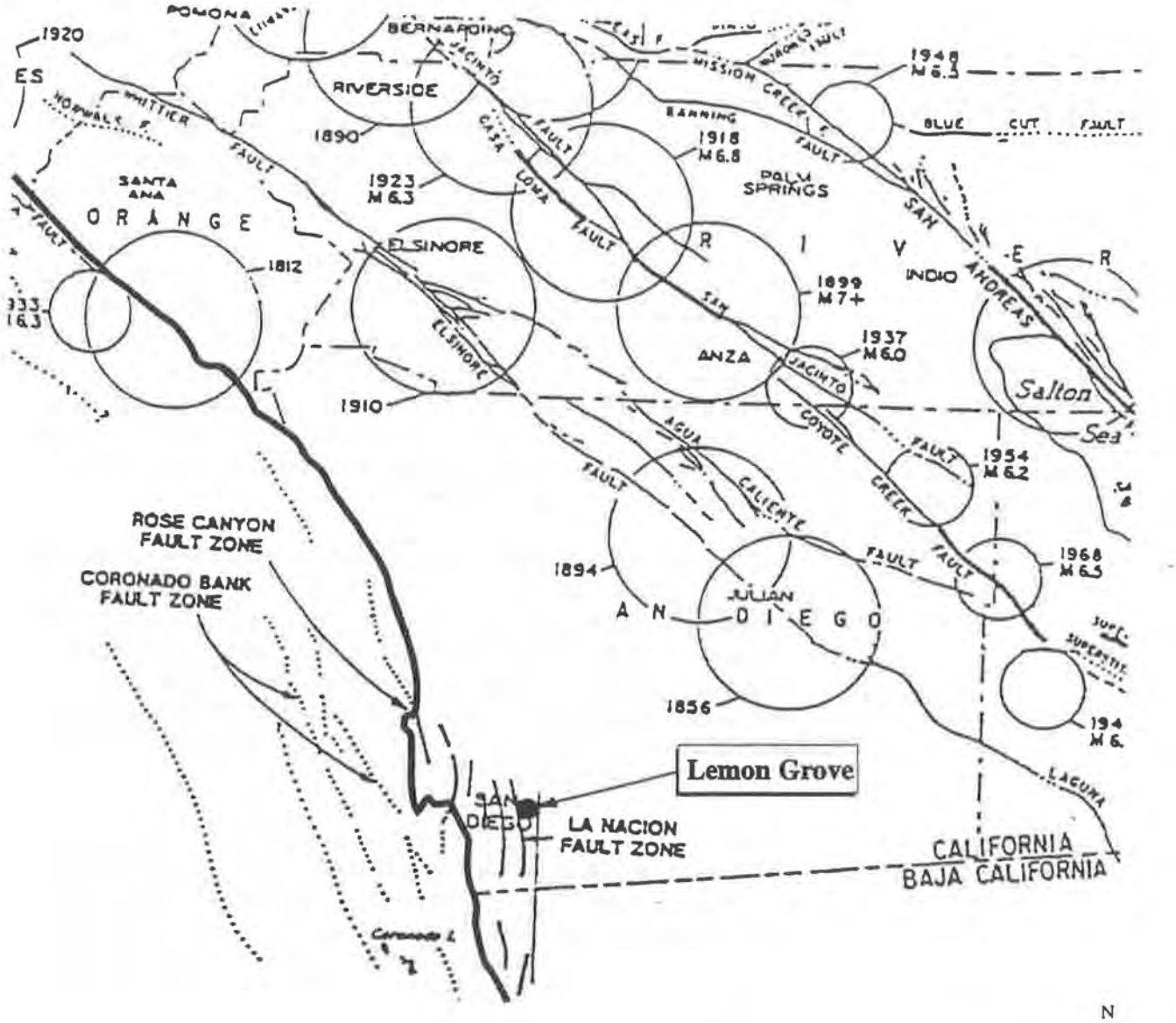
No known active or potentially active faults traverse the City, but the active regional faults shown in Figure S-1 could cause substantial ground shaking in Lemon Grove. The nearest faults are the Rose Canyon and Coronado Bank Faults, located about 14 miles west. As seen in recent earthquakes in California, ground shaking can cause structures to fail, resulting in significant property damage, business disruptions, injuries and even loss of life. Severe earthquake effects can be reduced if the community takes precautionary steps.

"Severe earthquake effects can be reduced if the community takes precautionary steps."

The local earthquake preparedness program will include educating the community about precautionary measures to take before an earthquake and what to do during and after seismic events. Because much of Lemon Grove was developed prior to modern building seismic codes, the City should also help educate the community about building reinforcement strategies. The City should show leadership by ensuring that all City-owned buildings meet current seismic codes. All new development must conform to current seismic codes.

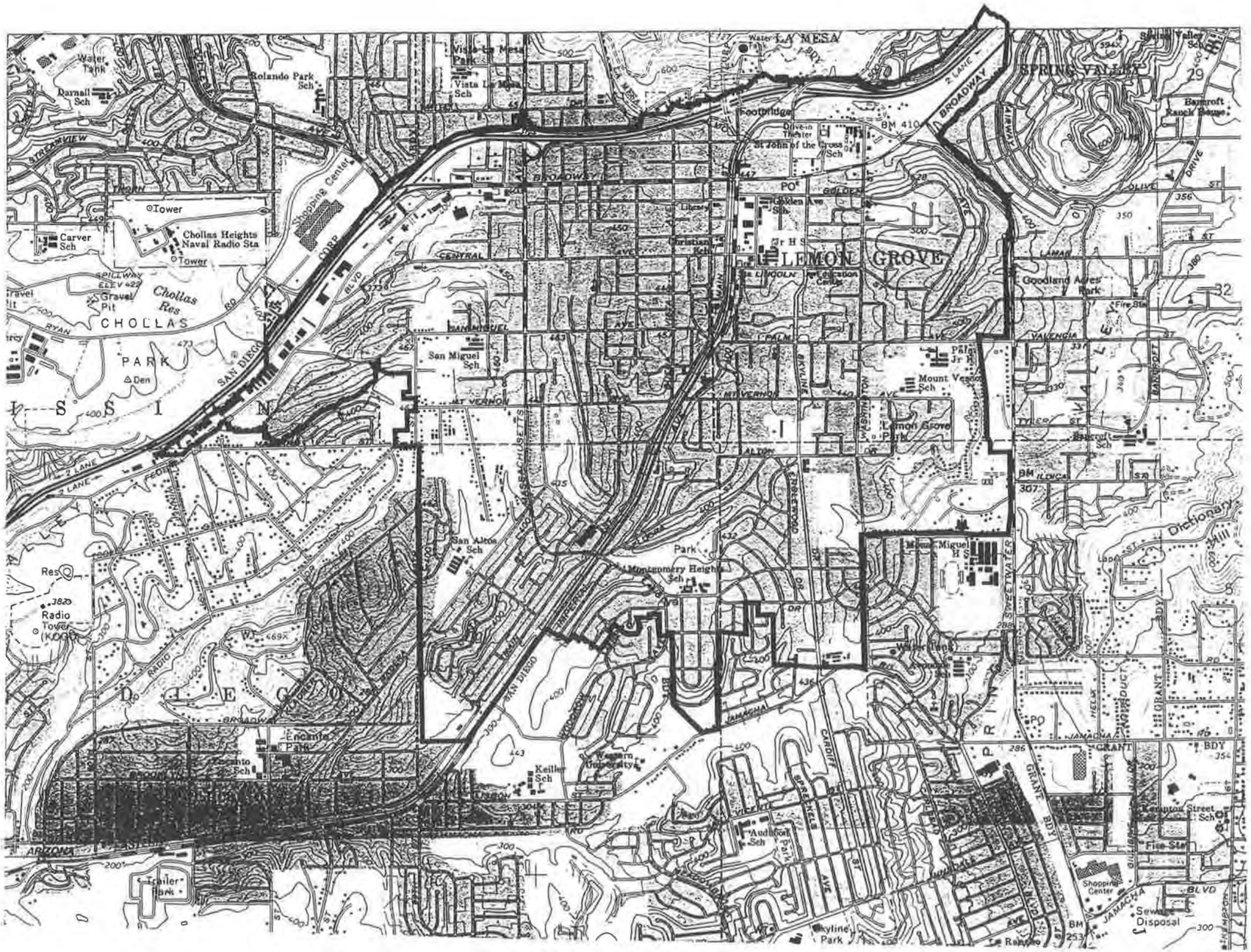
As shown in Figure S-2, relatively steep slopes primarily occur in various portions of the City, including south of Federal Boulevard; north and east of Golden Avenue; east of Lawton Drive and Camino de las Palmas; and around portions of Lemon Grove Avenue. In other districts, moderate slopes exist and residents occasionally report localized slope instability. Slope stability problems should be monitored and mapped, and the City can assist property owners in planning remedial actions.

All the soil types present in the City, except those in the east Broadway area have high clay contents with high potential for shrink-swell behavior. Expanding and shrinking soils can cause building foundations to shift



Source: *Final Environmental Impact Report for the Broadway Commercial Center.*

Figure S-1
Fault Location Map



Legend

City of Lemon Grove Boundary

Source: USGS 7.5 minute series topographic map, National City quadrangle

N

1 inch = 2,000 feet

Figure S-2
Topography

and crack. Proper geotechnical engineering techniques should be incorporated into development projects affected by shrink-swell soils.

Through the environmental review process required by the California Environmental Quality Act (CEQA), the City will assess all potential geologic hazards created by new development projects, including hazards related to earthquakes, shrink-swell soils and slopes. Appropriate geotechnical engineering studies will be required for projects involving grading and landform alteration.

Flooding

"...flooding can occur during winter rains as drainages and streams swell from increased flow."

Although Lemon Grove is located in a semi-desert climate, flooding can occur during winter rains as drainages and streams swell from increased flow. Runoff during winter rains can also accumulate and cause localized flooding. The Federal Emergency Management Agency (FEMA) has delineated inundation areas for 100-year and 500-year floods (see Figure S-3). A 100-year flood zone reflects the extent of a flood that has a one percent chance of occurring in a given year, and a 500-year flood reflects the extent of a flood that has a 0.2 percent chance of occurring in a given year.

As shown in Figure S-3, the primary flood zone occurs along Federal Boulevard. Nearly each year, significant flooding occurs in this area due to insufficient drainage infrastructure. The flooding impedes traffic, disrupts business operations and damages the roadway. The cost of the required drainage improvements has prevented the City from ameliorating this hazardous situation. However, the City is committed to obtaining the funding for the Federal Boulevard drainage project and moving forward with construction.

"...the City is committed to...the Federal Boulevard drainage project..."

In addition to the Federal Boulevard flooding problem, localized flooding occurs in various areas during rains. To reduce these hazards, the City plans to update the 1974 *Storm Drainage General Plan*. The plan presently provides guidance for drainage improvements, but some of the recommended improvements may be bigger than necessary to handle runoff. During the update, the City will re-assess current drainage inadequacies, identify required improvements and funding sources, and prioritize improvement projects to address the worst localized flooding problems. New development will be assessed for potential drainage impacts, and developers must construct any infrastructure improvements needed to prevent flooding hazards.

To allow local property owners to obtain federal flood insurance, the City will consider participating in the National Flood Insurance Administration (NFIA) program, which is administered by FEMA. This will involve local implementation of the *Lemon Grove Flood Insurance Study* and the corresponding flood zone management measures. Having access to flood insurance may give property owners and businesses along Federal Boulevard incentive to reinvest and rehabilitate the area.

Fire

Fire also poses a threat to public health and safety. Since the City and surrounding areas are almost entirely developed structural fires are much more common than wild fires occurring in natural areas. Typical fire hazards consist of older, deteriorating buildings with faulty electrical and heating systems as well as accumulated trash and rubbish.

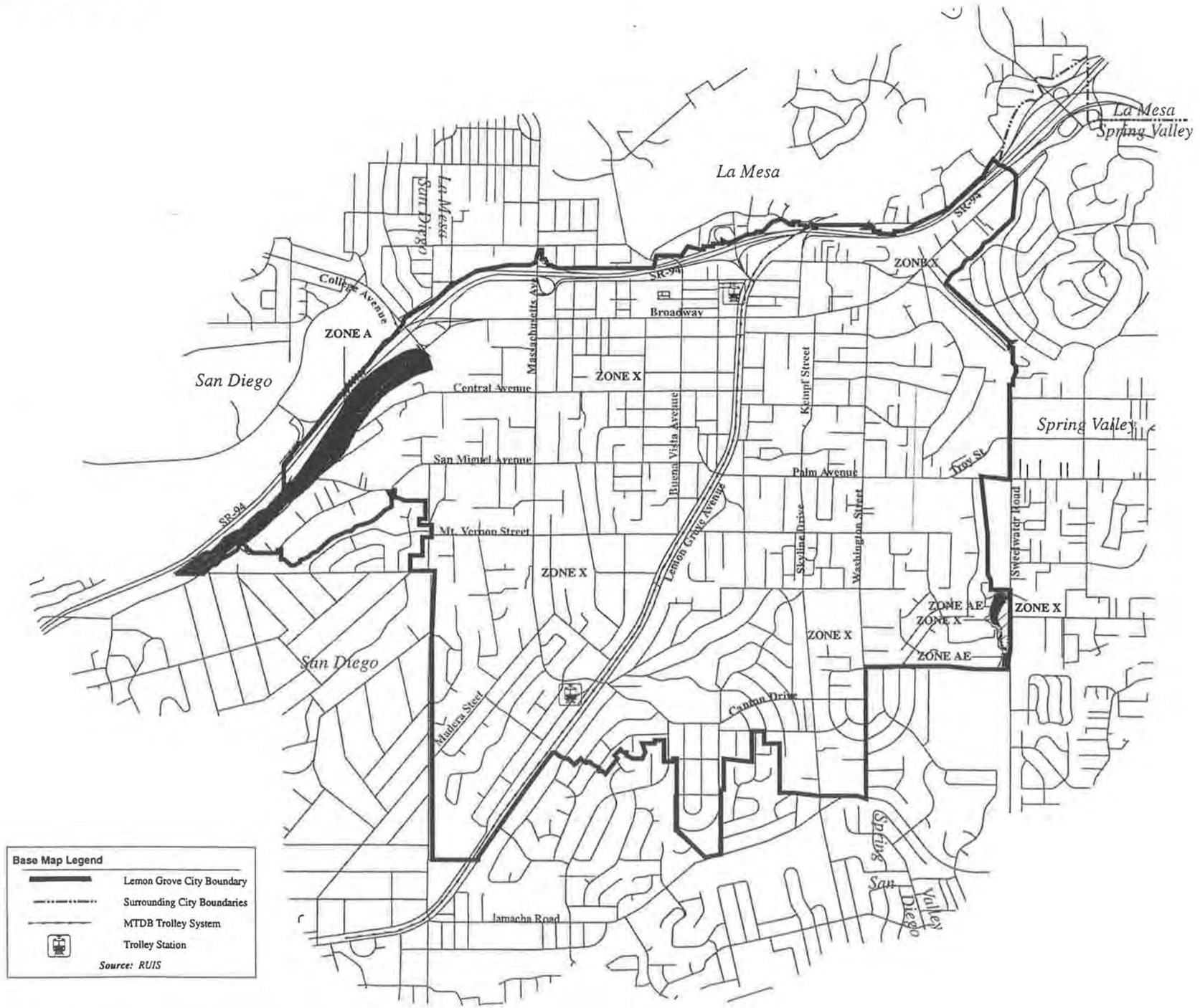
"The best way to protect community safety is to prevent fires from occurring in the first place."

The best way to protect community safety is to prevent fires from occurring in the first place. The City will educate residents and business about fire prevention and safety, including property maintenance, smoke detectors, excessive accumulation of combustible material, and what to do if a fire ignites. Educating the community about potential fire hazards related to older buildings and continued enforcement of the Weed Control and Waste Matter Ordinance will also help prevent dangerous fires.

In the event of a fire, the primary goal is to quickly extinguish the fire, minimizing injuries and property damage. As discussed in the Public Facilities Element, Fire Department staffing and equipment acquisitions will facilitate swift response times. Regularly monitoring water pressure throughout the City will help facilitate sufficient flows for fighting fires. New development will conform to the current Uniform Fire Code and must incorporate fire safety features such as smoke detectors and alarms, automated sprinklers, and well-marked accessible exits.

Hazardous Materials

Hazardous materials refer to materials that have the potential to impair health or degrade the environment. Hazardous materials may exhibit toxic, corrosive, reactive and/or flammable characteristics. Manufacturing the variety and quality of products enjoyed by our society often requires the use of some hazardous materials. The risk posed by a particular material depends on its chemical composition, physical state and concentration. The risk also depends on the management and handling techniques in addition to the number of people exposed to the materials. Protecting the public from potential threat requires addressing these risk factors.



Safety Element

Legend

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- **ZONE A** — No base flood elevations determined.
- **ZONE AE** — Base flood elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- **ZONE A0** — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE A99** — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- **ZONE V** — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- **ZONE X** — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside 500-year flood plain.
- **ZONE D** — Areas in which flood hazards are undetermined.

Base flood elevation line; elevation in feet (Referenced to the National Geodetic Vertical Datum of 1929)

Source: Flood Insurance Rate Map, City of Lemon Grove, 1988

N

1 inch = 2,000 feet

Figure S-3
Flood Zones

"The risk...depends on chemical composition, physical state and composition...[and] management and handling techniques and number of people exposed..."

Federal, state and county agencies closely regulate hazardous materials to protect public health and the environment. The California Environmental Protection Agency and county Hazardous materials Management Division (HMMD) issue permits for the use, storage, disposal and transport of hazardous materials. Conditions of the permit require precautionary measures to minimize potential risks. When issuing business licenses, the City plans to check that the appropriate permits for hazardous materials have been obtained from the regulatory agencies.

When hazardous material accidents occur, the number of injuries depend on the number of people present in the vicinity. Reducing the number of potential injuries in Lemon Grove will involve minimizing the concentration of hazardous material users in areas where people congregate, such as neighborhoods, schools and shopping areas. The City also anticipates establishing routes for the transport of hazardous materials, avoiding populated areas.

A number of materials used by households qualify as hazardous materials, including paint, cleaners, insecticides and automotive fluids. Often residents improperly dispose of household hazardous materials, not recognizing the toxic nature of the substance or lacking access to a disposal facility. Inadequate storage of such materials can also create fire hazards. Implementing the Lemon Grove *Household Hazardous Waste Element* will involve educating the community about the proper disposal and storage of household hazardous materials and advertising regional collection events for proper disposal.

"...educating the community about the proper disposal and storage of household hazardous materials..."

Several sites in the City have been contaminated by hazardous materials. The county Hazardous Materials Management Division informs local cities of known contaminated sites. Almost all of the sites in Lemon Grove occur in the areas of Broadway, Federal Boulevard and Lemon Grove Way, reflecting the location of light industrial and commercial uses. Automotive service or industrial operations occupy the majority of sites, and contamination is largely due to leaking underground storage tanks. Future redevelopment of contaminated sites could be impaired unless clean-up occurs. To avoid land use constraints and conserve environmental quality, the City will help to will coordinate clean-up efforts between HMMD and property owners. Redevelopment proposals will be reviewed for contaminated project sites and clean up will be required of developers where necessary.

Crime Prevention

"As the greater San Diego region continues to urbanize, crime prevention in Lemon Grove will grow in importance to maintain public safety."

Controlling crime is essential to community stability and productivity. The most common crimes in Lemon Grove consist of commercial, residential, and vehicle burglaries and thefts. The greatest number of burglaries, thefts and robberies transpire in the Broadway commercial corridor. In addition to reducing the occurrence of these property crimes, crime prevention efforts should address issues such as domestic violence, juvenile delinquency and alcohol-impaired driving. As the greater San Diego region continues to urbanize, crime prevention in Lemon Grove will grow in importance to maintain public safety.

A variety of tactics should be used to prevent crime, promote the well-being of residents, and maintain a stable community. These tactics include:

- Supporting crime prevention programs, such as Neighborhood Watch and the Retired Senior Volunteer Patrol, and community education about new laws and crime prevention measures for personal, family, property and business security.
- Publishing of local crime statistics, including type and location of incidents.
- Encouraging residents to utilize free public crime prevention services such as the Commercial Security Consultation and Residential Security Consultation through the Sheriff's Department.
- Enforcing laws and ordinances regarding public disorder, loitering and alcohol use.

Preventing crime as well as improving public health and safety should also be accomplished through the development of a community-wide network of public and private agencies, organizations, businesses and individuals. Such a network could collect and analyze data on local social problems, define early intervention methods, exchange information, and develop strategies to foster the long-term well-being of all community members.

"...the perception of crime is often elevated by stereotyped characterizations of different groups."

The perception of crime is often higher than the level of criminal activity revealed by statistics. In areas with diverse cultural populations like Lemon Grove, the perception of crime is often elevated by stereotyped characterizations of different groups. Positive community relationships

Lemon Grove Baseball Team, circa 1925. Photo courtesy of Lemon Grove Historical Society.

will be encouraged to dispel such myths and improve community security. Accomplishing this goal will involve:

- Celebrating diversity through an annual ethnic fair and/or ethnic recreational programs.
- Equal representation of local ethnic groups on City committees and boards.
- Programs facilitating increased interaction between youth and adults.
- Continued use of volunteer patrols such as the Retired Senior Volunteer Patrol (RSVP), encouraging involvement of all local ethnic sectors.

"Youth need options for positive activities as alternatives to antisocial behavior."

Youth need options for positive activities as alternatives to antisocial behavior. To deter youth from alcohol and other drug use, gang involvement and vandalism, the City will encourage, and within budgetary constraints, provide recreational, educational and prevention programs through forums like the schools, churches, the Lemon Grove Project, Teens With a Cause, D.A.R.E., and other civic programs and organizations.

After-school programs capturing the diverse interest of youth are essential. The City will continue prioritizing graffiti removal and prevention to reduce the potential for gang activity.

Areas with higher crime rates will be targeted. Property crimes around the trolley line have somewhat increased since trolley service commenced. The City will coordinate with the Metropolitan Transportation Development Board to identify methods to reduce crime around the trolley stations. Enhancing the aesthetic character and better maintaining the trolley corridor and stations will increase the perception of law and order and deter potential criminals. Each year, the City should work with the Sheriff's Department and broader community to identify crime areas and issues, and develop strategic responses.

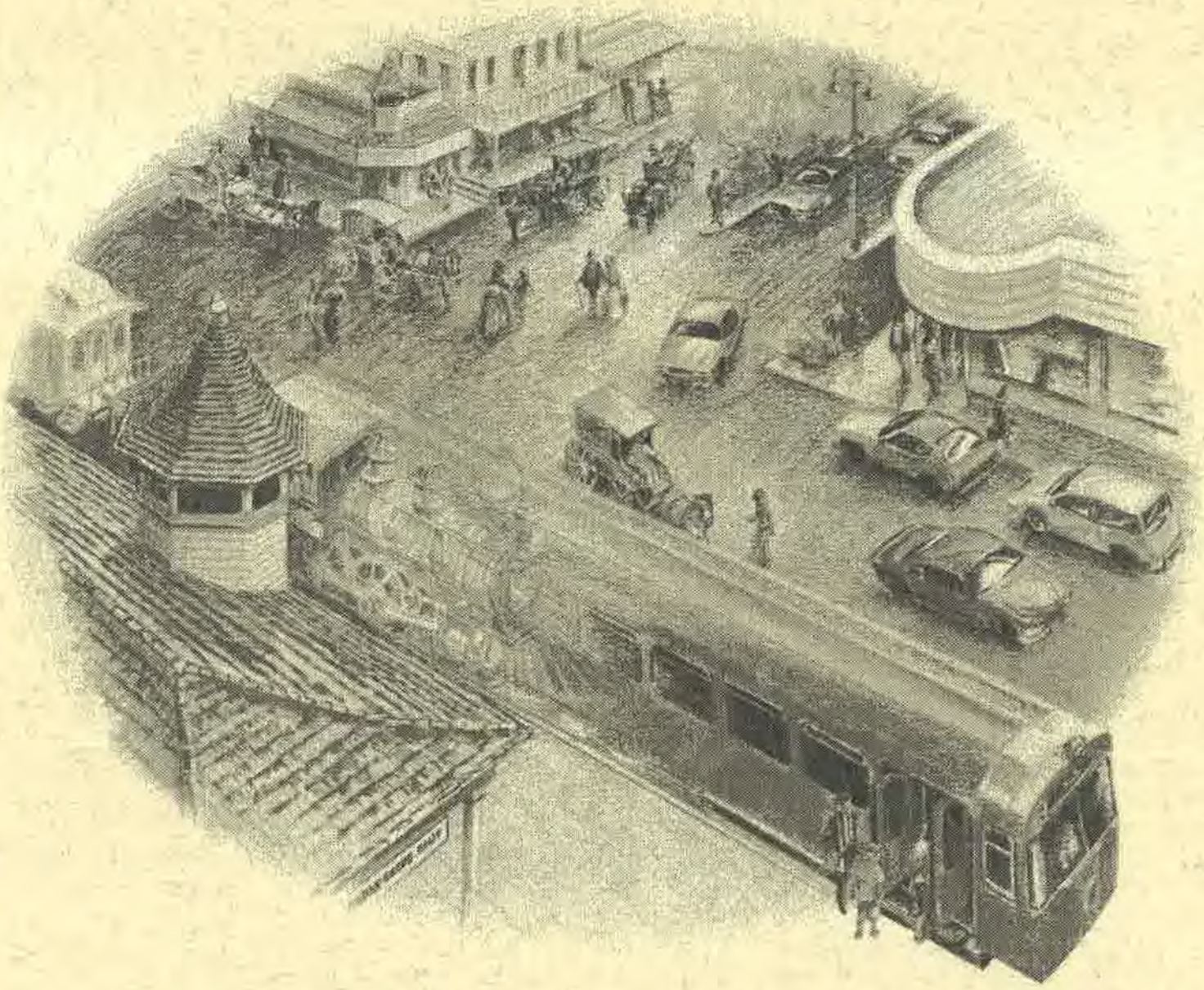
New development will be designed to prevent crime. Lighting, visibility and similar security measures can reduce the likelihood of property crimes. The Sheriff's Department will review development proposals and recommend measures to enhance public safety.

Emergency Preparedness

"...a swift and efficient response by emer-gency service providers minimizes injuries, casualties and property damage."

In the event of disasters and emergencies, a swift and efficient response by emergency service providers minimizes injuries, casualties and property damage. The City's *Emergency Plan* provides the framework for responding to any type of emergency or disaster that might occur in Lemon Grove. Accomplishing emergency preparedness will involve the following steps:

- Regularly update the *Emergency Plan* to address any changes in emergency response systems or new types of potential disasters.
- Educate residents and businesses about the *Emergency Plan* and evacuation routes.
- Periodically train City staff and other emergency response staff to effectively implement the *Emergency Plan*.



NOISE ELEMENT

Lemon Grove General Plan

Noise Element

INTRODUCTION

Implementing the Vision

The Vision for the Future calls for sustaining our small town feeling and protecting the established residential neighborhoods. Quiet, peaceful conditions contribute to the pleasant community we enjoy. Because traffic and active commercial and business centers can generate obtrusive noise, protecting the quiet environment requires careful, long-range planning.

Purpose

State planning law requires California cities to adopt specific elements in their general plans. The Lemon Grove Noise Element fulfills the state planning mandate for the noise element, as defined in the Government Code Section 65302(f) and Health and Safety Code Section 46050.1. The requirements for the noise element include estimating existing and future noise levels and establishing guidelines to minimize noise impacts to the community.

Scope

The Noise Element establishes the plan to protect the community from noise and maintain quiet conditions. Noise is defined as unwanted sound and results from heavy traffic, commercial establishments, machinery, air conditioning systems, industrial operations and landscaping equipment. Noise patterns often reflect land use patterns. In Lemon Grove, noise is greatest around the SR-94 freeway and the Broadway commercial corridor, reflecting the concentration of transportation, commercial and light industrial uses. The Safety Element sets forth a plan to minimize the effect of noise on residences, schools, parks and other areas that need quiet environments.

"...the plan to protect the community from noise and maintain quiet conditions."

The Noise Element is organized into three sections: 1) Introduction, 2) Objectives and Policies and 3) Plan. This Introduction explains the relationship between the element and the *General Plan* Vision for the Future, state planning requirements, and related plans and programs. In the section entitled Objectives and Policies, local noise issues are summarized and then objectives and policies addressing the issues follow. An *objective* represents the desired end point or goal while a *policy* signifies a broad, general rule or course of action to achieve the objective. All of the goals and objectives are extensions of the Vision for the Future.

INTRODUCTION

The Noise Plan - the final section of the element - directly builds on the objectives and policies. The plan describes the framework for achieving the objectives and policies and summarizes the programs that will protect the community from obtrusive noise and ultimately realize the Vision for the Future. Specific implementation measures for the Noise Element are provided in the *General Plan Implementation Manual*. All of the objectives and policies in this element are directly represented by one or more implementation programs.

Related Plans and Programs

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) of 1970 requires thorough analysis of the environmental impacts of proposed development, infrastructure and planning projects. Prior to approving a project, the CEQA process requires assessing potential environmental impacts and identifying mitigation measures to reduce the impacts to acceptable levels. Assessing and minimizing potential noise impacts is required by CEQA.

California Noise Insulation Standards (Title 24)

The California Noise Insulation Standards, (Title 24, Part 2, California Code of Regulations, often referred to as "Title 24"), establish an interior noise standard of 45 decibels or less (dB - CNEL or Ldn) for the interiors of residences. When residential development is proposed with noise contours of 60 dB or greater from freeways, expressways, parkways, major streets, thoroughfares, rail lines, rapid transit lines or industrial noise sources, an acoustical study must be prepared. The study must show that the building is designed to reduce the interior noise level to 45 dB or lower.

Lemon Grove Noise Abatement and Control Ordinance

The Lemon Grove Noise Abatement and Control Ordinance (Chapter 9.24 of the Municipal Code) regulates noise from a variety of sources and helps maintain quiet conditions. The ordinance regulates how much noise local activities can generate, and the allowable hours of operation of some noisy activities. Noise sources regulated by the ordinance include motor vehicles, trash trucks, powered model vehicles, construction equipment, food trucks and multiple-family dwelling units in addition to noise-producing activities such as the use of honking, loudspeakers, steam whistles, hawkers and peddlers, and barking dogs.

Planned SR-125 Freeway

Caltrans has finalized the environmental documentation and approved the construction of the State Route 125 (SR-125) freeway project. The new freeway will generally follow the existing path of Sweetwater Road, and comprise Lemon Grove's eastern boundary once completed. In the area of the existing intersection of Sweetwater Road and Broadway, an elevated interchange reaching 80 to 100 feet above the existing grade will connect the SR-125 to the existing SR-94 freeway. The Environmental Impact Report prepared for the freeway identifies significant noise impacts to Lemon Grove neighborhoods bordering the project corridor. Caltrans will primarily mitigate the impacts by constructing sound barriers. Freeway construction in the Lemon Grove area is scheduled to commence in mid-1988.

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Noise Element

OBJECTIVES AND POLICIES

Quiet Neighborhoods

Most of the neighborhoods in the City enjoy quiet and peaceful conditions. The established land use pattern with segregated commercial, light industrial, transportation and residential areas contributes to low noise levels in the neighborhoods.

Objective 1.0: Quiet and peaceful neighborhoods.

Policy 1.1: Maintain the existing land use pattern, where the established neighborhoods are generally separated from activities that generate noise.

Policy 1.2: Limit new multi-family residential development in the established neighborhoods.

Policy 1.3: Work to stabilize traffic volumes in the neighborhoods.

Transportation Noise

Noise is generated by the transportation corridors in and around the City, particularly the SR-94 freeway, Broadway and the trolley. The planned SR-125 freeway will increase noise levels in the eastern part of the City.

Objective 2.0: Protection of residential and public areas from transportation noise.

Policy 2.1: Avoid residential uses near major transportation corridors unless interior noise levels can be reduced to acceptable levels.

Policy 2.2: Pursue construction of noise barriers along the freeway to protect residential areas.

Policy 2.3: Monitor appropriate noise mitigation for the SR-125 freeway.

Policy 2.4: Encourage enforcement of vehicle noise standards and speed limits.

Policy 2.5: Promote reduction of unnecessary trolley noise.

Downtown Village and Massachusetts Station

The Downtown Village and Massachusetts Station are planned for a mix of shops and stores, restaurants, office, condominium and apartment buildings.

Objective 3.0: Quiet living areas for residents of the Downtown Village and Massachusetts Station.

Policy 3.1: In mixed use areas, plan for acceptable interior noise levels.

Other Noise Sources

Noise is also generated by other sources, such as construction operations, commercial and industrial activities, and loud music. These sources of noise are often referred to as "stationary" sources.

Objective 4.0: Minimal intrusions from stationary noise sources.

Policy 4.1: Locate new noise-generating uses away from sensitive uses, such as residences and schools.

Policy 4.2: Enforce noise ordinances and update as necessary to address new noise concerns.

Noise Element

PLAN

Overview

The Noise Plan sets forth strategies to maintain quiet and peaceful conditions and control exposure to noise. An explanation of noise characteristics is followed by a description of existing and future noise conditions and specific noise-reduction strategies.

Definitions and Standards

Sound and Noise Measurements

Sound consists of mechanical energy transmitted by pressure waves in a compressible medium such as air, and noise is defined as unwanted sound. Parameters that characterize sound include the rate of oscillation of sound waves, distance between successive troughs or crests, the speed of propagation, and the pressure level or energy content of sound. The sound pressure level has become the most common descriptor of loudness.

"...noise is defined as unwanted sound ...The decibel (dB) scale quantifies the sound intensity..."

The decibel (dB) scale quantifies the sound intensity or loudness. Because sound pressure can vary millionfold within the range of human hearing, the dB scale consists of a logarithmic progression very similar to the Richter Scale used for earthquake magnitude. Because the human ear is more sensitive to some sound frequencies more than others, sound descriptions are weighted in a process called "A-weighing," written as dB(A). In A-weighing, the middle A and its higher harmonics are weighted reflecting humans increased sensitivity to this range. Because people are also more sensitive to unwanted noise during the evening at night, state planning law requires adding an artificial dB increment to quiet time noise levels in a 24-hour noise descriptor, called the Community Noise Equivalent Level (CNEL). In practical terms, the CNEL measures the average sound occurring in a given area over a 24-hour period.

Noise Conditions

In Lemon Grove, noise is primarily caused by traffic on the SR-94 freeway and local roadways. The commercial and light industrial activity on Federal Boulevard and Broadway in addition to the trolley also incrementally contribute to local noise levels. Noise levels can be

Lemon Grove Rodeo billboard (held at St. John's Church), circa 1954. Photo courtesy of Lemon Grove Historical Society.

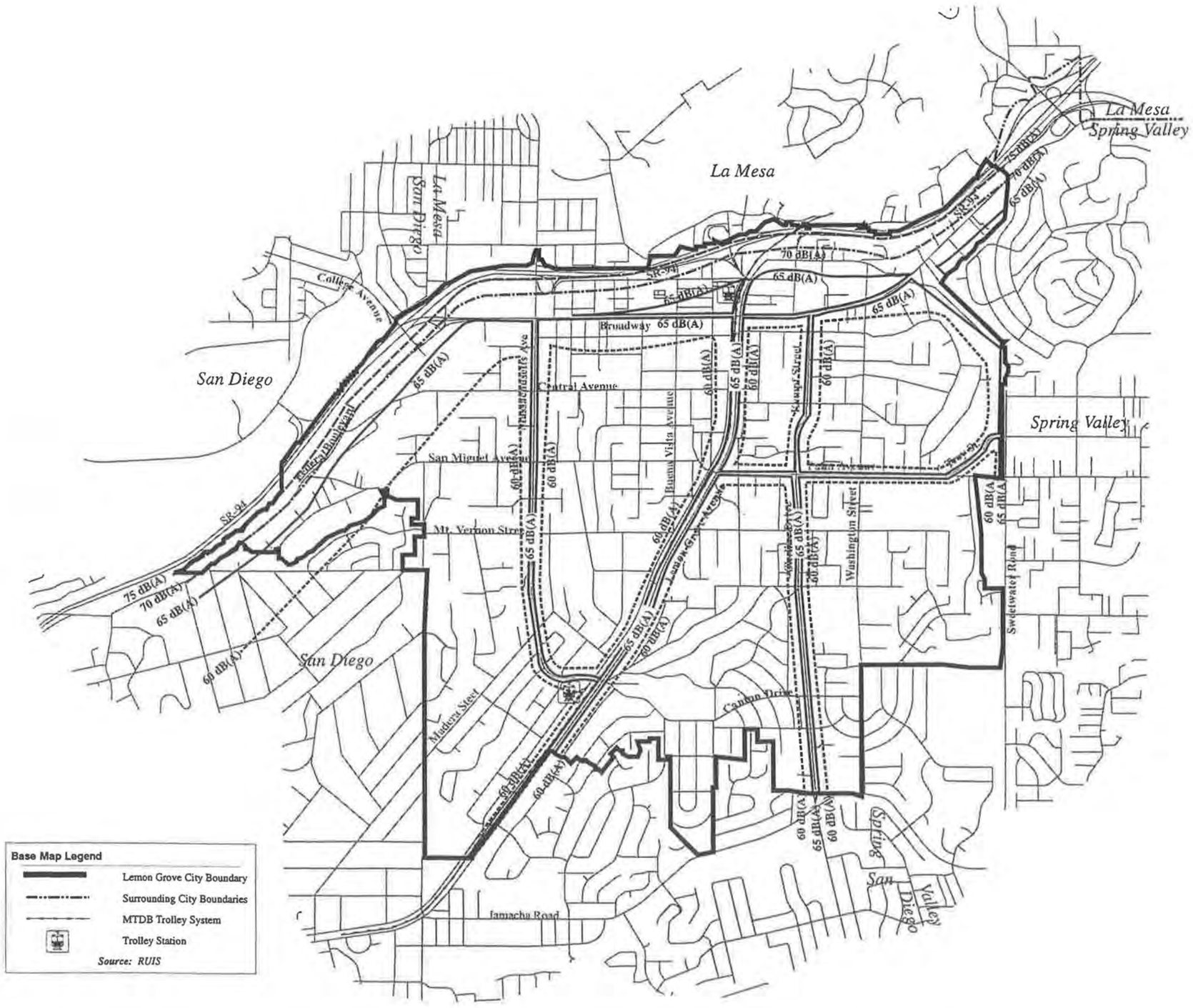
"In Lemon Grove, noise is primarily caused by traffic on the SR-94 freeway and local roadways."

estimated based on traffic volumes and represented as "noise contours." A noise contour indicates the area subject to a particular volume of noise. For example, the area between the 65-dB and 70-dB contour is subject to noise ranging between 65 and 70 dBs.

Figure N-1 shows the estimated noise contours in 1995 while Figure N-2 shows the expected contours for 2015. Greater areas in the northern part of the City will be affected by noise in the 65 dB(A), 70 dB(A) and 75 dB(A) levels in the future and neighborhoods in the eastern part of the City will also experience greater noise. The greater extent of the 2015 contours reflects anticipated increases in traffic volumes on SR-94 and local roads in addition to operation of the planned SR-125 freeway and elevated SR-125/SR-94 interchange.

Noise Planning and Standards

For planning purposes, land uses that generate noise are distinguished from uses that are particularly sensitive to noise. Noise sources include



Legend

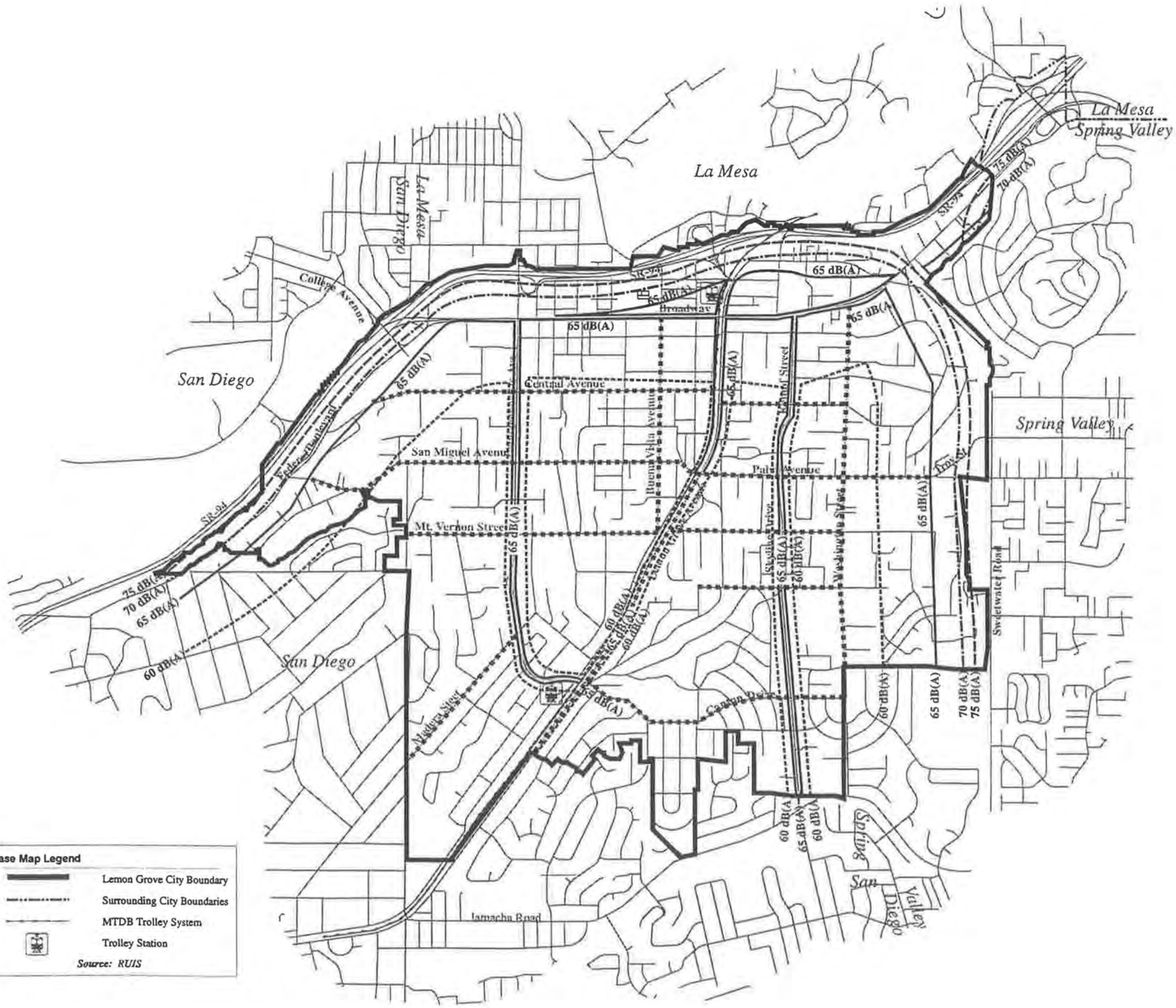
- 60 dB(A) CNEL
- 65 dB(A) CNEL
- 70 dB(A) CNEL
- 75 dB(A) CNEL

Source: Giroux & Associates, 1995

N

1 inch = 2,000 feet

Figure N-1
1995 Noise Contours



Legend

- 60 dB(A) CNEL
- 65 dB(A) CNEL
- 65 dB(A) CNEL (<50' to Centerline)
- 70 dB(A) CNEL
- 75 dB(A) CNEL

Source: Giroux & Associates, 1995

N

1 inch = 2,000 feet

Figure N-2
2015 Noise Contours

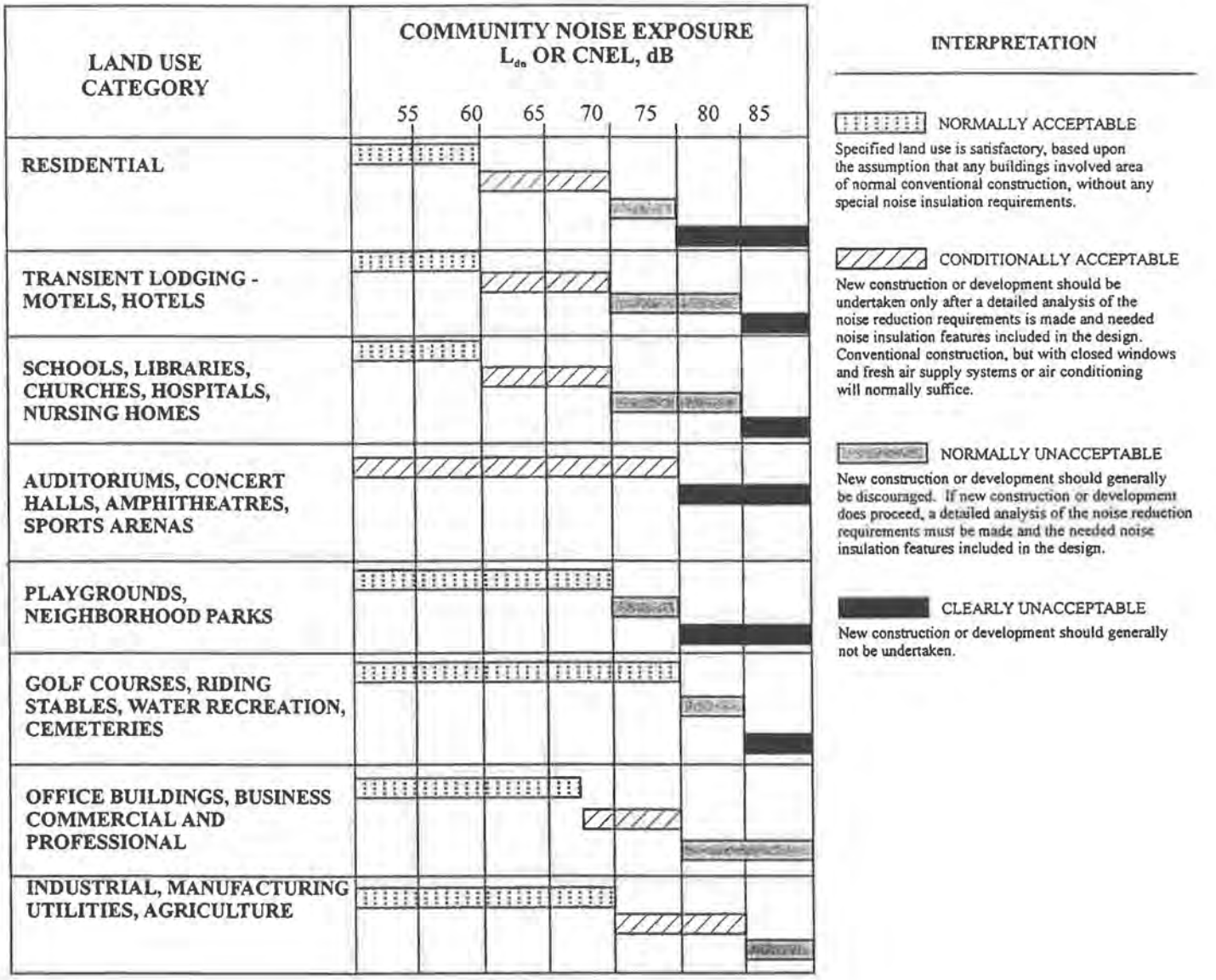
traffic, trains, commercial establishments, machinery, air conditioning systems, industrial operations and landscape maintenance equipment. Sensitive noise receptors primarily consist of residences but also include schools, hospitals, parks, libraries and churches. Residents and other sensitive noise receptors can be protected from noise by distancing noise sources. When residential uses are located near major transportation corridors and activity centers, sound levels experienced by residents can be reduced through building design.

"The City will implement established noise standards indicating which types of land uses are compatible with varying levels of noise..."

The City will implement established noise standards indicating which types of land uses are compatible with varying levels of noise to the extent feasible. Noise and land use compatibility standards issued by the state serve as the basis for the local standards depicted in Figure N-3. When development projects are proposed, the City will compare the proposed land use type and noise conditions to the standards, and determine the suitability of the development project for that specific site.

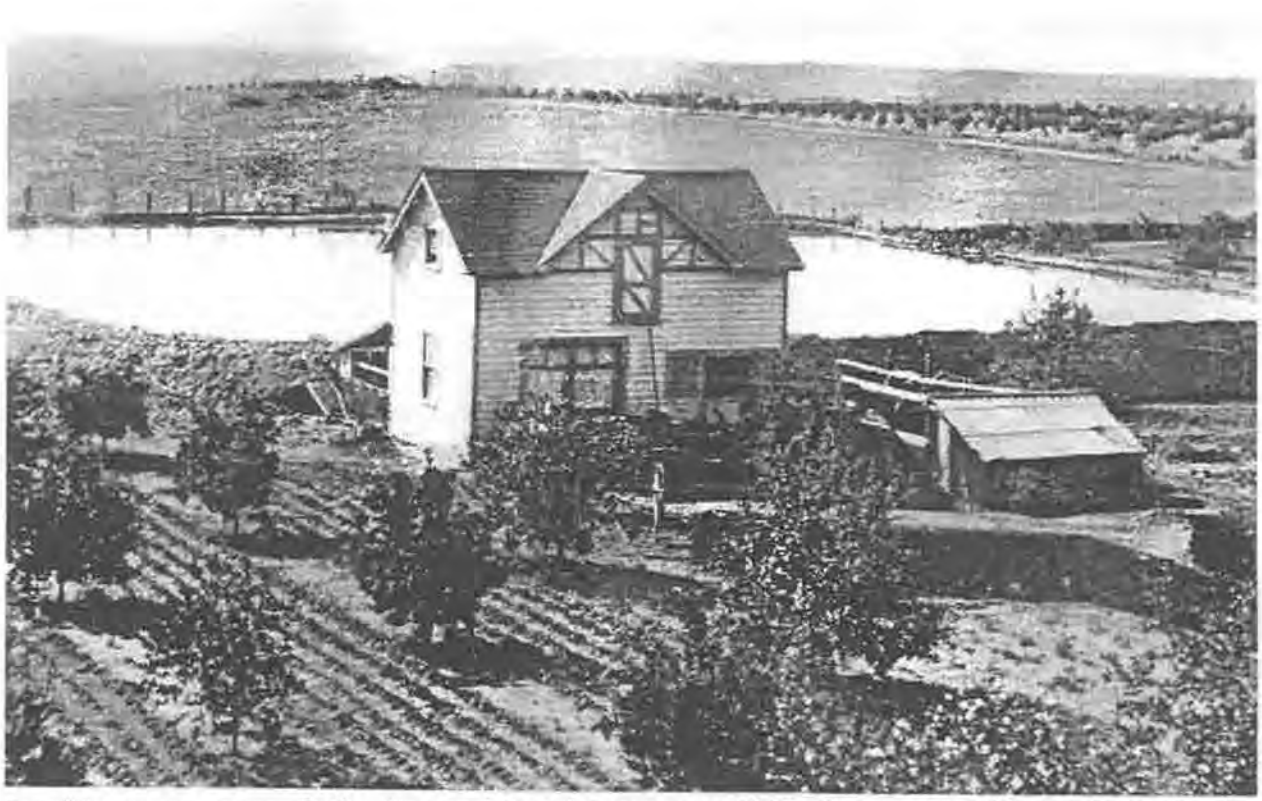
The City will also require that all new residential development meet the state Title 24 standard for interior noise levels. Title 24 requires that interior noise levels for both single-family and multiple-family dwelling units equal 45 dB(A) CNEL or less. Furthermore, noise studies will be required for all proposed residential sites in close proximity to automotive traffic, rail or light industrial sources with baseline levels exceeding 60 dB CNEL. As a requisite for project approval, the study must demonstrate that the interior noise level will not exceed 45 dB (A). Interior noise levels in noisy areas can often be reduced to meet the 45 dB(A) CNEL standard through extra insulation, treated windows and ventilation systems. Orienting buildings away from the noise source and using barriers to attenuate noise transmission also help reduce interior noise levels.

As required by the California Environmental Quality Act, the City will review development proposals for noise impacts. Two types of noise impacts can occur: 1) the noise conditions are incompatible with the proposed use and will interfere with the new use, or 2) if the proposed use will generate noise that impacts nearby sensitive noise receptors such as residences, schools, parks, churches and the library. For all identified impacts, the project must incorporate measures to ensure appropriate noise conditions.



Source: Office of Noise Control, California Dept. of Health, Feb. 1976.

Figure N-3
Land Use Compatibility



Troxell house, near corner of Olive Street and Central Avenue, circa 1900. Photo courtesy of Lemon Grove Historical Society.

Quiet Neighborhoods

"Lemon Grove residents enjoy quiet conditions largely due to the established land use patterns."

Lemon Grove residents enjoy quiet conditions largely due to the established land use patterns. The best way to preserve quiet in the neighborhoods is to limit development of land uses that generate noise either within or adjacent to the neighborhoods. Commercial, light industrial and transportation activity is primarily concentrated in the northern part of the City, away from the neighborhoods. This provides quiet conditions for residents. The Land Use Plan in the Community Development Element - the guide for future development - reinforces this land use pattern in part to protect the established neighborhoods.

Because traffic comprises the primary source of noise in Lemon Grove, traffic in the neighborhoods will be restricted. The Circulation Plan in the Mobility Element sets forth a hierarchical system of arterials and collectors to efficiently direct traffic through the City and around the neighborhoods. Primary objectives of the Circulation Plan design include reducing traffic volumes and speeds in the neighborhoods.

Transportation Noise

"Redevelopment [north of Broadway] will reduce the negative noise effects associated with the freeway."

Freeway Noise

The primary source of noise in Lemon Grove is generated by vehicle traffic traveling on the SR-94 freeway and local thoroughfares. Minimizing noise problems requires addressing the effects of noise from the freeways and local traffic. The SR-94 freeway comprises the northern boundary of the City, and the freeway traffic elevates noise levels north of Broadway. Most of the development exposed to freeway noise consists of commercial and light industrial uses and is not adversely impacted. The residential neighborhood abutting the freeway, between Corona Street and Vista Way, experiences excessive noise. However, this area is planned to transition to commercial development, according to the Land Use Plan in the Community Development Element. Redevelopment will reduce the negative noise effects associated with the freeway.

The Land Use Plan calls for the maintenance of other existing residential uses near the freeway, east of Lemon Grove Avenue. Additional apartment and condominium development is also encouraged in these areas. Future residential development affected by freeway noise must comply with the Title 24 standards. Furthermore, the City will request that Caltrans construct noise barriers along the SR-94 right-of-way to improve the living environment.

Construction and operation of the planned SR-125 freeway, which will form the City's eastern boundary, will significantly increase noise levels in nearby areas. Both residences and schools near the freeway corridor will be adversely affected. The Environmental Impact Report for the freeway project requires mitigation programs to reduce the noise effects, primarily through the use of noise barriers. The City will monitor planning and construction of the freeway to help make sure that all of the required mitigation measures are properly implemented.

Trolley Noise

"...the trolley is audible in close proximity to the tracks."

The East County Trolley Line, operated by the Metropolitan Transit Development Board (MTDB), extends north to south through the center of town. When traveling through Lemon Grove, the trolley is audible in close proximity to the tracks. With the exception of the necessary warning horns and audible crossing gates, electric trolleys are relatively quiet. The intermittent nature of operations does not significantly increase daily average noise exposure. However, local residents have expressed concerns about the noise from trolley operations. The City will identify

objectional sources of trolley noise along with the community and MTDB and develop appropriate measures to reduce noise where feasible.

Vehicle Noise

"...actively enforce vehicle noise and speed laws to reduce ambient noise levels."

Traffic noise throughout the City is greatly influenced by travel speeds and the adequacy of muffler systems. The state Department of Motor Vehicles (DMV) regulates muffler systems to optimize noise suppression and local law enforcement agencies can cite drivers for violating the DMV noise regulations. Speed limits in Lemon Grove are set and enforced by the Sheriff's Department. The City will coordinate with the Sheriff's Department to actively enforce vehicle noise and speed laws to reduce ambient noise levels.

Other Noise Sources

Activities other than transportation contribute to local noise levels, but to a significantly reduced degree. These sources include construction activity, loud music, landscaping maintenance equipment, alarms, trash trucks and barking dogs. The City's Noise Abatement and Control Ordinance, established to protect the health and welfare of residents, contains regulations to control noise from these sources and many other nuisances. Active enforcement of the ordinance will help maintain quiet conditions. The City should educate the community about the ordinance to encourage conformance as well as reporting of possible violations.

Downtown Village and Massachusetts Station STAs

The Land Use Plan in the Community Development Element identifies redevelopment with mixed uses in the Downtown Village and Massachusetts Station Special Treatment Areas (STAs). A mix of retail, office, public, condominium and apartment development will occur in the Downtown Village STA, and a mix of neighborhood commercial, condominium and apartment development is planned for the Massachusetts STA. The quality of life in mixed use areas can be diminished by excessive noise from the commercial components. The City will require that future residential development within the STAs conforms to the Title 24 interior noise standards and require appropriate measures to reduce noise.

CONSERVATION AND RECREATION ELEMENT

Lemon Grove General Plan

Construction Activity Storm Water Permit; General Industrial Storm Water Permit; and Areawide Municipal Storm Water Permit.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act of 1970 requires thorough analysis of the environmental impacts of proposed development, infrastructure and planning projects. Prior to approving a project, the CEQA process requires assessing the potential environmental impacts and identifying mitigation measures to reduce the impacts to acceptable levels. In Lemon Grove, CEQA will continue to be an effective tool to analyze proposals and minimize community impacts.

State Regulation of Biological Resources

In addition to the California Environmental Quality Act, the state regulates biological resources through the California Endangered Species Act, Native Plant Protection Act and the Natural Community Conservation Planning Act. Besides establishing habitat conservation programs, these regulations protect declining plant and animal populations. Sensitive plant and animal species in Lemon Grove are subject to regulations.

Title 24 - Water Conservation and Energy Conservation

The State of California requires that new development employ specific measures to conserve both water and energy. These requirements are established in Title 24, Part 2 of the California Code of Regulations, which is commonly referred to simply as Title 24.

California Integrated Waste Management Act/Source Reduction and Recycling Element

The California Integrated Waste Management Act of 1989 changed the focus of solid waste management from landfill disposal to diversion strategies such as source reduction, recycling and composting. The Act requires that local jurisdictions such as Lemon Grove reduce the solid waste stream by 25 percent by 1995 and 50 percent by 2000. Per the Act requirements, the City adopted the *Source Reduction and Recycling Element*. Short-term goals identified in the Element have included educating the public about source reduction, expanding current recycling programs, and modifying City procedural practices. The medium-term objective consists of encouraging source reduction behavior through instructional and promotional alternatives, economic incentives and rate

structure modifications, waste exchanges, City leadership and regulatory programs.

Regional Air Quality Strategy

Developed jointly by the San Diego Association of Governments (SANDAG) and the San Diego Air Pollution Control District (APCD), the Regional Air Quality Strategy (RAQS) establishes the regional plan to attain state and federal air quality standards by 1997. To meet this goal, the RAQS establishes the following strategies: 1) increasing the use of clean fuel motor vehicles in fleets; 2) specific control measures for stationary sources of air pollution (such as electrical power generation) and areawide sources (such as barbecue lighter fluid); and 3) transportation control measures (such as trip reduction programs and transportation system management). While the APCD is committed to implementing the RAQS, ozone levels will continue to exceed the standards for several decades due to pollutants "blowing down" from the Los Angeles basin.

Regional Growth Management Strategy

The Regional Growth Management Strategy was adopted by the San Diego Association of Governments (SANDAG) in 1993, as mandated by the voters through Proposition C, the Regional Planning and Growth Control Initiative. The Strategy takes "a quality of life" approach to growth management, and contains standards, objectives and recommended actions for nine quality of life factors, such as air quality, water, sensitive lands and open space preservation and protection, and solid waste management. Through a joint powers agreement, local jurisdictions including Lemon Grove have agreed to certify that their general plans are consistent with the Strategy.

Historic Preservation Policies

Federal laws, procedures and policies that affect the treatment of cultural resource include the Antiquities Act of 1906, National Historic Preservation Act of 1966, National Environmental Protection Act of 1969, Federal Land Policy Management Act. Sites significantly contributing to the national heritage of the country can be listed as National Register of Historic Places. According to the national register criteria, sites are evaluated by the quality of significance in American history; architecture, archaeology and culture is present in district, sites, buildings, structures and objects of state and local importance; and possession of integrity of

Natural Biological Habitat

Urban development and past agricultural activities have disturbed most of the original natural habitat. Very few of the native plants and animals that once inhabited the area are present. The remaining habitat is limited to less than two acres of coastal sage scrub and disturbed wetlands.

Objective 3.0: Conservation of existing biological habitat.

Policy 3.1: Limit impacts to the remaining biological habitat.

Solid Waste Management

In general, urbanized areas generate substantial amounts of trash requiring disposal in nearby landfills. Current solid waste management strategies in California include source reduction, recycling and composting to decrease the waste stream impacting landfills. These strategies are implemented in Lemon Grove through the *Source Reduction and Recycling Element*.

Objective 4.0: Reduced amount of solid waste requiring landfill disposal.

Policy 4.1: Continue to implement the Source Reduction and Recycling Element and update the element as necessary.

Policy 4.2: Participate in interjurisdictional efforts to preserve available landfill capacity in San Diego County.

Efficient Water Use

Lemon Grove is located in a semi-arid area with very limited local water resources. Approximately 90 percent of the water consumed in the City is imported from northern California and the Colorado River. Conservation of water is necessary to ensure adequate supplies for future generations, and reduce the environmental impacts resulting from regional water transfers.

Objective 5.0: Efficient use of water by residents, business owners and City government.

Policy 5.1: Encourage residents, business owners and City departments to conserve water.

Policy 5.2: Require new development to employ efficient plumbing and landscape irrigation systems.

Policy 5.3: Anticipate potential uses for reclaimed water.

Clean Water

Lemon Grove is part of a larger watershed that contributes water to Los Chollas Creek, which ultimately flows to the Pacific Ocean. While no use in the City directly discharges polluted water into surface streams, runoff during rain events contains pollutants that contribute to degradation of the Los Chollas Creek water quality.

Objective 6.0: Lower levels of pollutants in runoff.

Policy 6.1: Educate residents, business owners and City departments about methods to reduce pollutants in runoff.

Policy 6.2: Comply with current federal and state water quality programs.

Energy Conservation

Petroleum products, the primary source of energy at the present, is limited in supply. Using energy efficiently will help to extend the supply. Other benefits of energy conservation efforts include reducing the need for new, expensive power generators and transmission lines, and decreasing the level of air pollutants produced by electrical generation.

Objective 7.0: Conservation of energy through efficient use of electricity and natural gas.

Policy 7.1: Provide information about energy conservation programs to the community.

Policy 7.2: Require that new development projects incorporate energy efficient technologies.

Clean Air

Lemon Grove is located in the San Diego Air Basin, where state and federal standards are occasionally exceeded for ozone and particulate. The most prevalent source of pollutants in the City is automobile use. The existing land use pattern contributes to adverse air quality conditions because many residents rely on automobiles to access work, shopping areas and other activity centers.

Objective 8.0: Improved air quality by reducing the production of pollutants.

Policy 8.1: Promote a development pattern that permits the use of

transportation modes other than driving, such as the trolley and bus use, walking and bicycling.

Policy 8.2: Establish a system of bike lanes and sidewalks that connect residential neighborhoods to activity nodes.

Policy 8.3: Maintain an efficient circulation system to avoid traffic congestion and related emissions.

Policy 8.4: Strive to minimize pollutants from new development.

Policy 8.5: Participate in regional air quality planning and help to implement regional plans in Lemon Grove.

Recreation and Open Space

Local parks offer opportunities for play, exercise and respite, and represent valuable open space resources in a nearly built out community. In addition to the parks, the City operates recreational/community centers and provides a variety of recreational programs for youth and adults.

Parks

Objective 9.0: Parks and recreational facilities that are well maintained, safe and accessible to all residents.

Policy 9.1: Maximize the use of existing parks through proper maintenance, and construction of new facilities reflecting the interests of the community.

Policy 9.2: Consider establishing parks in neighborhoods that presently lack nearby public recreation facilities.

Policy 9.3: Through joint-use agreements with Lemon Grove School District, increase the facilities available for recreation.

Policy 9.4: Encourage proper maintenance and development of nearby regional parks.

Recreational Programs

Objective 10.0: Diverse recreational programs offering opportunities for personal development in addition to recreation.

Policy 10.1: Design recreational programs to reflect the interests of the children, teens, adults, seniors and ethnic groups in the community.

Policy 10.2: Explore opportunities for co-sponsoring recreational programs with local organizations, expanded use of volunteers, and the development of commercial recreational facilities.

Aesthetic Open Space

Objective 11.0: Open space that enhances community aesthetics and public well-being.

Policy 11.1: When considering approval of proposed residential projects, consider the availability of nearby open space areas for both children and adults.

Policy 11.2: Maximize the benefit of open spaces such as the trolley right-of-way, other undeveloped corridors, and plazas through enhanced landscaping and trails.

Policy 11.3: Use landscaping in public areas to increase the visual appeal of the community.

TABLE CR-1
LEMON GROVE PROPERTIES
LISTED IN THE HISTORIC PROPERTIES DATA FILE
FOR SAN DIEGO COUNTY

Street Address	Resource Name	National Register Status
8336 Broadway	Undetermined	Not Eligible
8344 Broadway	Undetermined	Not Eligible
8392 Broadway	Undetermined	Not Eligible
8406 Broadway	Undetermined	Not Eligible
8420 Broadway	Undetermined	Not Eligible
8426 Broadway	Undetermined	Not Eligible
7715 Church Street	Atherton Chapel	Not Eligible*
3055 Crane Street	Simpson Hunter Home	Eligible
8300 Golden Avenue	Undetermined	Not Eligible
8318 Golden Avenue	Undetermined	Not Eligible
8322 Golden Avenue	Undetermined	Not Eligible
8336 Golden Avenue	James House	Eligible
8372 Golden Avenue	Undetermined	Not Eligible
Main Street	Sonka Store	Not Eligible*
Main Street	Congregational Church of Christ	Not Eligible*
3262 Main Street	Undetermined	Not Eligible*
3268 Main Street	Undetermined	Not Eligible*
3270 Main Street	Undetermined	Not Eligible*
3700 Mason Drive	Undetermined	Not Eligible
3760 Milton Road	Undetermined	Not Eligible
3767 Milton Road	Undetermined	Not Eligible
7329 Pacific Avenue	Residence	Not Eligible*
8454 Palm Street	Undetermined	Not Eligible
8476 Palm Street	Undetermined	Not Eligible
1745 Skyline Drive	Undetermined	Not Eligible
1805 Skyline Drive	Undetermined	Not Eligible
3276 Sweetwater Way	Undetermined	Not Eligible
8540 Troy Street	H. Lee House	Eligible
8556 Troy Street	Undetermined	Not Eligible
8564 Troy Street	Undetermined	Not Eligible

*Potential for local interest was not considered in evaluation.
Source: Gallegos & Associates, 1995 (See 1995 *City Resources Report*)

TABLE CR-2
LEMON GROVE HISTORICAL SOCIETY
LIST OF HISTORIC PROPERTIES

Street Address	Resource Type	Comments
2349 Bonita Street	Building	Rammed-Earth House
2780 Buena Vista Avenue	Building	
7052 Central Avenue	Building	Architectural
7553 Central Avenue	Building	
7715 Church Street	Building	Atherton Chapel
3251 Kempf Street	Building	Treganza Home
3308 Main	Building	Sonka Store/Grove Pastry
2641 Massachusetts Avenue	Building	Architectural
8300 Mount Vernon Street	Building	
7546 Pacific Avenue	Building	
8357 Palm Avenue	Building	

Source: Gallegos & Associates, 1995 (See 1995 *City Resources Report*)

"The historic resources plan involves passing down that small town feeling and heritage to future generations in addition to preserving significant historic sites."

A number of historic sites have been identified in Lemon Grove. Table CR-1 summarizes the sites listed in the Directory of Properties in the Historic Property Data File for San Diego County, and Table CR-2 provides additional sites identified by the Lemon Grove Historical Society. The Historical Society's list has not been sanctioned as complete or accurate by the City. Three of the sites meet the criteria for National Register status. Within a one-mile radius of the City, the Historic Property Data File shows the presence of 14 historic resources. Given the density of recorded historic sites near the City, many additional unrecorded historic sites most likely exist in Lemon Grove.

With the assistance of the Lemon Grove Historical Society, the City plans conduct a citywide comprehensive survey of historic sites. The survey should include assessing the significance of historic sites according to the criteria established under the National Register of Historic Places and California Environmental Quality Act. Sites with local significance should be identified. Following the survey, the City should consider developing a Historic Sites List and adopt a Historic Preservation Ordinance. All property owners subject to the Historic Sites List or Historic Preservation Ordinance will be given the opportunity to participate in the planning process.

Some of the early residents of Lemon Grove still live in the community and recall colorful stories about the old days. To perpetuate the historic

"...the City... anticipates launching an oral history program to record these stories."

feeling in Lemon Grove, the City, with the help of the Lemon Grove Historical Society and other civic groups, anticipates launching an oral history program to record these stories. Signs should be placed on the properties included on the Historic Sites List to enhance historic awareness and appreciation, and a school curriculum on Lemon Grove history will be developed. The City should also work with the Lemon Grove Historical Society to establish a museum for collected relics and artifacts. The museum should be located in the planned civic center to optimize its contribution to community life.

Fossils and Prehistoric Resources

"Nearby and within Lemon Grove, significant fossils have been found..."

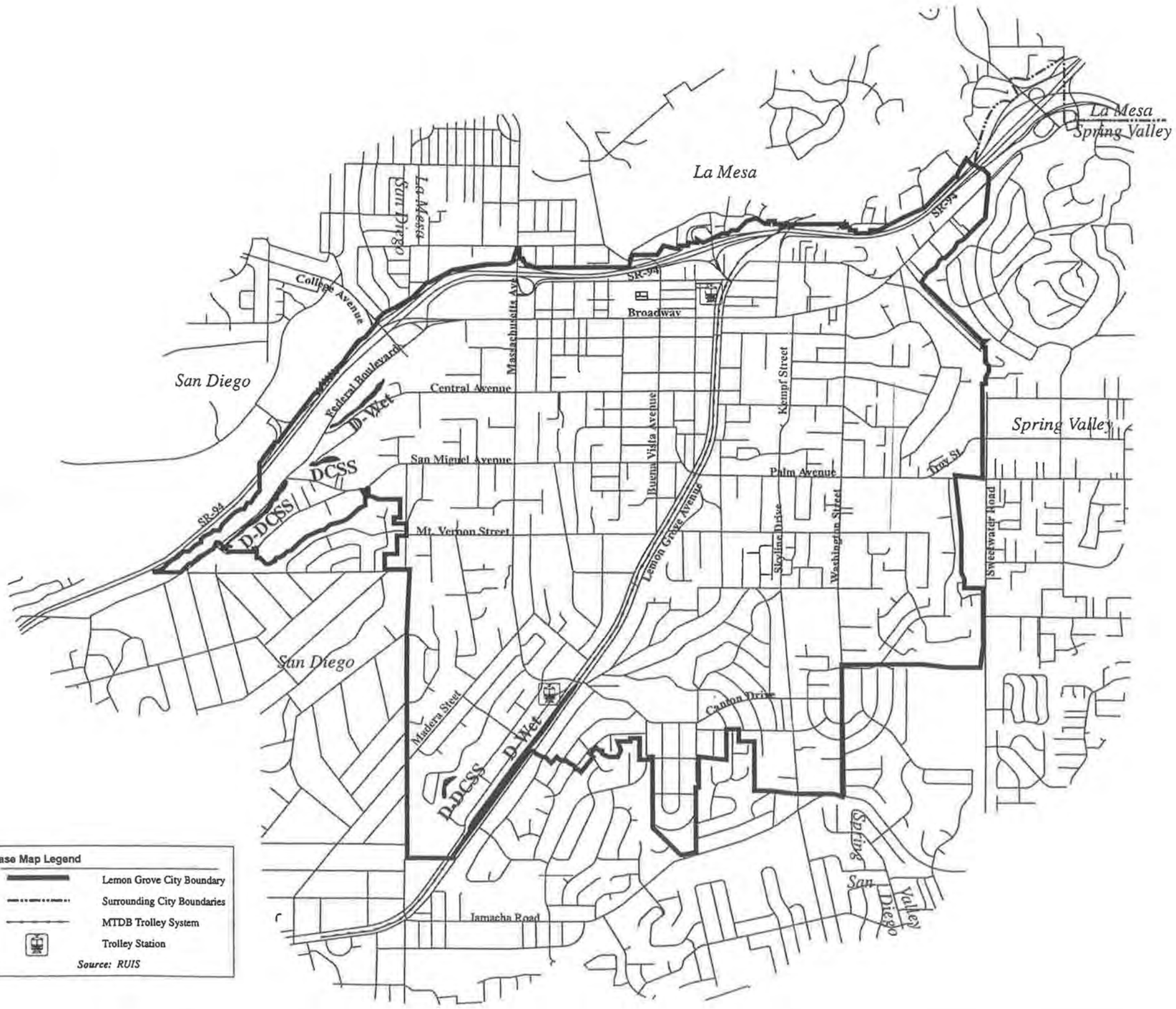
Nearby and within Lemon Grove, significant fossils have been found in the Mission Valley and San Diego geologic formations, and prehistoric artifacts probably from the San Dieguito/La Jolla cultural group have also been found. These resources may contain important information regarding past plant and animal life and human cultures that once inhabited the area. Both fossils and prehistoric resources are typically found underground and therefore subject to impacts from development and grading activities. Through the environmental review process for future development projects under the California Environmental Quality Act, the City will safeguard important fossils and cultural artifacts.

Natural Biological Habitat

Almost all natural biological habitat in Lemon Grove has been removed during development activities. The remaining habitat consists of very limited amounts of coastal sage scrub and wetlands (see Figure CR-1). The disturbed condition of the habitats reflects their isolated location within an urbanized area. Further impacts to the habitat areas shown in Figure CR-1 should be avoided. If a proposed development project encompasses a habitat area, the City will require appropriate mitigation to reduce the significance of the impact as required under the California Environmental Quality Act.

Solid Waste Management

Urban areas generate substantial amounts of trash requiring disposal in large landfills, and materials that can be recycled for other purposes are often instead thrown out. Recognizing the importance of integrated waste management and recycling, the City adopted and implements the *Lemon Grove Source Reduction and Recycling Element* (SRRE). Continued recycling and source reduction will help reduce the need to construct new regional landfills, and will conserve natural resources and energy for future generations.



Legend

D-Wet	Disturbed wetlands
DCSS	Diegan coastal sage scrub
D-DCSS	Disturbed Diegan coastal sage scrub

Source: Lettieri-McIntyre and Associates, 1995.

N

1 inch = 2,000 feet

Figure CR-1
Vegetation Communities

In addition to implementing the SRRE, periodic City newsletter articles can increase awareness of recycling, reuse and source reduction as well as the environmental and economic benefits of efficient solid waste management. The City will also participate in interjurisdictional programs to explore solid waste disposal solutions that minimize environmental and economic impacts.

Efficient Water Use

"Because Lemon Grove relies almost entirely on water imported from outside regions, water conservation will be promoted..."

Because Lemon Grove relies almost entirely on water imported from outside regions, water conservation will be promoted throughout the City. Each year the City will support Helix Water District's water conservation month to increase awareness about the need to efficiently use water and provide information about water conservation strategies. The City will also make water conservation literature available at City Hall. New development and substantial remodeling projects will be required incorporate drought tolerant landscaping, efficient irrigation systems and low-flow plumbing fixtures. Methods to improve water conservation efforts in City buildings, public parks and other public landscaped areas will be also studied. An ordinance requiring plumbing retrofits during the resale of property will be investigated and considered.

The City of San Diego Wastewater Department, who presently treats and disposes the City's wastewater, is presently developing facilities to reclaim wastewater for non-potable uses. The City will monitor reclaimed water programs and will work with the water providers to identify appropriate uses for reclaimed water in Lemon Grove. Potential uses may include irrigation of parks and roadway landscaping.

Clean Water

Although no factories or industries in Lemon Grove directly discharge polluted water into the environment, the community still contributes to regional water pollution problems. Pesticides, oil, grease, fertilizers, detergents and earth materials from urban areas are "washed away" in runoff. Polluted runoff flows to surface streams and water bodies, or percolates to the groundwater table.

To reduce the level of pollutants in local runoff, the City will pursue implementation of all applicable requirements of the National Pollutant Discharge Elimination System (NPDES) regulations, including the General Construction Activity Storm Water Permit and the Areawide Municipal Storm Water Permit. The City could also conduct annual campaigns to educate the community about reducing pollutants in runoff, and serve as

recreational facilities throughout the City and accessibility per the Americans with Disabilities Act (ADA). New park space and/or a public plaza should be incorporated into the planned Civic Center (see the Community Development Element).

As provided by the Quimby Act, the City will require new development to dedicate land and/or pay fees in lieu of dedication for the acquisition and development of recreational facilities. This will enable the City to provide additional facilities and better serve the population. Since Lemon Grove contains no regional park, the community will participate in planning for nearby regional parks to promote facilities that meet the needs of Lemon Grove residents.

Park planning should particularly emphasize facilities for active recreational pursuits, such as basketball, baseball, roller skating and bicycling. When pursuing sites for new active recreational facilities, the City will consider noise impacts to adjacent areas.

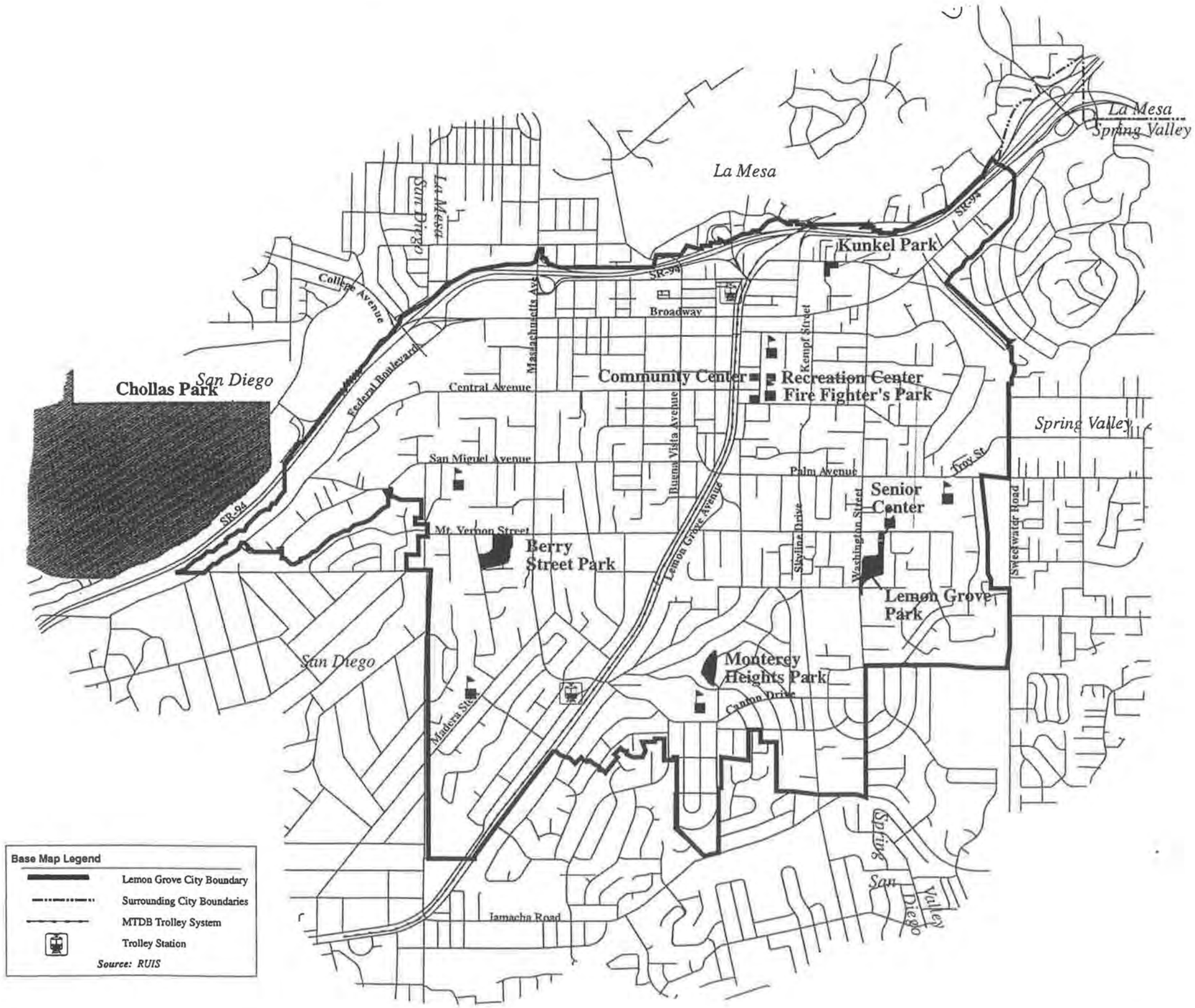
School fields and sport facilities comprise a significant portion of the open space. When the Lemon Grove School District permits the City to use school facilities and vise versa, both students and the broader community benefit from expanded recreational opportunities. The City will work to continue joint use of municipal and school facilities to maximize community benefits and cooperatively address facility maintenance, vandalism and other concerns.

Recreational Programs

A variety of recreational programs are offered by the City, including dance classes, crafts and sport leagues for children, teens and adults. After-school programs and day camps provide fun and enjoyable activities in addition to essential supervision for local kids. Special events such as Lemon Grove Old Time Days offers fun for all while building community relations. Residents also enjoy athletic, recreational and artistic programs sponsored by local civic and cultural organizations.

"...diverse recreational programs reflecting the interests of local children, teens, adults, seniors and ethnic groups."

The City will continue providing diverse recreational programs reflecting the interests of local children, teens, adults, seniors and ethnic groups. Programs will be modified as needed to reflect the evolving ethnic composition and interests in the community. A Recreation Strategy Plan could be useful to explore alternatives for expanding recreational options, such as fund-raising techniques, co-sponsoring programs with local



Legend

- Park
- Community Center
- Regional Park
- School

Source: City of Lemon Grove, 1995.

N

1 inch = 2,000 feet

Figure CR-2
Parks and Recreation Facilities

organizations and agencies, increased use of volunteers, and identifying opportunities for commercial recreational facilities and activities.

Aesthetic Open Space

The aesthetics of a community - the feeling of beauty and identification - significantly contribute to people's satisfaction and enjoyment. In Lemon Grove, parks and other open spaces provide a sense of mental well-being in addition to gracing the community landscape. The benefits of open spaces will be enhanced through enhanced landscaping and maintenance. The City will beautify parks and roadway medians by properly maintaining landscaping, picking up trash and routinely cleaning hard surfaces. Future plans to landscape the trolley right-of-way and Lemon Grove Avenue median islands will also heighten residents' and visitors' aesthetic experiences.

GLOSSARY

Lemon Grove General Plan

GLOSSARY

Planning Terms

Accessory Unit

A self-contained living unit, either attached to or detached from, and in addition to, the primary residential unit on a single lot. Sometimes called "granny flat" or "second unit."

A-Weighted Decibel

A measure of sound intensity that discriminates against the lower frequencies according to a relationship approximating the sensitivity of human hearing.

Acoustics

1) The science of sound, including the generation, transmission and effect of sound waves, both audible and inaudible. 2) The physical qualities of a room or other enclosure (such as size, shape or amount of noise) that determine the audibility and perception of speech and music.

Adequate Housing

Housing that: 1) is structurally sound, water-tight and weather-tight, with adequate cooking and plumbing facilities, heat, light and ventilation; 2) contains enough rooms to provide reasonable privacy for the occupants; and 3) is within the economic means of the occupants.

Affordable Housing

Housing that costs no more than 30 percent of a households income.

Air Pollution

Concentrations of substances found in the atmosphere that exceed naturally occurring quantities and are undesirable or harmful in some way.

Ambient Noise Level

Noise that exists at any instant, regardless of source.

Americans with Disabilities Act

Federal legislation requiring that public areas be accessible to all persons.

Annexation

The addition of land area into an existing city, with a resulting change in city boundaries.

Archaeological Site

Any mound, midden, settlement, burial ground mine, rock art or other location containing evidence of human activities which took lace prior to occupation by European settlers.

Arterial

A street that provides for the movement of large amounts of traffic. It carries traffic from collector streets to other collectors, arterials or freeways.

Average Daily Trips (ADTs)

An average 24-hour traffic volume at a given location for some period of time less than a year.

Barrier

An object that obstructs access. May serve as a visual and/or functional obstruction, and/or may attenuate or reduce noise.

Bicycle Facilities

Designation paths or trails for bicycle transportation. May be located within or outside of a street. The Mobility Element contains definitions of specific categories of bicycle facilities.

Blight

A condition of a site, structure or area that may cause nearby buildings and/or areas to decline in attractiveness and/or utility.

Buildout

Development of land to its full potential or theoretical capacity as permitted under current or proposed planning or zoning designations.

California Department of Transportation (CALTRANS)

The state agency in charge of transportation planning, construction and maintenance of the state's highway system.

California Environmental Quality Act (CEQA)

Enacted in 1970, CEQA requires thorough analysis of the environmental impacts of proposed development, infrastructure and planning projects. Prior to approving a project, the CEQA process requires assessing the potential environmental impacts and identifying mitigation measures to reduce the impacts to acceptable levels.

Capital Improvement

A major construction project, real estate acquisition, or major equipment acquisition by a city or other government agency.

Capital Improvement program (CIP)

A proposed timetable or schedule of all future capital improvements to be carried out during a specific time period. Includes cost estimates and anticipated means of financing each project.

Channel

A water course with a definite bed and banks that confine and conduct water.

Character

An attribute, quality or property of a place, space or object. The distinguishing character of a place, space or object.

Dwelling Unit

One or more rooms plus a single kitchen, designed for occupancy by one household for living and sleeping purposes. Includes a single house, an apartment or condominium unit, or a mobile home.

Egress

A transportation term referring to an exit.

Enhance

To improve existing conditions by increasing the quantity or quality of beneficial uses or features.

Environment

The physical conditions including land, air, water, minerals, geologic forms, plants, animals, noise, historic resources and visual qualities.

Environmental Impact Report (EIR)

A document prepared per the California Environmental Quality Act that evaluates the environmental impacts that could result from a proposed project. Mitigation measures are included to reduce significant impacts to acceptable levels.

Erosion

1) the loosening and transportation of rock and soil debris by wind, rain or running water. 2) The gradual wearing away of the upper lays of earth.

Fault

A fracture in the earth's crust that forms a boundary between shifting rock masses. An active fault has moved recently in geologic time and is likely to move again in the relatively near future. An inactive fault shows no evidence of recent movement and has an extremely low potential for movement in the relatively near future.

Floodplain

Any land area susceptible to being inundated from any source of flood water of the 100-year frequency, as defined by the Federal Emergency Management Agency (FEMA).

Floor Area Ratio (FAR)

The ratio between the total gross floor area of all buildings on a lot and the total area of that lot. For example, a building with 5,000 square feet of floor area on a 10,000 square-foot lot would have a FAR of 0.5 while a building with 20,000 square feet of floor area on the same lot would have a FAR of 2.0. The greater the FAR, the larger the building and the greater number of stories.

Freeway

A multi-lane, divided highway for the purpose of high speed vehicle travel.

Gateway

A major entrance to a city, typically occurring along major transportation routes.

Grading

Any stripping, cutting, filling, excavating or stock piling of earth or land.

Gross Acres

The entire acreage of a site including easements.

Groundwater

The supply of freshwater under the surface of the ground, within soil or an aquifer.

Habitat

A place or type of site where a plant or animal natural or normally lives and grows.

Streetscape

Landscaped areas adjacent to public or private streets. In addition to beautifying the street, streetscape can buffer adjacent development from traffic.

Subdivision

The division of a lot, or parcel of land, into two or more lots, tracts, parcels or other division of land for sale, development or lease in accordance with the California Subdivision Map Act.

Theme

The pervasive character of an area, development or special place.

Transit

The conveyance of persons or goods from one place to another by means of a public transportation systems such as bus and trolley.

Transit Corridor

Bus routes, trolley tracks and lands within the immediate vicinity.

Transportation Corridor

Major transportation arterials, freeways and lands within the immediate vicinity.

Trip

A one-way journey that proceeds from an origin to a destination via a single type or transportation.

Unacceptable Risk

Level of risk above which specific action by government is deemed to be necessary to protect life and property.

Urban Design

The relationship between land use, circulation, architectural design and landscaping within a given district.

Use

Purpose for which land or a building is occupied, arranged, designed or intended, or for which either land or building is or may be occupied or maintained.

View

An unobstructed sight of something, a vista.

Vision

The community's overriding goal for the future of the City, which serve as the basis for the General Plan objectives and policies.

Waste Management

An efficient system for the collection and disposal of waste products generated by households, industry and commercial enterprises.

Zone

A specifically delineated area or district within which regulations and requirements uniformly govern the use, placement, spacing and size of land and buildings.

Zoning

The dividing of a municipality into districts an the establishments of regulations governing the use, placement, spacing and size of land and buildings.

References

The Lemon Grove General Plan glossary represents a compilation of glossaries from the following general plans:

1994 Carlsbad General Plan;
1989 Chula Vista General Plan; and
1991 Poway General Plan.